TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 CHAPTER ONE: INTRODUCTION AND BACKGROUND

1.1 Introduction

The purposes of the Montana State Airport System Plan (SASP) are to assess the needs of the state's airports; help justify funding for necessary airport improvements; and provide information for governmental and other entities concerning the value, use, and needs of the state's public use airports.

This plan provides the Montana Department of Transportation's (MDT) Aeronautics Division with an important planning tool that enables them to remain current with industry trends. This plan also helps the Division of Aviation determine how the Montana airport system should be developed to respond to future challenges and to meet changes in demand. This study updates the previous Airport System Plan which was completed in 1998. In the future, it will be appropriate for the plan to continue to be updated at regular intervals. This SASP will provide the baseline for future updates and allow MDT to track changes at both commercial and general aviation airports in future years.

Through the National Plan of Integrated Airport Systems (NPIAS), the Federal Aviation Administration (FAA) monitors the development needs of the national air transportation system. State aviation system plans, are one of the primary inputs for updating the NPIAS. All general aviation and commercial airports in Montana that are open to the public are part of Montana's state airport system. Not all airports included in the state system are included in the NPIAS. Only those Montana airports included in the NPIAS are able to compete for federal funding from the FAA. All public-use airports in Montana can apply for grants from MDT Division of Aviation.

The SASP will provide the Aeronautics Division with guidelines to continue the successful development of its aviation system, with an emphasis on planning for the airport system as a whole. Within this process individual airport needs are considered within the broader framework of the entire Montana airport system.

With annual requests for grants that far exceed available financial resources, this plan provides the Division of Aviation with information that it uses to:

- Help determine which system airports are most essential to Montana transportation needs and economic objectives.
- Identify projects which have the greatest potential to improve the performance of the Montana airport system.
- Demonstrate how investment improves the performance of the Montana airport system relative to establish measures and benchmarks.

1.2 System Planning History

The Aeronautics Division (MAD) of the Montana Department of Transportation typically produces some form of state system planning document each year. The scope of each year's plan varies with the changing needs of the state airport system, but typical documents have included Inventory and Forecasting, Pavement Condition Surveys, Safety/Standards Review, Capital Improvement Planning, and National Plan of Integrated Airport System (NPIAS) Review. Generally, Pavement Condition Indices (PCI) are been performed on a 3-year cycle. Special topics addressed as part of the system planning process have included an Airport Land Use

Compatibility Study, an evaluation of MAD's Information Management System, and an Airports Economic Impact Study. A list of System Plan Updates by year is noted below.

- 1987 SASP Base Plan Update
- 1988 SASP Pavement Conditions Index
- 1989 SASP Airport Safety Inspections, Capital Improvement Plans, NPIAS Review
- 1991 SASP Pavement Conditions Index, Burn Pit Study
- 1991 Capital Improvement Plans
- 1993 Capital Improvement Plans, NPIAS Review
- 1994 SASP Pavement Conditions Index
- 1995 Safety Inspections / Standards Review, Airport Information Management System
- 1996 Land Use Compatibility Study
- 1997 SASP Pavement Conditions Index
- **1998 SASP Base Plan Update: Inventory & Forecasts**
- 2000 SASP Pavement Conditions Index
- 2002 Capitol Improvement Plans
- 2002 Standards Review
- **2006 Montana Air Service: Opportunities and Challenges Study**
- 2006 SASP Pavement Conditions Index
- **2009 Economic Impact of Montana Airports Study**
- 2009 SASP Pavement Conditions Index
- **2012 SASP Pavement Conditions Index**

The studies in bold above include the last base System Plan update and some of the more intensive studies undertaken since that update. They are discussed in detail below.

1998 Montana State Aviation System Plan Inventory and Forecasting

Introduction

The Montana Department of Transportation Research Programs contracted with Robert Peccia and Associates to update the Montana State System Plan "Inventory" which was initially developed in 1974. This study was initiated in September, 1998 and finalized in January, 2001. The study included an inventory and analysis of the existing system and a forecast of future demand on the state-wide system.

Research and Analysis Conducted

The initial portion of the State Aviation System Plan consisted of developing a database which identified and described the existing aviation system in Montana. System components identified included airport facilities, airspace utilization and navaids, aeronautical activity levels, multi-modal transportation options, land use and environmental considerations, and economic benefits of aviation in Montana. Aviation demand forecasts were provided based on historic aviation activity in Montana, the FAA's Terminal Area Forecast (TAF), and national industry projections by aviation organizations. Demand forecasts were compared to system capacities to identify existing or potential system deficiencies. Recommendations were presented for system and individual airport development to meet system needs.

Analysis Results

In 1998, Montana had 118 public use airports, two heliports and one seaport. These included 15 commercial service airports. Eight primary airports enplaned 10,000 or more passengers annually (Billings, Bozeman, Butte, Great Falls, Helena, Kalispell, Missoula and Sidney). The remaining seven commercial airports served the communities of Glasgow, Glendive, Havre, Lewistown, Miles City, West Yellowstone, and Wolf Point. The inventory identified 79 of the State's airports with at least one paved runway, 80 with runway lighting systems, 27 with instrument approach capabilities, and eight with at least one instrument approach.

Forecasts were developed to show projected trends in scheduled air service airport activity (enplanements, operations and air cargo) and general aviation activity (based aircraft, fleet mix, and operations). The forecasts showed a generally slow rate of growth for the Montana aviation industry. Capacity issues during the planning period were projected to be due to changes in the types of usage, with increased activity from business aircraft and air ambulances requiring longer runways at many smaller airports. Near double-digit growth in air cargo activity was projected at primary commercial and major general aviation (GA) airports.

Challenges and Deficiencies Identified

Challenges and deficiencies of the state aviation system that were identified in the plan included:

- Weather - Better quality weather reporting information was cited as the greatest concern among Montana pilots.
- Communications - Many GA airports did not have public phones available to arrange for ground transportation, call for emergency assistance, obtain a weather brief, or open/cancel a flight plan.
- Aviation Activity - Aircraft activity data such as operations counts and cargo movement was incomplete and/or of questionable accuracy.
- Airports - Limited funding availability was noted in the areas of local matching funds, pavement maintenance and state grants. It was noted that Essential Air Service airports were not generating sufficient passenger loads to be profitable without subsidies. Limited local ground transportation options at many GA airports was also noted.
- Airspace and Navigational Aids - Requests for instrument approaches outpaced the FAA's ability to process them. Poor Remote Communications Outlet (RCO) communications were reported in several areas.
- Land Use Planning - Few public use airports were protected from residential and other non-compatible encroachments.

Recommendations

Recommendations of the plan included:

- Increase Aviation fuel tax rates to significantly increase the State grant program for AIP project airports.
- Institute a 3-year State grant program offering up to a 100% local match for land purchases to protect ultimate airport development.
- Continue the State loan program for AIP projects.
- Initiate a State program to purchase and install super unicoms, radiophone flight service links, and other low-cost weather advisory information.

- Coordinate accessibility by modem and transmitters to existing automated weather resources.
- Grant funds and act as an information clearing house for airports wishing to purchase inexpensive weather and communications systems.
- Actively continue to educate and assist communities in airport land use planning and airspace zoning.
- Place emphasis on air ambulance use of airports when prioritizing airport funding.
- Use accumulated Pavement Condition Index (PCI) data to prioritize maintenance and reconstruction projects.
- Continue the State 50/50 grant program for pavement maintenance projects at all GA airports.
- Continue safety and standards inspections at GA airports.
- Provide public telephone and ground transportation at community airports where possible.
- Create a grant program for establishment of non-precision instrument approaches at GA airports.
- Encourage the Montana Airport Managers Association to establish state-wide standards for tracking of air cargo/express mail.
- Standardize the State aircraft registration database and retain historical records to accurately predict based aircraft and fleet mix.
- Expand the acoustical counting program to develop accurate operations data at GA airports, Primary Commercial Service airports attempting to justify a control tower, and part-time towered airports.
- Continue to work with local pilots associations to open and maintain recreational airports and encourage recreational flying in Montana.
- Continue to encourage new pilots through the Young Eagles Program.

Deliverables: *Inventory & Forecasting of Aeronautical Activities in Montana*, Final Report*,* Project Summary
Cost: $156,000

2006 Montana Air Service: Opportunities and Challenges

Introduction

The Montana Department of Transportation Research Programs contracted with Wilbur Smith Associates to conduct a study entitled *Montana Air Service: Opportunities and Challenges.* This study was in conducted in conjunction with the Montana Department of Commerce and was initiated in late 2004 and finalized in December 2006. The goal of the study was to report on the status and provide an assessment of commercial air service in the State of Montana as well as provide a historical framework from which to understand changes in air service.

Once the framework was established, an analysis of national and state trends was conducted to set the stage for determining the opportunities and challenges in improving air service in Montana. Airport infrastructure needs, intermodal concerns, and long-range transportation policy issues were also considered in the study as they related to development of a strategy for air service enhancements. Finally, a statewide marketing strategy was identified that documented considerations for improvements. Performance measures were also developed that could be used to monitor the performance air service as changes continue over time following the study.

Research and Analysis Conducted

The approach used to evaluate Montana's air service included compiling data from national, state, and airport-related sources, and analyzing the data based on the researchers' knowledge of the airline industry. Six steps were used to conduct the research including: 1) Review existing and historical air service; 2) Analyze trends impacting commercial air service, including Montana-specific trends; 3) Evaluate the impact of federal initiatives; 4) Identify air service challenges and opportunities; 5) Document the current health of airport infrastructure and intermodal needs; and 6) Develop a marketing strategy.

Analysis Results

In 2006, Montana had 15 commercial service airports to serve its population centers. The seven largest airports (referred to as Commercial Service in the Study) serve the state's large and medium-sized population centers including Billings, Bozeman, Butte, Great Falls, Helena, Kalispell, and Missoula. The remaining eight Montana airports (referred to as Essential Air Service or EAS Airports) serve the state's smaller communities of Glasgow, Glendive, Havre, Lewistown, Miles City, Sidney, West Yellowstone, and Wolf Point.

In 2005, there were several carriers that serve Montana's airports. Eight of the State's 15 airports were served by one regional carrier only; these eight communities are those with federal Essential Air Service (EAS) supported service. Large airlines serving Montana include Alaska/Horizon, Delta, Frontier, Northwest, and United. Big Sky Airlines serves 12 of the State's 15 air service communities. In addition, eight of the State's airports serve air cargo needs.

In 2005, Montana was one of the lowest ranking states in the continental U.S. in terms of domestic origin and destination (O&D) passenger activity and also had some of the highest airfares in the country. When ranked by outbound O&D passengers, Montana ranked 39th among continental U.S. states in 2005. When ranked by average one-way fares, Montana ranked 45th, or the fourth-highest. The average one-way fare paid by domestic passengers originating in Montana was $168.14 in 2005. This was $24 more than the average one-way fare paid by all U.S. domestic passengers combined. In addition, the study found that due to its remote location, many air travelers in Montana tended to travel further than the average continental U.S. traveler. The average itinerary for Montana O&D trips was over 1,300 miles, while the U.S. average was over 1,100 miles. This accounts for a portion of the higher fares as well.

Opportunities and Challenges Identified

The study recommended that airports in Montana should build strong relationships and have frequent open dialog with their incumbent carriers. Additionally, the study indicated that airports in Montana should pursue the following steps related to their level of service:

Billings:

- Add (three total) daily nonstop flight to Minneapolis operated by Northwest Airlink on CRJ aircraft.
- Expand scheduled service to Chicago on United.
- Add flights to Las Vegas on Allegiant Air.
- Add flights to Denver on Frontier Jet Express.

Bozeman:

- Add nonstop CRJ flights to Minneapolis on Northwest Airlink.
- Monitor the ridership of seasonal Atlanta-Bozeman service to try to add several weekly flights on more than a seasonal basis.

Butte:

- Upgrade current one-stop service to Seattle on Horizon Air to nonstop service.

Great Falls:

- Supplement existing service to Minneapolis with additional CRJ service.
- Upgrade current one-stop service to Seattle on Horizon Air to nonstop service.
- Add one nonstop flight to Denver on United Express.

Helena:

- Add nonstop CRJ flights to Minneapolis on Northwest Airlink.

Kalispell:

- Upgrade current one-stop service to Minneapolis to nonstop service.
- Add nonstop service to Seattle (upgrade one-stop service).
- Work with US Airways to see what can be done to establish year-round daily service to Phoenix.

Missoula:

- Add flights to Las Vegas on Allegiant Air.
- Supplement existing service to Minneapolis with CRJ service.
- Expand weekend only service to Chicago on United Express.

Several markets and carriers appeared to have potential for being new nonstop markets for Montana airports. The airports were encouraged to work with carriers serving the state to see if opportunities exist in their route planning. The study identified three types of carriers that could be analyzed for future air service opportunities in Montana. They were 1) traditional carriers with ties to the hub and spoke system, 2) low fare carriers, and 3) point-to-point carriers, such as Big Sky.

According to O&D analyses in the report, Montana airports were encouraged to pursue better linkages to the eastern half of the U.S. through the commuter partner of traditional carriers as well as strengthen connections to the Southwest U.S. Opportunities to hub airports included:

- Chicago
- Cincinnati
- Atlanta
- Las Vegas
- Los Angeles
- Denver
- Phoenix
- Dallas/Ft. Worth

Opportunities that should be pursued in the low fare airline realm included:

- Frontier – Bozeman, Kalispell, Missoula.

- Other – Airports were encouraged to monitor other carrier fleets and route planning including JetBlue, AirTran, Southwest, and Virgin America. US Airways should also be watched closely.

From the results of the statewide business survey that was administered, it appeared that just a small amount of business travel was currently conducted between Canada and Montana. Also, when transborder service was analyzed, only a small amount of air travel was generated between Canada and Montana. The top destinations were Vancouver (31 percent), Toronto (26 percent), and Montreal (11 percent).

What the Researchers Recommended

In terms of air service, unless a market is proven, small and medium-sized communities need to have the local and state support in place and incentives (financial and other) to offer potential carriers before many carriers will even consider entering a market. The state and local communities need to be well organized and have a good understanding of their markets to ensure the most effective pursuance of local air service improvements.

The study recommended that Montana should consider implementing some of the approaches used by other states to improve air service. Additionally, the study indicated that Montana would benefit economically if the opportunities for improving air service identified in the study were implemented. Initiatives to be considered at the state level and outlined in the 2006 study included:

- Continue to support EAS and the Governor's Essential Air Service Task Force.
- Develop a statewide air service committee.
- Create a policy statement.
- Fund a state air service development program.
- Work with state universities.
- Coordinate with other state agencies.
- Create a State Air Service Development Program.
- Create a state fund to match federal SCASDP grants.
- Develop state subsidies or revenue guarantees to airlines.
- Develop a statewide marketing campaign.
- Fund marketing support to airports.
- Conduct additional airport studies/surveys.

The study indicated that it is important that each of the communities supporting commercial airline service have a sincere interest in improving their service and that the information presented in the study be used as the basis for developing an individual action plan. Recommended actions to be considered at the local level included:

- Establish local catalyst and air service task force.
- Identify and monitor target audience and build consensus.
- Work with incumbent carriers.
- Implement marketing and community education.
- Hire an air service development coordinator.
- Conduct airline marketing.
- Fund revenue guarantees/subsidies.
- Provide free ground handling, terminal/counter space, gate leases, landing fees, etc.

- Develop program to advertise to passengers.
- Develop passenger rebates to use local airport.
- Coordinate Frequent Flier bonus miles program.

The study also recommended that MDT track certain statewide performance measures in order to continue to adjust their marketing strategy into the future. It also recommended that the state compile data on a monthly, quarterly, and annual basis in order to track the performance of the airports and state as a whole. The state's program should track the following data:

- Air Passengers,
- Aircraft Operations,
- Air Cargo,
- Industry Trend Watch, and
- Socioeconomic Trends.

Deliverables: *Montana Air Service: Opportunities and Challenges,* Project Summary, Final Report, Air Service PowerPoint Presentation
http://www.mdt.mt.gov/research/projects/aer/air_challenges.shtml
Cost: $199,500

2009 Economic Impact of Airports in Montana

Introduction

In 2007, the Montana Department of Transportation Research Programs contracted with Wilbur Smith Associates (WSA) to conduct a study entitled *The Economic Impact of Airports in Montana*. WSA was teamed with Morrison Maierle for this study. The study was initiated in 2007 and finalized in April 2009. The goal of the study was to measure the economic impact of Montana's system of airports.

Findings

The 2009 study found that Montana's public-use airports are a major catalyst to the state's growing economy. In 2008 (the study's base year), the economic value of aviation in the state was estimated at $1.56 billion. This includes expenditures by several hundred on-airport businesses and thousands of visitors using aviation services, as well as the multiplier, or spin off, effect associated with this spending. In total, nearly 18,750 jobs, with an annual payroll of nearly $600 million, were attributable to aviation in Montana in 2008.

The study measured the economic impact of all 121 public use airports in Montana . Seven of the airports are Primary Commercial Service Airports, while eight are Commercial Essential Air Service (EAS) Airports. 106 general aviation airports were also included in the analysis. The general aviation airports were broken into three categories: High Volume General Aviation, other Select General Aviation, and Rural Community Airports.

Study Process

The benefits provided by Montana's airports were calculated using an FAA-approved methodology that has been successfully applied throughout the United States. Through extensive survey efforts, direct economic benefits related to tenants and indirect benefits

stemming from visitors were measured. As these first-round benefits are released into the statewide economy, additional multiplier benefits are created. This second-round of spending re-circulates or multiplies until the benefits ultimately leak outside the region. Second-round benefits were calculated using IMPLAN multipliers that are specific to Montana. The total economic impact is the sum of the direct, indirect, and multiplier benefits.

There are many ways in which airports support economic impacts. On-airport businesses and government agencies including airlines, flight schools, airport sponsors, and the Federal Aviation Administration are responsible for tens of thousands of jobs and extensive capital projects at airports throughout the state. Visitors arriving on commercial airlines and private/corporate aircraft spend money for hotels, restaurants, retail, and entertainment, creating additional jobs and economic benefits.

When all factors are combined, Montana's 121 public-use airports included in the 2009 study:

- Supported nearly 18,800 jobs,
- Generated nearly $600 million in payroll,
- Produced $1.56 billion in economic activity, and
- Served as vital business links and support critical services such as medical care, agriculture support, wildland fire-fighting, recreation, and emergency access

Deliverables: Economic Impact of Montana Airports, Executive Summary, Technical Report and Power Point Presentation (10Mb) http://www.mdt.mt.gov/aviation/economic-impact-study.shtml
Project Cost: $220,000

Montana Aviation System Plan – Pavement Conditions Index, 2012 Update

Introduction

The Montana Aviation System Plan provides an on-going effort to develop and maintain a Pavement Management System for Montana's general aviation airports. This process is conducted every three to four years and was begun in 1988. The pavement management system is designed to be a systematic and objective tool for determining maintenance and rehabilitation needs and priorities for paved surfaces on Montana's general aviation airports. A pavement management system begins with an objective, repeatable method for determining present pavement condition. This project uses the Pavement Condition Index (PCI) developed at the US Army Corps of Engineers Research Lab (USACERL). The PCI is a numerical index from 0 to 100 that describes the pavement's overall structural integrity and operational condition, with 100 assigned to a new pavement with no flaws and zero to a highly degraded pavement.

Methodology

The PCI is developed by conducting visual inspections of samples of different pavements at each airport and then entering the distress type, quantity, and severity into a database called MicroPaver. The MicroPaver database calculates PCI's by applying various deducts for each type, quantity, and severity of distress. To maintain an accurate and reproducible pavement management system it is important to conduct consistent pavement inspections every time the PCI update is performed (every 3 years). The PCI process includes very good engineering guidance for identifying and measuring distresses. However, most of the distress type and

severity classifications require engineering judgment in the field and that opens up the potential for inconsistency of results from past PCI updates.

All of the field inspections for the 2012 Update were conducted independent of past inspections using only the distress classification guidance developed by USACERL. Only after the inspections were completed were comparisons performed to past inspections. Because of the subjective classification of distress type and severity, a QAQC process was used to re-evaluate significantly different PCI scores from past inspections and adjustments were made to some distresses to maintain consistency with past PCI scores. Some of the more common revisions that were made during the QAQC process include the following:

- Alligator cracking and block cracking. Alligator cracking has a much higher deduct value than block cracking and will significantly lower PCI values in comparison to block cracking.
- Weathering and raveling. Most inspections documented raveling and weathering through visual estimates of the distressed areas.
- Longitudinal and transverse cracking. In heavy distressed areas, the most accurate method for measuring cracks was to conduct a combined measurement (total LF of cracking) and then go back and assess the quantity for severity.

There were several inconsistencies of distresses noted on the 2000 Update that simply were not observed on the 2012 Update, even though no work was performed on the pavement. Often this can simply be the result of inspecting different sample sections that have different distresses. However, there are some instances where there is no apparent explanation for the differences. One of the more significant differences observed was bleeding. There were a few airports that bleeding was documented on the 2009 Update that simply but was not observed on the 2012 Update. One explanation for this could be heavy fog seal applications that puddle bituminous material and give the appearance of bleeding.

In summary, sound engineering judgment was used during the QAQC process on the 2012 Update to maintain consistency with past PCI inspections. Distress types and severity that require engineering judgment were reassessed and compared to past inspection quantities in an effort to maintain consistency in the pavement management system. However, there were often many distresses documented in past inspections that were not duplicated under the 2012 inspections. In the 2012 update, if there was no evidence for a certain distress existing, it was not added to the database in an effort to maintain consistency. Therefore there were some instances of significant variation between past PCI's and the current PCI's established under this update. But in all cases of variation, a subjective consideration of the pavement and the PCI value was made to ensure that the PCI value was reasonable given the visual condition of the pavement.

Deliverables: MONTANA AVIATION SYSTEM PLAN, 2012 UPDATE - PAVEMENT CONDITION INDEXES, 76 Pages, A.I.P. 3-30-0000-010-2012
http://www.mdt.mt.gov/aviation/docs/avsysplan2012/2012-sasp.pdf
Cost: $152,020

2 CHAPTER TWO: SYSTEM INVENTORY

2.1 Inventory Overview

The purpose of the inventory effort is to identify current facilities and conditions at Montana system airports. The inventory process and the data collected will provide a solid foundation to understanding the existing system's conditions. Further, much of the data collected will be used for subsequent analysis, evaluations, and recommendations throughout the study process. The data collected will also serve as a valuable resource to the Montana Department of Transportation (MDT) Division of Aviation as it provides a collection of updated data relative to the airports identified in the Montana airport system.

This chapter presents an overview of the Montana Airport System Plan (SASP) inventory effort. This chapter explains the process used to collect inventory data and presents summary inventory data in succinct form. The purpose of the inventory and data collection process is to develop an accurate database, representative of a "snap-shot in time" view of the existing system, that can be used throughout the study.

One hundred twenty-six (126) Montana airports have been selected for inclusion in the SASP. A large volume of information regarding these airports exists in various locations. Due to this, an inventory process was developed to gather all of the available information regarding the airports. This process includes information accumulated by MDT and the Federal Aviation Administration (FAA), as well as information available from the airports.

For purposes of this study, it is important to note that all airport-specific data is presented alphabetically by associated city. All tables referenced in this chapter appear together at the end of the chapter.

2.2 Airport Manager Survey

Inventory data was collected via an e-mailed survey (made available in hard copy upon request) distributed to airport owners and/or managers at all 126 airports in the system. The survey was distributed in January of 2013 and collected data in the following general subject areas:

- General Information Airside Facilities
- Airfield Lighting / NAVAIDs
- Based Aircraft & Operations Data
- Landside Facilities
- Airport Services and Accommodations
- Aircraft Operations Activity
- Community Outreach
- Existing Airport Plans
- Oil/Gas Boom
- Airport Development
- Airport Businesses

The surveys were pre-populated with available information. Airport managers were asked to verify existing information and respond to questions for which no previous public tracking had taken place. The survey included questions ranging from based aircraft to trends in airport activity. Completed surveys were received from 63 of the 126 system airports. Certain data collected in the survey was reconciled and/or supplemented with MDT Aeronautics and FAA sources.

A copy of the inventory survey is included as **Appendix A: Airport Inventory and Data Survey.** This dataset is complemented, where appropriate, by information available from MDT, the FAA and other public sources.

2.3 Airport Site Visits

Of those airports that did not originally return surveys, nine were selected for on-site visits. On site visits provided an opportunity to discuss each airport's goals and objectives and to note specific community issues related to the airport and its environs. The following airports were visited:

Glasgow International Airport
Miles City Airport
Sidney-Richland Municipal Airport
Poplar Municipal Airport
Dawson Community Airport, Glendive
Mission Field, Livingston
Big Timber Airport
Three Forks Airport
Dillon Airport

2.4 Airport Facilities

This section of the system inventory presents information on physical features of the airports. Additional sections include data on each airport's airside facilities, such as runways and runway lighting, approaches, navigational aids, and weather reporting. Finally, information on landside facilities, such as aprons, terminal buildings, and aircraft and automobile parking is presented here as well.

2.4.1 Study Airports

Table 2-2 at the end of this chapter presents data concerning the airports included in the study, the three letter/digit airport identifier at the time of the preparation of this document, and the FAA-assigned role of each airport. In addition, information is included as to each airport's inclusion in the National Plan of Integrated Airport Systems (NPIAS) and the FAA's 2012 Asset Study.

The NPIAS helps to establish a priority grouping for funding initiatives for those airports included in the federal system. In an effort to prioritize airports, classifications exist to distinguish between the different service roles among airports. Airport classifications in the NPIAS also represent different funding categories under which the distribution of federal aid, through the Airport Improvement Program (AIP), is determined.

Of the 126 airports included in the SASP, 70 are included in the NPIAS. Entry into the NPIAS is established by specific entry criteria and procedures. NPIAS airports are categorized by the type and level of service they provide to a community.

These services levels include:
Commercial Service Airports – Defined as airports which enplane over 2,500 or more passengers annually and receive scheduled passenger service. These are further subdivided into primary or non-primary categories.

Primary Commercial Service Airports – These airports enplane at least 10,000 passengers per year and are grouped into four subcategories: large, medium, small-hub, and non-hub airports.

Currently, seven airports in Montana are classified as primary commercial service airports: Billings Logan International, Bert Mooney Airport in Butte, Bozeman Yellowstone International, Glacier Park International in Kalispell, Great Falls International, Helena Regional, and Missoula International.

Non-Primary Commercial Service Airports – These airports enplane at least 2,500 but less than 10,000 passengers annually. These airports account for 0.1% of all enplanements within the U.S.

Currently, Montana has two airports defined in the NPIAS as non-primary commercial service airports: Sidney-Richland Municipal, and Yellowstone Airport in West Yellowstone.

General Aviation Airports – Communities that do not receive scheduled commercial service or do not meet criteria for commercial service having at least 2,500 annual enplanements may be designated as general aviation airports. The remaining 61 airports not listed above are designated general aviation airports in the NPIAS.

Reliever Airports – General aviation access is often constrained and more expensive at larger, more congested commercial service airports in metropolitan areas. Designated as reliever airports, these specialized facilities help to address operational capacity shortfalls in larger metropolitan areas. According to FAA guidelines, reliever airports must have 100 or more based aircraft or 25,000 itinerant operations annually, and the airport relieved must be in an area with 250,000 people or 250,000 enplanements and is operating at 60% or more capacity. There are no designated reliever airports in Montana.

Fifty Six (56) public-use airports included in the SASP are not included in the NPIAS.

The NPIAS method of classification does not offer a great deal of differentiation among general aviation airports, which is how the vast majority of airports in the NPIAS are classified. The FAA attempted to address this shortfall in their general aviation study entitled *General Aviation Airports: A National Asset* (the 2012 Asset study). This study defined five categories of general aviation airport – National, Regional, Local, Basic, and unclassified. However, none of Montana's airports met the definition of National, so there are only four categories of general aviation airport in Montana based upon the FAA study, in **Table 2-2**. Another limitation of the FAA's Asset study is that it only examined NPIAS airports, thereby excluding 56 airports recognized in Montana's system of airports. Furthermore, the FAA Asset study did not classify 4 NPIAS airports in Montana (either due to lack of data or evidence that the airport did not fit well into a single category), so sixty Montana system GA airports do not have a role as defined by the FAA Asset study (see **Table 2-2**).

Figure 2-1 depicts the location and classifications of Montana airports.

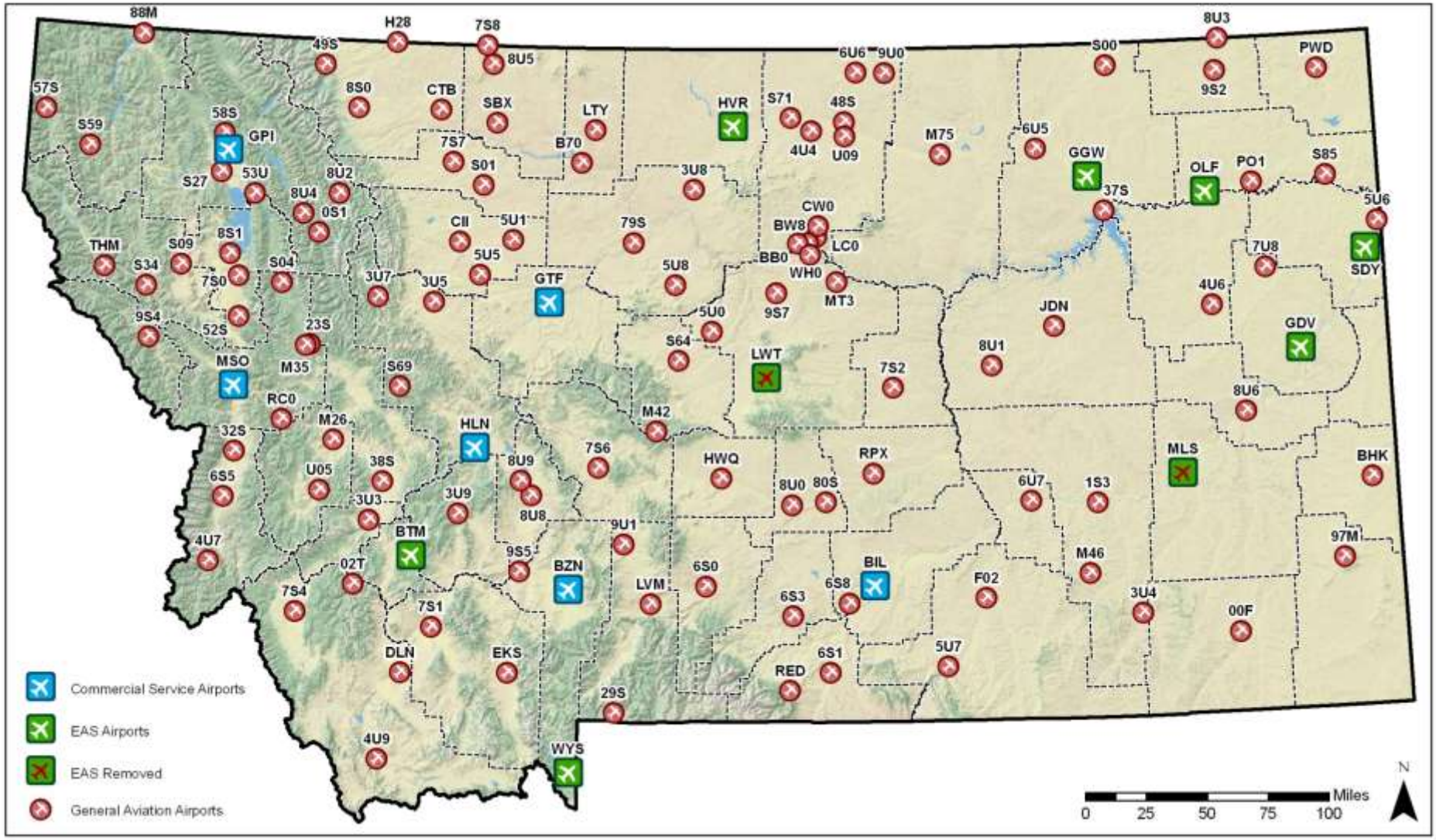


Figure 2-1 FAA Airport Classification

2.4.2 Airside Facilities

The following sections provide details on the types of airport installations that are known as airside facilities. The term “airside facilities” refers to pavement and equipment that are directly involved in flight activities. These facilities include such items as runways, taxiways, published approaches, and weather reporting equipment.

Runway Characteristics

Table 2-3 at the end of this chapter presents data on the length and width of each airport’s primary runway. For the purposes of this document, “primary runway” denotes the runway that is typically used most often and has the ability to accommodate the widest variety of aircraft types. The longest runways in Montana are 10,521 feet at Billings Logan International, 10,502 feet at great Falls International, and 9,501 feet at Missoula International. The shortest runway among system airports in Montana is the 1,200-foot turf runway at Woodhawk Airport, a Missouri River Breaks airstrip near Winifred.

In addition, **Table 2-3** shows information on the pavement type of each airport’s primary runway (asphalt, concrete, gravel, or turf), and the Pavement Condition Index (PCI) of that surface. Investment in the maintenance of paved surfaces at all system airports represents a considerable allocation of funds each year. Maintaining pavements to a certain standard or PCI score helps to prevent major and more costly reconstruction projects. The following PCI scale indicates typical ranges used for rating pavement conditions (turf runways are not assigned a PCI):

PCI Score	Condition
86-100	Excellent
71-85	Very Good
56-70	Good
41-55	Fair
26-40	Poor
11-25	Very Poor
0-10	Failed

Finally, the type of runway lighting installed on the primary runway is noted. HIRL, MIRL, and LIRL denote high-, medium-, and low-intensity runway lighting, respectively. “Non-standard” denotes systems such as reflectors or cones used to mark runways. The majority of airports in Montana (56 of 126) either have no runway lighting installed or have non-standard Lighting. Of those airports that possess runway lighting systems, the most commonly installed are medium-intensity. High-intensity lighting is installed at 7 Montana airports.

2.5 Airspace and Navigational Aids

This section contains a discussion of the national airspace system, typical airspace classification and the terminal airspace system.

2.5.1 FAA National Air Space (NAS) System Review

According to the FAA more than 85,000 flights are in the skies in the United States on a typical day. Only one-third of those operations are commercial passenger carriers. The remaining two-thirds include general aviation, with private planes and business jets, air taxi flights, military flights and air cargo flights. This translates into roughly 5,000 planes in the skies above the United States at any given moment. More than 15,000 federal air traffic controllers in Airport

Traffic Control Towers (ATCT), Terminal Radar Approach Control (TRACON) facilities and Air Route Traffic Control Centers (ARTCC) guide pilots through the system. These controllers provide air navigation services to aircraft in domestic airspace and international oceanic airspace delegated to the United States by the International Civil Aviation Organization (ICAO). The bullet points below breakout the numerous facilities, communications towers and equipment supporting the NAS as well as the annual number of operations throughout the U.S.

FAA NAS Operational Facilities [1]

- NAS Operational Facilities 64,937
- Communications 19,020
- Automation 2,199
- Infrastructure 22,560
- Mission Support 4,182
- Navigation 12,997
- Surveillance 1,707
- Weather 2,292
- ARTCC Centers 24
- ATCT Towers 513

2011 National Annual Operations

- Aircraft Handled by ARTCCs 38.1 million
- Airport Operations by FAA Towers 36.6 million
- Aircraft Operations (contracted) 13.9 million
- TRACON Operations by FAA Towers 41.1 million

FAA Next Generation Advancements

The FAA's mission is to provide the safest, most efficient aerospace system in the world, and NextGen is the FAA's comprehensive overhaul of the National Aviation System (NAS) to make air travel more convenient and dependable. Implementation of the FAA's Next Generation Air Transportation System (NextGen), which includes technology and procedural changes, is intended to boost capacity and increase safety throughout the airspace system, resulting in decreasing congestion.

Modernizing the U.S. air traffic system is providing access and safety benefits for general aviation airports. Here are some general aviation NextGen highlights:

- New approach procedures using the Wide Area Augmentation System (WAAS) increase access to general aviation airports, especially during low visibility. WAAS improves horizontal and vertical accuracy of GPS. New Localizer Performance with Vertical Guidance (LPV) approaches can be flown by equipped aircraft down to a decision altitude as low as 200 feet above the runway. Pilots fly the approach much like an Instrument Landing System (ILS) approach, but airports do not have to install and maintain expensive ground- based equipment.
- Another NextGen development helping general aviation pilots is the Automatic Dependent Surveillance–Broadcast (ADS-B) network of ground-based transceivers. These transceivers receive GPS position reports from aircraft equipped with ADS-B Out,

[1] FAA Administrators Fact Book 2012

which enhances air traffic surveillance and aviation safety. The upgrade is required by 2020 for aircraft flying in most controlled airspace.

- Traffic Information Service–Broadcast (TIS-B) uses surveillance data from ground-based air traffic control radars and ADS-B position reports from equipped aircraft and sends these reports back through the ADS-B ground stations to the cockpits of properly equipped aircraft. This will help pilots visually acquire other aircraft more easily.

In anticipation of air traffic growth, NextGen will help commercial airports accommodate the demand for additional capacity in a safe, efficient and environmentally responsible manner. Commercial airport Next Gen improvements include:

- Deploying tools by the FAA that will enable airports, airlines and other operators better access to surface surveillance data. The FAA has installed Airport Surface Detection Equipment–Model X (ASDE-X) at 35 busy airports, and is deploying ADS-B and multilateration upgrades to the surface detection equipment at San Francisco International Airport.
- There are 44 U.S airports currently with FAA surface surveillance. These airports have the option to install ADS-B Out transponders, also known as “squitters”, on vehicles that drive in the airport movement area. Vehicles will transmit their GPS-derived position so controllers will see their location on an ASDE-X display of the airport surface.
- The FAA is moving ahead to rapidly implement new Performance Based Navigation (PBN) procedures and minor adjustments to airspace sectors. PBN includes Area Navigation (RNAV) and Required Navigation Performance (RNP) procedures that enable aircraft to fly approaches and departures on paths not available previously because of the constraints of ground-based NAVAIDs.

National Air Space (NAS) Management

Since the United States has an immense geography its airspace is divided into 21 zones, and is managed by the Federal Aviation Administration (FAA). (See **Figure 2-2)** Additionally each zone is divided into sectors and each zone has one center which control the air space in its division. Within each zone are portions of airspace called TRACON (**T**erminal **R**adar **A**pproach **CON**trol) airspaces. Within each TRACON airspace are a number of airports which has its own airspace with up to a 5-mile (8-km) radius. The U.S. air traffic control system has been designed around these airspace divisions. Montana is located in the Salt Lake City zone (ZLC) which covers southern Idaho, western Wyoming, Utah and northeast Nevada.

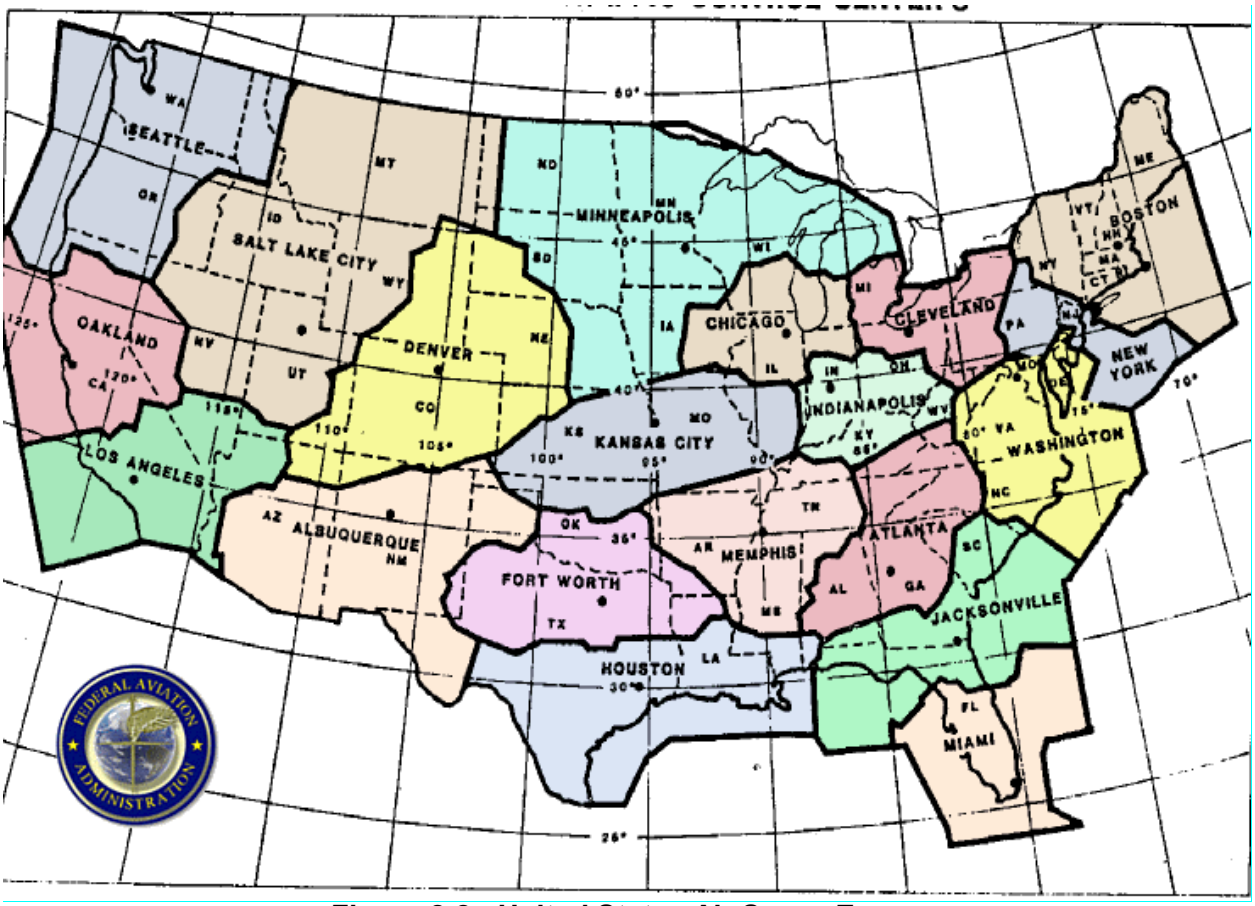


Figure 2-2: United States Air Space Zones

The air traffic control system divisions are:

Air traffic control tower (ATCT) - An ATCT is located at every airport that has regularly scheduled flights. Towers handle all takeoff, landing, and ground traffic.

Terminal radar approach control (TRACON) - handles departing and approaching aircraft within its space.

Air route traffic control centers (ARTCC) - There is one ARTCC for each center. Each ARTCC manages traffic within all sectors of its center except for TRACON airspace and local-airport airspace.

Air Traffic Control System Command Center (ATCSCC) - The ATCSCC oversees all air traffic control. It also manages air traffic control within centers where there are problems (inclement weather, air traffic congestion, closed runways and airports).

Flight service station (FSS) - The FSS provides information (weather, route, terrain, flight plan) for private pilots flying into and out of small airports and rural areas. It assists pilots in emergencies and coordinates search-and-rescue operations for missing or overdue aircraft.
As an aircraft travels through a given airspace division, it is monitored by the one or more air traffic controllers responsible for that division. The controllers monitor this airplane via radar and communicate instructions to the pilot. As the aircraft leaves that airspace division and enters

another, the air traffic controller hands over the aircraft to the controllers responsible for the new airspace division.

Pilots of small aircraft typically fly by visual flight rules, (VFR) and are not required by the FAA to file flight plans. Small aircraft under VFR will communicate with local towers but are not serviced by the ARTCC system. Pilots of large commercial flights typically use instrument flight rules, (IFR). They must file flight plans and are serviced by the ARTCC system. Flying IFR allow pilots to fly in poor weather and through clouds whereas VFR pilots are prohibited from these conditions.

2.5.2 Airspace Classification

Airspace in the United States is classified as controlled, uncontrolled, special use or other airspace. Controlled airspace encompasses those areas where there are specific certification, communication and navigation equipment requirements that pilots and aircraft must meet to operate in that airspace. Controlled airspace is classified as Class A, B, C, D, and E. The remaining airspace is uncontrolled and is classified as Class G airspace. **Figure 2-3** illustrates the basic features of each airspace classification.

Class A

Class A airspace covers the entire United States and lies between 18,000 feet and FL 600, approximately 60,000 feet mean sea level (msl). All of the jetways (jet routes) are in Class A airspace. Class A airspace is primarily used by jets and airliners traveling over long distances between major cities. All flights in Class A airspace are conducted under instrument flight rules (IFR); therefore pilots must hold an instrument rating and be on an active IFR flight plan. Pilots must obtain a clearance from ATC before entering Class A airspace and maintain radio contact with ATC. Aircraft must be equipped with an altitude-encoding transponder to provide aircraft location and altitude data to ATC radar equipment.

Control Zones

Airports with operating control towers will almost always be surrounded by Class B, C, or D airspace. Many people often refer to this airspace as a control zone.

Class B

Class B airspace surrounds the nation's busiest airports and airport hubs in cities like Boston, Chicago, and Los Angeles among others. Class B airspace is designed to help manage the flow of high volumes of airline traffic as these aircraft descend from the high-altitude flight levels into the lower altitudes and eventually the airport itself. It also helps manage their departure. The airspace is shaped like an upside-down wedding cake to help funnel aircraft in and out of the main airport. Most Class B airspace extends from the surface to 10,000 feet MSL with a circular diameter of 40 nautical miles. Pilots must obtain a clearance from air traffic control (ATC) before entering Class B airspace and then maintain radio contact with ATC. Aircraft must be equipped with an altitude-encoding transponder. Pilots must hold at least a private pilot certificate to enter. Or, a sport, recreational, or student certificate if certain advanced training requirements are met — although many Class B airports prohibit any student pilot solo flights.
An instrument rating is not required; pilots may operate under visual flight rules (VFR) in Class B airspace as long as they remain clear of the clouds and have at least three miles of in-flight visibility. There is no Class B airspace in the State of Montana

Class C

Class C airspace surrounds other busy airports that have radar services for arriving and departing aircraft. Typical airports with Class C airspace would be "medium or small hub airports." Most Class C airspace extends from the surface to 4,000 feet above ground level (agl), with a circular diameter of 20 nautical miles. Like Class B airspace, the airspace is shaped like an upside-down wedding cake with a 5 NM radius "core" extending from ground level to 4000 feet above ground level and a 10 NM radius "shelf" from 1200 to 4000 feet above ground level. A "outer area" for approach control radar pick-up extends to a radius of 20 NM from the airport. An air traffic control (ATC) clearance is not required in Class C airspace, but pilots must be in radio communication with ATC, and aircraft must be equipped with an altitude-encoding transponder. There are no additional pilot qualifications for operating in Class C, D, E, or G airspace. Pilots flying under visual flight rules (VFR) in Class C airspace must have at least three miles of visibility. They also must maintain a specified distance from the clouds.
Billings Logan International Airport is the only Class C Airspace in Montana. The Class C airspace extends from the surface to 7700 feet MSL within a 5 NM radius core and has a shelf from 4900 feet MSL to 7700 feet MSL extending to a 10 NM radius. Billings approach control monitors aircraft within 20 NM.

Class D

Class D airspace surrounds airports with operating control towers and weather reporting service that are not superseded by more restrictive Class B or C airspace. Most Class D airspace extends from the surface to 2,500 feet above ground level (agl), with a circular diameter of 4.3 nautical miles (5 statute miles). Aircraft must establish and maintain two-way radio contact with the control tower before entering or operating in Class D airspace. Weather minimums are the same as for Class C airspace. At airports with part-time control towers, the Class D airspace reverts to Class E airspace when the tower closes. Bozeman Yellowstone International, Helena Regional, Missoula International and Glacier Park International Airport all have part-time towers and, therefore, part-time Class D airspace. Only Great Falls International operates a 24 hour tower with continuous Class D airspace.

Class E

Class E airspace includes all other controlled airspace in the United States. The upper limit of Class E airspace is 18,000 feet mean sea level (msl). However, the lower limit (where it starts) can be 14,500 feet msl, 10,000 feet msl, 1,200 feet above ground level (agl), 700 feet agl, or all the way to the surface of the Earth. Most nonairport or nonairway Class E airspace located east of the Rocky Mountains starts at 1,200 feet agl, dropping lower over some airports. Most of the Class E airspace west of the Rocky Mountains starts at 10,000 feet or 14,500 feet msl. Class E airspace in Montana begins at 14,500 feet MSL up to but not including 18,000 feet MSL, then continues above FL 600, (approximately 60,000 feet MSL). The Class E airspace above 10,000 feet MSL has greater visibility and cloud clearance minimums for visual flight rules (VFR) operations. Class E airspace also surrounds airports that have weather reporting services in support of instrument flight rules (IFR) operations, but no operating control tower. Weather minimums for these areas of Class E airspace are the same as for Class C and D airspace. All victor airways that are not part of a higher class of airspace are Class E airspace.

The following thirty-one airports in Montana are within designated Class E airspace:

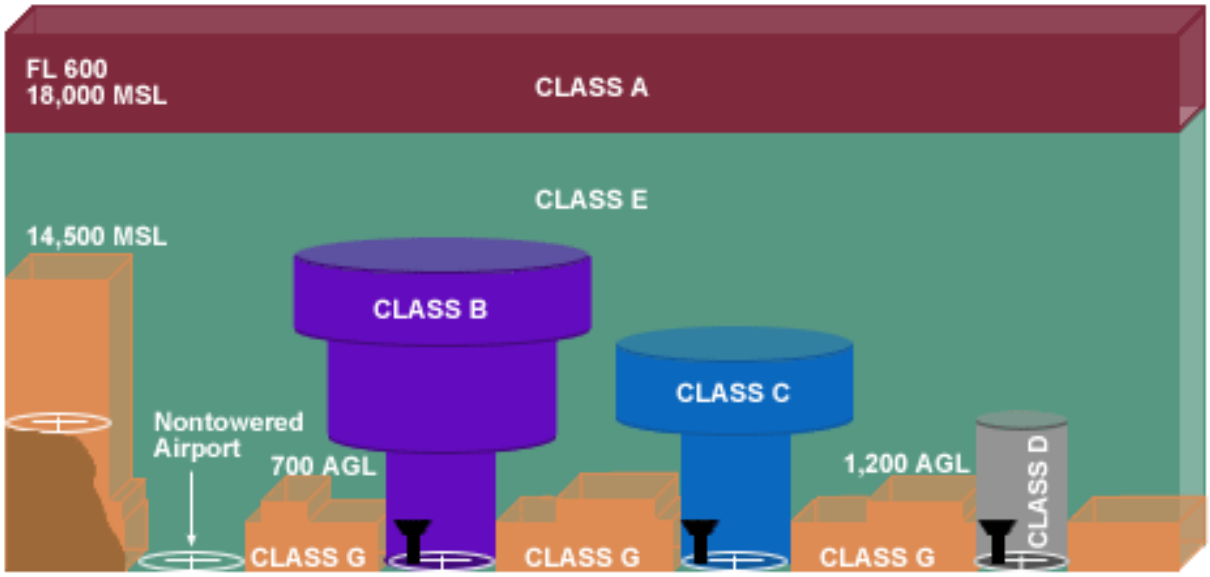
Baker Municipal	Dillon	Poplar Municipal
Bert Mooney	Ennis Big Sky	Ravalli County
Bowman Field	Glasgow International	Ronan
Choteau	Havre City-County Airport	Roundup
Circle Town County Airport	L. M. Clayton	Scobey
Colstrip	Lewistown Municipal	Shelby
Conrad	Libby	Sher-Wood
Cut Bank Municipal	Malta	Sidney-Richland
Dawson Community Airport	Miles City	Stevensville
Deer Lodge	Mission Field	Tillitt Field
		Yellowstone

Class F

Class F airspace is not used in the United States.

Class G

Class G airspace is uncontrolled, so it includes all airspace in the United States that is not classified as Class A, B, C, D, or E. No air traffic control (ATC) services are provided, and the only requirement for flight is certain visibility and cloud clearance minimums. The vast majority of Montana's airspace below 18,000 feet MSL is uncontrolled Class G airspace.



Airspace Features	Class A	Class B	Class C	Class D	Class E	Class G
ATC Facility	ARTCC	TRACON	TRACON or ATCT	ATCT	ARTCC	None
Operations Permitted	IFR	IFR & VFR	IFR & VFR	IFR & VFR	IFR & VFR	IFR & VFR
Entry Requirements	ATC Clearance	ATC Clearance	ATC Clearance for IFR. All require radio contact	ATC Clearance for IFR. All require radio contact	ATC Clearance for IFR. All require radio contact	None
VFR Minimum Distance from Clouds	N/A	Clear of clouds	500' below, 1,000' above, and 2000' horizontal	500' below, 1,000' above, and 2000' horizontal	500' below, 1,000' above, and 2000' horizontal	Clear of clouds
Aircraft Separation	All	All	IFR, SVFR, and runway operations	IFR, SVFR, and runway operations	IFR and SVFR	None

Courtesy of FAA

Figure 2-3: Airspace Classification

Special Use Airspace

Special use airspace (SUA) includes prohibited areas, restricted areas, warning areas, military operations areas (MOAs), alert areas, and controlled firing areas. In these areas, aeronautical activity must be limited, usually because of military use or national security concerns. Prohibited areas are established for security reasons or for national welfare and are identified on aviation charts by a defined area marked with the letter "P," followed by a number. Prohibited areas are permanently "off limits." An example of a prohibited area is the White House, or Camp David. There are no prohibited areas in Montana.

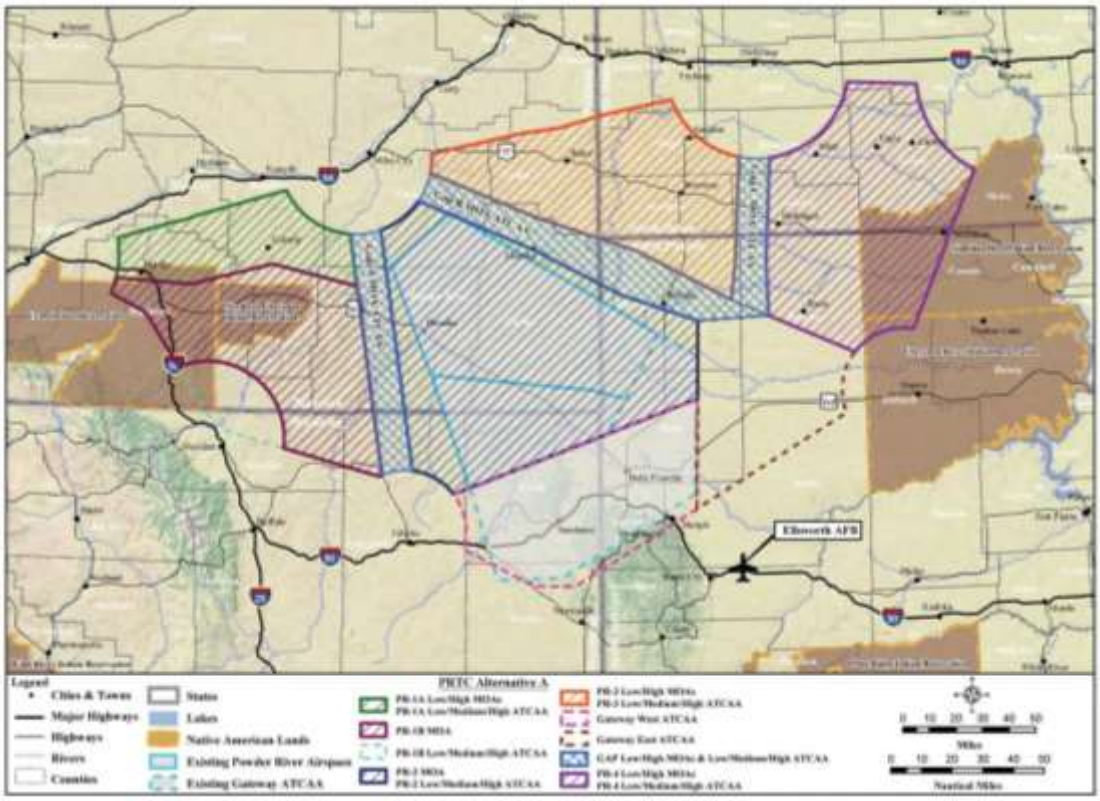
Restricted areas, though not entirely prohibited to flight activity, are areas in which unauthorized penetration is not only illegal, but also extremely dangerous. Restricted areas are identified on aeronautical charts by a defined area marked with the letter "R," followed by a number. Altitudes and times differ for each restricted area and can be determined by consulting sectional chart legends. Restricted areas generally contain operations that do not mix well with aircraft such as artillery firing, guided missiles, or aerial gunnery. Permission to fly in restricted areas can be given by ATC. There are no restricted areas in Montana.

A warning area is airspace over domestic or international waters that extends from three nm beyond shore. Warning areas are advisory in nature and alert pilots that they may be entering areas of hazardous activity. There are no warning areas in Montana

Military operations areas (MOAs), separate high-speed military traffic from IFR traffic. These areas are identified on aviation charts by a defined area marked with "MOA," preceded by the MOA's name. MOA altitudes differ for each individual area and can be determined by consulting sectional chart legends. Although VFR pilots are not prohibited from entering MOAs, they are cautioned to keep a watchful eye out for military operations such as aerial refueling, air combat training, and formation flying.

There are currently two MOA's in Montana, the Hays MOA and the Powder River A MOA. These MOA's are depicted on
Figure 2-7.

The United States Air Force has proposed to establish the Powder River Training Complex, a group of four primary military operations areas connected by Gap MOAs. It would include airspace over four states, with high and low complexes ranging from 500 feet AGL to FL 180. The extent of the proposed airspace is shown in **Figure 2-4** below. The complex is designed to facilitate low-level, high-speed combat training for B-1 and B-52 crews operating out of Ellsworth and Minot Air Force bases, and is scheduled to be active 240 days per year, including 10 days of Large Force Exercises. The Air Force completed an environmental impact study for the expanded MOA in 2010, and the FAA released its airspace study in February 2014, which is the final step before the MOA gets accepted and charted.



Source: Powder River Training Complex Environmental Impact Statement

Figure 2-4: Extent of Proposed Powder River Training Complex Airspace

2.5.3 Air Traffic Control

There are currently six operating control towers in the state of Montana. Great Falls and Billings both have towers operating 24 hours per day and it is noteworthy to point out that both of these airports have considerable general aviation, passenger and air cargo aircraft operations which warrant 24/7 tower operations. Great Falls also has considerable military flights. Bozeman, Helena, Missoula and Glacier Park International (Kalispell) have part-time towers. Three air traffic control towers in Montana also have TRACON facilities on a separate floor. These windowless rooms allow controllers to see radar screens and communicate with pilots as well as other air traffic control towers, the ZLC center and other centers. The TRACONs in Montana are located in Helena, Great Falls and Billings. TRACONS are also located in nearby states including: Bismarck, ND, Casper, WY, Twin Falls, ID, and Spokane, WA.

The other airports with air traffic control towers do not presently have TRACON facilities. Bozeman does have direct TRACON support via the TRACON at Boise, Idaho ATCT Tower. Since TRACON controllers do not need to view aircraft visually they can control TRACON related traffic remotely as in the case of Bozeman. Terminal Radar Approach Control began at BZN in the fall of 2013. The airport purchased Air Traffic Control Beacon Interrogator 6 (ATCBI-6) radar, tower display and made improvements to arrival and departure procedures, in order to update the “Bozeman Approach”. The ATCBI-6 allows approaches and departures to be handled by the Boise TRACON. The ATCBI-6 is a secondary surveillance radar that provides aircraft location data to Federal Aviation Administration (FAA) Air Traffic Controllers (ATC) for separation assurance, traffic management, navigation, and flight information in the en route airspace.

Prior to the Boise TRACON controlling approaches at BZN the airport had limited radar for air traffic control. That meant that aircraft under 11,000 feet altitude were tracked visually by controllers in the air traffic control tower. It also meant that, especially when there was inclement weather, there were delays. The ATCBI-6 allows controllers at the Boise TRACON to track all aircraft under 11,000 feet and thereby allow up to a three-minute separation which improves performance. BZN airport officials believe the new radar system could reduce delays by up to 90 percent.

2.5.4 Navigational Aids

Various types of navigational aid (NAVAID) equipment are in use at airports in Montana. These provide assistance to pilots in the en-route phase of flight and on final approach to an airport, particularly in poor weather conditions. This section provides insight into the various types of approaches and NAVAID equipment available at each public-use airport in Montana.

Instrument approaches are published in the US Terminal Procedures Flight Information Publication. This publication includes instrument approach procedures, standard terminal arrivals, departure procedures, and airport diagrams. **Table 2-4** presents the type of approaches available at each airport. The various types of approaches are as follows:

Distance Measuring Equipment (DME) – radio navigation technology that measures distance by timing the delay between two separate radio signals. DMEs are often installed in conjunction with a VOR (see below).

Global Positioning System (GPS) – allows an aircraft pilot to determine his location (longitude, latitude, and altitude) to within a few meters using time signals transmitted from satellites. GPS uses a minimum of three satellites to triangulate an aircraft's location.

Instrument Landing System (ILS) – a ground-based instrument approach system which provides precision guidance to an aircraft approaching a runway, using a combination of radio signals and lighting arrays to enable a safe landing during instrument flight conditions, such as low ceilings or reduced visibility due to fog, rain, or blowing snow. ILS systems are the most precise types of approaches currently available.

Localizer (LOC) – one component of an Instrument Landing System (ILS). The localizer provides runway centerline guidance to aircraft.

Non-directional Beacon (NDB) – a radio transmitter at a known location, broadcasting in a non-directional pattern. NDBs are being phased out by the FAA in favor of GPS technology.

Area Navigation (RNAV) – a method of air navigation that allows an aircraft to choose any course within a network of navigation beacons.

VHF Omni-directional Range (VOR) – a type of radio navigation system for aircraft. VORs broadcast a VHF radio composite signal and data that allows the aircraft to determine a magnetic bearing from the station to the aircraft.

Eight of Montana' airports have published ILS approaches, while another 21 have other types of published approaches utilizing other equipment. Ninety Seven airports in the state have no published approaches.

Also shown in **Table 2-4** are the types of navigational aids (NAVAIDs) available at each airport. NAVAIDs are systems that allow for visual identification of runways and proper alignment with runway centerlines and glideslopes, as well as items such as beacons and windsocks. These aids are defined as:

- Precision Approach Path Indicator (PAPI)
- Visual Approach Slope Indicator (VASI)
- Tri-colored VASI (TRIL)
- Runway End Indication Lighting (REIL)
- Medium-intensity Approach Lighting System with Runway alignment
- indicator lights (MALSR)
- Approach Light System configuration 2 (ALSF-2)
- Short Approach Light System (SALS)

Noted in **Table 2-4** is the presence on each airport of a beacon, a lighted or unlighted windsock, and the presence and type of on-site weather reporting available. Forty-two of Montana' 126 airports have on-site weather reporting equipment. Types of weather reporting equipment installed at Montana' airports include:

2.5.5 Weather Reporting and Data Collection Equipment on Airports

One of the primary concerns of the aviation community is safety related to weather conditions. In the United States, there are three primary types of automated weather stations these include the Automated Weather Observing System (AWOS), the Automated Surface Observing System (ASOS), and the Automated Weather Sensor System (AWSS)2. In Montana there are 15 ASOS units and 27 AWOS units located on airports in the state.

AWOS was designed to provide basic weather observation data, while the more sophisticated ASOS was developed to support weather forecast activities for aviation operations. Some specific differences are a difference in wind observations. AWOS broadcasts true wind direction, while ASOS converts surface winds to magnetic direction. In addition precipitation type identification and thunderstorm reporting are different between the two. Both systems receive upgraded software enhancements every few years to make them more accurate and beneficial for their users.

Automated Surface Observing Systems (ASOS) units are federally funded and are at more than 900 airports across the country; these are operated and controlled cooperatively by the National Weather Service, the Federal Aviation Administration, and the Department of Defense. A basic strength of ASOS is that critical aviation weather parameters are measured in close proximity to airport runway touchdown zones.

ASOS detects significant changes, transmitting hourly and special observations via the various networks. Additionally, ASOS routinely and automatically provides computer-generated voice observations directly to aircraft in the vicinity of airports, using FAA ground-to-air radio. These messages are also available via a telephone dial-in port. ASOS observes, formats, archives and transmits observations automatically. ASOS transmits a special report when conditions exceed preselected weather element thresholds, e.g., the visibility decreases to less than 3 miles.

The Automated Weather Observing System (AWOS) units are mostly operated, maintained and controlled by the Federal Aviation Administration (FAA) in the United States. Figure 2-5

[2] There are no AWSS stations in Montana

illustrates a typical ASOS station on an airport. There are also AWOS units that are also operated by state or local governments and some private agencies. The American National Weather Service (NWS) and Department of Defense (DOD) play little to no role in the operation, maintenance or deployment of AWOS units.

ASOS and AWOS reports the following basic weather elements:

- Sky conditions such as cloud height and cloud amount up to 12,000 feet,
- Surface visibility up to at least 10 statute miles,
- Basic present weather information such as the type and intensity for rain, snow, and freezing rain,
- Obstructions to vision such as fog, and haze,
- Sea-level pressure and altimeter settings,
- Air and dew point temperatures,
- Wind direction, speed and character,
- Precipitation accumulation, and
- Selected significant remarks including- variable cloud height, variable visibility, precipitation beginning/ending times, rapid pressure changes, pressure change tendency, wind shift, peak wind.

Figure 2-5: Typical Airport ASOS Station

Besides serving aviation needs, ASOS serves as a primary climatological observing network in the United States, making up the first-order network of climate stations. Because of this, not every ASOS is located at an airport and some are located at universities and federal agency sites. ASOS data is made available to the public and provides valuable information for researching weather and climatology. NOAA's National Climatic Data Center (NCDC), located in Asheville, North Carolina, maintains the world's largest climate data archive and provides climatological services and data to every sector of the United States economy and to users worldwide. Weather observation data gathered utilizing ASOS and AWOS instruments is collected by the NCDC and can be downloaded in raw format in as summary reports.

In order to better understand weather related issues for airports and aviators in Montana ASOS cloud ceiling and visibility data was downloaded from the NCDC for Montana airports with sufficient data for analysis.

Visibility Instrumentation

To determine visibility, automated airport weather stations use one of two sensor types: forward scatter sensors or transmissometers. Forward scatter sensors are more popular due to their lower price, smaller size and lower maintenance requirements. However, transmissometers are still used at some airports as they are more accurate at low visibilities.

Current sensors are capable of reporting visibility in a wide range such as feet, meters, miles, etc. For aviation purposes, the reported values are rounded down to the nearest step in one of the following scales:

M1/4 (less than 1/4 mile), 1/4, 1/2, 3/4, 1, 1-1/4, 1-1/2, 2, 2-1/2, 3, 4, 5, 7, 10 and 10+ (greater than 10 miles)

Ceiling Height Instrumentation

Automated airport weather stations use an upward-pointing laser beam ceilometer to detect the amount and height of clouds. The laser is pointed upward, and the time required for reflected light to return to the station allows for the calculation of the height of the cloud base. Because of the limited coverage area (the laser can only detect clouds directly overhead), the system computer calculates a time-averaged cloud cover and ceiling, which is reported to external users. To compensate for the danger of rapidly changing sky cover, the averaging is weighted toward the first 10 minutes of the 30-minute averaging period. The range of the ceilometer is 12,000 feet; clouds above that height are not detectable by automated stations.

Montana Climate

Montana's topography is comprised of valleys and mountains and significant effects on the amount of cloudiness and visibility in the state. In general, the western and south-central mountain areas experience more cloudiness and correspondingly less sunshine, than the eastern slopes and plains. Valley fog and low clouds, related to temperature inversions, often form during fall and winter in western Montana valleys. Inversion occurs in the Clark Fork of the Columbia, Kootenai and Flathead Valleys several times each season and can persist for several days while surrounding mountain ridges and passes remain clear. Mountains, however, are usually more covered with clouds than are valleys. Cloudy weather is most frequent during the period from late fall until early spring and impacts aviation activity. In general, seasonal difference in cloudiness is less east of the Continental Divide as the weather is less variable than west of the divide.

Automated Weather Reporting Capabilities

The accurate and current reporting of weather conditions is important to safe and efficient airport operations. Automated weather reporting systems disseminate current weather conditions to pilots through an automated VHF airband radio frequency. There exist several types of automated weather reporting systems, including the following:

Automated Weather Observing System (AWOS): The AWOS is one of the two most commonly used weather reporting technologies available to airports. AWOS units generally report weather conditions at 20 minute intervals and do not report special observations for rapidly changing weather conditions. There are several varieties of AWOS depending on the sensor systems which are installed. These varieties include the following:

AWOS A: Measures barometric air pressure and reports information required for proper altimeter setting.
AWOS AV: Provides altimeter and visibility data.
AWOS I: Reports wind speed and direction, wind gust, variable wind direction, temperature, dew point in Celsius, altimeter setting, and density altitude.
AWOS II: All capabilities of AWOS I plus visibility, variable visibility, precipitation, and day/night
AWOS III: All capabilities of AWOS II plus sky condition and cloud height up to 12,000 feet.
AWOS III P: All capabilities of AWOS III plus present weather and precipitation identification.
AWOS III T: All capabilities of AWOS III plus thunderstorm and lightning detection
AWOS III PT: All capabilities of AWOS III plus present weather and lightning detection
AWOS III PTZ: All capabilities of AWOS III plus present weather, lightning detection, and freezing rain detection.

Automated Surface Observing System (ASOS): The ASOS is the other of the mostly commonly used weather reporting technology at airports in the U.S. An ASOS system is comparable to the abilities of an AWOS III, and can also report dew point in degrees Fahrenheit, present weather, icing, lightning, sea level pressure, and precipitation accumulation.

Automated Weather Sensor System (AWSS): The AWSS is a less commonly used weather reporting system that is comparable in ability to an ASOS or AWOS III.

Weather Reporting Equipment at Montana Airports

Table 2-4 at the end of this chapter details the presence of these systems at airports in the Montana system. In total, 16 airports in the state have an ASOS, 11 have a standard AWOS, 11 have an AWOS AV, three airports have an AWOS A, three have an AWOS III, and one airport has an AWOS III P.

Visibility and Ceiling Height Data Collection at Montana Airports

In order to determine which airports in Montana have challenges related to weather and visibility the consultants for this study obtained NOAA's National Climatic Data Center (NCDC) visibility data. This data is collected by AWOS and ASOS equipment at Montana airports. The data pull was for a five year period for seven commercial service airports and eight Essential Air Service (EAS) airports. Data for the five year period was also available for two general aviation airports.

Table 2-1 below provides useful information on average distance visibility and cloud ceiling heights. While the data provided in the database includes quarter mile increments out to 10 miles, for purposes of the discussion, four parameters of visibility and ceiling heights are presented. For example at Billings Logan International Airport visibility is greater than two miles with ceiling heights greater than 3,000 feet occurs 85.9 percent of the time while Glacier Park Airport in Kalispell meets the same visibility parameter only 74.9 percent of the time. Four visibility and ceiling height parameters are provided in the table as well as the number of observations taken during the five year period to derive averages. Blue font in the table indicates which airport has the best weather for each parameter while the red font indicates which airports have the least favorable weather. Analysis of the data indicates that Glacier Park Airport in the commercial service category has the least favorable visibility and is largely

attributable to temperature inversions that impact the Flathead Valley during the winter months. Statewide visibility and ceiling height averages for the airports represented in **Table 2-1** are also provided.

Table 2-1: NOAA Airport Visibility Data for Select Montana Airports

Parameter	1	2	3	4	Total	Average
Visibility (mi)	>=0.25	>=0.5	>=1.0	>=2.0	Obser-	Observations
Ceiling height (ft)	>= 500	>= 1000	>= 2000	>= 3000	vations^^	Per Day
Commercial Service Airports						
Billings	96.7%	94.2%	89.7%	85.9%	60,603	33
Bozeman	97.9%	95.0%	88.2%	81.2%	53,742	29
Butte	98.8%	96.1%	89.9%	81.8%	53,666	29
Great Falls	96.2%	91.3%	83.1%	76.7%	54,328	30
Helena	98.2%	96.6%	91.6%	85.7%	55,795	31
Kalispell	95.1%	90.3%	82.5%	74.9%	56,772	31
Missoula	96.4%	93.9%	88.8%	82.5%	59,699	33
EAS Airports						
Glasgow	95.5%	92.5%	84.7%	77.3%	59,871	33
Glendive	98.1%	95.9%	91.0%	87.2%	61,631	34
Havre	96.4%	93.4%	84.7%	79.5%	58,562	32
Lewistown	95.5%	90.1%	79.2%	72.2%	56,801	31
Miles City	97.1%	93.9%	85.4%	78.6%	53,418	29
Sidney	98.5%	96.5%	91.2%	86.3%	62,770	34
West Yellowstone*	94.4%	91.1%	84.3%	79.1%	63,603	35
Wolf Point	95.2%	91.9%	84.8%	76.9%	53,669	29
GA Airports^						
Baker	94.5%	87.9%	76.6%	68.3%	58,343	32
Livingston	98.3%	93.9%	85.3%	77.7%	55,240	30
Statewide Average	**96.6%**	**93.2%**	**85.9%**	**79.5%**	**57,560**	**32**

^GA airport data available from NOAA,*West Yellowstone Airport is closed in winter but weather data collected year round, ^^Five year data collection period

Figure 2-6 maps these airports throughout the state with their 30-minute drive time market areas. In total, airports with automated weather reporting systems are accessible within 30 minutes to 80.1 percent of Montana's total population.

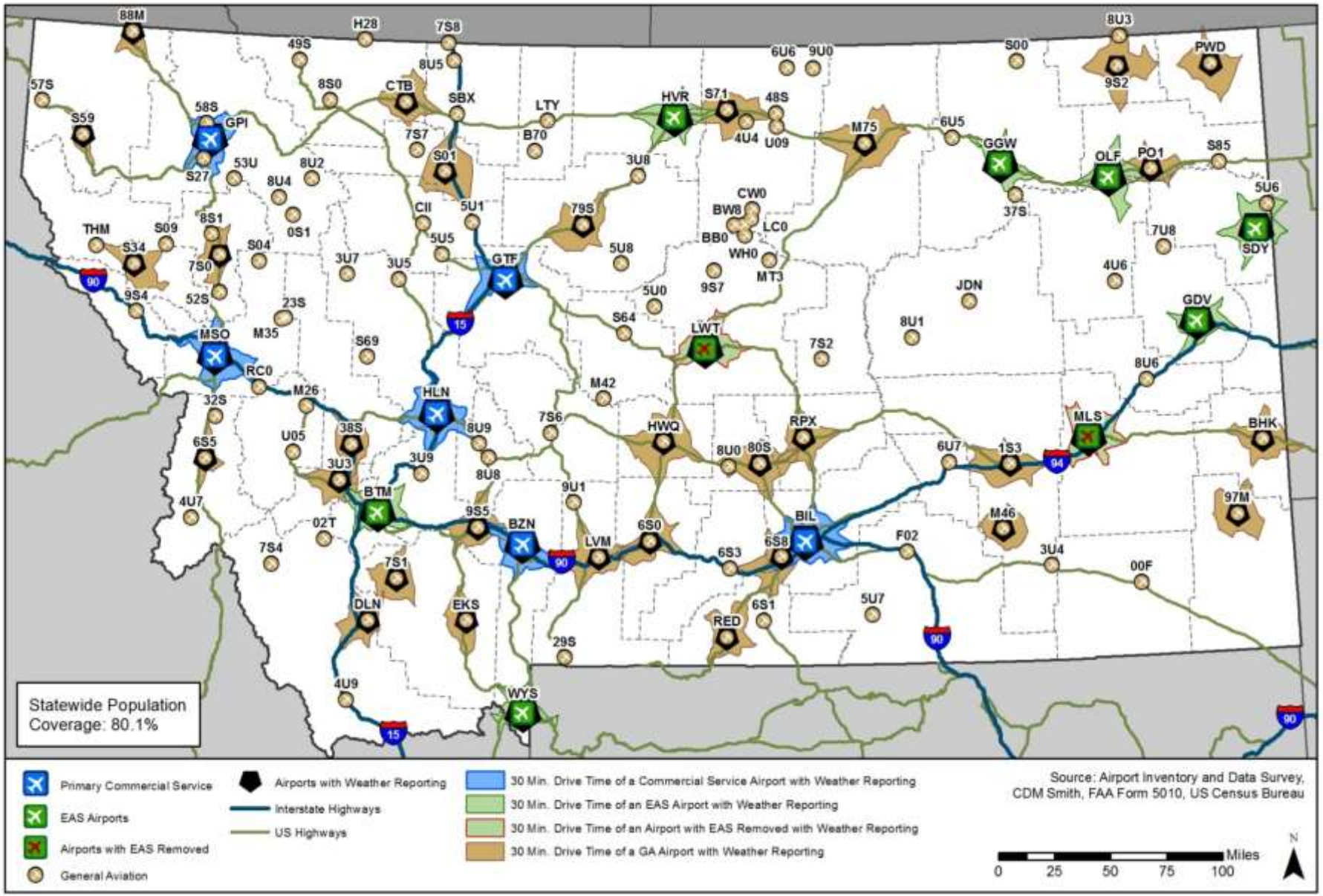


Figure 2-6: Coverage of Airports with On-Site Weather Reporting Capabilities

2.5.6 Enroute Airspace System

En route airspace in the United States consists of routing corridors used by both IFR and VFR traffic. Traffic is concentrated along these routes. Low altitude airways, termed victor airways, are the primary routes used by both IFR and VFR traffic. They are eight nautical miles wide and generally go from 1,200 feet above ground level up to, but not including, 18,000 MSL. The airway floor may be higher in areas of the western U.S. where terrain interferes more with the navigational facilities upon which the airways are based. They are depicted on aeronautical charts as blue shaded lines with a "V" (hence the term victor), followed by a number, such as V500, and are found on the sectionals, IFR en route low altitude charts, and terminal area charts.

Jet routes serve the same function as the low altitude airways except that they are found at 18,000 MSL and above (up to 45,000 MSL). Traffic on the jet routes is always IFR and is managed by air traffic control. Jet routes are shown on high altitude charts as a gray line and are designated by the letter "J," followed by a number, such as "J547."

Military Training Routes (MTR's) are aerial corridors across the United States in which military aircraft can operate below 10,000 feet faster than the maximum safe speed of 250 knots that all other aircraft are restricted to while operating below 10,000 feet. MTRs can be high or low altitude routes, and may be either Instrument Routes (IR) or Visual Routes (VR). MTR's are built from a number of segments, each with a floor and ceiling elevation. If a military route has at least one segment ceiling above 1500 AGL, it is considered a high-level route and will be designated by a three digit route code. Low-level routes are those where the training activities are conducted exclusively at or below 1,500 feet AGL and use a four digit route designator. All of the MTR's in Montana are classified as high-level instrument routes. The Department of Defense publication AP-1/B lists all military training routes in North America. Military training routes are depicted on FAA VFR sectional aeronautical charts as narrow gray lines with IR or VR designator prefixes.

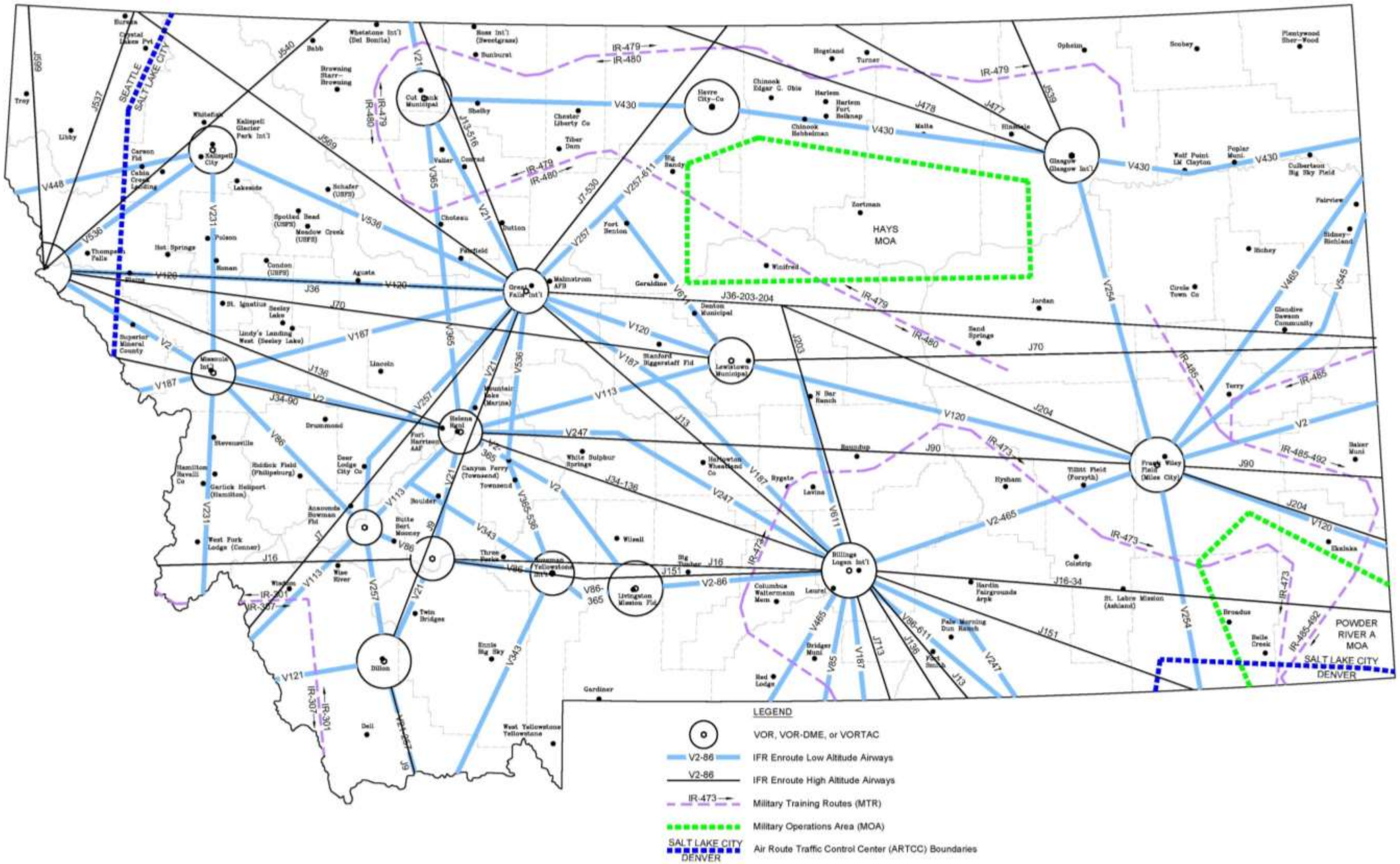


Figure 2-7: Airways and Airspace

2.6 Landside Facilities

Landside facilities at an airport include structures and areas that support flight activities, but are not directly involved in aircraft operations. Landside facilities include all airport buildings and parking areas for both aircraft and cars. Items included in the SASP inventory of landside facilities are:

Aircraft Apron – aircraft aprons are large, paved areas set aside for parking aircraft. Often, aircraft aprons have tie-downs for securing aircraft while parked. If an airport has a terminal, it is most often adjacent to the apron.

General Aviation Terminal – a building that typically houses facilities catering to GA pilots and passengers such as pilot rest areas, restrooms, flight planning areas, conference rooms, food service, and telephone and internet facilities.

Auto Parking – the number of spaces reserved for automobile parking by airport users.

Covered Aircraft Storage – secure hangars for overnight and/or long-term storage of aircraft. May be comprised of t-hangars or conventional hangars.

Pilot Lounge – a room set aside for pilots to rest.

Table 2-5 shows the landside aviation facilities present on each airport. The data gathered for landside facilities notes only the presence of such facilities, not the quantity, condition or sufficiency of the facilities.

2.7 Airport Plans

The data presented in **Table 2-6** indicates whether each of Montana' airports has completed a variety of planning documents. Included among these plans in **Table 2-6** are:

Airport Layout Plan – A detailed engineering drawing of the airport's layout, NAVAIDs, buildings, and other facilities.

Master Plan- The airport master plan is the planners concept of the long-term development of an airport. It displays the concept graphically and reports the data and logic upon which the plan is based. Master plans are prepared to support the modernization of existing airports and creation of new airports, regardless of size, complexity, or role. The goal of a master plan is to provide guidelines for future airport development which will satisfy aviation demand in a financially feasible manner, while at the same time resolving the aviation, environmental and socioeconomic issues existing in the community.

Minimum Standards- Airport minimum standards set forth the minimum requirements an individual or entity wishing to provide aeronautical services to the public on a public-use airport must meet in order to provide those services, such as minimum leasehold size, required equipment, hours of operation, and fees. Ensures the needs of the public, surrounding community and those wishing to provide services on the airport be met in a manner that is fair, economically viable and limits liability.

Obstruction Survey- Airport obstruction surveys are used by airports to determine when action is needed to avoid or remediate impingements on airspace (for example, trimming to reduce the height of trees near runways); by airlines to analyze flight paths for their aircraft; and by the FAA to analyze and design controlled airspace features such as new instrument approaches, including global positioning system (GPS) approaches. Airports also use these surveys to update Airport Layout Plan (ALP) drawings that may become the basis for restricting the heights of structures that could impinge on airspace and to note locations of temporary potential obstructions such as construction cranes.

AGIS- Undertaken by the FAA as part of the Next Generation National Airspace System (NEXGEN), the AGIS program seeks to standardize and streamline the data collection process at airports throughout the nation and organize the data into one web-based program. The data is collected through a combination of aerial imagery and field surveys to accuracy standards specified by the FAA.

Capital Improvement Program- The Airport Capital Improvement Plan (ACIP) provides a five year perspective of the airport's critical development needs and the financial planning to accommodate those needs. It also serves as the basis for distribution of grant funds under the FAA's Airport Improvement Program (AIP) and MDT's Airport Loan and Grant Program.

2.8 Aviation Services

Table 2-7 indicates the presence of a variety of services available to pilots and passengers at each Montana airport. In general, the greater the number of services available to pilots and passengers, the more traffic an airport will draw.

The availability of fuel, maintenance, and ground transportation will attract transient pilots and visitors to an airport, and thus increase visitors and spending in the local area.

Included in **Table 2-7** is information on the presence of the following types of services:

Full-Service Fixed Base Operator – A fixed base operator (FBO) is a business catering to the needs of general aviation pilots and aircraft. FBOs provide a range of services including fuel, storage, and maintenance of aircraft. Many FBOs also provide aircraft rental and/or charter and flight instruction. The buildings which house FBOs typically include facilities and services for pilots and passengers, such as conference rooms, flight planning, catering, ground transportation, and arrangement of accommodations.

Fuel – Aviation fuel (AvGas) used primarily in small piston aircraft. Jet-A fuel is used primarily by turbine-powered aircraft.

24/7 Fueling Facilities – Fuel is either provided by a 24-hour FBO or other personnel, or is available self-serve from a credit card-operated pump.

Rental Car – Cars that are available for rent by passengers and/or pilots, either on airport or by arrangement through an FBO or other agency.

Courtesy Car – Cars that are available to borrow short-term by either the airport or FBO.

Public Transit – The airport is located on a public bus, subway, or train line or has access to such a mode of transportation.

Flight Training – A business or individual on the airport offers flight instruction to the public. Such training may take the form of simple single engine private pilot courses to courses designed for commercial or specialty aircraft.

Table 2-2: Study Airports, FAA Role, NPIAS Status, and FAA Asset Study Status

ID	Associated City	Airport	NPIAS Category	FAA 2012 Asset Study Service Level	FAA 2012 Asset Study Category
3U3	Anaconda	Bowman Field	General Aviation	General Aviation	Basic
3U4	Ashland	St. Labre Mission	Not in NPIAS	Not Included	Not Included
3U5	Augusta	Augusta	Not in NPIAS	Not Included	Not Included
3U7	Augusta	Benchmark	Not in NPIAS	Not Included	Not Included
49S	Babb	Babb	Not in NPIAS	Not Included	Not Included
BHK	Baker	Baker Municipal	General Aviation	General Aviation	Local
3U8	Big Sandy	Big Sandy	General Aviation	General Aviation	Local
6S0	Big Timber	Big Timber	General Aviation	General Aviation	Basic
53U	Bigfork	Ferndale Airfield	Not in NPIAS	Not Included	Not Included
BIL	Billings	Billings Logan International	Primary Commercial Service	Not Included	Not Included
3U9	Boulder	Boulder	Not in NPIAS	Not Included	Not Included
BZN	Bozeman	Bozeman Yellowstone International	Primary Commercial Service	Not Included	Not Included
6S1	Bridger	Bridger Municipal	Not in NPIAS	Not Included	Not Included
00F	Broadus	Broadus	General Aviation	General Aviation	Basic
8S0	Browning	Starr-Browning Airstrip	Not in NPIAS	Not Included	Not Included
BTM	Butte	Bert Mooney	Primary Commercial Service	Not Included	Not Included
LTY	Chester	Liberty County	General Aviation	General Aviation	Basic
4U4	Chinook	Hebbleman	Not in NPIAS	Not Included	Not Included
S71	Chinook	Edgar G Obie	General Aviation	General Aviation	Basic
CII	Choteau	Choteau	General Aviation	General Aviation	Basic
4U6	Circle	Circle Town County	General Aviation	General Aviation	Basic
RC0	Clinton	Rock Creek	Not in NPIAS	Not Included	Not Included
M46	Colstrip	Colstrip	General Aviation	General Aviation	Basic
6S3	Columbus	Woltermann Memorial	General Aviation	General Aviation	Local
S04	Condon	Condon USFS	Not in NPIAS	Not Included	Not Included
4U7	Conner	West Fork Lodge	Not in NPIAS	Not Included	Not Included
S01	Conrad	Conrad	General Aviation	General Aviation	Basic
S85	Culbertson	Big Sky Field	General Aviation	General Aviation	Basic
CTB	Cut Bank	Cut Bank Municipal	General Aviation	General Aviation	Local
38S	Deer Lodge	Deer Lodge-City-County	General Aviation	General Aviation	Local

Study Airports, FAA Role, NPIAS Status, and FAA Asset Study Status (Cont.)

ID	Associated City	Airport	NPIAS Category	FAA 2012 Asset Study Service Level	FAA 2012 Asset Study Category
4U9	Dell	Dell Flight Strip	Not in NPIAS	Not Included	Not Included
5U0	Denton	Denton	Not in NPIAS	Not Included	Not Included
DLN	Dillon	Dillon	General Aviation	General Aviation	Local
M26	Drummond	Drummond	Not in NPIAS	Not Included	Not Included
5U1	Dutton	Dutton	Not in NPIAS	Not Included	Not Included
97M	Ekalaka	Ekalaka	General Aviation	General Aviation	Basic
EKS	Ennis	Ennis - Big Sky	General Aviation	General Aviation	Local
88M	Eureka	Eureka	General Aviation	General Aviation	Local
5U5	Fairfield	Fairfield	Not in NPIAS	Not Included	Not Included
5U6	Fairview	Fairview	Not in NPIAS	Not Included	Not Included
1S3	Forsyth	Tillitt Field	General Aviation	General Aviation	Local
79S	Fort Benton	Fort Benton	General Aviation	General Aviation	Basic
37S	Fort Peck	Fort Peck	Not in NPIAS	Not Included	Not Included
5U7	Fort Smith	Fort Smith Landing Strip	Not in NPIAS	Not Included	Not Included
29S	Gardiner	Gardiner	General Aviation	General Aviation	Basic
5U8	Geraldine	Geraldine	General Aviation	General Aviation	Not Classified
GGW	Glasgow	Wokal Field/Glasgow International	General Aviation	General Aviation	Local
GDV	Glendive	Dawson Community	General Aviation	General Aviation	Local
GTF	Great Falls	Great Falls International	Primary Commercial Service	Not Included	Not Included
6S5	Hamilton	Ravalli County	General Aviation	General Aviation	Local
00U	Hardin	Big Horn County	General Aviation	Not Included	Not Included
48S	Harlem	Harlem	General Aviation	General Aviation	Not Classified
U09	Harlem	Fort Belknap Agency	Not in NPIAS	Not Included	Not Included
HWQ	Harlowton	Wheatland County at Harlowton	General Aviation	General Aviation	Basic
HVR	Havre	Havre City-County	General Aviation	General Aviation	Local
HLN	Helena	Helena Regional	Primary Commercial Service	Not Included	Not Included
6U5	Hinsdale	Hinsdale	Not in NPIAS	Not Included	Not Included
6U6	Hogeland	Hogeland	Not in NPIAS	Not Included	Not Included
S09	Hot Springs	Hot Springs	Not in NPIAS	Not Included	Not Included
6U7	Hysham	Hysham	Not in NPIAS	Not Included	Not Included
JDN	Jordan	Jordan	General Aviation	General Aviation	Basic
GPI	Kalispell	Glacier Park International	Primary Commercial Service	Not Included	Not Included

Study Airports, FAA Role, NPIAS Status, and FAA Asset Study Status (Cont.)

ID	Associated City	Airport	NPIAS Category	FAA 2012 Asset Study Service Level	FAA 2012 Asset Study Category
S27	Kalispell	Kalispell City	General Aviation	General Aviation	Local
6S8	Laurel	Laurel Municipal	General Aviation	General Aviation	Local
80S	Lavina	Lavina	Not in NPIAS	Not Included	Not Included
LWT	Lewistown	Lewistown Municipal	General Aviation	General Aviation	Local
S59	Libby	Libby	General Aviation	General Aviation	Local
S69	Lincoln	Lincoln	General Aviation	General Aviation	Basic
LVM	Livingston	Mission Field	General Aviation	General Aviation	Local
M75	Malta	Malta	General Aviation	General Aviation	Basic
0S1	Meadow Creek	Meadow Creek USFS	Not in NPIAS	Not Included	Not Included
MLS	Miles City	Frank Wiley Field	General Aviation	General Aviation	Local
MSO	Missoula	Missoula International	Primary Commercial Service	Not Included	Not Included
S00	Opheim	Opheim	Not in NPIAS	Not Included	Not Included
U05	Philipsburg	Riddick Field	General Aviation	General Aviation	Not Classified
S34	Plains	Plains	General Aviation	General Aviation	Basic
PWD	Plentywood	Sher-Wood	General Aviation	General Aviation	Basic
8S1	Polson	Polson	General Aviation	General Aviation	Local
PO1	Poplar	Poplar Municipal	General Aviation	General Aviation	Basic
H28	Port of Del Bonita	Whetstone Intl	Not in NPIAS	Not Included	Not Included
RED	Red Lodge	Red Lodge	General Aviation	General Aviation	Basic
7U8	Richey	Richey	Not in NPIAS	Not Included	Not Included
7S0	Ronan	Ronan	General Aviation	General Aviation	Local
RPX	Roundup	Roundup	General Aviation	General Aviation	Basic
M42	Russian Flat	Russian Flat	Not in NPIAS	Not Included	Not Included
8U0	Ryegate	Ryegate	Not in NPIAS	Not Included	Not Included
8U1	Sand Springs	Sand Springs Strip	Not in NPIAS	Not Included	Not Included
8U2	Schafer	Schafer /USFS/	Not in NPIAS	Not Included	Not Included
8U3	Scobey	Scobey Border Station / East Poplar Intl.	Not in NPIAS	Not Included	Not Included
9S2	Scobey	Scobey	General Aviation	General Aviation	Basic

Study Airports, FAA Role, NPIAS Status, and FAA Asset Study Status (Cont.)

ID	Associated City	Airport	NPIAS Category	FAA 2012 Asset Study Service Level	FAA 2012 Asset Study Category
23S	Seeley Lake	Seeley Lake	Not in NPIAS	Not Included	Not Included
M35	Seeley Lake	Lindey's Landing Strip	Not in NPIAS	Not Included	Not Included
SBX	Shelby	Shelby	General Aviation	General Aviation	Local
SDY	Sidney	Sidney-Richland Municipal	Commercial Service	Commercial Service	Local
8U4	Spotted Bear	Spotted Bear /USFS	Not in NPIAS	Not Included	Not Included
52S	St. Ignatius	St. Ignatius	Not in NPIAS	Not Included	Not Included
S64	Stanford	Stanford	General Aviation	General Aviation	Basic
32S	Stevensville	Stevensville	General Aviation	General Aviation	Local
8U5	Sunburst	Sunburst	Not in NPIAS	Not Included	Not Included
9S4	Superior	Mineral County	General Aviation	General Aviation	Basic
7S8	Sweetgrass	Ross International	Not in NPIAS	Not Included	Not Included
8U6	Terry	Terry	General Aviation	General Aviation	Basic
THM	Thompson Falls	Thompson Falls	General Aviation	General Aviation	Basic
9S5	Three Forks	Three Forks	General Aviation	General Aviation	Local
B70	Tiber Dam	Tiber Dam	Not in NPIAS	Not Included	Not Included
8U8	Townsend	Townsend	General Aviation	General Aviation	Basic
8U9	Townsend	Canyon Ferry	Not in NPIAS	Not Included	Not Included
57S	Troy	Troy	Not in NPIAS	Not Included	Not Included
9U0	Turner	Turner	General Aviation	General Aviation	Basic
7S1	Twin Bridges	Twin Bridges	General Aviation	General Aviation	Basic
7S7	Valier	Valier	General Aviation	Not Included	Not Included
WYS	West Yellowstone	Yellowstone	Commercial Service	Commercial Service	Regional
7S6	White Sulphur Springs	White Sulphur Springs	General Aviation	General Aviation	Basic
58S	Whitefish	Whitefish	Not in NPIAS	Not Included	Not Included
9U1	Wilsall	Wilsall	Not in NPIAS	Not Included	Not Included
9S7	Winifred	Winifred	General Aviation	General Aviation	Basic
BB0	Winifred	Black Butte North	Not in NPIAS	Not Included	Not Included

Study Airports, FAA Role, NPIAS Status, and FAA Asset Study Status (Cont.)

ID	Associated City	Airport	NPIAS Category	FAA 2012 Asset Study Service Level	FAA 2012 Asset Study Category
BW8	Winifred	Bullwhacker	Not in NPIAS	Not Included	Not Included
CW0	Winifred	Cow Creek	Not in NPIAS	Not Included	Not Included
LC0	Winifred	Left Coulee	Not in NPIAS	Not Included	Not Included
MT3	Winifred	Knox Ridge	Not in NPIAS	Not Included	Not Included
WH0	Winifred	Woodhawk	Not in NPIAS	Not Included	Not Included
7S2	Winnett	Winnett	Not in NPIAS	Not Included	Not Included
7S4	Wisdom	Wisdom	Not in NPIAS	Not Included	Not Included
02T	Wise River	Wise River	Not in NPIAS	Not Included	Not Included
OLF	Wolf Point	L M Clayton	General Aviation	General Aviation	Basic

Table 2-3: Primary Runway Dimensions, Pavement Type and Condition, and Lighting

ID	Associated City	Airport	Length	Width	Pavement Type - Condition (FAA)	2012 MDT PCI	Lighting
3U3	Anaconda	Bowman Field	6,011	75	ASPH-G	90	MIRL
3U4	Ashland	St. Labre Mission	3,830	95	GRVL-DIRT-G		None
3U5	Augusta	Augusta	3,650	75	TURF-F		None
3U7	Augusta	Benchmark	6,000	100	ASPH-F		None
49S	Babb	Babb	3,860	110	TURF-F		None
BHK	Baker	Baker Municipal	5,904	75	ASPH-E	100	MIRL
3U8	Big Sandy	Big Sandy	3,570	60	ASPH-E	100	MIRL
6S0	Big Timber	Big Timber	5,290	75	ASPH-G	58	MIRL
53U	Bigfork	Ferndale Airfield	3,500	95	TURF-G		None
BIL	Billings	Billings Logan International	10,521	150	ASPH-G		HIRL
3U9	Boulder	Boulder	3,675	72	TURF-F		None
BZN	Bozeman	Bozeman Yellowstone International	8,994	150	ASPH-G		HIRL
6S1	Bridger	Bridger Municipal	3,400	42	ASPH-F		Non-Standard
00F	Broadus	Broadus	4,400	75	ASPH-E	92	MIRL
8S0	Browning	Starr-Browning Airstrip	4,051	74	ASPH-P		MIRL
BTM	Butte	Bert Mooney	9,001	150	ASPH-G		MIRL
LTY	Chester	Liberty County	4,607	75	ASPH-G	87	MIRL
S71	Chinook	Edgar G Obie	3,650	50	GRAVEL-F	85	Non-Standard
4U4	Chinook	Hebbleman	4,000	75	ASPH-G	78	MIRL
CII	Choteau	Choteau	5,001	75	ASPH-G	78	MIRL
4U6	Circle	Circle Town County	4,100	75	ASPH-G	88	MIRL
RC0	Clinton	Rock Creek	4,100	75	TURF-F		None
M46	Colstrip	Colstrip	5,100	75	ASPH-G	92	MIRL
6S3	Columbus	Woltermann Memorial	3,814	75	ASPH-G	72	MIRL
S04	Condon	Condon USFS	2,575	135	TURF-G		None
4U7	Conner	West Fork Lodge	2,600	65	TURF-GRVL-G		None
S01	Conrad	Conrad	4,601	75	ASPH-G	72	MIRL
S85	Culbertson	Big Sky Field	3,800	60	ASPH-G	99	MIRL
CTB	Cut Bank	Cut Bank Municipal	5,302	75	ASPH-G	93	MIRL

Primary Runway Dimensions, Pavement Type and Condition, and Lighting (Cont.)

ID	Associated City	Airport	Length	Width	Pavement Type - Condition (FAA)	2012 MDT PCI	Lighting
38S	Deer Lodge	Deer Lodge-City-County	5,800	75	ASPH-E	77	MIRL
4U9	Dell	Dell Flight Strip	7,000	70	ASPH-F		MIRL
5U0	Denton	Denton	2,550	180	TURF-G		None
DLN	Dillon	Dillon	6,501	75	ASPH-G	72	MIRL
M26	Drummond	Drummond	2,400	125	TURF-F		None
5U1	Dutton	Dutton	3,130	115	ASPH-TURF-G		Non-Standard
97M	Ekalaka	Ekalaka	3,800	75	ASPH-G	90	MIRL
EKS	Ennis	Ennis - Big Sky	6,601	75	ASPH-G	90	MIRL
88M	Eureka	Eureka	4,200	75	ASPH-G	93	Strobe
5U5	Fairfield	Fairfield	3,800	40	ASPH-F		Non-Standard
5U6	Fairview	Fairview	3,000	95	TURF-G		None
1S3	Forsyth	Tillitt Field	4,799	75	ASPH-G	54	MIRL
79S	Fort Benton	Fort Benton	4,300	75	ASPH-G	73	MIRL
37S	Fort Peck	Fort Peck	4,100	125	TURF-F		None
5U7	Fort Smith	Fort Smith Landing Strip	3,827	50	ASPH-F		None
29S	Gardiner	Gardiner	3,200	55	ASPH-G	45	LIRL
5U8	Geraldine	Geraldine	2,900	75	ASPH-F		None
GGW	Glasgow	Wokal Field/Glasgow International	5,002	100	ASPH-G	100	MIRL
GDV	Glendive	Dawson Community	5,704	100	ASPH-F	74	MIRL
GTF	Great Falls	Great Falls International	10,502	150	ASPH-G		HIRL
6S5	Hamilton	Ravalli County	4,200	75	ASPH-F	62	MIRL
00U	Hardin	Big Horn County	4,490	75	ASPH-E		MIRL
48S	Harlem	Harlem	4,100	75	ASPH-G	77	MIRL
U09	Harlem	Fort Belknap Agency	3,200	55	ASPH-F		None
HWQ	Harlowton	Wheatland County at Harlowton	4,200	60	ASPH-F	64	MIRL
HVR	Havre	Havre City-County	5,205	100	ASPH-F	98	MIRL
HLN	Helena	Helena Regional	9,000	150	ASPH-G		HIRL
6U5	Hinsdale	Hinsdale	2,200	75	TURF-G		Non-Standard
6U6	Hogeland	Hogeland	3,140	60	TREATED-P		None
S09	Hot Springs	Hot Springs	3,550	45	ASPH-TRTD-F		MIRL
6U7	Hysham	Hysham	3,060	45	ASPH-TRTD-F		LIRL
JDN	Jordan	Jordan	4,300	75	ASPH-G	80	MIRL

Primary Runway Dimensions, Pavement Type and Condition, and Lighting (Cont.)

ID	Associated City	Airport	Length	Width	Pavement Type - Condition (FAA)	2012 MDT PCI	Lighting
GPI	Kalispell	Glacier Park International	9,007	150	ASPH-G		HIRL
S27	Kalispell	Kalispell City	3,600	60	ASPH-G		Non-Standard
6S8	Laurel	Laurel Municipal	5,200	75	ASPH-F	79	MIRL
80S	Lavina	Lavina	3,460	100	TURF-F		None
LWT	Lewistown	Lewistown Municipal	6,100	100	ASPH-G	100	MIRL
S59	Libby	Libby	5,002	75	ASPH-G	95	MIRL
S69	Lincoln	Lincoln	4,239	75	ASPH-E	79	MIRL
LVM	Livingston	Mission Field	5,701	75	ASPH-E		MIRL
M75	Malta	Malta	5,614	50	ASPH-G	92	None
0S1	Meadow Creek	Meadow Creek USFS	2,830	100	TURF-G		None
MLS	Miles City	Frank Wiley Field	5,680	75	ASPH-G	84	MIRL
MSO	Missoula	Missoula International	9,501	150	ASPH-G		HIRL
S00	Opheim	Opheim	2,675	150	TURF-F		LIRL
U05	Philipsburg	Riddick Field	3,600	60	ASPH-P		MIRL
S34	Plains	Plains	4,651	75	ASPH-G	84	MIRL
PWD	Plentywood	Sher-Wood	3,900	75	ASPH-G	76	MIRL
8S1	Polson	Polson	4,195	75	ASPH-G	53	MIRL
PO1	Poplar	Poplar Municipal	4,403	75	ASPH-E	99	MIRL
H28	Port of Del Bonita	Whetstone Intl	4,440	65	TURF-G		None
RED	Red Lodge	Red Lodge	4,000	75	ASPH-G		MIRL
7U8	Richey	Richey	2,690	75	TURF-DIRT-F		LIRL
7S0	Ronan	Ronan	4,800	75	ASPH-G	56	MIRL
RPX	Roundup	Roundup	5,099	75	ASPH-G	78	MIRL
M42	Russian Flat	Russian Flat	3,000	65	TURF-G		None
8U0	Ryegate	Ryegate	3,440	100	TURF-F		None
8U1	Sand Springs	Sand Springs Strip	2,400	60	TURF-F		None
8U2	Schafer	Schafer /USFS/	3,200	60	TURF-F		None
8U3	Scobey	Scobey Border Station / East Poplar Intl.	3,330	75	TURF-F		None
9S2	Scobey	Scobey	4,020	75	ASPH-G	81	MIRL
23S	Seeley Lake	Seeley Lake	4,575	75	TURF-E		None
M35	Seeley Lake	Lindey's Landing Strip	14,000	1,000	WATER		None

Primary Runway Dimensions, Pavement Type and Condition, and Lighting (Cont.)

ID	Associated City	Airport	Length	Width	Pavement Type - Condition (FAA)	2012 MDT PCI	Lighting
SBX	Shelby	Shelby	5,005	75	ASPH-G	89	MIRL
SDY	Sidney	Sidney-Richland Municipal	5,705	100	ASPH-G	81	MIRL
8U4	Spotted Bear	Spotted Bear /USFS	3,800	78	TURF-GRVL-P		None
52S	St. Ignatius	St. Ignatius	2,610	60	ASPH-G		LIRL
S64	Stanford	Stanford	4,200	75	ASPH-G	75	MIRL
32S	Stevensville	Stevensville	3,800	60	ASPH-G	60	MIRL
8U5	Sunburst	Sunburst	2,700	140	TURF-P		None
9S4	Superior	Mineral County	3,450	75	ASPH-G	91	None
7S8	Sweetgrass	Ross International	2,900	80	TURF-F		None
8U6	Terry	Terry	4,300	75	ASPH-G	75	MIRL
THM	Thompson Falls	Thompson Falls	4,200	75	ASPH-G	83	MIRL
9S5	Three Forks	Three Forks	5,100	60	ASPH-G	64	MIRL
B70	Tiber Dam	Tiber Dam	2,550	90	TURF-F		None
8U8	Townsend	Townsend	4,000	60	ASPH-G	81	MIRL
8U9	Townsend	Canyon Ferry	3,200	75	GRAVEL-P		None
57S	Troy	Troy	3,570	30	ASPH-P		None
9U0	Turner	Turner	3,612	60	ASPH-G	78	MIRL
7S1	Twin Bridges	Twin Bridges	4,299	60	ASPH-G	54	MIRL
7S7	Valier	Valier	3,075	150	TURF-G		None
WYS	West Yellowstone	Yellowstone	8,400	150	ASPH-G	82	HIRL
7S6	White Sulphur Springs	White Sulphur Springs	6,100	75	ASPH-G	99	MIRL
58S	Whitefish	Whitefish	1,700	52	TURF-G		None
9U1	Wilsall	Wilsall	3,100	78	TURF-G		None
9S7	Winifred	Winifred	4,400	150	TURF-F		None
BB0	Winifred	Black Butte North	1,800	60	TURF-F		None
BW8	Winifred	Bullwhacker	1,500	60	TURF-P		None
CW0	Winifred	Cow Creek	2,200	60	TURF-P		None
LC0	Winifred	Left Coulee	1,600	60	TURF-P		None
MT3	Winifred	Knox Ridge	2,100	60	TURF-F		None
WH0	Winifred	Woodhawk	1,200	60	TURF-P		None
7S2	Winnett	Winnett	3,130	75	TURF-G		None
7S4	Wisdom	Wisdom	3,445	60	TURF-P		None

Primary Runway Dimensions, Pavement Type and Condition, and Lighting (Cont.)

ID	Associated City	Airport	Length	Width	Pavement Type - Condition (FAA)	2012 MDT PCI	Lighting
02T	Wise River	Wise River	4,050	60	DIRT-G		None
OLF	Wolf Point	L M Clayton	5,091	100	ASPH-G	99	MIRL

Table 2-4: Approach Types and Navigational Aids

ID	Associated City	Airport	Primary Runway Approach Type	Primary Runway NAVAIDs	Beacon	Wind Sock	Wind Sock Lighted	Weather Reporting
3U3	Anaconda	Bowman Field	VOR / DME / GPS	PAPI-2	Yes	Yes	Yes	AWOS AV
3U4	Ashland	St. Labre Mission	None		No	Yes	No	None
3U5	Augusta	Augusta	None		No	Yes	No	None
3U7	Augusta	Benchmark	None		No	Yes	No	None
49S	Babb	Babb	None		No	Yes	No	None
BHK	Baker	Baker Municipal	GPS / NDB	PAPI-2	Yes	Yes	Yes	ASOS
3U8	Big Sandy	Big Sandy	None	PAPI-2	Yes	Yes	Yes	None
6S0	Big Timber	Big Timber	None		Yes	Yes	Yes	AWOS A
53U	Bigfork	Ferndale Airfield	None		No	Yes	No	None
BIL	Billings	Billings Logan International	ILS / RNAV(GPS) / NDB	PAPI-4 REIL	Yes	Yes	Yes	ASOS
3U9	Boulder	Boulder	None		No	Yes	No	None
BZN	Bozeman	Bozeman Yellowstone International	ILS / RNAV(GPS)/RNAV (RNP)	VASI-4 REIL	Yes	Yes	Yes	ASOS
6S1	Bridger	Bridger Municipal	None		Yes	Yes	Yes	None
00F	Broadus	Broadus	None	PAPI-2	Yes	Yes	Yes	None
8S0	Browning	Starr-Browning Airstrip	None		Yes	Yes	No	None
BTM	Butte	Bert Mooney	ILS / RNAV(GPS) / LOC / DME	PAPI-4	Yes	Yes	Yes	ASOS
LTY	Chester	Liberty County	None		Yes	Yes	Yes	None
S71	Chinook	Edgar G Obie	None		No	Yes	No	None
4U4	Chinook	Hebbleman	None		Yes	Yes	Yes	AWOS AV
CII	Choteau	Choteau	GPS / NDB	PAPI-2	Yes	Yes	Yes	None
4U6	Circle	Circle Town County	RNAV (GPS)	PAPI-2	Yes	Yes	Yes	None

Approach Types and Navigational Aids (Cont.)

ID	Associated City	Airport	Primary Runway Approach Type	Primary Runway NAVAIDs	Beacon	Wind Sock	Wind Sock Lighted	Weather Reporting
RC0	Clinton	Rock Creek	None		No	Yes	No	None
M46	Colstrip	Colstrip	GPS	PAPI-2	Yes	Yes	Yes	AWOS AV
6S3	Columbus	Woltermann Memorial	None		Yes	Yes	No	None
S04	Condon	Condon USFS	None		No	Yes	No	None
4U7	Conner	West Fork Lodge	None		No	Yes	No	None
S01	Conrad	Conrad	GPS / NDB	REIL	Yes	Yes	Yes	AWOS
S85	Culbertson	Big Sky Field	None		Yes	Yes	Yes	None
CTB	Cut Bank	Cut Bank Municipal	GPS / VOR		Yes	Yes	Yes	ASOS
38S	Deer Lodge	Deer Lodge-City-County	RNAV (GPS)	PAPI-2	Yes	Yes	Yes	AWOS AV
4U9	Dell	Dell Flight Strip	None	PAPI-2	Yes	Yes	No	None
5U0	Denton	Denton	None		No	Yes	No	None
DLN	Dillon	Dillon	RNAV(GPS) / VOR / DME	PAPI-2	Yes	Yes	Yes	ASOS
M26	Drummond	Drummond	None		No	Yes	Yes	None
5U1	Dutton	Dutton	None		Yes	Yes	Yes	None
97M	Ekalaka	Ekalaka	None	PAPI-2	Yes	Yes	Yes	AWOS
EKS	Ennis	Ennis - Big Sky	RNAV (GPS)	PAPI-2	Yes	Yes	Yes	AWOS AV
88M	Eureka	Eureka	None	PAPI-2	Yes	Yes	Yes	AWOS AV
5U5	Fairfield	Fairfield	None		Yes	Yes	Yes	None
5U6	Fairview	Fairview	None		No	Yes	No	None
1S3	Forsyth	Tillitt Field	RNAV(GPS) / NDB	PAPI-2	Yes	Yes	Yes	AWOS AV
79S	Fort Benton	Fort Benton	RNAV(GPS)	PAPI-2	Yes	Yes	Yes	AWOS A
37S	Fort Peck	Fort Peck	None		No	Yes	No	None
5U7	Fort Smith	Fort Smith Landing Strip	None		No	Yes	No	None
29S	Gardiner	Gardiner	None		No	Yes	Yes	None

Approach Types and Navigational Aids (Cont.)

ID	Associated City	Airport	Primary Runway Approach Type	Primary Runway NAVAIDs	Beacon	Wind Sock	Wind Sock Lighted	Weather Reporting
5U8	Geraldine	Geraldine	None		No	Yes	No	None
GGW	Glasgow	Wokal Field/Glasgow International	RNAV(GPS) / NDB	PAPI-4 REIL	Yes	Yes	Yes	ASOS
GDV	Glendive	Dawson Community	RNAV(GPS) / NDB	VASI-4	Yes	Yes	Yes	AWOS III
GTF	Great Falls	Great Falls International	ILS / LOC / DME / RNAV(GPS) / RNAV(RNP) / VOR	PAPI-4 REIL	Yes	Yes	No	ASOS
6S5	Hamilton	Ravalli County	RNAV(GPS)	PAPI-2	Yes	Yes	Yes	AWOS AV
00U	Hardin	Big Horn County	None	PAPI-2	Yes	Yes	Yes	None
48S	Harlem	Harlem	None		Yes	Yes	Yes	None
U09	Harlem	Fort Belknap Agency	None		No	Yes	No	None
HWQ	Harlowton	Wheatland County at Harlowton	None		Yes	Yes	Yes	AWOS
HVR	Havre	Havre City-County	RNAV(GPS) / VOR	VASI-4 REIL	Yes	Yes	Yes	ASOS
HLN	Helena	Helena Regional	ILS / RNAV(RNP) / RNAV(GPS) / LOC / DME / VOR	VASI-4 REIL	Yes	Yes	Yes	ASOS
6U5	Hinsdale	Hinsdale	None		No	Yes	No	None
6U6	Hogeland	Hogeland	None		Yes	Yes	No	None
S09	Hot Springs	Hot Springs	None		Yes	Yes	Yes	None
6U7	Hysham	Hysham	None		Yes	Yes	No	None
JDN	Jordan	Jordan	None		Yes	Yes	Yes	None
GPI	Kalispell	Glacier Park International	ILS or LOC / RNAV(RNP) / RNAV (GPS) / VOR	PAPI-4 REIL	Yes	Yes	Yes	ASOS
S27	Kalispell	Kalispell City	None		Yes	Yes	Yes	None
6S8	Laurel	Laurel Municipal	RNAV(GPS) / VOR	PAPI-2	Yes	Yes	Yes	AWOS AV
80S	Lavina	Lavina	None		No	Yes	No	AWOS

Approach Types and Navigational Aids (Cont.)

ID	Associated City	Airport	Primary Runway Approach Type	Primary Runway NAVAIDs	Beacon	Wind Sock	Wind Sock Lighted	Weather Reporting
LWT	Lewistown	Lewistown Municipal	RNAV(GPS)	PAPI-2 REIL	Yes	Yes	Yes	ASOS
S59	Libby	Libby	GPS	PAPI-2 REIL	Yes	Yes	Yes	AWOS A
S69	Lincoln	Lincoln	None	PAPI-2	Yes	Yes	Yes	None
LVM	Livingston	Mission Field	RNAV(GPS) / VOR	REIL	Yes	Yes	Yes	ASOS
M75	Malta	Malta	None		Yes	Yes	No	AWOS
0S1	Meadow Creek	Meadow Creek USFS	None		No	Yes	No	None
MLS	Miles City	Frank Wiley Field	RNAV(GPS) / VOR / DMS	PAPI-2 REIL	Yes	Yes	Yes	ASOS
MSO	Missoula	Missoula International	ILS / RNAV(RNP) / RNAV(GPS) / VOR / DME	PAPI-4 REIL	Yes	Yes	Yes	ASOS
S00	Opheim	Opheim	None		Yes	Yes	Yes	None
U05	Philipsburg	Riddick Field	None		Yes	Yes	Yes	None
S34	Plains	Plains	None		Yes	Yes	Yes	AWOS
PWD	Plentywood	Sher-Wood	RNAV (GPS)	PAPI-2	Yes	Yes	Yes	AWOS AV
8S1	Polson	Polson	RNAV(GPS)	PAPI-4	Yes	Yes	Yes	None
PO1	Poplar	Poplar Municipal	RNAV (GPS)	PAPI-2	Yes	Yes	No	AWOS AV
H28	Port of Del Bonita	Whetstone Intl	None		No	Yes	No	None
RED	Red Lodge	Red Lodge	None	VASI-2	Yes	Yes	Yes	AWOS
7U8	Richey	Richey	None		Yes	Yes	Yes	None
7S0	Ronan	Ronan	RNAV (GPS)	PAPI-2	Yes	Yes	Yes	AWOS III
RPX	Roundup	Roundup	RNAV (GPS)	PAPI-2	Yes	Yes	Yes	AWOS
M42	Russian Flat	Russian Flat	None	REIL	No	Yes	No	None
8U0	Ryegate	Ryegate	None		Yes	Yes	No	None
8U1	Sand Springs	Sand Springs Strip	None		No	Yes	No	None
8U2	Schafer	Schafer /USFS/	None		No	Yes	No	None

Approach Types and Navigational Aids (Cont.)

ID	Associated City	Airport	Primary Runway Approach Type	Primary Runway NAVAIDs	Beacon	Wind Sock	Wind Sock Lighted	Weather Reporting
8U3	Scobey	Scobey Border Station / East Poplar Intl.	None		No	Yes	No	None
9S2	Scobey	Scobey	RNAV (GPS)	PAPI-2	Yes	Yes	Yes	AWOS
23S	Seeley Lake	Seeley Lake	None		Yes	Yes	Yes	None
M35	Seeley Lake	Lindey's Landing Strip	None		No	Yes	No	None
SBX	Shelby	Shelby	RNAV(GPS) NDB	PAPI-2	Yes	Yes	Yes	None
SDY	Sidney	Sidney-Richland Municipal	RNAV(GPS)	PAPI-2 REIL	Yes	Yes	Yes	AWOS III
8U4	Spotted Bear	Spotted Bear /USFS	None		No	Yes	No	None
52S	St. Ignatius	St. Ignatius	None		Yes	Yes	Yes	None
S64	Stanford	Stanford	None		Yes	Yes	Yes	None
32S	Stevensville	Stevensville	RNAV (GPS)	PAPI-2	Yes	Yes	Yes	None
8U5	Sunburst	Sunburst	None		No	Yes	No	None
9S4	Superior	Mineral County	None		No	Yes	No	None
7S8	Sweetgrass	Ross International	None		No	Yes	No	None
8U6	Terry	Terry	None	PAPI-2	Yes	Yes	Yes	None
THM	Thompson Falls	Thompson Falls	None	PAPI-2	Yes	Yes	Yes	None
9S5	Three Forks	Three Forks	None	PAPI-2	Yes	Yes	Yes	AWOS
B70	Tiber Dam	Tiber Dam	None		No	Yes	No	None
8U8	Townsend	Townsend	None	PAPI-2	Yes	Yes	Yes	None
8U9	Townsend	Canyon Ferry	None		No	Yes	No	None
57S	Troy	Troy	None		No	Yes	No	None
9U0	Turner	Turner	None		Yes	Yes	Yes	None
7S1	Twin Bridges	Twin Bridges	None		Yes	Yes	Yes	AWOS
7S7	Valier	Valier	None		No	Yes	No	None
WYS	West Yellowstone	Yellowstone	ILS / RNAV(GPS)	PAPI-4 REIL	Yes	Yes	Yes	AWOS III P

Approach Types and Navigational Aids (Cont.)

ID	Associated City	Airport	Primary Runway Approach Type	Primary Runway NAVAIDs	Beacon	Wind Sock	Wind Sock Lighted	Weather Reporting
7S6	White Sulphur Springs	White Sulphur Springs	None	PAPI-2	Yes	Yes	Yes	None
58S	Whitefish	Whitefish	None		No	Yes	No	None
9U1	Wilsall	Wilsall	None		No	Yes	No	None
9S7	Winifred	Winifred	None		No	Yes	No	None
BB0	Winifred	Black Butte North	None		No	No	No	None
BW8	Winifred	Bullwhacker	None		No	No	No	None
CW0	Winifred	Cow Creek	None		No	No	No	None
LC0	Winifred	Left Coulee	None		No	No	No	None
MT3	Winifred	Knox Ridge	None		No	No	No	None
WH0	Winifred	Woodhawk	None		No	No	No	None
7S2	Winnett	Winnett	None		No	Yes	No	None
7S4	Wisdom	Wisdom	None		No	Yes	No	None
02T	Wise River	Wise River	None		No	Yes	No	None
OLF	Wolf Point	L M Clayton	RNAV (GPS)	VASI-2 REIL	Yes	Yes	Yes	ASOS

Table 2-5: Landside Facilities

ID	Associated City	Airport	Aircraft Apron(sy)	GA terminal	Auto Parking (adequate?)	Pilot Lounge
3U3	Anaconda	Bowman Field	14,907	No	Yes	No
3U4	Ashland	St. Labre Mission	NA (Turf)	No	Yes	No
3U5	Augusta	Augusta	NA (Turf)	No	Yes	No
3U7	Augusta	Benchmark	5,167	No	Yes	No
49S	Babb	Babb	NA (Turf)	No	Yes	No
BHK	Baker	Baker Municipal	13,020	Yes	No	Yes
3U8	Big Sandy	Big Sandy	2,800	No	Yes	No
6S0	Big Timber	Big Timber	5,254	Yes	Yes	Yes
53U	Bigfork	Ferndale Airfield	NA (Turf)	No	Yes	No
BIL	Billings	Billings Logan International	80,000	Yes	Yes	Yes
3U9	Boulder	Boulder	6,517	No	Yes	No
BZN	Bozeman	Bozeman Yellowstone International	190,000	Yes	Yes	Yes
6S1	Bridger	Bridger Municipal	3,027	No	Yes	No
00F	Broadus	Broadus	9,700	No	Yes	No
8S0	Browning	Starr-Browning Airstrip	1,891	No	Yes	No
BTM	Butte	Bert Mooney	40,555	Yes	Yes	Yes
LTY	Chester	Liberty County	15,000	No	Yes	No
S71	Chinook	Edgar G Obie	NA	No	Yes	No
4U4	Chinook	Hebbleman	15,100	Yes	Yes	Yes
CII	Choteau	Choteau	8,879	No	Yes	No
4U6	Circle	Circle Town County	6,875	No	Yes	No
RC0	Clinton	Rock Creek	NA (Turf)	No	Yes	No
M46	Colstrip	Colstrip	7,089	No	Yes	No
6S3	Columbus	Woltermann Memorial	6,722	Yes	Yes	Yes
S04	Condon	Condon USFS	NA (Turf)	No	Yes	No
4U7	Conner	West Fork Lodge	NA (Turf)	No	Yes	No

Landside Facilities (Cont.)

ID	Associated City	Airport	Aircraft Apron(sy)	GA terminal	Auto Parking (adequate?)	Pilot Lounge
S01	Conrad	Conrad	10,444	No	Yes	Yes
S85	Culbertson	Big Sky Field	8,165	No	Yes	Yes
CTB	Cut Bank	Cut Bank Municipal	9,000	Yes	Yes	Yes
38S	Deer Lodge	Deer Lodge-City-County	10,150	Yes	Yes	Yes
4U9	Dell	Dell Flight Strip	NA	No	Yes	No
5U0	Denton	Denton	NA (Turf)	No	Yes	No
DLN	Dillon	Dillon	15,264	Yes	Yes	Yes
M26	Drummond	Drummond	NA (Turf)	No	Yes	No
5U1	Dutton	Dutton	NA	No	Yes	No
97M	Ekalaka	Ekalaka	11,000	No	Yes	No
EKS	Ennis	Ennis - Big Sky	17,500	Yes	Yes	Yes
88M	Eureka	Eureka	7,415	Yes	Yes	Yes
5U5	Fairfield	Fairfield	NA	No	Yes	No
5U6	Fairview	Fairview	NA (Turf)	No	Yes	No
1S3	Forsyth	Tillitt Field	15,500	Yes	Yes	Yes
79S	Fort Benton	Fort Benton	9,388	Yes	Yes	Yes
37S	Fort Peck	Fort Peck	NA (Turf)	No	Yes	No
5U7	Fort Smith	Fort Smith Landing Strip	NA	No	Yes	No
29S	Gardiner	Gardiner	NA	No	Yes	No
5U8	Geraldine	Geraldine	2,667	No	Yes	No
GGW	Glasgow	Wokal Field/Glasgow International	7,333	Yes	Yes	Yes
GDV	Glendive	Dawson Community	21,000	No	Yes	No
GTF	Great Falls	Great Falls International	209,632		Yes	
6S5	Hamilton	Ravalli County	17,103	Yes	No	Yes
00U	Hardin	Big Horn County	10,278	No	No	No
48S	Harlem	Harlem	6,750	Yes	Yes	Yes
U09	Harlem	Fort Belknap Agency	NA	No	Yes	No

Landside Facilities (Cont.)

ID	Associated City	Airport	Aircraft Apron(sy)	GA terminal	Auto Parking (adequate?)	Pilot Lounge
HWQ	Harlowton	Wheatland County at Harlowton	5,622	No	Yes	No
HVR	Havre	Havre City-County	13,250	Yes	Yes	Yes
HLN	Helena	Helena Regional	197,000	Yes	Yes	Yes
6U5	Hinsdale	Hinsdale	NA (Turf)	No	Yes	No
6U6	Hogeland	Hogeland	NA	No	Yes	No
S09	Hot Springs	Hot Springs	NA	No	No	
6U7	Hysham	Hysham	3,822	No	Yes	No
JDN	Jordan	Jordan	5,556	No	Yes	No
GPI	Kalispell	Glacier Park International		Yes	Yes	Yes
S27	Kalispell	Kalispell City	20,000	Yes	Yes	Yes
6S8	Laurel	Laurel Municipal	17,800	Yes	Yes	Yes
80S	Lavina	Lavina	NA (Turf)	No	Yes	No
LWT	Lewistown	Lewistown Municipal	11,626	Yes	Yes	Yes
S59	Libby	Libby	25,000	Yes	Yes	Yes
S69	Lincoln	Lincoln	5,925	No	Yes	No
LVM	Livingston	Mission Field	21,078	Yes	Yes	Yes
M75	Malta	Malta	10,649	Yes	Yes	Yes
0S1	Meadow Creek	Meadow Creek USFS	NA (Turf)		Yes	No
MLS	Miles City	Frank Wiley Field	36,266	Yes	Yes	Yes
MSO	Missoula	Missoula International	185,500	Yes	No	Yes
S00	Opheim	Opheim	NA (Turf)	No	Yes	No
U05	Philipsburg	Riddick Field	3,358		Yes	
S34	Plains	Plains	15,800	No	Yes	Yes
PWD	Plentywood	Sher-Wood	20,650	Yes	Yes	Yes
8S1	Polson	Polson	23,222	Yes	Yes	Yes
PO1	Poplar	Poplar Municipal	NA	Yes	Yes	Yes
H28	Port of Del Bonita	Whetstone Intl	NA (Turf)	No	Yes	No
RED	Red Lodge	Red Lodge	10,580	Yes	Yes	Yes
7U8	Richey	Richey	550	No	Yes	No

Landside Facilities (Cont.)

ID	Associated City	Airport	Aircraft Apron(sy)	GA terminal	Auto Parking (adequate?)	Pilot Lounge
7S0	Ronan	Ronan	21,225	Yes	Yes	Yes
RPX	Roundup	Roundup	5,320	Yes	Yes	Yes
M42	Russian Flat	Russian Flat	NA (Turf)	No	Yes	No
8U0	Ryegate	Ryegate	NA (Turf)	No	Yes	No
8U1	Sand Springs	Sand Springs Strip	NA (Turf)	No	Yes	No
8U2	Schafer	Schafer /USFS/	NA (Turf)	No	Yes	No
9S2	Scobey	Scobey	NA (Turf)	No	Yes	No
8U3	Scobey	Scobey Border Station / East Poplar Intl.	5,856	No	Yes	No
23S	Seeley Lake	Seeley Lake	NA (Turf)	No	Yes	No
M35	Seeley Lake	Lindey's Landing Strip	NA	No	Yes	No
SBX	Shelby	Shelby	14,578	Yes	Yes	Yes
SDY	Sidney	Sidney-Richland Municipal	29,157	Yes	Yes	Yes
8U4	Spotted Bear	Spotted Bear /USFS	NA (Turf)	No	Yes	No
52S	St. Ignatius	St. Ignatius	NA	No	Yes	Yes
S64	Stanford	Stanford	6,667	No	Yes	No
32S	Stevensville	Stevensville	15,069	Yes	Yes	Yes
8U5	Sunburst	Sunburst	NA (Turf)	No	Yes	No
9S4	Superior	Mineral County	4,889	No	Yes	No
7S8	Sweetgrass	Ross International	NA (Turf)	No	Yes	No
8U6	Terry	Terry	5,611	No	Yes	No
THM	Thompson Falls	Thompson Falls	8,861	Yes	Yes	Yes
9S5	Three Forks	Three Forks	7,200	Yes	Yes	Yes
B70	Tiber Dam	Tiber Dam	NA (Turf)	No	Yes	No
8U8	Townsend	Townsend	10,956	Yes	Yes	Yes
8U9	Townsend	Canyon Ferry	NA	No	Yes	No
57S	Troy	Troy	NA	No	Yes	No
9U0	Turner	Turner	3,333	Yes	Yes	Yes
7S1	Twin Bridges	Twin Bridges	9,734	Yes	Yes	Yes
7S7	Valier	Valier	NA (Turf)	Yes	Yes	No

Landside Facilities (Cont.)

ID	Associated City	Airport	Aircraft Apron(sy)	GA terminal	Auto Parking (adequate?)	Pilot Lounge
WYS	West Yellowstone	Yellowstone	58,494	Yes	Yes	Yes
7S6	White Sulphur Springs	White Sulphur Springs	9,173	Yes	Yes	Yes
58S	Whitefish	Whitefish	NA (Turf)	No	Yes	No
9U1	Wilsall	Wilsall	NA (Turf)	No	Yes	No
9S7	Winifred	Winifred	NA (Turf)	No	No	Yes
BB0	Winifred	Black Butte North	NA (Turf)	No	Yes	No
BW8	Winifred	Bullwhacker	NA (Turf)	No	Yes	No
CW0	Winifred	Cow Creek	NA (Turf)	No	Yes	No
LC0	Winifred	Left Coulee	NA (Turf)	No	Yes	No
MT3	Winifred	Knox Ridge	NA (Turf)	No	Yes	No
WH0	Winifred	Woodhawk	NA (Turf)	No	Yes	No
7S2	Winnett	Winnett	NA (Turf)	No	Yes	No
7S4	Wisdom	Wisdom	NA (Turf)	No	Yes	No
02T	Wise River	Wise River	NA	No	Yes	No
OLF	Wolf Point	L M Clayton	12,624	Yes	Yes	Yes

Table 2-6: Airport Plans

ID	Associated City	Airport	Airport Layout Plan	Master Plan	Minimum Standards	Obstruction Survey	AGIS
3U3	Anaconda	Bowman Field	Yes	No	No		
3U4	Ashland	St. Labre Mission	No	No	No		
3U5	Augusta	Augusta	No	No	No	No	No
3U7	Augusta	Benchmark	No	No	No		
49S	Babb	Babb	Yes	No	No	No	No
BHK	Baker	Baker Municipal	Yes	Yes	Yes	Yes	Yes
3U8	Big Sandy	Big Sandy	Yes	No	No		
6S0	Big Timber	Big Timber	Yes	No	No		
53U	Bigfork	Ferndale Airfield	No	No	No		
BIL	Billings	Billings Logan International	Yes	Yes	No	Yes	Yes
3U9	Boulder	Boulder	No	No			
BZN	Bozeman	Bozeman Yellowstone International	Yes	Yes	Yes	Yes	No
6S1	Bridger	Bridger Municipal	Yes	No	No	No	No
00F	Broadus	Broadus	Yes	Yes	No	No	No
8S0	Browning	Starr-Browning Airstrip	No	No	No		
BTM	Butte	Bert Mooney	Yes	Yes	No		
LTY	Chester	Liberty County	Yes	Yes	Yes	Yes	Yes
4U4	Chinook	Hebbleman	Yes	Yes	No	No	No
S71	Chinook	Edgar G Obie	Yes	Yes	No		
CII	Choteau	Choteau	Yes	No	No		
4U6	Circle	Circle Town County	Yes	Yes	No		
RC0	Clinton	Rock Creek	No	No	No	No	No
M46	Colstrip	Colstrip	Yes	Yes	No		

Airport Plans (Cont.)

ID	Associated City	Airport	Airport Layout Plan	Master Plan	Minimum Standards	Obstruction Survey	AGIS
6S3	Columbus	Woltermann Memorial	Yes	No	No		
S04	Condon	Condon USFS	No	No	No		
4U7	Conner	West Fork Lodge	No	No	No		
S01	Conrad	Conrad	Yes	No	No		
S85	Culbertson	Big Sky Field	Yes	Yes	No	Yes	
CTB	Cut Bank	Cut Bank Municipal	Yes	Yes	Yes	Yes	Yes
38S	Deer Lodge	Deer Lodge-City-County	Yes	No	No		
4U9	Dell	Dell Flight Strip	No	No	No	No	No
5U0	Denton	Denton	No	No	No		
DLN	Dillon	Dillon	Yes	No	No		
M26	Drummond	Drummond	Yes	No	No		
5U1	Dutton	Dutton	No	No	No		
97M	Ekalaka	Ekalaka	Yes	No	No		
EKS	Ennis	Ennis - Big Sky	Yes	Yes	Yes	Yes	Yes
88M	Eureka	Eureka	Yes	Yes	No	Yes	Yes
5U5	Fairfield	Fairfield	No	No	No		
5U6	Fairview	Fairview	No	No	No		
1S3	Forsyth	Tillitt Field	Yes	Yes	Yes	No	No
79S	Fort Benton	Fort Benton	Yes	Yes	No		
37S	Fort Peck	Fort Peck	No	No	No		
5U7	Fort Smith	Fort Smith Landing Strip	No	No	No		
29S	Gardiner	Gardiner	Yes	No	No		
5U8	Geraldine	Geraldine	Yes	Yes	No		
GGW	Glasgow	Wokal Field/Glasgow International	Yes	No	No		
GDV	Glendive	Dawson Community	Yes	No	No		
GTF	Great Falls	Great Falls International	Yes	Yes	No		

Airport Plans (Cont.)

ID	Associated City	Airport	Airport Layout Plan	Master Plan	Minimum Standards	Obstruction Survey	AGIS
6S5	Hamilton	Ravalli County	Yes	Yes	Yes	Yes	Yes
00U	Hardin	Big Horn County	Yes	No	No	Yes	Yes
48S	Harlem	Harlem	Yes	Yes	No	No	No
U09	Harlem	Fort Belknap Agency	Yes	No	No		
HWQ	Harlowton	Wheatland County at Harlowton	Yes	No	No		
HVR	Havre	Havre City-County	Yes	Yes	No		
HLN	Helena	Helena Regional	Yes	Yes	Yes	Yes	Yes
6U5	Hinsdale	Hinsdale	No	No	No	No	No
6U6	Hogeland	Hogeland	No	No	No		
S09	Hot Springs	Hot Springs	No	No	No		
6U7	Hysham	Hysham	No	No	No		
JDN	Jordan	Jordan	Yes	No	No		
GPI	Kalispell	Glacier Park International	Yes	Yes	No		
S27	Kalispell	Kalispell City	Yes	Yes	No		
6S8	Laurel	Laurel Municipal	Yes	Yes	No	Yes	No
80S	Lavina	Lavina	No	No	No	No	No
LWT	Lewistown	Lewistown Municipal	Yes	Yes	No	Yes	
S59	Libby	Libby	Yes	Yes	No	Yes	Yes
S69	Lincoln	Lincoln	Yes	Yes	Yes	Yes	No
LVM	Livingston	Mission Field	Yes	No	No		
M75	Malta	Malta	Yes	Yes	No		
0S1	Meadow Creek	Meadow Creek USFS	No	No	No		
MLS	Miles City	Frank Wiley Field	Yes	Yes	No		
MSO	Missoula	Missoula International	Yes	Yes	Yes	Yes	
S00	Opheim	Opheim	No	No	No		
U05	Philipsburg	Riddick Field	Yes	No	No		

Airport Plans (Cont.)

ID	Associated City	Airport	Airport Layout Plan	Master Plan	Minimum Standards	Obstruction Survey	AGIS
S34	Plains	Plains	Yes	Yes	No		
PWD	Plentywood	Sher-Wood	Yes	Yes	No	Yes	No
8S1	Polson	Polson	Yes	Yes	Yes	Yes	Yes
PO1	Poplar	Poplar Municipal	Yes	No	No		
H28	Port of Del Bonita	Whetstone Intl	No	No	No	No	No
RED	Red Lodge	Red Lodge	Yes	Yes	No		
7U8	Richey	Richey	No	No	No		
7S0	Ronan	Ronan	Yes	Yes	Yes	Yes	No
RPX	Roundup	Roundup	Yes	Yes	No		
M42	Russian Flat	Russian Flat	No	No	No		
8U0	Ryegate	Ryegate	No	No	No	No	No
8U1	Sand Springs	Sand Springs Strip	No	No	No		
8U2	Schafer	Schafer /USFS/	No	No	No		
8U3	Scobey	Scobey Border Station / East Poplar Intl.	Yes	No	No		
9S2	Scobey	Scobey	Yes	No	No	No	No
23S	Seeley Lake	Seeley Lake	Yes	Yes	No	No	No
M35	Seeley Lake	Lindey's Landing Strip	No	No	No		
SBX	Shelby	Shelby	Yes	Yes	No	Yes	Yes
SDY	Sidney	Sidney-Richland Municipal	Yes	Yes	No		
8U4	Spotted Bear	Spotted Bear /USFS	No	No	No		
52S	St. Ignatius	St. Ignatius	Yes	No	No	Yes	No
S64	Stanford	Stanford	Yes	No	No		
32S	Stevensville	Stevensville	Yes	Yes	No		
8U5	Sunburst	Sunburst	No	No	No	No	No
9S4	Superior	Mineral County	Yes	Yes	Yes	No	No

Airport Plans (Cont.)

ID	Associated City	Airport	Airport Layout Plan	Master Plan	Minimum Standards	Obstruction Survey	AGIS
7S8	Sweetgrass	Ross International	No	No	No	No	No
8U6	Terry	Terry	Yes	No	No	No	No
THM	Thompson Falls	Thompson Falls	Yes	No	No		
9S5	Three Forks	Three Forks	Yes	Yes	No		
B70	Tiber Dam	Tiber Dam	No	No	No	No	No
8U8	Townsend	Townsend	Yes	Yes	No		
8U9	Townsend	Canyon Ferry	Yes	No	No		
57S	Troy	Troy	No	No	No	No	No
9U0	Turner	Turner	Yes	No	No		
7S1	Twin Bridges	Twin Bridges	Yes	No	No		
7S7	Valier	Valier	Yes	No	Yes	No	No
WYS	West Yellowstone	Yellowstone	Yes	No	No		
7S6	White Sulphur Springs	White Sulphur Springs	Yes	Yes	No		
58S	Whitefish	Whitefish	No	No	No		
9U1	Wilsall	Wilsall	No	No	No		
9S7	Winifred	Winifred	Yes	No	No	No	No
BB0	Winifred	Black Butte North	No	No	No		
BW8	Winifred	Bullwhacker	No	No	No		
CW0	Winifred	Cow Creek	No	No	No		
LC0	Winifred	Left Coulee	No	No	No		
MT3	Winifred	Knox Ridge	No	No	No		
WH0	Winifred	Woodhawk	No	No	No		
7S2	Winnett	Winnett	No	No	Yes		
7S4	Wisdom	Wisdom	No	No	No		
02T	Wise River	Wise River	No	No	No		
OLF	Wolf Point	L M Clayton	Yes	Yes	No	Yes	Yes

Table 2-7: Aviation Services

ID	Associated City	Airport	Full Service FBO	AVGas	Jet Fuel	24/7 Fuel	Rental Car	Courtesy Car	Public Transit (Public Bus)	Public Transit (Taxi)	Public Transit (Other)	Flight Instruction
3U3	Anaconda	Bowman Field										
3U4	Ashland	St. Labre Mission										
3U5	Augusta	Augusta										
3U7	Augusta	Benchmark										
49S	Babb	Babb										
BHK	Baker	Baker Municipal	Yes	Yes	Yes	Yes	Yes	Yes				Yes
3U8	Big Sandy	Big Sandy		Yes		Yes		Yes				
6S0	Big Timber	Big Timber	Yes	Yes	Yes			Yes				
53U	Bigfork	Ferndale Airfield										
BIL	Billings	Billings Logan International	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
3U9	Boulder	Boulder										
BZN	Bozeman	Bozeman Yellowstone International	Yes	Yes	Yes	Yes	Yes			Yes	Yes	Yes
6S1	Bridger	Bridger Municipal						Yes		Yes		
00F	Broadus	Broadus		Yes	Yes	Yes		Yes				
8S0	Browning	Starr-Browning Airstrip										
BTM	Butte	Bert Mooney	Yes	Yes	Yes		Yes	Yes		Yes		
LTY	Chester	Liberty County	Yes	Yes				Yes				
S71	Chinook	Edgar G Obie		Yes		Yes		Yes				
4U4	Chinook	Hebbleman		Yes		Yes						Yes
CII	Choteau	Choteau		Yes	Yes	Yes		Yes				
4U6	Circle	Circle Town County	Yes	Yes								
RC0	Clinton	Rock Creek										
M46	Colstrip	Colstrip						Yes				
6S3	Columbus	Woltermann Memorial	Yes	Yes		Yes						

Aviation Services (Cont.)

ID	Associated City	Airport	Full Service FBO	AVGas	Jet Fuel	24/7 Fuel	Rental Car	Courtesy Car	Public Transit (Public Bus)	Public Transit (Taxi)	Public Transit (Other)	Flight Instruction
S04	Condon	Condon USFS										
4U7	Conner	West Fork Lodge		Yes								
S01	Conrad	Conrad		Yes								
S85	Culbertson	Big Sky Field		Yes		Yes						
CTB	Cut Bank	Cut Bank Municipal	Yes	Yes	Yes	Yes	Yes	Yes				Yes
38S	Deer Lodge	Deer Lodge-City-County	Yes	Yes	Yes	Yes						
4U9	Dell	Dell Flight Strip										
5U0	Denton	Denton										
DLN	Dillon	Dillon	Yes	Yes	Yes			Yes				
M26	Drummond	Drummond										
5U1	Dutton	Dutton										
97M	Ekalaka	Ekalaka		Yes								
EKS	Ennis	Ennis - Big Sky	Yes	Yes	Yes	Yes	Yes	Yes				Yes
88M	Eureka	Eureka		Yes		Yes		Yes				
5U5	Fairfield	Fairfield										
5U6	Fairview	Fairview										
1S3	Forsyth	Tillitt Field						Yes				Yes
79S	Fort Benton	Fort Benton	Yes	Yes		Yes		Yes				
37S	Fort Peck	Fort Peck		Yes								
5U7	Fort Smith	Fort Smith Landing Strip										
29S	Gardiner	Gardiner		Yes	Yes			Yes				
5U8	Geraldine	Geraldine										
GGW	Glasgow	Wokal Field/Glasgow International	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
GDV	Glendive	Dawson Community	Yes	Yes	Yes	Yes	Yes	Yes	Yes			
GTF	Great Falls	Great Falls International	Yes	Yes	Yes		Yes			Yes		
6S5	Hamilton	Ravalli County	Yes	Yes	Yes	Yes	Yes	Yes				Yes
00U	Hardin	Big Horn County										

Aviation Services (Cont.)

ID	Associated City	Airport	Full Service FBO	AVGas	Jet Fuel	24/7 Fuel	Rental Car	Courtesy Car	Public Transit (Public Bus)	Public Transit (Taxi)	Public Transit (Other)	Flight Instruction
48S	Harlem	Harlem										
U09	Harlem	Fort Belknap Agency										
HWQ	Harlowton	Wheatland County at Harlowton										
HVR	Havre	Havre City-County	Yes	Yes	Yes							
HLN	Helena	Helena Regional	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
6U5	Hinsdale	Hinsdale										
6U6	Hogeland	Hogeland										
S09	Hot Springs	Hot Springs						Yes				
6U7	Hysham	Hysham										
JDN	Jordan	Jordan										
GPI	Kalispell	Glacier Park International	Yes	Yes	Yes		Yes			Yes		
S27	Kalispell	Kalispell City	Yes	Yes			Yes			Yes		
6S8	Laurel	Laurel Municipal	Yes	Yes	Yes	Yes		Yes				Yes
80S	Lavina	Lavina										
LWT	Lewistown	Lewistown Municipal	Yes	Yes	Yes	Yes	Yes	Yes				Yes
S59	Libby	Libby	Yes	Yes	Yes	Yes		Yes				
S69	Lincoln	Lincoln										
LVM	Livingston	Mission Field	Yes	Yes	Yes		Yes			Yes		
M75	Malta	Malta	Yes	Yes	Yes							
0S1	Meadow Creek	Meadow Creek USFS										
MLS	Miles City	Frank Wiley Field	Yes	Yes	Yes	Yes	Yes			Yes		
MSO	Missoula	Missoula International	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
S00	Opheim	Opheim										
U05	Philipsburg	Riddick Field										
S34	Plains	Plains	No					Yes				
PWD	Plentywood	Sher-Wood		Yes		Yes		Yes				Yes
8S1	Polson	Polson	Yes	Yes	Yes	Yes		Yes				Yes
PO1	Poplar	Poplar Municipal	Yes	Yes	Yes			Yes				

Aviation Services (Cont.)

ID	Associated City	Airport	Full Service FBO	AVGas	Jet Fuel	24/7 Fuel	Rental Car	Courtesy Car	Public Transit (Public Bus)	Public Transit (Taxi)	Public Transit (Other)	Flight Instruction
H28	Port of Del Bonita	Whetstone Intl										
RED	Red Lodge	Red Lodge					Yes			Yes		
7U8	Richey	Richey										
7S0	Ronan	Ronan		Yes	Yes	Yes		Yes		Yes	Yes	Yes
RPX	Roundup	Roundup		Yes	Yes	Yes		Yes				
M42	Russian Flat	Russian Flat										
8U0	Ryegate	Ryegate										
8U1	Sand Springs	Sand Springs Strip										
8U2	Schafer	Schafer /USFS/										
9S2	Scobey	Scobey										
8U3	Scobey	Scobey Border Station / East Poplar Intl.	Yes	Yes	Yes	Yes						
23S	Seeley Lake	Seeley Lake						Yes				
M35	Seeley Lake	Lindey's Landing Strip						Yes				
SBX	Shelby	Shelby	Yes	Yes	Yes	Yes		Yes				Yes
SDY	Sidney	Sidney-Richland Municipal	Yes	Yes	Yes		Yes	Yes	Yes	Yes		
8U4	Spotted Bear	Spotted Bear /USFS										
52S	St. Ignatius	St. Ignatius		Yes		Yes		Yes				
S64	Stanford	Stanford		Yes								
32S	Stevensville	Stevensville	Yes	Yes		Yes		Yes				
8U5	Sunburst	Sunburst										
9S4	Superior	Mineral County		Yes		Yes		Yes				
7S8	Sweetgrass	Ross International										
8U6	Terry	Terry										
THM	Thompson Falls	Thompson Falls										
9S5	Three Forks	Three Forks	Yes	Yes		Yes		Yes				
B70	Tiber Dam	Tiber Dam										
8U8	Townsend	Townsend		Yes		Yes						

Aviation Services (Cont.)

ID	Associated City	Airport	Full Service FBO	AVGas	Jet Fuel	24/7 Fuel	Rental Car	Courtesy Car	Public Transit (Public Bus)	Public Transit (Taxi)	Public Transit (Other)	Flight Instruction
8U9	Townsend	Canyon Ferry										
57S	Troy	Troy										
9U0	Turner	Turner		Yes		Yes						
7S1	Twin Bridges	Twin Bridges	Yes	Yes	Yes			Yes				
7S7	Valier	Valier		Yes	Yes							
WYS	West Yellowstone	Yellowstone	Yes	Yes	Yes		Yes			Yes	Yes	
7S6	White Sulphur Springs	White Sulphur Springs		Yes		Yes		Yes				
58S	Whitefish	Whitefish										
9U1	Wilsall	Wilsall										
9S7	Winifred	Winifred		Yes		Yes						
BB0	Winifred	Black Butte North										
BW8	Winifred	Bullwhacker										
CW0	Winifred	Cow Creek										
LC0	Winifred	Left Coulee										
MT3	Winifred	Knox Ridge										
WH0	Winifred	Woodhawk										
7S2	Winnett	Winnett										
7S4	Wisdom	Wisdom										
02T	Wise River	Wise River										
OLF	Wolf Point	L M Clayton		Yes	Yes	Yes	Yes		Yes	Yes	Yes	

3 CHAPTER THREE: AVIATION ACTIVITY

3.1 Introduction

Historical aviation activity trends provide a basis for determining existing system capacities, forecasting future demands, and identifying additional system requirements.

Aeronautical activity is recorded in the categories of air carrier, air taxi, general aviation and military. Air carrier aircraft are defined as having a seating capacity of more than 60 seats or a maximum payload capacity of more than 18,000 pounds carrying passengers or cargo for hire or compensation. This includes US and foreign flagged carriers. Air taxi aircraft are defined as those that have a maximum seating capacity of 60 seats or less or a maximum payload capacity of 18,000 pounds or less, carrying passengers or cargo for hire or compensation. General aviation operations are all civilian operations other than scheduled air services and nonscheduled air transport operations. Military operations are any operations performed by aircraft of a state or federal defense agency. **Table 3-11,** at the end of this chapter, provides an overview of total operations and based aircraft for the present year (2013) for Montana's system airports as identified in the FAA's 5010 Airport Master Record.

3.2 Tower Operations

There are currently six operating control towers in the state of Montana. Great Falls and Billings both have 24 hour towers. Bozeman, Helena, Missoula and Glacier Park International (Kalispell) have part time towers. The tower at Glacier Park International opened in 2001, so full-year historical counts are not available prior to 2002. The tower at Bozeman Yellowstone International Airport opened in the spring of 1999, so full-year historical counts are not available until 2000.

Tower operations counts provide a good indicator of the level of activity in the local airport environs. Historic tower operations are shown in **Figure 3-1** and **Table 3-12**. These counts include aircraft take-offs and landings at the towered airport under either VFR (Visual Flight Rules) or IFR (Instrument Flight Rules) flight conditions. Tower operations for air carrier and air taxi aircraft are normally instrument flight operations.

Instrument operation counts include arrivals, or departures of aircraft in accordance with an IFR flight plan. The number of instrument operations at towered Montana airports is shown in **Figure 3-2** and **Table 3-13**.

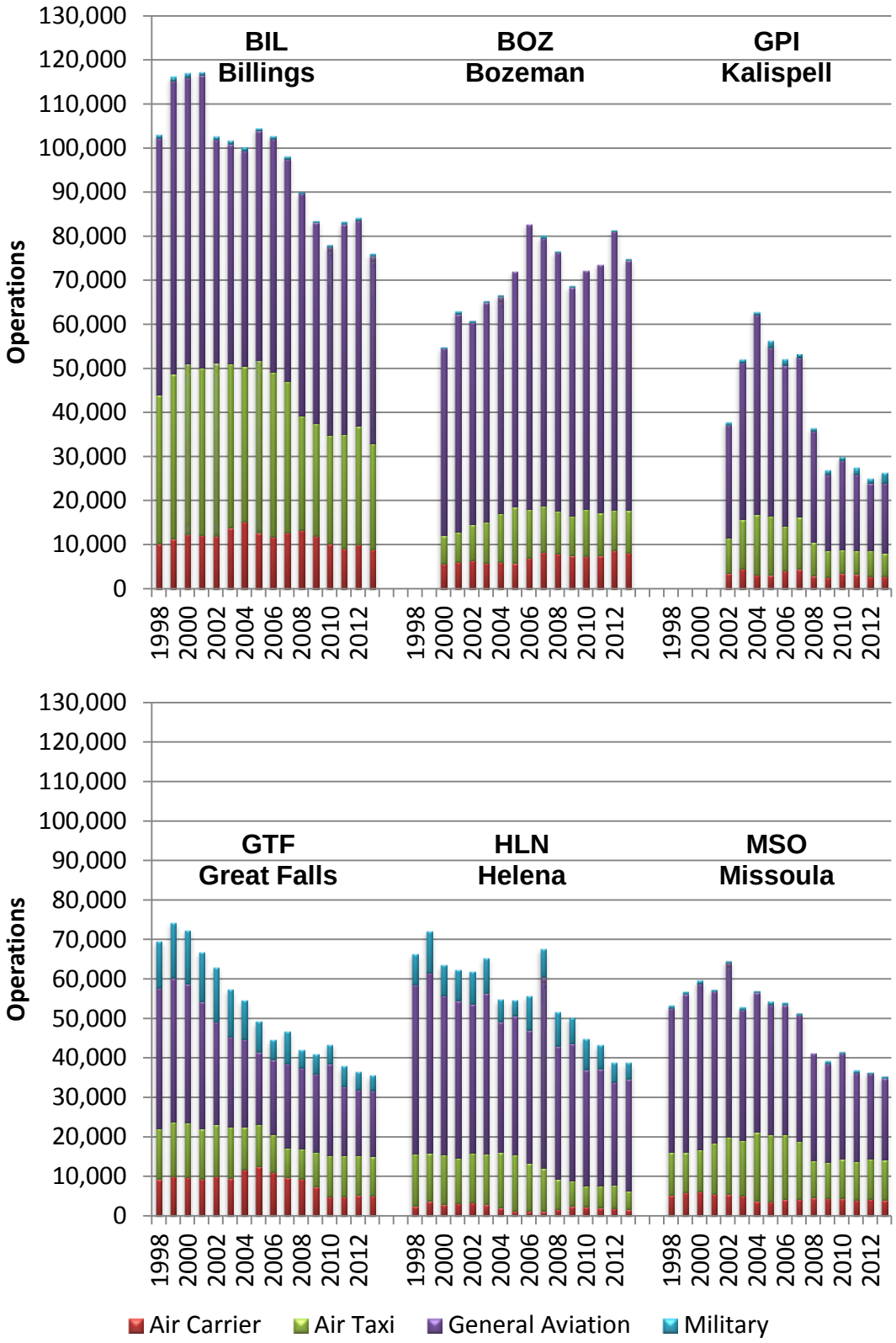


Figure 3-1: Tower Operations

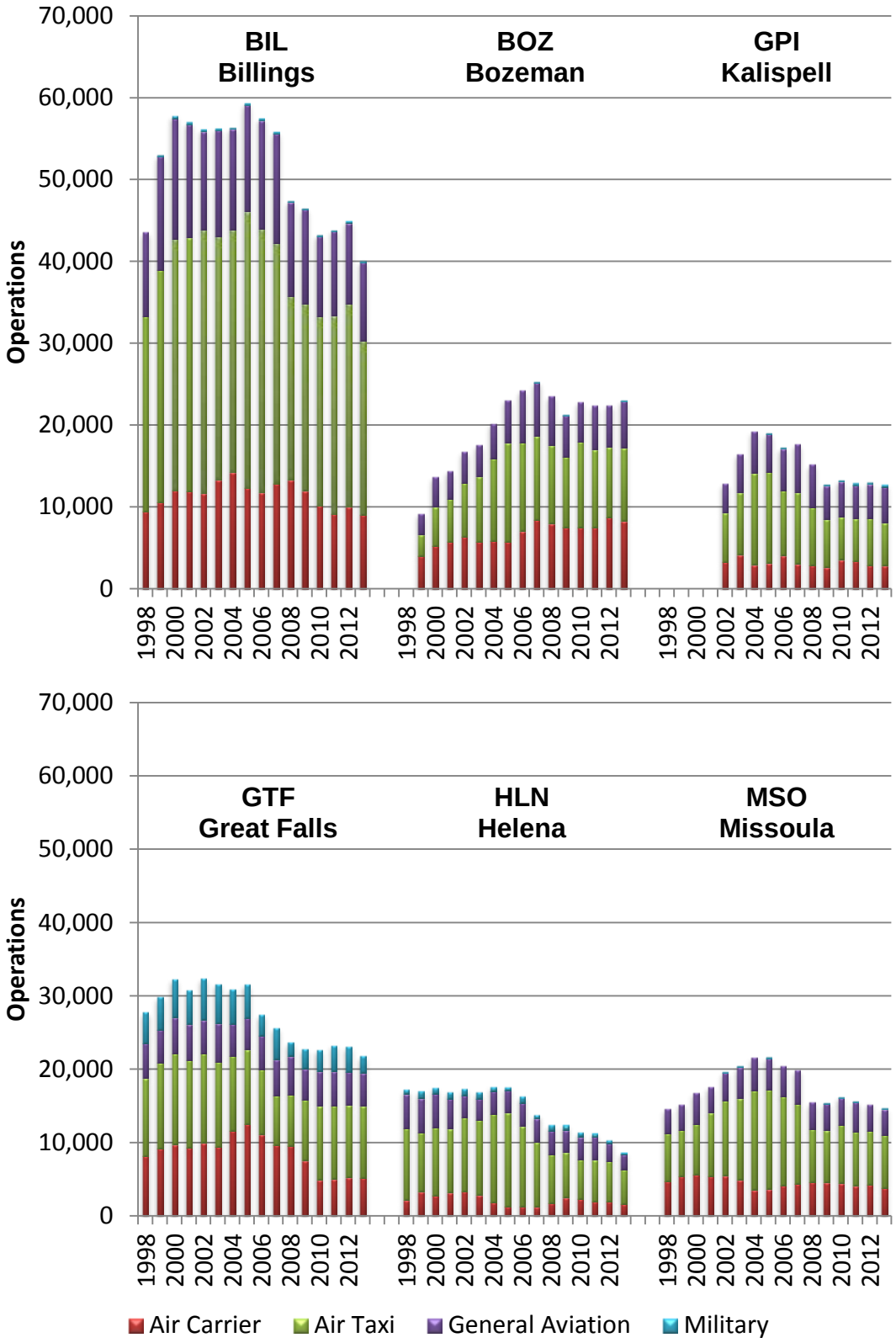


Figure 3-2: Instrument Operations at Towered Airports

3.3 Air Carrier and Air Taxi Operations

With advent of regional jets much commercial service in MT is defined as “air taxi” **Figure 3-3** and **Table 3-14** show air carrier and air taxi operations at Montana airports that provide commercial service. Data is derived from the Airport Master Record as presented in the Terminal Area Forecast.

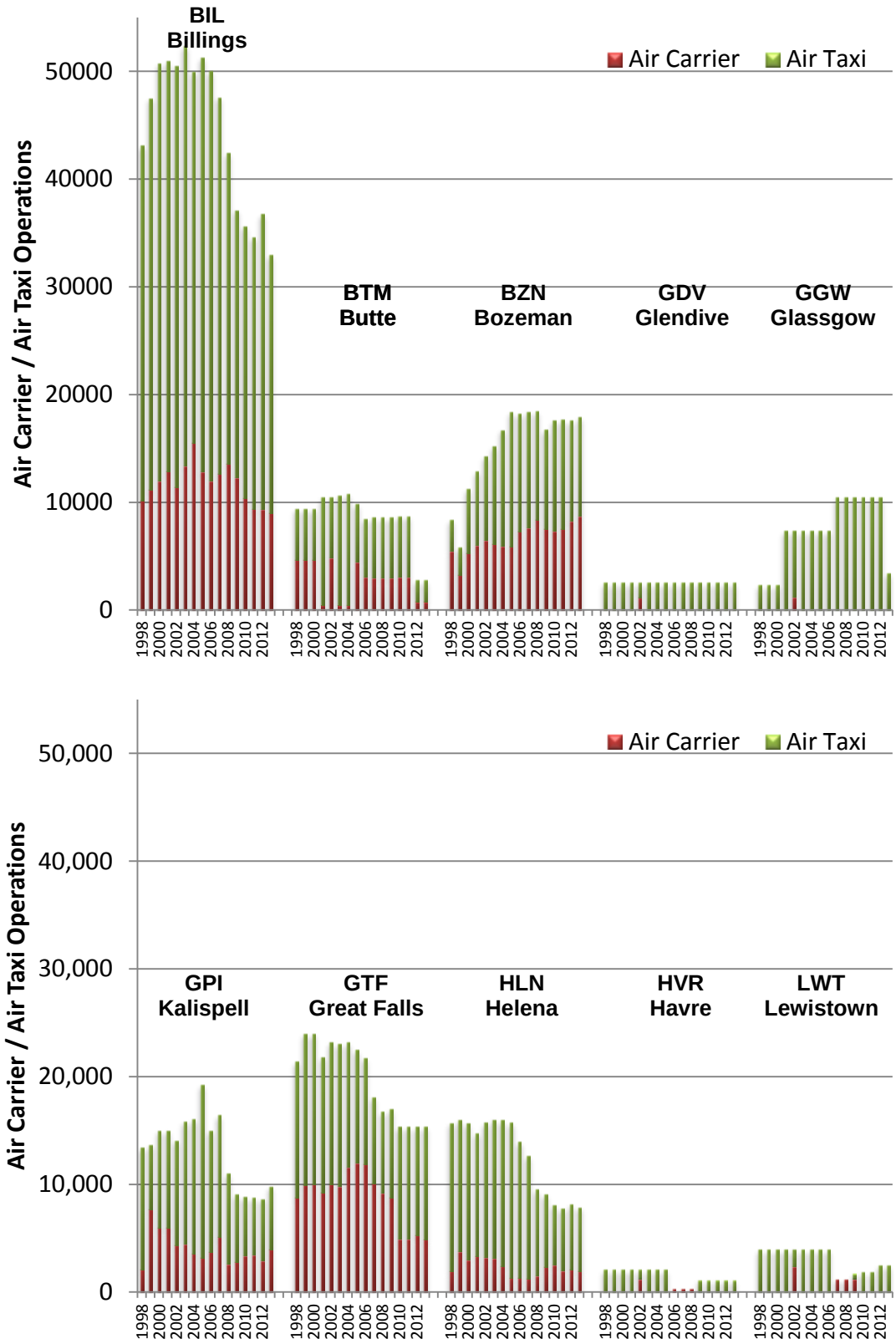


Figure 3-3: Air Carrier and Air Taxi Operations

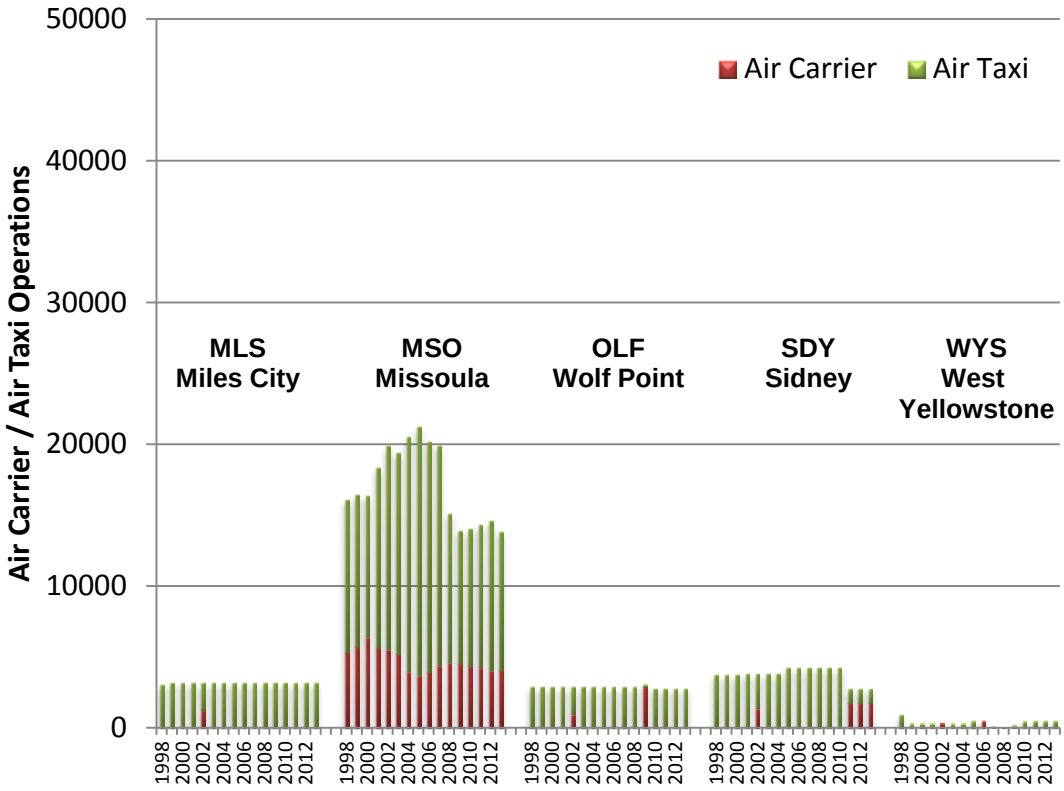


Figure 3-3 (Cont.): Air Carrier and Air Taxi Operations

3.4 Instrument Operations

Instrument operations counts include arrivals or departures of aircraft in accordance with an IFR flight plan, special VFR procedures, or an operation where IFR separation between aircraft is provided by a terminal control facility. **Figure 3-4** and **Table 3-15** show FAA Air Traffic activity data for Air Carrier and Air Taxi instrument Operations.

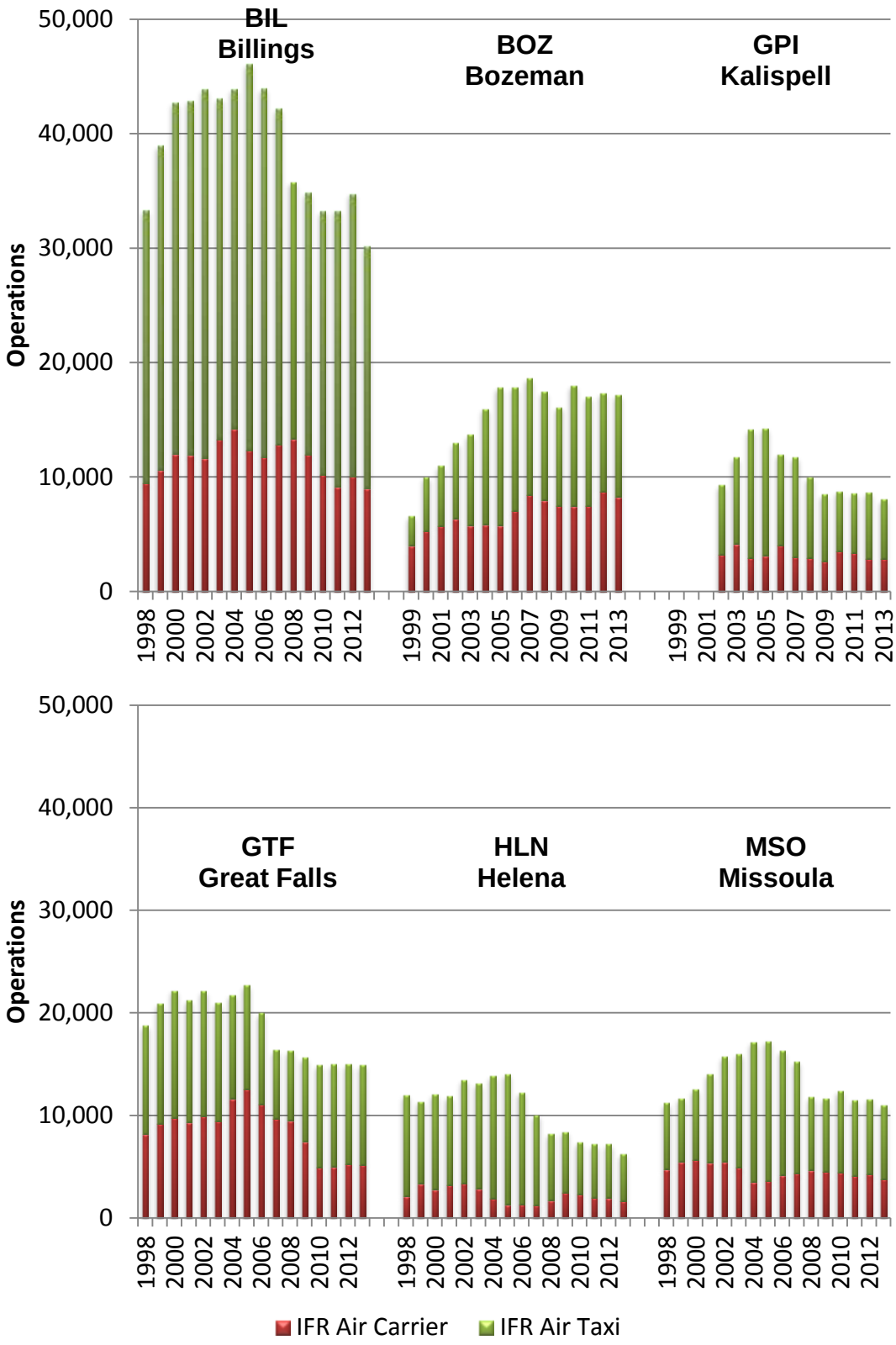


Figure 3-4: Instrument Operations - Air Carrier and Air Taxi

3.5 General Aviaiton

General aviation operations include all non-military aviation operations other than air transport operations for hire including flying for pleasure, business, or instruction. Based aircraft, fleet mixes, annual operations at towered airports and instrument approaches are common indicators of general aviation activity.

3.5.1 Based aircraft

A based aircraft is one that is stationed at an airport on a permanent basis. The FAA 5010 Airport Master Record provides based aircraft counts for each airport in the NPIAS. The 5010 database provides easy standardized comparison across the nation. The 5010 based aircraft number comes from a single site visit spot check, possibly modified by consultation with the airport manager. The 5010 form is currently the best indicator of based aircraft available, but can be influenced by differences in style and perception of each manager, other local authority, and/or the inspector.

FAA 5010 data indicates 2597 based aircraft at Montana's 126 public use airports in 2013. This is up 524 aircraft from the 2073 based aircraft indicated by FAA form 5010 counts presented in the 1998 Montana State Aviation System Plan for the system airports covered in this plan. **Table 3-16** provides a comparison by type and airport between 1998 and 2013 based aircraft from FAA 5010 data.

Historical 5010 Data is available on an annual basis for NPIAS airports through the Terminal Area Forecast (TAF). The FAA does not retain historical 5010 data for non-NPIAS airports. **Table 3-17** shows TAF Based Aircraft Counts for NPIAS airports by category in five year intervals beginning at 1998. The table includes a breakdown of fleet mix including single engine, multi-engine, jet, helicopter and "other".

3.5.2 General Aviation Annual Operations

Arrivals and departures from an airport are counted as airport operations. Operations are classified as local or itinerant. Local operations are performed by aircraft which operate in the local traffic pattern or within sight of the airport, are known to be departing for, or arriving from, flight in local practice areas (within a 20 mile radius of the airport), or execute simulated instrument approaches or low passes at the airport. All other operations are itinerant. Each take-off and each landing is counted as an airport operation.

Reliable FAA operation counts exist for the towered airports, however, accurate records of general aviation activity at Montana's non-towered airports are not available. The most accurate approximation for non-towered airports has traditionally been the FAA 5010 Airport Master Record. Aircraft operations on the 5010 generally come from a discussion between the inspector and the airport manager or other local personnel. These counts are included in **Table 3-18.**

Historical GA operations at towered airports are depicted in **Figure 3-5** and **Table 3-19** Operations are broken out by local and itinerant operations. Local GA operations are seen to be highly variable. Itinerant operations show less annual fluctuation than local. In general, itinerant operations outnumber local GA operations.

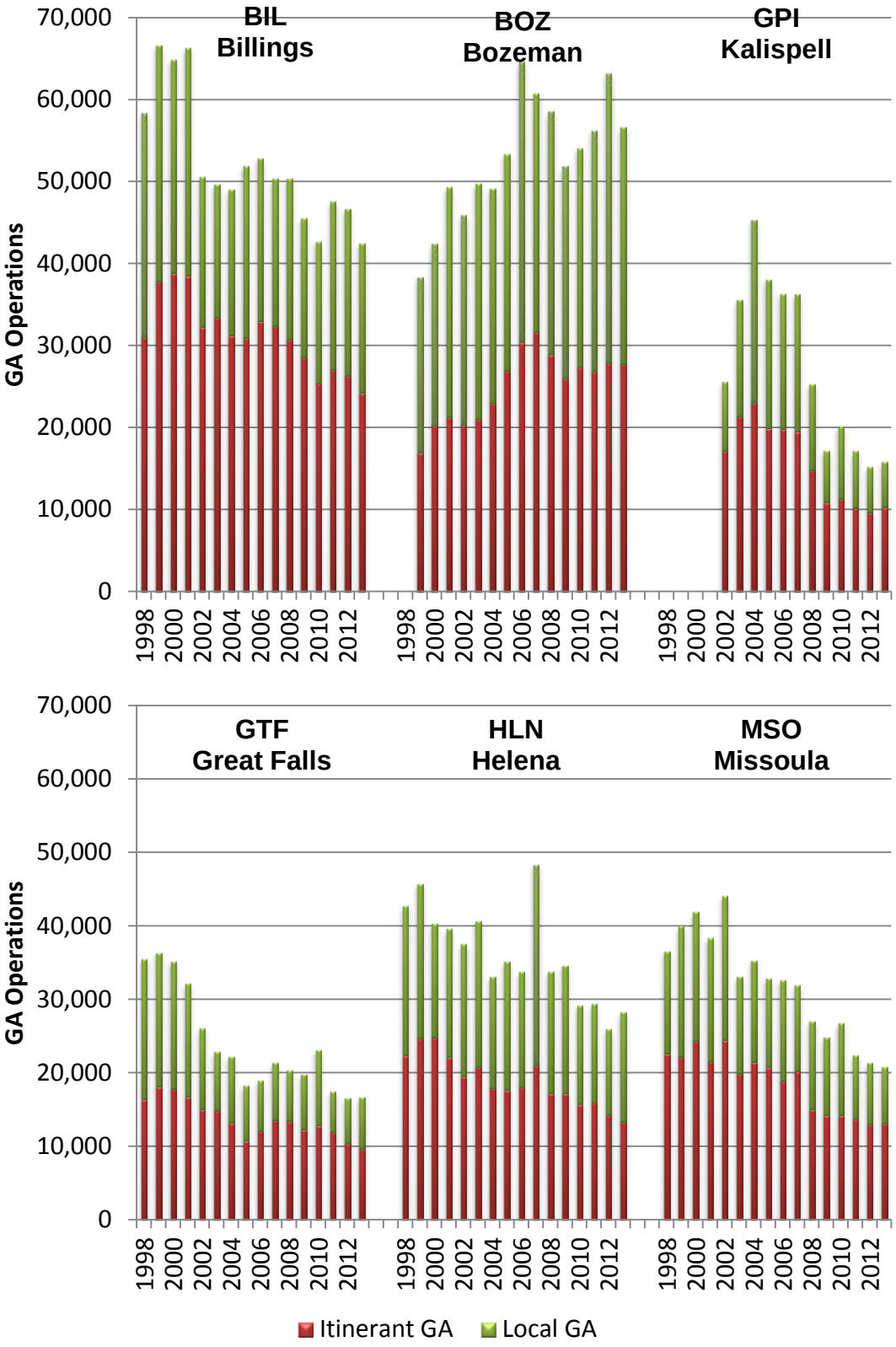


Figure 3-5: Tower Operations – General Aviation Trends

3.6 Military

Historic data on Montana's military activity is available through the FAA Airport Master Record and the FAA's Air Traffic Activity reports. Master Records are completed for all public use airports, but Air Traffic Activity reports have operations counts only for towered airports. Military aviation activity at Montana's public use airports for 1998 and 2013 as reported on FAA 5010's is shown in **Table 3-19**. Military operations at towered airports are depicted in **Figure 3-6** and .**Table 3-20.**

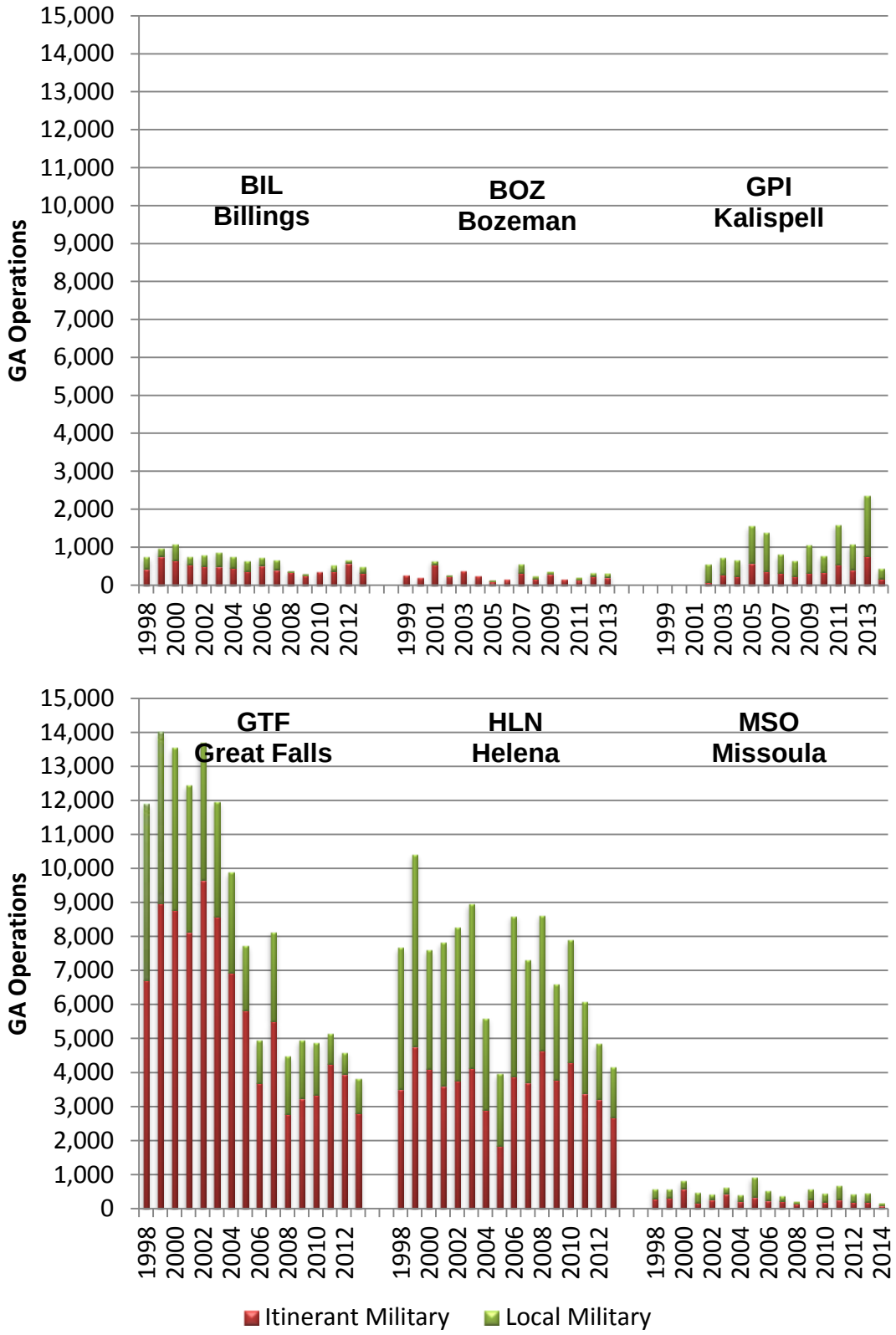


Figure 3-6: Tower Operations – Military Aviation Trends

3.7 Passenger Air Service

In order for a community to make informed decisions regarding the establishment of air service objectives, it is important to have a general understanding of the industry and the forces that influence the current airline operating environment. A summary of recent and anticipated trends in the national airline industry provides valuable educational data that help the community to set realistic air service expectations and to develop viable air service action plans.

This section provides a national perspective of the airline industry and how recent trend impacts communities, including those in Montana.

Industry Trends

The demand for aviation services and airport development is directly influenced by national trends, changes in socioeconomic factors, regulatory issues, business factors, and statewide and regional tourism. Consideration of airline issues, aircraft fleet plans, federal initiatives, hub development, and air cargo growth must be included in order to determine what the future may hold. In addition to these global and national trends, it is critical that Montana-specific trends are considered in the analysis prior to evaluating air service needs.

Since the late 1990s, many airlines continued to experience significant changes in costs, aircraft fleet and markets served. These changes impact their ability to serve destinations, including Montana. Some of the most significant changes that have impacted the service provided to Montana's airports include:

- Carrier consolidation and bankruptcies
- Legacy carrier route restructuring and changes to their operating model
- High cost of fuel
- Regional carrier absorption by larger carriers
- Regional jet aircraft introduction and increasing use
- Re-emergence of turbo prop aircraft
- Declining yields and revenues

Airline Mergers

Since 2008, four major U.S. airline mergers have occurred. Six legacy carriers[3] have merged into three (American/US Airways, United/Continental, and Delta/Northwest), and two low-cost carriers have consolidated into one (Southwest/AirTran). These four airlines now control 85 percent of the U.S. market[4]. Consideration of these four mergers are included in this section as they help provide a framework of market conditions and could possibly be attributable for any changes in Montana's air service since the 1998 system plan.

After decades of expansion into new markets and continued growth in enplanements, the start of the 21st century was not kind to the airlines. First came 9/11, which caused enplanements to drop; then came volatile fuel prices[5]; followed by the Great Recession – to which the airlines responded by consolidating, reducing capacity, and increasing ancillary revenue. America West

[3] Legacy carriers are those airlines that had established interstate routes prior to the Airline Deregulation Act of 1978
[4] http://articles.chicagotribune.com/2013-12-09/business/chi-american-airlines-merger-20131209_1_us-airways-ceo-ceo-doug-parker-united-airlines
[5] According to Airlines for America, the average price of Jet A per barrel has increased from $34.61 in 2003 to $90.26 in 2010, and has continued upwards to $122.66 in 2013

and US Airways merged in 2005; after cutting routes and streamlining operations, its stock skyrocketed. The other airlines followed suit shortly thereafter[6].

Delta Air Lines announced its merger agreement with Northwest Airlines in 2008 and completed the melding of operations in 2009 to become what was then the world's largest airline by market share. As a result of the Delta/Northwest merger, Continental Airlines was released from its SkyTeam airline alliance and joined Star Alliance shortly thereafter to more closely align with United Airlines and US Airways. Continental and United Airlines signed a deal in 2010 that led to an eventual merger, which was completed in 2011 and made it the world's largest airline by revenue passenger miles. In the meantime, Southwest Airlines announced its acquisition of AirTran Airways in late 2010 and obtained a single operating certificate in 2012, but complete integration is still underway. Most recently, American Airlines, which had been lingering in Chapter 11 bankruptcy since 2011, and US Airways announced plans to merge in early 2013, which would then become the world's largest airline by passengers carried. This merger is expected be complete in 2015.

U.S. airlines made a profit in 2000, and then lost money in seven of the next nine years.[7] According to the Bureau of Transportation Statistics, U.S. Airlines lost $23.7 billion in 2008 and appeared likely to continue down that path. However U.S. carriers in aggregate have made money each year since 2010, including $98 million in 2012, and $12.7 billion in 2013,[8] and are projected to make record profits in 2014. The airline mergers have increased both economies of scale and market share allowing airlines to achieve gains in added revenue and savings in operating costs. The added incentives for Southwest's acquisition of AirTran are the elimination of a low-cost competitor, access to the Atlanta market, and the addition of landing slots at New York City and Washington, D.C. airports. Airline merger impacts related to Montana's passenger air service is presented in Chapter 5.

Structure of Passenger Airline Service in Montana

Montana currently has 13 airports with scheduled commercial service flights to serve its population centers. The seven largest airports serve the State's large- and medium-sized population centers and include: Billings, Bozeman, Butte, Great Falls, Helena, Kalispell, and Missoula. The remaining six Montana airports serve the State's smaller communities including: Glasgow, Glendive, Havre, Sidney, West Yellowstone, and Wolf Point. Montana's air service at its small airports in eastern Montana is centered around Billings, the principal gateway for connecting passengers to the national transportation system. Billings serves as Cape Air "state hub" for other communities in Montana; that is, most of the State's smaller markets connect only via Billings. Billings has several carriers which offer service to several out-of-state destinations. In addition, two other markets, Butte and West Yellowstone, are served by Sky West with non-stop routes to Salt Lake City.

For the purpose of this report, the commercial airports in Montana are broken into the following two categories according to the type of airline service they receive:

Commercial Service Airports (7)

- Billings-Logan International Airport (BIL).
- Bozeman Yellowstone International Airport (BZN).

[6] http://www.nytimes.com/2013/08/17/opinion/nocera-merge-is-what-airlines-do.html?_r=0
[7] http://www.forbes.com/sites/tedreed/2013/02/25/airlines-not-yet-where-they-want-to-be-make-21-cents-per-passenger/
[8] http://www.latimes.com/business/la-fi-mo-airline-profits-skyrocket-20140505-story.html

- Missoula International Airport (MSO).
- Bert Mooney Airport (Butte) (BTM).
- Great Falls International Airport (GTF).
- Helena Regional Airport (HLN).
- Glacier Park International Airport (Kalispell) (FCA).

Essential Air Service (EAS) Airports (6)

- Glasgow International Airport – Wokal Field (GGW).
- Dawson Community Airport (Glendive) (GDV).
- Havre City-County Airport (HVR).
- Sidney-Richland Municipal Airport (SDY).
- Yellowstone Airport (West Yellowstone) (WYS).
- L. M. Clayton Airport (Wolf Point) (OLF).

Each of the six smallest airports in Montana is supported through the U.S. Department of Transportation's (US DOT's) Essential Air Service (EAS) program. Two carriers, Cape Air and SkyWest, provide EAS service in Montana. These carriers currently receive over $13.2 million[9] combined in EAS subsidies to provide service to the seven communities annually. The EAS program and its effects on Montana's communities are discussed in detail in Chapter 5.

There are several air carriers that serve Montana's airports. Seven of the State's 13 airports are served by one regional carrier only; six of those communities are those with EAS-supported service with either Cape Air or Delta SkyWest. Table 3-1 summarizes the carrier activity at Montana's airports as of July 2014 (*Montana Office of Tourism, 2014*). Billings, Bozeman, Great Falls, and Missoula are served by five carriers each.

Table 3-1: Scheduled Carriers (Including Regional Partners) Serving Montana Airports (As of July, 2014)

	Alaska/ Horizon	Allegiant	Cape Air	Delta	Frontier	United
Billings	X	X	X	X		X
Bozeman	X	X		X	X	X
Butte				X		
Glasgow[1]			X			
Glendive[1]			X			
Great Falls	X	X		X	X	X
Havre[1]			X			
Helena	X			X		X
Kalispell	X	X		X		X
Missoula	X	X		X	X	X
Sidney[1]			X			
West Yellowstone[1]				X		
Wolf Point[1]			X			

Source: *Montana Office of Tourism, 2014*

Notes: [1]Airport currently receiving service subsidized by the US DOT's Essential Air Service Program. *Lewistown and Miles City removed for cancellation of scheduled passenger service in 2013.

[9] U.S. DOT, Subsidized EAS Report

In 2013, eight of the State's airports provided cargo needs and served more than 48,600 tons of mail, express parcel, and freight which passed primarily through the airports at Billings, Bozeman, Butte, Great Falls, Helena, Kalispell, and Missoula. Billings International is a regional cargo hub for UPS, while FedEx operates a regional hub at Great Falls International. Both airports are major regional facilities for the U.S. Postal Service as well. The remaining airports provide origin and destination cargo and mail activity, mainly loaded in the bellies of passenger aircraft or in small "feeder" aircraft for cargo carriers.

Statewide Airline Passenger Activity

Statewide Current Service

Table 3-2 presents the scheduled service available at Montana's airports as of July 2014. Billings-Logan International had nonstop service to 11 destinations and was served by five carriers. The airport had approximately 72 weekly departures or an average of 10 per day. Unlike Billings, the other airports in the State serve origin and destination (O&D) traffic only, with limited connecting traffic. Bozeman Yellowstone International and Missoula International Airports offer 52 and 65 weekly departures on average, respectively. Bozeman International and Missoula International are both served by five carriers, providing nonstop service to over eight nonstop locations. The nonstop destinations served by these carriers include hub airports at Denver, Minneapolis, Salt Lake City, and Seattle.

Table 3-2: Scheduled Non-Stop Passenger Service at Montana Airports (as of July, 2014)

Category Airport	Number of Carriers[1]	Nonstop Daily Destination Served	Estimate Weekly Departures
Commercial Service Airports[10]			**294**
Billings	5	11	72
Bozeman	5	8	52
Great Falls	5	5	33
Helena	3	5	33
Kalispell	4	6	39
Missoula	5	10	65
EAS Airports[11]			**80**
Butte	1	1	(2x Day) 10
Glasgow	1	1	(2x Day) 10
Glendive	1	1	(2x Day) 10
Havre	1	1	(2x Day) 10
Sidney	1	1	(5x Day) 25
West Yellowstone	1	1	(1x Day) 5
Wolf Point	1	1	(2x Day) 10

Note: [1]If an airport is served by a mainline carrier such as United and its regional partner (United Express), it is counted as one carrier. Source: *CDM Smith*

[10] Based on a 7-day week; Sunday through-Saturday, flight schedule.
[11] Based on a 5-day; Monday through Friday, flight schedule

Two carriers serve the eight EAS airports in Montana; these include Cape Air and SkyWest Airlines. Operating a fleet of 9- seat Cessna-402 aircraft, Cape Air operates year-around flights to and from Glasgow, Glendive, Havre, Sidney, and Wolf Point to Billings. While Butte and West Yellowstone offer nonstop service to Salt Lake City on SkyWest. West Yellowstone service is on a seasonal basis between early June and late September. SkyWest service to Butte is on 50-seat CRJ-200, while West Yellowstone service is on a 30-seat EMB-120 aircraft operating as a Delta Connection flight[12].

Statewide Total Enplanements

Total Montana enplanements increased between 1999 and 2013, up 37.3 percent overall (see **Table 3-3**). An enplanement is defined as a revenue-producing passenger boarding an aircraft as an originating, through, or connecting passenger. Three of the largest airports (Bozeman, Kalispell and Missoula) accounted for most of this growth. At the Commercial Service Airports, a cumulative increase of 37.3 percent occurred between 1999 and 2013. One Commercial Service Airport, Butte, experienced a decline in enplanements over the period, while Bozeman saw enplanements double during the time period, representing the airport with the greatest growth[13]. In 2013, nearly 1.7 million passengers enplaned scheduled commercial airline flights at Montana's airports. Nearly 99 percent of these passengers enplaned flights at the seven Commercial Service Airports. The EAS airports in Montana comprised just over one percent of total statewide enplanements in 2013 (MDT Aeronautics Division 2013 Data).

Furthermore, the EAS airports of Glasgow, Sidney, West Yellowstone, and Wolf Point all had increased enplanement totals from the previous 2007 Air Service Study. This increase can be attributed to airfare cost, passenger demand related to Bakken oil and gas development, and frequency of service. It's important to point out that Lewistown and Miles City have been removed as EAS airports as of 2013 since their subsidy per passenger was too high based on federal guidelines. These airports comprised the most significant decrease, more than -85%, in enplanements from 1999-2013. Glendive is currently trailing this figure by -38% enplanements and will need further evaluation to determine long-term viability.

[12] http://www.destinationyellowstone.com/node/10377

[13] Note: As of 2012, Butte now provides EAS services to Salt Lake City. An increase of 8,000 enplanements from 2012-2012 should be noted.

Table 3-3: Montana Enplanements (1999-2005)

Category	Airport	1999	2000	2001	2002	2003	2004	2005
Commercial Service Airports		**1,195,070**	**1,260,001**	**1,260,580**	**1,307,410**	**1,314,399**	**1,397,815**	**1,487,226**
	Billings	339,855	359,524	354,054	382,550	369,473	392,091	398,037
	Bozeman	221,997	242,650	256,134	274,499	281,502	308,985	335,679
	Butte	49,133	48,821	44,287	42,214	37,996	40,319	41,853
	Great Falls	136,066	141,833	130,543	129,487	125,160	133,246	160,878
	Helena	79,862	76,473	77,742	77,173	76,200	84,303	93,218
	Kalispell	146,770	157,962	154,780	161,285	170,307	178,832	190,964
	Missoula	221,387	232,738	243,040	240,202	253,761	260,039	266,597
EAS Airports		**15,789**	**15,106**	**14,524**	**12,316**	**12,469**	**13,397**	**15,863**
	Glasgow	1,989	2,009	2,236	2,227	1,972	1,753	1,774
	Glendive	1,139	1,111	938	965	970	898	934
	Havre	1,378	1,237	1,140	1,124	1,097	1,147	1,526
	Lewistown**	1,052	1,016	735	862	744	758	748
	Miles City **	1,478	1,404	956	1,219	1,076	1,085	1,175
	Sidney	2,457	2,789	2,609	2,556	1,880	2,344	3,401
	West Yellowstone	4,816	3,838	4,044	3,886	3,250	3,985	4,366
	Wolf Point	1,480	1,702	1,866	1,477	1,480	1,427	1,939
Total - All Airports		**1,210,859**	**1,275,107**	**1,275,104**	**1,321,726**	**1,326,868**	**1,411,212**	**1,503,089**

Sources: MDT Aeronautics Division 2013

**** DENOTES AIRPORT REMOVAL FROM EAS PROGRAM; LEWISTOWN AND MILES CITY ARE INACTIVE AS OF 2013.**

Table 3-3: Montana Enplanements (2006-2013) (Continued)

Category / Airport	2006	2007	2008	2009	2010	2011	2012	2013	% Change Total (1999-2013)
Commercial Service Airports	**1,437,291**	**1,498,218**	**1,446,203**	**1,443,279**	**1,499,999**	**1,575,838**	**1,680,323**	**1,640,982**	**37.3%**
Billings	398,747	424,562	366,623	396,149	389,401	407,960	441,762	387,629	14.1%
Bozeman	317,850	335,274	351,062	342,714	365,210	397,822	433,829	442,540	99.3%
Butte	36,490	35,719	22,956	23,922	24,722	23,719	20,471	28,956	-41.1%
Great Falls	146,172	149,687	148,299	150,985	158,934	172,415	190,189	185,724	36.5%
Helena	87,208	83,723	85,862	88,867	98,130	102,358	97,026	98,379	23.2%
Kalispell	175,699	185,775	184,106	159,758	174,795	179,034	194,030	200,729	36.8%
Missoula	275,125	283,478	287,295	280,884	288,807	292,530	303,016	297,025	34.2%
EAS Airports	**13,824**	**12,878**	**5,222**	**12,023**	**13,056**	**16,138**	**24,313**	**21,143**	**33.9%**
Glasgow	1,400	1,528	-	1,148	1,594	1,739	1,945	2,039	2.5%
Glendive	863	733	-	243	423	582	742	702	-38.4%
Havre	1,305	1,133	-	729	954	1,001	1,186	1,177	-14.6%
Lewistown**	624	533	446	1,036	700	349	337	152	-85.6%
Miles City**	1,049	911	-	887	1,029	559	360	159	-89.2%
Sidney	2,892	2,799	598	2,762	3,429	5,174	11,799	9,046	268.2%
West Yellowstone	4,020	3,829	4,178	4,318	4,433	5,323	4,957	5,290	9.8%
Wolf Point	1,671	1,412	-	900	494	1,411	2,987	2,578	74.2%
Total - All Airports	**1,451,115**	**1,511,096**	**1,451,425**	**1,455,302**	**1,513,055**	**1,591,976**	**1,704,636**	**1,662,125**	**37.3%**

Sources: MDT Aeronautics Division 2013

**** DENOTES AIRPORT REMOVAL FROM EAS PROGRAM; LEWISTOWN AND MILES CITY ARE INACTIVE AS OF 2013.**

3.8 Air Cargo

A number of Montana airports support schedule air cargo aircraft on a regular basis. While passenger airlines do carry some cargo and mail, the vast majority of air cargo traffic arrives and departs on air cargo aircraft. In fact, Great Falls International and Billings International Airports are the only Montana airports with dedicated cargo jet activity which are operated by FedEx Express and UPS. A number of other airports in the state support turbo-prop and piston engine cargo aircraft, many of which are contracted to feed air cargo to and from the cargo jets. This section of the Montana System Plan identifies the airports and air cargo carriers operating within the state, as well as identifies the types of cargo commonly transported on air cargo aircraft.

Air Cargo Industry Overview

The movement of air cargo takes place via one of three types of carriers: all-cargo, integrated express, or on passenger airlines as belly compartment cargo. Integrated express operators rely on a hub-and-spoke system and are contracted to move the customer's goods door-to-door, providing shipment, collection, transport via air/truck, and delivery. Integrated express operators include FedEx Express, UPS, and DHL (which had domestic pickup and delivery service discontinued in January 2009 but international traffic continues). All-cargo carriers operate airport-to-airport freight services for their customers but do not offer passenger service.

All-cargo carriers include Polar Air Cargo, Atlas Air, and Kalitta Air Cargo, to name a few. Internationally, Korean Air, China Airlines, Lufthansa, and Emirates are passenger airlines with their own fleet of dedicated freighter aircraft. All-cargo carriers offer scheduled service to major markets throughout the world using widebody and/or containerized cargo aircraft. Air cargo services, or "belly cargo," provided by passenger airlines vary in scope and size from airline to airline, based on differences in aircraft operating fleet. A regional airline with a fleet of turboprop and regional jets cannot accommodate bulky cargo. Passenger airlines operating widebody aircraft have containerized lower decks and are capable of handling large shipments. These air cargo networks are supplemented in the air by regional/feeder airlines and on the ground by freight forwarders/road feeder service (RFS) trucking companies.

Air cargo is typically comprised of lightweight, time-sensitive, and high-value commodities. Common examples of air freight include perishables (flowers, fish, meat, produce), computers and peripherals, telecommunications equipment, motor vehicle parts, aircraft and aerospace parts, oil and gas drilling equipment, pharmaceuticals, clothing, medical devices and supplies, as well as many others. A 2010 study for the Cascade County Commission found that the Great Falls market commodities commonly transported inbound to the region by integrated express carriers include: aerospace parts and equipment, legal and financial documents, new cell phones, wind energy parts and equipment for maintenance and repair of local wind turbines, mining parts and equipment, and oil and gas extraction parts and equipment. Additionally there is a firm in Lincoln, MT that develops and ships wind turbine repair kits that include all the parts, tools and accessories to repair wind turbines. Medical diagnostic equipment, pharmaceuticals and medical devices are common inbound commodities to local hospitals. Flowers are commonly shipped to retailers in the region. Transport of tractor and heavy equipment parts is becoming more common as many local tractor and ranch suppliers in the region carry smaller inventories and rely more often on overnight express shipments.

The quantity of air cargo moving between origin and destination points, and also the amount of cargo transferring via an airport, is closely related to the market area size and airport infrastructure. Montana's busiest cargo airports are located near its largest cities which produce consistent passenger and air cargo traffic demand. Consequently, these facilities must be able to support large commercial aircraft capable of accommodating market demand. Smaller markets in the state produce demand for air cargo service but do not warrant cargo jet aircraft. These markets are typically served by contracted piston and turbo prop aircraft which transport cargo to and from cargo jet aircraft located at the larger airports in Montana. These smaller airports are typically commercial service airports although general aviation airports may also be utilized by the integrated express carriers.

A significant number of air cargo carriers operating in Montana are contracted feeders for larger integrated express carriers such as FedEx and UPS. Serving the air cargo needs of small market areas is often better accommodated by small single or twin engine piston or turboprop aircraft. While large cargo aircraft payloads can range from 18,000 to 95,000 pounds for narrow-body jets, the capacities of regional/feeder aircraft have payloads that range from 800 up to 7,000 pounds. This type of operation is often more economical than trucking to markets that are relatively isolated from the larger distribution network (remote areas) or those where the cargo demand does not warrant a full-size truck (LTL shipments). Montana has many such small markets and its geography and diverse economy make the state well suited for regional/feeder cargo airlines.

In addition to the processes by which air cargo is moved by aircraft at Montana airports, it is also important to understand how freight moves throughout the state on the ground. Integrated

express carriers such as FedEx, UPS, and to a lesser extent DHL, utilize both trucks and vans to move air cargo between airports and their respective processing centers. FedEx and UPS have two distinct business models that stem from their origins as exclusive air and exclusive trucking carriers, respectively. UPS was founded primarily as a trucking company and did not establish its own airline until 1988, which was in part a response to the success of competitor FedEx. Up until that point UPS was relying on contracts with commercial airlines to transport packages by air. FedEx was established as an air cargo airline in 1971 and began overnight air operations in 1973. FedEx did not get into the ground freight game until 1998 with the purchase of several trucking companies, which enabled FedEx to offer ground logistics services in addition to its overnight express airline component.

FedEx Express is the original overnight courier service that provides next day air service and time-definite international service. All Express packages pass through one of its eight domestic hubs or five international hubs depending on the region. FedEx Ground is the company's guaranteed day-definite delivery service within the U.S. and Canada that provides cost savings over the time-definite Express service. FedEx Freight is the company's less-than-truckload (LTL) service division, which consolidates multiple small freight shipments from multiple customers onto one truck. Each of FedEx's divisions operates independently, with no parcels from one service mixing with another. The surface transport of FedEx Express parcels are handled exclusively by FedEx Express trucks/vans (purple/orange/white brand) and sorting facilities.

In contrast, UPS parcels are transported by whatever means necessary to get shipments to their destination within the specified time-frame. UPS surface transport trucks/vans and sorting facilities handle both air and ground shipments. This makes identifying UPS air cargo related operations more challenging. UPS indicates that their air/overnight product comprises approximately 15 percent of all UPS activity, whereas 100 percent of FedEx Express activity is related to air cargo.

Montana's Air Cargo Trends

Montana has seven FAA Primary Commercial Service Airports which accommodate commercial passenger jet traffic as well as scheduled air cargo service. These airports include:

- Bert Mooney (Butte) – BTM
- Billings-Logan International – BIL
- Bozeman Yellowstone International – BZN
- Great Falls International – GTF
- Helena Regional – HLN
- Glacier Park International (Kalispell) – GPI
- Missoula International – MSO

Two other Commercial Service Airports that accommodate scheduled passenger traffic and ad-hoc air cargo service are:

- Sidney-Richland Municipal – SDY
- Yellowstone – WYS

Passenger service for Sidney-Richland Municipal and Yellowstone are provided under Essential Air Service contracts. Air service into Yellowstone only occurs on a seasonal basis in

accordance with tourist volumes. Montana's six other airports that receive minor scheduled passenger air service as well as scheduled and air cargo service are:

- Glasgow International (Wokal Field) – GGW
- Dawson Community – GDV
- Havre City-County – HVR
- Lewistown Municipal – LWT (recently lost EAS service)
- Miles City (Frank Wiley Field) – MLS (recently lost EAS service)
- L.M. Clayton (Wolf Point) – OLF

All of the above airports maintained scheduled passenger service subsidized through Essential Air Service; however, as of February 2014 only four have continued to have air service. The EAS contracts for Lewistown Municipal and Miles City were eliminated in July 2013. Despite this fact, these airports are included in this analysis due to their capability in facilitating air cargo operations.

As shown in **Table 3-4** Montana's airports handled nearly 56,000 tons of total air cargo in 2012, which represents a decrease of -2.6 percent annually since 2003. In this same time frame, only one of Montana's Primary Commercial Service Airports – Missoula International – experienced growth in total tonnage handled (3.1 percent annually). The only other airport to experience a gain in total air cargo tonnage was Sidney-Richland Municipal, which has experienced on-again-off-again air cargo operations and therefore sees relatively small volumes. The airports with the largest statewide market share of air cargo tonnage are Billings Logan International and Great Falls International. These, as well as other airports handling freight, are discussed in the following analysis.

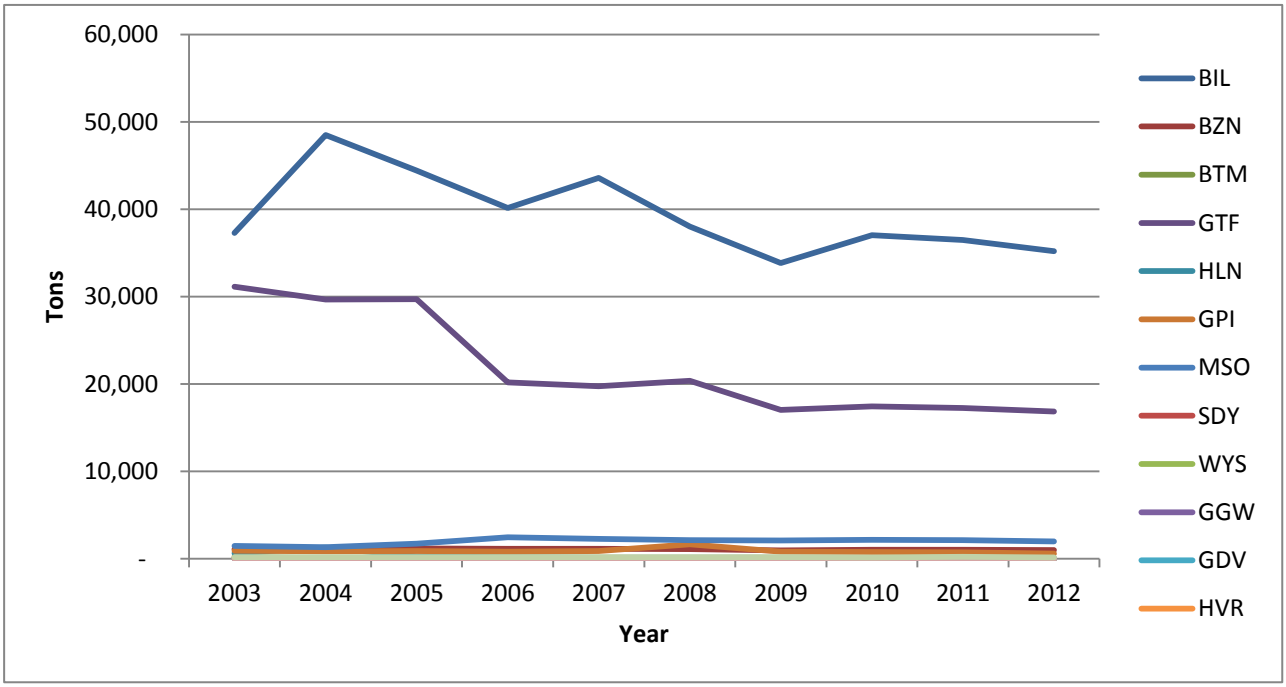
Table 3-4: Montana Annual Air Cargo Tonnage by Airport: 2003-2013

AIRPORT	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013*	2003-2012 AAGR
Primary Commercial Service Airports												
Billings Logan International	37,293	48,490	44,439	40,153	43,562	38,008	33,834	37,007	36,475	35,199	29,654	-0.6%
Bozeman Yellowstone International	1,096	1,101	1,182	1,132	1,128	1,113	952	1,037	1,018	1,000	871	-0.9%
Bert Mooney (Butte)	241	44	20	96	76	36	2	1	1	-	-	-100.0%
Great Falls International	31,112	29,678	29,688	20,187	19,725	20,354	17,051	17,424	17,263	16,868	15,794	-5.9%
Helena Regional	622	1,306	270	197	127	109	109	108	59	47	39	-22.7%
Glacier Park International	910	858	868	803	879	1,670	796	766	739	588	487	-4.3%
Missoula International	1,460	1,338	1,734	2,474	2,293	2,141	2,078	2,170	2,138	1,979	1,614	3.1%
Other Airports												
Sidney-Richland Municipal	2	1	3	3	0	-	1	89	13	5	2	11.7%
Yellowstone	0	0	-	0	0	0	0	0	-	-	-	
Glasgow International	5	4	1	3	1	4	4	7	7	3	2	-6.6%
Dawson Community	2	1	1	1	0	-	1	3	-	-	-	-100.0%
Havre City-County	1	1	1	0	0	-	-	-	-	-	-	-100.0%
Lewiston Municipal	3	2	2	0	0	-	-	-	-	-	-	-100.0%
Miles City	9	1	1	1	0	-	-	-	-	-	-	-100.0%
L.M. Clayton (Wolf Point)	179	192	186	177	188	180	199	136	210	159	144	-1.1%
STATEWIDE TOTAL	**72,935**	**83,017**	**78,396**	**65,226**	**67,982**	**63,615**	**55,028**	**58,747**	**57,923**	**55,848**	**48,607**	**-2.6%**

Source: RITA-BTS US DOT T-100 Data

*Latest Available Data: October 2013

The tonnages listed for each individual airport in **Table 3-4** provide ground-level insight into the year-over-year changes in air cargo. **Figure 3-7** provides context to the data by graphically depicting Montana's air cargo tonnage trends over the last decade.



Source: RITA-BTS USDOT T-100 Data
Latest Available Data: October 2013

Figure 3-7: Montana Annual Air Cargo Tonnage Trends by Airport: 2003-2012

As depicted in **Figure 3-7**, several observations can be made based on the trend lines of Billings Logan International (BIL) and Great Fall International (GTF). Over the last decade, air cargo volumes have declined overall, which is consistent with national domestic air cargo trends. The air cargo market faces stiff competition, not just among carriers, but from alternative shipping modes such as trucks primarily, but also container ships, and rail cars. The recession of the late 2000s and high fuel prices has slowed demand for air cargo somewhat and negatively impacted air cargo carriers just as it has passenger airlines. The volatility exhibited by BIL and GTF are also consistent with the market volatility experienced industry-wide since the terrorist attacks of September 11, 2001.

Montana's Air Cargo Carrier Networks

Integrated express operators are the dominate air cargo carriers in Montana. Integrated express operators provide their customer with door-to-door service and have a national and, in most cases, worldwide network. The integrated express operators in Montana with scheduled air cargo aircraft are:

- FedEx Express
- United Parcel Service (UPS)

UPS uses Billings Logan International as a center of aircraft operations, while FedEx Express uses Great Falls International as a regional hub. Both of these integrators contract with feeder airlines that also operate out of Billings and Great Falls to locations throughout the state and region. Many of the feeder cargo aircraft in Montana operate what is known as "long-thin" routes, in air cargo industry vernacular. Long-thin routes cover long distances with a low

volume of cargo. Long-thin routes are usually operated using aircraft with low operating costs albeit at slower speeds. Many of the intrastate cargo routes to and from Billings Logan International, for example, are operated using single-engine aircraft such as the Cessna 208 (Cessna Caravan). These aircraft offer fairly quick transport and have adequate cargo capacity for the markets they serve.

FedEx Express brings in their cargo from their national sorting hub in Memphis, Tennessee, on Boeing 757-200s. FedEx selected Great Falls for it regional sort hub in 2000. The 78,000-square-foot regional hub can accommodate 3,000 parcels per hour with a capability of servicing 6,000 parcels per hour. The facility also has an air cargo apron capable of accommodating six wide body aircraft. FedEx operates smaller feeder aircraft, which fly air cargo to other cities within the State. FedEx also serves the Billings market area with Boeing 757-200 jet service from Memphis and Denver. These air cargo routes are identified in **Table 3-5** below.

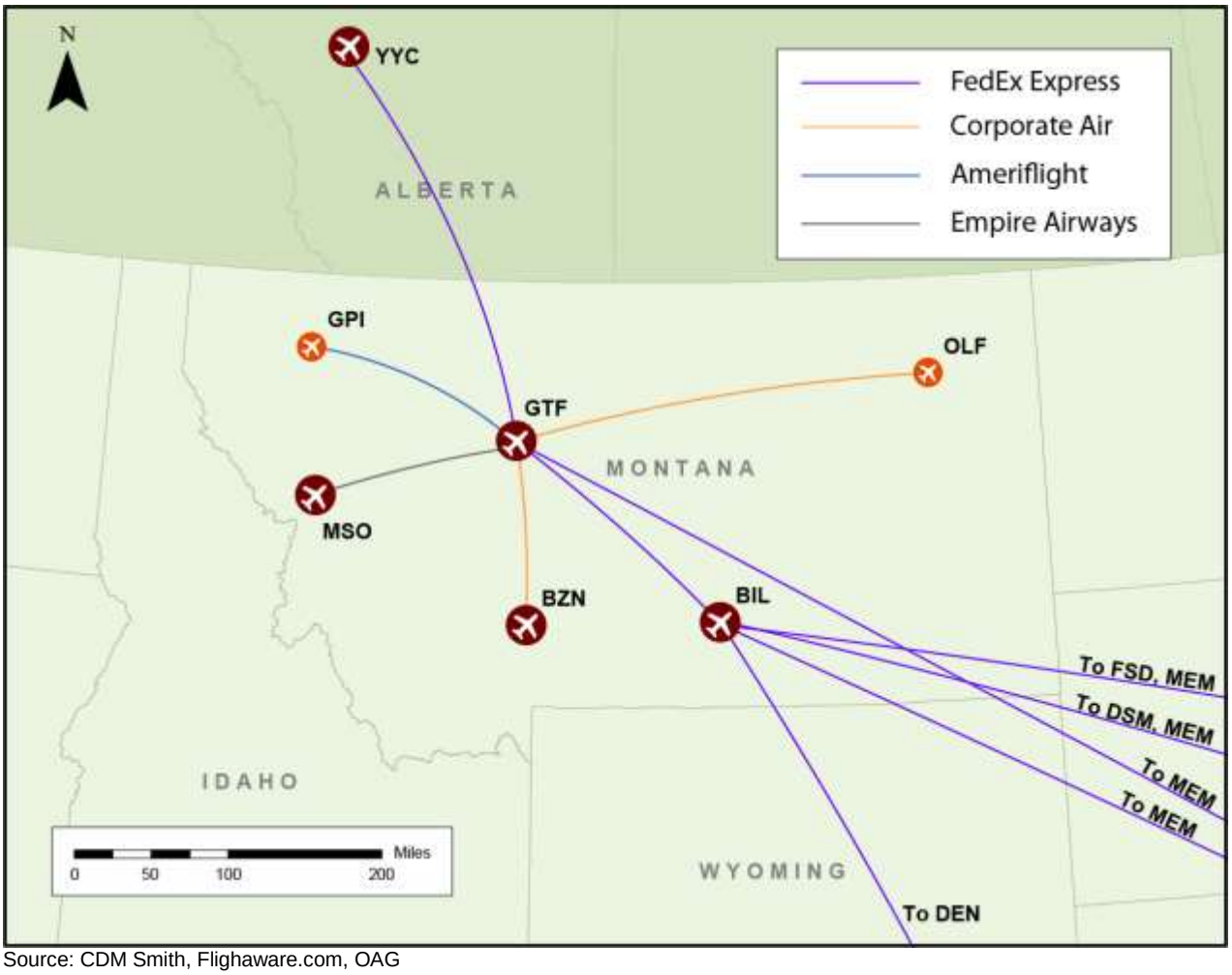
Table 3-5: Air Cargo Carrier Segments in Montana

Cargo Carrier	Aircraft Type	Morning Route			Evening Route		
		Origin	1st Stop	2nd Stop	Origin	1st Stop	2nd Stop
Integrated Express							
FedEx Express	B752	MEM	**GTF**	BIL*	**GTF**	MEM	
FedEx Express	B752	**GTF**	MEM		MEM	**GTF**	
FedEx Express*	B752	YYC	**GTF**	MEM	MEM	**GTF**	YYC
FedEx Express	B752	**BIL**	MEM		MEM	**BIL**	
FedEx Express	B752	DEN	**BIL**		**BIL**	DEN	
FedEx Express*	B752	**BIL**	DSM	MEM			
FedEx Express*	B752				**BIL**	FSD	MEM
UPS	A306	RFD	DEN	**BIL**	**BIL**	DEN	ONT
UPS	A306	**BIL**	SDF		SDF	**BIL**	
Contract/Feeder Carriers							
AirNet Express	C210	**BIL**	**GGW**	**MLS**	**MLS**	**BIL**	
Alpine Air (UPS)	B190/BE99	**BIL**	**BTM**		**BTM**	**BIL**	
Alpine Air (UPS)	B190/BE99	**BIL**	**GTF**	**CTB**	**CTB**	**GTF**	**BIL**
Alpine Air (UPS)	B190/BE99				**MSO**	**GTF**	
Alpine Air (UPS)	B190/BE99	**BIL**	**BZN**		**BZN**	**BIL**	
Alpine Air (UPS)	B190/BE99	**BIL**	**GPI**		**GPI**	**BIL**	
Alpine Air (UPS)	BE99	**BIL**	**HLN**		**HLN**	**BIL**	
Alpine Air (UPS)	B190/BE99	**BIL**	**MSO**		**MSO**	**BIL**	
Alpine Air (UPS)	BE99	**BIL**	**OLF**		**OLF**	**BIL**	
Ameriflight (FedEx)	B190	**GTF**	**GPI**		**GPI**	**GTF**	
Corporate Air (FedEx)	C208	**GTF**	**BZN**		**BZN**	**GTF**	
Corporate Air (FedEx)	C208	**GTF**	**OLF**		**OLF**	**GTF**	
Empire Airways (FedEx)	AT43	**GTF**	**MSO**		**MSO**	**GTF**	

*Weeekend only
Source: Flightaware.com, OAG

As shown in **Table 3-5**, Federal Express operates two air networks in and out of Great Falls. The weekday network has two round trip flights between GTF and MEM – one morning departure and one night departure. A weekend network is used by FedEx to supplement its lift requirements, which includes additional stops in Billings and Calgary (YYC). All of FedEx's contracted feeder airlines operate out of Great Falls International and serve various markets throughout the state. These contracted carriers include Ameriflight, Corporate Air, and Empire

Airways. To accommodate the air cargo needs of the Billings market area, FedEx operates daily round trip flights out of Billings to Memphis and Denver. On the weekends the BIL-MEM route includes stops in Omaha and Des Moines. It is assumed that significant amounts of air cargo on their day-time routes are USPS mail, as the US Postal Service renewed its contract with FedEx Express in October 2013 to handle Priority and Express Mail. Narrowbody B757 aircraft are used on all FedEx Express routes in Montana. These routes are illustrated in **Figure 3-8.**

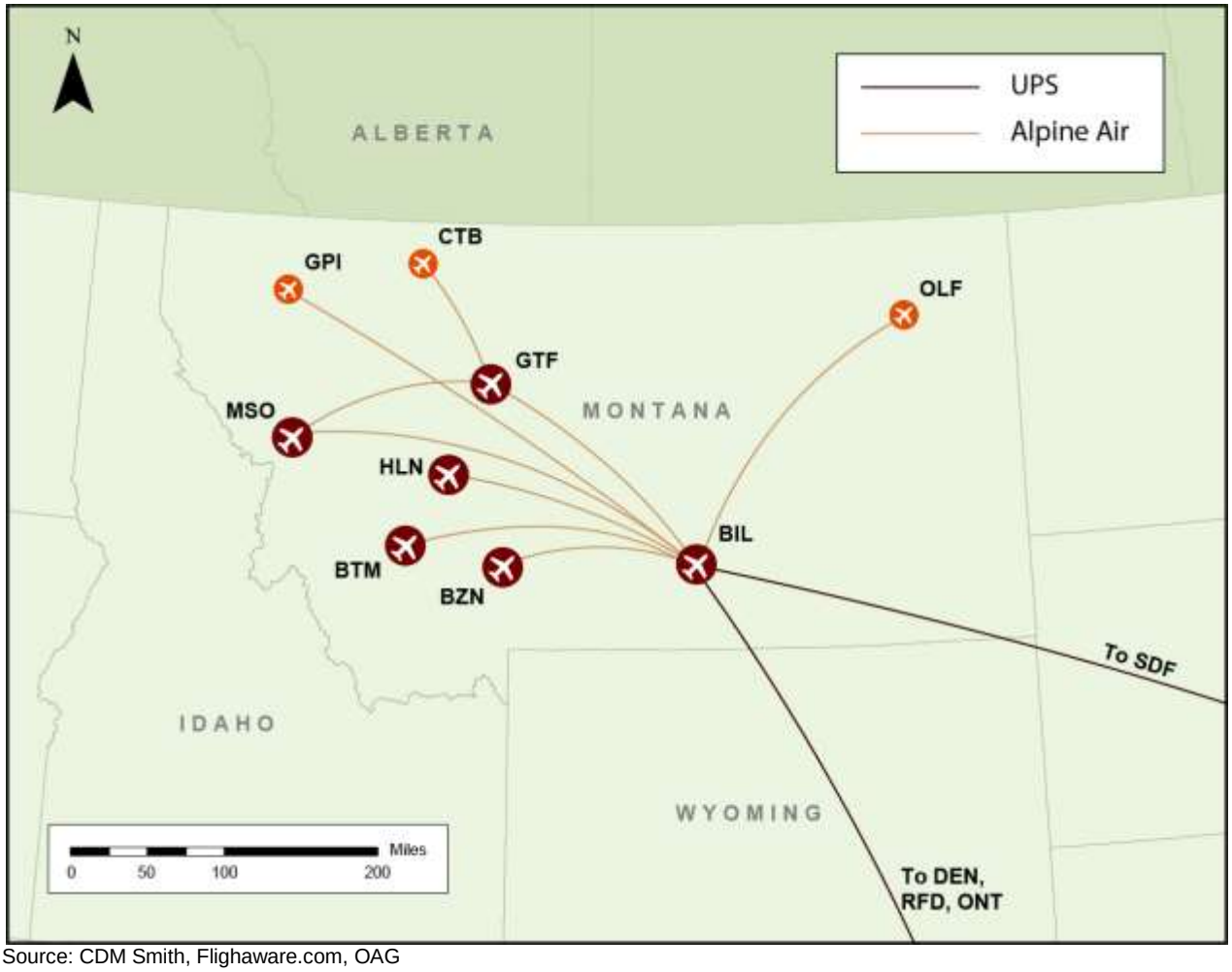


Source: CDM Smith, Flighaware.com, OAG

Figure 3-8: Air Cargo Network Route Map – FedEx Express

UPS operates two daily cargo routes in and out of Billings on widebody Airbus A300 aircraft. The first route operates round trip between Billings and UPS global hub in Louisville, Kentucky. The second morning route transports cargo to Billings via Denver after originating in Rockford, Illinois (the carrier's second largest hub). In the evening this aircraft departs Billings and continues westward to Ontario, California, via Denver. The widebody A300 aircraft are fed by Alpine Air, which operates spoke-routes between Billings and numerous Montana markets using Beech 1900 and Beech 99 aircraft. Alpine Air is UPS' sole feeder airline in Montana. **Figure**

3-9 identifies UPS' mainline and feeder routes. UPS uses a non-jet feeder aircraft to operate the GTF-BIL route.



Source: CDM Smith, Flighaware.com, OAG

Figure 3-9: Air Cargo Network Route Map – UPS

AirNet Express began transporting cancelled checks for the nation's banking system in 1974. The company has since expanded to offer small package delivery services and has a hub operation at Rickenbacker International in Columbus, Ohio. AirNet Express operates a fleet of more than 80 aircraft, including 24 Learjets, and conducts almost 200 flights per day. In Montana, AirNet operates a scheduled route out of Billings to Glasgow (GGW) and Miles City (MLS) before returning to Billings. This route is illustrated in **Figure 3-10**.

Source: CDM Smith, Flighaware.com, OAG

Figure 3-10: Air Cargo Network Route Map – AirNet Express

Several airport markets in Montana do not have scheduled air cargo service provided by integrated express carriers. These markets are served by trucks which transport cargo to and from the market area to an aircraft at a nearby airport. For example, FedEx Express trucks cargo from Helena to Great Falls International Airport where it is loaded onto an aircraft. FedEx Express also trucks cargo from Butte to a C208 aircraft in Bozeman. Generally speaking integrated express carriers may truck cargo to aircraft up to 90 minutes or more. It is also noteworthy to point out that FedEx Express supplements air cargo lift requirements in Montana's larger markets with trucks. For example, a FedEx truck carries a 53-foot long trailer loaded with five containers of deferred (2nd and 3rd day delivery) packages between Billings and Denver. FedEx Express typically does not transport overnight packages via truck outside of the state but relies entirely on aircraft. Montana's remote location from the integrators hub and spoke system insures that all arriving and departing overnight packages must be transported on aircraft.

Summary

Montana's airport system supports an extensive network of integrated express air cargo routes which carry the majority of air cargo in and out of the state. These carriers rely on airport's to provide navigational and weather reporting equipment as well as adequate runway length and aircraft services. While no major hub is located in the state for air cargo carriers, Great Falls and Billings International Airports support a number of regional cargo feeder routes providing market access to smaller communities in the State. Total air cargo volume declined in the state from 2005 to 2009 but has leveled out from 2010 and onward. Trucks are used to transport air cargo within Montana and some second and third day delivery packages are trucked out of the state. All overnight packages depart and arrive on integrated express cargo jets. Passenger airlines carry a small share of Montana's air freight and mail.

3.9 Surface Transportation

To better link airports to local and regional transportation networks, and to give aviation users access to their points of origin or destination, airports need to be connected to surface modes of transportation. In Montana, the most crucial of these modes is the state highway and road network, due to the large distances between cities and rugged terrain. It is also important for airports to connect passengers and pilots to the cities and towns that they serve through ground transportation services such as car rental and courtesy transportation. The following sections analyze roadway access and ground transportation for Montana's system of airports.

Highway and Road Access

Adequate linkage between transportation modes is important to the success of a regional, statewide, or national transportation network. In Montana, close proximity between an airport and the state's highway network allows for greater use of the facilities for economic, recreational, and emergency purposes. In addition, airports supported by paved access roads are better equipped to meet demands for emergency operations and intermodal cargo shipments.

Table 3-21 at the end of this chapter details access road status at Montana system airports. In total, 73 of the 126 airports included in this study have a paved access road, while 48 have an unpaved access road. An additional five wilderness airports are only accessible by air. Of the 70 Montana system airports included in the NPIAS, 59 have a paved access road.

Table 3-21 also details highway access for Montana's system airports, including the distance each airports is to the nearest major highway (state, federal, or interstate). Of the 121 airports with road access, only seven are more than 10 driving miles from a major highway. Several airports have close access to multiple highways, allowing for greater access to the rest of the state and beyond. In addition, 19 airports in Montana's system are within close proximity of the interstate highway network.

Rental Car and Courtesy Transportation

The availability of ground transportation is an important service for the users of both commercial and general aviation airports. It is common practice for commercial airports to have on-site rental car businesses, but this service is also important at general aviation airports that regularly serve transient activity. Rental car services are especially important at general aviation airports that serve a high volume of business and charter activity. Where rental cars are not available, a free-of-charge courtesy or crew car may offer airport patrons with another ground transportation option.

Table 3-22 details rental car and courtesy/crew car service at airports in the Montana system. In total, 20 airports have on-site rental car companies, while 42 offer courtesy or crew vehicle service.

Additionally, airports reported the availability of other intermodal surface transportation options. The following airports reported the availability of public bus service:

Missoula International Airport
Glasgow International Airport (Wokal Field)
Sidney-Richland Municipal Airport
L. M. Clayton Airport
Dawson Community Airport

3.10 General Economic Activity

This section provides an overview of the Montana economy and aviation activity in the state. This includes an evaluation of population and employment trends in the state, including historical changes which impact aviation demand on the state's airport system.

Historical Population Trends

In 2000, the U.S. Census Bureau quantified the population of Montana at 902,195 residents. By 2013, the population had grown by an estimated 112,970 residents to a total of 1,015,165, representing an 11% percent increase and crossing the 1 million total population for the first time in the state's history[14]. Between 2000 and 2013, 34 of Montana's 56 counties experienced a net increase in population and 22 experienced a net decrease. **Table 3-6** illustrates county population and growth trends from 2000 to 2013.

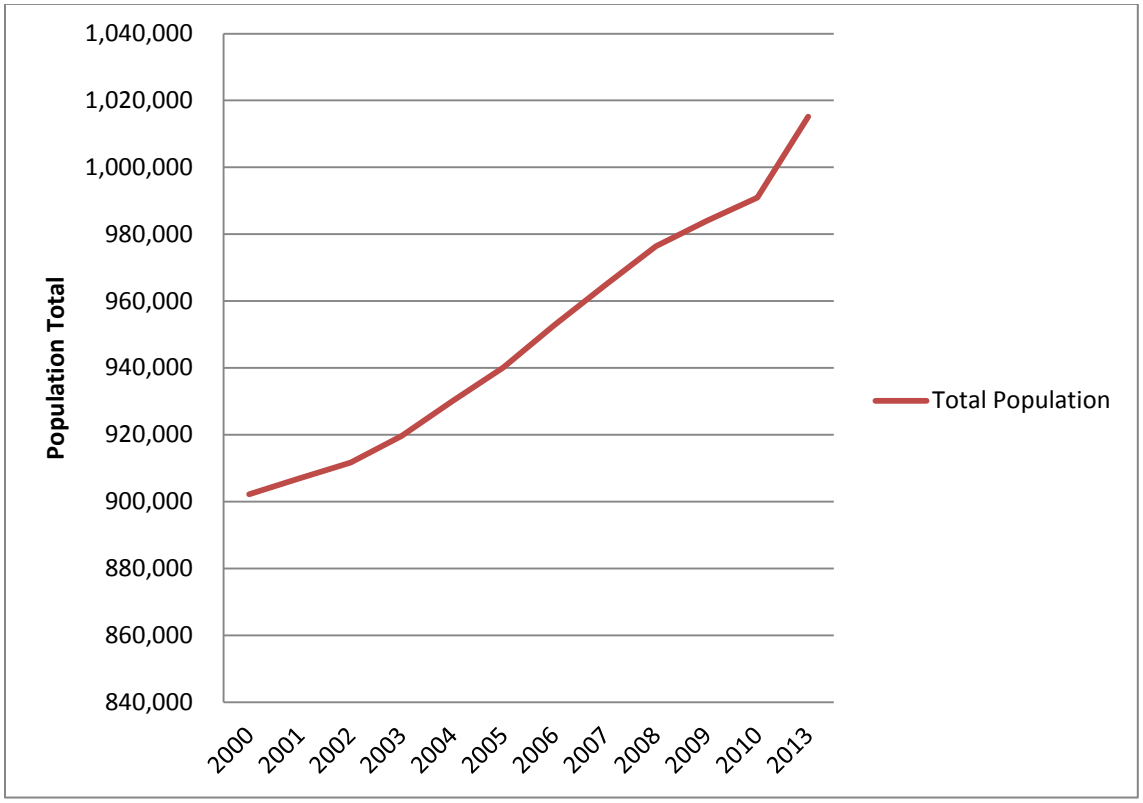
[14] U.S. Census Bureau, Census 2000

Table 3-6: Montana Population Trends, 2000-2013

	Population			
	2000 Census	2013 (Preliminary) Census	2000-2013 Change	Annual Population Growth (%) 2000-2013
Montana	902,195	1,015,165	112,970	11%
County				
Beaverhead	9,202	9,341	139	2%
Big Horn	12,671	13,042	371	3%
Blaine	7,009	6,604	-405	-6%
Broadwater	4,385	5,692	1,307	30%
Carbon	9,552	10,340	788	8%
Carter	1,360	1,174	-186	-14%
Cascade	80,357	82,384	2,027	3%
Chouteau	5,970	5,849	-121	-2%
Custer	11,696	11,951	255	2%
Daniels	2,017	1,791	-226	-11%
Dawson	9,059	9,445	386	4%
Deer Lodge	9,417	9,329	-88	-1%
Fallon	2,837	3,079	242	9%
Fergus	11,893	11,501	-392	-3%
Flathead	74,471	93,068	18,597	25%
Gallatin	67,831	94,720	26,889	40%
Garfield	1,279	1,290	11	1%
Glacier	13,247	13,739	492	4%
Golden Valley	1,042	859	-183	-18%
Granite	2,830	3,138	308	11%
Hill	16,673	16,568	-105	-1%
Jefferson	10,049	11,512	1,463	15%
Judith Basin	2,329	2,016	-313	-13%
Lake	26,507	29,017	2,510	9%
Lewis and Clark	55,716	65,338	9,622	17%
Liberty	2,158	2,369	211	10%
Lincoln	18,837	19,460	623	3%
McCone	1,977	1,709	-268	-14%
Madison	6,851	7,712	861	13%
Meagher	1,932	1,937	5	0%
Mineral	3,884	4,275	391	10%
Missoula	95,802	111,807	16,005	17%
Musselshell	4,497	4,629	132	3%
Park	15,694	15,682	-12	0%
Petroleum	493	506	13	3%
Phillips	4,601	4,179	-422	-9%
Pondera	6,424	6,211	-213	-3%
Powder River	1,858	1,748	-110	-6%
Powell	7,180	6,993	-187	-3%
Prairie	1,199	1,179	-20	-2%
Ravalli	36,070	40,823	4,753	13%
Richland	9,667	11,214	1,547	16%
Roosevelt	10,620	11,125	505	5%
Rosebud County	9,383	9,329	-54	-1%
Sanders	10,227	11,363	1,136	11%
Sheridan	4,105	3,668	-437	-11%
Silver Bow	34,606	34,523	-83	0%
Stillwater	8,195	9,318	1,123	14%
Sweet Grass	3,609	3,669	60	2%
Teton	6,445	6,065	-380	-6%
Toole	5,267	5,138	-129	-2%
Treasure	861	700	-161	-19%
Valley	7,675	7,630	-45	-1%
Wheatland	2,259	2,134	-125	-6%
Wibaux	1,068	1,121	53	5%
Yellowstone	129,352	154,162	24,810	19%

Source: U.S. Census Bureau, Population Division

Figure 3-11 identifies the total population percentage change for the State of Montana based on average annual growth rates. Montana has seen a steady increase of population growth since early 2000, with the most prevalent higher rate of growth occurring since 2010.



Source: MT Department of Commerce; Regional Economic Models, Inc. (REMI)

Figure 3-11: Montana Population Trends- Statewide, 2000-2013

According to United States Census estimate for 2013, Yellowstone County was the most populated county in the state, with an estimated 154,162 residents while Petroleum County was the least populated county in the state with an estimated 506 residents. **Figure 3-12** illustrates average annual growth rate (percent change) by county. The three positive-growth counties with the highest percent change from 2000 to 2013 were Gallatin County, Broadwater County and Flathead County. The three negative-growth counties with the greatest decrease were Treasure County, Golden Valley County, and Carter County. Of the positive-growth counties, the most rapidly growing counties were located primarily in the western and east central portions of the state, while the declining population counties are located along the Canadian border, central Montana and the southeast corner of the state. According to Montana's Census & Economic Information Center, growth in the western counties is the direct result of migration from rural to urban portions of the state[15]. Overall growth in the urban regions of the state can be attributed to opportunities for employment, housing and general ease of access to amenities.

[15] http://www.montana.edu/djyoung/papers/Montana%20Migration%20MBQ%20Fall%20pp12-16.pdf

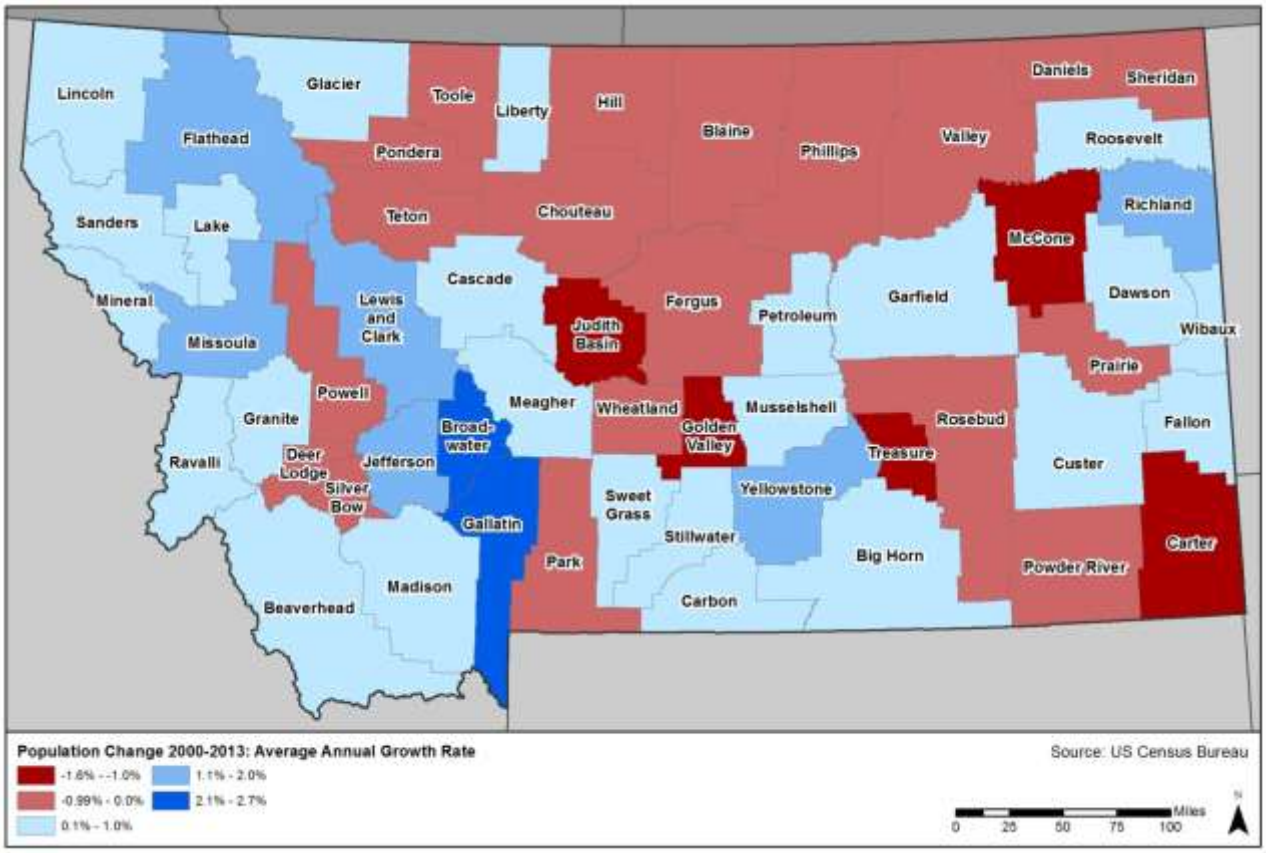


Figure 3-12: Montana County Average Annual Growth Rates (Percent Change), 2000-2013

The overall growth in eastern Montana is due to high rates of in-migration driven largely by the oil and gas activity in the Bakken Oil Formation. Located in the eastern most portions of Montana lay one of the richest resources for oil and natural gas development. The Bakken Shale Formation spans a significant area of eastern Montana, western North Dakota and into portions of Saskatchewan and Manitoba, Canada. The formation is comprised of one of the largest contiguous deposits of oil and natural gas in the United States and is a sequence of black shale, siltstone, and sandstone. Due to the increased demand for labor in this sector, many people have moved to the region seeking jobs related to energy development and the services that come with it.

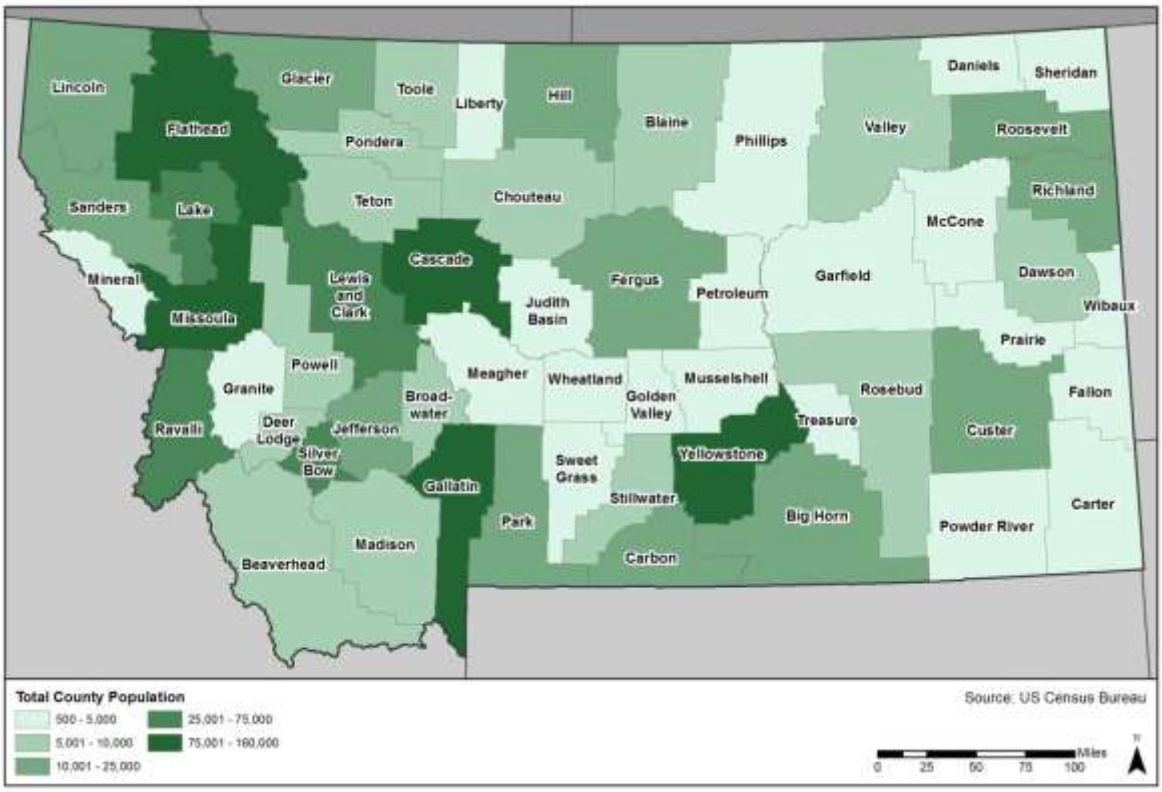


Figure 3-13: Montana Total County Population

Growth Impacts of the Bakken Shale Formation on Surrounding Counties

The primary growth counties located in an active section of the Bakken Shale Formation include the following Montana counties: Richland, Fallon, Dawson and Wibaux **(Table 3-7)**. These counties have seen population growth since the 2010 census, as well as years prior. These four primary counties experienced a total population increase of 1,087 residents to the area in two years (2010-12). According to the U.S. Census Bureau, Richland County stands among the state's fastest- growing counties with 6.6 percent population growth, amounting to 667 new residents. The other three counties experienced growth in population ranging from 2.8 to 7.1 percent from 2011-12. More detail on the Bakken oil and gas formation development and its implications to the airport system are provided in Chapter Five of this study.

Table 3-7: Montana Resident Population Primary County Growth at Bakken Oil Formation

County	2010-11 Percent Change	2011-2012 Percent Change	2011-2012 Population Change
Richland	**10.9%**	**6.6%**	**667**
Dawson	**3.2%**	**2.8%**	**250**
Fallon	**4.6%**	**3.4%**	**100**
Wibaux	**3.9%**	**7.1%**	**70**
Total			**1,087**

Source: Bureau of Business and Economic Research, University of Montana

Population Density

Figure 3-14 illustrates population density (persons per square mile) in Montana. Counties with areas of dense population concentration are Missoula County, Yellowstone County and Silver Bow County. The most densely populated cities in Montana reside within these counties and are Billings, Butte and Missoula.

Figure 3-14: Montana Population Density

Employment

In 2013, Montana ranked 10th lowest among all U.S. states for unemployment with an unemployment rate of just 5.4% (see **Table 3-8**), indicating unemployment is fairing much better in Montana than most other states[16]. The State's labor force numbered over 468,000 employees in early 2000 and since then has increased to over 513,000 in 2013[17].Fueled by job growth around the Bakken oil fields; Montana has fully recovered from the lingering 2008 recession, reaching employment levels seen prior to 2008. In total, the state lost roughly 30,000 jobs from 2008 to 2010, largely due to slowdowns in construction, the collapse of the housing market and cutbacks in the timber industry[18]. When measuring total employment growth, Montana has regained 58% of the jobs lost during the2008 recession compared to 49% nationally[19]. These job losses are believed to be offset by the private-sector growth and the previously mentioned Bakken Oil demand. Table 1.3 identifies the annual average

[16] U.S. Department of Labor, Bureau of Labor Statistics , May 2014
[17] U.S. Department of Labor, Bureau of Labor Statistics , May 2014
[18] http://billingsgazette.com/business/montana-s-recovery-from-recession-is-complete-but-workers-needed/article_58882bb0-32ba-58d8-aec1-d8444cd237ca.html
[19] Labor Day Report; Montana Department of Labor and Industry, Research and Analysis Bureau, 2012

unemployment rate for Montana and individual counties from 2000 to 2013. In 2013, there were 20 counties with an unemployment rate equal to or above that of the state average (5.4 percent[20]), with Big Horn County having the highest rate at 15.3 percent. On the opposite end of the employment spectrum, major metropolitan cities such as Billings, Great Falls and Missoula each had unemployment figures under 3.9 percent

Table 3-8: Montana Annual Average Employment, 2000-2013

	2000 Labor Force				2013 Labor Force			
County Name	Labor Force	Employed	Un-employed	Unemploy. Rate (%)	Labor Force	Employed	Un-employed	Unemploy. Rate (%)
Beaverhead	5,029	4,823	206	4.1%	5,230	4,994	236	4.5%
Big Horn	5,443	4,933	510	9.4%	5,422	4,594	828	15.3%
Blaine	2,977	2,815	162	5.4%	2,708	2,553	155	5.7%
Broadwater	2,237	2,137	100	4.5%	2,410	2,236	174	7.2%
Carbon	4,993	4,773	220	4.4%	5,339	5,089	250	4.7%
Carter	776	748	28	3.6%	638	616	22	3.4%
Cascade	38,328	36,440	1,888	4.9%	41,053	38,979	2,074	5.1%
Chouteau	2,807	2,702	105	3.7%	2,513	2,413	100	4%
Custer	5,992	5,721	271	4.5%	6,475	6,238	237	3.7%
Daniels	975	930	45	4.6%	733	701	32	4.4%
Dawson	4,770	4,577	193	4%	4,528	4,368	160	3.5%
Deer Lodge	4,249	3,947	302	7.1%	4,060	3,780	280	6.9%
Fallon	1,548	1,491	57	3.7%	2,116	2,074	42	2%
Fergus	6,124	5,804	320	5.2%	5,910	5,607	303	5.1%
Flathead	39,328	37,264	2,064	5.2%	44,292	40,792	3,500	7.9%
Gallatin	41,603	40,114	1,489	3.6%	52,640	50,315	2,325	4.4%
Garfield	706	677	29	4.1%	617	594	23	3.7%
Glacier	5,716	5,254	462	8.1%	6,032	5,374	658	10.9%
Golden Valley	547	518	29	5.3%	505	484	21	4.2%
Granite	1,356	1,272	84	6.2%	1,317	1,192	125	9.5%
Hill	8,006	7,616	390	4.9%	8,300	7,759	541	6.5%
Jefferson	5,375	5,123	252	4.7%	5,825	5,529	296	5.1%
Judith Basin	1,183	1,129	54	4.6%	1,134	1,085	49	4.3%
Lake	12,326	11,650	676	5.5%	11,284	10,398	886	7.9%
Lewis & Clark	31,212	29,963	1,249	4%	34,795	33,209	1,586	4.6%
Liberty	964	923	41	4.3%	759	723	36	4.7%
Lincoln	7,890	7,231	659	8.4%	7,607	6,505	1,102	14.5%
McCone	1,103	1,063	40	3.6%	1,028	1,001	27	2.6%
Madison	3,358	3,191	167	5%	4,226	4,000	226	5.3%
Meagher	993	935	58	5.8%	951	899	52	5.5%
Mineral	1,888	1,767	121	6.4%	1,935	1,745	190	9.8%
Missoula	54,211	52,041	2,170	4%	60,212	57,006	3,206	5.3%
Musselshell	2,096	1,969	127	6.1%	2,435	2,309	126	5.2%

[20] Bureau of Labor Statistics, December 2013

	2000 Labor Force				2013 Labor Force			
County Name	Labor Force	Employed	Un-employed	Unemploy. Rate (%)	Labor Force	Employed	Un-employed	Unemploy. Rate (%)
Park	9,051	8,589	462	5.1%	8,768	8,251	517	5.9%
Petroleum	252	235	17	6.7%	227	212	15	6.6%
Phillips	2,325	2,221	104	4.5%	2,103	1,982	121	5.8%
Pondera	2,982	2,840	142	4.8%	2,540	2,395	145	5.7%
Powder River	1,003	965	38	3.8%	1,036	998	38	3.7%
Powell	2,886	2,720	166	5.8%	2,794	2,596	198	7.1%
Prairie	617	585	32	5.2%	549	525	24	4.4%
Ravalli	17,105	16,197	908	5.3%	18,081	16,743	1,338	7.4%
Richland	4,979	4,717	262	5.3%	7,160	6,972	188	2.6%
Roosevelt	4,263	3,964	299	7%	4,350	4,066	284	6.5%
Rosebud	4,279	4,029	250	5.8%	3,903	3,626	277	7.1%
Sanders	4,409	4,105	304	6.9%	4,140	3,619	521	12.6%
Sheridan	2,021	1,928	93	4.6%	2,088	2,024	64	3.1%
Silver Bow	17,192	16,202	990	5.8%	17,846	16,866	980	5.5%
Stillwater	4,423	4,223	200	4.5%	4,593	4,383	210	4.6%
Sweet Grass	1,991	1,928	63	3.2%	2,462	2,396	66	2.7%
Teton	2,981	2,850	131	4.4%	3,007	2,877	130	4.3%
Toole	2,529	2,426	103	4.1%	2,447	2,344	103	4.2%
Treasure	458	437	21	4.6%	431	414	17	3.9%
Valley	3,852	3,681	171	4.4%	3,967	3,800	167	4.2%
Wheatland	1,124	1,070	54	4.8%	1,079	1,028	51	4.7%
Wibaux	551	527	24	4.4%	575	556	19	3.3%
Yellowstone	71,487	68,572	2,915	4.1%	84,463	80,857	3,606	4.3%
STATEWIDE TOTAL	**468,869**	**446,552**	**22,317**	**5.0%**	**513,638**	**484,691**	**28,947**	**5.4%**

Source: Bureau of Labor Statistics

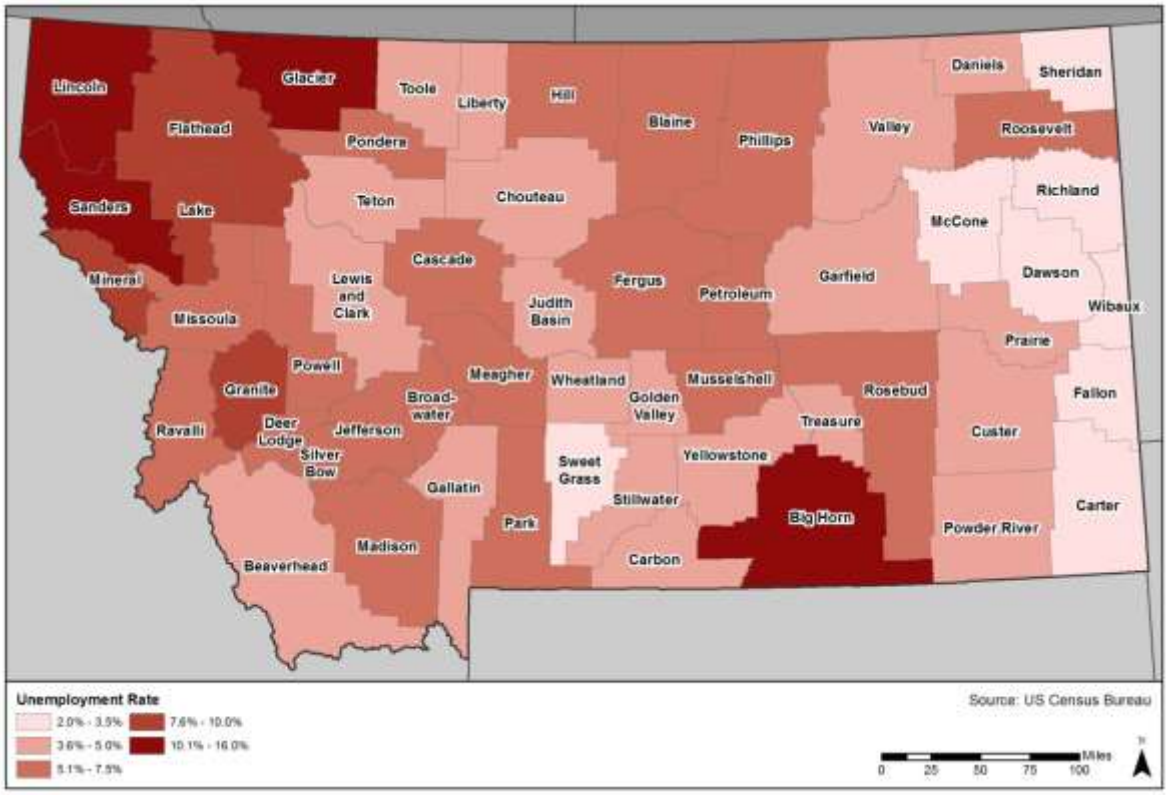


Figure 3-15: Montana Unemployment Rates, June 2014

Figure 3-15 illustrates unemployment rates (county based) in Montana. The nearly 11 percent unemployment rate in Lincoln County is the highest in the state, outpacing second-place Sanders County (8.6 percent) which is adjacent to Lincoln County. Both the timber and construction industry have a solid base in the western portions of Montana, which have greatly contributed to the unemployment rates after the recession. However, the latest figures from the Montana Department of Labor and Industry estimate there are 250 Montanans from a four-county area (Lincoln, Lake, Flathead and Sanders) relocating for work near the Bakken oil formation region[21].

Industry

The U.S. Bureau of Economic Analysis shows Montana's Gross Domestic Product (GDP) in 2012, the latest year for which data is available, was $33.3 billion[22]. This ranked the State 48th in the United States. The industry sectors with the highest levels of non-agricultural employment in the state in 2013 were trade, transportation, and utility providers (90,771 employees), leisure and hospitality services (57,743 employees), and natural resources and mining (55,426 employees). The state is ranked 14th in the U.S. in producing crude oil and 20th in natural gas production[23], with approximately 11,500 employees in the natural resources and mining sector in 2012[24].

[21] http://www.thewesternnews.com/news/county-unemployment-rate-hits-percent/article_463c5e04-b120-11e3-82eb-0019bb2963f4.html
[22] U.S. Department of Labor Statistics, Bureau of Labor Analysis; www.ceic.mt.gov
[23] U.S. Energy Information Administration, State Profiles and Energy Estimates, 2012-2014
[24] Top Oil and Gas Occupations in 2012, Economic Modeling Specialist; EMSI Complete Employment 2010

Furthermore, Montana's industry leader remains the agricultural sector. With 28,008 farms and ranches across Montana, the industry generated over $4.2 billion in agriculture services and products in 2012. Montana products such as wheat, barley and beef are in high demand across the United States and internationally[25].

Montana Aviation and Aerospace

U.S. Bureau of Labor Statistics and NAICS data was used to determine the total number of employees currently and historically employed within the aviation industry in Montana. The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the U.S. business economy. In this case, four aviation related industry codes (NAICS 3364, 4811, 4812, 4881) have been examined to determine total number of aerospace and aviation related employees statewide. Furthermore, a brief overview of businesses serving in each industry code will be examined.

Aerospace product and parts manufacturing (NAICS 3364)[26]

This industry group comprises establishments primarily engaged in manufacturing aircraft, missiles, space vehicles and their engines, propulsion units, and auxiliary equipment and parts. There are a variety of aerospace product and parts manufactures operating in Montana. AvMax Group, Inc., a Canadian- owned company operating out of Great Falls focuses on aviation support, training and management services. Operations at Great Falls entail providing aircraft heavy maintenance checks for airlines worldwide. Cable Technology of Montana, Inc. located in Great Falls provides a commercial aerospace product base of high quality wire and cable to customers in air transport, helicopter operators, and OEM airframe manufacturers for in-flight entertainment system harnessing, engine controls, antennas, and instrumentation.
Furthermore, companies such as Summit Aeronautics Group and Sonju Industrial have seen tremendous growth in parts and precision manufacturing in the last decade. Summit Aeronautics Group, based out of Helena, was acquired in 2010 for precision manufacturing by The Boeing Company. The company now operates under Boeing Fabrication, which maintains 10 sites around the globe involved in various manufacturing and assembly technologies of aircraft. Sonju Industrial, located in Kalispell, manufactures parts for aerospace and defense corporations, such as Boeing, Lockheed Martin, Raytheon and Northrop Grumman. Notable produced parts include aircraft wings and landing gear.

Scheduled air transportation (NAICS 4811)

The scheduled air transportation industry comprises establishments primarily engaged in transporting passengers and/or goods by aircraft, over regular routes and on regular schedules. These establishments usually have less flexibility with respect to choice of airports, hours of operation, and load factors. The leading scheduled air transportation companies operating in Montana include Delta Airlines, Horizon Airlines, United Airlines, Frontier Airlines, Allegiant Air and Cape Air.

Nonscheduled air transportation (NAICS 4812)

This industry group comprises establishments primarily engaged in the non-scheduled air transportation of passengers and/or goods. Establishments in this industry have more flexibility with respect to choice of airports, hours of operation, and load factors than do establishments in

[25] Montana Department of Agriculture
[26] https://www.census.gov/eos/www/naics/

4811, Scheduled Air Transportation. Montana supports a variety of companies in this industry sector in regards to aircraft charters, helicopter operations, and firefighting and air ambulance services. Popular charter operations in Montana include Helena-based Exec Air Montana, Bozeman's Montana Aircraft, Inc., Billings-based Edwards Jet Center and Monarch Air Group, and Northern Skies Aviation based in Laurel.

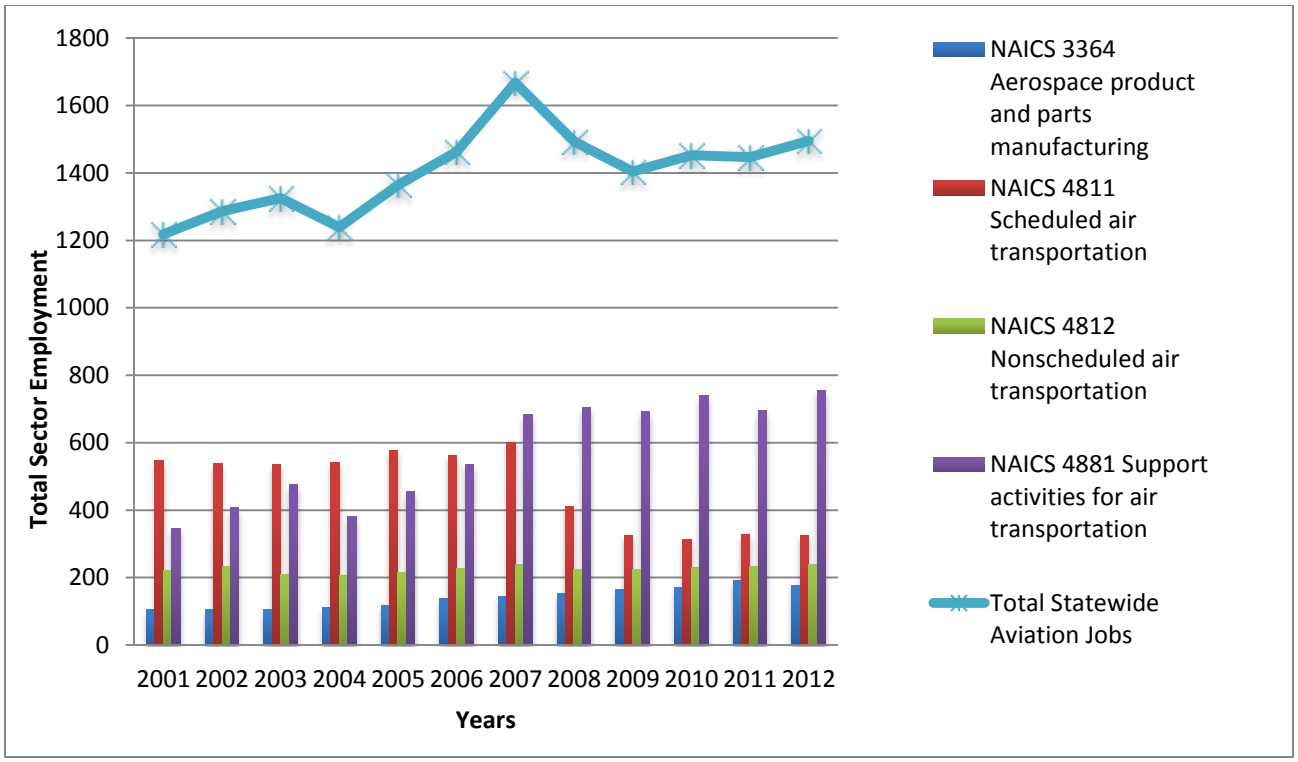
Due to the number of rural communities in Montana, a number of air ambulance services are in high demand. Establishments such as Summit Air Ambulance, based out of Bozeman, facilitate a quick response for emergency transports and transit from rural hospitals to trauma centers via helicopter and airplane[27]. In addition, Trinity Air Ambulance International, Med Flight Air Ambulance and AirCare1 International all provide medical evacuation services in Billings, working in cooperation with many local hospitals. Many other services such as these are accessible statewide. Furthermore, Montana's demand for fire suppression aircraft is significant [28]. Over the last three decades, fire season lengths have increased by 60-80 days and annual acreage burned has more than doubled to over 7 million acres annually in the U.S. While much of the aircraft fleet is owned and operated by state departments and resources, there are several independent contractors operating throughout Montana. Neptune Aviation Services, currently based in Missoula, has been the primary provider of large air tanker services to the U.S. Forest Service for the last 20 years. In addition, Billings Flying Service, a contracted firefighting establishment, currently operates two of the first non-military owned CH-47D Chinook helicopters. Both Chinook helicopters are being outfitted for wild land firefighting for the 2015 season and will join the six-fleet helicopter operation at Billings[29].

Support activities for air transportation (NAICS 4881)

The air transportation support industry comprises establishments primarily engaged in providing specialized services to the air transport industry. These establishments may offer air traffic control services, fixed-base operator (FBO) services, aircraft fuel services, aircraft repairs and airline ground handling. Employment growth in this sector has gradually increased since 2001 and comprises the majority of employment in the industry.

As shown in **Figure 3-16**, Montana has experienced changes within the aviation industry since 2001. Some of these changes can be attributed to national economic and airline issues while others are linked to the State's economy and rural nature. Total aerospace employment statewide peaked in 2007 with over 1,600 employees in aerospace and aviation then dipped as a result of the 2008 recession. Since 2009 the industry's employment has seen a gradual increase.

[27] http://www.krtv.com/news/new-air-ambulance-launches-in-sw-montana/
[28] http://www.abcfoxmontana.com/story/25572107/three-neptune-aviation-air-tankers-added-to-firefighting-fleet
[29] http://fireaviation.com/tag/montana/



Source: U.S. Bureau of Labor and Statistics; Montana Quarterly Census, Employment and Wages

Figure 3-16: Montana Aviation Employment Trends, 2001-2012

In 2008 NAICS 4811 Schedule Air Transportation saw a significant drop in employment but there was an increase in the share of employees in the NAICS 4881 Support for Air Transport. While the specifics of this change are not quite clear the change is likely attributed to more airlines in the state contracting out more labor intensive portions of their business such as baggage handling, ticketing and aircraft fueling.

As shown in **Table 3-9** aerospace product and parts manufacturing (69% growth increase), non-scheduled air transportation (8% growth increase), and air transportation support activities (118% growth increase) have seen continual progression since 2001. However, schedule air transportation has seen a decrease of 41% since 2001, which can be attributed to higher operating costs, airline turn-over and overall demand.

Table 3-9: Montana Employments by Aviation Industry, 2001-2012

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	% Change
Industry													
Base Industry: Total, all industries	306,790	310,388	314,240	323,727	334,143	346,275	356,725	356,638	338,854	334,866	339,529	347,922	13%
NAICS 3364 Aerospace product and parts manufacturing	105	105	106	111	118	139	145	152	164	170	190	177	69%
NAICS 4811 Scheduled air transportation	547	539	535	541	577	563	602	412	325	314	327	325	-41%
NAICS 4812 Nonscheduled air transportation	220	234	209	207	214	227	238	225	223	229	234	238	8%
NAICS 4881 Support activities for air transportation	346	408	475	380	455	534	683	704	692	740	696	755	118%
Total Aerospace Jobs in Montana	**1,218**	**1,286**	**1,325**	**1,239**	**1,364**	**1,463**	**1,668**	**1,493**	**1,404**	**1,453**	**1,447**	**1,495**	

Source: Bureau of Labor Statistics

3.11 Community Development Aspects

This section of the report identifies the role airports play in community development. Airports provide connectivity to other markets within and outside of Montana. Properties adjacent to airports also provide opportunities for economic development as businesses and government agencies find airport industrial and business parks advantageous. Additionally, this section provides information on how the healthcare industry uses aviation in its day-to-day operations.

Airport Activities

During the inventory phase of the study, airports were asked to report on the existence and frequency of certain aviation activities at their airports. Such activities are linked to the qualitative benefits of airports which are benefits tied to the health, welfare, and safety of a community or region. Similar activity data was collected as part of The Economic Impacts of Airports in Montana, published in 2009. Using both sources of data provides ample evidence of how aviation and airports benefits all Montanans.

Table 3-10 shows the percent of Montana's airport system for which activity data was not available, as well as the percent that reporting various aviation activities. The most commonly reported activities were recreational flights (71 percent of the system), corporate and business activity (57 percent of the system), aerial firefighting operations (55 percent of the system), and emergency medical flights or air ambulance operations (53 percent of the system).

Table 3-10: Aviation Activities at Montana System Airports

Activity	Activity Reported: Percent of System
Air Carrier	10%
Aircraft Charter	22%
Air Cargo Operations	20%
Corporate/Business Activities	57%
Aerial Wildland Firefighting	55%
Emergency Medical Operations/Air Ambulance	53%
Angel Flight	9%
Transporting Medical Doctors	12%
Agricultural Aircraft Operations	45%
Law Enforcement Aircraft Operations	38%
Powerline/Pipeline Control Operations	33%
Skydiving Operations	6%
Flight Training Operations	41%
Military	27%
Recreational Flights	71%
Fish, Wildlife & Parks / Tourism	41%
Survey	13%

Source: Airport Inventory and Data Survey, *The Economic Impacts of Airports in Montana*

Airport Industrial Parks

The existence of an industrial or business park on or near an airport can greatest benefit the airport, businesses in the industrial park, and the community. Businesses have easy access to aviation facilities and services for shipments of freight, business trips, and to bring clients to their site of operations. The airports themselves benefit from increased revenue streams through aircraft fuel sales and, in cases where these parks are located on airport property, lease revenue. Airport industrial parks also provide compatible land use in the airport environs.

By reviewing satellite imagery, it was possible to identify business and industrial parks at or adjacent to airports in the Montana airport system. This exercise focused on NPIAS airports. The list of airports below includes airports with dedicated industrial parks, airports with a large volume of business and industrial activity on airport property, but which may not be a dedicated park, and those airports known to have land reserved for business and industrial development.

Great Falls International Airport: the airport is home to Foreign-Trade Zone (FTZ) 88, located adjacent to Runway 03/21. The FTZ is over 150 acres in total area. In addition to the FTZ, this development is supported through the airport's low lease rates. Industrial and business development at Great Falls International Airport can be seen in **Figure 3-17**.

Source: Google Earth Pro

Figure 3-17: Foreign-Trade Zone 88 at Great Falls International Airport

Helena Regional Airport: several large businesses and industries currently lease land from the Helena Regional Airport Authority. In addition, the Airport Authority owns substantial property on the south side of the airport that is zoned for commercial light industrial use. This property will be available for lease upon being annexed into the city of Helena. Finally, the airport has reserved land along Washington Street and Custer Avenue for commercial development. Industrial, business, and commercial development on or near Helena Regional Airport can be seen on **Figure 3-18.**

Source: Google Earth Pro

Figure 3-18: Helena Regional Airport Environs

Missoula International Airport: there is currently no dedicated or concentrated industrial and businesses development at the airport. However, the 2008 *Missoula International Airport Master Plan Update* concluded that developable land south of the airport that is not already slated for aviation development should be reserved for low-rise business park and light industrial development. Development of this land would be contingent on providing utilities to this area. **Figure 3-19** shows one development alternative presented in the master plan, including multiple phases of land and access road development.

Source: *Missoula International Airport Master Plan Update*

Figure 3-19: Alternative for Land Development at Missoula International Airport

Woltermann Memorial Airport: a large section of land directly north of the airport is utilized by heavy industry, including nearly 18 acres occupied by a mining company. Other areas around the airport appear to include other light and heavy industrial activities. Industrial development near Woltermann Memorial Airport can be seen on **Figure 3-20**.

Source: Google Earth Pro

Figure 3-20: Industrial Development Adjacent to Woltermann Memorial Airport

Cut Bank Municipal Airport: the airport's full property encompasses approximately 1,800 acres. Although much of this land is sparsely developed at this time, it is allotted for a wide variety of land uses, including agriculture, commercial, heavy and light industry, residential, and aviation development. **Figure 3-21** details the land allotted for future development, shown on this map in light blue.

Source: Google Earth Pro

Figure 3-21: Areas Zoned for Development at Cut Bank Municipal Airport

Lewistown Municipal Airport: the airport does not have a dedicated industrial or business park, but a large section of land south of runway 08/26 is occupied by a number of businesses, including light industrial. The majority of these businesses have access to the airfield. This area is over 60 acres in size when including the airport's landside facilities, and is shown in **Figure 3-22**.

Source: Google Earth Pro

Figure 3-22: Mixed Aviation and Industrial Development at Lewistown Municipal Airport

Kalispell City Airport: an area of nearly 60 acres, running parallel to runway 13/31, is currently developed by commercial, business, and industrial companies. Some, but not all, of these lots have airfield access. There also exist numerous business and industrial developments adjacent to other parts of the airport property. Development surrounding Kalispell City Airport can be viewed in **Figure 3-23**.

Source: Google Earth Pro

Figure 3-23: Mixed Aviation and Industrial Development at Kalispell City Airport
Corporate Flight Departments

During the data collection effort for the 2009 *The Economic Impacts of Airports in Montana* study, Montana system reported information on tenant businesses, including corporate flight departments. According to this study, three airports in the Montana airport system have a corporate flight department based on site. These airports are as follows:

- Bozeman Yellowstone International Airport
- Glacier Park International Airport
- Yellowstone Airport

Range of Flights from Montana Airports

It is important for a system of airports to be connected to airports inside and outside of their state. Connections with many other airports and cities help to enhance business and economic connections with other regions. Consequently, it can be concluded that an airport system showing origin and destination data with airports in many other regions is supporting businesses and economies in these regions. This section provides a sample of origin and destination data from airports in Montana to many other airports in North America.

Unfortunately, no method exists to accurately count aircraft operations, even at airports with air traffic control towers. The best option for analyzing origin and destination data of airport operations comes from IFR data. These are flight plans filed by pilots operating under instrument flight rules. IFR data contains such information as origin, destination, aircraft type, N-number, date, time, and often the name of the company or aircraft operator. IFR data is recorded and made commercially available through an online database operated by GCR, Inc. For privacy reasons, many businesses and aircraft owners are increasingly choosing to not publicly file flight plans, resulting in less than complete data.

However, because the purpose of this analysis is not to gain an exact number of aircraft operations, but rather a range of flights to and from airports in Montana, IFR data is considered an excellent source from which to gather a sample. IFR data is available for airports included in the National Plan of Integrated Airport Systems (NPIAS), including the 70 NPIAS airports located in Montana. IFR data was downloaded for the period of June 1, 2013 to June 1, 2014. The following airports had blank IFR reports for that period, meaning that no flight plans were filed:

- Broadus Airport
- Gardiner Airport
- Circle Town County Airport
- Geraldine Airport
- Valier Airport
- Turner Airport

Figure 3-24 maps origin and destination airports found on the IFR reports of Montana NPIAS airports. Flight reports were filed listing more than 600 airports in the United States as either origin or destination, including airports in 48 of the 50 states. IFR data also revealed connections with over 30 airports in Canada, also shown on **Figure 3-24**.

Origin and destination airports included such distant facilities as Miami International Airport in Florida, Portland International Jetport in Maine, Wainwright Airport on the north coast of Alaska, and Honolulu International Airport in Hawaii.

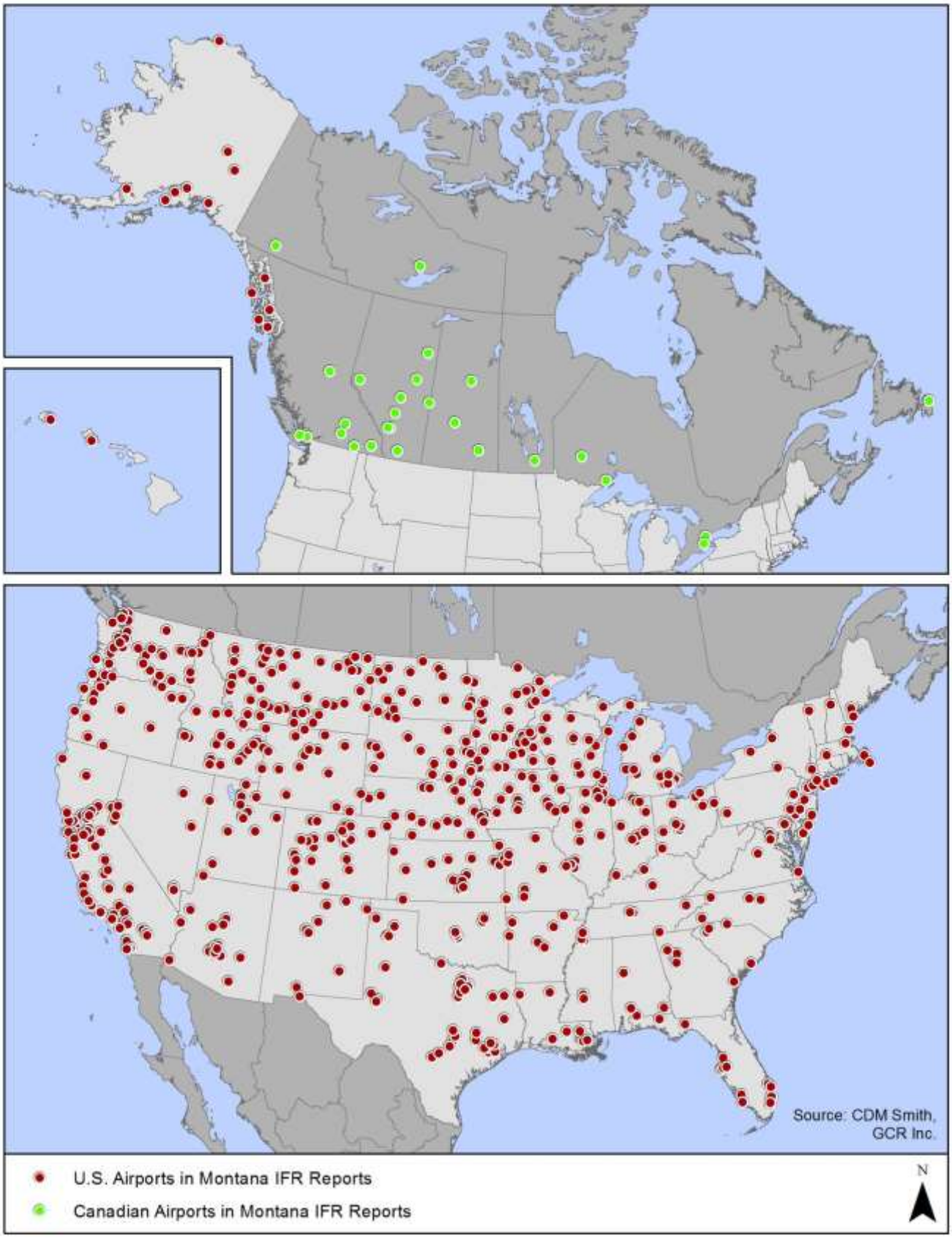


Figure 3-24: Range of Flights to and from Montana NPIAS Airports

Business Use of Montana Airports

The same IFR data was utilized to gain a snapshot of how Montana airports support local, regional, and statewide economies. Many companies disclose their company name when filing an IFR report, while others do not. Because not all companies provide this information when filing reports, and because IFR reports represent only a sample of flights to and from airports in Montana, this data is not exhaustive. The data does, however, provide a good enough sample to determine the industries using Montana airports with the most frequency.

Outside of the aviation industry, the most common companies appearing in IFR data from June 1, 2013 to June 1, 2014 are those in the finance, insurance, and real estate industries. Companies in the energy/oil and gas industry were also found to have utilized Montana airports frequently over the study period. Other industries appearing frequently in this IFR data include government, manufacturing, healthcare, construction, agriculture, and professional services.

Table 3-11: Aviation Activity for 2013

ID	Associated City	Airport	Total Operations (TAF)	Itinerant Operations (TAF)	Based Aircraft (TAF)	Based Jets (TAF)
3U3	Anaconda	Bowman Field	4,900	2,300	10	0
3U4	Ashland	St. Labre Mission	600	600	0	0
3U5	Augusta	Augusta	300	300	0	0
3U7	Augusta	Benchmark	470	470	0	0
49S	Babb	Babb	250	250	0	0
BHK	Baker	Baker Municipal	7,050	1,750	25	0
3U8	Big Sandy	Big Sandy	5,350	350	17	0
6S0	Big Timber	Big Timber	7,200	2,450	11	0
53U	Bigfork	Ferndale Airfield	5,000	2,500	0	0
BIL	Billings	Billings Logan International	86,557	63,194	167	11
3U9	Boulder	Boulder	600	175	2	0
BZN	Bozeman	Bozeman Yellowstone International	81,482	46,158	284	26
6S1	Bridger	Bridger Municipal	1,800	300	2	0
00F	Broadus	Broadus	5,350	600	1	0
8S0	Browning	Starr-Browning Airstrip	625	625	0	0
BTM	Butte	Bert Mooney	23,934	10,734	36	0
LTY	Chester	Liberty County	4,700	700	13	0
4U4	Chinook	Hebbleman	600	50	3	0
S71	Chinook	Edgar G Obie	8,350	1,350	11	0
CII	Choteau	Choteau	3,100	1,400	12	0
4U6	Circle	Circle Town County	3,750	1,350	1	0
RC0	Clinton	Rock Creek	525	450	1	0

Aviation Activity for 2013 (Cont.)

ID	Associated City	Airport	Total Operations (TAF)	Itinerant Operations (TAF)	Based Aircraft (TAF)	Based Jets (TAF)
M46	Colstrip	Colstrip	3,250	2,250	11	0
6S3	Columbus	Woltermann Memorial	9,050	5,050	29	0
S04	Condon	Condon USFS	300	200	0	0
4U7	Conner	West Fork Lodge	550	300	5	0
S01	Conrad	Conrad	3,850	1,350	13	0
S85	Culbertson	Big Sky Field	4,650	900	8	0
CTB	Cut Bank	Cut Bank Municipal	8,250	3,250	29	0
38S	Deer Lodge	Deer Lodge-City-County	4,050	2,300	14	0
4U9	Dell	Dell Flight Strip	950	425	3	1
5U0	Denton	Denton	550	150	0	0
DLN	Dillon	Dillon	10,500	6,950	17	0
M26	Drummond	Drummond	175	100	0	0
5U1	Dutton	Dutton	1,700	200	12	0
97M	Ekalaka	Ekalaka	2,576	1,576	3	0
EKS	Ennis	Ennis - Big Sky	11,000	4,918	10	1
88M	Eureka	Eureka	2,075	535	31	0
5U5	Fairfield	Fairfield	3,850	750	6	0
5U6	Fairview	Fairview	1,850	750	2	0
1S3	Forsyth	Tillitt Field	8,170	3,345	24	0
79S	Fort Benton	Fort Benton	5,450	1,650	25	0
37S	Fort Peck	Fort Peck	420	120	7	0
5U7	Fort Smith	Fort Smith Landing Strip	3,100	2,875	0	0
29S	Gardiner	Gardiner	7,600	4,600	0	0
5U8	Geraldine	Geraldine	3,800	1,100	0	0
GGW	Glasgow	Wokal Field/Glasgow International	8,315	4,815	76	1

Aviation Activity for 2013 (Cont.)

ID	Associated City	Airport	Total Operations (TAF)	Itinerant Operations (TAF)	Based Aircraft (TAF)	Based Jets (TAF)
GDV	Glendive	Dawson Community	5,815	4,215	15	0
GTF	Great Falls	Great Falls International	41,591	33,686	108	3
6S5	Hamilton	Ravalli County	23,600	10,100	104	3
F02	Hardin	Fairgrounds Airpark	5,600	2,100	7	0
48S	Harlem	Harlem	3,850	1,750	5	0
U09	Harlem	Fort Belknap Agency	300	300	0	0
HWQ	Harlowton	Wheatland County at Harlowton	2,275	775	7	0
HVR	Havre	Havre City-County	7,994	3,694	21	0
HLN	Helena	Helena Regional	38,600	26,874	377	30
6U5	Hinsdale	Hinsdale	800	350	3	0
6U6	Hogeland	Hogeland	275	125	2	0
S09	Hot Springs	Hot Springs	500	325	2	0
6U7	Hysham	Hysham	700	200	2	0
JDN	Jordan	Jordan	2,050	550	1	0
GPI	Kalispell	Glacier Park International	27,528	21,996	159	5
S27	Kalispell	Kalispell City	41,400	23,400	78	0
6S8	Laurel	Laurel Municipal	41,900	33,000	88	0
80S	Lavina	Lavina	375	275	1	0
LWT	Lewistown	Lewistown Municipal	16,804	11,104	64	0
S59	Libby	Libby	5,000	2,000	17	0
S69	Lincoln	Lincoln	4,115	2,765	10	0
LVM	Livingston	Mission Field	15,500	7,500	16	1
M75	Malta	Malta	0	0	11	0
0S1	Meadow Creek	Meadow Creek USFS	350	350	0	0
MLS	Miles City	Frank Wiley Field	11,200	8,000	20	0

Aviation Activity for 2013 (Cont.)

ID	Associated City	Airport	Total Operations (TAF)	Itinerant Operations (TAF)	Based Aircraft (TAF)	Based Jets (TAF)
MSO	Missoula	Missoula International	36,688	23,283	145	20
S00	Opheim	Opheim	200	100	2	0
U05	Philipsburg	Riddick Field	2,050	800	0	0
S34	Plains	Plains	4,240	1,240	7	0
PWD	Plentywood	Sher-Wood	11,360	7,310	10	0
8S1	Polson	Polson	9,750	5,250	31	1
PO1	Poplar	Poplar Municipal	11,400	5,400	7	0
H28	Port of Del Bonita	Whetstone Intl	110	110	0	0
RED	Red Lodge	Red Lodge	5,950	2,250	13	0
7U8	Richey	Richey	3,750	1,250	2	0
7S0	Ronan	Ronan	9,850	4,250	38	0
RPX	Roundup	Roundup	5,300	2,800	10	0
M42	Russian Flat	Russian Flat	320	320	0	0
8U0	Ryegate	Ryegate	275	275	0	0
8U1	Sand Springs	Sand Springs Strip	700	200	1	0
8U2	Schafer	Schafer /USFS/	550	550	0	0
8U3	Scobey	Scobey Border Station / East Poplar Intl.	10	10	0	0
9S2	Scobey	Scobey	4,450	1,450	14	0
23S	Seeley Lake	Seeley Lake	2,120	1,320	13	0
M35	Seeley Lake	Lindey's Landing Strip	230	140	0	0
SBX	Shelby	Shelby	8,400	1,350	21	1
SDY	Sidney	Sidney-Richland Municipal	6,815	3,815	32	0
8U4	Spotted Bear	Spotted Bear /USFS	870	870	0	0
52S	St. Ignatius	St. Ignatius	4,060	2,060	12	0
S64	Stanford	Stanford	4,300	1,000	10	0

Aviation Activity for 2013 (Cont.)

ID	Associated City	Airport	Total Operations (TAF)	Itinerant Operations (TAF)	Based Aircraft (TAF)	Based Jets (TAF)
32S	Stevensville	Stevensville	13,500	5,000	75	1
8U5	Sunburst	Sunburst	450	350	1	0
9S4	Superior	Mineral County	4,000	1,000	12	0
7S8	Sweetgrass	Ross International	25	25	0	0
8U6	Terry	Terry	800	400	1	0
THM	Thompson Falls	Thompson Falls	7,000	1,500	11	0
9S5	Three Forks	Three Forks	11,530	9,830	31	0
B70	Tiber Dam	Tiber Dam	70	70	0	0
8U8	Townsend	Townsend	4,600	3,100	10	0
8U9	Townsend	Canyon Ferry	1,260	500	3	0
57S	Troy	Troy	700	500	0	0
9U0	Turner	Turner	7,000	600	14	0
7S1	Twin Bridges	Twin Bridges	2,650	1,550	10	0
7S7	Valier	Valier	50	50	0	0
WYS	West Yellowstone	Yellowstone	11,105	8,605	0	0
7S6	White Sulphur Springs	White Sulphur Springs	5,550	3,725	5	0
58S	Whitefish	Whitefish	0	0	1	0
9U1	Wilsall	Wilsall	600	450	0	0
9S7	Winifred	Winifred	1,500	250	0	0
BB0	Winifred	Black Butte North	75	0	0	0
BW8	Winifred	Bullwhacker	75	0	0	0
CW0	Winifred	Cow Creek	75	0	0	0
LC0	Winifred	Left Coulee	75	0	0	0
MT3	Winifred	Knox Ridge	75	0	0	0
WH0	Winifred	Woodhawk	50	0	0	0
7S2	Winnett	Winnett	130	30	1	0

Aviation Activity for 2013 (Cont.)

ID	Associated City	Airport	Total Operations (TAF)	Itinerant Operations (TAF)	Based Aircraft (TAF)	Based Jets (TAF)
7S4	Wisdom	Wisdom	230	180	1	0
02T	Wise River	Wise River	500	400	0	0
OLF	Wolf Point	L M Clayton	5,839	3,739	8	0

Table 3-12: Tower Operations

Year	Facility	Air Carrier	Air Taxi	General Aviation	Military	Total
1998	BIL	10,228	33,789	58,374	751	103,142
1999	BIL	11,391	37,378	66,617	966	116,352
2000	BIL	12,426	38,798	64,872	1076	117,172
2001	BIL	12,204	38,076	66,318	759	117,357
2002	BIL	11,969	39,345	50,629	794	102,737
2003	BIL	13,833	37,416	49,670	870	101,789
2004	BIL	15,228	35,245	49,048	764	100,285
2005	BIL	12,739	39,207	52,011	648	104,605
2006	BIL	11,791	37,470	52,881	719	102,861
2007	BIL	12,873	34,268	50,402	655	98,198
2008	BIL	13,340	26,007	50,397	381	90,125
2009	BIL	11,992	25,630	45,573	306	83,501
2010	BIL	10,218	24,775	42,734	378	78,105
2011	BIL	9,158	25,988	47,591	520	83,257
2012	BIL	10,079	26,917	46,664	657	84,317
2013	BIL	9,011	24,022	42,512	487	76,032
1998	BZN					
1999	BZN					
2000	BZN	5,708	6,404	42,494	212	54,818
2001	BZN	6,085	6,945	49,342	650	63,022
2002	BZN	6,503	8,112	45,991	272	60,878
2003	BZN	5,928	9,322	49,770	390	65,410
2004	BZN	6,114	11,059	49,218	242	66,633
2005	BZN	5,822	12,811	53,427	142	72,202

Tower Operations (Cont.)

Year	Facility	Air Carrier	Air Taxi	General Aviation	Military	Total
2006	BZN	7,067	11,068	64,681	171	82,987
2007	BZN	8,468	10,413	60,792	568	80,241
2008	BZN	8,026	9,719	58,623	238	76,606
2009	BZN	7,506	9,041	51,914	356	68,817
2010	BZN	7,472	10,715	54,094	172	72,453
2011	BZN	7,519	9,719	56,297	211	73,746
2012	BZN	8,765	9,168	63,217	331	81,481
2013	BZN	8,266	9,622	56,712	317	74,917
1998	GPI					0
1999	GPI					0
2000	GPI					0
2001	GPI					0
2002	GPI	3,555	8,117	25,653	552	37,877
2003	GPI	4,574	11,143	35,622	735	52,074
2004	GPI	3,229	13,694	45,359	655	62,937
2005	GPI	3,157	13,483	38,109	1562	56,311
2006	GPI	4,146	10,246	36,374	1390	52,156
2007	GPI	4,457	11,865	36,281	809	53,412
2008	GPI	2,961	7,639	25,332	647	36,579
2009	GPI	2,656	6,075	17,216	1072	27,019
2010	GPI	3,534	5,463	20,181	782	29,960
2011	GPI	3,363	5,384	17,204	1597	27,548
2012	GPI	2,893	5,883	15,225	1074	25,075
2013	GPI	2,853	5,300	15,866	2368	26,387

Tower Operations (Cont.)

Year	Facility	Air Carrier	Air Taxi	General Aviation	Military	Total
1998	GTF	9,379	12,824	35,565	11919	69,687
1999	GTF	10,038	13,863	36,380	14021	74,302
2000	GTF	9,855	13,811	35,122	13570	72,358
2001	GTF	9,406	12,741	32,176	12447	66,770
2002	GTF	10,133	13,053	26,163	13703	63,052
2003	GTF	9,581	13,031	22,859	11959	57,430
2004	GTF	11,754	10,755	22,268	9891	54,668
2005	GTF	12,591	10,674	18,267	7739	49,271
2006	GTF	11,121	9,564	18,974	4948	44,607
2007	GTF	9,785	7,488	21,378	8140	46,791
2008	GTF	9,497	7,655	20,383	4488	42,023
2009	GTF	7,469	8,829	19,810	4944	41,052
2010	GTF	4,946	10,432	23,161	4871	43,410
2011	GTF	5,010	10,438	17,477	5139	38,064
2012	GTF	5,281	10,103	16,607	4600	36,591
2013	GTF	5,198	9,883	16,695	3830	35,606
1998	HLN	2,484	13,384	42,806	7686	66,360
1999	HLN	3,772	12,135	45,744	10413	72,064
2000	HLN	2,933	12,634	40,339	7604	63,510
2001	HLN	3,264	11,582	39,651	7828	62,325
2002	HLN	3,406	12,618	37,584	8270	61,878
2003	HLN	2,971	12,850	40,622	8957	65,400
2004	HLN	2,129	14,001	33,096	5602	54,828
2005	HLN	1,307	14,251	35,156	3975	54,689
2006	HLN	1,316	12,047	33,750	8600	55,713
2007	HLN	1,253	10,842	48,362	7305	67,762

Tower Operations (Cont.)

Year	Facility	Air Carrier	Air Taxi	General Aviation	Military	Total
2008	HLN	1,781	7,507	33,778	8628	51,694
2009	HLN	2,511	6,496	34,635	6615	50,257
2010	HLN	2,354	5,477	29,228	7905	44,964
2011	HLN	2,044	5,776	29,442	6083	43,345
2012	HLN	2,005	6,024	25,959	4857	38,845
2013	HLN	1,683	4,742	28,270	4167	38,862
1998	MSO	5,278	10,857	36,589	587	53,311
1999	MSO	6,012	10,199	40,007	579	56,797
2000	MSO	6,241	10,682	41,970	814	59,707
2001	MSO	5,590	12,976	38,434	475	57,475
2002	MSO	5,538	14,568	44,083	428	64,617
2003	MSO	5,113	14,128	33,052	623	52,916
2004	MSO	3,776	17,552	35,332	411	57,071
2005	MSO	3,651	17,008	32,887	915	54,461
2006	MSO	4,163	16,593	32,667	525	53,948
2007	MSO	4,391	14,668	31,986	385	51,430
2008	MSO	4,657	9,472	26,988	219	41,336
2009	MSO	4,551	9,206	24,887	577	39,221
2010	MSO	4,443	10,018	26,742	440	41,643
2011	MSO	4,125	9,752	22,447	670	36,994
2012	MSO	4,359	10,285	21,381	420	36,445
2013	MSO	3,980	10,197	20,796	459	35,432

Source: FAA Air Traffic Activity, Respective Calendar Years

Table 3-13: Instrument Operations at Towered Airports

Year	Facility	Air Carrier	Air Taxi	General Aviation	Military	Total
1998	BIL	9,469	23,879	10,219	77	43,644
1999	BIL	10,614	28,398	13,852	187	53,051
2000	BIL	12,027	30,763	14,683	401	57,874
2001	BIL	11,914	31,041	13,837	280	57,072
2002	BIL	11,649	32,279	11,975	294	56,197
2003	BIL	13,303	29,813	12,923	267	56,306
2004	BIL	14,218	29,740	12,265	142	56,365
2005	BIL	12,348	33,798	13,011	249	59,406
2006	BIL	11,757	32,235	13,256	273	57,521
2007	BIL	12,828	29,428	13,375	266	55,897
2008	BIL	13,329	22,480	11,461	176	47,446
2009	BIL	11,984	22,898	11,518	155	46,555
2010	BIL	10,212	23,119	9,780	197	43,308
2011	BIL	9,151	24,230	10,284	204	43,869
2012	BIL	10,051	24,817	9,791	327	44,986
2013	BIL	9,016	21,306	9,587	222	40,131
1998						
1999	BZN	3,998	2,617	2,589	23	9,227
2000	BZN	5,272	4,750	3,684	12	13,718
2001	BZN	5,732	5,282	3,358	86	14,458
2002	BZN	6,362	6,612	3,781	68	16,823
2003	BZN	5,770	7,968	3,850	81	17,669
2004	BZN	5,837	10,147	4,202	29	20,215

Instrument Operations at Towered Airports (Cont.)

Year	Facility	Air Carrier	Air Taxi	General Aviation	Military	Total
2005	BZN	5,765	12,090	5,234	32	23,121
2006	BZN	7,064	10,834	6,347	72	24,317
2007	BZN	8,436	10,241	6,513	126	25,316
2008	BZN	7,985	9,534	6,029	64	23,612
2009	BZN	7,501	8,622	5,060	106	21,289
2010	BZN	7,468	10,555	4,815	81	22,919
2011	BZN	7,516	9,504	5,385	67	22,472
2012	BZN	8,758	8,566	5,114	127	22,565
2013	BZN	8,261	8,948	5,734	100	23,043
1998	GPI					
1999	GPI					
2000	GPI					
2001	GPI					
2002	GPI	3,258	6,061	3,541	13	12,873
2003	GPI	4,151	7,613	4,662	29	16,455
2004	GPI	2,943	11,218	5,057	38	19,256
2005	GPI	3,122	11,161	4,660	163	19,106
2006	GPI	4,054	7,955	5,111	157	17,277
2007	GPI	3,022	8,756	5,920	87	17,785
2008	GPI	2,908	7,052	5,260	81	15,301
2009	GPI	2,650	5,863	4,113	148	12,774
2010	GPI	3,540	5,245	4,326	181	13,292
2011	GPI	3,361	5,222	4,091	269	12,943
2012	GPI	2,876	5,795	4,153	209	13,033
2013	GPI	2,841	5,229	4,392	345	12,807

Instrument Operations at Towered Airports (Cont.)

Year	Facility	Air Carrier	Air Taxi	General Aviation	Military	Total
1998	GTF	8,200	10,609	4,754	4268	27,831
1999	GTF	9,201	11,704	4,490	4474	29,869
2000	GTF	9,754	12,434	4,896	5243	32,327
2001	GTF	9,347	11,934	4,830	4696	30,807
2002	GTF	9,957	12,192	4,567	5637	32,353
2003	GTF	9,455	11,586	5,235	5398	31,674
2004	GTF	11,634	10,176	4,408	4759	30,977
2005	GTF	12,571	10,151	4,268	4595	31,585
2006	GTF	11,106	8,929	4,594	2866	27,495
2007	GTF	9,699	6,719	4,903	4364	25,685
2008	GTF	9,553	7,016	5,214	1926	23,709
2009	GTF	7,546	8,285	4,215	2760	22,806
2010	GTF	4,946	10,035	4,744	2938	22,663
2011	GTF	5,009	10,054	4,672	3555	23,290
2012	GTF	5,278	9,816	4,575	3442	23,111
2013	GTF	5,198	9,783	4,506	2343	21,830
1998	HLN	2,133	9,853	4,643	646	17,275
1999	HLN	3,333	8,049	4,651	994	17,027
2000	HLN	2,788	9,316	4,555	836	17,495
2001	HLN	3,198	8,704	4,100	950	16,952
2002	HLN	3,359	10,122	2,981	896	17,358
2003	HLN	2,858	10,275	2,856	944	16,933
2004	HLN	1,901	12,001	3,143	628	17,673
2005	HLN	1,307	12,765	3,076	416	17,564
2006	HLN	1,308	10,987	3,125	900	16,320

Instrument Operations at Towered Airports (Cont.)

Year	Facility	Air Carrier	Air Taxi	General Aviation	Military	Total
2007	HLN	1,246	8,819	3,234	535	13,834
2008	HLN	1,725	6,660	3,222	821	12,428
2009	HLN	2,492	6,205	2,982	765	12,444
2010	HLN	2,336	5,404	3,032	674	11,446
2011	HLN	1,994	5,656	3,163	547	11,360
2012	HLN	1,958	5,516	2,452	439	10,365
2013	HLN	1,683	4,646	2,039	357	8,725
1998	MSO	4,739	6,526	3,319	65	14,649
1999	MSO	5,461	6,251	3,536	47	15,295
2000	MSO	5,663	6,920	4,223	61	16,867
2001	MSO	5,420	8,652	3,537	92	17,701
2002	MSO	5,499	10,275	3,783	110	19,667
2003	MSO	4,950	11,119	4,210	173	20,452
2004	MSO	3,528	13,612	4,483	40	21,663
2005	MSO	3,635	13,639	4,239	190	21,703
2006	MSO	4,163	12,208	4,125	123	20,619
2007	MSO	4,384	10,890	4,595	86	19,955
2008	MSO	4,651	7,199	3,663	57	15,570
2009	MSO	4,551	7,135	3,600	189	15,475
2010	MSO	4,444	7,973	3,735	112	16,264
2011	MSO	4,125	7,411	3,987	137	15,660
2012	MSO	4,296	7,326	3,624	125	15,371
2013	MSO	3,793	7,267	3,508	122	14,690

Source: FAA Air Traffic Activity, Respective Calendar Years

Table 3-14: Air Carrier and Air Taxi Operations at Towered Airports

Year	Facility	Air Carrier	Air Taxi	Total
1998	BIL	10,167	33,004	43,171
1999	BIL	11,208	36,336	47,544
2000	BIL	12,002	38,752	50,754
2001	BIL	12,909	38,070	50,979
2002	BIL	11,417	39,152	50,569
2003	BIL	13,396	39,004	52,400
2004	BIL	15,538	34,495	50,033
2005	BIL	12,845	38,457	51,302
2006	BIL	12,006	38,086	50,092
2007	BIL	12,657	34,977	47,634
2008	BIL	13,617	28,827	42,444
2009	BIL	12,311	24,857	37,168
2010	BIL	10,429	25,247	35,676
2011	BIL	9,409	25,271	34,680
2012	BIL	9,385	27,410	36,795
2013	BIL	9,024	23,969	32,993
1998	BTM	4,684	4,778	9,462
1999	BTM	4,684	4,778	9,462
2000	BTM	4,684	4,778	9,462
2001	BTM	500	10,010	10,510
2002	BTM	4,868	5,642	10,510
2003	BTM	500	10,205	10,705
2004	BTM	500	10,303	10,803

Air Carrier and Air Taxi Operations at Towered Airports (Cont.)

Year	Facility	Air Carrier	Air Taxi	Total
2005	BTM	4,486	5,396	9,882
2006	BTM	3,100	5,408	8,508
2007	BTM	3,004	5,654	8,658
2008	BTM	3,004	5,654	8,658
2009	BTM	3,004	5,654	8,658
2010	BTM	3,104	5,654	8,758
2011	BTM	3,104	5,654	8,758
2012	BTM	808	2,001	2,809
2013	BTM	808	2,001	2,809
1998	BZN	5,475	2,910	8,385
1999	BZN	3,266	2,581	5,847
2000	BZN	5,321	5,947	11,268
2001	BZN	6,041	6,881	12,922
2002	BZN	6,505	7,787	14,292
2003	BZN	6,169	9,039	15,208
2004	BZN	5,943	10,806	16,749
2005	BZN	5,900	12,481	18,381
2006	BZN	7,327	10,972	18,299
2007	BZN	7,668	10,796	18,464
2008	BZN	8,387	10,127	18,514
2009	BZN	7,540	9,247	16,787
2010	BZN	7,378	10,244	17,622
2011	BZN	7,576	10,119	17,695
2012	BZN	8,297	9,359	17,656
2013	BZN	8,765	9,168	17,933

Air Carrier and Air Taxi Operations at Towered Airports (Cont.)

Year	Facility	Air Carrier	Air Taxi	Total
1998	GDV	0	2,600	2,600
1999	GDV	0	2,600	2,600
2000	GDV	0	2,600	2,600
2001	GDV	0	2,600	2,600
2002	GDV	1,200	1,400	2,600
2003	GDV	0	2,600	2,600
2004	GDV	0	2,600	2,600
2005	GDV	0	2,600	2,600
2006	GDV	0	2,600	2,600
2007	GDV	0	2,600	2,600
2008	GDV	0	2,600	2,600
2009	GDV	0	2,600	2,600
2010	GDV	0	2,600	2,600
2011	GDV	0	2,600	2,600
2012	GDV	0	2,600	2,600
2013	GDV	0	2,600	2,600
1998	GGW	0	2,373	2,373
1999	GGW	0	2,373	2,373
2000	GGW	0	2,373	2,373
2001	GGW	0	7,398	7,398
2002	GGW	1,248	6,150	7,398
2003	GGW	0	7,398	7,398
2004	GGW	0	7,398	7,398
2005	GGW	0	7,398	7,398
2006	GGW	0	7,398	7,398

Air Carrier and Air Taxi Operations at Towered Airports (Cont.)

Year	Facility	Air Carrier	Air Taxi	Total
2007	GGW	0	10,500	10,500
2008	GGW	0	10,500	10,500
2009	GGW	0	10,500	10,500
2010	GGW	0	10,500	10,500
2011	GGW	0	10,500	10,500
2012	GGW	0	10,500	10,500
2013	GGW	0	3,460	3,460
1998	GPI	2,100	11,350	13,450
1999	GPI	7,710	6,020	13,730
2000	GPI	6,000	9,044	15,044
2001	GPI	6,000	9,044	15,044
2002	GPI	4,382	9,725	14,107
2003	GPI	4,490	11,424	15,914
2004	GPI	3,585	12,524	16,109
2005	GPI	3,198	16,052	19,250
2006	GPI	3,745	11,304	15,049
2007	GPI	5,148	11,311	16,459
2008	GPI	2,617	8,451	11,068
2009	GPI	2,792	6,324	9,116
2010	GPI	3,398	5,470	8,868
2011	GPI	3,468	5,368	8,836
2012	GPI	2,930	5,755	8,685
2013	GPI	3,986	5,871	9,857
1998	GTF	8,778	12,676	21,454

Air Carrier and Air Taxi Operations at Towered Airports (Cont.)

Year	Facility	Air Carrier	Air Taxi	Total
1999	GTF	9,943	14,051	23,994
2000	GTF	10,046	13,987	24,033
2001	GTF	9,288	12,561	21,849
2002	GTF	10,020	13,222	23,242
2003	GTF	9,828	13,280	23,108
2004	GTF	11,649	11,565	23,214
2005	GTF	12,009	10,514	22,523
2006	GTF	11,877	9,865	21,742
2007	GTF	10,123	7,980	18,103
2008	GTF	9,238	7,554	16,792
2009	GTF	8,792	8,257	17,049
2010	GTF	4,966	10,427	15,393
2011	GTF	4,968	10,417	15,385
2012	GTF	5,274	10,121	15,395
2013	GTF	4,926	10,458	15,384
1998	HLN	0	4,000	4,000
1999	HLN	0	4,000	4,000
2000	HLN	0	4,000	4,000
2001	HLN	0	4,000	4,000
2002	HLN	2,400	1,600	4,000
2003	HLN	0	4,000	4,000
2004	HLN	0	4,000	4,000
2005	HLN	0	4,000	4,000
2006	HLN	0	4,000	4,000
2007	HLN	1,248	0	1,248
2008	HLN	1,248	0	1,248

Air Carrier and Air Taxi Operations at Towered Airports (Cont.)

Year	Facility	Air Carrier	Air Taxi	Total
2009	HLN	1,248	520	1,768
2010	HLN	0	1,872	1,872
2011	HLN	0	1,872	1,872
2012	HLN	0	2,496	2,496
2013	HLN	1,982	5,931	7,913
1998	HVR	0	2,140	2,140
1999	HVR	0	2,140	2,140
2000	HVR	0	2,140	2,140
2001	HVR	0	2,140	2,140
2002	HVR	1,240	900	2,140
2003	HVR	0	2,140	2,140
2004	HVR	0	2,140	2,140
2005	HVR	0	2,140	2,140
2006	HVR	350	0	350
2007	HVR	350	0	350
2008	HVR	350	0	350
2009	HVR	0	1,144	1,144
2010	HVR	0	1,144	1,144
2011	HVR	0	1,144	1,144
2012	HVR	0	1,144	1,144
2013	HVR	0	1,144	1,144
1998	LWT	0	4,000	4,000
1999	LWT	0	4,000	4,000
2000	LWT	0	4,000	4,000

Air Carrier and Air Taxi Operations at Towered Airports (Cont.)

Year	Facility	Air Carrier	Air Taxi	Total
2001	LWT	0	4,000	4,000
2002	LWT	2,400	1,600	4,000
2003	LWT	0	4,000	4,000
2004	LWT	0	4,000	4,000
2005	LWT	0	4,000	4,000
2006	LWT	0	4,000	4,000
2007	LWT	1,248	0	1,248
2008	LWT	1,248	0	1,248
2009	LWT	1,248	520	1,768
2010	LWT	0	1,872	1,872
2011	LWT	0	1,872	1,872
2012	LWT	0	2,496	2,496
2013	LWT	0	2,496	2,496
1998	MLS	0	3,088	3,088
1999	MLS	0	3,200	3,200
2000	MLS	0	3,200	3,200
2001	MLS	0	3,200	3,200
2002	MLS	1,300	1,900	3,200
2003	MLS	0	3,200	3,200
2004	MLS	0	3,200	3,200
2005	MLS	0	3,200	3,200
2006	MLS	0	3,200	3,200
2007	MLS	0	3,200	3,200
2008	MLS	0	3,200	3,200
2009	MLS	0	3,200	3,200
2010	MLS	0	3,200	3,200

Air Carrier and Air Taxi Operations at Towered Airports (Cont.)

Year	Facility	Air Carrier	Air Taxi	Total
2011	MLS	0	3,200	3,200
2012	MLS	0	3,200	3,200
2013	MLS	0	3,200	3,200
1998	MSO	5,395	10,683	16,078
1999	MSO	5,744	10,703	16,447
2000	MSO	6,414	10,017	16,431
2001	MSO	5,658	12,678	18,336
2002	MSO	5,555	14,371	19,926
2003	MSO	5,250	14,194	19,444
2004	MSO	4,024	16,553	20,577
2005	MSO	3,731	17,508	21,239
2006	MSO	3,965	16,264	20,229
2007	MSO	4,437	15,477	19,914
2008	MSO	4,638	10,527	15,165
2009	MSO	4,564	9,355	13,919
2010	MSO	4,401	9,646	14,047
2011	MSO	4,295	10,057	14,352
2012	MSO	4,079	10,545	14,624
2013	MSO	4,124	9,727	13,851
1998	OLF	0	2,910	2,910
1999	OLF	0	2,910	2,910
2000	OLF	0	2,910	2,910
2001	OLF	0	2,910	2,910
2002	OLF	990	1,920	2,910

Air Carrier and Air Taxi Operations at Towered Airports (Cont.)

Year	Facility	Air Carrier	Air Taxi	Total
2003	OLF	0	2,910	2,910
2004	OLF	0	2,910	2,910
2005	OLF	0	2,910	2,910
2006	OLF	0	2,910	2,910
2007	OLF	0	2,910	2,910
2008	OLF	0	2,910	2,910
2009	OLF	2,910	250	3,160
2010	OLF	0	2,805	2,805
2011	OLF	0	2,805	2,805
2012	OLF	0	2,805	2,805
2013	OLF	0	2,805	2,805
1998	SDY	0	3,750	3,750
1999	SDY	0	3,750	3,750
2000	SDY	0	3,750	3,750
2001	SDY	0	3,850	3,850
2002	SDY	1,400	2,450	3,850
2003	SDY	0	3,850	3,850
2004	SDY	0	3,850	3,850
2005	SDY	0	4,250	4,250
2006	SDY	0	4,250	4,250
2007	SDY	0	4,250	4,250
2008	SDY	0	4,250	4,250
2009	SDY	0	4,250	4,250
2010	SDY	0	4,250	4,250
2011	SDY	1,800	1,000	2,800
2012	SDY	1,800	1,000	2,800

Air Carrier and Air Taxi Operations at Towered Airports (Cont.)

Year	Facility	Air Carrier	Air Taxi	Total
2013	SDY	1,800	1,000	2,800
1998	WYS	0	966	966
1999	WYS	0	362	362
2000	WYS	0	362	362
2001	WYS	0	360	360
2002	WYS	360	0	360
2003	WYS	0	360	360
2004	WYS	0	360	360
2005	WYS	0	544	544
2006	WYS	520	0	520
2007	WYS	114	0	114
2008	WYS	114	0	114
2009	WYS	0	270	270
2010	WYS	0	516	516
2011	WYS	0	530	530
2012	WYS	0	530	530
2013	WYS	0	530	530

Source: FAA Terminal Area Forecast

Table 3-15: Airline Instrument Operations

Year	Facility	IFR Air Carrier	IFR Air Taxi	VFR Air Carrier	VFR Air Taxi	Tot Air Carrier	Tot Air Taxi	Total Commercial
1998	BIL	9,469	23,879	759	9,910	10,228	33,789	44,017
1999	BIL	10,614	28,398	777	8,980	11,391	37,378	48,769
2000	BIL	12,027	30,763	399	8,035	12,426	38,798	51,224
2001	BIL	11,914	31,041	290	7,035	12,204	38,076	50,280
2002	BIL	11,649	32,279	320	7,066	11,969	39,345	51,314
2003	BIL	13,303	29,813	530	7,603	13,833	37,416	51,249
2004	BIL	14,218	29,740	1,010	5,505	15,228	35,245	50,473
2005	BIL	12,348	33,798	391	5,409	12,739	39,207	51,946
2006	BIL	11,757	32,235	34	5,235	11,791	37,470	49,261
2007	BIL	12,828	29,428	45	4,840	12,873	34,268	47,141
2008	BIL	13,329	22,480	11	3,527	13,340	26,007	39,347
2009	BIL	11,984	22,897	8	2,733	11,992	25,630	37,622
2010	BIL	10,203	23,054	15	1,721	10,218	24,775	34,993
2011	BIL	9,145	24,158	13	1,830	9,158	25,988	35,146
2012	BIL	10,040	24,748	39	2,169	10,079	26,917	36,996
2013	BIL	9,009	21,214	2	2,808	9,011	24,022	33,033
1999	BZN	3,998	2,617	393	1,201	4,391	3,818	8,209
2000	BZN	5,272	4,750	436	1,654	5,708	6,404	12,112
2001	BZN	5,732	5,282	353	1,663	6,085	6,945	13,030
2002	BZN	6,362	6,612	141	1,500	6,503	8,112	14,615
2003	BZN	5,770	7,968	158	1,354	5,928	9,322	15,250
2004	BZN	5,837	10,147	277	912	6,114	11,059	17,173
2005	BZN	5,765	12,090	57	721	5,822	12,811	18,633
2006	BZN	7,064	10,834	3	234	7,067	11,068	18,135
2007	BZN	8,436	10,241	32	172	8,468	10,413	18,881

Airline Instrument Operations (Cont.)

Year	Facility	IFR Air Carrier	IFR Air Taxi	VFR Air Carrier	VFR Air Taxi	Tot Air Carrier	Tot Air Taxi	Total Commercial
2008	BZN	7,981	9,534	45	185	8,026	9,719	17,745
2009	BZN	7,501	8,622	5	419	7,506	9,041	16,547
2010	BZN	7,467	10,555	5	160	7,472	10,715	18,187
2011	BZN	7,515	9,504	4	215	7,519	9,719	17,238
2012	BZN	8,758	8,566	7	602	8,765	9,168	17,933
2013	BZN	8,261	8,948	5	674	8,266	9,622	17,888
1998	GPI							
1999	GPI							
2000	GPI							
2001	GPI							
2002	GPI	3,258	6,061	297	2,056	3,555	8,117	11,672
2003	GPI	4,151	7,613	423	3,530	4,574	11,143	15,717
2004	GPI	2,943	11,218	286	2,476	3,229	13,694	16,923
2005	GPI	3,122	11,161	35	2,322	3,157	13,483	16,640
2006	GPI	4,054	7,955	92	2,291	4,146	10,246	14,392
2007	GPI	3,022	8,756	1,435	3,109	4,457	11,865	16,322
2008	GPI	2,908	7,052	53	587	2,961	7,639	10,600
2009	GPI	2,650	5,858	6	217	2,656	6,075	8,731
2010	GPI	3,534	5,245	0	218	3,534	5,463	8,997
2011	GPI	3,361	5,220	2	164	3,363	5,384	8,747
2012	GPI	2,876	5,795	17	88	2,893	5,883	8,776
2013	GPI	2,841	5,229	12	71	2,853	5,300	8,153
1998	GTF	8,200	10,609	1,179	2,215	9,379	12,824	22,203
1999	GTF	9,201	11,704	837	2,159	10,038	13,863	23,901

Airline Instrument Operations (Cont.)

Year	Facility	IFR Air Carrier	IFR Air Taxi	VFR Air Carrier	VFR Air Taxi	Tot Air Carrier	Tot Air Taxi	Total Commercial
2000	GTF	9,754	12,434	101	1,377	9,855	13,811	23,666
2001	GTF	9,347	11,934	59	807	9,406	12,741	22,147
2002	GTF	9,957	12,192	176	861	10,133	13,053	23,186
2003	GTF	9,455	11,586	126	1,445	9,581	13,031	22,612
2004	GTF	11,634	10,176	120	579	11,754	10,755	22,509
2005	GTF	12,571	10,151	20	523	12,591	10,674	23,265
2006	GTF	11,106	8,929	15	635	11,121	9,564	20,685
2007	GTF	9,699	6,719	86	769	9,785	7,488	17,273
2008	GTF	9,469	6,889	28	766	9,497	7,655	17,152
2009	GTF	7,468	8,236	1	593	7,469	8,829	16,298
2010	GTF	4,943	10,025	3	407	4,946	10,432	15,378
2011	GTF	5,005	10,026	5	412	5,010	10,438	15,448
2012	GTF	5,274	9,776	7	327	5,281	10,103	15,384
2013	GTF	5,196	9,737	2	146	5,198	9,883	15,081
1998	HLN	2,133	9,853	351	3,531	2,484	13,384	15,868
1999	HLN	3,333	8,049	439	4,086	3,772	12,135	15,907
2000	HLN	2,788	9,316	145	3,318	2,933	12,634	15,567
2001	HLN	3,198	8,704	66	2,878	3,264	11,582	14,846
2002	HLN	3,359	10,122	47	2,496	3,406	12,618	16,024
2003	HLN	2,858	10,275	113	2,575	2,971	12,850	15,821
2004	HLN	1,901	12,001	228	2,000	2,129	14,001	16,130
2005	HLN	1,307	12,765	0	1,486	1,307	14,251	15,558
2006	HLN	1,308	10,987	8	1,060	1,316	12,047	13,363
2007	HLN	1,246	8,819	7	2,023	1,253	10,842	12,095
2008	HLN	1,725	6,534	56	973	1,781	7,507	9,288
2009	HLN	2,489	5,930	22	566	2,511	6,496	9,007

Airline Instrument Operations (Cont.)

Year	Facility	IFR Air Carrier	IFR Air Taxi	VFR Air Carrier	VFR Air Taxi	Tot Air Carrier	Tot Air Taxi	Total Commercial
2010	HLN	2,336	5,085	18	392	2,354	5,477	7,831
2011	HLN	1,993	5,238	51	538	2,044	5,776	7,820
2012	HLN	1,957	5,309	48	715	2,005	6,024	8,029
2013	HLN	1,683	4,602	0	140	1,683	4,742	6,425
1998	MSO	4,739	6,526	539	4,331	5,278	10,857	16,135
1999	MSO	5,461	6,251	551	3,948	6,012	10,199	16,211
2000	MSO	5,663	6,920	578	3,762	6,241	10,682	16,923
2001	MSO	5,420	8,652	170	4,324	5,590	12,976	18,566
2002	MSO	5,499	10,275	39	4,293	5,538	14,568	20,106
2003	MSO	4,950	11,119	163	3,009	5,113	14,128	19,241
2004	MSO	3,528	13,612	248	3,940	3,776	17,552	21,328
2005	MSO	3,635	13,639	16	3,369	3,651	17,008	20,659
2006	MSO	4,163	12,208	0	4,385	4,163	16,593	20,756
2007	MSO	4,384	10,890	7	3,778	4,391	14,668	19,059
2008	MSO	4,650	7,198	7	2,274	4,657	9,472	14,129
2009	MSO	4,551	7,134	0	2,072	4,551	9,206	13,757
2010	MSO	4,438	7,973	5	2,045	4,443	10,018	14,461
2011	MSO	4,125	7,411	0	2,341	4,125	9,752	13,877
2012	MSO	4,296	7,324	63	2,961	4,359	10,285	14,644
2013	MSO	3,791	7,267	189	2,930	3,980	10,197	14,177

Source: FAA Air Traffic Activity, Respective Calendar Years

Table 3-16: Based Aircraft FAA 5010 Form 1998 & 2013

		1998 FAA 5010 Form							2013 5010 Form						
Associated City	Airport Name	1998 Single Engine	1998 Multi-engine	1998 Jet	1998 Helicopter	1998 Other	1998 Military	1998 Total	2013 Single Engine	2013 Multi-engine	2013 Jet	2013 Helicopter	2013 Other	2013 Military	2013 Total
Anaconda	Bowman Field	18	2					**20**	6	2	0	2			**10**
Ashland	St. Labre Mission Airport	1	1	1				**3**							**0**
Augusta	Augusta Airport	0						**0**							**0**
Augusta	Benchmark Airport							**0**							**0**
Babb	Babb Airport														**0**
Baker	Baker Municipal Airport	22		3				**25**	21	2	0	2			**25**
Big Sandy	Big Sandy Airport	14	0					**14**	17	0	0	0			**17**
Big Timber	Big Timber Airport	11						**11**	11	0	0	0			**11**
Bigfork	Ferndale Airfield	28				1		**29**	0				0		**0**
Billings	Billings Logan International Airport	140	40	2	2			**184**	91	59	11	6			**167**
Boulder	Boulder Airport	1						**1**	2						**2**
Bozeman	Bozeman Yellowstone International Airport	124	12	6	2	13		**157**	215	15	26	18	10		**284**
Bridger	Bridger Municipal Airport	4	1					**5**	2						**2**
Broadus	Broadus Airport	8						**8**	1	0	0	0			**1**
Browning	Starr-Browning Airstrip							**0**							**0**
Butte	Bert Mooney Airport	17	13					**30**	24	9		3			**36**
Chester	Liberty County Airport	12						**12**	12	0	0	0	1		**13**
Chinook	Hebbelman Airport	5						**5**	3						**3**
Chinook	Edgar G. Obie Airport	15						**15**	11	0	0	0			**11**
Choteau	Choteau Airport	14			2	1		**17**	11	0	0		1		**12**
Circle	Circle Town County Airport	7				1		**8**	0				1		**1**

Based Aircraft FAA 5010 Form 1998 & 2013 (Cont.)

		1998 FAA 5010 Form							2013 5010 Form						
Associated City	**Airport Name**	**1998 Single Engine**	**1998 Multi-engine**	**1998 Jet**	**1998 Helicopter**	**1998 Other**	**1998 Military**	**1998 Total**	**2013 Single Engine**	**2013 Multi-engine**	**2013 Jet**	**2013 Helicopter**	**2013 Other**	**2013 Military**	**2013 Total**
Clinton	Rock Creek Airport							**0**	1						**1**
Colstrip	Colstrip Airport	11	1					**12**	11	0	0	0			**11**
Columbus	Columbus Airport (Wolterman Memorial)	12	1			3		**16**	28	0	0	1			**29**
Condon	Condon USFS Airport	1						**1**							**0**
Conner	West Fork Lodge Airport	0						**0**	5						**5**
Conrad	Conrad Airport	10	1					**11**	9	3	0	1			**13**
Culbertson	Big Sky Field	10						**10**	8	0	0	0			**8**
Cut Bank	Cut Bank Municipal Airport	26	1	1	0	1		**29**	25	1	0	0	3		**29**
Deer Lodge	Deer Lodge-City-County Airport	10	1		1			**12**	11	1	0	2			**14**
Dell	Dell Flight Strip	3		1				**4**	2		1				**3**
Denton	Denton Airport							**0**							**0**
Dillon	Dillon Airport	21	1					**22**	17	0	0	0			**17**
Drummond	Drummond Airport	1						**1**							**0**
Dutton	Dutton Airport	7						**7**	11				1		**12**
Ekalaka	Ekalaka Airport	4						**4**	3	0	0	0			**3**
Ennis	Ennis Big Sky Airport	23	3					**26**	9	0	1	0	0	0	**10**
Eureka	Eureka Airport	10				2		**12**	24	4	0	1	2	0	**31**
Fairfield	Fairfield Airport	1						**1**	6						**6**
Fairview	Fairview Airport	1				0		**1**	1				1		**2**
Forsyth	Tillitt Field	25						**25**	24	0	0	0			**24**
Fort Benton	Fort Benton Airport	17	1					**18**	24	1	0	0			**25**
Fort Peck	Fort Peck Airport							**0**	5				2		**7**
Fort Smith	Fort Smith Landing Strip							**0**							**0**
Gardiner	Gardiner Airport	9						**9**	0						**0**

Based Aircraft FAA 5010 Form 1998 & 2013 (Cont.)

		1998 FAA 5010 Form							2013 5010 Form						
Associated City	**Airport Name**	**1998 Single Engine**	**1998 Multi-engine**	**1998 Jet**	**1998 Helicopter**	**1998 Other**	**1998 Military**	**1998 Total**	**2013 Single Engine**	**2013 Multi-engine**	**2013 Jet**	**2013 Helicopter**	**2013 Other**	**2013 Military**	**2013 Total**
Geraldine	Geraldine Airport	8						**8**	0						**0**
Glasgow	Glasgow International Airport (Wokal Field)	26	4					**30**	71	4	1	0			**76**
Glendive	Dawson Community Airport	31						**31**	15	0	0	0			**15**
Great Falls	Great Falls International Airport	60	13				18	**91**	66	12	3	9		18	**108**
Hamilton	Ravalli County Airport	78	5	2	1	5		**91**	84	8	3	5	8		**108**
Hardin	Fairgrounds Airpark	6						**6**	7						**7**
Harlem	Harlem Airport	12						**12**	5	0	0	0			**5**
Harlem	Fort Belknap Agency Airport							**0**							**0**
Harlowton	Wheatland County Airport at Harlowton	7	1					**8**	6	1	0	0			**7**
Havre	Havre City-County Airport	33	3					**36**	20	1	0	0			**21**
Helena	Helena Regional Airport	101	15	2	3		46	**167**	273	27	30	22	2	23	**377**
Hinsdale	Hogeland Airport	3						**3**	2						**2**
Hogeland	Hysham Airport	1						**1**	2						**2**
Hot Springs	Hot Springs Airport	1						**1**	2						**2**
Hysham	Hinsdale Airport	2						**2**	3						**3**
Jordan	Jordan Airport	1						**1**	1	0	0	0			**1**
Kalispell	Glacier Park International Airport	57	12	5	1			**75**	124	26	5	4			**159**
Kalispell	Kalispell City Airport	56	3		0	6		**65**	68	4	0	5	1		**78**
Laurel	Laurel Municipal Airport	96	4		2	7		**107**	74	5	0	6	3	0	**88**
Lavina	Lavina Airport							**0**	1						**1**

Based Aircraft FAA 5010 Form 1998 & 2013 (Cont.)

		1998 FAA 5010 Form							2013 5010 Form						
Associated City	**Airport Name**	**1998 Single Engine**	**1998 Multi-engine**	**1998 Jet**	**1998 Helicopter**	**1998 Other**	**1998 Military**	**1998 Total**	**2013 Single Engine**	**2013 Multi-engine**	**2013 Jet**	**2013 Helicopter**	**2013 Other**	**2013 Military**	**2013 Total**
Lewistown	Lewistown Municipal Airport	23	2		3			**28**	55	6	0	3			**64**
Libby	Libby Airport	16			1			**17**	17	0	0	0			**17**
Lincoln	Lincoln Airport	4						**4**	8	2	0	0			**10**
Livingston	Mission Field	10	2			1		**13**	11	3	1	0	1		**16**
Malta	Malta Airport	7			0			**7**	9	1			1		**11**
Meadow Creek	Meadow Creek USFS Airport							**0**							**0**
Miles City	Miles City Airport	22	1					**23**	18	2	0	0			**20**
Missoula	Missoula International Airport	68	32	7	5			**112**	87	22	20	16			**145**
Opheim	Opheim Airport	2						**2**	2						**2**
Philipsburg	Riddick Field	7						**7**	0						**0**
Plains	Plains Airport	13						**13**	7	0	0	0			**7**
Plentywood	Sher-Wood Airport	23				1		**24**	8	0	0	0	2		**10**
Polson	Polson Airport	30		1				**31**	28	0	1	1	1		**31**
Poplar	Poplar Municipal Airport	10	1					**11**	6	1					**7**
Port of Del Bonita	Whetstone International Airport							**0**							**0**
Red Lodge	Red Lodge Airport	8	0		0			**8**	13	0					**13**
Richey	Richey Airport	3						**3**	2						**2**
Ronan	Ronan Airport	7						**7**	37	1	0	0			**38**
Roundup	Roundup Airport	12			1	1		**14**	9	1	0				**10**
Russian Flat	Russian Flat Airport							**0**							**0**
Ryegate	Ryegate Airport							**0**							**0**
Sand	Sand Springs Strip	2						**2**	1						**1**

Based Aircraft FAA 5010 Form 1998 & 2013 (Cont.)

		1998 FAA 5010 Form							2013 5010 Form						
Associated City	**Airport Name**	**1998 Single Engine**	**1998 Multi-engine**	**1998 Jet**	**1998 Helicopter**	**1998 Other**	**1998 Military**	**1998 Total**	**2013 Single Engine**	**2013 Multi-engine**	**2013 Jet**	**2013 Helicopter**	**2013 Other**	**2013 Military**	**2013 Total**
Springs															
Schafer	Schafer USFS Airport							**0**							**0**
Scobey	Scobey Border Station Airport (East Poplar International)							**0**							**0**
Scobey	Scobey Airport	8	1					**9**	14	0	0	0			**14**
Seeley Lake	Seeley Lake Airport	10				1		**11**	11				2		**13**
Seeley Lake	Lindey's Landing West Seaplane Base	0						**0**							**0**
Shelby	Shelby Airport	15	2		1			**18**	19	1	1	0			**21**
Sidney	Sidney-Richland Municipal Airport	40	5					**45**	27	5	0	0			**32**
Spotted Bear	Spotted Bear USFS Airport							**0**							**0**
St. Ignatius	St. Ignatius Airport	7						**7**	9	2			3		**14**
Stanford	Stanford Airport	10						**10**	10	0	0	0			**10**
Stevensville	Stevensville Airport	43	2	2	1			**48**	70	3	1	1			**75**
Sunburst	Sunburst Airport	1						**1**	1						**1**
Superior	Mineral County Airport	9	1					**10**	12		0	0			**12**
Sweetgrass	Ross International Airport							**0**							**0**
Terry	Terry Airport	1						**1**	2	0	0	0			**1**
Thompson Falls	Thompson Falls Airport	8	1					**9**	11	0	0	0			**11**
Three Forks	Three Forks Airport	7				4		**11**	25	0	0	1	5		**31**
Tiber Dam	Tiber Dam Airport							**0**							**0**
Townsend	Townsend Airport	9	1					**10**	10	0	0	0			**10**

Based Aircraft FAA 5010 Form 1998 & 2013 (Cont.)

		1998 FAA 5010 Form							2013 5010 Form						
Associated City	**Airport Name**	**1998 Single Engine**	**1998 Multi-engine**	**1998 Jet**	**1998 Helicopter**	**1998 Other**	**1998 Military**	**1998 Total**	**2013 Single Engine**	**2013 Multi-engine**	**2013 Jet**	**2013 Helicopter**	**2013 Other**	**2013 Military**	**2013 Total**
Townsend	Canyon Ferry Airport	3						**3**	2				1		**3**
Troy	Troy Airport	1				1		**2**					0		
Turner	Turner Airport	6						**6**	14	0	0	0			**14**
Twin Bridges	Twin Bridges Airport	5	1			1		**7**	8	1	0	0	1		**10**
Valier	Valier Airport	7						**7**	0			0			**0**
West Yellowstone	Yellowstone Airport	6	1					**7**	0	0	0	0			**0**
White Sulphur Springs	White Sulphur Springs Airport	6						**6**	5	0	0	0			**5**
Whitefish	Whitefish Airport	3						**3**	1						**1**
Wilsall	Wilsall Airport							**0**							**0**
Winifred	Winifred Airport	4						**4**	8						**0**
Winifred	Black Butte North Airport							**0**							**0**
Winifred	Bullwhacker Airport							**0**							**0**
Winifred	Cow Creek Airport							**0**							**0**
Winifred	Left Coulee Airport							**0**							**0**
Winifred	Knox Ridge Airport							**0**							**0**
Winifred	Woodhawk Airport							**0**							**0**
Winnett	Winnett Airport							**0**	1						**1**
Wisdom	Wisdom Airport	1						**1**	1						**1**
Wise River	Wise River Airport							**0**							**0**
Wolf Point	L. M. Clayton Airport	10	1					**11**	8	0	0	0			**8**
		1709	193	33	26	50	64	**2073**	2062	236	105	109	53	41	**2597**

Based Aircraft FAA 5010 Form 1998 & 2013 (Cont.)

		1998 FAA 5010 Form							2013 5010 Form						
Associated City	**Airport Name**	**1998 Single Engine**	**1998 Multi-engine**	**1998 Jet**	**1998 Helicopter**	**1998 Other**	**1998 Military**	**1998 Total**	**2013 Single Engine**	**2013 Multi-engine**	**2013 Jet**	**2013 Helicopter**	**2013 Other**	**2013 Military**	**2013 Total**
Associated City	Airport Name	1998 Single Engine	1998 Multi-engine	1998 Jet	1998 Helicopter	1998 Other	1998 Military	**1998 Total**	2013 Single Engine	2013 Multi-engine	2013 Jet	2013 Helicopter	2013 Other	2013 Military	**2013 Total**
	Based Aircraft Fleet Mix	82.44%	9.31%	1.59%	1.25%	2.41%	3.09%		79.40%	9.09%	4.04%	4.20%	2.04%	1.58%	

Table 3-17: Based Aircraft NPIAS Airports 1998, 2003, 2008 and 2013

		1998 Based Aircraft						2003 Based Aircraft						2008 Based Aircraft						2013 Based Aircraft					
Associated City	**Airport**	**1998 Single**	**1998 Jet**	**1998 Multi**	**1998 Helo**	**1998 Other**	**1998 Total**	**2003 Single**	**2003 Jet**	**2003 Multi**	**2003 Helo**	**2003 Other**	**2003 Total**	**2008 Single**	**2008 Jet**	**2008 Multi**	**2008 Helo**	**2008 Other**	**2008 Total**	**2013 Single**	**2013 Jet**	**2013 Multi**	**2013 Helo**	**2013 Other**	**2013 Total**
Anaconda	Bowman Field	18	0	2	0	0	**20**	18	0	2	0	0	20	5	0	2	0	0	7	6	0	2	2	0	10
Baker	Baker Municipal	22	0	0	0	0	**22**	22	0	0	0	0	22	24	1	2	1	0	28	20	0	2	2	0	24
Big Sandy	Big Sandy	14	0	1	0	0	**15**	14	0	1	0	0	15	17	0	0	0	0	17	17	0	0	0	0	17
Big Timber	Big Timber	9	0	0	0	0	**9**	13	1	2	0	0	16	13	0	0	0	0	13	12	0	0	0	0	12
Billings	Billings Logan International	140	1	40	2	0	**183**	73	5	62	5	0	145	94	9	63	7	0	173	91	11	59	6	0	167
Bozeman	Bozeman Yellowstone International	115	5	13	1	11	**145**	155	12	8	3	18	196	228	21	19	10	14	292	222	25	17	9	8	281
Broadus	Broadus	8	0	0	0	0	**8**	8	0	0	0	0	8	1	0	0	0	0	1	1	0	0	0	0	1
Butte	Bert Mooney	17	0	13	0	0	**30**	17	1	11	0	0	29	24	0	9	3	0	36	24	0	9	3	0	36
Chester	Liberty County						**0**						0	9	0	0	0	0	9	12	0	0	0	1	13
Chinook	Edgar G Obie	23	0	0	0	0	**23**	23	0	0	0	0	23	11	0	0	0	0	11	11	0	0	0	0	11
Choteau	Choteau	14	0	0	0	1	**15**	11	0	0	0	1	12	12	0	0	0	1	13	11	0	0	0	1	12
Circle	Circle Town County	7	0	0	0	1	**8**	7	0	0	0	1	8	1	0	0	0	1	2	0	0	0	0	1	1
Colstrip	Colstrip	8	0	0	0	0	**8**	10	0	0	0	0	10	12	0	2	0	0	14	11	0	0	0	0	11
Columbus	Woltermann Memorial	12	0	0	0	1	**13**	12	0	0	0	1	13	28	0	0	1	0	29	28	0	0	1	0	29
Conrad	Conrad	10	0	1	0	0	**11**	10	0	1	0	0	11	10	0	3	1	0	14	9	0	3	1	0	13
Culbertson	Big Sky Field	10	0	0	0	0	**10**	10	0	0	0	0	10	5	0	0	0	0	5	8	0	0	0	0	8
Cut Bank	Cut Bank Municipal	21	2	1	2	1	**27**	21	1	2	0	1	25	28	0	1	0	3	32	25	0	1	0	3	29
Deer Lodge	Deer Lodge-City-County	8	0	0	0	0	**8**	8	0	0	0	0	8	12	0	1	2	0	15	11	0	1	2	0	14
Dillon	Dillon	21	0	1	0	0	**22**	21	0	1	0	0	22	21	0	0	0	0	21	17	0	0	0	0	17
Ekalaka	Ekalaka	4	0	0	0	0	**4**	4	0	0	0	0	4	3	0	0	0	0	3	3	0	0	0	0	3
Ennis	Ennis - Big Sky						**0**						0	12	1	0	0	0	13	9	1	0	0	0	10
Eureka	Eureka	10	0	0	0	2	**12**	10	0	0	0	2	12	28	0	5	1	2	36	24	0	5	1	2	32
Forsyth	Tillitt Field	25	0	0	0	0	**25**	25	0	0	0	0	25	24	0	1	0	0	25	24	0	0	0	0	24
Fort Benton	Fort Benton	17	0	1	0	0	**18**	17	0	1	0	0	18	32	0	1	0	0	33	24	0	1	0	0	25

Based Aircraft NPIAS Airports 1998, 2003, 2008 and 2013 (Cont.)

		1998 Based Aircraft						2003 Based Aircraft						2008 Based Aircraft						2013 Based Aircraft					
Associated City	**Airport**	**1998 Single**	**1998 Jet**	**1998 Multi**	**1998 Helo**	**1998 Other**	**1998 Total**	**2003 Single**	**2003 Jet**	**2003 Multi**	**2003 Helo**	**2003 Other**	**2003 Total**	**2008 Single**	**2008 Jet**	**2008 Multi**	**2008 Helo**	**2008 Other**	**2008 Total**	**2013 Single**	**2013 Jet**	**2013 Multi**	**2013 Helo**	**2013 Other**	**2013 Total**
Gardiner	Gardiner	9	0	0	0	0	**9**	9	0	0	0	0	9	9	0	0	0	0	9	0	0	0	0	0	0
Geraldine	Geraldine	8	0	0	0	0	**8**	8	0	0	0	0	8	5	0	0	0	0	5	0	0	0	0	0	0
Glasgow	Wokal Field/Glasgow International	26	0	3	0	0	**29**	26	0	3	0	0	29	77	1	6	0	0	84	72	1	4	0	0	77
Glendive	Dawson Community	31	0	0	0	0	**31**	31	0	0	0	0	31	17	0	0	0	0	17	15	0	0	0	0	15
Great Falls	Great Falls International	58	0	15	0	18	**91**	48	0	10	0	15	73	65	5	15	3	18	106	67	3	12	9	1	92
Hamilton	Ravalli County	74	0	3	0	2	**79**	87	2	4	1	3	97	96	2	9	1	8	116	72	2	5	3	8	90
Harlem	Harlem	12	0	0	0	0	**12**	12	0	0	0	0	12	3	0	0	0	0	3	5	0	0	0	0	5
Harlowton	Wheatland County at Harlowton	7	0	1	0	0	**8**	7	0	1	0	0	8	6	0	1	0	0	7	6	0	1	0	0	7
Havre	Havre City-County	33	0	3	0	0	**36**	33	0	3	0	0	36	22	0	1	0	0	23	19	0	1	0	0	20
Helena	Helena Regional	101	2	15	3	46	**167**	171	5	29	19	52	276	197	6	37	8	20	268	274	30	27	22	21	374
Jordan	Jordan	1	0	0	0	0	**1**	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1
Kalispell	Glacier Park International	76	7	19	1	0	**103**	96	4	22	5	0	127	124	5	26	4	0	159	127	5	27	4	0	163
Kalispell	Kalispell City	56	0	3	1	4	**64**	56	0	3	1	4	64	70	0	3	7	1	81	62	0	5	6	1	74
Laurel	Laurel Municipal	30	0	3	0	10	**43**	99	0	5	5	10	119	78	0	3	4	2	87	74	0	5	6	3	88
Lewistown	Lewistown Municipal	23	0	1	3	0	**27**	30	0	2	2	0	34	40	0	5	4	0	49	51	0	6	3	0	60
Libby	Libby	16	0	0	1	0	**17**	16	0	0	1	0	17	18	0	0	0	0	18	16	0	0	0	0	16
Lincoln	Lincoln	4	0	0	0	0	**4**	4	0	0	0	0	4	12	0	0	1	0	13	9	0	0	0	0	9
Livingston	Mission Field	10	0	2	0	1	**13**	10	0	2	0	1	13	13	2	3	0	1	19	11	1	3	0	1	16
Malta	Malta						**0**	10	0	0	1	0	11	12	0	0	0	0	12	13	0	0	0	0	13
Miles City	Frank Wiley Field	22	0	1	0	0	**23**	22	0	1	0	0	23	20	0	2	0	0	22	18	0	2	0	0	20
Missoula	Missoula International	32	6	24	4	0	**66**	32	7	24	6	0	69	87	9	20	11	0	127	87	20	22	16	0	145
Philipsburg	Riddick Field	7	0	0	0	0	**7**	7	0	0	0	0	7	7	0	0	0	0	7	7	0	0	0	0	7
Plains	Plains	13	0	0	0	0	**13**	13	0	0	0	0	13	3	0	0	0	0	3	6	0	0	0	0	6
Plentywood	Sher-Wood	23	0	0	0	1	**24**	23	0	0	0	1	24	8	0	0	0	2	10	8	0	0	0	2	10
Polson	Polson	30	1	0	0	0	**31**	48	0	2	0	0	50	50	1	3	1	1	56	27	1	0	1	1	30
Poplar	Poplar Municipal						**0**						0						0	6	0	1	0	0	7

Based Aircraft NPIAS Airports 1998, 2003, 2008 and 2013 (Cont.)

		1998 Based Aircraft						2003 Based Aircraft						2008 Based Aircraft						2013 Based Aircraft					
Associated City	**Airport**	**1998 Single**	**1998 Jet**	**1998 Multi**	**1998 Helo**	**1998 Other**	**1998 Total**	**2003 Single**	**2003 Jet**	**2003 Multi**	**2003 Helo**	**2003 Other**	**2003 Total**	**2008 Single**	**2008 Jet**	**2008 Multi**	**2008 Helo**	**2008 Other**	**2008 Total**	**2013 Single**	**2013 Jet**	**2013 Multi**	**2013 Helo**	**2013 Other**	**2013 Total**
Red Lodge	Red Lodge	12	0	1	1	0	**14**	10	0	2	1	0	13	14	0	2	0	0	16	13	0	0	0	0	13
Ronan	Ronan	7	0	0	0	0	**7**	7	0	0	0	0	7	42	0	1	0	0	43	38	0	0	0	0	38
Roundup	Roundup	12	0	0	1	1	**14**	14	0	0	1	1	16	7	0	2	0	0	9	9	0	1	0	0	10
Scobey	Scobey	8	0	1	0	0	**9**	8	0	1	0	0	9	12	0	1	0	0	13	14	0	0	0	0	14
Shelby	Shelby	15	0	2	1	0	**18**	18	0	2	1	0	21	16	0	3	0	0	19	14	1	1	0	0	16
Sidney	Sidney-Richland Municipal	40	0	5	0	0	**45**	40	0	5	0	0	45	1	0	0	0	0	1	27	0	5	0	0	32
Stanford	Stanford	10	0	0	0	0	**10**	10	0	0	0	0	10	7	0	0	0	0	7	10	0	0	0	0	10
Stevensville	Stevensville	43	2	2	1	0	**48**	43	2	2	1	0	48	73	0	4	1	0	78	69	1	2	1	0	73
Superior	Mineral County	9	0	1	0	0	**10**	9	0	1	0	0	10	10	0	0	0	0	10	11	0	0	0	0	11
Terry	Terry	2	0	0	0	0	**2**	2	0	0	0	0	2	1	0	0	0	0	1	1	0	0	0	0	1
Thompson Falls	Thompson Falls	15	0	0	0	0	**15**	15	0	1	0	0	16	12	0	0	0	0	12	11	0	0	0	0	11
Three Forks	Three Forks	7	0	0	0	4	**11**	7	0	0	0	4	11	27	0	0	1	5	33	25	0	0	1	5	31
Townsend	Townsend	9	0	1	0	0	**10**	9	0	1	0	0	10	12	0	0	0	0	12	10	0	0	0	0	10
Turner	Turner	6	0	0	0	0	**6**	6	0	0	0	0	6	15	0	0	0	0	15	14	0	0	0	0	14
Twin Bridges	Twin Bridges	5	0	1	0	1	**7**	5	0	1	0	1	7	9	0	1	0	1	11	9	0	1	0	1	11
Valier	Valier	7	0	0	0	0	**7**	7	0	0	0	0	7	7	0	0	1	0	8	0	0	0	0	0	0
West Yellowstone	Yellowstone	6	0	1	0	0	**7**	7	0	5	12	2	26	0	0	0	0	0	0	0	0	0	0	0	0
White Sulphur Springs	White Sulphur Springs	8	0	0	0	0	**8**	8	0	0	0	0	8	5	0	0	1	0	6	5	0	0	0	0	5
Winifred	Winifred	4	0	0	0	0	**4**	4	0	0	0	0	4	3	0	0	0	0	3	0	0	0	0	0	0
Wolf Point	L M Clayton	10	0	1	0	0	**11**	10	0	1	0	0	11	9	0	1	0	0	10	8	0	0	0	0	8
		1470	26	182	22	105	**1805**	1647	40	224	65	118	2094	1975	63	258	74	80	2450	1961	102	231	99	60	2453
Associated City	**Airport**	**1998 Single**	**1998 Jet**	**1998 Multi**	**1998 Helo**	**1998 Other**	**1998 Total**	**2003 Single**	**2003 Jet**	**2003 Multi**	**2003 Helo**	**2003 Other**	**2003 Total**	**2008 Single**	**2008 Jet**	**2008 Multi**	**2008 Helo**	**2008 Other**	**2008 Total**	**2013 Single**	**2013 Jet**	**2013 Multi**	**2013 Helo**	**2013 Other**	**2013 Total**
	Based Aircraft Fleet Mix	81.4%	1.4%	10.1%	1.2%	5.8%		78.7%	1.9%	10.7%	3.1%	5.6%		80.6%	2.6%	10.5%	3.0%	3.3%		79.9%	4.2%	9.4%	4.0%	2.4%	

Source: FAA Terminal Area Forecast

Table 3-18: General Aviation Operations FAA 5010 Form 1998 & 2013

			1998 FAA 5010 Form			2013 FAA 5010 Form		
FAA ID	Associated City	Airport_Name	1998 GA Local	1998 GA Itinerant	1998 GA Total	2013 GA Local	2013 GA Itinerant	2013 GA Total
3U3	Anaconda	Bowman Field	2700	3400	**6100**	2600	2000	**4600**
3U4	Ashland	St. Labre Mission Airport		500	**500**		500	**500**
3U5	Augusta	Augusta Airport		250	**250**		250	**250**
3U7	Augusta	Benchmark Airport		350	**350**		350	**350**
49S	Babb	Babb Airport		300	**300**		200	**200**
BHK	Baker	Baker Municipal Airport	5300	1400	**6700**	5300	1400	**6700**
3U8	Big Sandy	Big Sandy Airport	5000	300	**5300**	5000	350	**5350**
6S0	Big Timber	Big Timber Airport	4700	1700	**6400**	4750	1750	**6500**
53U	Bigfork	Ferndale Airfield	8000	2500	**10500**	2500	2500	**5000**
BIL	Billings	Billings Logan International Airport	27338	31036	**58374**	18298	24247	**42545**
3U9	Boulder	Boulder Airport	400	150	**550**	425	175	**600**
BZN	Bozeman	Bozeman Yellowstone International Airport	21000	16500	**37500**	35324	27892	**63216**
6S1	Bridger	Bridger Municipal Airport	600	800	**1400**	1500	600	**2100**
00F	Broadus	Broadus Airport	4750	500	**5250**	4750	500	**5250**
8S0	Browning	Starr-Browning Airstrip		200	**200**		225	**225**
BTM	Butte	Bert Mooney Airport	4000	5200	**9200**	13200	7300	**20500**
LTY	Chester	Liberty County Airport	4000	650	**4650**	4000	700	**4700**
S71	Chinook	Edgar G. Obie Airport	7000	800	**7800**	7000	850	**7850**
4U4	Chinook	Hebbelman Airport	550	50	**600**	550	50	**600**
CII	Choteau	Choteau Airport	1000	700	**1700**	1700	1000	**2700**
4U6	Circle	Circle Town County Airport	1300	1300	**2600**	2400	1300	**3700**

General Aviation Operations FAA 5010 Form 1998 & 2013 (Cont.)

			1998 FAA 5010 Form			2013 FAA 5010 Form		
FAA ID	Associated City	Airport_Name	1998 GA Local	1998 GA Itinerant	1998 GA Total	2013 GA Local	2013 GA Itinerant	2013 GA Total
RC0	Clinton	Rock Creek Airport	*	*	**0**	75	350	**425**
M46	Colstrip	Colstrip Airport	1500	1700	**3200**	1000	1500	**2500**
6S3	Columbus	Columbus Airport (Wolterman Memorial)	3300	4400	**7700**	4000	4800	**8800**
S04	Condon	Condon USFS Airport	350	400	**750**	100	150	**250**
4U7	Conner	West Fork Lodge Airport	250	300	**550**	250	300	**550**
S01	Conrad	Conrad Airport	2500	1000	**3500**	2500	1050	**3550**
S85	Culbertson	Big Sky Field	3750	650	**4400**	3750	700	**4450**
CTB	Cut Bank	Cut Bank Municipal Airport	2600	2600	**5200**	5000	2600	**7600**
38S	Deer Lodge	Deer Lodge-City-County Airport	1350	1450	**2800**	1750	1500	**3250**
4U9	Dell	Dell Flight Strip	500	400	**900**	525	425	**950**
5U0	Denton	Denton Airport	400	100	**500**	400	150	**550**
DLN	Dillon	Dillon Airport	3500	5800	**9300**	3550	5850	**9400**
M26	Drummond	Drummond Airport	50	100	**150**	75	100	**175**
5U1	Dutton	Dutton Airport	1200	100	**1300**	1500	150	**1650**
97M	Ekalaka	Ekalaka Airport	500	1500	**2000**	1000	1500	**2500**
EKS	Ennis	Ennis Big Sky Airport	6082	4618	**10700**	6082	4618	**10700**
88M	Eureka	Eureka Airport	1540	460	**2000**	1540	460	**2000**
5U5	Fairfield	Fairfield Airport	3100	600	**3700**	3100	650	**3750**
5U6	Fairview	Fairview Airport	1100	700	**1800**	1100	750	**1850**
1S3	Forsyth	Tillitt Field	4800	3600	**8400**	4825	2995	**7820**
79S	Fort Benton	Fort Benton Airport	3800	1600	**5400**	3800	1650	**5450**
37S	Fort Peck	Fort Peck Airport	*	*	**0**	300	100	**400**
5U7	Fort Smith	Fort Smith Landing Strip	200	2700	**2900**	225	2750	**2975**
29S	Gardiner	Gardiner Airport	3500	4500	**8000**	3000	4000	**7000**

General Aviation Operations FAA 5010 Form 1998 & 2013 (Cont.)

			1998 FAA 5010 Form			2013 FAA 5010 Form		
FAA ID	Associated City	Airport_Name	1998 GA Local	1998 GA Itinerant	1998 GA Total	2013 GA Local	2013 GA Itinerant	2013 GA Total
5U8	Geraldine	Geraldine Airport	2700	950	**3650**	2700	1000	**3700**
GGW	Glasgow	Glasgow International Airport (Wokal Field)	6075	13200	**19275**	3500	1250	**4750**
GDV	Glendive	Dawson Community Airport	1600	1600	**3200**	1600	1600	**3200**
GTF	Great Falls	Great Falls International Airport	19179	16386	**35565**	7905	13675	**21580**
6S5	Hamilton	Ravalli County Airport	11400	7000	**18400**	13500	8200	**21700**
F02	Hardin	Fairgrounds Airpark	3700	2600	**6300**	3500	2000	**5500**
U09	Harlem	Fort Belknap Agency Airport	*	*	**0**		100	**100**
48S	Harlem	Harlem Airport	2100	1700	**3800**	2100	1750	**3850**
HWQ	Harlowton	Wheatland County Airport at Harlowton	1500	600	**2100**	1500	600	**2100**
HVR	Havre	Havre City-County Airport	4300	2500	**6800**	4300	2500	**6800**
HLN	Helena	Helena Regional Airport	20454	22352	**42806**	11726	14139	**25865**
6U6	Hinsdale	Hogeland Airport	450	300	**750**	150	125	**275**
6U7	Hogeland	Hysham Airport	150	100	**250**	500	200	**700**
S09	Hot Springs	Hot Springs Airport	175	275	**450**	175	325	**500**
6U5	Hysham	Hinsdale Airport	350	100	**450**	450	350	**800**
JDN	Jordan	Jordan Airport	1500	500	**2000**	1500	550	**2050**
GPI	Kalispell	Glacier Park International Airport	22800	27360	**50160**	5532	11072	**16604**
S27	Kalispell	Kalispell City Airport	13600	14000	**27600**	18000	15000	**33000**
6S8	Laurel	Laurel Municipal Airport	7500	2500	**10000**	8,900	33,000	**41900**
80S	Lavina	Lavina Airport		250	**250**	100	275	**375**
LWT	Lewistown	Lewistown Municipal Airport	5600	7600	**13200**	5700	7908	**13608**

General Aviation Operations FAA 5010 Form 1998 & 2013 (Cont.)

			1998 FAA 5010 Form			2013 FAA 5010 Form		
FAA ID	Associated City	Airport_Name	1998 GA Local	1998 GA Itinerant	1998 GA Total	2013 GA Local	2013 GA Itinerant	2013 GA Total
S59	Libby	Libby Airport	2000	2000	**4000**	3000	1000	**4000**
S69	Lincoln	Lincoln Airport	1250	1800	**3050**	1350	1950	**3300**
LVM	Livingston	Mission Field	2200	1000	**3200**	8000	4500	**12500**
M75	Malta	Malta Airport	1400	900	**2300**			**0**
0S1	Meadow Creek	Meadow Creek USFS Airport		150	**150**		200	**200**
MLS	Miles City	Miles City Airport	3170	4780	**7950**	3200	4800	**8000**
MSO	Missoula	Missoula International Airport	13997	22592	**36589**	13405	8760	**22165**
S00	Opheim	Opheim Airport	100	100	**200**	100	100	**200**
U05	Philipsburg	Riddick Field	1100	1200	**2300**	1250	700	**1950**
S34	Plains	Plains Airport	2600	1000	**3600**	3000	1200	**4200**
PWD	Plentywood	Sher-Wood Airport	4000	7000	**11000**	4050	7050	**11100**
8S1	Polson	Polson Airport	3350	3500	**6850**	4500	5000	**9500**
PO1	Poplar	Poplar Municipal Airport	2050	1050	**3100**	6000	4500	**10500**
H28	Port of Del Bonita	Whetstone International Airport	*	*	**0**		80	**80**
RED	Red Lodge	Red Lodge Airport	3700	4100	**7800**	3700	2000	**5700**
7U8	Richey	Richey Airport	2500	1200	**3700**	2500	1250	**3750**
7S0	Ronan	Ronan Airport	2300	600	**2900**	5600	4000	**9600**
RPX	Roundup	Roundup Airport	2800	1600	**4400**	2500	2500	**5000**
M42	Russian Flat	Russian Flat Airport	*	*	**0**		300	**300**
8U0	Ryegate	Ryegate Airport		250	**250**		275	**275**
8U1	Sand Springs	Sand Springs Strip	500	150	**650**	500	200	**700**
8U2	Schafer	Schafer USFS Airport		350	**350**		350	**350**
9S2	Scobey	Scobey Airport	3000	1000	**4000**	3000	1050	**4050**

General Aviation Operations FAA 5010 Form 1998 & 2013 (Cont.)

			1998 FAA 5010 Form			2013 FAA 5010 Form		
FAA ID	Associated City	Airport_Name	1998 GA Local	1998 GA Itinerant	1998 GA Total	2013 GA Local	2013 GA Itinerant	2013 GA Total
8U3	Scobey	Scobey Border Station Airport (East Poplar International)		20	**20**		10	**10**
M35	Seeley Lake	Lindey's Landing West Seaplane Base	90	70	**160**	90	70	**160**
23S	Seeley Lake	Seeley Lake Airport	500	1150	**1650**	800	1300	**2100**
SBX	Shelby	Shelby Airport	7000	1000	**8000**	7050	1000	**8050**
SDY	Sidney	Sidney-Richland Municipal Airport	4100	15600	**19700**	3000	1000	**4000**
8U4	Spotted Bear	Spotted Bear USFS Airport		200	**200**		300	**300**
52S	St. Ignatius	St. Ignatius Airport	1750	700	**2450**	2000	2000	**4000**
S64	Stanford	Stanford Airport	3200	800	**4000**	3300	1000	**4300**
32S	Stevensville	Stevensville Airport	6700	2500	**9200**	8500	3600	**12100**
8U5	Sunburst	Sunburst Airport	100	250	**350**	100	300	**400**
9S4	Superior	Mineral County Airport	1000	450	**1450**	3000	1000	**4000**
7S8	Sweetgrass	Ross International Airport		25	**25**		25	**25**
8U6	Terry	Terry Airport	400	300	**700**	400	300	**700**
THM	Thompson Falls	Thompson Falls Airport	4500	1500	**6000**	5500	1500	**7000**
9S5	Three Forks	Three Forks Airport	2000	1500	**3500**	1700	1530	**3230**
B70	Tiber Dam	Tiber Dam Airport		60	**60**		60	**60**
8U9	Townsend	Canyon Ferry Airport	520	220	**740**	760	300	**1060**
8U8	Townsend	Townsend Airport	1200	1900	**3100**	1500	2000	**3500**
57S	Troy	Troy Airport	200	500	**700**	200	500	**700**
9U0	Turner	Turner Airport	3200	400	**3600**	6400	400	**6800**
7S1	Twin Bridges	Twin Bridges Airport	1100	1100	**2200**	1100	1500	**2600**
7S7	Valier	Valier Airport	1000	100	**1100**	0	50	**50**

General Aviation Operations FAA 5010 Form 1998 & 2013 (Cont.)

			1998 FAA 5010 Form			2013 FAA 5010 Form		
FAA ID	Associated City	Airport_Name	1998 GA Local	1998 GA Itinerant	1998 GA Total	2013 GA Local	2013 GA Itinerant	2013 GA Total
WYS	West Yellowstone	Yellowstone Airport	905	11050	**11955**	2500	8000	**10500**
7S6	White Sulphur Springs	White Sulphur Springs Airport	1800	3200	**5000**	1825	3500	**5325**
58S	Whitefish	Whitefish Airport	700	300	**1000**			**0**
9U1	Wilsall	Wilsall Airport	150	450	**600**	150	450	**600**
BB0	Winifred	Black Butte North Airport	1100	100	**1200**	75		**75**
BW8	Winifred	Bullwhacker Airport	*	*	**0**	75		**75**
CW0	Winifred	Cow Creek Airport	*	*	**0**	75		**75**
MT3	Winifred	Knox Ridge Airport	*	*	**0**	75		**75**
LC0	Winifred	Left Coulee Airport	*	*	**0**	75		**75**
9S7	Winifred	Winifred Airport	1100	100	**1200**	1250	250	**1500**
WH0	Winifred	Woodhawk Airport			**0**	50		**50**
7S2	Winnett	Winnett Airport	*	*	**0**	100	30	**130**
7S4	Wisdom	Wisdom Airport	50	180	**230**	50	180	**230**
02T	Wise River	Wise River Airport	50	10	**60**	100	400	**500**
OLF	Wolf Point	L. M. Clayton Airport	1250	1000	**2250**	2100	930	**3030**

* = Not Available

Table 3-19: General Aviation Operations at Towered Airports

Year	Facility	Itinerant GA	Local GA	Total GA
1998	BIL	31,036	27,338	58,374
1999	BIL	37,806	28,811	66,617
2000	BIL	38,838	26,034	64,872
2001	BIL	38,497	27,821	66,318
2002	BIL	32,233	18,396	50,629
2003	BIL	33,458	16,212	49,670
2004	BIL	31,213	17,835	49,048
2005	BIL	30,990	21,021	52,011
2006	BIL	32,992	19,889	52,881
2007	BIL	32,382	18,020	50,402
2008	BIL	30,782	19,615	50,397
2009	BIL	28,601	16,972	45,573
2010	BIL	25,375	17,359	42,734
2011	BIL	27,032	20,559	47,591
2012	BIL	26,292	20,372	46,664
2013	BIL	24,214	18,298	42,512
1998	BZN			
1999	BZN	16,928	21,409	38,337
2000	BZN	20,267	22,227	42,494
2001	BZN	21,300	28,042	49,342
2002	BZN	20,366	25,625	45,991
2003	BZN	21,057	28,713	49,770
2004	BZN	23,033	26,185	49,218
2005	BZN	26,954	26,473	53,427
2006	BZN	30,384	34,297	64,681
2007	BZN	31,711	29,081	60,792
2008	BZN	28,844	29,779	58,623
2009	BZN	26,030	25,884	51,914
2010	BZN	27,370	26,724	54,094
2011	BZN	26,812	29,485	56,297

General Aviation Operations at Towered Airports (Cont.)

Year	Facility	Itinerant GA	Local GA	Total GA
2012	BZN	27,893	35,324	63,217
2013	BZN	27,781	28,931	56,712
1998	GPI			
1999	GPI			
2000	GPI			
2001	GPI			
2002	GPI	17,195	8,458	25,653
2003	GPI	21,351	14,271	35,622
2004	GPI	23,014	22,345	45,359
2005	GPI	19,913	18,196	38,109
2006	GPI	19,795	16,579	36,374
2007	GPI	19,493	16,788	36,281
2008	GPI	14,821	10,511	25,332
2009	GPI	10,870	6,346	17,216
2010	GPI	11,309	8,872	20,181
2011	GPI	10,220	6,984	17,204
2012	GPI	9,695	5,530	15,225
2013	GPI	10,258	5,608	15,866
1998	GTF	16,386	19,179	35,565
1999	GTF	18,120	18,260	36,380
2000	GTF	17,816	17,306	35,122
2001	GTF	16,739	15,437	32,176
2002	GTF	15,019	11,144	26,163
2003	GTF	14,843	8,016	22,859
2004	GTF	13,181	9,087	22,268
2005	GTF	10,759	7,508	18,267
2006	GTF	12,075	6,899	18,974
2007	GTF	13,597	7,781	21,378
2008	GTF	13,475	6,908	20,383

General Aviation Operations at Towered Airports (Cont.)

Year	Facility	Itinerant GA	Local GA	Total GA
2009	GTF	12,258	7,552	19,810
2010	GTF	12,829	10,332	23,161
2011	GTF	11,967	5,510	17,477
2012	GTF	10,359	6,248	16,607
2013	GTF	9,716	6,979	16,695
1998	HLN	22,352	20,454	42,806
1999	HLN	24,745	20,999	45,744
2000	HLN	24,789	15,550	40,339
2001	HLN	22,117	17,534	39,651
2002	HLN	19,490	18,094	37,584
2003	HLN	20,808	19,814	40,622
2004	HLN	17,919	15,177	33,096
2005	HLN	17,662	17,494	35,156
2006	HLN	18,072	15,678	33,750
2007	HLN	21,055	27,307	48,362
2008	HLN	17,196	16,582	33,778
2009	HLN	17,187	17,448	34,635
2010	HLN	15,678	13,550	29,228
2011	HLN	15,994	13,448	29,442
2012	HLN	14,246	11,713	25,959
2013	HLN	13,394	14,876	28,270
1998	MSO	22,592	13,997	36,589
1999	MSO	22,149	17,858	40,007
2000	MSO	24,352	17,618	41,970
2001	MSO	21,624	16,810	38,434
2002	MSO	24,433	19,650	44,083
2003	MSO	19,915	13,137	33,052
2004	MSO	21,446	13,886	35,332
2005	MSO	20,760	12,127	32,887

General Aviation Operations at Towered Airports (Cont.)

Year	Facility	Itinerant GA	Local GA	Total GA
2006	MSO	18,888	13,779	32,667
2007	MSO	20,165	11,821	31,986
2008	MSO	15,023	11,965	26,988
2009	MSO	14,220	10,667	24,887
2010	MSO	14,180	12,562	26,742
2011	MSO	13,683	8,764	22,447
2012	MSO	13,023	8,358	21,381
2013	MSO	13,119	7,677	20,796

Source: FAA Air Traffic Activity

Table 3-20: Military Operations FAA 5010 Form 1998 & 2013

FAA ID	Airport_Name	Associated City	1998 Military Ops	2013 Military Ops
3U5	Augusta Airport	Augusta		
49S	Babb Airport	Babb		
BHK	Baker Municipal Airport	Baker		50
3U7	Benchmark Airport	Augusta	20	20
BTM	Bert Mooney Airport	Butte	40	625
3U8	Big Sandy Airport	Big Sandy		
S85	Big Sky Field	Culbertson	100	100
6S0	Big Timber Airport	Big Timber		
BIL	Billings Logan International Airport	Billings	751	492
BB0	Black Butte North Airport	Winifred		
3U9	Boulder Airport	Boulder		
3U3	Bowman Field	Anaconda		
BZN	Bozeman Yellowstone International Airport	Bozeman	232	333
6S1	Bridger Municipal Airport	Bridger		
00F	Broadus Airport	Broadus		
BW8	Bullwhacker Airport	Winifred		
8U9	Canyon Ferry Airport	Townsend	440	200
CII	Choteau Airport	Choteau		100
4U6	Circle Town County Airport	Circle		
M46	Colstrip Airport	Colstrip		
6S3	Columbus Airport (Wolterman Memorial)	Columbus		
S04	Condon USFS Airport	Condon		
S01	Conrad Airport	Conrad	100	100
CW0	Cow Creek Airport	Winifred		
CTB	Cut Bank Municipal Airport	Cut Bank	50	150
GDV	Dawson Community Airport	Glendive	15	15
38S	Deer Lodge-City-County Airport	Deer Lodge	200	300
4U9	Dell Flight Strip	Dell		
5U0	Denton Airport	Denton		

DLN	Dillon Airport	Dillon	200	250
M26	Drummond Airport	Drummond		
5U1	Dutton Airport	Dutton	50	50
S71	Edgar G. Obie Airport	Chinook		
97M	Ekalaka Airport	Ekalaka		
EKS	Ennis Big Sky Airport	Ennis		0
88M	Eureka Airport	Eureka		
5U5	Fairfield Airport	Fairfield		
F02	Fairgrounds Airpark	Hardin		
5U6	Fairview Airport	Fairview		
53U	Ferndale Airfield	Bigfork		
U09	Fort Belknap Agency Airport	Harlem		
79S	Fort Benton Airport	Fort Benton		
37S	Fort Peck Airport	Fort Peck		10
5U7	Fort Smith Landing Strip	Fort Smith		
29S	Gardiner Airport	Gardiner		
5U8	Geraldine Airport	Geraldine		
GPI	Glacier Park International Airport	Kalispell	720	1067
GGW	Glasgow International Airport (Wokal Field)	Glasgow	110	105
GTF	Great Falls International Airport	Great Falls	11919	4627
48S	Harlem Airport	Harlem		
HVR	Havre City-County Airport	Havre	48	50
4U4	Hebbelman Airport	Chinook		
HLN	Helena Regional Airport	Helena	7686	4822
6U5	Hinsdale Airport	Hysham		
6U6	Hogeland Airport	Hinsdale		
S09	Hot Springs Airport	Hot Springs		
6U7	Hysham Airport	Hogeland		
JDN	Jordan Airport	Jordan		
S27	Kalispell City Airport	Kalispell	1000	2000
MT3	Knox Ridge Airport	Winifred		
OLF	L. M. Clayton Airport	Wolf Point		4
6S8	Laurel Municipal Airport	Laurel	3000	0
80S	Lavina Airport	Lavina		
LC0	Left Coulee Airport	Winifred		

LWT	Lewistown Municipal Airport	Lewistown	700	700
S59	Libby Airport	Libby		
LTY	Liberty County Airport	Chester		
S69	Lincoln Airport	Lincoln	100	125
M35	Lindey's Landing West Seaplane Base	Seeley Lake	70	70
M75	Malta Airport	Malta	10	
0S1	Meadow Creek USFS Airport	Meadow Creek		
MLS	Miles City Airport	Miles City		
9S4	Mineral County Airport	Superior		
LVM	Mission Field	Livingston	20	1000
MSO	Missoula International Airport	Missoula	587	672
S00	Opheim Airport	Opheim		
S34	Plains Airport	Plains		
8S1	Polson Airport	Polson		50
PO1	Poplar Municipal Airport	Poplar	100	
6S5	Ravalli County Airport	Hamilton		
RED	Red Lodge Airport	Red Lodge	50	50
7U8	Richey Airport	Richey		
U05	Riddick Field	Philipsburg		
RC0	Rock Creek Airport	Clinton		100
7S0	Ronan Airport	Ronan		
7S8	Ross International Airport	Sweetgrass		
RPX	Roundup Airport	Roundup		
M42	Russian Flat Airport	Russian Flat		
8U0	Ryegate Airport	Ryegate		
8U1	Sand Springs Strip	Sand Springs		
8U2	Schafer USFS Airport	Schafer		
9S2	Scobey Airport	Scobey		
8U3	Scobey Border Station Airport (East Poplar International)	Scobey		
23S	Seeley Lake Airport	Seeley Lake		
SBX	Shelby Airport	Shelby	250	250
PWD	Sher-Wood Airport	Plentywood	10	10
SDY	Sidney-Richland Municipal Airport	Sidney		15
8U4	Spotted Bear USFS Airport	Spotted Bear	250	250

52S	St. Ignatius Airport	St. Ignatius		10
3U4	St. Labre Mission Airport	Ashland		
S64	Stanford Airport	Stanford		
8S0	Starr-Browning Airstrip	Browning		
32S	Stevensville Airport	Stevensville		
8U5	Sunburst Airport	Sunburst	50	50
8U6	Terry Airport	Terry		
THM	Thompson Falls Airport	Thompson Falls		
9S5	Three Forks Airport	Three Forks	1000	1000
B70	Tiber Dam Airport	Tiber Dam		
1S3	Tillitt Field	Forsyth	12	25
8U8	Townsend Airport	Townsend	1700	1000
57S	Troy Airport	Troy		
9U0	Turner Airport	Turner		
7S1	Twin Bridges Airport	Twin Bridges		
7S7	Valier Airport	Valier		0
4U7	West Fork Lodge Airport	Conner		
HWQ	Wheatland County Airport at Harlowton	Harlowton	25	50
H28	Whetstone International Airport	Port of Del Bonita		30
7S6	White Sulphur Springs Airport	White Sulphur Springs		
58S	Whitefish Airport	Whitefish		
9U1	Wilsall Airport	Wilsall		
9S7	Winifred Airport	Winifred		
7S2	Winnett Airport	Winnett		
7S4	Wisdom Airport	Wisdom		
02T	Wise River Airport	Wise River		
WH0	Woodhawk Airport	Winifred		
WYS	Yellowstone Airport	West Yellowstone	30	75

Source: FAA 5010 - 2013 Data, 1998 SASP 1998 Data

Table 3-21: Ground and Highway Access to Montana System Airports

FAA ID	Associated City	Airport Name	NPIAS Status**	Access Road	Nearest Highway	Highway Distance to Airport Access Road (Miles)
Primary Commercial Service						
MSO	Missoula	Missoula International	P	Paved	I-90	0
BIL	Billings	Billings Logan International	P	Paved	SR 8 and I-90	0 and 5
BZN	Bozeman	Bozeman Yellowstone International	P	Paved	SR 85 and I-90	1 and 1.5
GPI	Kalispell	Glacier Park International	P	Paved	US 2	0
HLN	Helena	Helena Regional	P	Paved	I-15	0
GTF	Great Falls	Great Falls International	P	Paved	I-15	0
EAS Commercial Service						
BTM	Butte	Bert Mooney	P	Paved	SR 393 and I-90	0 and 3.5
GGW	Glasgow	Glasgow International (Wokal Field)	GA	Paved	US 2	0.75
LWT	Lewistown*	Lewistown Municipal	GA	Paved	US 87	0
WYS	West Yellowstone	Yellowstone	CS	Paved	US 191	0
MLS	Miles City*	Miles City	GA	Paved	SR 59/489	0
HVR	Havre	Havre City-County	GA	Paved	US 2	0
SDY	Sidney	Sidney-Richland Municipal	CS	Paved	SR 16	0.5
OLF	Wolf Point	L. M. Clayton	GA	Paved	SR 25	0
GDV	Glendive	Dawson Community	GA	Paved	I-94	4.5
General Aviation						
3U3	Anaconda	Bowman Field	GA	Paved	SR 48	0
3U4	Ashland	St. Labre Mission	Non-NPIAS	Paved	SR 212	1
3U7	Augusta	Benchmark	Non-NPIAS	Unpaved	US 287	30
3U5	Augusta	Augusta	Non-NPIAS	Unpaved	US 287	0
49S	Babb	Babb	Non-NPIAS	Unpaved	US 89	0
BHK	Baker	Baker Municipal	GA	Paved	SR 7	0
3U8	Big Sandy	Big Sandy	GA	Paved	SR 236	0

Ground and Highway Access to Montana System Airports

FAA ID	Associated City	Airport Name	NPIAS Status**	Access Road	Nearest Highway	Highway Distance to Airport Access Road (Miles)
6S0	Big Timber	Big Timber	GA	Paved	SR 298	0
53U	Bigfork	Ferndale Airfield	Non-NPIAS	Paved	SR 83	2
3U9	Boulder	Boulder	Non-NPIAS	Unpaved	SR 69	0
6S1	Bridger	Bridger Municipal	Non-NPIAS	Paved	US 310	0
00F	Broadus	Broadus	GA	Paved	SR 59 and US 212	0 and 0.5
8S0	Browning	Starr-Browning Airstrip	Non-NPIAS	Paved	SR 464	8
LTY	Chester	Liberty County	GA	Paved	US 2	0.5
S71	Chinook	Edgar G. Obie	GA	Paved	US 2	0.25
4U4	Chinook	Hebbelman	Non-NPIAS	Unpaved	US 2	6
CII	Choteau	Choteau	GA	Paved	SR 221	1
4U6	Circle	Circle Town County	GA	Unpaved	SR 200	0
RC0	Clinton	Rock Creek	Non-NPIAS	Paved	I-90	0
M46	Colstrip	Colstrip	GA	Unpaved	SR 39	5
6S3	Columbus	Columbus (Wolterman Memorial)	GA	Paved	I-90	1
S04	Condon	Condon USFS	Non-NPIAS	Unpaved	SR 83	0
4U7	Conner	West Fork Lodge	Non-NPIAS	Unpaved	US 93	7
S01	Conrad	Conrad	GA	Paved	I-15	3
S85	Culbertson	Big Sky Field	GA	Paved	SR 16	0
CTB	Cut Bank	Cut Bank Municipal	GA	Paved	SR 358	0
38S	Deer Lodge	Deer Lodge-City-County	GA	Paved	I-90 and I-90B	2 and 3
4U9	Dell	Dell Flight Strip	Non-NPIAS	Paved	I-15	0
5U0	Denton	Denton	Non-NPIAS	Unpaved	SR 81	0
DLN	Dillon	Dillon	GA	Unpaved	SR 66	17
M26	Drummond	Drummond	Non-NPIAS	Unpaved	SR 1	2
5U1	Dutton	Dutton	Non-NPIAS	Unpaved	I-15	0
97M	Ekalaka	Ekalaka	GA	Paved	SR 7 and SR 323	1 and 1

Ground and Highway Access to Montana System Airports

FAA ID	Associated City	Airport Name	NPIAS Status**	Access Road	Nearest Highway	Highway Distance to Airport Access Road (Miles)
EKS	Ennis	Ennis Big Sky	GA	Paved	US 287	1.5
88M	Eureka	Eureka	GA	Paved	US 93	4
5U5	Fairfield	Fairfield	Non-NPIAS	Paved	US 89	0
5U6	Fairview	Fairview	Non-NPIAS	Unpaved	SR 201	0
1S3	Forsyth	Tillitt Field	GA	Paved	I-94	0
79S	Fort Benton	Fort Benton	GA	Paved	SR 387	0
37S	Fort Peck	Fort Peck	Non-NPIAS	Unpaved	SR 117 and SR 24	0
5U7	Fort Smith	Fort Smith Landing Strip	Non-NPIAS	Paved	SR 313	19
29S	Gardiner	Gardiner	GA	Unpaved	US 89	0
5U8	Geraldine	Geraldine	GA	Paved	SR 80	0
6S5	Hamilton	Ravalli County	GA	Paved	SR 269	0
F02	Hardin	Fairgrounds Airpark	Non-NPIAS	Paved	SR 47 and I-90	0 and 1.5
48S	Harlem	Harlem	GA	Paved	SR 241	0
U09	Harlem	Fort Belknap Agency	Non-NPIAS	Unpaved	US 2	0.5
HWQ	Harlowton	Wheatland County at Harlowton	GA	Unpaved	US 12	1
6U5	Hinsdale	Hinsdale	Non-NPIAS	Unpaved	US 2	0
6U6	Hogeland	Hogeland	Non-NPIAS	Paved	SR 338	4.5
S09	Hot Springs	Hot Springs	Non-NPIAS	Unpaved	SR 28	0.5
6U7	Hysham	Hysham	Non-NPIAS	Unpaved	I-94	5
JDN	Jordan	Jordan	GA	Unpaved	SR 200	2
S27	Kalispell	Kalispell City	GA	Paved	US 93	0
6S8	Laurel	Laurel Municipal	GA	Paved	I-90	3
80S	Lavina	Lavina	Non-NPIAS	Unpaved	SR 3	0
S59	Libby	Libby	GA	Paved	US 2	2
S69	Lincoln	Lincoln	GA	Paved	SR 200	0
LVM	Livingston	Mission Field	GA	Paved	I-90	0

Ground and Highway Access to Montana System Airports

FAA ID	Associated City	Airport Name	NPIAS Status**	Access Road	Nearest Highway	Highway Distance to Airport Access Road (Miles)
M75	Malta	Malta	GA	Paved	US 2	0.5
0S1	Meadow Creek	Meadow Creek USFS	Non-NPIAS	No road access	NA	NA
S00	Opheim	Opheim	Non-NPIAS	Unpaved	SR 24	0.25
U05	Philipsburg	Riddick Field	GA	Unpaved	SR 1	0
S34	Plains	Plains	GA	Paved	SR 200	0.25
PWD	Plentywood	Sher-Wood	GA	Paved	SR 16	2
8S1	Polson	Polson	GA	Paved	US 93	0
PO1	Poplar	Poplar Municipal	GA	Paved	US 2	2
H28	Port of Del Bonita	Whetstone International	Non-NPIAS	Unpaved	SR 213	0
RED	Red Lodge	Red Lodge	GA	Paved	SR 78	0
7U8	Richey	Richey	Non-NPIAS	Unpaved	SR 200	0
7S0	Ronan	Ronan	GA	Unpaved	US 93	1.5
RPX	Roundup	Roundup	GA	Unpaved	US 87	0.5
M42	Russian Flat	Russian Flat	Non-NPIAS	Unpaved	US 12	22
8U0	Ryegate	Ryegate	Non-NPIAS	Unpaved	SR 3	1
8U1	Sand Springs	Sand Springs Strip	Non-NPIAS	Unpaved	SR 200	1
8U2	Schafer	Schafer USFS	Non-NPIAS	No road access	NA	NA
9S2	Scobey	Scobey	GA	Paved	SR 13	1
8U3	Scobey	Scobey Border Station (East Poplar International)	Non-NPIAS	Unpaved	SR 13	0
23S	Seeley Lake	Seeley Lake	Non-NPIAS	Unpaved	SR 83	2
M35	Seeley Lake	Lindey's Landing West Seaplane Base	Non-NPIAS	Paved	SR 83	0
SBX	Shelby	Shelby	GA	Paved	I-15	0.5
8U4	Spotted Bear	Spotted Bear USFS	Non-NPIAS	Unpaved	US 2	50
52S	St. Ignatius	St. Ignatius	Non-NPIAS	Paved	US 93	0.5
S64	Stanford	Stanford	GA	Paved	SR 3	0
32S	Stevensville	Stevensville	GA	Paved	SR 203	1

Ground and Highway Access to Montana System Airports

FAA ID	Associated City	Airport Name	NPIAS Status**	Access Road	Nearest Highway	Highway Distance to Airport Access Road (Miles)
8U5	Sunburst	Sunburst	Non-NPIAS	Unpaved	I-15	1
9S4	Superior	Mineral County	GA	Paved	I-90	2.5
7S8	Sweetgrass	Ross International	Non-NPIAS	Unpaved	I-15	0
8U6	Terry	Terry	GA	Paved	I-94	1
THM	Thompson Falls	Thompson Falls	GA	Paved	SR 200	1
9S5	Three Forks	Three Forks	GA	Paved	SR 2	0
B70	Tiber Dam	Tiber Dam	Non-NPIAS	Unpaved	SR 223	8
8U8	Townsend	Townsend	GA	Paved	US 12	0
8U9	Townsend	Canyon Ferry	Non-NPIAS	Unpaved	US 12	1
57S	Troy	Troy	Non-NPIAS	Paved	US 2	0
9U0	Turner	Turner	GA	Paved	SR 241	0.5
7S1	Twin Bridges	Twin Bridges	GA	Unpaved	SR 287	1
7S7	Valier	Valier	GA	Paved	SR 44	0.5
7S6	White Sulphur Springs	White Sulphur Springs	GA	Paved	US 12	0
58S	Whitefish	Whitefish	Non-NPIAS	Paved	US 93	1.5
9U1	Wilsall	Wilsall	Non-NPIAS	Unpaved	US 89	0
9S7	Winifred	Winifred	GA	Unpaved	SR 236	10
CW0	Winifred	Cow Creek	Non-NPIAS	Unpaved	0	0
BB0	Winifred	Black Butte North	Non-NPIAS	No road access	NA	NA
BW8	Winifred	Bullwhacker	Non-NPIAS	No road access	NA	NA
LC0	Winifred	Left Coulee	Non-NPIAS	Unpaved	US 191	50
MT3	Winifred	Knox Ridge	Non-NPIAS	Unpaved	US 191	8.5
WH0	Winifred	Woodhawk	Non-NPIAS	No road access	NA	NA
7S2	Winnett	Winnett	Non-NPIAS	Unpaved	SR 244	0
7S4	Wisdom	Wisdom	Non-NPIAS	Unpaved	SR 278	0
02T	Wise River	Wise River	Non-NPIAS	Unpaved	SR 43	2

*EAS status removed; **P – Primary Commercial Service; CS – Commercial Service; GA – General Aviation

Table 3-22: Rental Car and Courtesy Transportation at Montana System Airports

FAA ID	Associated City	Airport Name	On-Site Rental Car	Courtesy Vehicle/ Crew Car
Primary Commercial Service				
MSO	Missoula	Missoula International	Yes	Yes
BIL	Billings	Billings Logan International	Yes	No
BZN	Bozeman	Bozeman Yellowstone International	Yes	Yes
GPI	Kalispell	Glacier Park International	Yes	Yes
HLN	Helena	Helena Regional	Yes	Yes
GTF	Great Falls	Great Falls International	Yes	Yes
EAS Commercial Service				
BTM	Butte	Bert Mooney	Yes	Yes
GGW	Glasgow	Glasgow International (Wokal Field)	No	Yes
LWT	Lewistown*	Lewistown Municipal	Yes	Yes
WYS	West Yellowstone	Yellowstone	Yes	No
MLS	Miles City*	Miles City	Yes	No
HVR	Havre	Havre City-County	No	No
SDY	Sidney	Sidney-Richland Municipal	Yes	Yes
OLF	Wolf Point	L. M. Clayton	Yes	No
GDV	Glendive	Dawson Community	Yes	Yes
General Aviation				
3U3	Anaconda	Bowman Field	No	No
3U4	Ashland	St. Labre Mission	No	No
3U7	Augusta	Benchmark	No	No
3U5	Augusta	Augusta	No	No
49S	Babb	Babb	No	No
BHK	Baker	Baker Municipal	Yes	Yes

Rental Car and Courtesy Transportation at Montana System Airports

FAA ID	Associated City	Airport Name	On-Site Rental Car	Courtesy Vehicle/ Crew Car
3U8	Big Sandy	Big Sandy	No	Yes
6S0	Big Timber	Big Timber	No	Yes
53U	Bigfork	Ferndale Airfield	No	No
3U9	Boulder	Boulder	No	No
6S1	Bridger	Bridger Municipal	No	Yes
00F	Broadus	Broadus	No	Yes
8S0	Browning	Starr-Browning Airstrip	No	No
LTY	Chester	Liberty County	No	Yes
S71	Chinook	Edgar G. Obie	No	Yes
4U4	Chinook	Hebbelman	No	Yes
CII	Choteau	Choteau	No	No
4U6	Circle	Circle Town County	No	No
RC0	Clinton	Rock Creek	No	No
M46	Colstrip	Colstrip	No	Yes
6S3	Columbus	Columbus (Wolterman Memorial)	No	Yes
S04	Condon	Condon USFS	No	No
4U7	Conner	West Fork Lodge	No	No
S01	Conrad	Conrad	No	No
S85	Culbertson	Big Sky Field	No	No
CTB	Cut Bank	Cut Bank Municipal	Yes	Yes
38S	Deer Lodge	Deer Lodge-City-County	No	Yes
4U9	Dell	Dell Flight Strip	No	No
5U0	Denton	Denton	No	No
DLN	Dillon	Dillon	No	No
M26	Drummond	Drummond	No	No
5U1	Dutton	Dutton	No	No

Rental Car and Courtesy Transportation at Montana System Airports

FAA ID	Associated City	Airport Name	On-Site Rental Car	Courtesy Vehicle/ Crew Car
97M	Ekalaka	Ekalaka	No	No
EKS	Ennis	Ennis Big Sky	Yes	Yes
88M	Eureka	Eureka	No	Yes
5U5	Fairfield	Fairfield	No	No
5U6	Fairview	Fairview	No	No
1S3	Forsyth	Tillitt Field	No	Yes
79S	Fort Benton	Fort Benton	No	No
37S	Fort Peck	Fort Peck	No	Yes
5U7	Fort Smith	Fort Smith Landing Strip	No	No
29S	Gardiner	Gardiner	No	Yes
5U8	Geraldine	Geraldine	No	No
6S5	Hamilton	Ravalli County	Yes	Yes
F02	Hardin	Fairgrounds Airpark	No	No
48S	Harlem	Harlem	No	No
U09	Harlem	Fort Belknap Agency	No	No
HWQ	Harlowton	Wheatland County at Harlowton	No	No
6U5	Hinsdale	Hinsdale	No	No
6U6	Hogeland	Hogeland	No	No
S09	Hot Springs	Hot Springs	No	Yes
6U7	Hysham	Hysham	No	No
JDN	Jordan	Jordan	No	No
S27	Kalispell	Kalispell City	Yes	No
6S8	Laurel	Laurel Municipal	No	Yes
80S	Lavina	Lavina	No	No
S59	Libby	Libby	No	Yes
S69	Lincoln	Lincoln	No	No

Rental Car and Courtesy Transportation at Montana System Airports

FAA ID	Associated City	Airport Name	On-Site Rental Car	Courtesy Vehicle/ Crew Car
LVM	Livingston	Mission Field	Yes	No
M75	Malta	Malta	No	No
0S1	Meadow Creek	Meadow Creek USFS	No	No
S00	Opheim	Opheim	No	No
U05	Philipsburg	Riddick Field	No	No
S34	Plains	Plains	No	Yes
PWD	Plentywood	Sher-Wood	No	Yes
8S1	Polson	Polson	No	Yes
PO1	Poplar	Poplar Municipal	No	Yes
H28	Port of Del Bonita	Whetstone International	No	No
RED	Red Lodge	Red Lodge	Yes	No
7U8	Richey	Richey	No	No
7S0	Ronan	Ronan	No	Yes
RPX	Roundup	Roundup	No	Yes
M42	Russian Flat	Russian Flat	No	No
8U0	Ryegate	Ryegate	No	No
8U1	Sand Springs	Sand Springs Strip	No	No
8U2	Schafer	Schafer USFS	No	No
9S2	Scobey	Scobey	No	No
8U3	Scobey	Scobey Border Station (East Poplar International)	No	No
23S	Seeley Lake	Seeley Lake	No	Yes
M35	Seeley Lake	Lindey's Landing West Seaplane Base	No	Yes
SBX	Shelby	Shelby	No	Yes
8U4	Spotted Bear	Spotted Bear USFS	No	No
52S	St. Ignatius	St. Ignatius	No	Yes
S64	Stanford	Stanford	No	No

Rental Car and Courtesy Transportation at Montana System Airports

FAA ID	Associated City	Airport Name	On-Site Rental Car	Courtesy Vehicle/ Crew Car
32S	Stevensville	Stevensville	No	No
8U5	Sunburst	Sunburst	No	No
9S4	Superior	Mineral County	No	Yes
7S8	Sweetgrass	Ross International	No	No
8U6	Terry	Terry	No	No
THM	Thompson Falls	Thompson Falls	No	Yes
9S5	Three Forks	Three Forks	No	Yes
B70	Tiber Dam	Tiber Dam	No	No
8U8	Townsend	Townsend	No	Yes
8U9	Townsend	Canyon Ferry	No	No
57S	Troy	Troy	No	No
9U0	Turner	Turner	No	No
7S1	Twin Bridges	Twin Bridges	No	No
7S7	Valier	Valier	No	No
7S6	White Sulphur Springs	White Sulphur Springs	No	Yes
58S	Whitefish	Whitefish	No	No
9U1	Wilsall	Wilsall	No	No
9S7	Winifred	Winifred	No	No
CW0	Winifred	Cow Creek	No	No
BB0	Winifred	Black Butte North	No	No
BW8	Winifred	Bullwhacker	No	No
LC0	Winifred	Left Coulee	No	No
MT3	Winifred	Knox Ridge	No	No
WH0	Winifred	Woodhawk	No	No
7S2	Winnett	Winnett	No	No
7S4	Wisdom	Wisdom	No	No

Rental Car and Courtesy Transportation at Montana System Airports

FAA ID	Associated City	Airport Name	On-Site Rental Car	Courtesy Vehicle/ Crew Car
02T	Wise River	Wise River	No	No

*EAS status removed.

4 CHAPTER FOUR: SYSTEM ROLE ANALYSIS

This document examines several characteristics of Montana system airports in order to define the role that each airport serves the state. This analysis includes a review of how Montana airports have been classified in other documents and studies, such as the FAA National Plan of Integrated Airport Systems (NPIAS) and the FAA Asset Study, released in 2012, as well as previous Montana plans. Finally, this document assigns a role classification score to each Montana system airport based on a number of airport facilities, services, and aspects of activity. These scores are used to place each airport into an appropriate role category.

4.1 NPIAS Classifications

The FAA National Plan of Integrated Airport Systems (NPIAS) classifies commercial airports into several categories and general aviation airports (that are part of the NPIAS) into two categories – either as a reliever airport or general aviation airport. The NPIAS nationwide airports are categorized into one of three categories:

- ***Commercial Service*:** Public airports receiving scheduled passenger service and having 2,500 or more enplaned passengers per year. There are 499 commercial service airports in the U.S. that are divided into 378 primary and 121 non-primary. The 378 primary airports have more than 10,000 annual passenger enplanements. Primary airports receive an annual apportionment of at least $1 million in AIP funds with the amount determined by the number of enplaned passengers. Calendar Year (CY) 2010 enplanements determine FY 2012 passenger apportionments. The 121 non-primary commercial service airports are publically owned with scheduled air carrier service and annual passenger boardings between 2,500 and 10,000. The 378 primary airports are grouped into four categories defined in statute: large hub, medium hub, and small hub, and non-hub airports.

- ***Reliever*:** High activity general aviation airports that provide general aviation with alternatives to congested hubs

- ***General Aviation*:** Public airports, in states that have at least 2,500 passenger boardings each year and are receiving scheduled passenger aircraft service.

Montana has 70 airports within the NPIAS[30]. With only two categories for general aviation airports, the NPIAS does not offer much differentiation in terms of airport roles. The FAA recently addressed this shortcoming with its Asset Study which examines general aviation airports across the U.S. The first version was released in May 2012 and the second updated version was released in March 2014.

4.2 FAA Asset Study Classifications

With only two categories for general aviation airports, the NPIAS does not offer much differentiation in terms of airport roles. The FAA recently addressed this shortcoming with its Asset Study which examines general aviation airports across the U.S. and was released in May 2012. The 2012 Asset Study addressed the inadequacies by properly describing the critical

[30] The 2013 NPIAS Report indicates 71 airports including a New (yet to be built) airport in Hardin. There are 7 Primary and 2 commercial service airports the remaining 61 are general aviation. None of the airports fall into the reliever category.

roles of the general aviation airports. The process to group the general aviation airports into more descriptive categories included a review of state aviation system plans. Even though state interests are more narrowly focused, the state plans provided useful insights into how one might distinguish among general aviation airports.

While the Asset Study provided greater differentiation than the NPIAS Study, it still had limitations. Montana's airport system includes 127 airports in total but 56 of these airports are not in the NPIAS and as a result were not included in the FAA 2012 Asset Study. The 2012 Asset Study classified 2,455 out of the 2,952 NPIAS general aviation airports into one of four categories. Additionally, the Asset Study could not establish an asset category for three of Montana's NPIAS airports because of different types of activities and characteristics at these airports.

- ***National Airports*:** Support the national and state system by providing communities with access to national and international markets in multiple states and throughout the United States. These airports have very high levels of activity with many jets and multi-engine propeller aircraft. They average about 200 total based aircraft, of which 30, on average, are jets.

- ***Regional Airports*:** Support regional economies by connecting communities to statewide and interstate markets. These airports have high levels of activity with some jets and multi-engine propeller aircraft. They average about 90 total based aircraft, of which 3, on average, are jets.

- ***Local Airports*:** Supplement communities by providing access to primarily intrastate and some interstate markets. These airports have moderate levels of activity with some multi-engine propeller aircraft. They average about 33 based propeller-driven aircraft and no jets.

- ***Basic Airports*:** Links the community with the national airport system and supports general aviation activities. These airports have moderate to low levels of activity, but often serve critical aeronautical functions within local and regional markets. They average about 10 propeller-driven based aircraft.

- ***Unclassified*:** Does not maintain categories established by NPIAS or no longer meet criteria for prior established category. The unclassified category is a result of the 2012 study that determined over 400 U.S. airports did not meet the specified categories.

When reviewing the 2012 Asset Study Categories, a total of 33 Montana airports are assigned the basic study category, 25 within the local category, three unclassified, and one regional category airport. No airports in Montana were assigned the National Category. Since the FAA 2012 Asset Study focuses on general aviation airports, seven primary commercial service airports were not included in the Asset Study analysis. In addition, one Montana NPIAS general aviation airport (Valier) was not included in the 2012 Asset Study. This was rectified in the 2014 Asset Study.

The original 2012 Asset Study identified 497 unclassified facilities that did not fit into one of the newly established categories and for which a separate category could not be defined. After the 2012 study was complete, the FAA began working with airport sponsors, state aviation offices, and industry stakeholders to conduct a more in-depth review of these unclassified airports to ensure all available information was considered. After this analysis the FAA determined that 212 (42 percent) of the original 497 unclassified airports met the criteria for inclusion as regional,

local, or basic. They also found that 281 airports continue to be unclassified with no clearly defined Federal role.

In the 2012 study, Montana had a total of three unclassified airports that could not be placed into one of the four categories. These airports include Blaine County Airport, Geraldine & Choteau County Airport and Granite County Airport. After the 2014 update to the previous study, Blaine County Airport was updated to the basic category and Valier Airport which was previously not included in the study was assigned to the unclassified category in the 2014 evaluation. The overall total unclassified airports still remain at three.

4.3 1998 Montana SASP Categories

Prior system plans in Montana included a system inventory and analysis in 1998. Classification of the airports was solely based on commercial service and general aviation usage, with general aviation categorized by runway surface attributes and activity levels. Many of the documented airports included in the airport inventory list were not included in NPIAS. The 1998 Montana SASP categories include:

- Primary Commercial Service
- Non-Primary Commercial Service
- General Aviation - Paved Runway with More Than 10,000 Annual Operations
- General Aviation - Paved Runway with Less Than 10,000 Annual Operations
- General Aviation - Paved Turf/ Improved Runway
- Seaplane Base

4.4 2008 Montana Economic Impact Study Categories

This study measured the economic impact of all 121 public use airports in Montana[31]. Seven of these airports are Primary Commercial Service Airports, while eight are Commercial Essential Air Service (EAS) Airports. 106 general aviation airports were also included in the analysis. The general aviation airports were broken into three categories: High Volume General Aviation, Other Select General Aviation, and Rural Community Airports.

4.5 New Role Classification System for the 2014 System Plan

Based on discussions with MDT personnel, it was determined to formulate a new set of airport role categories for the 2014 system plan. These role categories are based on a variety of airport attributes such as activities and services. This new classification system accounts for the wide variety of general aviation airports in Montana by dividing them into four levels:

- ***Level 1 Airport*** – maintains a consistent and contributing role in enabling the local, regional, and statewide economy to have access to and from the national and global economy.
- ***Level 2 Airport*** – maintains a contributing role in supporting the local and regional economies and connecting it to the State and National economies.
- ***Level 3 Airport*** – maintains a supplemental contributing role for the local economy and community access.
- ***Level 4 Airport*** – maintains a limited contributing role for the local economy and community access. May also serve a role of wilderness access.

[31] The study includes 70 National Plan of Integrated Airport System (NPIAS) Airports which may be eligible for federal funding assistance and 51 additional non-NPIAS airports.

In addition to these roles for general aviation airports, commercial service airports would be assigned to their own distinct role.

4.5.1 Factors in Airport Role Analysis Evaluation

The Airport role analysis evaluation was built from framework evaluations conducted in other statewide system plans. These role analyses use a variety of airport factors, and assign a score to each. An airport's role category is a result of its total score.
This study analyzed 11 factors in the categories of access, airport facilities, airport services, and airport activity. This process provides a means to group the airports by functional level and is not intended to imply a relative level of importance among airports. This grouping is necessary to establish facility and service standards or objectives that are desirable at airports in each of the functional levels. The 11 factors are listed below:

Access:
- Population coverage

Airport facilities:
- Primary runway length
- Primary runway surface
- Instrument approach capabilities
- Automated weather reporting

Airport services:
- Full service FBO
- Aircraft fuel sales

Airport activity:
- Commercial service
- Total based aircraft
- Total based jets
- Aerial firefighting

The following sections offer descriptions of each of these classification factors, including how each was scored, and how the scores distribute throughout the Montana airport system. Although the effort to classify the Montana airport system into a set of roles is primarily concerned with the state's general aviation facilities, these tables also account for scores at commercial service airports.

Access

Population: Using geographic information systems (GIS), a 30 minute drive time area was generated for each Montana system airport.[32] Census block data was then used to estimate the total population that can access each system airport within 30 minutes. This population represents the number of potential aviation users within the airport's market area. The higher the population of the associated city for the airport, the higher the classification score assigned. **Table 4-1** shows scores assigned to various population ranges, and the number of Montana system airports that received each score. **Figure 4-1** maps the 30 minute drive time area of each Montana system airport.

[32] 30 minute drive time areas were not generated for two Montana system airports. Schafer USFS Airport and Woodhawk airport are not connected to any road network, and therefore are only accessible by air.

Table 4-1: Population with a 30 Minute Drive Time

Population Range		Score	Number of Airports
Low	High		
0	999	0	35
1,000	4,999	1	53
5,000	9,999	2	16
10,000	24,999	4	12
25,000	49,999	6	1
50,000	74,999	8	2
75,000	99,999	9	4
100,000	and up	10	3

Source: CDM Smith, US Census Bureau

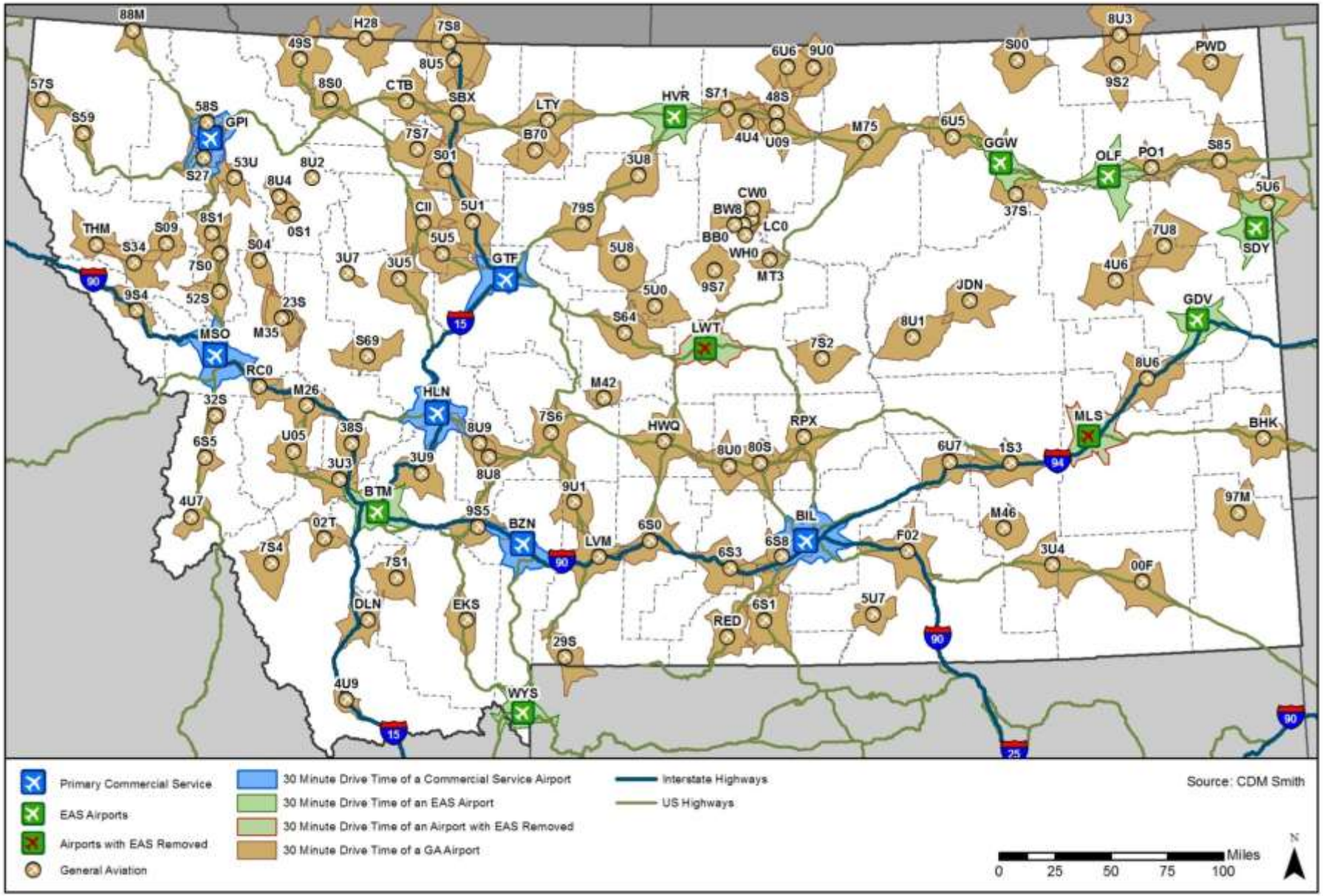


Figure 4-1: 30 Minute Drive Time Market Areas of Montana System Airports

Airport Facilities

Primary runway length: An airport's runway length is a major factor in determining what the types of aircraft and activities it can support. In general, larger aircraft need longer runways to operate safely and efficiently. Airports with longer runways often serve commercial airline operations, large cargo carriers, or military units, all of which are important components of an aviation system. For these reasons, those airports with longer runways were assigned higher relative scores. **Table 4-2** shows scores assigned to different ranges of primary runway length, and the number of Montana system airports that received each score.[33]

Table 4-2: Primary Runway Length

Primary Runway Length		Score	Number of Airports
Low	High		
0	2,999	2	21
3,000	3,999	4	39
4,000	4,999	6	31
5,000	5,999	8	19
6,000	7,999	10	7
8,000	and up	12	8

Source: Airport Inventory and Data Survey, FAA Form 5010

Primary runway surface: a paved runway is a crucial element of an airport looking to support many types of aircraft, especially larger passenger and cargo aircraft. The rural nature of much of Montana means that many of the state's airports have unpaved runway surfaces. These runways are typically composed of turf or gravel. **Table 4-3** shows scores assigned to paved and unpaved primary runways, and details the number of Montana system airports that have each.

Table 4-3: Primary Runway Surface

Runway Surface	Score	Number of Airports
Paved	3	85
Unpaved	0	41

Source: Airport Inventory and Data Survey, FAA Form 5010

Instrument approach capabilities: Weather can limit the operations of an airport if it does not have an instrument approach procedure to guide aircraft to the runway ends. Determining each airport's best instrument approach capability helps to identify those airports that are best equipped to meet these demands. Of the Montana system airports with instrument approach capabilities, most have either an instrument landing system (ILS) or area navigation/geographic positioning system (RNAV/GPS) approach with one airport having a circling approach. Airports without an instrument approach procedure are referred to as visual, meaning these airports can only be used during fair weather when visibility is above certain minimums. **Table 4-4** details scores assigned to ILS, RNAV/GPS, circling, and visual approaches, and lists the number of Montana system airports with each capability.

[33] This section of the analysis does not include Lindey's Landing West Seaplane Base, which has a water runway 14,000 feet in length.

Table 4-4: Best Instrument Approach Capability

Approach Capability	Score	Number of Airports
ILS	5	8
GPS/RNAV	3	30
Circling	1	1
Visual	0	87

Source: Airport Inventory and Data Survey, FAA Form 5010

Automated weather reporting: Accurate and timely weather reporting is essential to safe and expeditious airport operations. Automated weather reporting systems disseminate weather information to pilots. The most common of these systems are the automated weather observing system (AWOS) and the automated surface observing system (ASOS). **Table 4-5** shows scoring assigned to airports with an AWOS or ASOS.

Table 4-5: Automated Weather Reporting

Weather Reporting	Score	Number of Airports
AWOS/ASOS	3	44
None	0	82

Source: Airport Inventory and Data Survey, FAA Form 5010

Airport Services

Fixed base operator: a fixed base operator (FBO) typically provides a wide range of general aviation services to airport customers. These services include aircraft fuel, parking, storage, and maintenance, ground handling, and charter flights. Many FBOs also offer a wide range of terminal facilities and services such as conference rooms, flight planning, catering, and ground transportation. **Table 4-6** details scoring for FBOs at Montana system airports.

Table 4-6: Fixed Base Operators

FBO	Score	Number of Airports
Yes	3	39
No	0	87

Source: Airport Inventory and Data Survey, FAA Form 5010

Aircraft fueling: The availability of aircraft fuel is one of the most basic services that an airport can provide its customers. Piston engine aircraft use 100LL AvGas while larger turbo-prop and jet aircraft use Jet A fuel. **Table 4-7** details scoring for Montana system airports with aircraft fuel service. Note that all airports offering Jet A also offer AvGas.

Table 4-7: Available Aircraft Fuel

Aircraft Fuel Available	Score	Number of Airports
Jet A & AvGas	8	36
AvGas	3	58
No Fuel Available	0	68

Source: Airport Inventory and Data Survey, FAA Form 5010

Airport Activity

Commercial service: Airports with scheduled commercial aircraft service were identified. For the purpose of this analysis, this also includes airports in the Essential Air Service (EAS) program, and those airports which have until recently offered EAS service. Scoring for commercial service airports is shown in **Table 4-8**.

Table 4-8: Commercial Service Airports

CS or EAS Activity	Score	Number of Airports
Yes	10	14
No	0	112

Source: Airport Inventory and Data Survey, FAA Form 5010

Total based aircraft: The number of based aircraft at an airport is a good indicator of overall activity levels that that facility. More points were assigned to airports with larger numbers of based aircraft, with points assigned based on ranges. **Table 4-9** details scoring for total based aircraft.

Table 4-9: Total Based Aircraft

Number of Aircraft		Score	Number of Airports
Low	High		
0	0	0	36
1	9	2	35
10	19	4	29
20	59	6	14
60	99	8	5
100	and up	10	7

Source: Airport Inventory and Data Survey, FAA Form 5010

Total based jets: Jet aircraft have greater facility requirements than piston aircraft, making it important to determine which Montana system airports support based jet aircraft. Any airport with at least one based jet was given the full number of points possible. **Table 4-10** details scores for based jet aircraft and the number of airports that have these aircraft.

Table 4-10: Based Jet Aircraft

Based Jets	Score	Number of Airports
Yes	5	14
No	0	112

Source: Airport Inventory and Data Survey, FAA Form 5010

Aerial firefighting: Certain Montana airports maintain aerial firefighting facilities and activities to combat forest and wilderness fires. Different points were assigned to different types of firefighting activities. **Table 11** details this scoring at Montana system airports.

Table 4-11: Aerial Firefighting

Based Jets	Score	Number of Airports
Smoke Jumper	5	2
Permanent Base	3	8
Seasonal Use	1	3
None	0	113

Source: Airport Inventory and Data Survey, FAA Form 5010

4.5.2 Results of Role Analysis

Each airport was evaluated in the 10 factors described previously. The scores for all 11 factors were added together to arrive at a total role analysis score for each airport. **Table 4-12** details scoring at each Montana system airport, listing airports in descending order based on total role analysis score.

Table 4-12: Total Role Analysis Scores

FAA ID	Associated City	Airport Name	Popul-ation	RW Length	RW Surface	Inst. Appr.	Weather Reporting	FBO	Fuel	CS	Based Aircraft	Based Jets	Fire-fighting	Total Role Analysis Score
MSO	Missoula	Missoula International	10	12	3	5	3	3	8	10	10	5	5	74
BIL	Billings	Billings Logan International	10	12	3	5	3	3	8	10	10	5	3	72
BZN	Bozeman	Bozeman Yellowstone International	9	12	3	5	3	3	8	10	10	5	3	71
GPI	Kalispell	Glacier Park International	9	12	3	5	3	3	8	10	10	5	3	71
HLN	Helena	Helena Regional	8	12	3	5	3	3	8	10	10	5	3	70
GTF	Great Falls	Great Falls International	9	12	3	5	3	3	8	10	10	5	0	68
BTM	Butte	Bert Mooney	6	12	3	5	3	3	8	10	6	0	0	56
GGW	Glasgow	Glasgow International (Wokal Field)	2	8	3	3	3	3	8	10	8	5	0	53
LWT	Lewistown	Lewistown Municipal	2	10	3	3	3	3	8	10	8	0	3	53
WYS	West Yellowstone	Yellowstone	1	12	3	5	3	3	8	10	0	0	5	50
MLS	Miles City	Miles City	4	8	3	3	3	3	8	10	6	0	1	49
HVR	Havre	Havre City-County	4	8	3	3	3	3	8	10	6	0	0	48
6S5	Hamilton	Ravalli County	4	6	3	3	3	3	8	0	10	5	3	48
SDY	Sidney	Sidney-Richland Municipal	2	8	3	3	3	3	8	10	6	0	0	46
6S8	Laurel	Laurel Municipal	10	8	3	3	3	3	8	0	8	0	0	46
LVM	Livingston	Mission Field	4	8	3	3	3	3	8	0	4	5	1	42
EKS	Ennis	Ennis - Big Sky	1	10	3	3	3	3	8	0	4	5	0	40
OLF	Wolf Point	L. M. Clayton	2	8	3	3	3	0	8	10	2	0	0	39
8S1	Polson	Polson	4	6	3	3	0	3	8	0	6	5	0	38
SBX	Shelby	Shelby	1	8	3	3	0	3	8	0	6	5	0	37
DLN	Dillon	Dillon	2	10	3	3	3	3	8	0	4	0	0	36
BHK	Baker	Baker Municipal	1	8	3	3	3	3	8	0	6	0	0	35
CTB	Cut Bank	Cut Bank Municipal	1	8	3	3	3	3	8	0	6	0	0	35
32S	Stevensville	Stevensville	4	4	3	3	0	3	3	0	8	5	1	34
38S	Deer Lodge	Deer Lodge-City-County	2	8	3	3	3	3	8	0	4	0	0	34
GDV	Glendive	Dawson Community	2	8	3	3	3	3	8	0	4	0	0	34
S59	Libby	Libby	2	8	3	3	3	3	8	0	4	0	0	34
S27	Kalispell	Kalispell City	9	4	3	0	0	3	3	0	8	0	3	33
7S0	Ronan	Ronan	4	6	3	3	3	0	8	0	6	0	0	33
9S2	Scobey	Scobey	1	6	3	3	3	3	8	0	4	0	0	31
9S5	Three Forks	Three Forks	4	8	3	0	3	3	3	0	6	0	0	30
RPX	Roundup	Roundup	1	8	3	3	3	0	8	0	4	0	0	30

Total Role Analysis Scores

FAA ID	Associated City	Airport Name	Popul-ation	RW Length	RW Surface	Inst. Appr.	Weather Reporting	FBO	Fuel	CS	Based Aircraft	Based Jets	Fire-fighting	Total Role Analysis Score
PO1	Poplar	Poplar Municipal	1	6	3	3	3	3	8	0	2	0	0	29
7S1	Twin Bridges	Twin Bridges	1	6	3	0	3	3	8	0	4	0	0	28
79S	Fort Benton	Fort Benton	1	6	3	3	3	3	3	0	6	0	0	28
6S0	Big Timber	Big Timber	1	8	3	0	0	3	8	0	4	0	0	27
CII	Choteau	Choteau	1	8	3	3	0	0	8	0	4	0	0	27
3U3	Anaconda	Bowman Field	4	10	3	1	3	0	0	0	4	0	0	25
88M	Eureka	Eureka	1	6	3	0	3	3	3	0	6	0	0	25
S71	Chinook	Edgar G. Obie	4	6	3	0	3	0	3	0	4	0	0	23
S01	Conrad	Conrad	1	6	3	3	3	0	3	0	4	0	0	23
M75	Malta	Malta	1	8	3	0	3	3	0	0	4	0	0	22
1S3	Forsyth	Tillitt Field	1	6	3	3	3	0	0	0	6	0	0	22
M46	Colstrip	Colstrip	1	8	3	3	3	0	0	0	4	0	0	22
6S3	Columbus	Columbus (Wolterman Memorial)	2	4	3	0	0	3	3	0	6	0	0	21
PWD	Plentywood	Sher-Wood	1	4	3	3	3	0	3	0	4	0	0	21
4U6	Circle	Circle Town County	1	6	3	3	0	3	3	0	2	0	0	21
00F	Broadus	Broadus	1	6	3	0	0	0	8	0	2	0	0	20
4U9	Dell	Dell Flight Strip	0	10	3	0	0	0	0	0	2	5	0	20
LTY	Chester	Liberty County	1	6	3	0	0	3	3	0	4	0	0	20
7S6	White Sulphur Springs	White Sulphur Springs	1	10	3	0	0	0	3	0	2	0	0	19
S34	Plains	Plains	1	6	3	0	3	0	0	0	2	0	3	18
RED	Red Lodge	Red Lodge	1	6	3	0	3	0	0	0	4	0	0	17
S64	Stanford	Stanford	1	6	3	0	0	0	3	0	4	0	0	17
8U8	Townsend	Townsend	1	6	3	0	0	0	3	0	4	0	0	17
52S	St. Ignatius	St. Ignatius	4	2	3	0	0	0	3	0	4	0	0	16
29S	Gardiner	Gardiner	1	4	3	0	0	0	8	0	0	0	0	16
97M	Ekalaka	Ekalaka	0	4	3	0	3	0	3	0	2	0	0	15
9S4	Superior	Mineral County	1	4	3	0	0	0	3	0	4	0	0	15
HWQ	Harlowton	Wheatland County at Harlowton	1	6	3	0	3	0	0	0	2	0	0	15
S69	Lincoln	Lincoln	1	6	3	0	0	0	0	0	4	0	0	14
THM	Thompson Falls	Thompson Falls	1	6	3	0	0	0	0	0	4	0	0	14
S85	Culbertson	Big Sky Field	1	4	3	0	0	0	3	0	2	0	0	13
3U7	Augusta	Benchmark	0	10	3	0	0	0	0	0	0	0	0	13
7S7	Valier	Valier	1	4	0	0	0	0	8	0	0	0	0	13
8U6	Terry	Terry	1	6	3	0	0	0	0	0	2	0	0	12

Total Role Analysis Scores

FAA ID	Associated City	Airport Name	Popul-ation	RW Length	RW Surface	Inst. Appr.	Weather Reporting	FBO	Fuel	CS	Based Aircraft	Based Jets	Fire-fighting	Total Role Analysis Score
37S	Fort Peck	Fort Peck	1	6	0	0	0	0	3	0	2	0	0	12
3U8	Big Sandy	Big Sandy	1	4	3	0	0	0	0	0	4	0	0	12
48S	Harlem	Harlem	1	6	3	0	0	0	0	0	2	0	0	12
58S	Whitefish	Whitefish	8	2	0	0	0	0	0	0	2	0	0	12
5U1	Dutton	Dutton	1	4	3	0	0	0	0	0	4	0	0	12
8S0	Browning	Starr-Browning Airstrip	2	6	3	0	0	0	0	0	0	0	0	11
23S	Seeley Lake	Seeley Lake	1	6	0	0	0	0	0	0	4	0	0	11
5U5	Fairfield	Fairfield	2	4	3	0	0	0	0	0	2	0	0	11
9U0	Turner	Turner	0	4	3	0	0	0	0	0	4	0	0	11
00U	Hardin	Big Horn County	2	4	3	0	0	0	0	0	2	0	0	11
JDN	Jordan	Jordan	0	6	3	0	0	0	0	0	2	0	0	11
80S	Lavina	Lavina	1	4	0	0	3	0	0	0	2	0	0	10
4U4	Chinook	Hebbelman	1	4	0	0	0	0	3	0	2	0	0	10
6S1	Bridger	Bridger Municipal	1	4	3	0	0	0	0	0	2	0	0	10
RC0	Clinton	Rock Creek	2	6	0	0	0	0	0	0	2	0	0	10
S09	Hot Springs	Hot Springs	1	4	3	0	0	0	0	0	2	0	0	10
02T	Wise River	Wise River	0	6	3	0	0	0	0	0	0	0	0	9
57S	Troy	Troy	2	4	3	0	0	0	0	0	0	0	0	9
6U6	Hogeland	Hogeland	0	4	3	0	0	0	0	0	2	0	0	9
6U7	Hysham	Hysham	0	4	3	0	0	0	0	0	2	0	0	9
9S7	Winifred	Winifred	0	6	0	0	0	0	3	0	0	0	0	9
3U4	Ashland	St. Labre Mission	1	4	3	0	0	0	0	0	0	0	0	8
8U9	Townsend	Canyon Ferry	2	4	0	0	0	0	0	0	2	0	0	8
9U1	Wilsall	Wilsall	1	4	3	0	0	0	0	0	0	0	0	8
U09	Harlem	Fort Belknap Agency	1	4	3	0	0	0	0	0	0	0	0	8
4U7	Conner	West Fork Lodge	1	2	0	0	0	0	3	0	2	0	0	8
53U	Bigfork	Ferndale Airfield	4	4	0	0	0	0	0	0	0	0	0	8
5U6	Fairview	Fairview	2	4	0	0	0	0	0	0	2	0	0	8
U05	Philipsburg	Riddick Field	1	4	3	0	0	0	0	0	0	0	0	8
5U7	Fort Smith	Fort Smith Landing Strip	0	4	3	0	0	0	0	0	0	0	0	7
3U9	Boulder	Boulder	1	4	0	0	0	0	0	0	2	0	0	7
7S2	Winnett	Winnett	0	4	0	0	0	0	0	0	2	0	0	6
7S4	Wisdom	Wisdom	0	4	0	0	0	0	0	0	2	0	0	6
H28	Port of Del Bonita	Whetstone International	0	6	0	0	0	0	0	0	0	0	0	6

Total Role Analysis Scores

FAA ID	Associated City	Airport Name	Popul-ation	RW Length	RW Surface	Inst. Appr.	Weather Reporting	FBO	Fuel	CS	Based Aircraft	Based Jets	Fire-fighting	Total Role Analysis Score
5U8	Geraldine	Geraldine	0	2	3	0	0	0	0	0	0	0	0	5
8U3	Scobey	Scobey Border Station (East Poplar Intl)	1	4	0	0	0	0	0	0	0	0	0	5
8U5	Sunburst	Sunburst	1	2	0	0	0	0	0	0	2	0	0	5
6U5	Hinsdale	Hinsdale	0	2	0	0	0	0	0	0	2	0	0	4
8U0	Ryegate	Ryegate	0	4	0	0	0	0	0	0	0	0	0	4
M42	Russian Flat	Russian Flat	0	4	0	0	0	0	0	0	0	0	0	4
M35	Seeley Lake	Lindey's Landing West Seaplane Base	1	0	0	0	0	3	0	0	0	0	0	4
3U5	Augusta	Augusta	0	4	0	0	0	0	0	0	0	0	0	4
49S	Babb	Babb	0	4	0	0	0	0	0	0	0	0	0	4
7U8	Richey	Richey	0	2	0	0	0	0	0	0	2	0	0	4
8U1	Sand Springs	Sand Springs Strip	0	2	0	0	0	0	0	0	2	0	0	4
8U2	Schafer	Schafer USFS	0	4	0	0	0	0	0	0	0	0	0	4
8U4	Spotted Bear	Spotted Bear USFS	0	4	0	0	0	0	0	0	0	0	0	4
S00	Opheim	Opheim	0	2	0	0	0	0	0	0	2	0	0	4
M26	Drummond	Drummond	1	2	0	0	0	0	0	0	0	0	0	3
CW0	Winifred	Cow Creek	0	2	0	0	0	0	0	0	0	0	0	2
0S1	Meadow Creek	Meadow Creek USFS	0	2	0	0	0	0	0	0	0	0	0	2
5U0	Denton	Denton	0	2	0	0	0	0	0	0	0	0	0	2
7S8	Sweetgrass	Ross International	0	2	0	0	0	0	0	0	0	0	0	2
B70	Tiber Dam	Tiber Dam	0	2	0	0	0	0	0	0	0	0	0	2
BB0	Winifred	Black Butte North	0	2	0	0	0	0	0	0	0	0	0	2
BW8	Winifred	Bullwhacker	0	2	0	0	0	0	0	0	0	0	0	2
LC0	Winifred	Left Coulee	0	2	0	0	0	0	0	0	0	0	0	2
MT3	Winifred	Knox Ridge	0	2	0	0	0	0	0	0	0	0	0	2
S04	Condon	Condon USFS	0	2	0	0	0	0	0	0	0	0	0	2
WH0	Winifred	Woodhawk	0	2	0	0	0	0	0	0	0	0	0	2

Source: Airport Inventory and Data Survey, CDM Smith, FAA Form 5010

4.5.3 Airport Role Definitions

The next step in the process of classifying Montana's airports into role categories is to determine the total role analysis score range for each airport role. Because their roles are set by other circumstances, the scores of commercial service airports are largely inconsequential. The ranges assigned to the four general aviation levels are shown in **Table 4-13**. These role categories can be renamed to best meet the goals of the SASP.

Table 4-13: Role Analysis Score Ranges for Role Categories

Total Score		Airport Role
Low	High	
--	--	Commercial Service
25	and up	GA Level 1
15	24	GA Level 2
10	14	GA Level 3
0	9	GA Level 4

Source: CDM Smith

Each airport was assigned a current role based on its total role analysis score and the criteria in **Table 4-13**. Those roles are shown in **Table 4-14**, arranged by total role analysis score. **Table 4-15** then categorizes Montana system airports by role, listed in alphabetical order by associated city. Figure 4-2depicts a map of the Montana airport system with each airport's role indicated.

Table 4-14: Montana Airport Roles and Total Role Analysis Scores

FAA ID	Associated City	Airport Name	Total Role Analysis Score
Primary Commercial Service			
MSO	Missoula	Missoula International	74
BIL	Billings	Billings Logan International	72
BZN	Bozeman	Bozeman Yellowstone International	71
GPI	Kalispell	Glacier Park International	71
HLN	Helena	Helena Regional	70
GTF	Great Falls	Great Falls International	68
EAS Commercial Service			
BTM	Butte	Bert Mooney	56
GGW	Glasgow	Glasgow International (Wokal Field)	53
LWT	Lewistown	Lewistown Municipal	53
WYS	West Yellowstone	Yellowstone	50
MLS	Miles City	Miles City	49
HVR	Havre	Havre City-County	48
SDY	Sidney	Sidney-Richland Municipal	46
OLF	Wolf Point	L. M. Clayton	39
GDV	Glendive	Dawson Community	34

Montana Airport Roles and Total Role Analysis Scores

FAA ID	Associated City	Airport Name	Total Role Analysis Score
GA Level 1			
6S5	Hamilton	Ravalli County	48
6S8	Laurel	Laurel Municipal	46
LVM	Livingston	Mission Field	42
EKS	Ennis	Ennis - Big Sky	40
8S1	Polson	Polson	38
SBX	Shelby	Shelby	37
DLN	Dillon	Dillon	36
BHK	Baker	Baker Municipal	35
CTB	Cut Bank	Cut Bank Municipal	35
32S	Stevensville	Stevensville	34
38S	Deer Lodge	Deer Lodge-City-County	34
S59	Libby	Libby	34
S27	Kalispell	Kalispell City	33
7S0	Ronan	Ronan	33
9S2	Scobey	Scobey	31
9S5	Three Forks	Three Forks	30
RPX	Roundup	Roundup	30
PO1	Poplar	Poplar Municipal	29
7S1	Twin Bridges	Twin Bridges	28
79S	Fort Benton	Fort Benton	28
6S0	Big Timber	Big Timber	27
CII	Choteau	Choteau	27
3U3	Anaconda	Bowman Field	25
88M	Eureka	Eureka	25
GA Level 2			
S71	Chinook	Edgar G. Obie	23
S01	Conrad	Conrad	23
M75	Malta	Malta	22
1S3	Forsyth	Tillitt Field	22
M46	Colstrip	Colstrip	22
6S3	Columbus	Columbus (Wolterman Memorial)	21
PWD	Plentywood	Sher-Wood	21
4U6	Circle	Circle Town County	21
00F	Broadus	Broadus	20
4U9	Dell	Dell Flight Strip	20
LTY	Chester	Liberty County	20
7S6	White Sulphur Springs	White Sulphur Springs	19
S34	Plains	Plains	18

Montana Airport Roles and Total Role Analysis Scores

FAA ID	Associated City	Airport Name	Total Role Analysis Score
RED	Red Lodge	Red Lodge	17
S64	Stanford	Stanford	17
8U8	Townsend	Townsend	17
52S	St. Ignatius	St. Ignatius	16
29S	Gardiner	Gardiner	16
97M	Ekalaka	Ekalaka	15
9S4	Superior	Mineral County	15
HWQ	Harlowton	Wheatland County at Harlowton	15
GA Level 3			
S69	Lincoln	Lincoln	14
THM	Thompson Falls	Thompson Falls	14
S85	Culbertson	Big Sky Field	13
3U7	Augusta	Benchmark	13
7S7	Valier	Valier	13
8U6	Terry	Terry	12
37S	Fort Peck	Fort Peck	12
3U8	Big Sandy	Big Sandy	12
48S	Harlem	Harlem	12
58S	Whitefish	Whitefish	12
5U1	Dutton	Dutton	12
8S0	Browning	Starr-Browning Airstrip	11
23S	Seeley Lake	Seeley Lake	11
5U5	Fairfield	Fairfield	11
9U0	Turner	Turner	11
00U	Hardin	Big Horn County	11
JDN	Jordan	Jordan	11
80S	Lavina	Lavina	10
4U4	Chinook	Hebbelman	10
6S1	Bridger	Bridger Municipal	10
RC0	Clinton	Rock Creek	10
S09	Hot Springs	Hot Springs	10
GA Level 4			
02T	Wise River	Wise River	9
57S	Troy	Troy	9
6U6	Hogeland	Hogeland	9
6U7	Hysham	Hysham	9
9S7	Winifred	Winifred	9
3U4	Ashland	St. Labre Mission	8
8U9	Townsend	Canyon Ferry	8

Montana Airport Roles and Total Role Analysis Scores

FAA ID	Associated City	Airport Name	Total Role Analysis Score
9U1	Wilsall	Wilsall	8
U09	Harlem	Fort Belknap Agency	8
4U7	Conner	West Fork Lodge	8
53U	Bigfork	Ferndale Airfield	8
5U6	Fairview	Fairview	8
U05	Philipsburg	Riddick Field	8
5U7	Fort Smith	Fort Smith Landing Strip	7
3U9	Boulder	Boulder	7
7S2	Winnett	Winnett	6
7S4	Wisdom	Wisdom	6
H28	Port of Del Bonita	Whetstone International	6
5U8	Geraldine	Geraldine	5
8U3	Scobey	Scobey Border Station (East Poplar International)	5
8U5	Sunburst	Sunburst	5
6U5	Hinsdale	Hinsdale	4
8U0	Ryegate	Ryegate	4
M42	Russian Flat	Russian Flat	4
M35	Seeley Lake	Lindey's Landing West Seaplane Base	4
3U5	Augusta	Augusta	4
49S	Babb	Babb	4
7U8	Richey	Richey	4
8U1	Sand Springs	Sand Springs Strip	4
8U2	Schafer	Schafer USFS	4
8U4	Spotted Bear	Spotted Bear USFS	4
S00	Opheim	Opheim	4
M26	Drummond	Drummond	3
CW0	Winifred	Cow Creek	2
0S1	Meadow Creek	Meadow Creek USFS	2
5U0	Denton	Denton	2
7S8	Sweetgrass	Ross International	2
B70	Tiber Dam	Tiber Dam	2
BB0	Winifred	Black Butte North	2
BW8	Winifred	Bullwhacker	2
LC0	Winifred	Left Coulee	2
MT3	Winifred	Knox Ridge	2
S04	Condon	Condon USFS	2
WH0	Winifred	Woodhawk	2

Source: Airport Inventory and Data Survey, CDM Smith, FAA Form 5010

Table 4-15: Montana Airport Roles

FAA ID	Associated City	Airport Name
Primary Commercial Service		
BIL	Billings	Billings Logan International
BZN	Bozeman	Bozeman Yellowstone International
GPI	Kalispell	Glacier Park International
GTF	Great Falls	Great Falls International
HLN	Helena	Helena Regional
MSO	Missoula	Missoula International
EAS Commercial Service		
BTM	Butte	Bert Mooney
GDV	Glendive	Dawson Community
GGW	Glasgow	Glasgow International (Wokal Field)
HVR	Havre	Havre City-County
OLF	Wolf Point	L. M. Clayton
LWT	Lewistown	Lewistown Municipal
MLS	Miles City	Miles City
SDY	Sidney	Sidney-Richland Municipal
WYS	West Yellowstone	Yellowstone
GA Level 1		
BHK	Baker	Baker Municipal
6S0	Big Timber	Big Timber
3U3	Anaconda	Bowman Field
CII	Choteau	Choteau
CTB	Cut Bank	Cut Bank Municipal
38S	Deer Lodge	Deer Lodge-City-County
DLN	Dillon	Dillon
EKS	Ennis	Ennis - Big Sky
88M	Eureka	Eureka
79S	Fort Benton	Fort Benton
S27	Kalispell	Kalispell City
6S8	Laurel	Laurel Municipal
S59	Libby	Libby
LVM	Livingston	Mission Field
8S1	Polson	Polson
PO1	Poplar	Poplar Municipal
6S5	Hamilton	Ravalli County
7S0	Ronan	Ronan
RPX	Roundup	Roundup
9S2	Scobey	Scobey
SBX	Shelby	Shelby

Montana Airport Roles

FAA ID	Associated City	Airport Name
32S	Stevensville	Stevensville
9S5	Three Forks	Three Forks
7S1	Twin Bridges	Twin Bridges
GA Level 2		
00F	Broadus	Broadus
4U6	Circle	Circle Town County
M46	Colstrip	Colstrip
6S3	Columbus	Columbus (Wolterman Memorial)
S01	Conrad	Conrad
4U9	Dell	Dell Flight Strip
S71	Chinook	Edgar G. Obie
97M	Ekalaka	Ekalaka
29S	Gardiner	Gardiner
LTY	Chester	Liberty County
M75	Malta	Malta
9S4	Superior	Mineral County
S34	Plains	Plains
RED	Red Lodge	Red Lodge
PWD	Plentywood	Sher-Wood
52S	St. Ignatius	St. Ignatius
S64	Stanford	Stanford
1S3	Forsyth	Tillitt Field
8U8	Townsend	Townsend
HWQ	Harlowton	Wheatland County at Harlowton
7S6	White Sulphur Springs	White Sulphur Springs
GA Level 3		
3U7	Augusta	Benchmark
3U8	Big Sandy	Big Sandy
S85	Culbertson	Big Sky Field
6S1	Bridger	Bridger Municipal
5U1	Dutton	Dutton
5U5	Fairfield	Fairfield
F02	Hardin	Fairgrounds Airpark
37S	Fort Peck	Fort Peck
48S	Harlem	Harlem
4U4	Chinook	Hebbelman
S09	Hot Springs	Hot Springs
JDN	Jordan	Jordan
80S	Lavina	Lavina
S69	Lincoln	Lincoln

Montana Airport Roles

FAA ID	Associated City	Airport Name
RC0	Clinton	Rock Creek
23S	Seeley Lake	Seeley Lake
8S0	Browning	Starr-Browning Airstrip
8U6	Terry	Terry
THM	Thompson Falls	Thompson Falls
9U0	Turner	Turner
7S7	Valier	Valier
58S	Whitefish	Whitefish
GA Level 4		
3U5	Augusta	Augusta
49S	Babb	Babb
BB0	Winifred	Black Butte North
3U9	Boulder	Boulder
BW8	Winifred	Bullwhacker
8U9	Townsend	Canyon Ferry
S04	Condon	Condon USFS
CW0	Winifred	Cow Creek
5U0	Denton	Denton
M26	Drummond	Drummond
5U6	Fairview	Fairview
53U	Bigfork	Ferndale Airfield
U09	Harlem	Fort Belknap Agency
5U7	Fort Smith	Fort Smith Landing Strip
5U8	Geraldine	Geraldine
6U5	Hinsdale	Hinsdale
6U6	Hogeland	Hogeland
6U7	Hysham	Hysham
MT3	Winifred	Knox Ridge
LC0	Winifred	Left Coulee
M35	Seeley Lake	Lindey's Landing West Seaplane Base
0S1	Meadow Creek	Meadow Creek USFS
S00	Opheim	Opheim
7U8	Richey	Richey
U05	Philipsburg	Riddick Field
7S8	Sweetgrass	Ross International
M42	Russian Flat	Russian Flat
8U0	Ryegate	Ryegate
8U1	Sand Springs	Sand Springs Strip
8U2	Schafer	Schafer USFS
8U3	Scobey	Scobey Border Station (East Poplar International)

Montana Airport Roles

FAA ID	Associated City	Airport Name
8U4	Spotted Bear	Spotted Bear USFS
3U4	Ashland	St. Labre Mission
8U5	Sunburst	Sunburst
B70	Tiber Dam	Tiber Dam
57S	Troy	Troy
4U7	Conner	West Fork Lodge
H28	Port of Del Bonita	Whetstone International
9U1	Wilsall	Wilsall
9S7	Winifred	Winifred
7S2	Winnett	Winnett
7S4	Wisdom	Wisdom
02T	Wise River	Wise River
WH0	Winifred	Woodhawk

Source: Airport Inventory and Data Survey, CDM Smith, FAA Form 5010

Figure 4-2 Identifies each Montana system airport and the role assigned to them in the initial categorization analysis.

Figure 4-3 identifies each Montana system airport that is included in the NPIAS and the 30-minute drive times associated with each NPIAS airport. The population analysis indicates that 86.9 percent of the state's population is within 30 minutes of a NPIAS airport.

Figure 4-4 identifies each Montana system airport with aviation fuel (Avgas and Jet A) facilities and population coverage in aggregate. 30-minute drive times associated with each airport with fuel facilities are also presented. Analysis indicates that 83.4 percent of the state's population is within 30 minutes of an airport with fuel.

Figure 4-5 identifies each Montana system airport with Jet A facilities and population coverage in aggregate. 30-minute drive times associated with each airport are also presented. Analysis indicates that 76.9 percent of the state's population is within 30 minutes of an airport with Jet A fuel.

Figure 4-6 identifies each Montana system airport with aviation weather reporting equipment and population coverage in aggregate. 30-minute drive times associated with each airport with weather reporting facilities are also presented. Analysis indicates that 79.8 percent of the state's population is within 30 minutes of an airport with weather reporting.

Figure 4-7 identifies each Montana system airport with published approaches and population coverage in aggregate. 30-minute drive times associated with each airport with these approaches are also presented. Analysis indicates that 79.3 percent of the state's population is within 30 minutes of an airport with a published approach.

Figure 4-8 identifies each Montana system airport with an ILS approach and population coverage in aggregate. 30-minute drive times associated with each airport with these approaches are also presented. Analysis indicates that 59.0 percent of the state's population is within 30 minutes of an airport with an ILS approach. All these airports are commercial service

airports and, with the exception of West Yellowstone, are located in the state's most populous metropolitan areas.

Figure 4-9 identifies each Montana system airport with paved runways and population coverage in aggregate. 30-minute drive times associated with each airport are also presented. Analysis indicates that 90.0 percent of the state's population is within 30 minutes of an airport with a paved runway.

Figure 4-2: Montana Airports by Initial Roles Categorization

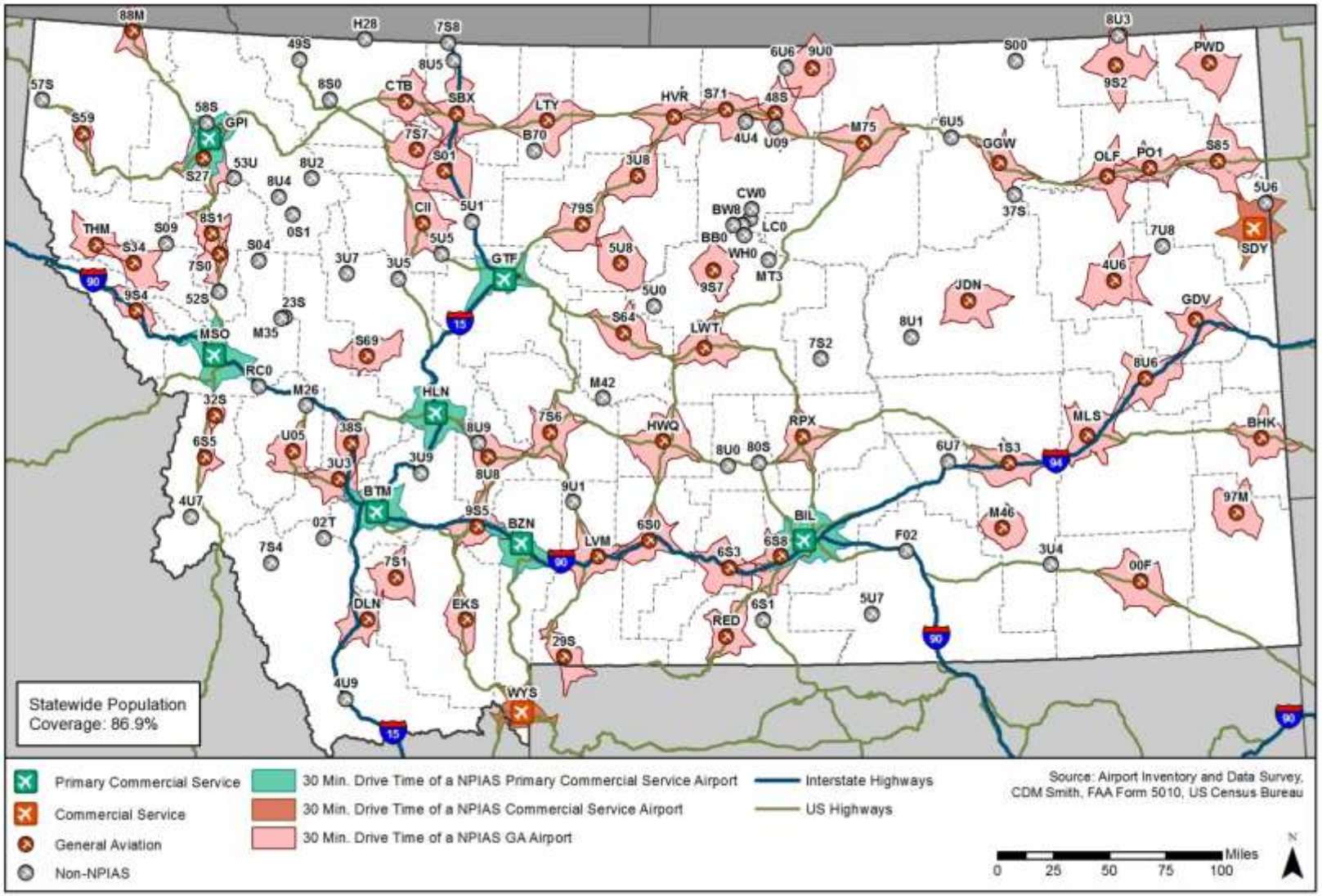


Figure 4-3: Montana Airports - NPIAS Facilities and Population Coverage

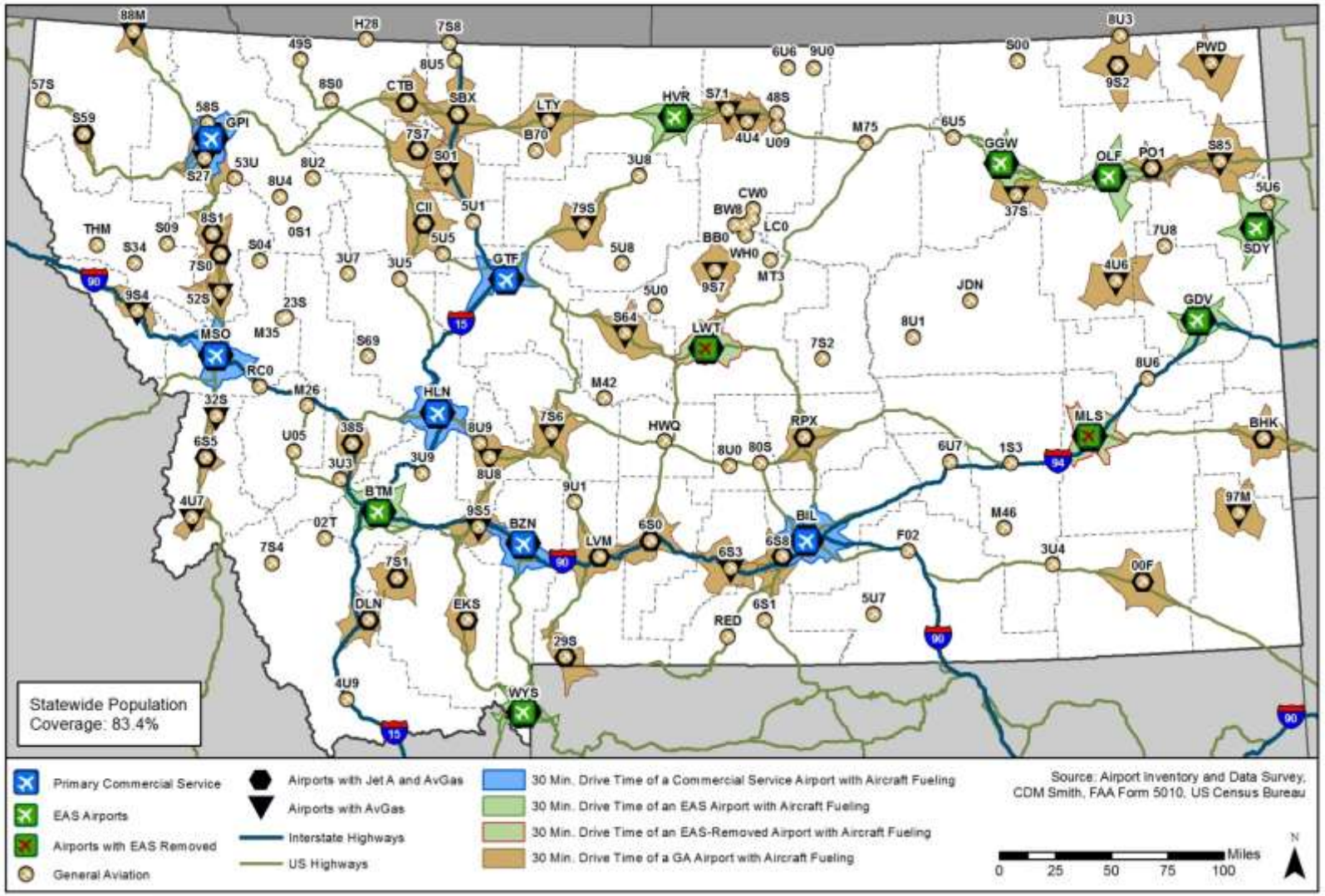


Figure 4-4: Montana Airports - Aviation Fuel Facilities and Population Coverage

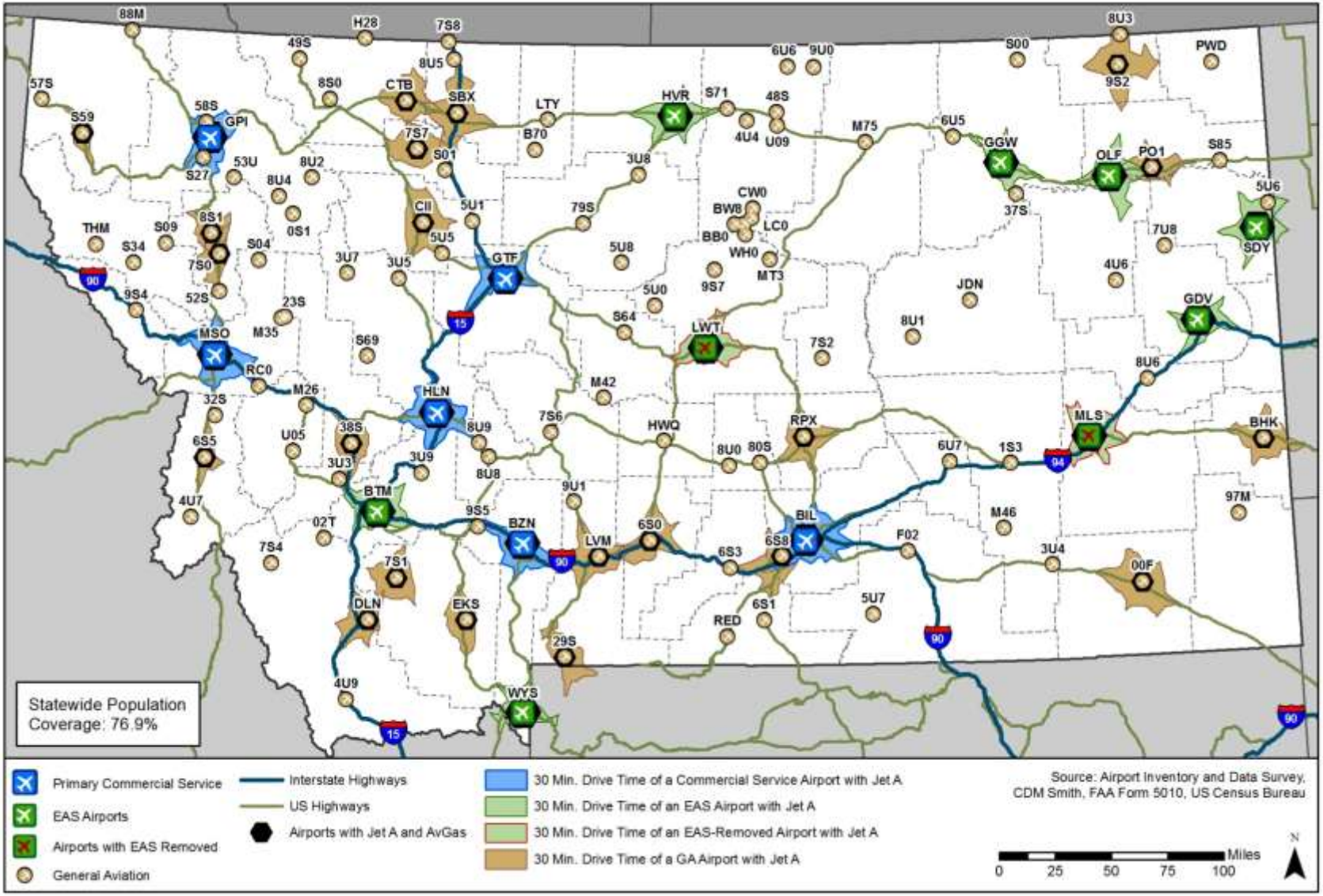


Figure 4-5: Montana Airports - Jet A Fuel Facilities and Population Coverage

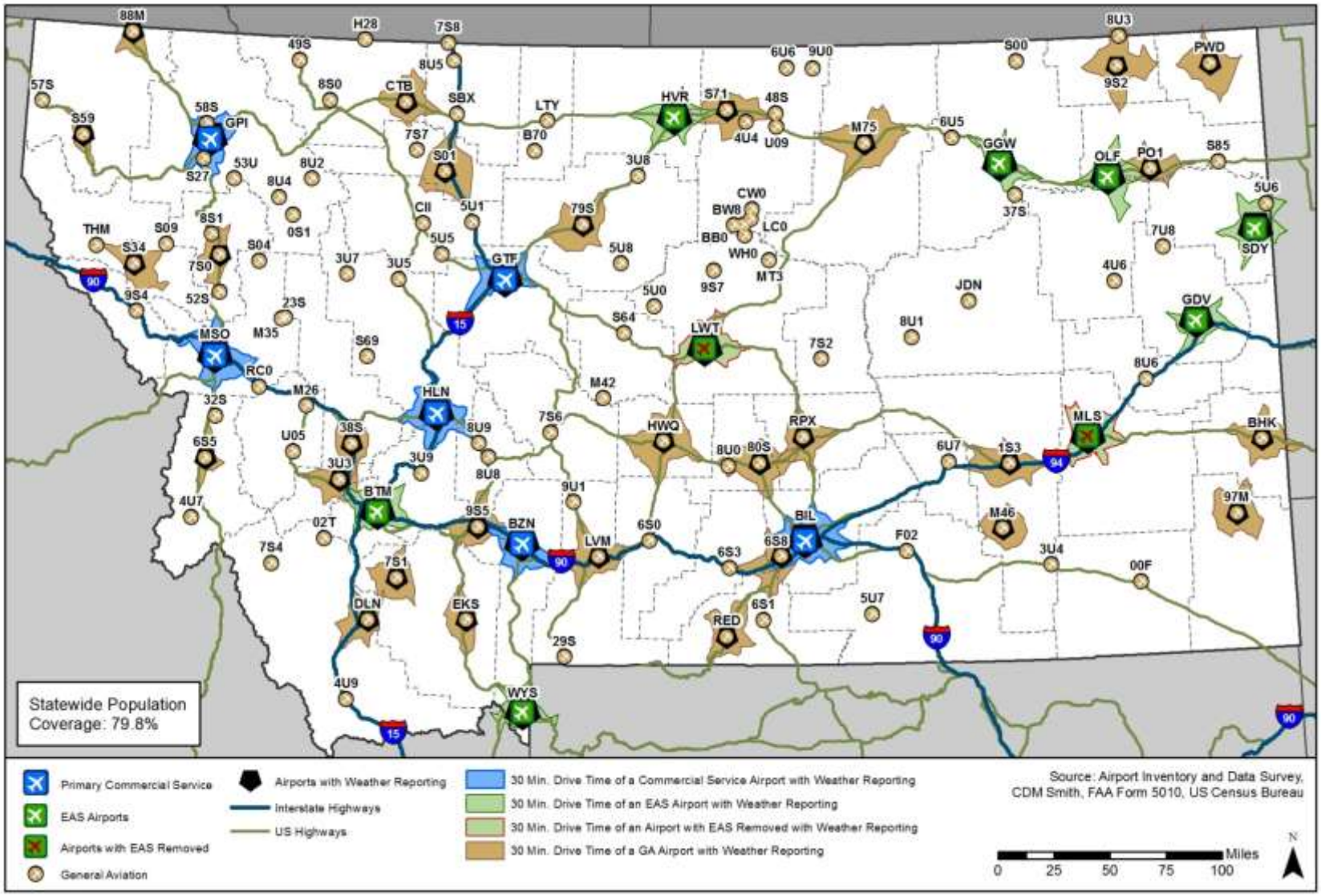


Figure 4-6: Montana Airports – Weather Reporting Facilities and Population Coverage

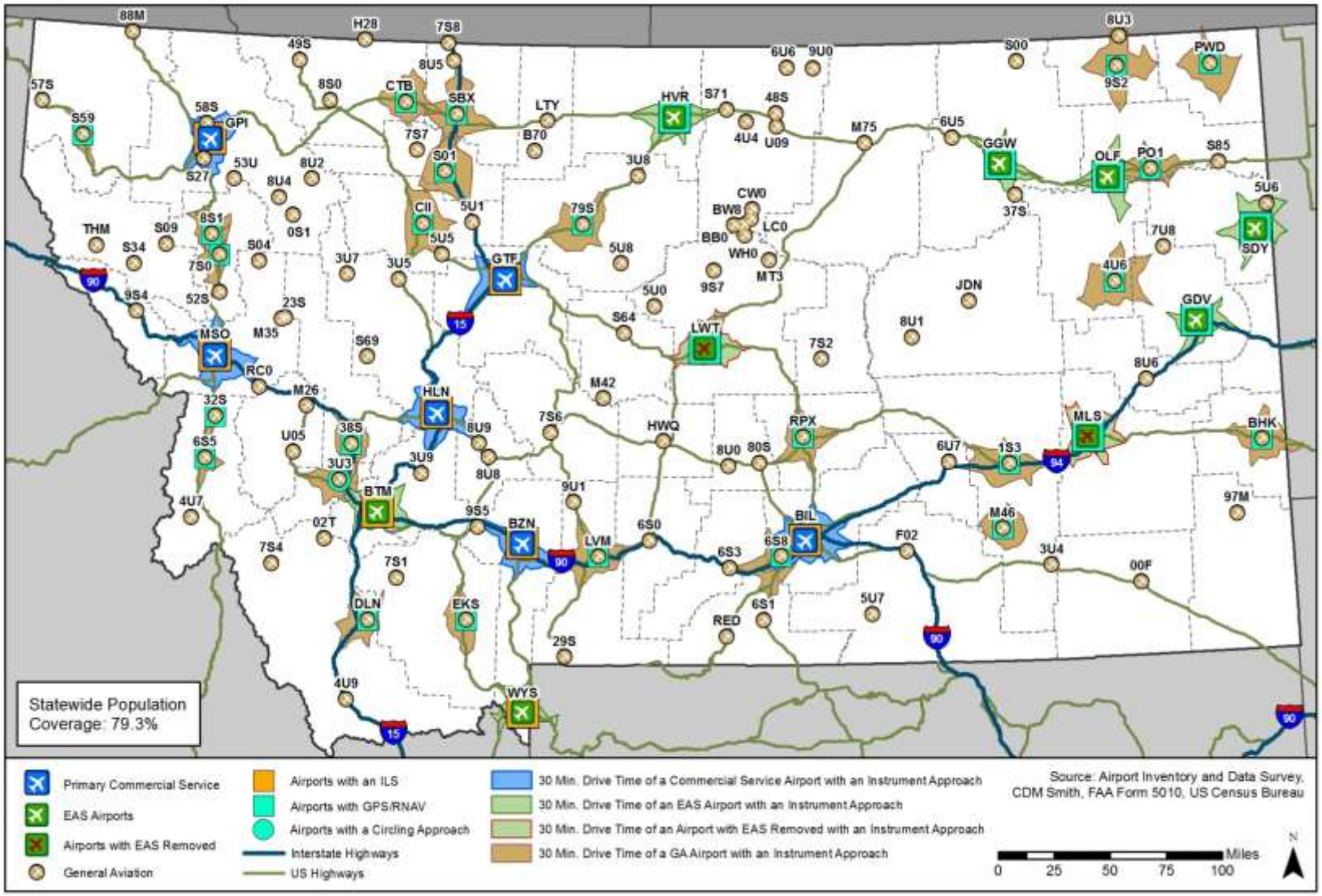


Figure 4-7: Montana Airports – Published Approaches and Population Coverage

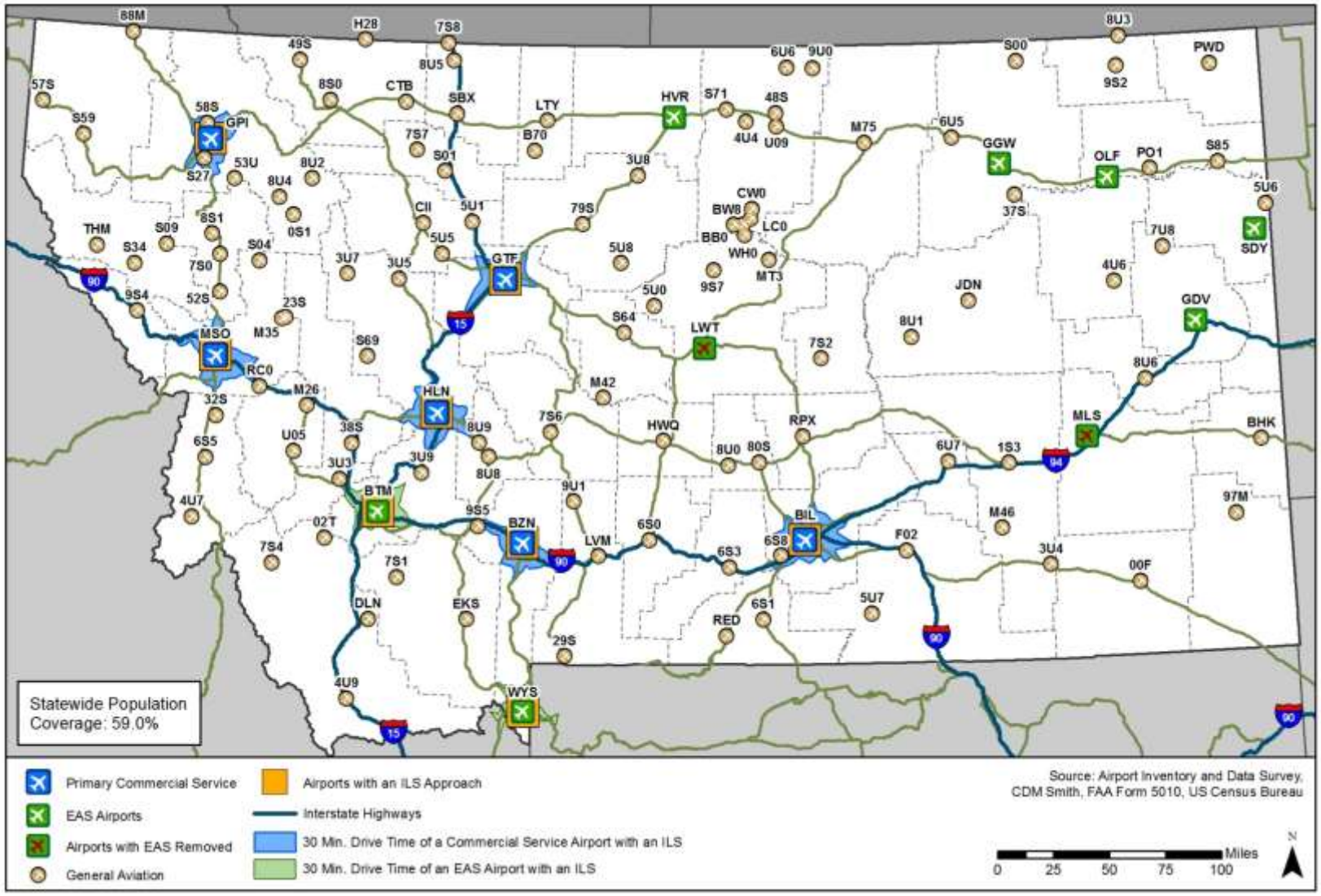


Figure 4-8: Montana Airports – ILS Approaches and Population Coverage

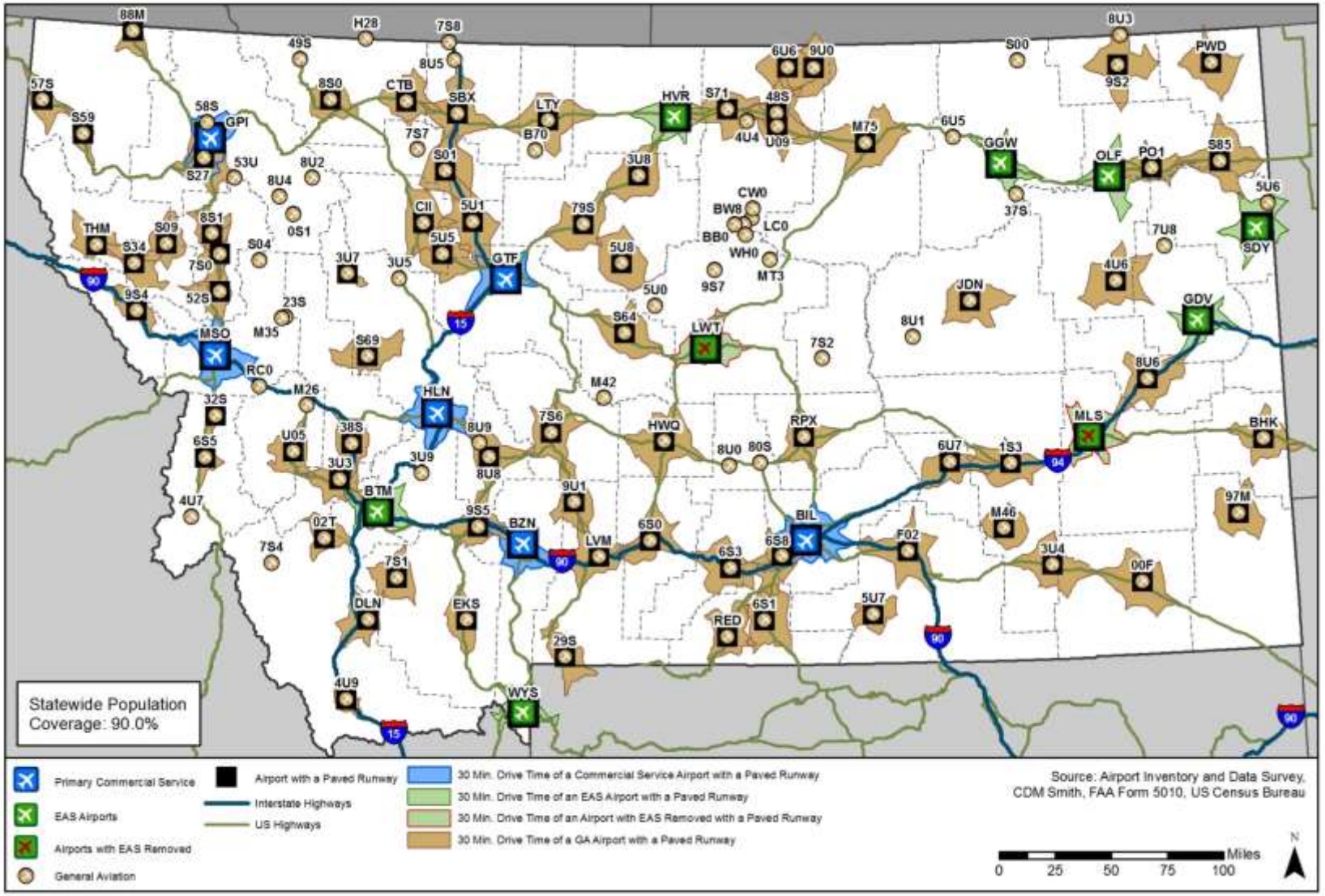


Figure 4-9: Montana Airports – Paved Primary Runways and Population Coverage

5 CHAPTER FIVE: STUDY TOPICS OF PRESENT CONCERN

5.1 Bakken Oil Formation Impacts on Airline and General Aviation Activity

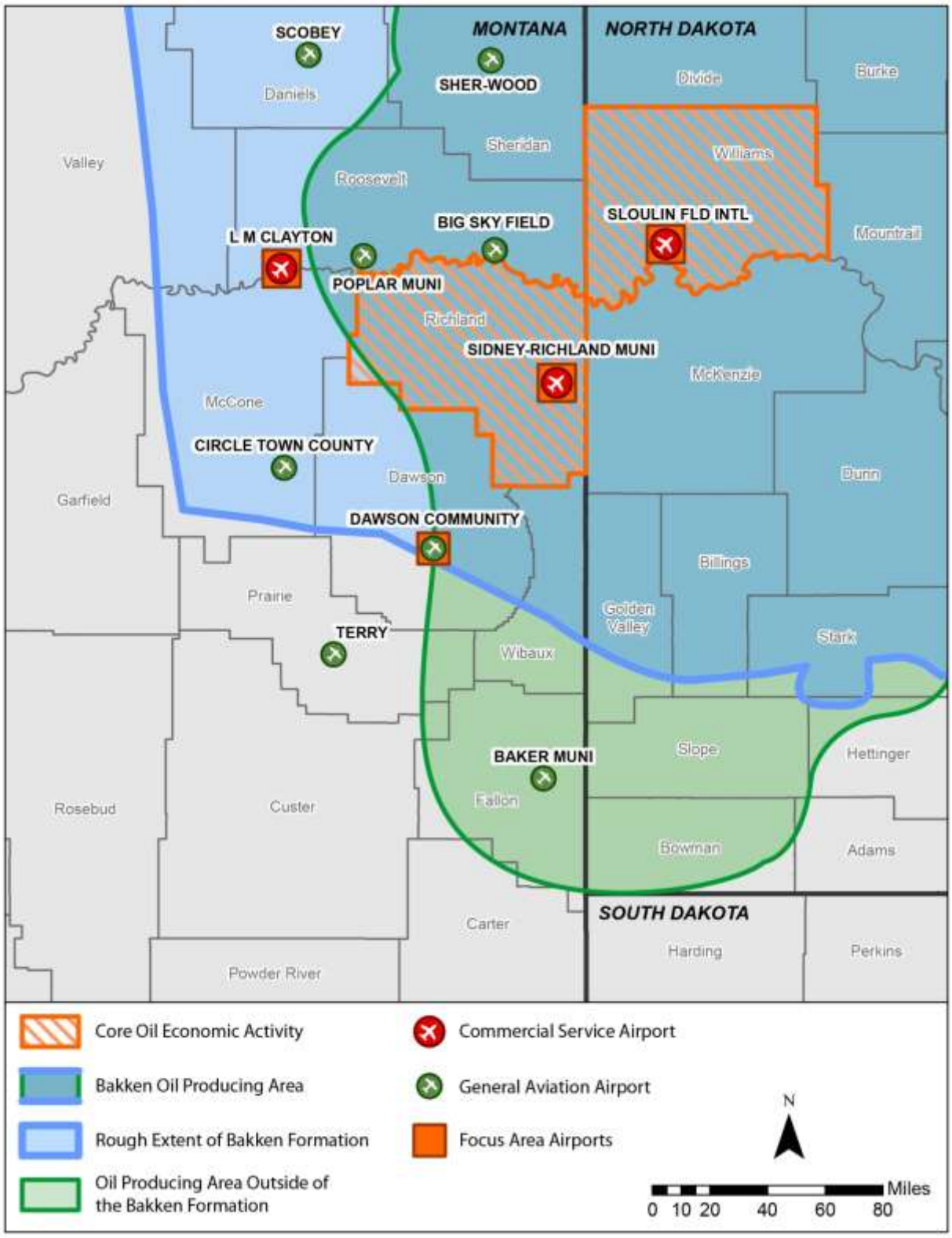
Located in the northeastern most portions of Montana lay one of the richest resources for oil and natural gas development. The Bakken Shale Formation spans a significant area of northeastern Montana, northwestern North Dakota and into portions of Saskatchewan and Manitoba, Canada. The formation is comprised of one of the largest contiguous deposits of oil and natural gas in the United States and is a sequence of black shale, siltstone, and sandstone (**Figure 5-1**). The extraction of this natural resource has provided a substantial economic boom in eastern Montana as well as adjacent states. Due to this increased economic activity, a significant increase in commercial service passenger traffic activity has also occurred.

In Montana, the exploration and extraction from the Bakken Shale Formation has created 22,000 Montana jobs (2010-12) and has provided an increase to the state's economy of nearly 1.2 billion yearly[34]. As of January 2013, Montana has a total of 22 oil rigs, up from eight rigs in 2012. In fact, the Montana Department of Natural Resources and Conservation issued a record 356 oil drilling permits in the first ten months of 2012[35]. Montana produces around 300,000 barrels a day and USGS estimates that 3.65 billion barrels of oil still remain in the Bakken Formation[36].

This recent activity has created an increase in airline passenger traffic at several commercial service airports in the state. Anecdotal evidence indicates that the Bakken Oil Formation industry has boosted, and will likely continue to increase general aviation traffic at airports in the eastern portion of the state. In turn, this new activity will require airports supporting this activity to meet the demand of the area by supplying the necessary facilities and services.

Figure 5-1 displays the Bakken Oil Play in Montana which currently has abundant oil and gas resources, located in the northeastern part of the state along the North Dakota and the Montana/ Canada border. The focus area is comprised of four primary Montana counties with the highest increase in population and economic growth. These counties include Richland, Dawson Fallon and Wibaux and represent the anticipated increase in usage and future need of business aircraft at general aviation and commercial airports. Richland County is considered the core for Montana's oil and gas extraction activity. The following section analyzes the utilization of the oil and gas industry on Montana's commercial and general aviation airports, and the basic facility requirements that the oil and gas industry's aviation activity places on airports in the region.

[34] Bakken Oil Fields Creating Energy: Boom in Northeast Montana Appears to have Staying Power, The Billings Gazette, Page 1-4.
[35] Rig Count; The Montana Bakken Oil Play: "Great News for a Great Play," Fairfield Sun Times
[36] Bakken Formation, Geology.com



Source: CDM Smith, USGS

Figure 5-1: Area of Bakken Formation

Growth Impacts of the Bakken Shale Formation on Surrounding Counties

The primary growth counties located in an active section of the Bakken Shale Formation include the following Montana counties: Richland, Fallon, Dawson and Wibaux **(Table 5-1)**. These counties have seen population growth since the 2010 census, as well as years prior. These four primary counties experienced a total population increase of 1,087 residents to the area in two years (2010-12). According to the U.S. Census Bureau, Richland County stands among the state's fastest- growing counties with 6.6 percent population growth, amounting to 667 new residents. The other three counties experienced growth in population ranging from 2.8 to 7.1 percent from 2011-12. The growth in northeastern Montana can be attributed directly to the high rates of in-migration driven largely by the oil boom, while nineteen other counties in other area of Montana lost population over the last year[37]. Stories in the local press state that people move to the region seeking jobs related to energy development and services that come with it.

Table 5-1: Montana Resident Population Primary County Growth at Bakken Oil Formation

County	2010-11 Percent Change	2011-2012 Percent Change	2011-2012 Population Change
Richland	10.9%	6.6%	667
Dawson	3.2%	2.8%	250
Fallon	4.6%	3.4%	100
Wibaux	3.9%	7.1%	70
Total			**1,087**

Source: Bureau of Business and Economic Research, University of Montana

Secondary growth counties include Sheridan, Roosevelt, Daniels, McCone and Prairie which are located adjacent to the core area of activity. Respectively, these five counties saw an aggregate increase population growth of 519 residents from 2011-2012.

Airports within the Primary Counties of the Bakken Shale Formation

Based on airline passenger trends in Montana, it can be inferred that the greater activity in the oil and gas industry has provided substantial increased traffic to the region and therefore increased demand on area airports. Extraction from the Bakken Shale Formation has positively impacted the commercial airline industry with increased passenger enplanements. In addition, studies from other areas of the country experiencing a boom in oil and gas development indicated that workers in the oil and gas sector have higher than average visitor spending.

For the purpose of this study, commercial and general aviation airports near the center of the formation will be presented. These airports have seen significant growth and expect to see continued growth in the near term. The commercial service airports include: L. M. Clayton Airport (OLF) in Wolf point, Dawson Community Airport (GDV) in Glendive, and Sidney-Richland Airport (SDY). Additional information will be presented on nearby Sloulin Field International Airport (ISN) located in Williston, North Dakota for out-of-state growth comparisons**.** Sloulin Field International Airport is located to the east of the North Dakota-Montana border and is

[37] *Data Show Bakken Counties Growing Faster Than Montana Metro Areas*, 2013, Institute for Energy Research

experiencing significant passenger airline growth related to the Bakken Shale Formation development.

Montana Airports near the Bakken Shale Formation

***L.M. Clayton Airport* (OLF)** – LM Clayton Airport is located three miles northeast of Wolf Point, Montana and is directly accessible from U.S. Route 2 and Montana Highway 25. The airfield has a primary runway (11/29) which is 5,089 feet long by 100 feet wide and is supported by a non-precision approach. Full service fuel is available in addition to hangar space and aircraft tie downs. The airport is an essential air service (EAS) airport and is served by Cape Air utilizing a 9-seat Cessna 402 aircraft. L.M. Clayton receives 95% federal funding for capital projects and recent improvements include a wildlife fence, security gate, storage building, firefighting equipment, and lighting additions. TSA has also provided funding for the expansion of the terminal building and additional security measures[38].

***Dawson Community Airport* (OLF)** – Dawson Community Airport is located four miles northwest of Glendive, Montana and is directly accessible from Interstate 94 and Airport Road. The airfield has a primary runway (12/30) which is 5,704 feet long by 100 feet wide with a non-precision approach. The airport is serviced under EAS contract by Cape Air with flights throughout the week. Dawson Community Airport services include fuel, parking, hangars, passenger terminal and lounge, courtesy transportation, public telephone, restrooms, and camping. Also available are agricultural operations (aerial spraying), charter flights, flight instruction, and aircraft rental.

***Sidney - Richland Airport* (SDY)** – Sidney-Richland is located one mile west of Sidney, Montana and is directly accessible from Montana Highway 200 and 16. The airfield has a primary runway (01/19) which is 5,705 feet long by 100 feet wide with a non-precision approach. The airport is serviced under EAS contract by Cape Air with flights throughout the week to Billings, Montana. Sidney- Richland Airport services include fuel, parking, hangars, passenger terminal and lounge and courtesy transportation. Also available are aircraft rentals, flight training and aerial tours/sightseeing.

Impact on Commercial Service Airports in Montana

The Bakken Shale Formation and the oil and gas industry surrounding the northeast portion of Montana will likely continue to boost the activity at eastern Montana's commercial service and general aviation airports. Since 2010, oil and gas activity has contributed to the increase in enplanement levels at these airports. **Table 5-2** provides 2010 to 2013 enplanement data[39] for three Montana airports located in the Bakken Oil Play. The three Montana airports saw increases in passenger traffic from 2010 to 2012 followed by a 21% decrease in aggregate traffic in 2013. This loss in traffic may be the result of improved passenger jet service at Williston which is the only commercial service of the four that has jet service.

It should be noted that with the overall increase in enplanements, Montana is likely seeing increased economic growth in the hospitality sector since commercial airline travelers traveling on oil and gas business usually spend more per trip than that of typical passengers. Evidence

[38] City of Wolfpoint- Public Works

[39] 2013 data based on January through November airport statistics and projections for December 2013 traffic. Williston's Sloulin Field is included and is based on airport records through November 2013.

from the Ohio Airport Economic Impact study [40] found a direct correlation between increase enplanements and increase passenger spending to the Marcellus Oil and Gas region.

Table 5-2: Enplanement Trends 2010 to 2013

Enplanement Totals						
FAA ID	Associated City	**Airport Name**	**2010 Totals**	**2011 Totals**	**2012 Totals**	**2013 Totals**
OLF	Wolf Point	L.M. Clayton	664	1,086	2,987	2,581
GDV	Glendive	Dawson Community	268	764	742	605
SDY	Sidney	Sidney- Richland	3,274	4,023	11,799	9,092
Total			**4,206**	**5,873**	**15,528**	**12,278**
ISN	Williston (N.D.)	Sloulin Field International Airport	14,732	23,957	32,357	74,287

Source: Montana Department of Transportation, Sloulin Field International Airport, CDM Smith

Impact on General Aviation Airports in Eastern Montana

In addition to the impact on commercial aviation in the state of Montana, the area within the Bakken Shale Formation will likely see an increase in activity at the general aviation airports. Airports supporting business aircraft operations need to have several facility attributes to meet the requirements of corporate flight departments. These include adequate runway length to meet the requirements set by insurance policies related to corporate jets, fuel availability, weather reporting equipment on the airport, instrument approach capabilities, available ground transportation and passenger terminals. Through high level analysis of airports in eastern Montana, it was possible identify airports that meet standards used by the business aviation community. The following lists airport facility and services criteria that will best suit business user needs includes:

- 5,000' or greater Primary Runway
- Paved Runway
- Jet Fuel Availability
- Instrument Approach Capabilities, Precision and Non-Precision Equivalent Approach
- Ground Transportation (Rental or Courtesy Car)
- General Aviation Passenger Terminal Facility

Table 5-3 is an evaluation of these minimum criteria grouped by airport type. L.M. Clayton Airport in Wolf Point, Dawson Community Airport in Glendive and Sidney- Richland in Sidney all meet the services and facilities criteria identified above for business aviation user needs. It is noteworthy to point out that these three commercial airports meet the criteria but only one

[40] CDM Smith, *Ohio Airport Focus Study*, 2014

general aviation airport in the study area meets all criteria. Baker Municipal Airport in Fallon County meets all criteria for business aircraft activity while Poplar Municipal Airport falls short by one criterion, runway length.

It should be noted that although not all of the general aviation airports surrounding the Bakken Oil Formation meet all the criteria it does not excluded them from the realm of potential business usage. Some oil and gas businesses and their suppliers utilize small single engine or twin piston engine aircraft and larger turboprop aircraft to transport personnel and goods to remote areas. These aircraft can operate without significant limitations at airports with paved runways with 3,000 feet of length or more. Poplar Municipal, Terry, Circle Town County, Scobey, Sherwood, and Big Sky Field all have runways greater than 3,000 feet in length.

Table 5-4 contains airport data for the primary airports in the Bakken Formation focus area. In addition Sloulin Field International Airport has been added to the list for comparison of out-of-state airports within the Bakken Formation oil play.

In Summary, the Montana airports located in the northeastern portion of the Bakken Shale Formation are vital to the state's energy resources growth. Since the discovery and development of the Bakken Shale, employment, population, and economic status have been on the rise in Richland, Fallon, Dawson and Wibaux counties. This in turn has contributed to the growth in aviation activity at the airports within those counties. In order to position the region for economic growth, L.M. Clayton, Dawson Community, and Sidney- Richland, as well as Baker Municipal will need to continue to meet the needs of business users flying into the area. Maintaining runways, fuel services, terminal, ground transportation, and overall access will be the key to Montana's contribution in the Bakken Oil Play success.

Table 5-3: Business User Needs at Montana Airports

FAA ID	Associated City	County	Airport Name	5,000 Foot Runway	Jet Fuel	Instrument Approach	Ground Transportation	Terminal Facilities	Meets All Business User Needs
				Montana Focus Airports					
OLF	Wolfpoint	Roosevelt	L.M. Clayton	✓	✓	✓	✓	✓	✓
GDV	Glendive	Dawson	Dawson Community	✓	✓	✓	✓	✓	✓
SDY	Sidney	Richland	Sidney- Richland	✓	✓	✓	✓	✓	✓
				Montana GA Airports in Proximity to the Bakken Formation					
BHK	Baker	Fallon	Baker Municipal	✓	✓	✓	✓	Pilot Lounge	✓
PO1	Poplar	Poplar	Poplar Municipal	-	✓	✓	✓	✓	-
8U6	Terry	Prairie	Terry Airport	-	-	-	-	-	-
4U6	Circle	McCone	Circle Town County	-	✓	✓	NA	✓	-
9S2	Scobey	Daniels	Scobey Airport	-	✓	✓	NA	✓	-
PWD	Plenty-wood	Sheridan	Sher-wood Airport	-	✓	✓	NA	✓	-
S85	Culbert-son	Roosevelt	Big Sky Field	-	-	-	NA	✓	-
				Out of State Comparison- North Dakota					
ISN	Williston, ND	Williams	Sloulin Field International	✓	✓	✓	✓	✓	✓

Source: CDM Smith

Table 5-4: Airport Data for Primary Bakken Formation Focus Area

FAA ID	Associated City	County	Airport Name	GA CS	Runways	Surface	Runway Lengths	NAV-AIDS	Weather Reporting	Based Aircraft	Total Annual Operation
					Montana Focus Airports						
OLF	Wolfpoint	L.M. Clayton	**L.M. Clayton**	CS	11/29	Asphalt	5,091' x 100'	✓	✓	8	5,839
GDV	Glendive	Dawson Community	**Dawson Community**	GA	12/30 02/20	Asphalt Asphalt	5,704' x 100' 3,002' x 60'	✓	AWOS	15	5,815
SDY	Sidney	Sidney-Richland	**Sidney-Richland**	CS	01/19 11/29	Asphalt Asphalt	5,705' x 100' 4,023' x 100'	✓	AWOS	27	6,815
					Montana GA Airports in Proximity to the Bakken Formation						
BHK	Baker	Fallon	**Baker Municipal**	GA	13/31	Asphalt	5,904' x 75'	-	ASOS	23	7,050
PO1	Poplar	Poplar	**Poplar Municipal**	GA	09/27 02/20	Asphalt Turf	4,403' x 75' 3,020' x 80'	-	AWOS	7	11,400
8U6	Terry	Prairie	**Terry Airport**	GA	08/26	Asphalt	4,300' x 75'	-	-	1	800
4U6	Circle	McCone	**Circle Town County**	GA	12/30 03/21	Asphalt Turf	4,100' x 75' 2,280' x 195'	-	-	0	3,750
9S2	Scobey	Daniels	**Scobey Airport**	GA	12/30	Asphalt	4,020' x 75'	-	-	14	4,450
PWD	Plenty-wood	Sheridan	**Sher-wood Airport**	GA	12/30 08/26 16/34	Asphalt Turf Turf	3,900' x 75' 2,951' x 60' 1,601' x 83'	✓	AWOS	8	11,360
S85	Culbert-son	Roosevelt	**Big Sky Field**	GA	08/26	Asphalt	3,800' x 60'	-	-	8	4,650
					Out of State Comparison- North Dakota						
ISN	Williston, ND	Williams	**Sloulin Field International**	CS	02/20 11/29	Asphalt Asphalt	3,453' x 60' 6,650' x 100'	✓	ASOS	41	39,877

5.2 Changes in Montana Airline Service

The following carriers have added or discontinued service to hubs at various Commercial Service Airports in Montana since the *2007 Montana Air Service: Opportunities and Challenges Study*. Data identifying the discontinuations or additions are based on USDOT TranStats data as reported by airlines to airports as well as anecdotal information from press releases. Significant changes in service are identified below as well as in

Table 5-5 and **Table 5-6**:

Alaska/ Horizon Air

- 2014: Alaska Airlines offers seasonal operations between Portland and Kalispell from June to mid-August[41].
- 2010: Horizon increased service between four Montana cities (Billings, Bozeman, Kalispell and Missoula) and Seattle.
- 2010: Horizon permanently discontinues nonstop service between Billings and Helena.[42.]
- 2008: Horizon ends operations in Butte. Skywest remains in Butte market.

Allegiant Air

- 2012: Allegiant added Oakland/San Francisco as well as vacation destinations from four Montana cities - Missoula, Kalispell, Bozeman and Billings[43].
- 2012: Billings, Great Falls, and Missoula all have expanded summer flight options to Phoenix/ Las Vegas/ Los Angeles.

Delta

- 2013: Atlanta to Bozeman expanded from twice per week to three weekly.[44]
- 2013: Atlanta to Kalispell expanded from once per week to twice weekly.
- 2013: New Saturday service from Atlanta to Missoula and Los Angeles to Bozeman.
- 2008: Delta and Northwest announce merger. Routes change from Northwest to Delta over two-year period.

Frontier

- 2014: Flights added from Missoula, offering four round-trip flights per week during the summer and scaled back to three trips per week during the winter.[45.]
- 2013: Discontinues service to Billings.
- 2012: Initiates service from Denver to Great Falls.
- 2011: Initiates service from Denver to Bozeman.

Northwest Airlines

- 2008: Delta Air Lines merged with Northwest Airlines.
- 2009: Northwest's last flights in Billings took place when Delta Air Lines brand took over service.
- 2010: Northwest's last flights in Bozeman, Kalispell, Great Falls, Helena and Missoula took place. Delta Air Lines brand took over service.

[41] http://www.oregonlive.com/travel/index.ssf/2014/02/portland-to-kalispell_montana.html
[42] http://splash.alaskasworld.com/newsroom/QXnews/QXstories/QX_20100322_071828.asp
[43] http://www.iflyglacier.com/allegiant-news-release.html
[44] http://news.delta.com/index.php?s=20295&item=124228
[45] http://www.nbcmontana.com/news/frontier-airlines-begins-new-missoula-flights/26527634

USAirways

- 2006: Discontinues service in Billings the only Montana market it served.

United

- 2012: United offers non-stop seasonal flights from Bozeman to Newark, NY. [46.]

Table 5-5: Montana Commercial Service Airports Air Carrier Changes between 2006 and 2014

Commercial Service Airports	Year	Mainline Legacy Carriers	Commuter/Regional Partner Carriers	LCC/ Vacation Carriers	EAS
Billings-Logan Int'l	2006	Alaska	Horizon		
				Allegiant	
					Big Sky (*2008)
		Delta	Atlantic Southeast (DL Connection) SkyWest (Delta Connection)		
		Frontier (*2013)			
		Northwest (*2009)			
		United	SkyWest (United Express)		
		US Airways	Mesa		
	2014	Alaska	Horizon		
				Allegiant	
					Cape Air (^2013)
		Delta			
		Delta	SkyWest (Delta Connection)		
		United			
		United	SkyWest (United Express)		
Bozeman-Yellowstone Int'l	2006	Alaska	Horizon		
					Big Sky (*2008)
		Delta			
		Delta	Atlantic Southeast (DL Connection) SkyWest (Delta Connection)		
		Northwest (*2010)			
		United			

[46] http://watchdog.org/10157/montana-united-flight-nonstop-flight-from-newark-to-bozeman-offers-a-slew-of-prices/

Commercial Service Airports	Year	Mainline Legacy Carriers	Commuter/Regional Partner Carriers	LCC/ Vacation Carriers	EAS
		United	SkyWest (United Express)		
	2014	Alaska	Horizon		
				Allegiant (^2012)	
		Delta	Atlantic Southeast (DL Connection)		
			SkyWest (Delta Connection)		
		Frontier (*2011)			
		United	GoJet		
		United	SkyWest (United Express)		
Great Falls Int'l	2006	Alaska	Horizon		
		Delta	SkyWest (Delta Connection)		
		Northwest (*2010)			
		United	SkyWest (United Express)		
	2014	Alaska	Horizon		
				Allegiant(^2007)	
				Frontier(^2012)	
		Delta	SkyWest (Delta Connection)		
		United	SkyWest (United Express)		
Helena Regional Airport	2006	Alaska	Horizon		
					Big Sky (*2008)
		Delta	SkyWest (Delta Connection)		
		Northwest (*2010)			
		United	SkyWest (United Express)		
	2014	Alaska	Horizon		
		Delta	SkyWest (Delta Connection)		
		Delta	Compass		
		United	SkyWest (United Express)		
Glacier Park Int'l	2006	Alaska	Horizon		
					Big Sky (*2008)
		Delta	Atlantic Southeast (DL Connection)		
		Northwest (*2010)			
		US Airways (*2007)			
	2014	Alaska	Horizon		
		Delta	SkyWest (Delta Connection)		
		Delta	Compass		
		United	SkyWest (United Express)		

Commercial Service Airports	Year	Mainline Legacy Carriers	Commuter/Regional Partner Carriers	LCC/ Vacation Carriers	EAS
Missoula Int'l	2006	Alaska	Horizon		
				Allegiant	
					Big Sky (*2008)
		Delta	Atlantic Southeast (DL Connection)		
			SkyWest (Delta Connection)		
		Northwest (*2010)			
		United	SkyWest (United Express)		
	2014	Alaska	Horizon		
				Allegiant	
		Delta			
		Delta	Endevor Air		
		Delta	SkyWest (Delta Connection)		
		United	SkyWest (United Express)		

*Denotes year left market, ^Denotes year entered market

Table 5-6: Montana Essential Air Service Airports Air Carrier Changes between 2006 and 2014

EAS Airports	Year	Mainline Legacy Carriers	Commuter/Regional Partner Carriers	LCC/ Vacation Carriers	EAS
Bert Mooney	2006	Alaska	Horizon (*2009)		
		Delta	SkyWest (Delta Connection)		
	2014	Delta	SkyWest (Delta Connection)		
Wokal Field/Glasgow Intl	2006				Big Sky (*2009)
	2014				Cape Air (^2013)
Dawson Community	2006				Big Sky (*2009)
	2014				Cape Air (^2013)
Havre City-County	2006				Big Sky (*2009)
	2014				Cape Air (^2013)
Lewistown Municipal	2006				Big Sky (*2009)
	2014				None
Frank Wiley Field	2006				Big Sky (*2009)
	2014				None
Sidney-Richland Municipal	2006				Big Sky (*2009)
	2014				Cape Air (^2013)
Yellowstone	2006	Delta	SkyWest (Delta Connection)		
	2014	Delta	SkyWest (Delta Connection)		
L M Clayton	2006				Big Sky (*2009)
	2014				Cape Air (^2013)

Table 5-7 presents the schedule service options available in 2014 at Montana's commercial service airports. Commercial airline options include Alaska Air/Horizon, Allegiant, Delta, Frontier, and United Airlines. Common aircraft models are flown by each airline route.

Table 5-7: Scheduled Non-Stop Passenger Services and Destinations (as of July, 2014)

Airport	Destination(s)	Airline	Aircraft	Approx. Seats/ FLT	Estimated Weekly Seats
Billings					
	Seattle Portland	**Alaska Air/Horizon**	Q-400	76	494
	Las Vegas** Los Angeles** Phoenix/Mesa**	**Allegiant Air**	MD-80	166	1079
	Salt Lake City Minneapolis	**Delta/SkyWest**	A-319 / CRJ-700	126/ 70	819/ 455
	Denver Chicago	**United**	B-737-900	154	1001
Bozeman					
	Portland Seattle	**Alaska Air/Horizon**	Dash-8	50	325
	Phoenix/Mesa** Las Vegas**	**Allegiant**	MD-80	166	1079
	Atlanta Salt Lake San Francisco Minneapolis	**Delta/Skywest**	A319 (SLC) / CRJ-700 (SLC)	126 / 70	819 / 455
	Denver	**Frontier**	A-320	168	1092
	Los Angeles Newark**	**United**	B-739	167	1086
Great Falls					
	Helena Seattle	**Alaska Air/Horizon**	Dash-8	50	325
	Las Vegas** Los Angeles** Phoenix/Mesa**	**Allegiant**	MD-80	166	1079
	Minneapolis Salt Lake	**Delta/Skywest**	CRJ-700	70	455
	Denver	**Frontier**	A-319	138	897
	Denver	**United**	CRJ-200	50	325
Helena					
	Seattle Great Falls	**Alaska Air/Horizon**	Dash-8	50	325
	Salt Lake Minneapolis	**Delta/ SkyWest**	CRJ-900 (MSP) / CRJ-200 (DEN/SLC)	80 / 70	520 / 455
	Denver	**United**	CRJ-200	50	325

Airport	Destination(s)	Airline	Aircraft	Approx. Seats/ FLT	Estimated Weekly Seats
Kalispell					
	Seattle Portland**	**Alaska Air/Horizon**	Dash-8	50	325
	Las Vegas** Oakland** Los Angeles**	**Allegiant**	MD-83	166	1079
	Salt Lake Minneapolis Atlanta** Los Angeles** Denver	**Delta**	MD-90 (MSP) / CRJ-200 (DEN/SLC)	160 / 50	1040 / 325
	Denver Chicago**	**United**	CRJ-200	50	325
Missoula					
	Seattle Portland**	**Alaska Air/Horizon**	Dash-8	50	325
	Oakland Las Vegas Los Angeles Phoenix	**Allegiant**	MD-83	166	1079
	Salt Lake Minneapolis Atlanta**	**Delta**	MD-90 (MSP) / CRJ-200 (DEN/SLC)	160 / 50	1040 / 325
	Denver	**Frontier**	A-319	138	897
	Denver Chicago** San Francisco**	**United**	CRJ-200	50	325

Source: CDM Smith
** Denotes Seasonal Flight

5.3 Essential Air Service (EAS) In Montana

This section will describe and address the current state and historical trends of the Essential Air Service (EAS) program in Montana, various factors pertaining to communities served, enplanements, aircraft capacities, subsidy rates, and EAS program budgets. Both qualitative and quantitative information from the Department of Transportation, Montana Department of Transportation, air carriers, and commercial aviation databases will be analyzed to identify and describe major factors of the EAS program. Furthermore, a scenario based model will identify and evaluate options available to air carriers that to determine the viability of air service to small communities in Montana if EAS were to cease.

Background of the EAS Program

Under the Essential Air Service (EAS) program, the U.S. Department of Transportation (US DOT) is authorized to declare a community eligible for essential air service funding. U.S. DOT also specifies the frequency of service (number of flights) and the airport hub(s) to which service will be provided. Usually the closest geographically medium or large “hub airport” is selected,

and a community is guaranteed at least 10 weekly round-trips. If revenues from the service do not cover costs, the carriers providing service can submit for subsidy reimbursal.

The original program, instated in 1978, was authorized for 10 years; however, Congress continues to fund the EAS program currently and is slated to continue through 2015 and possibly longer. The program began as a response to the Airline Deregulation Act of 1978 to support small airport markets that would likely lose air service due to the airlines focusing service to the larger markets in the U.S. The program has, in the past, been severely restricted by program funding cutbacks and federal legislation that limited eligibility for subsidy. The US DOT and Related Agencies Appropriation Act of 1994 prohibited "the use of funds for airports in the contiguous 48 states within 70 highway miles of a hub airport or for airports that receive passenger subsidies greater than $200 per passenger- and that are less than 210 miles from the nearest hub."(U.S. General Accounting Office 1994)

Under EAS program regulations, every two years, the U.S. DOT requests proposals from carriers interested in providing service at EAS-eligible communities. When selecting a carrier to serve a community, the U.S. DOT considers each carrier's subsidy requirements as well as four other factors:

- Service reliability
- Contractual and marketing agreements with a larger carrier at the hub
- Interline arrangements with a larger carrier at the hub
- Community view and recommendation

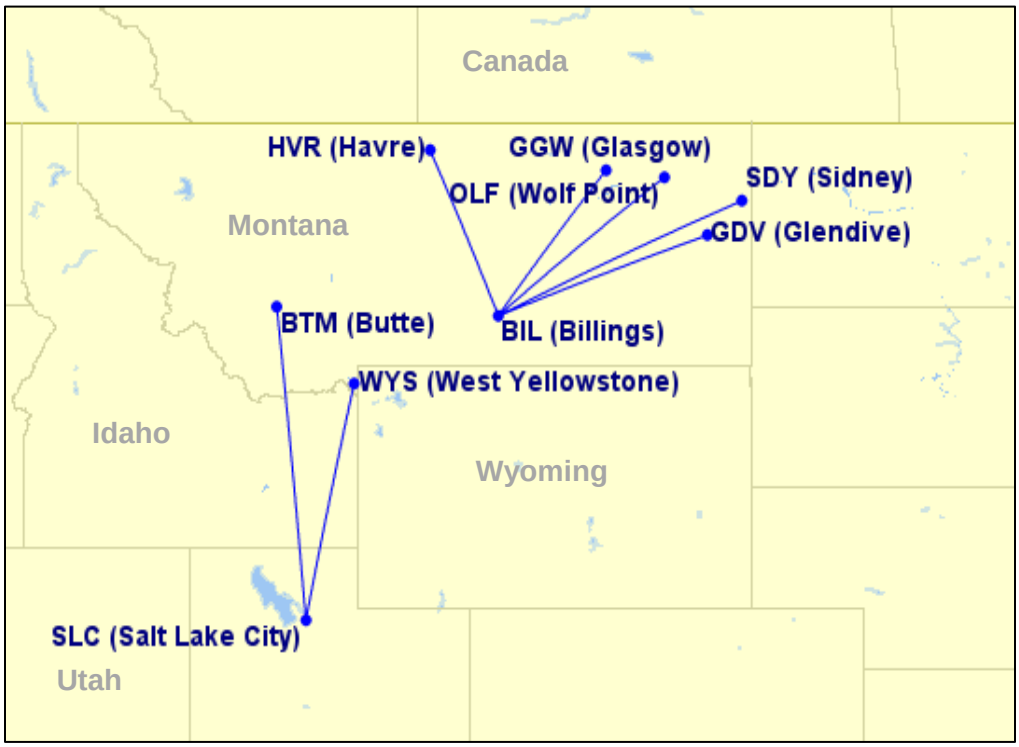
In 2001, the EAS program's funding was increased from $50 million to $113 million, partly as a result of the terrorist attacks of September 11, but also due to the inadequate funding of the program to meet the carriers' rising costs. The current EAS program continues to provide subsidies to air carriers serving small communities that meet certain criteria (such as being at least 70 miles from a large or medium-sized hub airport, except in Alaska and Hawaii). The total number of passengers served annually has fluctuated in recent years, as well as the subsidy per passenger per flight, which has ranged from about $5 to $500. Congress has directed that these subsidies not exceed $200 per passenger per flight (>$1,000 per passenger per year) unless the community is more than 210 miles from the nearest large or medium-sized hub airport. Since the previous study, two Montana communities were removed in 2013 from the EAS program for not meeting program requirements. Miles City and Lewistown both more than doubled the per passenger subsidy amount in 2012, according to the U.S. Department of Transportation. Lewistown had 660 passengers and an average per passenger subsidy of $2,009 in the fiscal year ending Sept. 30, 2012; Miles City had 694 passengers and an average per passenger subsidy of $2,337 during the same time[47]. A current list of all Essential Air Service communities nationwide can be found in **Appendix B.**

Current Essential Air Service in Montana

Montana's scheduled air service within the smaller community airports has the ability to connect area residents and businesses with the global airline network. However, as mentioned previously, these smaller communities struggle to provide sufficient demand to warrant airline service at a reasonable cost and reliable service. Essential Air Service (EAS) program in Montana is currently served by two EAS carriers operating at seven participating airports. These

[47] http://www.dot.gov/policy/aviation-policy/small-community-rural-air-service/essential-air-service

airport communities include: Butte, Glasgow, Glendive, Havre, Sidney, West Yellowstone and Wolf Point. See **Figure 5-2**.



Source: CDM Smith

Figure 5-2: EAS Community Provider Routes

As seen in **Table 5-8**, two carriers now currently serve Montana under the EAS program. Cape Air Airlines currently provides nonstop service between most of the communities and Billings, including five of the seven EAS communities. Prior to Cape Air[48], the department selected Silver Airlines in February 2011 to provide air service to these cities, as well as Lewistown and Miles City, for a two-year period. Cape Air's Essential Air Service contract is expected to run December 1, 2013 to November 30, 2015, at a combined annual subsidy of $11,950,400. Nine-passenger Cessna 402 aircraft utilized by Cape Air and operate to and from Glasgow, Glendive, Harve, Sidney and Wolf Point. There are two daily round trips, at a passenger fare of $49 one-way ($98 round trip), from all these markets to Billings. The exception is Sidney which has five round trip flights a day under the contract. Cape Air supports 50 full-time employees based in Montana.

[48] Cape Air became the fourth airline to provide Montana EAS service in five years when it took over in December.

Table 5-8: Subsidized EAS Community Providers, June 2014

EAS Community	EAS Airport	Air Carrier	Hub	Aircraft	Available Seating
Butte	Bert Mooney (BTM)	SkyWest	Salt Lake City (SLC)	CRJ-200	50
Glasgow	Glasgow In'tl (GGW)	Cape Air	Billings (BIL)	C-402	9
Glendive	Dawson Community (GDV)	Cape Air	Billings (BIL)	C-402	9
Havre	Havre City-County (HVR)	Cape Air	Billings (BIL)	C-402	9
Sidney	Sidney-Richland Municipal (SDY)	Cape Air	Billings (BIL)	C-402	9
West Yellowstone	Yellowstone Airport (WYS)	SkyWest	Salt Lake City (SLC)	EMB-120	30
Wolf Point	L.M. Clayton (OLF)	Cape Air	Billings (BIL)	C-402	9

Source: *2012 Air Traffic Hubs*; Bureau of Transportation Statistics, US Dept. of Transportation, April 2014

Delta SkyWest is the other carrier who strictly serves Butte and West Yellowstone to Salt Lake City under EAS contract. Prior to 2008, Big Sky Airlines was the primary carrier serving the Essential Air Service communities. Big Sky Airlines departed the Montana market after their EAS contract ended in March of 2008 after 30 years of service in the Montana airline market. The company cited various financial distresses related to contracts and record-high fuel prices.

Delta SkyWest Airlines continues to provide seasonal operations between West Yellowstone and Salt Lake City for the 27th consecutive year. Two round-trip flights are scheduled each day, during the summer season, using a 30- passenger Embraer Brasilia turboprop aircraft. Dates of operation are June 7th through September 30th. West Yellowstone Airport is closed to aircraft operations during the winter months. Also, in 2012, SkyWest teamed with Butte's Bert Mooney Airport to provide 14 flights per week between Butte and Salt Lake City, including an additional Saturday flight[49].

Miles City and Lewistown communities lost EAS operations in 2013. The airports cited the cost for providing the service became too expensive[50]. The U.S. Department of Transportation terminated the eligibility of Lewistown and Miles City in June 2013 under the EAS program after they learned that both cities exceeded the average subsidy per passenger per flight of $1,000. Both cities had filed a petition for reconsideration in July, 2013. In August 2013, Lewistown filed a motion to withdraw its petition. Miles City made the same motion six days later. In June, Silver filed a 90-day notice to terminate its subsidized service contract, which would have been

[49] http://www.beartoothnbc.com/news/montana/17899-skywest-to-serve-butte-airport-under-eas-program.html
[50] http://www.kxlf.com/news/essential-air-service-ending-in-lewistown-miles-city/

effective September 26, 2013[51]. It's noteworthy to point out that Lewistown is approximately 126 miles, or 2.25 hours driving distance from Billings while Miles City is 145 miles from Billings Logan International Airport. The drive time estimates from Miles City to Billings is estimated at 2 hours and 8 minutes and is almost entirely on interstate highways.

Montana Subsidy

According to FAA regulations, the U.S. Department of Transportation pays the carriers in arrears on a per-flight-completed basis. At the end of each month, each carrier submit claims for the prior month based on the number of flights that it actually completed in conformance with the contract. Each carrier is then required to submit invoices, detailing the service completed, including date of service, aircraft type, routing, and frequency of service, and any actual variations from the service anticipated by the contract. Substitutions of aircraft type will adjust the subsidy rate accordingly. According to the Billings Gazette, Essential Air Service is federally subsidized in Montana at roughly $500 per passenger for flights to Glasgow, Glendive, Havre and Wolf Point. Sidney's flights are less subsidized, at $237 per passenger[52]. **Table 5-9** presents the current and historical level of subsidy the carriers receive to serve the airports and the expiration date of the carrier contracts.

[51] http://www.northeastmontananews.com/wph/index.php/wp-news/1212-cape-air-awarded-contract-for-essential-air-service

[52] http://billingsgazette.com/news/state-and-regional/montana/cape-air-boardings-are-taking-off-in-eastern-montana/article_0c2e5bfd-c56e-543a-80da-73bb48c0c171.html#ixzz32dFzKANf

Table 5-9: Current List of EAS Eligible Communities and Annual Subsidy Amounts

EAS Community	EAS Airport	EAS Subsidy, May. as of 2006	EAS Subsidy, Oct. as of 2012	EAS Subsidy, as of Jan. 2014	Expiration Date of Term
Butte	Bert Mooney (BTM)	N/A	$672,230	$735,956	12/31/2015
Glasgow	Glasgow In'tl (GGW)	$922,103	$1,166,049	$2,046,800	12/31/2015
Glendive	Dawson Community (GDV)	$922,103	$1,193,391	$1,944,467	12/31/2015
Havre	Havre City-County (HVR)	$922,103	$1,162,329	$2,036,254	12/31/2015
Lewistown	Lewistown Municipal (LWT)	$922,103	N/A	N/A	Expired
Miles City	Miles City Airport (MLS)	$922,103	N/A	N/A	Expired
Sidney	Sidney-Richland Municipal (SDY)	$1,306,313	$2,932,152	$3,777,579	12/31/2015
West Yellowstone	Yellowstone Airport (WYS)	$247,122	$389,412	$535,141	09/30/2014
Wolf Point	L.M. Clayton (OLF)	$922,103	$1,502,378	$2,145,326	12/31/2015
Total		**$7,086,053**	**$9,017,941**	**$13,221,523**	

Source: Congressional Research Service, Essential Air Service (EAS).

It's interesting to point out that Montana communities that were eligible in 1978 included: Billings, Bozeman. Butte, Glasgow, Glendive, Great Falls, Havre, Helena, Kalispell, Lewistown, Miles City, Missoula, Sidney, West Yellowstone and Wolf Point. Seven of these communities provided more than one carrier option for passengers.

Small Community Air Service Development Program

As a result of implementation of the Wendell H. Ford Aviation Investment and Reform Act for the 21st Century (AIR-21), many changes in federal airport funding and even air service have resulted. While the majority of AIR-21 addresses issues such as airport development, funding, and FAA management reform; Title II of the Act specifically addresses "airline service improvements." There are two subtitles within Title II that have the ability to impact communities in Montana. The first subtitle, Subtitle A, addresses policies for small communities. Within this subtitle is the Small Community Air Service Development Program (SCASDP). The purpose of the original pilot program was to improve air carrier service to airports that were determined to

have insufficient service. The word "pilot" has now been dropped as the program has continued (US DOT 2006c).

Program Requirements

Unlike the Essential Air Service (EAS) program, the communities, not the airlines, receive the SCASDP funds and the communities develop a program that best serves their air service needs. The program uses an application process to select up to 40 communities or consortia of communities to participate. No more than four communities or consortia of communities may be in the same state. The types of assistance can include subsidizing service and marketing and promotion of air service in the community. The Title does say that "direct financial assistance" will be provided, but that the assistance for an air carrier is limited to three years. The criteria for participation in the application process include:

- Airport must be smaller than a "small hub" airport (defined by enplanement levels).
- Airport must have insufficient air carrier service.
- Airport must have unreasonably high air fares.
- Airport should demonstrate need for participation in the program based on characteristics such as geographic diversity or unique circumstances.

Priorities for participation in the program are given to communities or consortia that:

- Have air fares that are higher than the average air fares for all communities.
- Provide a monetary match for the assistance program other than from airport revenues.
- Establish a public-private partnership to promote air carrier service.
- Provide benefits from the assistance to a broad segment of the traveling public whose access to the national air transportation system is currently limited.

One factor heavily considered when SCASDP grants are awarded is demonstrated local commitment. This commitment is partially gauged by non-federal funding pledged, in addition to the federal grant that a community or consortia is requesting. If, for example, a community requested a $750,000 federal grant, a minimum pledge of $75,000 to $100,000 in local funds would likely be needed to support their proposal. Some states provide funding assistance to communities seeking to secure a SCASDP grant. In most instances, state financial assistance has been offered in the form of matching funds. If state funds were available to match the local financial pledge, this could give the community an added advantage in grant selection.

To fund the program, an appropriation of $20 million was approved for fiscal years 2002 through 2005, $10 million for fiscal years 2006 through 2007, and $8 million for fiscal years 2008 through 2009, $7 million for fiscal year 2010 and $15 million for fiscal year 2011. Since the program has been initiated, 12 rounds of grants have been issued. The SCASDP was reauthorized at $6 million annually with the signing of the FAA Modernization and Reform Act (H.R. 658) in February 2012, and In August of 2012, Funding of up to $14.9 million during the 2011 fiscal year was approved for the program. Since then funding has gradually decrease from $13.9 million for fiscal year 2012 and $11.4 million for fiscal year 2013. Like the EAS Program, the continuation of this program is not assured beyond fiscal year 2015[53].

[53] http://www.nado.org/final-faa-reauthorization-deal-modifies-essential-air-service/

Montana SCASDP Awards

Several Montana airports have submitted proposals to the US DOT for the SCASDP in recent years. Below are the selected airports for the 2012 and 2011 grants, it should be noted that no grants were selected for Montana airports in years 2010 and 2013.

In 2012, Glacier Park International in the city of Kalispell, MT was awarded a $200,000 grant. Glacier Park International submitted for the grant stating the need for funds to offset ground handling cost and marketing for new nonstop service to Los Angeles Basin (via Allegiant Airlines). SCASDP awarded this grant based on several priority and selection criteria. Glacier Park International met the requirement for strong local contributions, public-private partnerships and community participation. The airport had over 28 local organizations offering contribution to non-airport funding and multiple business and stakeholders backing the proposed project.

Bert Mooney Airport in the city of Butte, MT was the recipient of a $150,000 SCASDP grant in 2012, which was used to develop a marketing program designed to focus on increasing existing Essential Air Service to Salt Lake City on SkyWest/ Delta Connection. SCASDP awarded this grant based on a variety of factors. The Butte community had recently become an EAS-subsidized community and the project aligned with local contributions and private-public partnerships in the community.

In 2011, Bozeman Yellowstone International Airport in the community of Bozeman, MT was the recipient of a $950,000 SCASDP grant[54]. The grant was awarded to establish direct flights between the state of New York and the community of Bozeman. In an airport press release[55] from January 2014, Bozeman Yellowstone International now offers non-stop seasonal summer service to New York- LaGuardia Airport (LGA) on Delta Air Lines. Delta operates these flights using Airbus A319 aircraft with capacity for up to 114 passengers and currently operates on Saturdays.

Program Success

The Small Community Air Service Development program has worked just as designed in terms of getting new service started. The newer air service thrives as a result. However, many of the smaller markets that receive the grants typically don't have the high load factors seen in larger cities, which is why many don't last beyond the life of the grant. Profitability and long-term success for airline service in small markets is dependent on consistent demand. It is therefore essential for SCASDP grant applicant airports to demonstrate that sufficient demand exists in their market to sustain air service without subsidy. Local funding for marketing of new service is also vital to its success.

Funding Essential Air Service

In February of 2012, the FAA Modernization and Reform Act of 2012 (H.R. 658) was signed into law, which reauthorized FAA programs through fiscal year 2015 and ended a string of 23 short-term extensions. Modifications to the EAS program were among the details of the Act and, as a result, the program will see annual reductions in discretionary spending from $142 million in 2012 to $93 million by 2015. However, the discretionary funding cutbacks will be backfilled by an increase in mandatory funds, allocating $199 million each year from 2013 through 2015. This mandatory funding increase will be generated by an increase in the overflight fee charged to foreign airliners using U.S. airspace but not landing in the country[56].

[54] http://www.dot.gov/policy/aviation-policy/fy2011-scasdp-grant-recipients
[55] http://www.bozemanairport.com/
[56] http://www.nado.org/final-faa-reauthorization-deal-modifies-essential-air-service/

Beyond 2015, the continuance of this program's assistance is not guaranteed. The Essential Air Service Program will continually be evaluated with an eye toward either reducing the scope of assistance offered or restricting the eligibility of certain airports, particularly those closer to larger or hub airports. The rationale for possible cutbacks in service points and total dollars awarded is attributed to the high cost per passenger of providing subsidized air transportation through the EAS program. The program was intended to be transitional, giving communities and airlines time to adjust to deregulation, more than a quarter of a century ago. Because of continuing financial pressure on the aviation industry, about 37 communities have been forced into the EAS program since 9/11. As of October 2013, the EAS program ensured commercial air service to 160 nationwide communities, of which 43 were in Alaska and two in Hawaii[57]

In regards to the approaching 2015 deadline for the EAS program, next-step actions will be taking place. If after September 30, 2015, a particular community's subsidy per passenger remains above the $200 per flight subsidy amount and its location is less than 210 miles from the nearest large or medium hub airport, the U.S. Department of Transportation will initiate proceedings and directing personnel will be required to show why the Department should not terminate the eligibility of the community in question under the EAS Program. Communities that become ineligible have various options for reinstatement if subsidy requirements are not met. Petitions to the Secretary of DOT for a waiver may be provided in this case. In addition, communities may petition the Secretary for reinstatement into the program in a subsequent year if the community can demonstrate that it will be able to comply with the $200 subsidy cap on an annual basis going forward. This process will provide each potentially affected community with a fair and reasonable opportunity to demonstrate compliance with the $200 subsidy cap prior to a final decision by DOT. To provide the Department with sufficient time to receive and evaluate the FY 2015 data for potentially affected communities, DOT does not intend to begin the show cause process until January 2016[58].

Table 5-10 presents the distance from EAS communities to the nearest medium or large hub airport. In addition, the compromise prevents new communities from entering the EAS program and limits the program to those communities participating in the program in as of 2011.

[57] http://www.dot.gov/office-policy/aviation-policy/us-non-alaskan-subsidized-eas-report-november-2013
[58]Essential Air Service Proposed Enforcement Policy, National Archives May 2014. https://www.federalregister.gov/articles/2014/05/01/2014-09830/essential-air-service-proposed-enforcement-policy

Table 5-10: Current List of EAS Eligible Communities in Montana and Distances to Nearest Hubs

EAS Community	Nearest Large or Medium Hub	Miles (Large/Medium)	Nearest Small Hub	Miles (Small)
Butte	SLC (Large)	419	BZN	75
Glasgow	DEN (Large)	709	BIL	285
Glendive	DEN (Large)	607	BIL	223
Havre	SLC (Large)	668	BIL	230
Sidney	MSP (Large)	658	BIL	272
West Yellowstone	SLC (Large)	332	BZN	89
Wolf Point	DEN (Large)	686	BIL	293

Source: *2012 Air Traffic Hubs*; Bureau of Transportation Statistics, US Dept. of Transportation, April 2014

Essential Air Service Considerations

Demand at EAS Airports

Total enplanements for all EAS airports have demonstrated positive year-over-year enplanement growth between 2008 and 2013 **(**see **Table 5-11)**. In 2013, the slight enplanement decrease in four of the seven EAS communities was attributed to multiple carrier turn-over rates[59]. With new carrier contracts set in place until 2015, enplanements are expected to remain steady. Growth of 12% from 2012 to 2013 is a strong indicator that enplanements could increase in the next several years. Since 2011, total EAS enplanements in Montana have more than doubled with the addition of Butte's Bert Mooney Airport to the Montana EAS roster of airports. SkyWest Airlines, a Delta Air Lines partner, now operates 14 weekly EAS flights at Bert Mooney Airport, totaling nearly 29,000 enplanements in 2013.

Table 5-11: Montana EAS Enplanements 2008-2012*

EAS Community	2008	2009	2010	2011	2012	2013
Butte^	-	-	-	-	20,471	28,956
Glasgow	-	1,148	1,594	1,739	1,945	2,039
Glendive	-	243	423	582	742	702
Havre	-	729	954	1,001	1,186	1,177
Sidney	598	2,762	3,429	5,174	11,799	9,046
W. Yellowstone	4,178	4,318	4,433	5,323	4,957	5,290
Wolf Point	-	900	494	1,411	2,987	2,578
Totals	**4,776**	**10,100**	**11,327**	**15,230**	**44,087**	**49,788**

Source: Montana Department of Transportation, Airline Boarding 2007-2013

^ EAS Service at Butte's Bert Mooney Airport started February 10th, 2012. Prior to this date air service to Butte was non-EAS.

In 2014, Cape Air transported 7,112 Montana passengers through April, according to flight data from the Montana Department of Transportation. By comparison, Silver Airways, the previous Essential Air Service provider for rural Montana, finished 2013 with 27,827 enplanements, down

[59] Cape Air became the fourth airline to provide Montana EAS service in five years when it took over in December.

from 38,757 in 2012, before ceasing operations and transferring market regions[60]. Not only are Essential Air Service numbers up, but they've increased despite Cape Air servicing two fewer communities (Lewistown and Miles City) than previous EAS carriers. EAS airports report that the airline's success stems from its service reliability and price. It's often times less economical for passengers to make the 267-mile drive from Sidney to Billings than to fly for the $49 air fare. Rural airports are already asking the airline to increase its number of flights when the company's EAS contract is up for bid again in late 2015[61].

Airline Regulations Impacting EAS Service

For decades, the FAA Administration has had the statutory authority to issue operating certifications to both airport and air carrier operations to establish regulatory standards. There are three primary regulations found in the Federal Aviation Regulations (FAR) pertaining to passenger airline operations they are:

- FAR 14 CFR Part 121,
- FAR 14 CFR Part 135,
- and FAR 14 CFR Part 119.

Part 121 basically refers to schedule passenger airline service with 10 or more passenger seats. Until the late 1990s this regulation used to exempt scheduled service airlines with aircraft with less than 30 seats (which fell under Part 135). Under federal regulations, small commuter airlines are subject to FAA Part 135 regulations for providing commercial service. Part 135 regulations were designed to establish a standard for professionalism, safety and best practices in the industry. These regulations govern pilot training and experience, aircraft maintenance, safety procedures and insurance requirements. As stated by the FAA, Part 135 applies to short distance commercial aircraft operations or "commuters" and non-scheduled carriers that operate "on-demand."

In 1997, a new set of FAA regulations took effect that dramatically changed the regulatory environment for all air carriers. Commonly known as the "Commuter Rule," the new 14 CFR 119 (Part 119) reclassified the certification and operations specifications requirements for air carriers. The most significant change was that scheduled commuter operators previously under Part 135 were transitioned to Part 121. As part of this transition, the FAA restricted the ability of Part 135 on-demand operators to conduct even occasional scheduled operations.

Under today's rules, an on-demand operator may conduct scheduled flights in an airplane under these limited conditions:

- The airplane used must be piston-powered or turbo-prop (i.e. not turbojet);
- The airplane used must have a maximum seating capacity of 9 passenger seats or fewer;
- The airplane used must have a maximum payload of 7,500 pounds or less; and
- The operator is limited to conducting fewer than five round trips per week between any two points.

Therefore, whenever a turbojet airplane is used in an operation that meets the definition of a scheduled operation, that flight may not be conducted under Part 135 under any circumstances. Scheduled flights in turbojet-powered airplanes must be conducted under Part 121 regulations.

[60] Silver Airways operated in Montana from 2011 till 2013 under EAS contract.
[61] http://billingsgazette.com/news/state-and-regional/montana/cape-air-boardings-are-taking-off-in-eastern-montana/article_0c2e5bfd-c56e-543a-80da-73bb48c0c171.html#ixzz32dFzKANf

Public Policy Impacts to EAS Service

On February 12, 2009, Colgan Air Flight 3407 crashed into a home in Clarence Center, New York, after experiencing an aerodynamic stall. The aircraft had a total of 45 passengers on board, in addition to four crew members, all of which perished. The accident was the first fatal accident of a commercial airliner in the U.S. since the August 2006 crash of Comair Flight 191 and triggered significant investigations over regional airline operations in the United States.

On February 10, 2010, a final report from NTSB was released to the general public. Within a year of the accident, the NTSB determined that the cause of the accident was due to pilot error. It was determined that both pilots responded inconsistently with company stall recovery procedures and had limited commercial pilot flight hours in the Q400 aircraft. Furthermore, safety issues examined during the accident investigation process concluded that pilot training, hiring requirements, and pilot fatigue were critical factors that lead to the accident. These factors were a "call to action" for the FAA and further improvements in the practices of regional carriers needed to be examined.

Since the Colgan Air Flight 3407 crash, the FAA has proposed or implemented several changes as a result, including stall procedures to Airline Transport Pilot Certifications (ATP). More importantly, as of January 2014, newly hired co-pilots on the nation's commercial airlines must now have six times more flight experience (hours in commercial flying) as need in years past. The current law, instated late 2013, now requires co-pilots to have the same Air Transport Pilot license and the 1,500 hours of flight time it requires, the same qualifications as the pilot.

These new regulations affected many carriers providing Essential Air Service as well as smaller air carriers nationwide. In addition, new regulations on flight hours for pilots differ between Part 135 and Part 121. Any airline operating under Part 121 is subject to new pilot training rules requiring each pilot hired to have 1,500 hours of flying, as previously discussed.

With the dramatic increase in requirements for the Air Transport Pilot license the market has changed dramatically. The new rules took effect amid an already emerging pilot shortage that industry officials blame on a wave of mandatory retirements and growing demand for pilots worldwide. Many regional airlines have been accustomed to hiring pilots with as less than 250 hours in the cockpit. Most dramatically of all, Great Lakes Airlines, a Wyoming-based carrier, has seen its number of pilots shrink from 304 to 98. Many regional commercial pilots no longer qualify to fly anymore under the new rules, and the airlines are struggling to find replacements[62]. These new guidelines have the potential to greatly affect the EAS program, as finding qualified candidates willing to locate into these rural communities may prove difficult.

Public Policy Impacts to EAS Aircraft Gauge

Very recently, Congress passed several significant reforms to the EAS program. On August 5, 2011, the "Airport and Airway Extension Act, Part IV" was passed into law which contained a provision which prohibits the Department from providing EAS to communities whose annual passenger subsidies are greater than $1,000 per passenger, regardless of their distance from the nearest hub airport. Subsequently, the "Consolidated and Further Continuing Appropriations Act, 2012" (Public Law No: 112-55, November 18, 2011) waived the requirement that communities receive EAS on 15-seat or larger aircraft thus opening the door for operators of nine-seat aircraft to win EAS contracts.

[62] http://www.buffalonews.com/city-region/flight-3407/airline-industry-pushing-back-at-rules-spurred-by-flight-3407-20140208

Until recently, 19-seat aircraft were fairly common on EAS routes particularly in western states. These aircraft include Beechcraft B1900 models, commonly used by Silver Airways and Great Lakes Airlines both of which served Montana EAS routes in the past. The Beechcraft 1900 model is a 19-seat passenger, pressurized twin-engine turboprop manufactured by the Beechcraft Company. The aircraft, produced until 2002, can hold up to 245 gallons of fuel, carrying 19 passengers with a max range of roughly 600 miles[63]. This aircraft is currently used for EAS service in the Arizona, California, Kansas, Nebraska and Iowa.

Cessna 208 Caravan and Cessna 402, both of which are nine-seat aircraft, are increasingly being used on EAS routes. For example, the Cessna 208 Caravan, regularly used by Seaport Airlines, is a single-engine turboprop, short-haul regional airliner which is commonly used in western states and Alaska. The aircraft, currently still in production, offers a variety of configurations for seating and cargo holds and the airframe can be outfitted with various types of landing gear, allowing it to operate in a wide variety of environments. Cessna 208 Caravans have the ability to hold up to 300 gallons of fuel, with a maximum range of 1,000 miles.[64]

The Cessna 402, regularly used by Cape Air Airlines, is a popular choice for EAS providers, as the twin engine uses less fuel and fits the needs of passenger loads[65]. The Cessna 402 is a light twin, piston engine aircraft manufactured by Cessna from 1972 to 1985. C-402 aircraft are powered by a 300 horsepower turbocharged Continental engine with three-bladed, constant speed propellers. The aircraft has the ability to provide both passenger or cargo service, as all the seats can easily be removed to accommodate an all-cargo configuration. Cessna 402 is a nine-seat aircraft with the ability to hold up to 200 gallons of fuel and a maximum range of 1,100 miles.[66]

It is noteworthy to point out that due to new regulations, some Beech 1900 models are being retrofitted to avoid pilot requirements assigned to carriers operating aircraft with 10 or more seats. Carrier cost for operating 19-seat turboprop aircraft has greatly increased over time making this aircraft less economical to operate on “long-thin” routes commonly found in western states. With the implementation of the previously mentioned regulations, some smaller airlines offering a greater number of seating (>10 passenger seats) have opted to make modifications to adhere to the Part 135 regulations. Companies such as Great Lakes Airlines have been given approval by the FAA to remove 10 seats from its Beechcraft 1900 planes, the mainstay of its fleet. Originally a 19-seat aircraft, the newly converted nine-seat passenger aircraft will be permitted to fly commercial routes using flight crews under Federal Aviation Regulations Part 135 rules[67].In essence, the change means Great Lakes can now fly a nine-seat configuration with first officers (co-pilots) who do not meet the 1,500-hour flight time CFR Part 121 requirement. Great Lakes believes that adhering to the formalities of the Part 135 regulations and flying the nine-seat aircraft will be a critical step in correcting their pilot shortage, rather than operating under Part 121 regulations with the 19-seat configuration.

[63] http://www.srs.aero/wordpress/wp-content/uploads/2012/02/SRS-TSD-007-Rev-0-1900D-Fuel-Emissions-Cost-Savings-Operational-Analysis.pdf
[64] http://www.cessna.com/en/caravan/cessna-caravan
[65] http://www.greatfallstribune.com/story/money/2014/07/11/cape-air-serving-havre-daily-flights-small-plane/12547347/
[66] http://www.cessna.com/en/caravan/cessna-caravan
[67] http://www.dailyranger.com/story.php?story_id=11890&headline=Great-Lakes-has-a-plan

Example Nine-Seat Carrier (Part 135) Services

Nine-seat Part 135 carriers offer regional airline capabilities connecting small and rural communities within the national air transportation system via large hub airports. To accomplish this, these carriers offer regional connections that are convenient, while operating smaller capacity aircraft that enable them to offer a higher level of service at an affordable airfare. Many of the carriers currently operate from small/medium hub airport terminals or general aviation fixed-base operator (FBO) facilities. This service offers passenger convenience and increased time savings with automobile parking and security screening at the airport. The following section identifies several nine-seat carriers operating successfully in various markets around the U.S.

New Mexico Airlines is an American commuter airline brand founded by Pacific Air Holdings to operate flights in New Mexico after the airline was awarded an Essential Air Service contract to serve Hobbs and Carlsbad, New Mexico. The airline, headquartered in Mesa, Arizona, offers flights at $49 (plus tax and fees) each way[68]. New Mexico Airline started flights on July 1, 2007, flying with a fleet of nine-seat passenger C-208 Grand Caravan aircraft. This carrier also operates a non-EAS route from Los Alamos, NM to Albuquerque.

Cape Air, headquartered in Barnstable, Massachusetts, is a scheduled passenger service founded by Hyannis Air Service, Inc. With a fleet of seventy-five Cessna 402s, two ATR-42s and three Britten-Norman Islanders, Cape Air flies more than 735,000 passengers annually with up to 550 flights per day, servicing 44 destinations in its 5 regions in U.S. domestic and international markets. Cape Air was established in 1989 and is now one of the largest independent regional airlines in the United States, primarily flying only nine-seat passenger aircraft. The airline services a variety of travel destinations on the east coast and mid-west regions, with additional flights available in Puerto Rico, U.S. Virgin Islands and West Indies[69]. Cape Air operates both EAS and non-EAS routes with nine-seat aircraft and is currently Montana's EAS provider.

Southern Airways Express is a Memphis-based airline which currently serves ten cities in the Southern United States, with hubs in Memphis and Destin. Southern Airways currently operates a fleet of Cessna 208 Caravans and 208B Grand Caravans. Each of these aircraft are outfitted with nine luxury leather passenger seats, a Bose or Sony headset for each passenger, and space in the cabin for one personal item, such as a briefcase of purse. Unlike major carriers, Southern Airways Express operates out of general aviation fixed-base operator (FBO) terminals, allowing the airline to offer more personalized service to its passengers.

SeaPort Airlines is a scheduled commuter airline headquartered in Portland, Oregon. Founded in 1982 in Juneau, Alaska, the airline serviced much of the Southwest Alaska region until its recent expansion. In 2008, operations were launched in the Pacific Northwest with a business strategy of operating a shuttle service between Seattle and Portland that offered private terminals and avoidance of TSA screening lines. After rising operating costs hindered business, SeaPort refocused on a strategy of building a regional airline which connected small and rural communities with national air transportation via large hub airports. To offer those connections, SeaPort operates a modern fleet of nine-seat passenger Cessna 208 Caravan turboprop aircraft, providing comfortable, economical, and reliable transportation. Current routes include northwest flights in the Oregon region, Mid-south flights in Tennessee, Arkansas and Kansas, as well as southwest regions of California and southeast Alaska.

[68] www.pacificwings.com
[69] https://www.capeair.com/about_us/index.html

Montana EAS Subsidy Elimination Scenarios EAS

Since the EAS program is a federal subsidy relying on the approval of the US Congress it is vulnerable to changes in political support which could shift based on elections and political mood of the country. If subsidies were lost the Montana air service market at EAS airports may or may not successfully transition from a subsidized market to a demand-driven market. In this section we analyze whether the airport markets in eastern Montana with current EAS service, as well as two airports which had EAS service until recently, could support scheduled passenger airline service without a federal subsidy.

Alternative Air Service Model

Over the past two years air service to seven rural communities in Montana has been provided through to several airlines such as Great Lakes, Silver Airways and, the current provider, Cape Air[70]. These carriers, and others like them, typically utilize small turbo-prop and piston aircraft such as the Cessna C208 Caravan, Cessna 402, Beechcraft B1900, and Pilatus PC-12. These aircraft range from 7 to 19 seats in capacity. As stated earlier, the EAS program now supports nine-seat aircraft and the public has had a brief period of time to be introduced to these unfamiliar aircraft which typically have a single pilot. Additionally, the nine-seat aircraft also lack a lavatory and some have a single engine. With these conditions in mind the study team set out to determine, from a 30,000-foot-level-view, whether air carrier service can operate in the eastern Montana market without the benefit of a government subsidy. In this analysis we consider the cost of operating three types of aircraft in eastern Montana. These costs are based on block hour costs for routes to seven eastern Montana airports with flight frequencies similar to existing schedules. It is assumed that the routes will be to Billings Logan International Airport where passengers can connect to other air carriers. Additionally the analysis took into consideration three scenarios. The first examines the nonstop routes to each community while the second scenario looks at the possibility of "tagging" two markets together such as a route which begins in Billings and stops in Glasgow then Wolf Point before returning to Billings. The third scenario investigates what happens if subsidized and non-subsidized air service to rural EAS airport goes away completely and the implications it has on the flying public.

The basis for determining the carrier costs are the hourly costs to operating the three aircraft that are most suitable for air service to rural western communities. These aircraft are currently in service or recently operated in Montana. Table **5-12** below identifies the B1900 as the most expensive aircraft to operate per block hour while the Cessna 402, a piston engine aircraft, is the least expensive. The Cessna C208 Caravan costs are in the middle of the block hour costs range. Block hours by definition measure the time on a flight from engine start-up, taxi time, flight-time, taxi-time and shutdown.

[70] Analysis for two EAS airports (Butte Bert Mooney Airport and West Yellowstone) is not considered in the scenarios since subsidies are considered small at less than $100 per passenger. If EAS service is lost to these markets an air carrier will likely enter the market possibly with more economical aircraft.

Table 5-12: Block Hour Costs for Aircraft Typically Operating in Rural Communities

EAS Aircraft Costs			Aircraft Costs	
Aircraft Type	Per Block Hour		Per Block Minute	
B1900	$	1,671	$	27.84
C402	$	571	$	9.52
C208	$	992	$	16.53

Source: AircraftCostCalculator.com, CDM Smith analysis

Air Service Scenario 1

Figure 5-3 identifies the route structure for the first nonsubsidized air service scenario. Seven routes are analyzed with Lewistown being the closest market to Billings (BIL) at 96 air miles and the longest being Billings to Sidney at 245 miles. The average distance for this scenario is 182 miles flying distance per route.

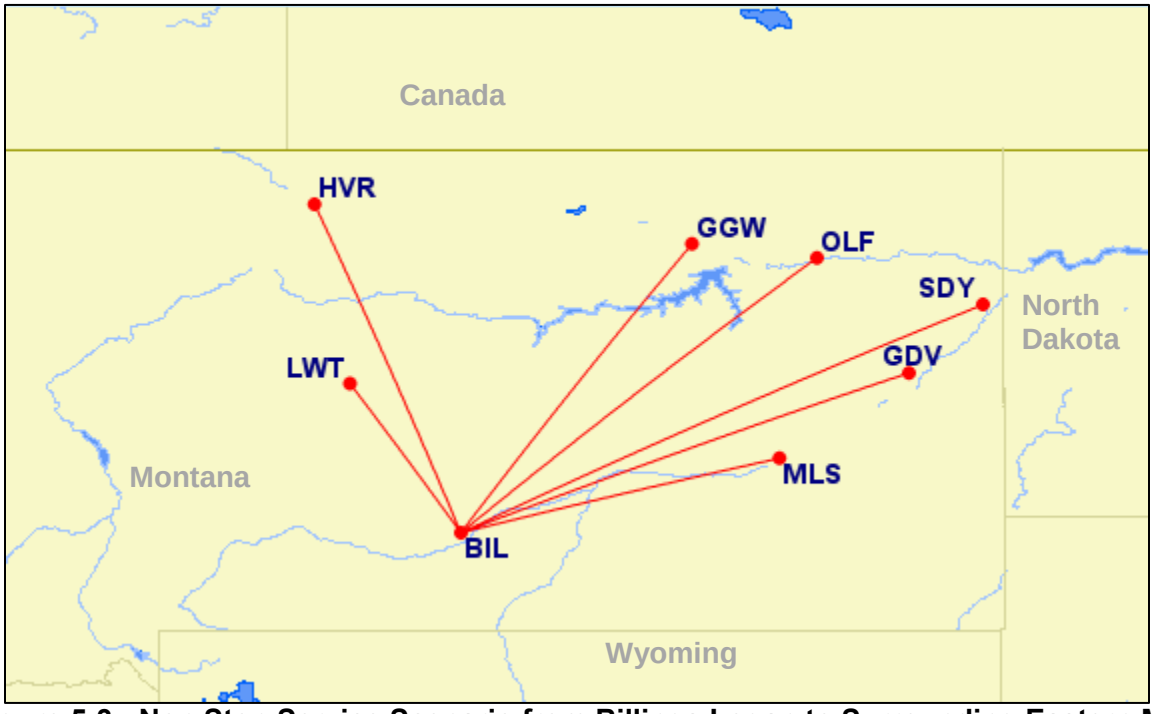


Figure 5-3: Non Stop Service Scenario from Billings Logan to Surrounding Eastern MT Airports

The distance and time flown by each aircraft on each route was determined by measuring the distance in miles and dividing by each aircraft's cruise speed. Adjustments to this speed were made to account for taxi-times and take-off and landing speeds. These time calculations are presented in minutes. By multiplying the "Block Minutes" by aircraft costs per minute, the study team estimated the cost of operating each aircraft type for each route. These are identified in Table 5-13. Aircraft expenses are greatest for the B1900 route but its lower block times, due to higher aircraft speeds, make its costs slightly greater that the C208 costs on the same routes. Additionally, this analysis makes it apparent that the C402 twin-piston aircraft is the least costly to operate on each route in this scenario.

Table 5-13: Aircraft Costs for Non-Stop Service from Billings Logan to Surrounding EAS Airports

		Miles	C208 Block	C208	C402 Block	C402	B1900 Block	B1900
	FAA	to	Time	RT	Time	RT	Time	RT
Market	Code	BIL	Minutes	Cost	Minutes	Cost	Minutes	Cost
Havre	HVR	197	70	$ 2,314	82	$ 1,562	46	$ 2,575
Glendive	GDV	201	71	$ 2,356	80	$ 1,524	46	$ 2,575
Wolf Point	OLF	211	75	$ 2,480	83	$ 1,581	49	$ 2,715
Glasgow	GGW	189	68	$ 2,232	81	$ 1,543	44	$ 2,436
Sidney	SDY	245	88	$ 2,893	93	$ 1,771	56	$ 3,132
Lewistown	LWT	96	35	$ 1,157	33	$ 633	23	$ 1,253
Miles City	MLS	135	48	$ 1,571	47	$ 887	31	$ 1,740

In order to earn a profit on each, flight airline revenue must be greater than operating costs. For this analysis the study team estimated the load factor for each flight based on each airport's average annual (2013) load factor[71]. **Table 5-14** below identifies the cost per passenger per round trip to each of the seven markets in this scenario. The following discussion identifies significant findings from the analysis.

Havre to Billings: If the Havre market sells 34% of the nine-seat C402 aircraft on average for each flight the average round trip airfare needs to be an estimated $509 per passenger in order for the airline to "break even" on the round trip flight. Should demand regularly exceed the assumed 34% load factors then the airline would likely lower the per passenger air fare.

Glendive to Billings: The Glendive market is in an almost identical predicament related to load factors. Current average load factors of 33% would decrease yields and force airfares to be over $500 per round trip in the least expensive aircraft to operate. These fares for both these markets would likely be unsustainable to an air carrier since passengers continuing on flights from Billings to other destinations will have additional airfares for those segments.

Sidney to Billings: A load factor of 74% provides a more reasonable airfare, and estimated $266 roundtrip, for each aircraft type on this route examined in this scenario even though the distance traveled is the greatest of all routes presented. Analysis of the current Cape Air schedules indicates that the Billings to Sidney service is supported by up to five round trips per weekday. An airline could increase load factors on this route by decreasing the number of flights per day from five to four, (forcing passengers on to fewer aircraft) thus making flights more economical for the carrier. Five frequencies per day on this route is currently subsidized (EAS). While this would increase loads and perhaps provide more competitive fares the down side is that aircraft would be more cramped and passengers may choose to depart a flight out of Williston ND, which is 55 miles northeast of Sidney.

Lewistown to Billings: It is noteworthy to point out that while Lewistown could offer fairly reasonable airfares to Billings the market is less than a two hour drive to Billings placing automobile travel in direct competition with scheduled air service. The geographic proximity of Miles City to Billings is also a disadvantage for air service development there.

[71] Load factors were derived by taking the total annual enplanements and dividing by the estimated the annual number of aircraft seats available for each airport. Annual seats available were based on airline schedules and aircraft types.

Table 5-14: Non Stop Service Billings Logan to Surrounding EAS Airports
Estimated Fare per Passenger (Round Trip)
To Cover Costs

Market	FAA Code	Miles to BIL	Estimated Load Factor	Aircraft Type C208	Aircraft Type C402	Aircraft Type B1900^
Havre	HVR	197	34%	$ 754	$ 509	$ 839
Glendive	GDV	201	33%	$ 783	$ 507	$ 856
Wolf Point	OLF	211	61%	$ 452	$ 288	$ 495
Glasgow	GGW	189	52%	$ 473	$ 327	$ 517
Sidney	SDY	245	74%	$ 435	$ 266	$ 471
Lewistown	LWT	96	33%	$ 390	$ 213	$ 422
Miles City	MLS	135	33%	$ 529	$ 299	$ 586

Source: CDM Smith analysis
^Assumes 9-seat aircraft configuration

Air Service Scenario 2

Figure 5-4 identifies the route structure for the second air service scenario. Four routes are analyzed with six of the seven markets tagged or paired with another market. Some airlines tag markets to make the route more economical by increasing load factor on the round trip. All routes begin and end in Billings (BIL). The Billings to Sidney route is the only route that provides nonstop service in this scenario. The average distance for this scenario is 182 miles flying distance per route.

Using analysis similar to Scenario 1 aircraft operating costs for each route by aircraft type were prepared. Based on this analysis C402 aircraft are the least expensive to operate on these routes. (See **Table 5-15)**. Additionally, when comparing the Havre-Billings route in Scenario 1 with the Havre-Lewistown-Billings route in Scenario 2 the operating costs are only $133 more per route since Lewistown only adds a eight miles flying distance to the round trip route.

There are drawbacks to tagging cities on commuter type air routes. First, some passengers will experience longer flights since a stop will be included in their route itinerary. Secondly, each stop will increase the potential for delay to destination as weather may change while on the ground or the aircraft may have a mechanical issue. Additionally, there are fewer seats per market served when an aircraft is shared between two markets. The benefit of course to the airline is lower operating costs and increased load factors and revenues. An airline will take these factors into consideration when developing a business case before entering a market.

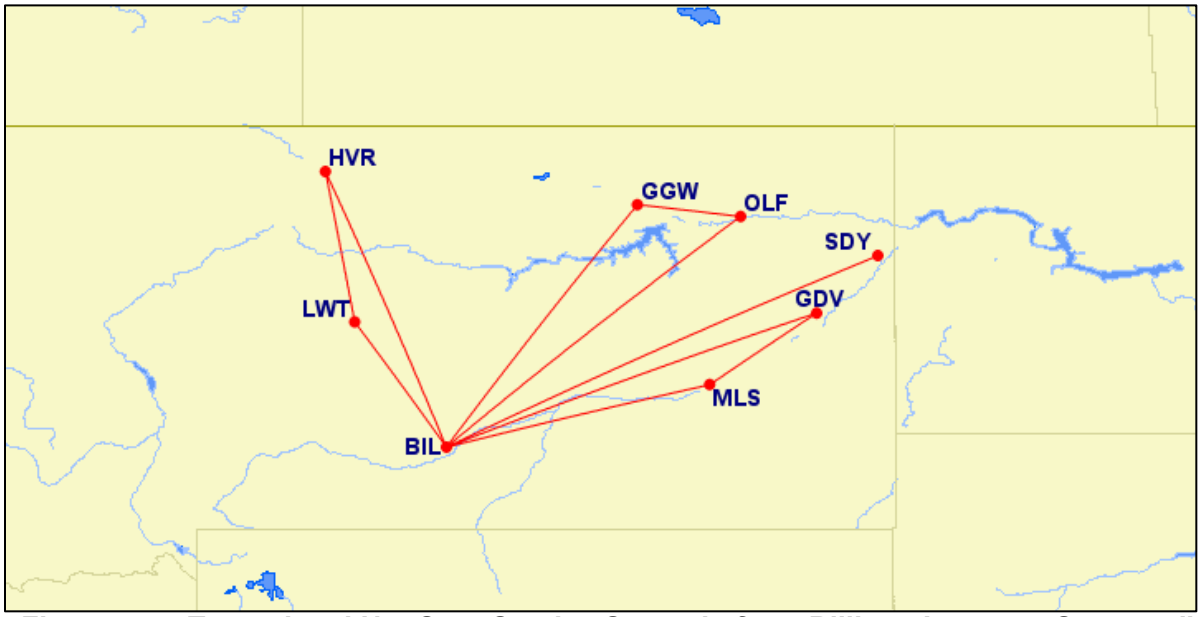


Figure 5-4: Tagged and NonStop Service Scenario from Billings Logan to Surrounding Eastern MT Airports

Table 5-15: Aircraft Costs for NonStop and Tagged Servicefrom Billings Logan to EAS Airports

Markets	Route	Route Miles	C208 RT Cost	C402 RT Cost	B1900 RT Cost
Havre-Lewistown	HVR-LWT-BIL	201	$ 2,507	$ 1,695	$ 2,740
Glendive-Miles City	GDV-MLS-BIL	206	$ 2,594	$ 1,524	$ 2,814
Wolf Point-Glasgow	OLF-GGW-BIL	238	$ 2,990	$ 1,581	$ 3,259
Sidney	SDY-BIL	245	$ 2,893	$ 1,771	$ 3,132

Air fares derived in Scenario 2 would be lowest for a carrier operating a C402 aircraft operating at an assumed 80 percent load factor. The Billings to Sidney route would have the highest fare of approximately $246 per passenger round trip utilizing this aircraft. As indicated in **Table 5-16** the routes with the tagged markets have the lowest fares since more passengers are sharing in the operating costs.

Air fares to and from rural areas vary widely in the U.S. particularly on non EAS routes. Airlines typically take into consideration the flying public's sensitivity to tick prices and go to great lengths to determine air fares. Price points for seats are based on market demand, carrier schedule and aircraft type. Carriers also take into consideration the type passenger using their service such as business travelers and leisure travelers. Schedules also dictate fares as carriers realize the cost of additional overnight stays to the business traveler for example. Leisure market travelers may have more flexibility in their schedule and may opt for a lower fare even if it requires departing a day later. Additionally carriers take into consideration the passenger's costs of driving to a more distant yet competitive airport market. The next scenario takes into consideration the driving alternative for Montana's EAS markets.

Table 5-16: Shared Service Billings Logan to Surrounding EAS Airports Estimated Fare Per Passenger (Round Trip)To Cover Costs (Assumes 80% Load Factor)

Markets	Routes	C208 RT Cost	C402 RT Cost	B1900 RT Cost
Havre-Lewistown	HVR-LWT-BIL	$ 348	$ 217	$ 381
Glendive-Miles City	GDV-MLS-BIL	$ 360	$ 212	$ 391
Wolf Point-Glasgow	OLF-GGW-BIL	$ 415	$ 220	$ 453
Sidney	SDY-BIL	$ 402	$ 246	$ 435

Air Service Scenario 3

The third and final Scenario looks at alternatives to passengers in current EAS markets should they lose air service at these airports entirely. Today Cape Air provides nonstop service to Billings to five rural Montana markets at a very reasonable subsidized air fare of $49 each way. If air service is lost the primary alternative to travel is by automobile. Passengers in each market would likely consider flying out of the closest commercial airport. **Table 5-17** below identifies the closest commercial airport to the five airports with EAS service and two airports which recently had EAS service.

Analysis shows that Great Falls international airport is the closest commercial airport to both Havre and Lewistown. While passengers at Havre would likely chose Great Falls for air travel Lewistown passengers could also chose driving to Billings since Lewiston is about equidistant from both airports but is slightly closer to Billings. Billings Logan International Airport is the closest airport to Miles City. The other four Montana markets with EAS service are in closest proximity to Sloulin Field International Airport in Williston, North Dakota. This airport has experienced significant growth in passenger enplanements due to Bakken Oil Field development and, as result, now has nonstop jet service to both Denver and Minneapolis.

If EAS service, and air service in general, proves unviable for the current EAS airports in eastern Montana it will negatively impact travel to these areas of the state. Not only will travelers need to plan on increased travel times but increased travel costs as well. Vehicle costs, such as gasoline and wear-and-tear, will increase for travelers that use EAS as will other costs such as hotels, meals and rental car fees. Passengers with early morning departures at Williston for example may need to leave Wolf Point the night prior thereby incurring hotel and meal expenses.

Table 5-17: Alternative Commercial Airports

Montana EAS Market	Alternative Airport	FAA Code	Distance in Miles Driven	Time
Havre	Great Falls International	GTF	119	2 hrs 17 min
Lewistown	Great Falls International	GTF	109	2 hrs 3 min
Miles City	Billings Logan International	BIL	146	2 hrs 14 min
Sidney	Sloulin Field International	ISN	55	1 hrs 10 min
Glendive	Sloulin Field International	ISN	107	2 hrs 6 min
Glasgow	Sloulin Field International	ISN	145	2 hrs 43 min
Wolf Point	Sloulin Field International	ISN	96	1 hrs 56 min

Source: CDM Smith, Rand McNally Distance Calculator

Rural Area NonEAS Successes

There are markets in rural America where small nine-seat aircraft have successful airline operations. **Table 5-18** below identifies these airport markets and the carriers that serve them without federal EAS subsidies. The carriers in the example below operate either C402 and C208 aircraft. Round trip air fares range from $466 to $98. Destinations range from vacation areas to Midwestern cities. Should EAS subsidies cease to exist carriers like the ones identified venturing into new markets will likely give airports in eastern Montana serious consideration for air service.

Conclusion

Several factors could limit future EAS operations in Montana and include changes in federal legislation, increasing carrier costs, limited passenger revenue and load factors, pilot shortages and total number of eligible communities requiring subsidized service. Should the EAS funding program end in Montana airlines may choose to provide service to eastern Montana airports if they believe it makes business sense. The most economical aircraft to operate in the state as a Part 135 operator is the Cessna C402 twin piston aircraft, a nine-seat aircraft with a single pilot. A Part 135 operator may choose to operate the current routes structure in eastern Montana but some markets with current low load factors may lose service entirely. Carriers also have the option to tag markets on routes for better aircraft economics and increased load factors. Should subsidized EAS air service end in the state and non-subsidized Part 135 operations move into the market, the traveling public will likely experience “sticker-shock” as airfares will be raised from the current subsidized rates of $98 round trip to well over $200 to $400 per round trip.

Cancellation of the Essential Air Service program and loss of air service to the five communities with current EAS service would negatively impact Montana’s rural communities’ connectivity to the national air transportation network. Cancellation of the service will likely cause economic hardship to the communities and have dramatic economic impacts on the airports currently supported by EAS service.

Table 5-18: Non-EAS Routes or Similar Distance Airfare Cost Analysis

Carrier	Similar Route to/from Non-EAS Community		Distance (Miles)	Aircraft Type	Airfare Cost (+14 days)
Cape Air	HPN (White Plains, NY)	SLK (Saranac Lake, NY)	230 mi	C-402	$466.00
	HPN (White Plains, NY)	ACK (Nantucket, MA)	191 mi	C-402	$466.00
	OWB (Owensboro, KY)	STL (St. Louis)	188 mi	C-402	$100.00
New Mexico Airlines	ABQ (Albuquerque, NM)	LAM (Los Alamos, NM)	61 mi	C-208 Caravan	$98.00
SeaPort	MEM (Memphis, TN)	BNA (Nashville, TN)	200 mi	C-402	$187.00
	PDX (Portland, OR)	OTH (North Bend, OR)	171 mi	C-402	$238.00
Southern Airways Express	DSI (Destin, FL)	NEW (New Orleans LA)	214 mi	C-208 Caravan	$398.00
	DSI (Destin, FL)	KMBO (Jackson, MS)	256 mi	C-208 Caravan	$436.00
	OLV (Olive Branch, MS)	BHM (Birmingham, AL)	199 mi	C-208 Caravan	$396.00

Source: CDM Smith, carrier websites

5.4 Implications of FAA Phaseout of VOR and NDB Equipment

With the advent of GPS navigation in aircraft and at airports the FAA is moving forward with the scheduled decommissioning of many ground-based NAVAIDs. The program began in 2010 and moved GPS systems on a course to supplant long-range navigation (LORAN) and VHF Omni-directional Range (VOR) equipment in general aviation cockpits. The FAA plans to transition from defining airways, routes and procedures using VHF Omni-directional Range (VOR) and other legacy navigation aids (NAVAIDs) towards a National Air Space (NAS) based on Area Navigation (RNAV) in all regions and Required Navigation Performance (RNP)[72] where beneficial. These capabilities will be enabled largely by the Global Positioning System (GPS) and the Wide Area Augmentation System (WAAS)[73]. The Coast Guard decommissioning of the

[72] Required navigation performance (RNP) is a type of performance-based navigation (PBN) that allows an aircraft to fly a specific path between two 3D-defined points in space. RNAV and RNP systems are fundamentally similar. The key difference between them is the requirement for on-board performance monitoring and alerting. A navigation specification that includes a requirement for on-board navigation performance monitoring and alerting is referred to as an RNP specification. One not having such a requirement is referred to as an RNAV specification.

[73] The Wide Area Augmentation System (WAAS) is an air navigation aid developed by the Federal Aviation Administration (prime contractor Raytheon Company) to augment the Global Positioning System (GPS), with the goal of improving its accuracy, integrity, and availability. Essentially, WAAS is intended to enable aircraft to rely on GPS for all phases of flight, including precision approaches to any airport within its coverage area. WAAS uses a network of ground-based reference stations, in North America and Hawaii, to measure small variations in the GPS satellites' signals in the western hemisphere.

LORAN system in 2010 left general aviation pilots with only VORs to serve as a backup to GPS. In addition, the 2008 Department of Transportation Federal Radio Navigation Plan calls for gradually discontinuing service at VOR facilities as aviation users transition to satellite services, beginning with facilities where service is not needed or where satisfactory alternatives are available.

Not all ground based NAVAIDs will be eliminated as some have speculated. The FAA plans to retain an optimized network of Distance Measuring Equipment (DME) stations and a Minimum Operational Network (MON) of VOR stations to ensure safety and continuous operations for high and low altitude en route airspace over the conterminous US (CONUS) and terminal operations at the "Core 30" airports.

According to the FAA over 80% of the 967 VORs in the NAS inventory are past their economic service life and cost the FAA more than $110M per year to operate. Likewise, replacement parts are becoming increasingly difficult to obtain. The replacement of all of the VORs would cost over $1.0 Billion. Therefore, the FAA is planning a gradual discontinuance (removal from service) of VOR facilities in CONUS to a (MON) network. The MON would enable aircraft anywhere in the CONUS to proceed safely to a destination with a GPS-independent approach within 100 nm. MON coverage is planned to be provided at altitudes above 5,000 feet above ground level (AGL). The FAA would also retain VORs to support international arrival airways from the Atlantic, Pacific, Caribbean, and at the Core 30 airports. The existing U.S. legacy navigation aids outside CONUS will be retained until a longer-term solution can be coordinated with users. The drawdown of VORs to a MON is to be completed no later than January 1, 2020.

In 2012 The Aircraft Owners and Pilots Association (AOPA) requested the FAA provide clarification on their VOR decommissioning proposal. In their response the FAA proposed retaining all existing VOR stations in the mountain west region, Alaska, Hawaii, and U.S. islands and territories. The current infrastructure of 945 FAA-maintained VOR stations is to be reduced to 483 (the minimum operational network) by 2020. The remaining network would allow safe ILS and VOR approaches virtually nationwide—without radar vectors, DME or ADF equipment—in the event of a GPS outage. VOR coverage would be maintained at and above 5,000 feet AGL across most of the continental U.S. (See the FAA response in **Appendix C**)[74] According to FAA Analysis, there are areas of Montana however that will not have VOR coverage above 5,000 feet.

FAA VOR Decommissioning Impacts to Montana Airports

Analysis of the A Minimum Operational Network (MON) of VORs whitepaper indicates all VORs will be retained in Alaska, the Western U.S. Mountainous Area (WUSMA), and U.S. Islands and territories. Maps provided in the whitepaper indicate VORs at 13 Montana airports will be retained. Additionally, Figure 2 in the whitepaper indicates that seven airports in Montana with VOR approaches will retain these approaches. These airports include: CTB, BTM, DLN, HVR, LWT, MLS, and GGW[75]. 40 airports in MT have published approaches and 16 airports still have published VOR Approaches. **Table 5-19** lists airports in Montana and their VOR approaches as published by the FAA. Some airports have more than one VOR approaches.

[74] http://download.aopa.org/epilot/2012/120112VOR-MON-White-Paper.pdf
[75] These VORs do not require radar, DME, or ADF

Table 5-19: Montana Airports with Published VOR Equipment and Approaches (August, 2014)

City	Airport Name	FAA Code	Published Approach
ANACONDA, MT	BOWMAN FIELD	3U3	VOR/DME OR GPS-A
LAUREL, MT	LAUREL MUNI	6S8	VOR RWY 22
BILLINGS, MT	BILLINGS LOGAN INTL	BIL	VOR/DME RWY 28R
BILLINGS, MT	BILLINGS LOGAN INTL	BIL	VOR-A
BUTTE, MT	BERT MOONEY	**BTM**	VOR OR GPS-B
BUTTE, MT	BERT MOONEY	**BTM**	VOR/DME OR GPS-A
BOZEMAN, MT	BOZEMAN YELLOWSTONE INTL	BZN	VOR RWY 12
BOZEMAN, MT	BOZEMAN YELLOWSTONE INTL	BZN	VOR/DME RWY 12
CUT BANK, MT	CUT BANK INTL	**CTB**	VOR RWY 31
DILLON, MT	DILLON	**DLN**	VOR/DME-B
DILLON, MT	DILLON	**DLN**	VOR-A
GLASGOW, MT	WOKAL FIELD / GLASGOW INTL	**GGW**	VOR RWY 12
GLASGOW, MT	WOKAL FIELD / GLASGOW INTL	**GGW**	VOR RWY 30
KALISPELL, MT	GLACIER PARK INTL	GPI	VOR/DME RWY 30
GREAT FALLS, MT	GREAT FALLS INTL	GTF	VOR RWY 21
GREAT FALLS, MT	GREAT FALLS INTL	GTF	VOR/DME RWY 03
HELENA, MT	HELENA RGNL	HLN	VOR/DME-B
HELENA, MT	HELENA RGNL	HLN	VOR-A
HAVRE, MT	HAVRE CITY-COUNTY	**HVR**	VOR RWY 08
HAVRE, MT	HAVRE CITY-COUNTY	**HVR**	VOR RWY 26
LIVINGSTON, MT	MISSION FIELD	LVM	VOR/DME-B
LIVINGSTON, MT	MISSION FIELD	LVM	VOR-A
LEWISTOWN, MT	LEWISTOWN MUNI	**LWT**	VOR RWY 08
MILES CITY, MT	FRANK WILEY FIELD	**MLS**	VOR RWY 04
MILES CITY, MT	FRANK WILEY FIELD	**MLS**	VOR/DME RWY 04
MILES CITY, MT	FRANK WILEY FIELD	**MLS**	VOR/DME RWY 22
MISSOULA, MT	MISSOULA INTL	MSO	VOR/DME-A
MISSOULA, MT	MISSOULA INTL	MSO	VOR/DME-B

Source: FAA

FAA NDB Approaches Decommissioning Impacts to Montana Airports

Non Directional Beacons are also being decommissioned by the FAA. It costs the FAA about $20,000 a year to retain each NDB approach in the United States. More than 250 have been decommissioned since 2005; however, no NDB approaches in Montana were decommissioned in the first round taking place that year. Many pilots consider NDB approaches antiquated and difficult to manage from the cockpit and they consider GPS approaches to be far superior.

Additionally, NDBs are considered the least precise of all non-precision approaches. According to FAA records 13 airports have published NDB approaches in Montana.

Table 5-20: Montana Airports with Published NDB Approaches (August, 2014)

City	Airport Name	FAA Code	Published Approach
BAKER, MT	BAKER MUNI	BHK	NDB RWY 13
BAKER, MT	BAKER MUNI	BHK	NDB RWY 31
BILLINGS, MT	BILLINGS LOGAN INTL	BIL	NDB RWY 10L
CHOTEAU, MT	CHOTEAU MUNI	CII	NDB OR GPS RWY 23
CONRAD, MT	CONRAD	S01	NDB OR GPS RWY 24
FORSYTH, MT	TILLITT FIELD	1S3	NDB RWY 26
GLASGOW, MT	WOKAL FIELD/GLASGOW INTL	GGW	NDB RWY 30
GLENDIVE, MT	DAWSON COMMUNITY	GDV	NDB RWY 12
GREAT FALLS, MT	GREAT FALLS INTL	GTF	NDB RWY 34
HELENA, MT	HELENA RGNL	HLN	NDB-D
SHELBY, MT	SHELBY	SBX	NDB RWY 23
SIDNEY, MT	SIDNEY-RICHLAND MUNI	SDY	NDB RWY 01
SIDNEY, MT	SIDNEY-RICHLAND MUNI	SDY	NDB RWY 19
WEST YELLOWSTONE, MT	YELLOWSTONE	WYS	NDB RWY 01
WOLF POINT, MT	L. M. CLAYTON	OLF	NDB RWY 29

Source: FAA

5.5 Medical Use of Aviation

Hospital Use of Montana Airports

One of the more important functions of Montana's airports is to support the state's network of hospitals and medical facilities in the care of critically ill patients, and in the transport of physicians to the state's remote communities. Given the significant distances between many of Montana's communities and the state's centers of advanced medicine, it is important to all Montanans that the state's system of airports provide adequate facilities for the transport patients and doctors to all the areas of the state. The value of lifesaving benefits provided by fast, reliable air medical evacuation cannot be measured in traditional economic or monetary terms.

The Montana Department of Transportation sponsored a survey effort to collect information from the state's hospitals to determine usage patterns by hospitals and physicians of its airports. This survey was mailed to the administrators of 64 hospitals across the state, critical access care centers, and Native American health centers, with questions regarding their use of airports and aviation in transporting patients. Of the 64 surveys mailed, 27 were completed and returned, for a response rate in excess of 41 percent. These 27 hospitals accounted for 1,879 of the state's 3,704 beds, or approximately 50 percent of the state's hospital patient capacity.

The questions that appeared on the survey, along with a summary of responses, appear below.

1. *Does your facility host specialty clinics (i.e. cardiology)? If yes, please indicate the follow average number of monthly clinics held at your facility, and the average number of specialists at each clinic.*

   Of the responding facilities, 19 (59 percent) reported hosting specialty clinics. These facilities reported hosting an average of six clinics per month, with nearly four physicians at each clinic.

2. *If you offer specialty clinics, do specialists and doctors travel to your facility on aircraft? If yes, please list the cities where these specialists base their practice. If specialists utilize aircraft, which nearby airport do they use?*

   Twelve facilities, or 63 percent of those reporting hosting clinics, indicated that doctors flew to their facilities. The most common "home" city for these physicians was Kalispell, followed by Billings.

3. *Does your facility have a helipad? If so, how many times per month is it used?*

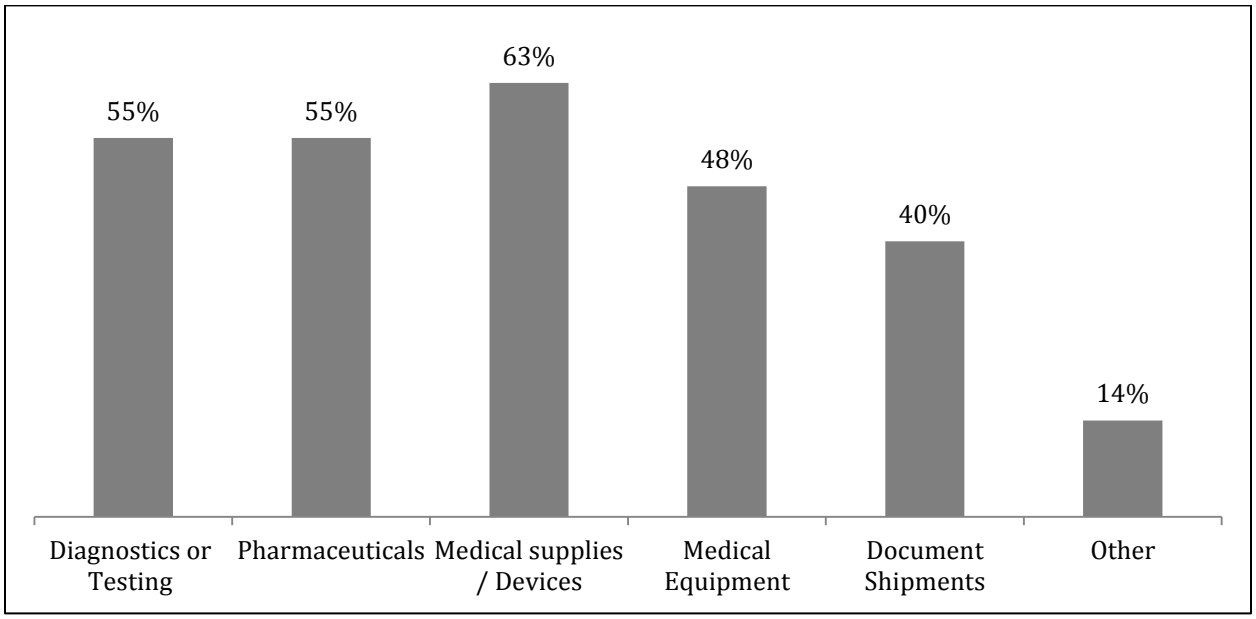
   Of the responding facilities, 17 indicated the presence of a helipad. The average use of helipads among facilities was 4 times per month, or once every three days. (Two of the facilities were statistical outliers, with helipad utilization at 40 and 50 times per month, respectively. These facilities were not included in the calculations above.)

4. *Are patients transferred to or from your facility via air ambulance? If so, please indicate the aviation facility/facilities used, and to which three cities are trauma and critical care patients most frequently transferred?*

   Every responding facility to the survey reported the use of air ambulance for transporting patients. Ten facilities incorporated both helipad and airports to transport patients, four of the facilities used a helipad as their sole method, and 12 indicated using only airports. Billings was the most common destination for these patients, along with Great Falls, Missoula, Salt Lake City, and Seattle. Reporting facilities averaged nearly six airport flights per month. (The Billings Clinic was a statistical outlier, transferring nearly 600 patients per month. This clinic was not included in the calculations above.)

5. *Please indicate if your facility utilizes air cargo/express (e.g. FedEx) services for diagnostics/testing, medical equipment, medical supplies/devices, pharmaceuticals, document shipments, etc.*

   Fifty-five percent of responding hospitals reported using air cargo/express services for Diagnostics or Testing shipments. Another 55 percent of facilities depend on air cargo/express for pharmaceuticals. Nearly 63 percent use such services for medical supplies / devices, and 48 percent utilize services for medical equipment. Additionally, many of the hospitals use these services to conduct daily business operations. Forty percent of responding hospitals reported using air transport for document shipments. Four hospitals reported using these services for a variety of other uses. **Figure 5-5** summarizes reported hospital use of cargo services.



Source: Montana Hospital Survey

Figure 5-5: Hospital Use of Air Cargo

In all, it is clear the availability of reliable, fast air transportation is critical to Montana's resident's health and well-being. In the absence of the state's network of airports, health care in Montana would be impinged. Seriously ill or injured patients would not be able to seek emergency care without long ambulance rides, and small towns would largely be left without advanced specialized medical care.

From information volunteered by hospital administrators, it is evident that nearly all of Montana's hospitals rely on air ambulance services to transport critically ill patients, sometimes to cities as far away as Salt Lake City and Seattle. Forty-four percent of hospitals reported flying doctors in to local hospitals for attendance and clinics; these hospitals would otherwise be forced to do without the services of specialists. Approximately two-thirds of hospitals require the services of air cargo express companies to carry out daily business.

5.6 Decline in General Aviation Pilots

The number of private and recreational pilots across the country has been in decline for several decades. **Table 5-21** - **Table 5-23** and **Figure 5-6** - **Figure 5-8** below depict data from FAA's US Civil Airmen Statistics 1999-2013. Estimated numbers of active pilots and flight instructors are shown for the United States as a whole, the FAA's Northwest Mountain Region and for the State of Montana. Population estimates from US Census Data are used to determine pilots per capita. In all categories and geographic regions, the number of private pilots has seen a constant decline both in terms of real numbers and pilots per capita. In the U.S., the number of private airplane pilots has declined from nearly 264,000 in 1999 to 187,000 in 2013, a drop of nearly 30 percent over 14 years. In the FAA's Northwest Mountain Region, a drop from approximately 27,000 to 22,000 represents a 20% drop, and in the State of Montana a decline from 1,700 private pilots to 1,500 represents a drop of approximately 13%. As population rises, the corresponding decline in private pilots per capita is even more dramatic. Some have attributed the declines to rising fuel prices, waning interest and heightened flying restrictions following the Sept. 11, 2001, attacks. Others believe the recent economic downturn has left fewer people with discretionary income, further accelerating the decline in the past few years.

The Government Accountability Office (GAO) released its report Aviation Workforce: Current and Future Availability of Airline Pilots in February 2014. The report was requested by Congress and by a coalition of aviation industry stakeholders to discuss the outlook for airline pilot supply and demand after "a decade of turmoil" in the industry. Although the study focused on FAR Part 121 commercial carriers, the GAO did call attention to the vital role that general aviation plays in helping aspiring candidates build flight time. "Evidence suggests that the supply pipeline is changing as fewer students enter and complete collegiate pilot-training programs and fewer [retired] military pilots are available than in the past," the study noted. In response to the study, David Oord, AOPA manager of regulatory affairs said, "General aviation is the start of the pilot supply pipeline—which, for some, eventually leads to an airline transport pilot certificate and airline career. Without a steady supply at the start by inspiring our future aviators, an airline pilot shortage will be both realized and severe."

The trend of decline in commercial and general aviation pilot numbers highlights importance of aviation education and recreational flying. The Montana Department of Transportation Aeronautics Division supports aviation education in the State of Montana by administering scholarships, and encourages young pilots through educational programs, such as the Young Eagles. The Division also works with local pilots associations to promote general aviation through special events.

Table 5-21: Estimated Active Pilots and Flight Instructors, United States Total

Year	Total Pilots	Students	Private Airplane	Commercial Airplane	Airline Transport	Misc. 1/	Flight Instructor 2/	Population	Pilots per Capita
1999	629,536	96,459	263,877	119,098	134,470	15,632	80,989	272,690,813	0.0010
2000	596,189	87,969	245,219	112,797	134,688	15,516	78,623	282,162,411	0.0009
2001	533,447	75,789	210,532	105,339	128,583	13,204	72,470	284,968,955	0.0007
2002	605,407	73,017	217,559	115,695	125,925	307	72,464	287,625,193	0.0008
2003	600,575	83,567	250,150	127,389	139,157	312	85,865	290,107,933	0.0009
2004	595,234	84,324	245,608	126,761	138,247	294	87,698	292,805,298	0.0008
2005	586,304	83,577	238,736	125,437	138,139	415	88,723	295,516,599	0.0008
2006	572,923	80,934	229,763	122,849	138,197	1,180	89,452	298,379,912	0.0008
2007	572,923	80,934	229,763	122,849	138,197	1,180	89,452	301,231,207	0.0008
2008	578,541	75,382	231,322	126,893	142,070	2,874	91,155	304,093,966	0.0008
2009	556,274	67,079	220,274	125,609	139,834	3,478	92,591	306,771,529	0.0007
2010	584,437	110,025	210,728	122,298	137,502	3,884	94,119	309,349,689	0.0007
2011	572,029	108,614	202,572	118,667	137,899	4,277	95,002	311,587,816	0.0007
2012	564,169	109,091	195,522	114,020	140,843	4,693	95,888	313,914,040	0.0006
2013	552,656	109,176	187,117	106,236	145,084	5,043	96,348	316,128,839	0.0006

1/ Includes helicopter, glider, and recreational.

2/ Not included in total.

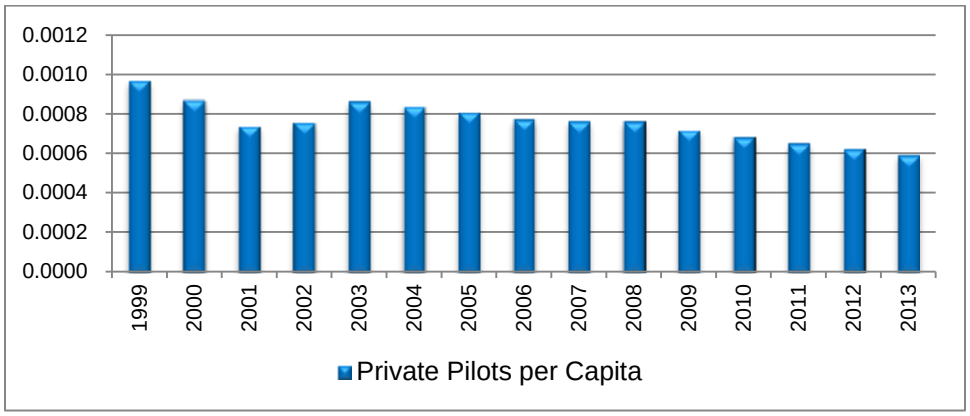


Figure 5-6: Private Pilots per Capita, United States

Table 5-22: Estimated Active Pilots and Flight Instructors, FAA Northwest Mountain Region

Year	Total Pilots	Students	Private Airplane	Commercial Airplane	Airline Transport	Misc. 1/	Flight Instructor 2/	Population	Pilots per Capita
1999	65,219	9,560	27,192	12,261	14,425	1,781	8,040	18,330,966	0.0015
2000	65,093	9,395	26,843	12,248	14,769	1,838	8,259	18,609,146	0.0014
2001	64,431	9,039	26,261	12,373	15,030	1,728	8,717	18,884,641	0.0014
2002	67,102	8,862	28,449	14,610	15,166	15	9,179	19,133,050	0.0015
2003	66,886	8,979	28,248	14,566	15,075	18	9,443	19,326,823	0.0015
2004	66,619	9,017	27,862	14,688	15,036	16	9,860	19,555,618	0.0014
2005	66,081	8,928	27,024	14,818	15,283	28	10,183	19,842,614	0.0014
2006	65,292	8,900	26,018	14,698	15,583	93	10,469	20,231,594	0.0013
2007	65,292	8,900	26,018	14,698	15,583	93	10,469	20,590,305	0.0013
2008	67,129	8,399	26,990	15,393	16,068	279	10,949	20,940,516	0.0013
2009	64,620	7,266	25,705	15,414	15,901	334	11,260	21,269,914	0.0012
2010	67,854	12,117	24,701	14,971	15,688	377	11,462	21,535,801	0.0011
2011	66,230	11,959	23,624	14,548	15,675	424	11,572	21,770,912	0.0011
2012	64,854	11,628	22,574	13,839	16,353	460	11,733	22,016,515	0.0010
2013	63,405	11,518	21,656	12,677	17,049	505	11,789	22,280,669	0.0010

1/ Includes helicopter, glider, and recreational.

2/ Not included in total.

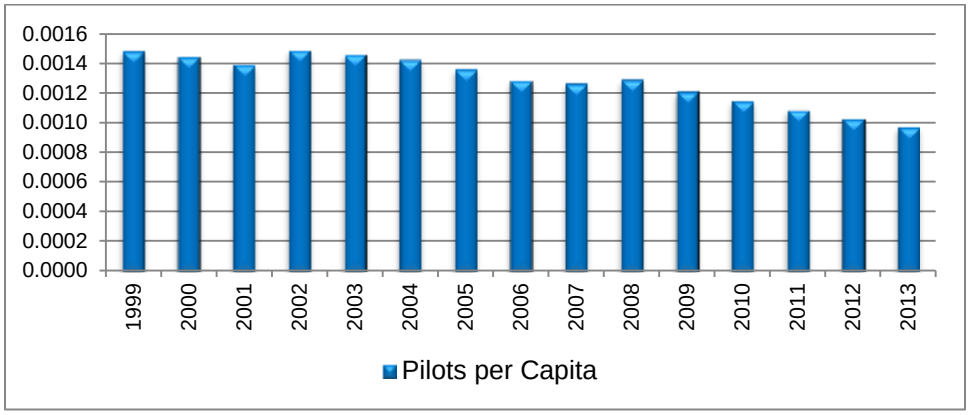


Figure 5-7: Private Pilots per Capita, FAA Northwest Mountain Region

Table 5-23: Estimated Active Pilots and Flight Instructors, Montana

Year	Total Pilots	Students	Private Airplane	Commercial Airplane	Airline Transport	Misc. 1/	Flight Instructor 2/	Population	Pilots per Capita
1999	3,628	463	1,743	886	464	72	438	897,507	0.0019
2000	3,613	481	1,718	878	469	67	431	903,773	0.0019
2001	3,571	463	1,672	893	476	67	451	906,961	0.0018
2002	3,722	497	1,757	983	483	2	477	911,667	0.0019
2003	3,808	534	1,788	991	493	2	494	919,630	0.0019
2004	3,855	557	1,800	995	502	1	518	930,009	0.0019
2005	3,902	560	1,776	1,024	539	3	542	940,102	0.0019
2006	3,885	517	1,751	1,035	574	8	576	952,692	0.0018
2007	3,885	517	1,751	1,035	574	8	576	964,706	0.0018
2008	4,001	540	1,819	1,034	589	19	602	976,415	0.0019
2009	3,885	482	1,750	1,033	601	19	627	983,982	0.0018
2010	4,102	758	1,722	1,007	596	19	661	990,898	0.0017
2011	3,974	739	1,634	982	596	23	651	997,667	0.0016
2012	3,925	743	1,579	957	622	24	647	1,005,141	0.0016
2013	3,822	704	1,520	938	633	27	657	1,015,165	0.0015

1/ Includes helicopter, glider, and recreational.

2/ Not included in total.

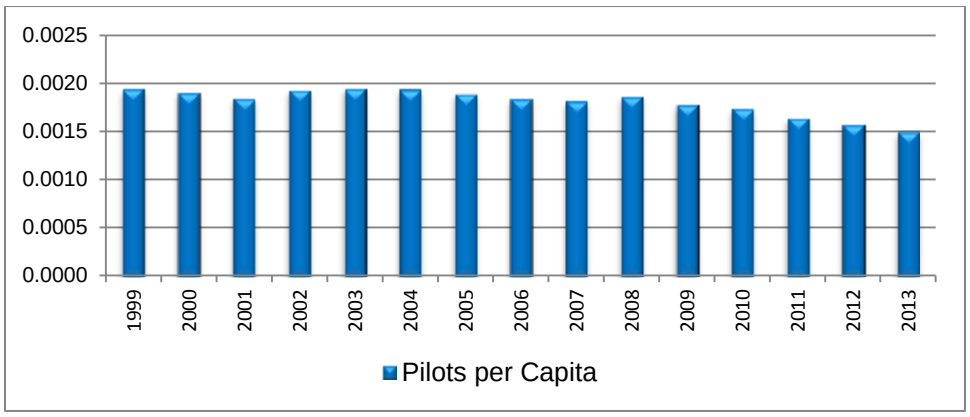


Figure 5-8: Private Pilots per Capita, Montana

6 CHAPTER SIX: SYSTEM FORECASTING

6.1 Introduction

The development of aviation activity projections for the airports included in Montana's aviation system is a key step in assessing the need for and phasing of future development requirements. Projections are useful to evaluate the future capacity of the system as well as to plan for future airside and landside facilities. For this analysis, projections were developed for a 20-year period; 2013 served as the base year since this was the most recent period for which a complete calendar year of historic data was available.

The assumptions and methodologies used to prepare aviation demand projections for the airports included in the Montana State Aviation System Plan (SASP) are discussed in the following sections:

- General Approach to Forecasting
- Commercial Service Activity and Projections
  - Annual Passenger Enplanements
  - Annual Airline Operations
  - Annual Air Cargo Tonnage
- General Aviation Activity and Projections
  - Based Aircraft Projections
  - General Aviation Operations Projections
  - Operational Fleet Mix
- General Aviation Based Aircraft and Operations Scenario Projections
  - Scenario One
  - Scenario Two
- Forecast Implications to Aviation Activity in Montana
- Summary

6.2 General Approach to Forecasting

The general approach used to develop aviation forecasts for Montana's airport system was to identify relationships between Montana airport activity levels, U.S. aviation activity metrics prepared by the FAA, and Montana-specific population trends. Recent trends in demand, experienced on a statewide basis and at individual system airports, were also considered. Current and historic airport-specific data presented in this chapter were derived from FAA sources such as 5010 Forms and the Terminal Area Forecast (TAF), previous studies, airport sponsors, and the Montana Department of Transportation (MDT).

Projections presented in this chapter are segregated into commercial service and general aviation activity. While the primary intent of the Montana SASP is to target general aviation airports and their activity, an overview of projected commercial service activity is provided in this chapter for context. Commercial service activity projections focus on enplanements (airline passengers departing at an airport) and airline operations (arrivals and departures). General aviation activity at commercial service and essential air service (EAS) airports is included in the analysis.

6.3 Commercial Service Activity and Projections

Commercial service activity projections were developed for passenger enplanements, annual operations, and air cargo tonnages. Calendar year 2013 was used as the base year for these projections, with the most recent FAA TAF average annual growth rate used as both a reference and a projection tool for individual airports. Population growth rates were additionally applied to forecasts to provide a multi-sourced projection estimate.

Montana's commercial airports, as defined in Chapter 2, are divided in this chapter into the following two categories:

Commercial Service Airports (7)	**Essential Air Service (6)**
Bert Mooney (BTM)	Dawson Community (GDV)
Billings Logan International (BIL)	Havre City-County (HVR)
Bozeman Yellowstone International (BZN)	L M Clayton (OLF)
Glacier Park International (GPI)	Sidney-Richland Municipal (SDY)
Great Falls International (GTF)	Wokal Field / Glasgow International (GGW)
Helena Regional (HLN)	Yellowstone (WYS)
Missoula International (MSO)	

6.3.1 Annual Passenger Enplanements

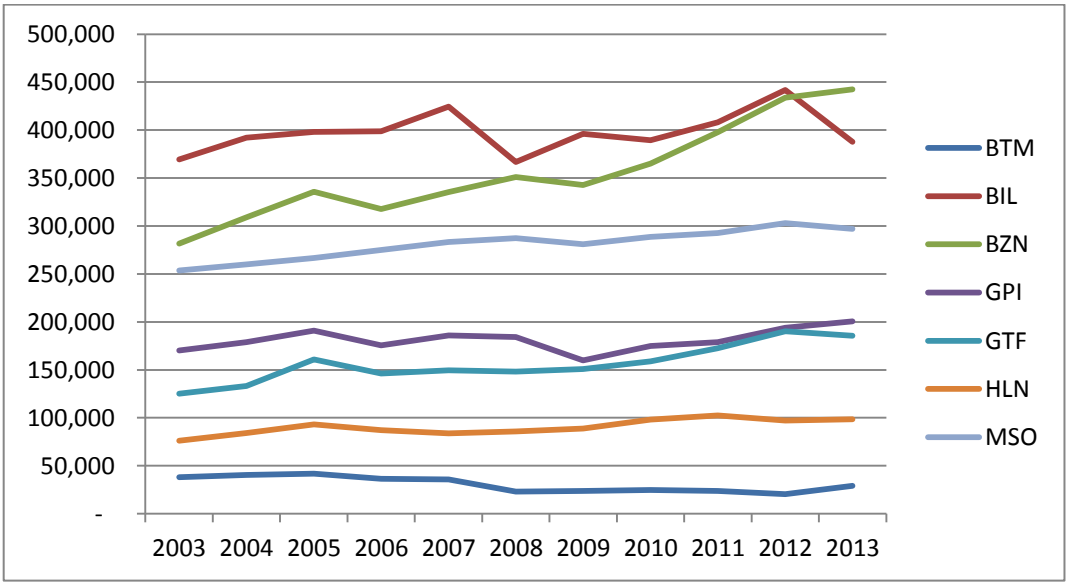
Passenger enplanement projections were developed by using three forecast methodologies. The passenger enplanements projections for Montana's 13 commercial and EAS airports are discussed in the following section.

As shown in **.**, total statewide commercial service and EAS passenger enplanements based on MDT data increased from 1,325,048 in 2003 to 1,661,814 in 2013, representing an average annual growth rate of 2.29 percent. Although this represents an overall increase, statewide passenger enplanements have declined three times in this period, the most significantly during the economic recession of 2008/2009, which had negative impacts on enplanement levels at nearly all Montana's airports. For comparison, according to TAF data, total U.S. passenger enplanements grew by a lower average annual growth rate of 1.31 percent over the same period. Historic commercial service airport growth in Montana is shown in **Figure 6-1** and historic EAS airport growth in the state is shown in **Figure 6-2**.

Table 6-1: Total Montana Statewide Passenger Enplanements 2003 – 2013

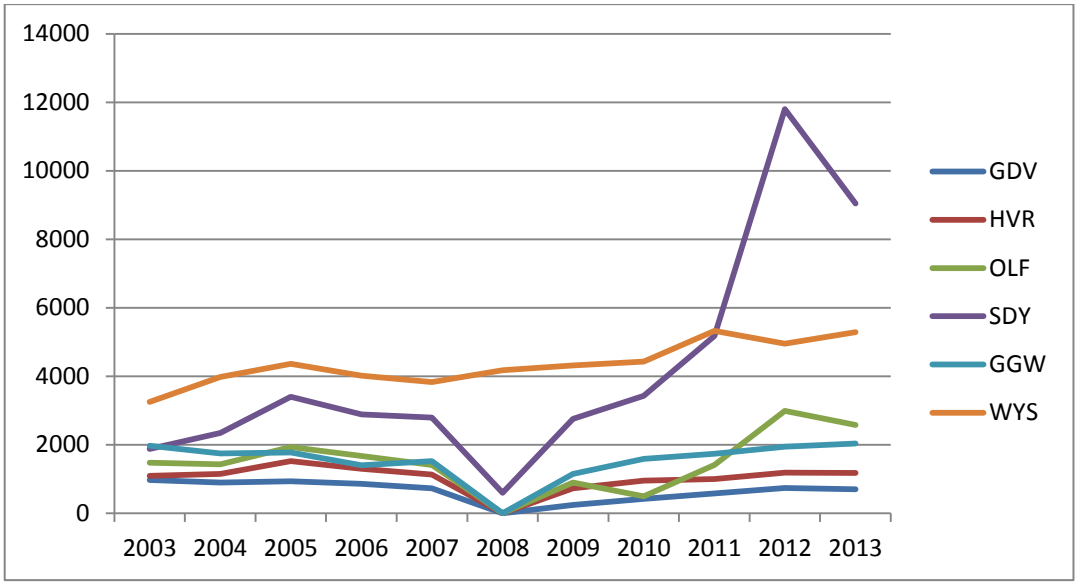
Historic	Enplanements	% Growth
2003	1,325,048	
2004	1,409,369	6.36%
2005	1,501,166	6.51%
2006	1,449,442	-3.45%
2007	1,509,652	4.15%
2008	1,450,979	-3.89%
2009	1,453,379	0.17%
2010	1,511,326	3.99%
2011	1,591,068	5.28%
2012	1,703,939	7.09%
2013	1,661,814	-2.47%
AAGR 2003-2013		**2.29%**

Source: MDT, CDM Smith



Source: MDT, CDM Smith

Figure 6-1: Historic Commercial Service Airport Passenger Enplanement Data 2003 – 2013



Source: MDT, CDM Smith

Figure 6-2: Historic Essential Air Service Airport Passenger Enplanement Data 2003 – 2013

Total Statewide Passenger Enplanement Projections

A summary of each airport's historic passenger enplanements is shown in **Table 6-2.** The historic totals and average annual growth rates depicted in Table 6-2 represent MDT's passenger enplanement data from 2003 to 2013. To develop enplanements projections for the commercial service and EAS airports in Montana, TAF airport-specific projected growth rates for 2013 to 2033 were used. These growth rates were then applied to base year (2013) MDT enplanements.

According to MDT and projections by CDM Smith, Montana enplanements are projected to increase from 1,661,814 in 2013 to 2,458,415 in 2033 (**Table 6-3**). This growth in enplanements represents an overall statewide average annual growth rate of 1.98 percent. This rate is slightly higher than national projections of domestic enplanement activity, which project total U.S. passenger enplanements to increase at a lower average annual growth rate of 1.87 percent from 2013 to 2033.[76]

Two alternative methodologies were compiled to forecast statewide enplanements. **Table 6-4** outlines a top-down approach by applying the U.S. Census Bureau's 2010 to 2013 historic Montana population growth rate of 2.6 percent. **Table 6-5** utilizes a bottom-up approach by applying the average annual growth rate for each region and its corresponding airport. **Table 6-6** compares these three methodologies.

[76] CDM Smith: Based on data on FAA Aerospace Forecast, Fiscal Years 2014 – 2034, pg. 96.

Table 6-2:
Historic Passenger Enplanements by Airport and Average Annual Growth Rates

Historic	ID	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	AAGR 2003-2013
Commercial Service													
Bert Mooney	BTM	37,996	40,319	41,853	36,490	35,719	22,956	23,922	24,722	23,719	20,471	28,956	-2.68%
Billings Logan Intl.	BIL	369,473	392,091	398,037	398,747	424,562	366,623	396,149	389,401	407,960	441,762	387,629	0.48%
Bozeman Yellowstone Intl.	BZN	281,502	308,985	335,679	317,850	335,274	351,062	342,714	365,210	397,822	433,829	442,540	4.63%
Glacier Park Intl.	GPI	170,307	178,832	190,964	175,699	185,775	184,106	159,758	174,795	179,034	194,030	200,729	1.66%
Great Falls Intl.	GTF	125,160	133,246	160,878	146,172	149,687	148,299	150,985	158,934	172,415	190,189	185,724	4.03%
Helena Regional	HLN	76,200	84,303	93,218	87,208	83,723	85,862	88,867	98,130	102,358	97,026	98,379	2.59%
Missoula Intl.	MSO	253,761	260,039	266,597	275,125	283,478	287,295	280,884	288,807	292,530	303,016	297,025	1.59%
Essential Air Service													
Dawson Community	GDV	970	898	934	863	733	0	243	423	582	742	702	-3.18%
Havre City-County	HVR	1,097	1,147	1,526	1,305	1,133	0	729	954	1,001	1,186	1,177	0.71%
LM Clayton	OLF	1,480	1,427	1,939	1,671	1,412	0	900	494	1,411	2,987	2,578	5.71%
Sidney-Richland Municipal	SDY	1,880	2,344	3,401	2,892	2,799	598	2,762	3,429	5,174	11,799	9,046	17.01%
Wokal Field/Glasgow Intl.	GGW	1,972	1,753	1,774	1,400	1,528	0	1,148	1,594	1,739	1,945	2,039	0.33%
Yellowstone	WYS	3,250	3,985	4,366	4,020	3,829	4,178	4,318	4,433	5,323	4,957	5,290	4.99%
STATEWIDE TOTAL		**1,325,048**	**1,409,369**	**1,501,166**	**1,449,442**	**1,509,652**	**1,450,979**	**1,453,379**	**1,511,326**	**1,591,068**	**1,703,939**	**1,661,814**	**2.29%**

Source: MDT

Table 6-3: Projected Passenger Enplanements in Montana Utilizing FAA TAF Growth Rates

Airport Name	ID	2013	2018	2023	2033	TAF AAGR 2013 - 2033
Commercial Service						
Bert Mooney	BTM	28,956	32,270	35,963	44,666	2.19%
Billings Logan Intl.	BIL	387,629	412,742	439,482	498,272	1.26%
Bozeman Yellowstone Intl.	BZN	442,540	483,453	528,148	630,318	1.78%
Glacier Park Intl.	GPI	200,729	216,904	234,382	273,678	1.56%
Great Falls Intl.	GTF	185,724	206,161	228,846	281,981	2.11%
Helena Regional	HLN	98,379	112,329	128,258	167,211	2.69%
Missoula Intl.	MSO	297,025	344,811	400,286	539,445	3.03%
Essential Air Service						
Dawson Community	GDV	702	702	702	702	0.00%
Havre City-County	HVR	1,177	1,223	1,271	1,373	0.77%
LM Clayton	OLF	2,578	2,578	2,578	2,578	0.00%
Sidney-Richland Municipal	SDY	9,046	9,046	9,046	9,046	0.00%
Wokal Field/Glasgow Intl.	GGW	2,039	2,089	2,140	2,247	0.49%
Yellowstone	WYS	5,290	5,653	6,042	6,900	1.34%
STATEWIDE TOTAL*		**1,661,814**	**1,829,962**	**2,017,145**	**2,458,415**	**1.98%**

Source: MDT, FAA Terminal Area Forecast, CDM Smith. *May not sum due to rounding

Table 6-4: Enplanement Projection Based on Projected State Population Growth Rate Top-Down Methodology

Airport Name	ID	Montana Population Growth Rate 2010-2013	2013	2018	2023	2033
Commercial Service						
Bert Mooney	BTM	2.6%	28,956	32,921	37,429	48,382
Billings Logan Intl.	BIL	2.6%	387,629	440,710	501,060	647,684
Bozeman Yellowstone Intl.	BZN	2.6%	442,540	503,141	572,040	739,435
Glacier Park Intl.	GPI	2.6%	200,729	228,216	259,468	335,396
Great Falls Intl.	GTF	2.6%	185,724	211,157	240,072	310,324
Helena Regional	HLN	2.6%	98,379	111,851	127,167	164,380
Missoula Intl.	MSO	2.6%	297,025	337,699	383,943	496,295
Essential Air Service						
Dawson Community	GDV	2.6%	702	798	907	1,173
Havre City-County	HVR	2.6%	1,177	1,338	1,521	1,967
LM Clayton	OLF	2.6%	2,578	2,931	3,332	4,308
Sidney-Richland Municipal	SDY	2.6%	9,046	10,285	11,693	15,115
Wokal Field/Glasgow Intl.	GGW	2.6%	2,039	2,318	2,636	3,407
Yellowstone	WYS	2.6%	5,290	6,014	6,838	8,839
STATEWIDE TOTAL*		**2.6%**	**1,661,814**	**1,889,380**	**2,148,108**	**2,776,704**

Source: MDT, FAA Terminal Area Forecast, U.S. Census Bureau, CDM Smith. *May not sum due to rounding

It is noteworthy to point out that several of the fastest growing commercial service airports, in terms of enplanements, act as gateways to Montana's national parks. According to the Montana Office of Tourism, there were 11 million visitors to Montana in 2013. This industry is expected to be a significant driver of Montana's economy, with Montana tourists expected to increase at an average of 2 percent per year.[77] Bozeman Yellowstone International Airport's proximity to Montana's outdoor recreation activities, such as Yellowstone National Park, helps to make it the fastest growing commercial service airport in the state. The second and third fastest growing airports outlined in Table 6-2 are also considered to be located in tourist regions of Montana. Located on the west entrance of Yellowstone National Park, Yellowstone Airport, an EAS airport, provides the closet airline access to one of the most popular national parks in the county. In the northwest corner of the state, Glacier Park International Airport provides access to the western side of Glacier National Park while Great Falls International Airport acts as the eastern gateway to the park.

Table 6-5: Enplanement Projection Based on Historic Regional Population Growth Rate Bottom-Up Methodology

Airport Name	ID	Region	Regional Population AAGR 2013-2033	2013	2018	2023	2033
Commercial Service							
Bert Mooney	BTM	4	0.27%	28,956	29,349	29,747	30,560
Billings Logan Intl.	BIL	8	0.53%	387,629	398,011	408,670	430,854
Bozeman Yellowstone Intl.	BZN	5	0.95%	442,540	463,964	486,425	534,662
Glacier Park Intl.	GPI	1	0.82%	200,729	209,095	217,810	236,344
Great Falls Intl.	GTF	6	0.52%	185,724	190,603	195,611	206,024
Helena Regional	HLN	3	0.61%	98,379	101,416	104,548	111,103
Missoula Intl.	MSO	2	0.67%	297,025	307,110	317,537	339,465
Essential Air Service							
Dawson Community	GDV	12	0.79%	702	730	759	822
Havre City-County	HVR	7	0.45%	1,177	1,204	1,231	1,288
LM Clayton	OLF	11	0.62%	2,578	2,659	2,742	2,917
Sidney-Richland Municipal	SDY	11	0.62%	9,046	9,330	9,623	10,236
Wokal Field/Glasgow Intl.	GGW	9	0.18%	2,039	2,057	2,076	2,114
Yellowstone	WYS	5	0.95%	5,290	5,546	5,815	6,391
STATEWIDE TOTAL*			**0.71%**	**1,661,814**	**1,721,074**	**1,782,593**	**1,912,778**

Source: FAA Terminal Area Forecast, Montana Department of Commerce - REMI, CDM Smith. *May not sum due to rounding

[77] Institute for Tourism Recreation and Research. University of Montana. Nonresident Visitation, 1993 – 2013.

Table 6-6: Comparison Summary of Passenger Enplanement Projection Methodologies

Projection Type	2013	2018	2023	2033	AAGR 2013-2033
Enplanements Top-Down	1,661,814	1,889,380	2,148,108	2,776,704	2.6%
Enplanements Bottom-Up	1,661,814	1,721,074	1,782,593	1,912,778	0.71%
Enplanements TAF AAGR Forecast	1,661,814	1,829,962	2,017,145	2,458,415	1.98%

Source: FAA Terminal Area Forecast, MDT, Montana Department of Commerce - REMI, U.S. Census Bureau, CDM Smith

Annual Airline Operations

Commercial airline operations refer to those aircraft takeoffs and landings performed by scheduled airlines, including major, national, regional, and commuter carriers. Each of the six smallest airports in Montana is supported through the U.S. Department of Transportation's (US DOT) EAS program. Two carriers, Cape Air and SkyWest, provide EAS service in Montana. These carriers currently receive over $13.2 million combined in EAS subsidies to provide service to the seven communities annually. The EAS program and its effects on Montana's communities are discussed in detail in Chapter 5.

There are several air carriers that serve Montana's airports. Seven of the State's 13 airports are served by one regional carrier only; six of those communities are those with EAS-supported service with either Cape Air or Delta SkyWest. Billings, Bozeman, Great Falls, and Missoula are served by five carriers each.

Table 6-7 identifies the 13 commercial and EAS airports in Montana and their historic annual airline operations based on FAA TAF data. Bozeman Yellowstone International, Bert Mooney, Wokal Field/Glasgow International, and LM Clayton were the only airports that experienced gains in airline aircraft operations. **Table 6-8** identifies projected annual commercial airline aircraft operations based on FAA TAF forecasts; however, EAS airports are excluded because they remain constant in the TAF for the planning period. Statewide airline aircraft operations have decreased historically from 188,127 operations in 2003 to 120,429 operations in 2013, representing an average annual growth rate of -4.36 percent during the time period. The same TAF forecasts for commercial airports during the planning period projects an overall statewide average annual growth rate of 0.99 percent for airline operations. It is important to point out that fewer operations do not necessarily translate into less aircraft capacity. For example, an airline may change from operating a 50-seat aircraft four times a day to a 90-seat aircraft operating three times per day, thereby gaining 70 seats with one less operation.

Along with TAF projections, two alternative methodologies were compiled to forecast statewide enplanements. **Table 6-9** implements a top-down approach by applying the projected Montana population growth rate of 2.6 percent for the planning period. **Table 6-10** uses a bottom-up approach by applying the average annual growth rate based on regional population growth rates that correspond with individual airports. **Table 6-11** compares these three methodologies and depicts a wide range of growth rate possibilities and outcomes. Out of the three methodologies, the bottom-up and TAF forecast provide similar growth rates at 0.64 percent and 0.99 percent, respectively. It is noteworthy to point out that the FAA TAF forecasts held EAS airports at no growth over the planning periods, and were subsequently not included in the Table 6-8.

Table 6-7:
Historic TAF Airline Operations by Airport

Historic	ID	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	AAGR 2003-2013
Commercial Service													
Bert Mooney	BTM	10,705	10,803	9,882	8,508	8,658	8,658	8,658	8,758	8,758	2,809	2,809	-12.52%
Billings Logan Intl.	BIL	52,400	50,033	51,302	50,092	47,634	42,444	37,168	35,676	34,680	36,795	33,673	-4.33%
Bozeman Yellowstone Intl.	BZN	15,208	16,749	18,381	18,299	18,464	18,514	16,787	17,622	17,695	17,656	18,017	1.71%
Glacier Park Intl.	GPI	15,914	16,109	19,250	15,049	16,459	11,068	9,116	8,868	8,836	8,685	8,409	-6.18%
Great Falls Intl.	GTF	23,108	23,214	22,523	21,742	18,103	16,792	17,049	15,393	15,385	15,395	15,143	-4.14%
Helena Regional	HLN	16,045	16,011	15,792	13,979	12,653	9,584	9,095	8,146	7,755	8,211	6,687	-8.38%
Missoula Intl.	MSO	35,489	36,588	37,031	34,208	32,567	24,749	23,014	22,193	22,107	22,835	21,104	-5.06%
Essential Air Service													
Dawson Community	GDV	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600	0.00%
Havre City-County	HVR	2,140	2,140	2,140	350	350	350	1,144	1,144	1,144	1,144	2,392	1.12%
LM Clayton	OLF	2,910	2,910	2,910	2,910	2,910	2,910	3,160	2,805	2,805	2,805	2,805	-0.37%
Sidney-Richland Municipal	SDY	3,850	3,850	4,250	4,250	4,250	4,250	4,250	4,250	2,800	2,800	2,800	-3.13%
Wokal Field/Glasgow Intl.	GGW	7,398	7,398	7,398	7,398	10,500	10,500	10,500	10,500	10,500	10,500	3,460	-7.32%
Yellowstone	WYS	360	360	544	520	114	114	270	516	530	530	530	3.94%
STATWIDE TOTAL		**188,127**	**188,765**	**194,003**	**179,905**	**175,262**	**152,533**	**142,811**	**138,471**	**135,595**	**132,765**	**120,429**	**-4.36%**

Source: FAA Terminal Area Forecast, CDM Smith

Table 6-8: Projected Statewide Airline Operations in Montana Based on FAA TAF Growth Rates

Airport Name	ID	2013	2018	2023	2033	AAGR 2013 - 2033
Commercial Service						
Bert Mooney	BTM	2,809	2,904	3,002	3,213	0.67%
Billings Logan Intl.	BIL	33,673	40,213	40,516	44,820	1.44%
Bozeman Yellowstone Intl.	BZN	18,017	20,758	22,916	25,982	1.85%
Glacier Park Intl.	GPI	8,409	9,328	9,808	10,877	1.30%
Great Falls Intl.	GTF	15,143	16,034	17,113	19,611	1.30%
Helena Regional	HLN	6,687	6,604	6,964	7,762	0.75%
Missoula Intl.	MSO	21,104	14,320	15,881	19,671	-0.35%
All EAS Airports		*14,587*	*14,587*	*14,587*	*14,587*	*0.00%*
STATEWIDE TOTAL		**120,429**	**124,748**	**130,787**	**146,523**	**0.99%**

Source: FAA Terminal Area Forecast, CDM Smith. *May not sum due to rounding

Table 6-9: Airline Operations Projection Based on Historic State Population Growth Rate Top-Down Methodology

Airport Name	ID	Montana Growth Rate 2010 - 2013	2013	2018	2023	2033
Commercial Service						
Bert Mooney	BTM	2.6%	2,809	3,194	3,631	4,694
Billings Logan Intl.	BIL	2.6%	33,673	38,284	43,527	56,264
Bozeman Yellowstone Intl.	BZN	2.6%	18,017	20,484	23,289	30,104
Glacier Park Intl.	GPI	2.6%	8,409	9,561	10,870	14,050
Great Falls Intl.	GTF	2.6%	15,143	17,217	19,574	25,302
Helena Regional	HLN	2.6%	6,687	7,603	8,644	11,173
Missoula Intl.	MSO	2.6%	21,104	23,994	27,280	35,262
Essential Air Service						
Dawson Community	GDV	2.6%	2,600	2,956	3,361	4,344
Havre City-County	HVR	2.6%	2,392	2,720	3,092	3,997
LM Clayton	OLF	2.6%	2,805	3,189	3,626	4,687
Sidney-Richland Municipal	SDY	2.6%	2,800	3,183	3,619	4,678
Wokal Field/Glasgow Intl.	GGW	2.6%	3,460	3,934	4,472	5,781
Yellowstone	WYS	2.6%	530	603	685	886
STATEWIDE TOTAL		**2.6%**	**120,429**	**136,920**	**155,670**	**201,223**

Source: FAA Terminal Area Forecast, U.S. Census Bureau, CDM Smith. *May not sum due to rounding

Table 6-10: Airline Operations Projection Based on Projected Regional Population Growth Rate

Bottom-Up Methodology

Airport Name	ID	Region	Regional Population AAGR 2013-2033	2013	2018	2023	2033
Commercial Service							
Bert Mooney	BTM	4	0.27%	2,809	2,847	2,886	2,965
Billings Logan Intl.	BIL	8	0.53%	33,673	34,575	35,501	37,428
Bozeman Yellowstone Intl.	BZN	5	0.95%	18,017	18,889	19,804	21,768
Glacier Park Intl.	GPI	1	0.82%	8,409	8,759	9,125	9,901
Great Falls Intl.	GTF	6	0.52%	15,143	15,541	15,949	16,798
Helena Regional	HLN	3	0.61%	6,687	6,893	7,106	7,552
Missoula Intl.	MSO	2	0.67%	21,104	21,821	22,561	24,119
Essential Air Service							
Dawson Community	GDV	12	0.79%	2,600	2,704	2,813	3,043
Havre City-County	HVR	7	0.45%	2,392	2,446	2,502	2,617
LM Clayton	OLF	11	0.62%	2,805	2,893	2,984	3,174
Sidney-Richland Municipal	SDY	11	0.62%	2,800	2,888	2,979	3,168
Wokal Field/Glasgow Intl.	GGW	9	0.18%	3,460	3,491	3,523	3,587
Yellowstone	WYS	5	0.95%	530	556	583	640
STATEWIDE TOTAL			**0.64%**	**120,429**	**124,304**	**128,314**	**136,760**

Source: FAA Terminal Area Forecast, Montana Department of Commerce - REMI, CDM Smith
*May not sum due to rounding

Table 6-11: Comparison Summary of Airline Operations Projections

Projection Type	2013	2018	2023	2033	AAGR 2013-2033
Airline Operations Top-Down	120,429	136,920	155,670	201,223	2.60%
Airline Operations Bottom-Up	120,429	124,304	128,314	136,760	0.64%
Airline Operations TAF Forecast	120,429	124,748	130,787	146,523	0.99%

Source: CDM Smith

6.4 Annual Air Cargo Tonnage

Historic air cargo tonnages are displayed in **Table 6-12**. Annual air cargo tonnage for Montana airports with scheduled cargo service is based on forecast growth rates found in the Boeing Annual World Air Cargo Forecast. These forecasted growth rates and activity levels are presented by intra-region and region-to-region criteria. Boeing forecasts that worldwide air cargo traffic will grow at an average annual rate of 4.7 percent over the next two decades. However, not all regions will grow at the same rate. According to Boeing, the North American domestic air cargo market will grow at a lower rate of 2.1 percent annually over the twenty years from 2013 to 2033. This rate was applied to each Montana airport's base year and extended through the end of the planning period. When utilizing this rate, total air cargo tonnage in

Montana approaches the average peak year activity found between 2003 and 2007. The projected tonnages for each airport with air cargo in 2013 are presented below in **Table 6-13.**

Table 6-12: Historic Air Cargo Tonnages

Airport Name	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	AAGR 2003-2012*
Commercial Service												
Bert Mooney	241	44	20	96	76	36	2	1	1	0	0	-100%
Billings Logan Intl.	37,293	48,490	44,439	40,153	43,562	38,008	33,834	37,007	36,475	35,199	29,654	-0.64%
Bozeman Yellowstone	1,096	1,101	1,182	1,132	1,128	1,113	952	1037	1018	1000	871	-1.01%
Glacier Park	910	858	868	803	879	1,670	796	766	739	588	487	-4.74%
Great Falls	31,112	29,678	29,688	20187	19,725	20354	17,051	17,424	17,263	16,868	15,794	-6.58%
Helena Regional	622	1,306	270	197	127	109	109	108	59	47	39	-24.95%
Missoula	1,460	1,338	1,734	2,474	2,293	2,141	2,078	2,170	2,138	1,979	1,614	3.44%
Essential Air Service												
Dawson Community	2	1	1	1	0	0	1	3	0	0	0	-100%
Havre City-County	1	1	1	0	0	0	0	0	0	0	0	-100%
LM Clayton	179	192	186	177	188	180	199	136	210	159	144	-1.31%
Sidney-Richland	2	1	3	3	0	0	1	89	13	5	2	10.72%
Wokal Field/Glasgow	5	4	1	3	1	4	4	7	7	3	2	-5.52%
Yellowstone	0	0	0	0	0	0	0	0	0	0	0	0.00%
STATEWIDE TOTAL	**72,923**	**83,014**	**78,393**	**65,226**	**67,979**	**63,615**	**55,027**	**58,748**	**57,923**	**55,848**	**48,607**	**-2.92%**

Source: RITA-BTS U.S. DOT T-100 Data
*Latest Available Data: October 2013

Table 6-13:
Projected Air Cargo Tonnages Based on Boeing Forecast

Airport Name	ID	North American Domestic Boeing Forecast Rate	Base Year Tonnage 2013	Projected Tonnage 2018	2023	2033
Billings Logan Intl.	BIL	2.1%	29,654	32,901	36,504	44,936
Bozeman Yellowstone Intl.	BZN	2.1%	871	966	1,072	1,320
Glacier Park Intl.	GPI	2.1%	487	540	599	738
Great Falls Intl.	GTF	2.1%	15,794	17,523	19,442	23,934
Helena Regional	HLN	2.1%	39	43	48	59
Missoula Intl.	MSO	2.1%	1,614	1,791	1,987	2,446
LM Clayton	OLF	2.1%	144	160	177	218
Sidney-Richland Municipal	SDY	2.1%	2	2	2	3
Wokal Field/Glasgow Intl.	GGW	2.1%	2	2	2	3
STATEWIDE TOTAL*		**2.1%**	**48,607**	**53,930**	**59,835**	**73,657**

Source: North American Domestic Boeing Forecasts, CDM Smith. *May not sum due to rounding

6.5 General Aviation Activity and Projections

General aviation activity represents all facets of civil aviation, except scheduled activity by certificated air carriers and military aviation. Projections of based aircraft and general aviation operations were prepared for the system airports in the State of Montana. These terms are defined as follows:

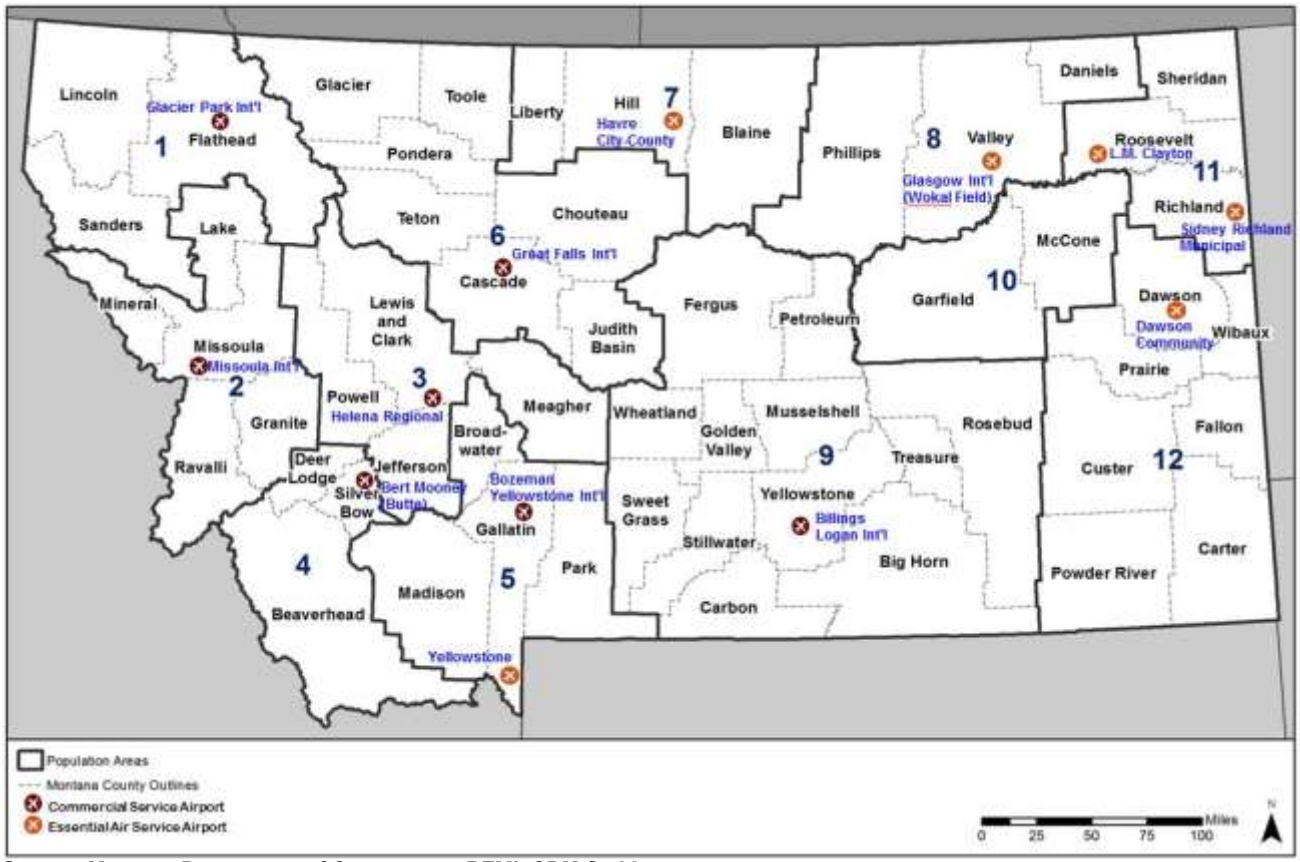
Based Aircraft – The total number of general aviation aircraft that are stored in either hangars or tie-downs at an airport.

Total Aircraft Operations – An operation is defined as a landing or a takeoff; both a landing and a takeoff, such as a touch-and-go, account for two operations.

It is important to note that general aviation activity occurs at all of the airports in Montana's system. Therefore, projections of these two activity indicators were prepared for all 126 Montana system airports.

General aviation activity, measured in terms of total annual aircraft operations (takeoffs and landings), is often related to the number of aircraft based at a particular airport. Therefore, preparation of based aircraft projections is an important element in the Montana SASP. For this plan, based aircraft were projected using two methodologies: top-down and bottom-up. The top-down methodology examined the projected growth rate of the national Total General Aviation Fleet as presented in the FAA Aerospace Forecast, Fiscal Years 2014-2034. The growth rate was applied to each airport through the end of the 20-year planning period. The bottom-up methodology uses each airport's associated regional and county population projection from the Montana Department of Commerce which utilizes Regional Economic Models, Inc. (REMI) data. These regions are shown in **Figure 6-3**. Each region is defined by county boundaries and was chosen to correlate with individual airports and their accessibility, areas of population growth, and regions with significant economic drivers.

Top-down and bottom-up methodologies were also used to develop projections of general aviation aircraft operations for Montana airports. The top-down methodology applies the growth rate of the FAA's national general aviation hours flown projection to each Montana airport's base-year general aviation operations and extends it through the end of the planning period. This methodology assumes that general aviation operations are directly correlated to the number of hours flown and that if the average hours flown per operation remains constant, operations must increase if hours flown are projected to increase. The bottom-up methodology projects general aviation operations by applying the regional population projection for each airport.



Source: Montana Department of Commerce – REMI, CDM Smith

Figure 6-3: Montana Regions

6.5.1 Based Aircraft Projections

Three forecast methodologies were used to project based aircraft for each system airport:

- The first methodology was a bottom-up approach. This approach used regional population growth trends associated with each airport's region to forecast future based aircraft.
- The second methodology was a top-down methodology, which projects based aircraft by applying the national average annual growth rate of active aircraft found in the FAA Aerospace Forecast, Fiscal Years 2014-2034. These rates are applied to each airport's current based aircraft count through the end of the planning period.
- The third methodology was a second top-down approach that utilizes data from the 1998 Montana State Aviation System Plan.

Each of these forecasts and the preferred based aircraft projections are discussed in the following sections. FAA TAF forecasts for based aircraft indicated no growth; therefore, it was decided to not utilize that projection.

6.5.1.1 Bottom-Up Methodology

In the bottom-up growth rate methodology, the projected population growth from 2013 to 2033 at each system airport's associated county was first calculated using available census data. Due to the wide ranges of projected change, counties and their associated airports were grouped into 12 regions to project future based aircraft. The proportional increase was determined by the projected population growth of each airport's associated county. Each county's regional percentage was determined through Montana Department of Commerce county population data for the projected time period. This type of projection is referred to as a bottom-up methodology as it looks at activity from the airport-specific level and then totals the individual projections to develop a statewide total. As shown in **Table 6-14**, using the bottom-up methodology, total statewide based aircraft are projected to increase from 2,594 in 2013 to 2,951 in 2033, a statewide average annual growth rate of 0.65 percent over the 20-year period.

Table 6-14:
General Aviation Based Aircraft Projection
Bottom-Up Methodology

ID	Associated City	Airport Name	Region	Regional AAGR 2013-2033	2013	2018	2023	2033
3U3	Anaconda	Bowman Field	4	0.27%	10	10	10	11
3U4	Ashland	St. Labre Mission	8	0.53%	0	0	0	0
3U5	Augusta	Augusta	3	0.61%	0	0	0	0
3U7	Augusta	Benchmark	3	0.61%	0	0	0	0
49S	Babb	Babb	6	0.52%	0	0	0	0
BHK	Baker	Baker Municipal	12	0.79%	25	26	27	29
3U8	Big Sandy	Big Sandy	6	0.52%	17	17	18	19
6S0	Big Timber	Big Timber	8	0.53%	11	11	12	12
53U	Bigfork	Ferndale Airfield	1	0.82%	0	0	0	0
BIL	Billings	Billings Logan Intl.	8	0.53%	167	171	176	186
3U9	Boulder	Boulder	3	0.61%	2	2	2	2
BZN	Bozeman	Bozeman Yellowstone Intl.	5	0.95%	284	298	312	343
6S1	Bridger	Bridger Municipal	8	0.53%	2	2	2	2
00F	Broadus	Broadus	12	0.79%	1	1	1	1
8S0	Browning	Starr-Browning Airstrip	6	0.52%	0	0	0	0
BTM	Butte	Bert Mooney	4	0.27%	36	36	37	38
LTY	Chester	Liberty County	7	0.45%	13	13	14	14
4U4	Chinook	Hebbleman	7	0.45%	3	3	3	3

ID	Associated City	Airport Name	Region	Regional AAGR 2013-2033	2013	2018	2023	2033
S71	Chinook	Edgar G Obie	7	0.45%	11	11	12	12
CII	Choteau	Choteau	6	0.52%	12	12	13	13
4U6	Circle	Circle Town County	10	0.58%	0	0	0	0
RC0	Clinton	Rock Creek	2	0.67%	1	1	1	1
M46	Colstrip	Colstrip	8	0.53%	11	11	12	12
6S3	Columbus	Woltermann Memorial	8	0.53%	29	30	31	32
S04	Condon	Condon USFS	2	0.67%	0	0	0	0
4U7	Conner	West Fork Lodge	2	0.67%	5	5	5	6
S01	Conrad	Conrad	6	0.52%	13	13	14	14
S85	Culbertson	Big Sky Field	11	0.62%	8	8	9	9
CTB	Cut Bank	Cut Bank Municipal	6	0.52%	29	30	31	32
38S	Deer Lodge	Deer Lodge-City-County	3	0.61%	14	14	15	16
4U9	Dell	Dell Flight Strip	4	0.27%	3	3	3	3
5U0	Denton	Denton	8	0.53%	0	0	0	0
DLN	Dillon	Dillon	4	0.27%	17	17	17	18
M26	Drummond	Drummond	2	0.67%	0	0	0	0
5U1	Dutton	Dutton	6	0.52%	12	12	13	13
97M	Ekalaka	Ekalaka	12	0.79%	3	3	3	4
EKS	Ennis	Ennis - Big Sky	5	0.95%	10	10	11	12
88M	Eureka	Eureka	1	0.82%	31	32	34	37
5U5	Fairfield	Fairfield	6	0.52%	6	6	6	7
5U6	Fairview	Fairview	11	0.62%	2	2	2	2
1S3	Forsyth	Tillitt Field	8	0.53%	24	25	25	27
79S	Fort Benton	Fort Benton	6	0.52%	25	26	26	28
37S	Fort Peck	Fort Peck	9	0.18%	7	7	7	7
5U7	Fort Smith	Fort Smith Landing Strip	8	0.53%	0	0	0	0
29S	Gardiner	Gardiner	5	0.95%	0	0	0	0
5U8	Geraldine	Geraldine	6	0.52%	0	0	0	0
GGW	Glasgow	Wokal Field/Glasgow Intl.	9	0.18%	76	77	77	79
GDV	Glendive	Dawson Community	12	0.79%	15	16	16	18

ID	Associated City	Airport Name	Region	Regional AAGR 2013-2033	2013	2018	2023	2033
GTF	Great Falls	Great Falls Intl.	6	0.52%	108	111	114	120
6S5	Hamilton	Ravalli County	2	0.67%	104	108	111	119
00U	Hardin	Big Horn County	8	0.53%	10	10	11	11
48S	Harlem	Harlem	7	0.45%	5	5	5	5
U09	Harlem	Fort Belknap Agency	7	0.45%	0	0	0	0
HWQ	Harlowton	Wheatland County	8	0.53%	7	7	7	8
HVR	Havre	Havre City-County	7	0.45%	21	21	22	23
HLN	Helena	Helena Regional	3	0.61%	377	389	401	426
6U5	Hinsdale	Hinsdale	9	0.18%	3	3	3	3
6U6	Hogeland	Hogeland	7	0.45%	2	2	2	2
S09	Hot Springs	Hot Springs	1	0.82%	2	2	2	2
6U7	Hysham	Hysham	8	0.53%	2	2	2	2
JDN	Jordan	Jordan	10	0.58%	1	1	1	1
GPI	Kalispell	Glacier Park Intl.	1	0.82%	159	166	173	187
S27	Kalispell	Kalispell City	1	0.82%	78	81	85	92
6S8	Laurel	Laurel Municipal	8	0.53%	88	90	93	98
80S	Lavina	Lavina	8	0.53%	1	1	1	1
LWT	Lewistown	Lewistown Municipal	8	0.53%	64	66	67	71
S59	Libby	Libby	1	0.82%	17	18	18	20
S69	Lincoln	Lincoln	3	0.61%	10	10	11	11
LVM	Livingston	Mission Field	5	0.95%	16	17	18	19
M75	Malta	Malta	9	0.18%	11	11	11	11
0S1	Meadow Creek	Meadow Creek USFS	1	0.82%	0	0	0	0
MLS	Miles City	Frank Wiley Field	12	0.79%	20	21	22	23
MSO	Missoula	Missoula Intl.	2	0.67%	145	150	155	166
S00	Opheim	Opheim	9	0.18%	2	2	2	2
U05	Philipsburg	Riddick Field	2	0.67%	0	0	0	0
S34	Plains	Plains	1	0.82%	7	7	8	8
PWD	Plentywood	Sher-Wood	11	0.62%	10	10	11	11

ID	Associated City	Airport Name	Region	Regional AAGR 2013-2033	2013	2018	2023	2033
8S1	Polson	Polson	2	0.67%	31	32	33	35
PO1	Poplar	Poplar Municipal	11	0.62%	7	7	7	8
H28	Port of Del Bonita	Whetstone Intl.	6	0.52%	0	0	0	0
RED	Red Lodge	Red Lodge	8	0.53%	13	13	14	14
7U8	Richey	Richey	12	0.79%	2	2	2	2
7S0	Ronan	Ronan	2	0.67%	38	39	41	43
RPX	Roundup	Roundup	8	0.53%	10	10	11	11
M42	Russian Flat	Russian Flat	6	0.52%	0	0	0	0
8U0	Ryegate	Ryegate	8	0.53%	0	0	0	0
8U1	Sand Springs	Sand Springs Strip	10	0.58%	1	1	1	1
8U2	Schafer	Schafer / USFS	1	0.82%	0	0	0	0
8U3	Scobey	Scobey / East Popular	9	0.18%	0	0	0	0
9S2	Scobey	Scobey	9	0.18%	14	14	14	15
23S	Seeley Lake	Seeley Lake	2	0.67%	13	13	14	15
M35	Seeley Lake	Lindey's Landing Strip	2	0.67%	0	0	0	0
SBX	Shelby	Shelby	6	0.52%	21	22	22	23
SDY	Sidney	Sidney-Richland Municipal	11	0.62%	32	33	34	36
8U4	Spotted Bear	Spotted Bear / USFS	1	0.82%	0	0	0	0
52S	St. Ignatius	St. Ignatius	2	0.67%	12	12	13	14
S64	Stanford	Stanford	6	0.52%	10	10	11	11
32S	Stevensville	Stevensville	2	0.67%	75	78	80	86
8U5	Sunburst	Sunburst	6	0.52%	1	1	1	1
9S4	Superior	Mineral County	2	0.67%	12	12	13	14
7S8	Sweetgrass	Ross Intl.	6	0.52%	0	0	0	0
8U6	Terry	Terry	12	0.79%	1	1	1	1
THM	Thompson Falls	Thompson Falls	1	0.82%	11	11	12	13
9S5	Three Forks	Three Forks	5	0.95%	31	33	34	37
B70	Tiber Dam	Tiber Dam	7	0.45%	0	0	0	0
8U8	Townsend	Townsend	5	0.95%	10	10	11	12

ID	Associated City	Airport Name	Region	Regional AAGR 2013-2033	2013	2018	2023	2033
8U9	Townsend	Canyon Ferry	5	0.95%	3	3	3	4
57S	Troy	Troy	1	0.82%	0	0	0	0
9U0	Turner	Turner	7	0.45%	14	14	15	15
7S1	Twin Bridges	Twin Bridges	5	0.95%	10	10	11	12
7S7	Valier	Valier	6	0.52%	0	0	0	0
WYS	West Yellowstone	Yellowstone	5	0.95%	0	0	0	0
7S6	White Sulphur Springs	White Sulphur Springs	3	0.61%	5	5	5	6
58S	Whitefish	Whitefish	1	0.82%	1	1	1	1
9U1	Wilsall	Wilsall	5	0.95%	0	0	0	0
9S7	Winifred	Winifred	8	0.53%	0	0	0	0
BB0	Winifred	Black Butte North	8	0.53%	0	0	0	0
BW8	Winifred	Bullwhacker	8	0.53%	0	0	0	0
CW0	Winifred	Cow Creek	8	0.53%	0	0	0	0
LC0	Winifred	Left Coulee	8	0.53%	0	0	0	0
MT3	Winifred	Knox Ridge	8	0.53%	0	0	0	0
WH0	Winifred	Woodhawk	8	0.53%	0	0	0	0
7S2	Winnett	Winnett	8	0.53%	1	1	1	1
7S4	Wisdom	Wisdom	4	0.27%	1	1	1	1
02T	Wise River	Wise River	4	0.27%	0	0	0	0
OLF	Wolf Point	LM Clayton	11	0.62%	8	8	9	9
STATEWIDE TOTAL*				**0.65%**	**2,593**	**2,678**	**2,765**	**2,950**

Source: FAA Terminal Area Forecast, Montana Department of Commerce - REMI, CDM Smith.
*May not sum due to rounding

6.5.1.2 Top-Down Methodology

Table 6-15 presents projected statewide based general aviation aircraft for Montana using the top-down methodology. The FAA Aerospace Forecast 2014-2034 approximates that national based aircraft is projected to increase by an average annual growth rate of 0.54 percent. Individual airport based aircraft projections were derived by applying this growth rate to each airport's current based aircraft total through the end of the planning period.

Table 6-15:
General Aviation Based Aircraft Projection
Top-Down Methodology

ID	Associated City	Airport Name	National AAGR 2013-2033	2013	2018	2023	2033
3U3	Anaconda	Bowman Field	0.54%	10	10	11	11
3U4	Ashland	St. Labre Mission	0.54%	0	0	0	0
3U5	Augusta	Augusta	0.54%	0	0	0	0
3U7	Augusta	Benchmark	0.54%	0	0	0	0
49S	Babb	Babb	0.54%	0	0	0	0
BHK	Baker	Baker Municipal	0.54%	25	26	26	28
3U8	Big Sandy	Big Sandy	0.54%	17	17	18	19
6S0	Big Timber	Big Timber	0.54%	11	11	12	12
53U	Bigfork	Ferndale Airfield	0.54%	0	0	0	0
BIL	Billings	Billings Logan Intl.	0.54%	167	172	176	186
3U9	Boulder	Boulder	0.54%	2	2	2	2
BZN	Bozeman	Bozeman Yellowstone Intl.	0.54%	284	292	300	316
6S1	Bridger	Bridger Municipal	0.54%	2	2	2	2
00F	Broadus	Broadus	0.54%	1	1	1	1
8S0	Browning	Starr-Browning Airstrip	0.54%	0	0	0	0
BTM	Butte	Bert Mooney	0.54%	36	37	38	40
LTY	Chester	Liberty County	0.54%	13	13	14	14
4U4	Chinook	Hebbleman	0.54%	3	3	3	3
S71	Chinook	Edgar G Obie	0.54%	11	11	12	12
CII	Choteau	Choteau	0.54%	12	12	13	13
4U6	Circle	Circle Town County	0.54%	0	0	0	0
RC0	Clinton	Rock Creek	0.54%	1	1	1	1
M46	Colstrip	Colstrip	0.54%	11	11	12	12
6S3	Columbus	Woltermann Memorial	0.54%	29	30	31	32
S04	Condon	Condon USFS	0.54%	0	0	0	0
4U7	Conner	West Fork Lodge	0.54%	5	5	5	6
S01	Conrad	Conrad	0.54%	13	13	14	14
S85	Culbertson	Big Sky Field	0.54%	8	8	8	9
CTB	Cut Bank	Cut Bank Municipal	0.54%	29	30	31	32
38S	Deer Lodge	Deer Lodge-City-County	0.54%	14	14	15	16
4U9	Dell	Dell Flight Strip	0.54%	3	3	3	3
5U0	Denton	Denton	0.54%	0	0	0	0
DLN	Dillon	Dillon	0.54%	17	17	18	19
M26	Drummond	Drummond	0.54%	0	0	0	0
5U1	Dutton	Dutton	0.54%	12	12	13	13

ID	Associated City	Airport Name	National AAGR 2013-2033	2013	2018	2023	2033
97M	Ekalaka	Ekalaka	0.54%	3	3	3	3
EKS	Ennis	Ennis - Big Sky	0.54%	10	10	11	11
88M	Eureka	Eureka	0.54%	31	32	33	35
5U5	Fairfield	Fairfield	0.54%	6	6	6	7
5U6	Fairview	Fairview	0.54%	2	2	2	2
1S3	Forsyth	Tillitt Field	0.54%	24	25	25	27
79S	Fort Benton	Fort Benton	0.54%	25	26	26	28
37S	Fort Peck	Fort Peck	0.54%	7	7	7	8
5U7	Fort Smith	Fort Smith Landing Strip	0.54%	0	0	0	0
29S	Gardiner	Gardiner	0.54%	0	0	0	0
5U8	Geraldine	Geraldine	0.54%	0	0	0	0
GGW	Glasgow	Wokal Field/Glasgow Intl.	0.54%	76	78	80	85
GDV	Glendive	Dawson Community	0.54%	15	15	16	17
GTF	Great Falls	Great Falls Intl.	0.54%	108	111	114	120
6S5	Hamilton	Ravalli County	0.54%	104	107	110	116
00U	Hardin	Big Horn County	0.54%	10	10	11	11
48S	Harlem	Harlem	0.54%	5	5	5	6
U09	Harlem	Fort Belknap Agency	0.54%	0	0	0	0
HWQ	Harlowton	Wheatland County	0.54%	7	7	7	8
HVR	Havre	Havre City-County	0.54%	21	22	22	23
HLN	Helena	Helena Regional	0.54%	377	387	398	420
6U5	Hinsdale	Hinsdale	0.54%	3	3	3	3
6U6	Hogeland	Hogeland	0.54%	2	2	2	2
S09	Hot Springs	Hot Springs	0.54%	2	2	2	2
6U7	Hysham	Hysham	0.54%	2	2	2	2
JDN	Jordan	Jordan	0.54%	1	1	1	1
GPI	Kalispell	Glacier Park Intl.	0.54%	159	163	168	177
S27	Kalispell	Kalispell City	0.54%	78	80	82	87
6S8	Laurel	Laurel Municipal	0.54%	88	90	93	98
80S	Lavina	Lavina	0.54%	1	1	1	1
LWT	Lewistown	Lewistown Municipal	0.54%	64	66	68	71
S59	Libby	Libby	0.54%	17	17	18	19
S69	Lincoln	Lincoln	0.54%	10	10	11	11
LVM	Livingston	Mission Field	0.54%	16	16	17	18
M75	Malta	Malta	0.54%	11	11	12	12
0S1	Meadow Creek	Meadow Creek USFS	0.54%	0	0	0	0
MLS	Miles City	Frank Wiley Field	0.54%	20	21	21	22
MSO	Missoula	Missoula Intl.	0.54%	145	149	153	162

ID	Associated City	Airport Name	National AAGR 2013-2033	2013	2018	2023	2033
S00	Opheim	Opheim	0.54%	2	2	2	2
U05	Philipsburg	Riddick Field	0.54%	0	0	0	0
S34	Plains	Plains	0.54%	7	7	7	8
PWD	Plentywood	Sher-Wood	0.54%	10	10	11	11
8S1	Polson	Polson	0.54%	31	32	33	35
PO1	Poplar	Poplar Municipal	0.54%	7	7	7	8
H28	Port of Del Bonita	Whetstone Intl.	0.54%	0	0	0	0
RED	Red Lodge	Red Lodge	0.54%	13	13	14	14
7U8	Richey	Richey	0.54%	2	2	2	2
7S0	Ronan	Ronan	0.54%	38	39	40	42
RPX	Roundup	Roundup	0.54%	10	10	11	11
M42	Russian Flat	Russian Flat	0.54%	0	0	0	0
8U0	Ryegate	Ryegate	0.54%	0	0	0	0
8U1	Sand Springs	Sand Springs Strip	0.54%	1	1	1	1
8U2	Schafer	Schafer / USFS	0.54%	0	0	0	0
8U3	Scobey	Scobey / East Popular	0.54%	0	0	0	0
9S2	Scobey	Scobey	0.54%	14	14	15	16
23S	Seeley Lake	Seeley Lake	0.54%	13	13	14	14
M35	Seeley Lake	Lindey's Landing Strip	0.54%	0	0	0	0
SBX	Shelby	Shelby	0.54%	21	22	22	23
SDY	Sidney	Sidney-Richland Municipal	0.54%	32	33	34	36
8U4	Spotted Bear	Spotted Bear / USFS	0.54%	0	0	0	0
52S	St. Ignatius	St. Ignatius	0.54%	12	12	13	13
S64	Stanford	Stanford	0.54%	10	10	11	11
32S	Stevensville	Stevensville	0.54%	75	77	79	84
8U5	Sunburst	Sunburst	0.54%	1	1	1	1
9S4	Superior	Mineral County	0.54%	12	12	13	13
7S8	Sweetgrass	Ross Intl.	0.54%	0	0	0	0
8U6	Terry	Terry	0.54%	1	1	1	1
THM	Thompson Falls	Thompson Falls	0.54%	11	11	12	12
9S5	Three Forks	Three Forks	0.54%	31	32	33	35
B70	Tiber Dam	Tiber Dam	0.54%	0	0	0	0
8U8	Townsend	Townsend	0.54%	10	10	11	11
8U9	Townsend	Canyon Ferry	0.54%	3	3	3	3
57S	Troy	Troy	0.54%	0	0	0	0
9U0	Turner	Turner	0.54%	14	14	15	16
7S1	Twin Bridges	Twin Bridges	0.54%	10	10	11	11

ID	Associated City	Airport Name	National AAGR 2013-2033	2013	2018	2023	2033
7S7	Valier	Valier	0.54%	0	0	0	0
WYS	West Yellowstone	Yellowstone	0.54%	0	0	0	0
7S6	White Sulphur Springs	White Sulphur Springs	0.54%	5	5	5	6
58S	Whitefish	Whitefish	0.54%	1	1	1	1
9U1	Wilsall	Wilsall	0.54%	0	0	0	0
9S7	Winifred	Winifred	0.54%	0	0	0	0
BB0	Winifred	Black Butte North	0.54%	0	0	0	0
BW8	Winifred	Bullwhacker	0.54%	0	0	0	0
CW0	Winifred	Cow Creek	0.54%	0	0	0	0
LC0	Winifred	Left Coulee	0.54%	0	0	0	0
MT3	Winifred	Knox Ridge	0.54%	0	0	0	0
WH0	Winifred	Woodhawk	0.54%	0	0	0	0
7S2	Winnett	Winnett	0.54%	1	1	1	1
7S4	Wisdom	Wisdom	0.54%	1	1	1	1
02T	Wise River	Wise River	0.54%	0	0	0	0
OLF	Wolf Point	LM Clayton	0.54%	8	8	8	9
STATEWIDE TOTAL*			**0.54%**	**2,593**	**2,664**	**2,737**	**2,890**

Source: FAA Terminal Area Forecast, FAA Aerospace Forecast 2014-2034, TAF CDM Smith
*May not sum due to rounding

6.5.1.3 Historic Linear Growth Methodology

Table 6-16 presents projected statewide based general aviation aircraft for Montana using an alternative top-down methodology. The growth rate utilized in this methodology acquired was by ascertaining the actual based aircraft growth rate from 1998 to 2013, a 15 year period. According to the plan, the number of actual based aircraft in Montana was 2,170 at system airports. The number of based aircraft increased to 2,593 in 2013, representing an average annual growth rate of 1.2 percent. This rate was applied to current base year data to achieve projections for the planning period.

Table 6-16: General Aviation Based Aircraft Projection
Historic Linear Growth

ID	Associated City	Airport Name	Historic AAGR 1998-2013	2013	2018	2023	2033
3U3	Anaconda	Bowman Field	1.2%	10	11	11	13
3U4	Ashland	St. Labre Mission	1.2%	0	0	0	0
3U5	Augusta	Augusta	1.2%	0	0	0	0
3U7	Augusta	Benchmark	1.2%	0	0	0	0
49S	Babb	Babb	1.2%	0	0	0	0
BHK	Baker	Baker Municipal	1.2%	25	27	28	32
3U8	Big Sandy	Big Sandy	1.2%	17	18	19	22
6S0	Big Timber	Big Timber	1.2%	11	12	12	14
53U	Bigfork	Ferndale Airfield	1.2%	0	0	0	0
BIL	Billings	Billings Logan Intl.	1.2%	167	177	188	212
3U9	Boulder	Boulder	1.2%	2	2	2	3
BZN	Bozeman	Bozeman Yellowstone Intl.	1.2%	284	301	320	361
6S1	Bridger	Bridger Municipal	1.2%	2	2	2	3
00F	Broadus	Broadus	1.2%	1	1	1	1
8S0	Browning	Starr-Browning Airstrip	1.2%	0	0	0	0
BTM	Butte	Bert Mooney	1.2%	36	38	41	46
LTY	Chester	Liberty County	1.2%	13	14	15	17
4U4	Chinook	Hebbleman	1.2%	3	3	3	4
S71	Chinook	Edgar G Obie	1.2%	11	12	12	14
CII	Choteau	Choteau	1.2%	12	13	14	15
4U6	Circle	Circle Town County	1.2%	0	0	0	0
RC0	Clinton	Rock Creek	1.2%	1	1	1	1
M46	Colstrip	Colstrip	1.2%	11	12	12	14
6S3	Columbus	Woltermann Memorial	1.2%	29	31	33	37
S04	Condon	Condon USFS	1.2%	0	0	0	0
4U7	Conner	West Fork Lodge	1.2%	5	5	6	6
S01	Conrad	Conrad	1.2%	13	14	15	17
S85	Culbertson	Big Sky Field	1.2%	8	8	9	10
CTB	Cut Bank	Cut Bank Municipal	1.2%	29	31	33	37
38S	Deer Lodge	Deer Lodge-City-County	1.2%	14	15	16	18
4U9	Dell	Dell Flight Strip	1.2%	3	3	3	4
5U0	Denton	Denton	1.2%	0	0	0	0
DLN	Dillon	Dillon	1.2%	17	18	19	22
M26	Drummond	Drummond	1.2%	0	0	0	0

ID	Associated City	Airport Name	Historic AAGR 1998-2013	2013	2018	2023	2033
5U1	Dutton	Dutton	1.2%	12	13	14	15
97M	Ekalaka	Ekalaka	1.2%	3	3	3	4
EKS	Ennis	Ennis - Big Sky	1.2%	10	11	11	13
88M	Eureka	Eureka	1.2%	31	33	35	39
5U5	Fairfield	Fairfield	1.2%	6	6	7	8
5U6	Fairview	Fairview	1.2%	2	2	2	3
1S3	Forsyth	Tillitt Field	1.2%	24	25	27	30
79S	Fort Benton	Fort Benton	1.2%	25	27	28	32
37S	Fort Peck	Fort Peck	1.2%	7	7	8	9
5U7	Fort Smith	Fort Smith Landing Strip	1.2%	0	0	0	0
29S	Gardiner	Gardiner	1.2%	0	0	0	0
5U8	Geraldine	Geraldine	1.2%	0	0	0	0
GGW	Glasgow	Wokal Field/Glasgow Intl.	1.2%	76	81	86	96
GDV	Glendive	Dawson Community	1.2%	15	16	17	19
GTF	Great Falls	Great Falls Intl.	1.2%	108	115	122	137
6S5	Hamilton	Ravalli County	1.2%	104	110	117	132
00U	Hardin	Big Horn County	1.2%	10	11	11	13
48S	Harlem	Harlem	1.2%	5	5	6	6
U09	Harlem	Fort Belknap Agency	1.2%	0	0	0	0
HWQ	Harlowton	Wheatland County	1.2%	7	7	8	9
HVR	Havre	Havre City-County	1.2%	21	22	24	27
HLN	Helena	Helena Regional	1.2%	377	400	425	479
6U5	Hinsdale	Hinsdale	1.2%	3	3	3	4
6U6	Hogeland	Hogeland	1.2%	2	2	2	3
S09	Hot Springs	Hot Springs	1.2%	2	2	2	3
6U7	Hysham	Hysham	1.2%	2	2	2	3
JDN	Jordan	Jordan	1.2%	1	1	1	1
GPI	Kalispell	Glacier Park Intl.	1.2%	159	169	179	202
S27	Kalispell	Kalispell City	1.2%	78	83	88	99
6S8	Laurel	Laurel Municipal	1.2%	88	93	99	112
80S	Lavina	Lavina	1.2%	1	1	1	1
LWT	Lewistown	Lewistown Municipal	1.2%	64	68	72	81
S59	Libby	Libby	1.2%	17	18	19	22
S69	Lincoln	Lincoln	1.2%	10	11	11	13
LVM	Livingston	Mission Field	1.2%	16	17	18	20
M75	Malta	Malta	1.2%	11	12	12	14

ID	Associated City	Airport Name	Historic AAGR 1998-2013	2013	2018	2023	2033
0S1	Meadow Creek	Meadow Creek USFS	1.2%	0	0	0	0
MLS	Miles City	Frank Wiley Field	1.2%	20	21	23	25
MSO	Missoula	Missoula Intl.	1.2%	145	154	163	184
S00	Opheim	Opheim	1.2%	2	2	2	3
U05	Philipsburg	Riddick Field	1.2%	0	0	0	0
S34	Plains	Plains	1.2%	7	7	8	9
PWD	Plentywood	Sher-Wood	1.2%	10	11	11	13
8S1	Polson	Polson	1.2%	31	33	35	39
PO1	Poplar	Poplar Municipal	1.2%	7	7	8	9
H28	Port of Del Bonita	Whetstone Intl.	1.2%	0	0	0	0
RED	Red Lodge	Red Lodge	1.2%	13	14	15	17
7U8	Richey	Richey	1.2%	2	2	2	3
7S0	Ronan	Ronan	1.2%	38	40	43	48
RPX	Roundup	Roundup	1.2%	10	11	11	13
M42	Russian Flat	Russian Flat	1.2%	0	0	0	0
8U0	Ryegate	Ryegate	1.2%	0	0	0	0
8U1	Sand Springs	Sand Springs Strip	1.2%	1	1	1	1
8U2	Schafer	Schafer / USFS	1.2%	0	0	0	0
8U3	Scobey	Scobey / East Popular	1.2%	0	0	0	0
9S2	Scobey	Scobey	1.2%	14	15	16	18
23S	Seeley Lake	Seeley Lake	1.2%	13	14	15	17
M35	Seeley Lake	Lindey's Landing Strip	1.2%	0	0	0	0
SBX	Shelby	Shelby	1.2%	21	22	24	27
SDY	Sidney	Sidney-Richland Municipal	1.2%	32	34	36	41
8U4	Spotted Bear	Spotted Bear / USFS	1.2%	0	0	0	0
52S	St. Ignatius	St. Ignatius	1.2%	12	13	14	15
S64	Stanford	Stanford	1.2%	10	11	11	13
32S	Stevensville	Stevensville	1.2%	75	80	85	95
8U5	Sunburst	Sunburst	1.2%	1	1	1	1
9S4	Superior	Mineral County	1.2%	12	13	14	15
7S8	Sweetgrass	Ross Intl.	1.2%	0	0	0	0
8U6	Terry	Terry	1.2%	1	1	1	1
THM	Thompson Falls	Thompson Falls	1.2%	11	12	12	14
9S5	Three Forks	Three Forks	1.2%	31	33	35	39
B70	Tiber Dam	Tiber Dam	1.2%	0	0	0	0

ID	Associated City	Airport Name	Historic AAGR 1998-2013	2013	2018	2023	2033
8U8	Townsend	Townsend	1.2%	10	11	11	13
8U9	Townsend	Canyon Ferry	1.2%	3	3	3	4
57S	Troy	Troy	1.2%	0	0	0	0
9U0	Turner	Turner	1.2%	14	15	16	18
7S1	Twin Bridges	Twin Bridges	1.2%	10	11	11	13
7S7	Valier	Valier	1.2%	0	0	0	0
WYS	West Yellowstone	Yellowstone	1.2%	0	0	0	0
7S6	White Sulphur Springs	White Sulphur Springs	1.2%	5	5	6	6
58S	Whitefish	Whitefish	1.2%	1	1	1	1
9U1	Wilsall	Wilsall	1.2%	0	0	0	0
9S7	Winifred	Winifred	1.2%	0	0	0	0
BB0	Winifred	Black Butte North	1.2%	0	0	0	0
BW8	Winifred	Bullwhacker	1.2%	0	0	0	0
CW0	Winifred	Cow Creek	1.2%	0	0	0	0
LC0	Winifred	Left Coulee	1.2%	0	0	0	0
MT3	Winifred	Knox Ridge	1.2%	0	0	0	0
WH0	Winifred	Woodhawk	1.2%	0	0	0	0
7S2	Winnett	Winnett	1.2%	1	1	1	1
7S4	Wisdom	Wisdom	1.2%	1	1	1	1
02T	Wise River	Wise River	1.2%	0	0	0	0
OLF	Wolf Point	LM Clayton	1.2%	8	8	9	10
STATEWIDE TOTAL*			**1.2%**	**2,593**	**2,752**	**2,922**	**3,292**

Source: 1998 Montana State Aviation System Plan, CDM Smith. *May not sum due to rounding

Preferred Based Aircraft Methodology

The results from the three based aircraft projection methodologies developed in this forecast are compared in **Table 6-17**. In 2013, the Montana airports examined as part of this analysis were home to 2,593 based aircraft. The bottom-up methodology produced a 2033 statewide projection of 2,950 based aircraft and an average annual growth rate of 0.65 percent. The top-down methodology produced a 2033 statewide projection of 2,890 based aircraft and a lower average annual growth rate of 0.54 percent. The alternative top-down methodology utilizing an historic linear projection produced a robust 3,292 based aircraft for the planning period. After comparing the results and the average annual growth rates of each methodology, and although the historic linear projection had the strongest growth, it was decided to be highly optimistic since sustaining a 1.2 percent growth rate over a 35 year period is unlikely. As a result, the more conservative bottom-up growth rate of 0.65 percent was chosen as the preferred forecast.

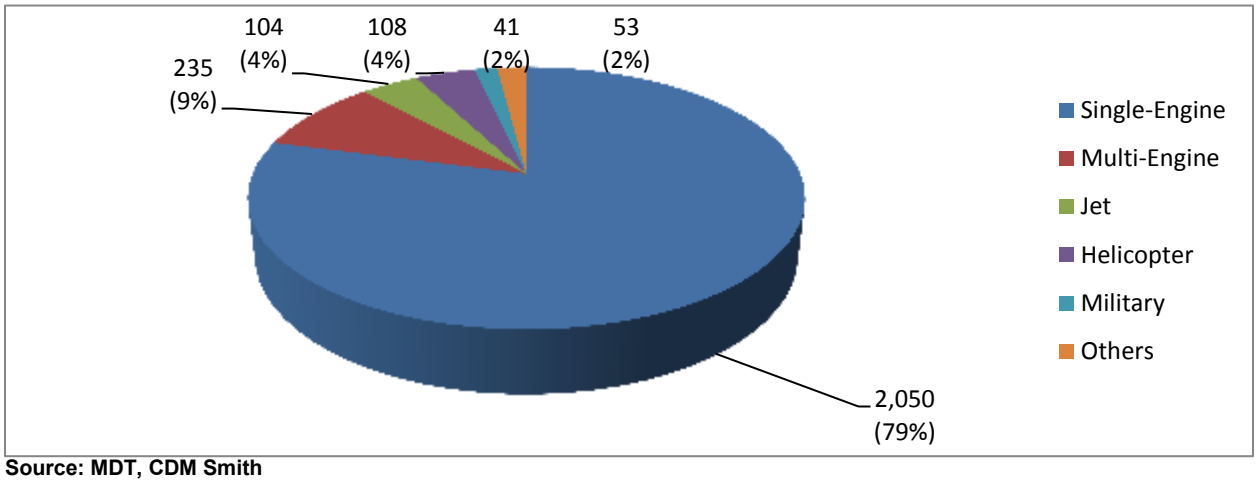
Table 6-17: Comparison Summary of General Aviation Based Aircraft Projection Methodologies

Methodology	2013	2018	2023	2033	AAGR 2013-2033
Bottom-Up	2,593	2,678	2,765	2,950	0.65%
Top-Down	2,593	2,664	2,737	2,890	0.54%
1998 Linear	2,593	2,752	2,922	3,292	1.20%

Source: FAA Terminal Area Forecast, Montana Department of Commerce - REMI, 1998 Montana State Aviation System Plan, CDM Smith

Operational Fleet Mix

An airport's fleet mix is one indication of its operational role and facility needs. **Figure 6-4** shows the 2013 general aviation fleet mix in Montana, according to MDT. Single-engine aircraft account for the majority of all based aircraft, or 79 percent of the statewide total. Multi-engine aircraft follow with nine percent. Jets and helicopters each account for four percent. Military aircraft account for two percent. Other types of aircraft, including ultralight/light-sport aircraft, gliders, blimps, and experimental aircraft, comprise two percent of Montana's total.



Source: MDT, CDM Smith

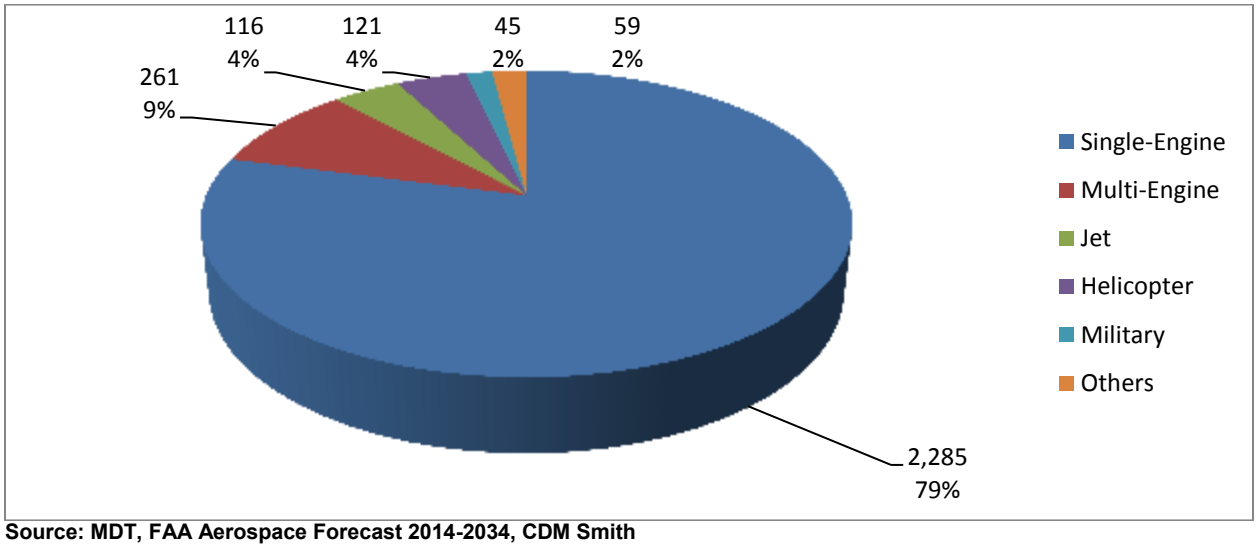
Figure 6-4: Current Based Aircraft Fleet Mix at System Airports – 2013

A statewide forecast of aircraft fleet mix was tied to the total statewide based aircraft in the preferred forecast, as well as growth rates provided in the FAA Aerospace Forecasts, Fiscal Years 2014-2034. Utilizing that data, it was assumed that increases in based aircraft would occur at the national FAA Aerospace Forecast 2014-2034 Total General Aviation Fleet average annual growth rate of 0.54 percent. **Table 6-18** presents the projected based aircraft fleet mix in Montana through 2033. **Figure 6-5** shows the percentage of total Montana based aircraft for each aircraft type in 2033. Each category of aircraft retains its share of the total aircraft fleet mix from 2013. **Table 6-19** compares the historic fleet mix identified in the 1998 Montana State Aviation System Plan, with the most recent fleet mix splits as shown in Figure 6-4, and the average annual growth rate between these datasets.

Table 6-18: Projected Based Aircraft Fleet Mix
Top-Down Methodology

Aircraft Type	Base Year 2013	Projected Years 2018	2023	2033	AAGR 2013-2033
Single-Engine	2,050	2,106	2,164	2,285	0.54%
Multi-Engine	235	241	248	261	0.54%
Jet	104	107	110	116	0.54%
Helicopter	108	111	114	121	0.54%
Military	41	42	43	45	0.54%
Other	53	54	56	59	0.54%
STATEWIDE TOTAL*	**2,591**	**2,662**	**2,735**	**2,887**	**0.54%**

Source: FAA Aerospace Forecast 2014-2034, MDT, CDM Smith. *May not sum due to rounding



Source: MDT, FAA Aerospace Forecast 2014-2034, CDM Smith

Figure 6-5: Projected Based Aircraft Fleet Mix at System Airports – 2033

Table 6-19:
Comparison of Historic Based Aircraft Fleet Mix 1998 - 2013

Aircraft	1998	2013	AAGR 1998 - 2013
Single-Engine	1,706	2,050	1.23%
Multi-Engine	193	235	1.32%
Jet	33	104	7.95%
Helicopter	26	108	9.96%
Military	64	41	-2.93%
Other	50	53	0.39%
STATEWIDE TOTAL	**2,072**	**2,591**	**1.50%**

Source: 1998 Montana State Aviation System Plan, CDM Smith

General Aviation Operations Projections

Total annual aircraft operational demand consists of several types of activity including air carrier, air taxi, military, and general aviation. For those airports with scheduled commercial air service, air carrier (including major/national and regional/commuter operations) activity was projected separately in a previous section. Additionally, commercial service airport exclude air taxi operations, while EAS airports include air taxi. For those airports with military operations, the military operations were subtracted from the total aircraft operations estimate, as were commercial operations, to arrive at a total annual general aviation operations for each system airport. Only those airports that have air traffic control towers have records of actual activity. Airports without a tower have provided estimates of annual operations. Therefore, annual operational estimates were developed through a number of sources such as FAA TAF, FAA 5010, MDT, and airport data.

6.5.1.4 Bottom-Up: General Aviation Operations per Based Aircraft Methodology

In the bottom-up growth rate methodology, the projected population growth from 2013 to 2033 at each system airport's associated county was calculated through Montana Department of Commerce County Population Projections from 2010 to 2013. Due to the wide range of projected population change in counties and their associated airports, 12 regions were developed to project future based aircraft. The proportional increase was determined by the projected population growth of each airport's associated county. This type of projection is referred to as a bottom-up methodology as it looks at activity from the airport-specific level and then totals the individual projections to develop a statewide total. As shown in **Table 6-20**, using the bottom-up methodology, total statewide based aircraft are projected to increase from 734,196 in 2013 to 835,572 in 2033, a statewide average annual growth rate of 0.65 percent over the 20-year period.

Table 6-20:
Total Annual General Aviation Operations Projection
Bottom-Up Methodology

ID	Associated City	Airport Name	Regional AAGR 2010-2013	2013	2018	2023	2033
3U3	Anaconda	Bowman Field	0.27%	4,900	4,967	5,034	5,171
3U4	Ashland	St. Labre Mission	0.53%	510	524	538	567
3U5	Augusta	Augusta	0.61%	150	155	159	169
3U7	Augusta	Benchmark	0.61%	450	464	478	508
49S	Babb	Babb	0.52%	250	257	263	277
BHK	Baker	Baker Municipal	0.79%	7,000	7,281	7,573	8,193
3U8	Big Sandy	Big Sandy	0.52%	5,400	5,542	5,687	5,990
6S0	Big Timber	Big Timber	0.53%	7,200	7,393	7,591	8,003
53U	Bigfork	Ferndale Airfield	0.82%	5,000	5,208	5,425	5,887
BIL	Billings	Billings Logan Intl.	0.53%	42,677	43,820	44,994	47,436
3U9	Boulder	Boulder	0.61%	600	619	638	678
BZN	Bozeman	Bozeman Yellowstone Intl.	0.95%	56,839	59,591	62,475	68,671
6S1	Bridger	Bridger Municipal	0.53%	1,800	1,848	1,898	2,001
00F	Broadus	Broadus	0.79%	5,350	5,565	5,788	6,262
8S0	Browning	Starr-Browning Airstrip	0.52%	625	641	658	693
BTM	Butte	Bert Mooney	0.27%	20,500	20,778	21,060	21,636
LTY	Chester	Liberty County	0.45%	4,700	4,807	4,916	5,142
4U4	Chinook	Hebbleman	0.45%	600	614	628	656
S71	Chinook	Edgar G Obie	0.45%	8,350	8,540	8,733	9,135
CII	Choteau	Choteau	0.52%	3,000	3,079	3,160	3,328
4U6	Circle	Circle Town County	0.58%	3,750	3,860	3,973	4,210
RC0	Clinton	Rock Creek	0.67%	425	439	454	486
M46	Colstrip	Colstrip	0.53%	3,250	3,337	3,426	3,612
6S3	Columbus	Woltermann Memorial	0.53%	9,050	9,292	9,541	10,059
S04	Condon	Condon USFS	0.67%	300	310	321	343
4U7	Conner	West Fork Lodge	0.67%	550	569	588	629
S01	Conrad	Conrad	0.52%	3,750	3,849	3,950	4,160
S85	Culbertson	Big Sky Field	0.62%	4,550	4,693	4,840	5,149
CTB	Cut Bank	Cut Bank Municipal	0.52%	8,100	8,313	8,531	8,985
38S	Deer Lodge	Deer Lodge-City-County	0.61%	3,750	3,866	3,985	4,235
4U9	Dell	Dell Flight	0.27%	950	963	976	1,003

ID	Associated City	Airport Name	Regional AAGR 2010-2013	2013	2018	2023	2033
		Strip					
5U0	Denton	Denton	0.53%	550	565	580	611
DLN	Dillon	Dillon	0.27%	10,250	10,389	10,530	10,818
M26	Drummond	Drummond	0.67%	175	181	187	200
5U1	Dutton	Dutton	0.52%	1,650	1,693	1,738	1,830
97M	Ekalaka	Ekalaka	0.79%	2,576	2,679	2,787	3,015
EKS	Ennis	Ennis - Big Sky	0.95%	11,000	11,533	12,091	13,290
88M	Eureka	Eureka	0.82%	2,075	2,161	2,252	2,443
5U5	Fairfield	Fairfield	0.52%	3,850	3,951	4,055	4,271
5U6	Fairview	Fairview	0.62%	1,850	1,908	1,968	2,093
1S3	Forsyth	Tillitt Field	0.53%	8,145	8,363	8,587	9,053
79S	Fort Benton	Fort Benton	0.52%	5,450	5,593	5,740	6,046
37S	Fort Peck	Fort Peck	0.18%	410	414	417	425
5U7	Fort Smith	Fort Smith Landing Strip	0.53%	3,100	3,183	3,268	3,446
29S	Gardiner	Gardiner	0.95%	7,600	7,968	8,354	9,182
5U8	Geraldine	Geraldine	0.52%	3,800	3,900	4,002	4,215
GGW	Glasgow	Wokal Field/Glasgow Intl.	0.18%	8,210	8,284	8,359	8,511
GDV	Glendive	Dawson Community	0.79%	5,800	6,033	6,275	6,789
GTF	Great Falls	Great Falls Intl.	0.52%	16,359	16,789	17,230	18,147
6S5	Hamilton	Ravalli County	0.67%	23,600	24,401	25,230	26,972
00U	Hardin	Big Horn County	0.53%	5,600	5,750	5,904	6,224
48S	Harlem	Harlem	0.45%	3,850	3,937	4,027	4,212
U09	Harlem	Fort Belknap Agency	0.45%	300	307	314	328
HWQ	Harlowton	Wheatland County	0.53%	2,225	2,285	2,346	2,473
HVR	Havre	Havre City-County	0.45%	7,244	7,408	7,577	7,925
HLN	Helena	Helena Regional	0.61%	27,626	28,479	29,358	31,199
6U5	Hinsdale	Hinsdale	0.18%	800	807	815	829
6U6	Hogeland	Hogeland	0.45%	275	281	288	301
S09	Hot Springs	Hot Springs	0.82%	500	521	543	589
6U7	Hysham	Hysham	0.53%	700	719	738	778
JDN	Jordan	Jordan	0.58%	2,050	2,110	2,172	2,301
GPI	Kalispell	Glacier Park Intl.	0.82%	15,923	16,587	17,278	18,748
S27	Kalispell	Kalispell City	0.82%	39,400	41,042	42,753	46,391
6S8	Laurel	Laurel Municipal	0.53%	41,900	43,022	44,174	46,572
80S	Lavina	Lavina	0.53%	375	385	395	417
LWT	Lewistown	Lewistown Municipal	0.53%	16,104	16,535	16,978	17,900

ID	Associated City	Airport Name	Regional AAGR 2010-2013	2013	2018	2023	2033
S59	Libby	Libby	0.82%	5,000	5,208	5,425	5,887
S69	Lincoln	Lincoln	0.61%	3,990	4,113	4,240	4,506
LVM	Livingston	Mission Field	0.95%	14,500	15,202	15,938	17,518
M75	Malta	Malta	0.18%	4,100	4,137	4,174	4,250
0S1	Meadow Creek	Meadow Creek USFS	0.82%	350	365	380	412
MLS	Miles City	Frank Wiley Field	0.79%	11,200	11,649	12,117	13,109
MSO	Missoula	Missoula Intl.	0.67%	20,998	21,711	22,448	23,998
S00	Opheim	Opheim	0.18%	200	202	204	207
U05	Philipsburg	Riddick Field	0.67%	2,050	2,120	2,192	2,343
S34	Plains	Plains	0.82%	4,240	4,417	4,601	4,992
PWD	Plentywood	Sher-Wood	0.62%	11,350	11,706	12,074	12,843
8S1	Polson	Polson	0.67%	9,700	10,029	10,370	11,086
PO1	Poplar	Poplar Municipal	0.62%	11,400	11,758	12,127	12,900
H28	Port of Del Bonita	Whetstone Intl.	0.52%	70	72	74	78
RED	Red Lodge	Red Lodge	0.53%	5,900	6,058	6,220	6,558
7U8	Richey	Richey	0.79%	3,750	3,900	4,057	4,389
7S0	Ronan	Ronan	0.67%	9,850	10,184	10,530	11,257
RPX	Roundup	Roundup	0.53%	5,300	5,442	5,588	5,891
M42	Russian Flat	Russian Flat	0.52%	320	328	337	355
8U0	Ryegate	Ryegate	0.53%	275	282	290	306
8U1	Sand Springs	Sand Springs Strip	0.58%	700	721	742	786
8U2	Schafer	Schafer / USFS	0.82%	550	573	597	648
8U3	Scobey	Scobey / East Popular	0.18%	10	10	10	10
9S2	Scobey	Scobey	0.18%	4,450	4,490	4,531	4,613
23S	Seeley Lake	Seeley Lake	0.67%	2,120	2,192	2,266	2,423
M35	Seeley Lake	Lindey's Landing Strip	0.67%	160	165	171	183
SBX	Shelby	Shelby	0.52%	8,250	8,467	8,689	9,152
SDY	Sidney	Sidney-Richland Municipal	0.62%	11,500	11,861	12,233	13,013
8U4	Spotted Bear	Spotted Bear / USFS	0.82%	620	646	673	730
52S	St. Ignatius	St. Ignatius	0.67%	4,050	4,188	4,330	4,629
S64	Stanford	Stanford	0.52%	4,300	4,413	4,529	4,770
32S	Stevensville	Stevensville	0.67%	13,500	13,958	14,432	15,429
8U5	Sunburst	Sunburst	0.52%	400	411	421	444
9S4	Superior	Mineral County	0.67%	4,000	4,136	4,276	4,572
7S8	Sweetgrass	Ross Intl.	0.52%	25	26	26	28
8U6	Terry	Terry	0.79%	800	832	865	936

ID	Associated City	Airport Name	Regional AAGR 2010-2013	2013	2018	2023	2033
THM	Thompson Falls	Thompson Falls	0.82%	7,000	7,292	7,596	8,242
9S5	Three Forks	Three Forks	0.95%	10,530	11,040	11,574	12,722
B70	Tiber Dam	Tiber Dam	0.45%	90	92	94	98
8U8	Townsend	Townsend	0.95%	3,600	3,774	3,957	4,349
8U9	Townsend	Canyon Ferry	0.95%	1,200	1,258	1,319	1,450
57S	Troy	Troy	0.82%	700	729	760	824
9U0	Turner	Turner	0.45%	7,000	7,159	7,321	7,658
7S1	Twin Bridges	Twin Bridges	0.95%	2,650	2,778	2,913	3,202
7S7	Valier	Valier	0.52%	50	51	53	55
WYS	West Yellowstone	Yellowstone	0.95%	10,500	11,008	11,541	12,686
7S6	White Sulphur Springs	White Sulphur Springs	0.61%	5,550	5,721	5,898	6,268
58S	Whitefish	Whitefish	0.82%	500	521	543	589
9U1	Wilsall	Wilsall	0.95%	600	629	659	725
9S7	Winifred	Winifred	0.53%	1,500	1,540	1,581	1,667
BB0	Winifred	Black Butte North	0.53%	70	72	74	78
BW8	Winifred	Bullwhacker	0.53%	70	72	74	78
CW0	Winifred	Cow Creek	0.53%	75	77	79	83
LC0	Winifred	Left Coulee	0.53%	70	72	74	78
MT3	Winifred	Knox Ridge	0.53%	70	72	74	78
WH0	Winifred	Woodhawk	0.53%	50	51	53	56
7S2	Winnett	Winnett	0.53%	130	133	137	144
7S4	Wisdom	Wisdom	0.27%	230	233	236	243
02T	Wise River	Wise River	0.27%	500	507	514	528
OLF	Wolf Point	LM Clayton	0.62%	5,835	6,018	6,207	6,603
STATEWIDE TOTAL			**0.65%**	**734,196**	**758,217**	**783,098**	**835,572**

Source: Montana Department of Commerce - REMI, CDM Smith. *May not sum due to rounding

Top-Down: FAA General Aviation Hours Flown Methodology

This methodology uses the FAA's projected average annual growth rate of national general aviation hours flown (as found in FAA Aerospace Forecasts 2014-2034) and applies that growth rate to each airport's 2013 total local and itinerant general aviation operations. In this methodology, forecasted general aviation operations are based on the assumption that general aviation operations at Montana system airports increase at the same rate as the number of hours flown nationally. The FAA's projected average annual growth rate of national general aviation hours flown from 2013 to 2033 is 1.5 percent. When this growth rate is applied to each of Montana's system airports, total statewide general aviation operations at Montana system airports increase from 734,196 in 2013 to 988,856 in 2033. **Table 6-21** identifies the projected general aviation operations for each of Montana's system airports using this methodology.

Table 6-21:
General Aviation Operations Projection
Top-Down Methodology

ID	Associated City	Airport Name	FAA Hours Flown AAGR 2013-2033	2013	2018	2023	2033
3U3	Anaconda	Bowman Field	1.5%	4,900	5,279	5,687	6,600
3U4	Ashland	St. Labre Mission	1.5%	510	549	592	687
3U5	Augusta	Augusta	1.5%	150	162	174	202
3U7	Augusta	Benchmark	1.5%	450	485	522	606
49S	Babb	Babb	1.5%	250	269	290	337
BHK	Baker	Baker Municipal	1.5%	7,000	7,541	8,124	9,428
3U8	Big Sandy	Big Sandy	1.5%	5,400	5,817	6,267	7,273
6S0	Big Timber	Big Timber	1.5%	7,200	7,756	8,356	9,697
53U	Bigfork	Ferndale Airfield	1.5%	5,000	5,386	5,803	6,734
BIL	Billings	Billings Logan Intl.	1.5%	42,677	45,975	49,528	57,480
3U9	Boulder	Boulder	1.5%	600	646	696	808
BZN	Bozeman	Bozeman Yellowstone Intl.	1.5%	56,839	61,232	65,964	76,554
6S1	Bridger	Bridger Municipal	1.5%	1,800	1,939	2,089	2,424
00F	Broadus	Broadus	1.5%	5,350	5,763	6,209	7,206
8S0	Browning	Starr-Browning Airstrip	1.5%	625	673	725	842
BTM	Butte	Bert Mooney	1.5%	20,500	22,084	23,791	27,611
LTY	Chester	Liberty County	1.5%	4,700	5,063	5,455	6,330
4U4	Chinook	Hebbleman	1.5%	600	646	696	808
S71	Chinook	Edgar G Obie	1.5%	8,350	8,995	9,691	11,246
CII	Choteau	Choteau	1.5%	3,000	3,232	3,482	4,041
4U6	Circle	Circle Town County	1.5%	3,750	4,040	4,352	5,051
RC0	Clinton	Rock Creek	1.5%	425	458	493	572
M46	Colstrip	Colstrip	1.5%	3,250	3,501	3,772	4,377
6S3	Columbus	Woltermann Memorial	1.5%	9,050	9,749	10,503	12,189
S04	Condon	Condon USFS	1.5%	300	323	348	404
4U7	Conner	West Fork Lodge	1.5%	550	593	638	741
S01	Conrad	Conrad	1.5%	3,750	4,040	4,352	5,051
S85	Culbertson	Big Sky Field	1.5%	4,550	4,902	5,280	6,128
CTB	Cut Bank	Cut Bank Municipal	1.5%	8,100	8,726	9,400	10,910
38S	Deer Lodge	Deer Lodge-City-County	1.5%	3,750	4,040	4,352	5,051
4U9	Dell	Dell Flight Strip	1.5%	950	1,023	1,103	1,280
5U0	Denton	Denton	1.5%	550	593	638	741
DLN	Dillon	Dillon	1.5%	10,250	11,042	11,896	13,805
M26	Drummond	Drummond	1.5%	175	189	203	236
5U1	Dutton	Dutton	1.5%	1,650	1,778	1,915	2,222
97M	Ekalaka	Ekalaka	1.5%	2,576	2,775	2,990	3,469
EKS	Ennis	Ennis - Big Sky	1.5%	11,000	11,850	12,766	14,815
88M	Eureka	Eureka	1.5%	2,075	2,235	2,408	2,795
5U5	Fairfield	Fairfield	1.5%	3,850	4,148	4,468	5,185
5U6	Fairview	Fairview	1.5%	1,850	1,993	2,147	2,492
1S3	Forsyth	Tillitt Field	1.5%	8,145	8,774	9,453	10,970
79S	Fort Benton	Fort Benton	1.5%	5,450	5,871	6,325	7,340
37S	Fort Peck	Fort Peck	1.5%	410	442	476	552

ID	Associated City	Airport Name	FAA Hours Flown AAGR 2013-2033	2013	2018	2023	2033
5U7	Fort Smith	Fort Smith Landing Strip	1.5%	3,100	3,340	3,598	4,175
29S	Gardiner	Gardiner	1.5%	7,600	8,187	8,820	10,236
5U8	Geraldine	Geraldine	1.5%	3,800	4,094	4,410	5,118
GGW	Glasgow	Wokal Field/Glasgow Intl.	1.5%	8,210	8,845	9,528	11,058
GDV	Glendive	Dawson Community	1.5%	5,800	6,248	6,731	7,812
GTF	Great Falls	Great Falls Intl.	1.5%	16,359	17,623	18,985	22,033
6S5	Hamilton	Ravalli County	1.5%	23,600	25,424	27,389	31,786
00U	Hardin	Big Horn County	1.5%	5,600	6,033	6,499	7,542
48S	Harlem	Harlem	1.5%	3,850	4,148	4,468	5,185
U09	Harlem	Fort Belknap Agency	1.5%	300	323	348	404
HWQ	Harlowton	Wheatland County	1.5%	2,225	2,397	2,582	2,997
HVR	Havre	Havre City-County	1.5%	7,244	7,804	8,407	9,757
HLN	Helena	Helena Regional	1.5%	27,626	29,761	32,061	37,208
6U5	Hinsdale	Hinsdale	1.5%	800	862	928	1,077
6U6	Hogeland	Hogeland	1.5%	275	296	319	370
S09	Hot Springs	Hot Springs	1.5%	500	539	580	673
6U7	Hysham	Hysham	1.5%	700	754	812	943
JDN	Jordan	Jordan	1.5%	2,050	2,208	2,379	2,761
GPI	Kalispell	Glacier Park Intl.	1.5%	15,923	17,154	18,479	21,446
S27	Kalispell	Kalispell City	1.5%	39,400	42,445	45,725	53,066
6S8	Laurel	Laurel Municipal	1.5%	41,900	45,138	48,627	56,433
80S	Lavina	Lavina	1.5%	375	404	435	505
LWT	Lewistown	Lewistown Municipal	1.5%	16,104	17,349	18,689	21,690
S59	Libby	Libby	1.5%	5,000	5,386	5,803	6,734
S69	Lincoln	Lincoln	1.5%	3,990	4,298	4,631	5,374
LVM	Livingston	Mission Field	1.5%	14,500	15,621	16,828	19,529
M75	Malta	Malta	1.5%	4,100	4,417	4,758	5,522
0S1	Meadow Creek	Meadow Creek USFS	1.5%	350	377	406	471
MLS	Miles City	Frank Wiley Field	1.5%	11,200	12,066	12,998	15,085
MSO	Missoula	Missoula Intl.	1.5%	20,998	22,621	24,369	28,281
S00	Opheim	Opheim	1.5%	200	215	232	269
U05	Philipsburg	Riddick Field	1.5%	2,050	2,208	2,379	2,761
S34	Plains	Plains	1.5%	4,240	4,568	4,921	5,711
PWD	Plentywood	Sher-Wood	1.5%	11,350	12,227	13,172	15,287
8S1	Polson	Polson	1.5%	9,700	10,450	11,257	13,064
PO1	Poplar	Poplar Municipal	1.5%	11,400	12,281	13,230	15,354
H28	Port of Del Bonita	Whetstone Intl.	1.5%	70	75	81	94
RED	Red Lodge	Red Lodge	1.5%	5,900	6,356	6,847	7,946
7U8	Richey	Richey	1.5%	3,750	4,040	4,352	5,051
7S0	Ronan	Ronan	1.5%	9,850	10,611	11,431	13,267
RPX	Roundup	Roundup	1.5%	5,300	5,710	6,151	7,138
M42	Russian Flat	Russian Flat	1.5%	320	345	371	431
8U0	Ryegate	Ryegate	1.5%	275	296	319	370
8U1	Sand Springs	Sand Springs Strip	1.5%	700	754	812	943

ID	Associated City	Airport Name	FAA Hours Flown AAGR 2013-2033	2013	2018	2023	2033
8U2	Schafer	Schafer / USFS	1.5%	550	593	638	741
8U3	Scobey	Scobey / East Popular	1.5%	10	11	12	13
9S2	Scobey	Scobey	1.5%	4,450	4,794	5,164	5,994
23S	Seeley Lake	Seeley Lake	1.5%	2,120	2,284	2,460	2,855
M35	Seeley Lake	Lindey's Landing Strip	1.5%	160	172	186	215
SBX	Shelby	Shelby	1.5%	8,250	8,888	9,574	11,112
SDY	Sidney	Sidney-Richland Municipal	1.5%	11,500	12,389	13,346	15,489
8U4	Spotted Bear	Spotted Bear / USFS	1.5%	620	668	720	835
52S	St. Ignatius	St. Ignatius	1.5%	4,050	4,363	4,700	5,455
S64	Stanford	Stanford	1.5%	4,300	4,632	4,990	5,791
32S	Stevensville	Stevensville	1.5%	13,500	14,543	15,667	18,183
8U5	Sunburst	Sunburst	1.5%	400	431	464	539
9S4	Superior	Mineral County	1.5%	4,000	4,309	4,642	5,387
7S8	Sweetgrass	Ross Intl.	1.5%	25	27	29	34
8U6	Terry	Terry	1.5%	800	862	928	1,077
THM	Thompson Falls	Thompson Falls	1.5%	7,000	7,541	8,124	9,428
9S5	Three Forks	Three Forks	1.5%	10,530	11,344	12,220	14,182
B70	Tiber Dam	Tiber Dam	1.5%	90	97	104	121
8U8	Townsend	Townsend	1.5%	3,600	3,878	4,178	4,849
8U9	Townsend	Canyon Ferry	1.5%	1,200	1,293	1,393	1,616
57S	Troy	Troy	1.5%	700	754	812	943
9U0	Turner	Turner	1.5%	7,000	7,541	8,124	9,428
7S1	Twin Bridges	Twin Bridges	1.5%	2,650	2,855	3,075	3,569
7S7	Valier	Valier	1.5%	50	54	58	67
WYS	West Yellowstone	Yellowstone	1.5%	10,500	11,311	12,186	14,142
7S6	White Sulphur Springs	White Sulphur Springs	1.5%	5,550	5,979	6,441	7,475
58S	Whitefish	Whitefish	1.5%	500	539	580	673
9U1	Wilsall	Wilsall	1.5%	600	646	696	808
9S7	Winifred	Winifred	1.5%	1,500	1,616	1,741	2,020
BB0	Winifred	Black Butte North	1.5%	70	75	81	94
BW8	Winifred	Bullwhacker	1.5%	70	75	81	94
CW0	Winifred	Cow Creek	1.5%	75	81	87	101
LC0	Winifred	Left Coulee	1.5%	70	75	81	94
MT3	Winifred	Knox Ridge	1.5%	70	75	81	94
WH0	Winifred	Woodhawk	1.5%	50	54	58	67
7S2	Winnett	Winnett	1.5%	130	140	151	175
7S4	Wisdom	Wisdom	1.5%	230	248	267	310
02T	Wise River	Wise River	1.5%	500	539	580	673
OLF	Wolf Point	LM Clayton	1.5%	5,835	6,286	6,772	7,859
STATWIDE TOTAL			**1.5%**	**734,196**	**790,938**	**852,064**	**988,856**

Source: FAA Aerospace Forecast 2014-2034, CDM Smith. *May not sum due to rounding

6.5.1.5 Preferred General Aviation Operations Methodology

The results from the two general aviation operations projection methodologies developed in this forecast are compared in **Table 6-22**. In 2013, the Montana system airports examined in this analysis accommodated 734,196 general aviation operations. The bottom-up methodology produced a 2033 statewide projection of 835,572 general aviation operations, an average annual growth rate of 0.65 percent. The top-down methodology produced a 2033 statewide projection of 988,856 general aviation operations, an average annual growth rate of 1.5 percent. After comparing the results and the average annual growth rates of each methodology, the top-down growth rate of 1.5 percent was chosen as the preferred growth rate because it more closely resembles the FAA's projected average annual growth rate of national general aviation hours flown.

Table 6-22
General Aviation Operations Projections
Comparison of Methodologies

Methodology	2013	2018	2023	2033	AAGR 2013-2033
Bottom-Up	734,196	758,217	783,098	835,572	0.65%
Top-Down	734,196	790,938	852,064	988,856	1.5%

Source: Montana Department of Commerce – REMI, FAA Aerospace Forecast 2014-2034, CDM Smith

6.6 General Aviation Scenario Projections

Two alternative forecasts of aviation activity were developed based upon assumed economic expansions in Montana. Each scenario forecasts based aircraft and general aviation operations.

Scenario One
This scenario outlines the potential outcome of a 10-year economic expansion. Furthermore, this scenario outlines a positive shift in Montana's overall 10-year business cycle, followed by a lower, yet constant, growth rate. To estimate the appropriate growth rate for this methodology, an additional percentage point was added to the same statewide population growth rate used for top-down enplanement projections. This economic expansion assumes every major industry within Montana experiences unrestricted growth for the first 10 years of a 20-year planning period. Industry sectors include oil and gas development, high tech, university systems, health care, tourism, and agriculture. This scenario features a robust 3.6 percent statewide growth rate from 2013 to 2023, followed by a 1.8 percent statewide growth rate between 2023 and 2033. Based aircraft projections are outlined in **Table 6-23**, while general aviation operations are outlined in **Table 6-24**.

Table 6-23: Scenario One: Based Aircraft Projection

ID	Associated City	Airport Name	Montana Growth Rate 2013-2033	Montana Growth Rate 2023-2033	2013	2018	2023	2033
3U3	Anaconda	Bowman Field	3.6%	1.8%	10	12	14	17
3U4	Ashland	St. Labre Mission	3.6%	1.8%	0	0	0	0
3U5	Augusta	Augusta	3.6%	1.8%	0	0	0	0
3U7	Augusta	Benchmark	3.6%	1.8%	0	0	0	0
49S	Babb	Babb	3.6%	1.8%	0	0	0	0
BHK	Baker	Baker Municipal	3.6%	1.8%	25	30	36	43
3U8	Big Sandy	Big Sandy	3.6%	1.8%	17	20	24	29
6S0	Big Timber	Big Timber	3.6%	1.8%	11	13	16	19
53U	Bigfork	Ferndale Airfield	3.6%	1.8%	0	0	0	0
BIL	Billings	Billings Logan Intl.	3.6%	1.8%	167	199	238	284
3U9	Boulder	Boulder	3.6%	1.8%	2	2	3	3
BZN	Bozeman	Bozeman Yellowstone Intl.	3.6%	1.8%	284	339	404	483
6S1	Bridger	Bridger Municipal	3.6%	1.8%	2	2	3	3
00F	Broadus	Broadus	3.6%	1.8%	1	1	1	2
8S0	Browning	Starr-Browning Airstrip	3.6%	1.8%	0	0	0	0
BTM	Butte	Bert Mooney	3.6%	1.8%	36	43	51	61
LTY	Chester	Liberty County	3.6%	1.8%	13	16	19	22
4U4	Chinook	Hebbleman	3.6%	1.8%	3	4	4	5
S71	Chinook	Edgar G Obie	3.6%	1.8%	11	13	16	19
CII	Choteau	Choteau	3.6%	1.8%	12	14	17	20
4U6	Circle	Circle Town County	3.6%	1.8%	0	0	0	1
RC0	Clinton	Rock Creek	3.6%	1.8%	1	1	1	2
M46	Colstrip	Colstrip	3.6%	1.8%	11	13	16	19
6S3	Columbus	Woltermann Memorial	3.6%	1.8%	29	35	41	49
S04	Condon	Condon USFS	3.6%	1.8%	0	0	0	0
4U7	Conner	West Fork Lodge	3.6%	1.8%	5	6	7	9
S01	Conrad	Conrad	3.6%	1.8%	13	16	19	22
S85	Culbertson	Big Sky Field	3.6%	1.8%	8	10	11	14
CTB	Cut Bank	Cut Bank Municipal	3.6%	1.8%	29	35	41	49
38S	Deer Lodge	Deer Lodge-City-County	3.6%	1.8%	14	17	20	24
4U9	Dell	Dell Flight Strip	3.6%	1.8%	3	4	4	5

ID	Associated City	Airport Name	Montana Growth Rate 2013-2033	Montana Growth Rate 2023-2033	2013	2018	2023	2033
5U0	Denton	Denton	3.6%	1.8%	0	0	0	0
DLN	Dillon	Dillon	3.6%	1.8%	17	20	24	29
M26	Drummond	Drummond	3.6%	1.8%	0	0	0	0
5U1	Dutton	Dutton	3.6%	1.8%	12	14	17	20
97M	Ekalaka	Ekalaka	3.6%	1.8%	3	4	4	5
EKS	Ennis	Ennis - Big Sky	3.6%	1.8%	10	12	14	17
88M	Eureka	Eureka	3.6%	1.8%	31	37	44	53
5U5	Fairfield	Fairfield	3.6%	1.8%	6	7	9	10
5U6	Fairview	Fairview	3.6%	1.8%	2	2	3	3
1S3	Forsyth	Tillitt Field	3.6%	1.8%	24	29	34	41
79S	Fort Benton	Fort Benton	3.6%	1.8%	25	30	36	43
37S	Fort Peck	Fort Peck	3.6%	1.8%	7	8	10	12
5U7	Fort Smith	Fort Smith Landing Strip	3.6%	1.8%	0	0	0	0
29S	Gardiner	Gardiner	3.6%	1.8%	0	0	0	0
5U8	Geraldine	Geraldine	3.6%	1.8%	0	0	0	0
GGW	Glasgow	Wokal Field /Glasgow Intl.	3.6%	1.8%	76	91	108	129
GDV	Glendive	Dawson Community	3.6%	1.8%	15	18	21	26
GTF	Great Falls	Great Falls Intl.	3.6%	1.8%	108	129	154	184
6S5	Hamilton	Ravalli County	3.6%	1.8%	104	124	148	177
00U	Hardin	Big Horn County	3.6%	1.8%	10	12	14	17
48S	Harlem	Harlem	3.6%	1.8%	5	6	7	9
U09	Harlem	Fort Belknap Agency	3.6%	1.8%	0	0	0	0
HWQ	Harlowton	Wheatland County	3.6%	1.8%	7	8	10	12
HVR	Havre	Havre City-County	3.6%	1.8%	21	25	30	36
HLN	Helena	Helena Regional	3.6%	1.8%	377	450	537	642
6U5	Hinsdale	Hinsdale	3.6%	1.8%	3	4	4	5
6U6	Hogeland	Hogeland	3.6%	1.8%	2	2	3	3
S09	Hot Springs	Hot Springs	3.6%	1.8%	2	2	3	3
6U7	Hysham	Hysham	3.6%	1.8%	2	2	3	3
JDN	Jordan	Jordan	3.6%	1.8%	1	1	1	2
GPI	Kalispell	Glacier Park Intl.	3.6%	1.8%	159	190	226	271
S27	Kalispell	Kalispell City	3.6%	1.8%	78	93	111	133
6S8	Laurel	Laurel Municipal	3.6%	1.8%	88	105	125	150
80S	Lavina	Lavina	3.6%	1.8%	1	1	1	2

ID	Associated City	Airport Name	Montana Growth Rate 2013-2033	Montana Growth Rate 2023-2033	2013	2018	2023	2033
LWT	Lewistown	Lewistown Municipal	3.6%	1.8%	64	76	91	109
S59	Libby	Libby	3.6%	1.8%	17	20	24	29
S69	Lincoln	Lincoln	3.6%	1.8%	10	12	14	17
LVM	Livingston	Mission Field	3.6%	1.8%	16	19	23	27
M75	Malta	Malta	3.6%	1.8%	11	13	16	19
0S1	Meadow Creek	Meadow Creek USFS	3.6%	1.8%	0	0	0	0
MLS	Miles City	Frank Wiley Field	3.6%	1.8%	20	24	28	34
MSO	Missoula	Missoula Intl.	3.6%	1.8%	145	173	207	247
S00	Opheim	Opheim	3.6%	1.8%	2	2	3	3
U05	Philipsburg	Riddick Field	3.6%	1.8%	0	0	0	0
S34	Plains	Plains	3.6%	1.8%	7	8	10	12
PWD	Plentywood	Sher-Wood	3.6%	1.8%	10	12	14	17
8S1	Polson	Polson	3.6%	1.8%	31	37	44	53
PO1	Poplar	Poplar Municipal	3.6%	1.8%	7	8	10	12
H28	Port of Del Bonita	Whetstone Intl.	3.6%	1.8%	0	0	0	0
RED	Red Lodge	Red Lodge	3.6%	1.8%	13	16	19	22
7U8	Richey	Richey	3.6%	1.8%	2	2	3	3
7S0	Ronan	Ronan	3.6%	1.8%	38	45	54	65
RPX	Roundup	Roundup	3.6%	1.8%	10	12	14	17
M42	Russian Flat	Russian Flat	3.6%	1.8%	0	0	0	0
8U0	Ryegate	Ryegate	3.6%	1.8%	0	0	0	0
8U1	Sand Springs	Sand Springs Strip	3.6%	1.8%	1	1	1	2
8U2	Schafer	Schafer / USFS	3.6%	1.8%	0	0	0	0
8U3	Scobey	Scobey / East Popular	3.6%	1.8%	0	0	0	0
9S2	Scobey	Scobey	3.6%	1.8%	14	17	20	24
23S	Seeley Lake	Seeley Lake	3.6%	1.8%	13	16	19	22
M35	Seeley Lake	Lindey's Landing Strip	3.6%	1.8%	0	0	0	0
SBX	Shelby	Shelby	3.6%	1.8%	21	25	30	36
SDY	Sidney	Sidney-Richland Municipal	3.6%	1.8%	32	38	46	54
8U4	Spotted Bear	Spotted Bear / USFS	3.6%	1.8%	0	0	0	0
52S	St. Ignatius	St. Ignatius	3.6%	1.8%	12	14	17	20
S64	Stanford	Stanford	3.6%	1.8%	10	12	14	17
32S	Stevensville	Stevensville	3.6%	1.8%	75	90	107	128

ID	Associated City	Airport Name	Montana Growth Rate 2013-2033	Montana Growth Rate 2023-2033	2013	2018	2023	2033
8U5	Sunburst	Sunburst	3.6%	1.8%	1	1	1	2
9S4	Superior	Mineral County	3.6%	1.8%	12	14	17	20
7S8	Sweetgrass	Ross Intl.	3.6%	1.8%	0	0	0	0
8U6	Terry	Terry	3.6%	1.8%	1	1	1	2
THM	Thompson Falls	Thompson Falls	3.6%	1.8%	11	13	16	19
9S5	Three Forks	Three Forks	3.6%	1.8%	31	37	44	53
B70	Tiber Dam	Tiber Dam	3.6%	1.8%	0	0	0	0
8U8	Townsend	Townsend	3.6%	1.8%	10	12	14	17
8U9	Townsend	Canyon Ferry	3.6%	1.8%	3	4	4	5
57S	Troy	Troy	3.6%	1.8%	0	0	0	0
9U0	Turner	Turner	3.6%	1.8%	14	17	20	24
7S1	Twin Bridges	Twin Bridges	3.6%	1.8%	10	12	14	17
7S7	Valier	Valier	3.6%	1.8%	0	0	0	0
WYS	West Yellowstone	Yellowstone	3.6%	1.8%	0	0	0	0
7S6	White Sulphur Springs	White Sulphur Springs	3.6%	1.8%	5	6	7	9
58S	Whitefish	Whitefish	3.6%	1.8%	1	1	1	2
9U1	Wilsall	Wilsall	3.6%	1.8%	0	0	0	0
9S7	Winifred	Winifred	3.6%	1.8%	0	0	0	0
BB0	Winifred	Black Butte North	3.6%	1.8%	0	0	0	0
BW8	Winifred	Bullwhacker	3.6%	1.8%	0	0	0	0
CW0	Winifred	Cow Creek	3.6%	1.8%	0	0	0	0
LC0	Winifred	Left Coulee	3.6%	1.8%	0	0	0	0
MT3	Winifred	Knox Ridge	3.6%	1.8%	0	0	0	0
WH0	Winifred	Woodhawk	3.6%	1.8%	0	0	0	0
7S2	Winnett	Winnett	3.6%	1.8%	1	1	1	2
7S4	Wisdom	Wisdom	3.6%	1.8%	1	1	1	2
02T	Wise River	Wise River	3.6%	1.8%	0	0	0	0
OLF	Wolf Point	LM Clayton	3.6%	1.8%	8	10	11	14
STATEWIDE TOTAL*					**2,594**	**3,096**	**3,695**	**4,416**

Source: FAA Terminal Area Forecast, CDM Smith. *May not sum due to rounding

Table 6-24: Scenario One: General Aviation Operations Projection

ID	Associated City	Airport Name	Statewide Growth Rate 2013-2033	Statewide Growth Rate 2023-2033	2013	2018	2023	2033
3U3	Anaconda	Bowman Field	3.6%	1.8%	4,900	5,848	6,979	8,342
3U4	Ashland	St. Labre Mission	3.6%	1.8%	510	609	726	868
3U5	Augusta	Augusta	3.6%	1.8%	150	179	214	255
3U7	Augusta	Benchmark	3.6%	1.8%	450	537	641	766
49S	Babb	Babb	3.6%	1.8%	250	298	356	426
BHK	Baker	Baker Municipal	3.6%	1.8%	7,000	8,354	9,970	11,917
3U8	Big Sandy	Big Sandy	3.6%	1.8%	5,400	6,445	7,691	9,193
6S0	Big Timber	Big Timber	3.6%	1.8%	7,200	8,593	10,255	12,258
53U	Bigfork	Ferndale Airfield	3.6%	1.8%	5,000	5,967	7,121	8,512
BIL	Billings	Billings Logan Intl.	3.6%	1.8%	42,677	50,932	60,784	72,656
3U9	Boulder	Boulder	3.6%	1.8%	600	716	855	1,021
BZN	Bozeman	Bozeman Yellowstone Intl.	3.6%	1.8%	56,839	67,834	80,955	96,766
6S1	Bridger	Bridger Municipal	3.6%	1.8%	1,800	2,148	2,564	3,064
00F	Broadus	Broadus	3.6%	1.8%	5,350	6,385	7,620	9,108
8S0	Browning	Starr-Browning Airstrip	3.6%	1.8%	625	746	890	1,064
BTM	Butte	Bert Mooney	3.6%	1.8%	20,500	24,465	29,198	34,900
LTY	Chester	Liberty County	3.6%	1.8%	4,700	5,609	6,694	8,002
4U4	Chinook	Hebbleman	3.6%	1.8%	600	716	855	1,021
S71	Chinook	Edgar G Obie	3.6%	1.8%	8,350	9,965	11,893	14,215
CII	Choteau	Choteau	3.6%	1.8%	3,000	3,580	4,273	5,107
4U6	Circle	Circle Town County	3.6%	1.8%	3,750	4,475	5,341	6,384
RC0	Clinton	Rock Creek	3.6%	1.8%	425	507	605	724
M46	Colstrip	Colstrip	3.6%	1.8%	3,250	3,879	4,629	5,533
6S3	Columbus	Woltermann Memorial	3.6%	1.8%	9,050	10,801	12,890	15,407
S04	Condon	Condon USFS	3.6%	1.8%	300	358	427	511
4U7	Conner	West Fork Lodge	3.6%	1.8%	550	656	783	936
S01	Conrad	Conrad	3.6%	1.8%	3,750	4,475	5,341	6,384
S85	Culbertson	Big Sky Field	3.6%	1.8%	4,550	5,430	6,481	7,746
CTB	Cut Bank	Cut Bank Municipal	3.6%	1.8%	8,100	9,667	11,537	13,790
38S	Deer Lodge	Deer Lodge-City-County	3.6%	1.8%	3,750	4,475	5,341	6,384
4U9	Dell	Dell Flight Strip	3.6%	1.8%	950	1,134	1,353	1,617

ID	Associated City	Airport Name	Statewide Growth Rate 2013-2033	Statewide Growth Rate 2023-2033	2013	2018	2023	2033
5U0	Denton	Denton	3.6%	1.8%	550	656	783	936
DLN	Dillon	Dillon	3.6%	1.8%	10,250	12,233	14,599	17,450
M26	Drummond	Drummond	3.6%	1.8%	175	209	249	298
5U1	Dutton	Dutton	3.6%	1.8%	1,650	1,969	2,350	2,809
97M	Ekalaka	Ekalaka	3.6%	1.8%	2,576	3,074	3,669	4,386
EKS	Ennis	Ennis - Big Sky	3.6%	1.8%	11,000	13,128	15,667	18,727
88M	Eureka	Eureka	3.6%	1.8%	2,075	2,476	2,955	3,533
5U5	Fairfield	Fairfield	3.6%	1.8%	3,850	4,595	5,484	6,554
5U6	Fairview	Fairview	3.6%	1.8%	1,850	2,208	2,635	3,150
1S3	Forsyth	Tillitt Field	3.6%	1.8%	8,145	9,721	11,601	13,866
79S	Fort Benton	Fort Benton	3.6%	1.8%	5,450	6,504	7,762	9,278
37S	Fort Peck	Fort Peck	3.6%	1.8%	410	489	584	698
5U7	Fort Smith	Fort Smith Landing Strip	3.6%	1.8%	3,100	3,700	4,415	5,278
29S	Gardiner	Gardiner	3.6%	1.8%	7,600	9,070	10,825	12,939
5U8	Geraldine	Geraldine	3.6%	1.8%	3,800	4,535	5,412	6,469
GGW	Glasgow	Wokal Field/Glasgow Intl.	3.6%	1.8%	8,210	9,798	11,693	13,977
GDV	Glendive	Dawson Community	3.6%	1.8%	5,800	6,922	8,261	9,874
GTF	Great Falls	Great Falls Intl.	3.6%	1.8%	16,359	19,523	23,300	27,850
6S5	Hamilton	Ravalli County	3.6%	1.8%	23,600	28,165	33,613	40,178
00U	Hardin	Big Horn County	3.6%	1.8%	5,600	6,683	7,976	9,534
48S	Harlem	Harlem	3.6%	1.8%	3,850	4,595	5,484	6,554
U09	Harlem	Fort Belknap Agency	3.6%	1.8%	300	358	427	511
HWQ	Harlowton	Wheatland County	3.6%	1.8%	2,225	2,655	3,169	3,788
HVR	Havre	Havre City-County	3.6%	1.8%	7,244	8,645	10,318	12,333
HLN	Helena	Helena Regional	3.6%	1.8%	27,626	32,970	39,347	47,032
6U5	Hinsdale	Hinsdale	3.6%	1.8%	800	955	1,139	1,362
6U6	Hogeland	Hogeland	3.6%	1.8%	275	328	392	468
S09	Hot Springs	Hot Springs	3.6%	1.8%	500	597	712	851
6U7	Hysham	Hysham	3.6%	1.8%	700	835	997	1,192
JDN	Jordan	Jordan	3.6%	1.8%	2,050	2,447	2,920	3,490
GPI	Kalispell	Glacier Park Intl.	3.6%	1.8%	15,923	19,003	22,679	27,108
S27	Kalispell	Kalispell City	3.6%	1.8%	39,400	47,021	56,117	67,077
6S8	Laurel	Laurel Municipal	3.6%	1.8%	41,900	50,005	59,678	71,333

ID	Associated City	Airport Name	Statewide Growth Rate 2013-2033	Statewide Growth Rate 2023-2033	2013	2018	2023	2033
80S	Lavina	Lavina	3.6%	1.8%	375	448	534	638
LWT	Lewistown	Lewistown Municipal	3.6%	1.8%	16,104	19,219	22,937	27,416
S59	Libby	Libby	3.6%	1.8%	5,000	5,967	7,121	8,512
S69	Lincoln	Lincoln	3.6%	1.8%	3,990	4,762	5,683	6,793
LVM	Livingston	Mission Field	3.6%	1.8%	14,500	17,305	20,652	24,686
M75	Malta	Malta	3.6%	1.8%	4,100	4,893	5,840	6,980
0S1	Meadow Creek	Meadow Creek USFS	3.6%	1.8%	350	418	499	596
MLS	Miles City	Frank Wiley Field	3.6%	1.8%	11,200	13,366	15,952	19,067
MSO	Missoula	Missoula Intl.	3.6%	1.8%	20,998	25,060	29,907	35,748
S00	Opheim	Opheim	3.6%	1.8%	200	239	285	340
U05	Philipsburg	Riddick Field	3.6%	1.8%	2,050	2,447	2,920	3,490
S34	Plains	Plains	3.6%	1.8%	4,240	5,060	6,039	7,218
PWD	Plentywood	Sher-Wood	3.6%	1.8%	11,350	13,545	16,166	19,323
8S1	Polson	Polson	3.6%	1.8%	9,700	11,576	13,816	16,514
PO1	Poplar	Poplar Municipal	3.6%	1.8%	11,400	13,605	16,237	19,408
H28	Port of Del Bonita	Whetstone Intl.	3.6%	1.8%	70	84	100	119
RED	Red Lodge	Red Lodge	3.6%	1.8%	5,900	7,041	8,403	10,044
7U8	Richey	Richey	3.6%	1.8%	3,750	4,475	5,341	6,384
7S0	Ronan	Ronan	3.6%	1.8%	9,850	11,755	14,029	16,769
RPX	Roundup	Roundup	3.6%	1.8%	5,300	6,325	7,549	9,023
M42	Russian Flat	Russian Flat	3.6%	1.8%	320	382	456	545
8U0	Ryegate	Ryegate	3.6%	1.8%	275	328	392	468
8U1	Sand Springs	Sand Springs Strip	3.6%	1.8%	700	835	997	1,192
8U2	Schafer	Schafer / USFS	3.6%	1.8%	550	656	783	936
8U3	Scobey	Scobey / East Popular	3.6%	1.8%	10	12	14	17
9S2	Scobey	Scobey	3.6%	1.8%	4,450	5,311	6,338	7,576
23S	Seeley Lake	Seeley Lake	3.6%	1.8%	2,120	2,530	3,019	3,609
M35	Seeley Lake	Lindey's Landing Strip	3.6%	1.8%	160	191	228	272
SBX	Shelby	Shelby	3.6%	1.8%	8,250	9,846	11,750	14,045
SDY	Sidney	Sidney-Richland Municipal	3.6%	1.8%	11,500	13,725	16,379	19,578
8U4	Spotted Bear	Spotted Bear / USFS	3.6%	1.8%	620	740	883	1,056
52S	St. Ignatius	St. Ignatius	3.6%	1.8%	4,050	4,833	5,768	6,895
S64	Stanford	Stanford	3.6%	1.8%	4,300	5,132	6,124	7,321

ID	Associated City	Airport Name	Statewide Growth Rate 2013-2033	Statewide Growth Rate 2023-2033	2013	2018	2023	2033
32S	Stevensville	Stevensville	3.6%	1.8%	13,500	16,111	19,228	22,983
8U5	Sunburst	Sunburst	3.6%	1.8%	400	477	570	681
9S4	Superior	Mineral County	3.6%	1.8%	4,000	4,774	5,697	6,810
7S8	Sweetgrass	Ross Intl.	3.6%	1.8%	25	30	36	43
8U6	Terry	Terry	3.6%	1.8%	800	955	1,139	1,362
THM	Thompson Falls	Thompson Falls	3.6%	1.8%	7,000	8,354	9,970	11,917
9S5	Three Forks	Three Forks	3.6%	1.8%	10,530	12,567	14,998	17,927
B70	Tiber Dam	Tiber Dam	3.6%	1.8%	90	107	128	153
8U8	Townsend	Townsend	3.6%	1.8%	3,600	4,296	5,127	6,129
8U9	Townsend	Canyon Ferry	3.6%	1.8%	1,200	1,432	1,709	2,043
57S	Troy	Troy	3.6%	1.8%	700	835	997	1,192
9U0	Turner	Turner	3.6%	1.8%	7,000	8,354	9,970	11,917
7S1	Twin Bridges	Twin Bridges	3.6%	1.8%	2,650	3,163	3,774	4,512
7S7	Valier	Valier	3.6%	1.8%	50	60	71	85
WYS	West Yellowstone	Yellowstone	3.6%	1.8%	10,500	12,531	14,955	17,876
7S6	White Sulphur Springs	White Sulphur Springs	3.6%	1.8%	5,550	6,624	7,905	9,449
58S	Whitefish	Whitefish	3.6%	1.8%	500	597	712	851
9U1	Wilsall	Wilsall	3.6%	1.8%	600	716	855	1,021
9S7	Winifred	Winifred	3.6%	1.8%	1,500	1,790	2,136	2,554
BB0	Winifred	Black Butte North	3.6%	1.8%	70	84	100	119
BW8	Winifred	Bullwhacker	3.6%	1.8%	70	84	100	119
CW0	Winifred	Cow Creek	3.6%	1.8%	75	90	107	128
LC0	Winifred	Left Coulee	3.6%	1.8%	70	84	100	119
MT3	Winifred	Knox Ridge	3.6%	1.8%	70	84	100	119
WH0	Winifred	Woodhawk	3.6%	1.8%	50	60	71	85
7S2	Winnett	Winnett	3.6%	1.8%	130	155	185	221
7S4	Wisdom	Wisdom	3.6%	1.8%	230	274	328	392
02T	Wise River	Wise River	3.6%	1.8%	500	597	712	851
OLF	Wolf Point	LM Clayton	3.6%	1.8%	5,835	6,964	8,311	9,934
STATWIDE TOTAL					**734,196**	**876,215**	**1,045,706**	**1,249,935**

Source: FAA Terminal Area Forecast, U.S. Census Bureau, CDM Smith. *May not sum due to rounding

Scenario One resulted in significant increases for both based aircraft and general aviation operations. These increases were each represented by an average annual growth rate of 2.7 percent, for a total increase of more than 70 percent over the planning period. Based aircraft were initially 2,594 in 2013, but sharply increase to 4,416. General aviation operations increased from 734,196 to 1,249,935 for the planning period in this scenario.

Scenario Two

This scenario outlines the potential outcome application of a bottom-up methodology based on individual airport levels of aviation activities. The 2009 Montana Economic Impact Study of airports identified high, low, and medium aviation activities at 72 Montana airports. Growth rates were formulated based on the number of on-airport activities present at individual airports.[78] These activities were formulated into a point system based on high, medium, or low activity levels where points were converted to average annual growth rates. Essentially, busier airports translate into greater growth rates. These growth rates are grouped by airport type in **Table-25.** Based aircraft projections are outlined in **Table 6-26**, while general aviation operations are outlined in **Table 6-27**.

Table 6-25: Airport Activity Growth Rate Designation

Airport Designations	Number of Airports	Growth Rate
Primary Commercial Service Airports	7	3.0%
Essential Air Service Airports	6	2.1%
High Volume General Aviation Airports	22	1.4%
Select General Aviation Airports	37	1.0%
Other General Aviation System Airports	54	0.5%
STATWIDE TOTAL AND AVERAGE	**126**[79]	

Source: Wilbur Smith - Economic Impacts of Airports in Montana, 2009, CDM Smith

Table 6-26: Scenario Two: Based Aircraft Projection

ID	Associated City	Airport Name	Applied Montana Growth Rate 2013-2033	2013	2018	2023	2033
3U3	Anaconda	Bowman Field	1.0%	10	11	11	12
3U4	Ashland	St. Labre Mission	0.5%	0	0	0	0
3U5	Augusta	Augusta	0.5%	0	0	0	0
3U7	Augusta	Benchmark	1.0%	0	0	0	0
49S	Babb	Babb	0.5%	0	0	0	0
BHK	Baker	Baker Municipal	1.4%	25	27	29	33
3U8	Big Sandy	Big Sandy	1.0%	17	18	19	21
6S0	Big Timber	Big Timber	1.4%	11	12	13	15
53U	Bigfork	Ferndale Airfield	0.5%	0	0	0	0
BIL	Billings	Billings Logan Intl.	3.0%	167	194	225	302
3U9	Boulder	Boulder	0.5%	2	2	2	2

[78] Wilbur Smith - Economic Impacts of Airports in Montana, 2009: Table 25
[79] Ibid. - High Volume airports are those with over 10,000 annual operations as related in the FAA 5010. Low Volume have under 10,000 annual operations. All other airports do not fit activities criteria resulting in a higher growth rate.

ID	Associated City	Airport Name	Applied Montana Growth Rate 2013-2033	2013	2018	2023	2033
BZN	Bozeman	Bozeman Yellowstone Intl.	3.0%	284	329	382	514
6S1	Bridger	Bridger Municipal	0.5%	2	2	2	2
00F	Broadus	Broadus	1.0%	1	1	1	1
8S0	Browning	Starr-Browning Airstrip	0.5%	0	0	0	0
BTM	Butte	Bert Mooney	3.0%	36	42	48	65
LTY	Chester	Liberty County	1.0%	13	14	14	16
4U4	Chinook	Hebbleman	0.5%	11	11	12	12
S71	Chinook	Edgar G Obie	1.4%	3	3	3	4
CII	Choteau	Choteau	1.4%	12	13	14	16
4U6	Circle	Circle Town County	1.0%	1	1	1	1
RC0	Clinton	Rock Creek	0.5%	1	1	1	1
M46	Colstrip	Colstrip	1.0%	11	12	12	13
6S3	Columbus	Woltermann Memorial	1.4%	29	31	33	38
S04	Condon	Condon USFS	0.5%	0	0	0	0
4U7	Conner	West Fork Lodge	0.5%	5	5	5	6
S01	Conrad	Conrad	1.0%	13	14	14	16
S85	Culbertson	Big Sky Field	1.0%	8	8	9	10
CTB	Cut Bank	Cut Bank Municipal	1.4%	29	31	33	38
38S	Deer Lodge	Deer Lodge-City-County	1.0%	14	15	15	17
4U9	Dell	Dell Flight Strip	0.5%	3	3	3	3
5U0	Denton	Denton	0.5%	0	0	0	0
DLN	Dillon	Dillon	1.4%	17	18	20	22
M26	Drummond	Drummond	0.5%	0	0	0	0
5U1	Dutton	Dutton	0.5%	12	12	13	13
97M	Ekalaka	Ekalaka	1.0%	3	3	3	4
EKS	Ennis	Ennis - Big Sky	1.0%	10	11	11	12
88M	Eureka	Eureka	1.0%	31	33	34	38
5U5	Fairfield	Fairfield	0.5%	6	6	6	7
5U6	Fairview	Fairview	0.5%	2	2	2	2
1S3	Forsyth	Tillitt Field	1.4%	24	26	28	32
79S	Fort Benton	Fort Benton	1.0%	25	26	28	31
37S	Fort Peck	Fort Peck	0.5%	7	7	7	8
5U7	Fort Smith	Fort Smith Landing Strip	0.5%	0	0	0	0
29S	Gardiner	Gardiner	1.0%	0	0	0	0
5U8	Geraldine	Geraldine	1.0%	0	0	0	0
GGW	Glasgow	Wokal Field / Glasgow Intl.	2.1%	76	84	93	115
GDV	Glendive	Dawson Community	2.1%	15	17	18	23
GTF	Great Falls	Great Falls Intl.	3.0%	108	125	145	195
6S5	Hamilton	Ravalli County	1.4%	104	111	119	137
00U	Hardin	Big Horn County	0.5%	10	10	11	11

ID	Associated City	Airport Name	Applied Montana Growth Rate 2013-2033	2013	2018	2023	2033
48S	Harlem	Harlem	1.0%	5	5	6	6
U09	Harlem	Fort Belknap Agency	0.5%	0	0	0	0
HWQ	Harlowton	Wheatland County	1.0%	7	7	8	9
HVR	Havre	Havre City-County	2.1%	21	23	26	32
HLN	Helena	Helena Regional	3.0%	377	437	507	682
6U5	Hinsdale	Hinsdale	0.5%	3	3	3	3
6U6	Hogeland	Hogeland	0.5%	2	2	2	2
S09	Hot Springs	Hot Springs	0.5%	2	2	2	2
6U7	Hysham	Hysham	0.5%	2	2	2	2
JDN	Jordan	Jordan	1.4%	1	1	1	1
GPI	Kalispell	Glacier Park Intl.	3.0%	159	184	214	288
S27	Kalispell	Kalispell City	1.4%	78	84	90	103
6S8	Laurel	Laurel Municipal	1.4%	88	94	101	116
80S	Lavina	Lavina	0.5%	1	1	1	1
LWT	Lewistown	Lewistown Municipal	1.4%	64	69	74	84
S59	Libby	Libby	1.0%	17	18	19	21
S69	Lincoln	Lincoln	1.0%	10	11	11	12
LVM	Livingston	Mission Field	1.4%	16	17	18	21
M75	Malta	Malta	1.0%	11	12	12	13
0S1	Meadow Creek	Meadow Creek USFS	0.5%	0	0	0	0
MLS	Miles City	Frank Wiley Field	1.4%	20	21	23	26
MSO	Missoula	Missoula Intl.	3.0%	145	168	195	262
S00	Opheim	Opheim	0.5%	2	2	2	2
U05	Philipsburg	Riddick Field	1.0%	0	0	0	0
S34	Plains	Plains	1.0%	7	7	8	9
PWD	Plentywood	Sher-Wood	1.0%	10	11	11	12
8S1	Polson	Polson	1.4%	31	33	36	41
PO1	Poplar	Poplar Municipal	1.0%	7	7	8	9
H28	Port of Del Bonita	Whetstone Intl.	0.5%	0	0	0	0
RED	Red Lodge	Red Lodge	1.0%	13	14	14	16
7U8	Richey	Richey	0.5%	2	2	2	2
7S0	Ronan	Ronan	1.4%	38	41	44	50
RPX	Roundup	Roundup	1.0%	10	11	11	12
M42	Russian Flat	Russian Flat	0.5%	0	0	0	0
8U0	Ryegate	Ryegate	0.5%	0	0	0	0
8U1	Sand Springs	Sand Springs Strip	0.5%	1	1	1	1
8U2	Schafer	Schafer / USFS	0.5%	0	0	0	0
8U3	Scobey	Scobey / East Popular	1.0%	0	0	0	0
9S2	Scobey	Scobey	0.5%	14	14	15	15
23S	Seeley Lake	Seeley Lake	1.4%	13	14	15	17
M35	Seeley Lake	Lindey's Landing Strip	0.5%	0	0	0	0

ID	Associated City	Airport Name	Applied Montana Growth Rate 2013-2033	2013	2018	2023	2033
SBX	Shelby	Shelby	1.4%	21	23	24	28
SDY	Sidney	Sidney-Richland Municipal	2.1%	32	35	39	48
8U4	Spotted Bear	Spotted Bear / USFS	0.5%	0	0	0	0
52S	St. Ignatius	St. Ignatius	0.5%	12	12	13	13
S64	Stanford	Stanford	1.0%	10	11	11	12
32S	Stevensville	Stevensville	1.4%	75	80	86	99
8U5	Sunburst	Sunburst	0.5%	1	1	1	1
9S4	Superior	Mineral County	1.0%	12	13	13	15
7S8	Sweetgrass	Ross Intl.	0.5%	0	0	0	0
8U6	Terry	Terry	1.0%	1	1	1	1
THM	Thompson Falls	Thompson Falls	1.0%	11	12	12	13
9S5	Three Forks	Three Forks	1.4%	31	33	36	41
B70	Tiber Dam	Tiber Dam	0.5%	0	0	0	0
8U8	Townsend	Townsend	1.0%	10	11	11	12
8U9	Townsend	Canyon Ferry	0.5%	3	3	3	3
57S	Troy	Troy	0.5%	0	0	0	0
9U0	Turner	Turner	1.0%	14	15	15	17
7S1	Twin Bridges	Twin Bridges	1.4%	10	11	11	13
7S7	Valier	Valier	1.0%	0	0	0	0
WYS	West Yellowstone	Yellowstone	2.1%	0	0	0	0
7S6	White Sulphur Springs	White Sulphur Springs	1.0%	5	5	6	6
58S	Whitefish	Whitefish	0.5%	1	1	1	1
9U1	Wilsall	Wilsall	0.5%	0	0	0	0
9S7	Winifred	Winifred	0.5%	0	0	0	0
BB0	Winifred	Black Butte North	1.0%	0	0	0	0
BW8	Winifred	Bullwhacker	0.5%	0	0	0	0
CW0	Winifred	Cow Creek	0.5%	0	0	0	0
LC0	Winifred	Left Coulee	0.5%	0	0	0	0
MT3	Winifred	Knox Ridge	0.5%	0	0	0	0
WH0	Winifred	Woodhawk	0.5%	0	0	0	0
7S2	Winnett	Winnett	0.5%	1	1	1	1
7S4	Wisdom	Wisdom	0.5%	1	1	1	1
02T	Wise River	Wise River	0.5%	0	0	0	0
OLF	Wolf Point	LM Clayton	2.1%	8	9	10	12
STATEWIDE TOTAL*			**2.22%**	**2,594**	**2,886**	**3,218**	**4,022**

Source: FAA Terminal Area Forecast, Wilbur Smith - Economic Impacts of Airports in Montana, 2009, CDM Smith
*May not sum due to rounding

Table 6-27: Scenario Two: General Aviation Operations Projection

ID	Associated City	Airport Name	Statewide Growth Rate 2013-2033	2013	2018	2023	2033
3U3	Anaconda	Bowman Field	1.0%	4,900	5,152	5,416	5,987
3U4	Ashland	St. Labre Mission	0.5%	510	523	536	563
3U5	Augusta	Augusta	0.5%	150	154	158	166
3U7	Augusta	Benchmark	1.0%	450	473	497	550
49S	Babb	Babb	0.5%	250	256	263	276
BHK	Baker	Baker Municipal	1.4%	7,000	7,502	8,040	9,236
3U8	Big Sandy	Big Sandy	1.0%	5,400	5,677	5,969	6,598
6S0	Big Timber	Big Timber	1.4%	7,200	7,717	8,270	9,500
53U	Bigfork	Ferndale Airfield	0.5%	5,000	5,126	5,256	5,524
BIL	Billings	Billings Logan Intl.	3.0%	42,677	49,491	57,394	77,186
3U9	Boulder	Boulder	0.5%	600	615	631	663
BZN	Bozeman	Bozeman Yellowstone Intl.	3.0%	56,839	65,915	76,440	102,800
6S1	Bridger	Bridger Municipal	0.5%	1,800	1,845	1,892	1,989
00F	Broadus	Broadus	1.0%	5,350	5,625	5,914	6,537
8S0	Browning	Starr-Browning Airstrip	0.5%	625	641	657	691
BTM	Butte	Bert Mooney	3.0%	20,500	23,773	27,569	37,077
LTY	Chester	Liberty County	1.0%	4,700	4,941	5,195	5,743
4U4	Chinook	Hebbleman	0.5%	600	615	631	663
S71	Chinook	Edgar G Obie	1.4%	8,350	8,949	9,591	11,017
CII	Choteau	Choteau	1.4%	3,000	3,215	3,446	3,958
4U6	Circle	Circle Town County	1.0%	3,750	3,943	4,145	4,582
RC0	Clinton	Rock Creek	0.5%	425	436	447	470
M46	Colstrip	Colstrip	1.0%	3,250	3,417	3,592	3,971
6S3	Columbus	Woltermann Memorial	1.4%	9,050	9,699	10,395	11,940
S04	Condon	Condon USFS	0.5%	300	308	315	331
4U7	Conner	West Fork Lodge	0.5%	550	564	578	608
S01	Conrad	Conrad	1.0%	3,750	3,943	4,145	4,582
S85	Culbertson	Big Sky Field	1.0%	4,550	4,784	5,029	5,559
CTB	Cut Bank	Cut Bank Municipal	1.4%	8,100	8,681	9,304	10,687
38S	Deer Lodge	Deer Lodge-City-County	1.0%	3,750	3,943	4,145	4,582
4U9	Dell	Dell Flight Strip	0.5%	950	974	999	1,050
5U0	Denton	Denton	0.5%	550	564	578	608

ID	Associated City	Airport Name	Statewide Growth Rate 2013-2033	2013	2018	2023	2033
DLN	Dillon	Dillon	1.4%	10,250	10,985	11,774	13,524
M26	Drummond	Drummond	0.5%	175	179	184	193
5U1	Dutton	Dutton	0.5%	1,650	1,692	1,734	1,823
97M	Ekalaka	Ekalaka	1.0%	2,576	2,708	2,847	3,147
EKS	Ennis	Ennis - Big Sky	1.0%	11,000	11,565	12,159	13,440
88M	Eureka	Eureka	1.0%	2,075	2,182	2,294	2,535
5U5	Fairfield	Fairfield	0.5%	3,850	3,947	4,047	4,254
5U6	Fairview	Fairview	0.5%	1,850	1,897	1,945	2,044
1S3	Forsyth	Tillitt Field	1.4%	8,145	8,729	9,356	10,746
79S	Fort Benton	Fort Benton	1.0%	5,450	5,730	6,024	6,659
37S	Fort Peck	Fort Peck	0.5%	410	420	431	453
5U7	Fort Smith	Fort Smith Landing Strip	0.5%	3,100	3,178	3,259	3,425
29S	Gardiner	Gardiner	1.0%	7,600	7,990	8,401	9,286
5U8	Geraldine	Geraldine	1.0%	3,800	3,995	4,200	4,643
GGW	Glasgow	Wokal Field/Glasgow Intl.	2.1%	8,210	9,105	10,098	12,421
GDV	Glendive	Dawson Community	2.1%	5,800	6,432	7,134	8,775
GTF	Great Falls	Great Falls Intl.	3.0%	16,359	18,971	22,000	29,587
6S5	Hamilton	Ravalli County	1.4%	23,600	25,293	27,108	31,137
00U	Hardin	Big Horn County	0.5%	5,600	5,741	5,886	6,187
48S	Harlem	Harlem	1.0%	3,850	4,048	4,256	4,704
U09	Harlem	Fort Belknap Agency	0.5%	300	308	315	331
HWQ	Harlowton	Wheatland County	1.0%	2,225	2,339	2,459	2,719
HVR	Havre	Havre City-County	2.1%	7,244	8,034	8,910	10,959
HLN	Helena	Helena Regional	3.0%	27,626	32,037	37,153	49,965
6U5	Hinsdale	Hinsdale	0.5%	800	820	841	884
6U6	Hogeland	Hogeland	0.5%	275	282	289	304
S09	Hot Springs	Hot Springs	0.5%	500	513	526	552
6U7	Hysham	Hysham	0.5%	700	718	736	773
JDN	Jordan	Jordan	1.4%	2,050	2,197	2,355	2,705
GPI	Kalispell	Glacier Park Intl.	3.0%	15,923	18,466	21,414	28,799
S27	Kalispell	Kalispell City	1.4%	39,400	42,227	45,257	51,984
6S8	Laurel	Laurel Municipal	1.4%	41,900	44,906	48,128	55,282
80S	Lavina	Lavina	0.5%	375	384	394	414
LWT	Lewistown	Lewistown Municipal	1.4%	16,104	17,259	18,498	21,247
S59	Libby	Libby	1.0%	5,000	5,257	5,527	6,109
S69	Lincoln	Lincoln	1.0%	3,990	4,195	4,410	4,875

ID	Associated City	Airport Name	Statewide Growth Rate 2013-2033	2013	2018	2023	2033
LVM	Livingston	Mission Field	1.4%	14,500	15,540	16,655	19,131
M75	Malta	Malta	1.0%	4,100	4,311	4,532	5,009
0S1	Meadow Creek	Meadow Creek USFS	0.5%	350	359	368	387
MLS	Miles City	Frank Wiley Field	1.4%	11,200	12,004	12,865	14,777
MSO	Missoula	Missoula Intl.	3.0%	20,998	24,351	28,239	37,977
S00	Opheim	Opheim	0.5%	200	205	210	221
U05	Philipsburg	Riddick Field	1.0%	2,050	2,155	2,266	2,505
S34	Plains	Plains	1.0%	4,240	4,458	4,687	5,181
PWD	Plentywood	Sher-Wood	1.0%	11,350	11,933	12,546	13,868
8S1	Polson	Polson	1.4%	9,700	10,396	11,142	12,798
PO1	Poplar	Poplar Municipal	1.0%	11,400	11,986	12,601	13,929
H28	Port of Del Bonita	Whetstone Intl.	0.5%	70	72	74	77
RED	Red Lodge	Red Lodge	1.0%	5,900	6,203	6,522	7,209
7U8	Richey	Richey	0.5%	3,750	3,845	3,942	4,143
7S0	Ronan	Ronan	1.4%	9,850	10,557	11,314	12,996
RPX	Roundup	Roundup	1.0%	5,300	5,572	5,858	6,476
M42	Russian Flat	Russian Flat	0.5%	320	328	336	354
8U0	Ryegate	Ryegate	0.5%	275	282	289	304
8U1	Sand Springs	Sand Springs Strip	0.5%	700	718	736	773
8U2	Schafer	Schafer / USFS	0.5%	550	564	578	608
8U3	Scobey	Scobey / East Popular	1.0%	10	11	11	12
9S2	Scobey	Scobey	0.5%	4,450	4,562	4,678	4,917
23S	Seeley Lake	Seeley Lake	1.4%	2,120	2,272	2,435	2,797
M35	Seeley Lake	Lindey's Landing Strip	0.5%	160	164	168	177
SBX	Shelby	Shelby	1.4%	8,250	8,842	9,476	10,885
SDY	Sidney	Sidney-Richland Municipal	2.1%	11,500	12,754	14,145	17,398
8U4	Spotted Bear	Spotted Bear / USFS	0.5%	620	636	652	685
52S	St. Ignatius	St. Ignatius	0.5%	4,050	4,152	4,257	4,475
S64	Stanford	Stanford	1.0%	4,300	4,521	4,753	5,254
32S	Stevensville	Stevensville	1.4%	13,500	14,469	15,507	17,812
8U5	Sunburst	Sunburst	0.5%	400	410	420	442
9S4	Superior	Mineral County	1.0%	4,000	4,205	4,421	4,887
7S8	Sweetgrass	Ross Intl.	0.5%	25	26	26	28
8U6	Terry	Terry	1.0%	800	841	884	977
THM	Thompson Falls	Thompson Falls	1.0%	7,000	7,360	7,738	8,553
9S5	Three Forks	Three Forks	1.4%	10,530	11,285	12,095	13,893

ID	Associated City	Airport Name	Statewide Growth Rate 2013-2033	2013	2018	2023	2033
B70	Tiber Dam	Tiber Dam	0.5%	90	92	95	99
8U8	Townsend	Townsend	1.0%	3,600	3,785	3,979	4,399
8U9	Townsend	Canyon Ferry	0.5%	1,200	1,230	1,261	1,326
57S	Troy	Troy	0.5%	700	718	736	773
9U0	Turner	Turner	1.0%	7,000	7,360	7,738	8,553
7S1	Twin Bridges	Twin Bridges	1.4%	2,650	2,840	3,044	3,496
7S7	Valier	Valier	1.0%	50	53	55	61
WYS	West Yellowstone	Yellowstone	2.1%	10,500	11,645	12,915	15,885
7S6	White Sulphur Springs	White Sulphur Springs	1.0%	5,550	5,835	6,135	6,781
58S	Whitefish	Whitefish	0.5%	500	513	526	552
9U1	Wilsall	Wilsall	0.5%	600	615	631	663
9S7	Winifred	Winifred	0.5%	1,500	1,538	1,577	1,657
BB0	Winifred	Black Butte North	1.0%	70	74	77	86
BW8	Winifred	Bullwhacker	0.5%	70	72	74	77
CW0	Winifred	Cow Creek	0.5%	75	77	79	83
LC0	Winifred	Left Coulee	0.5%	70	72	74	77
MT3	Winifred	Knox Ridge	0.5%	70	72	74	77
WH0	Winifred	Woodhawk	0.5%	50	51	53	55
7S2	Winnett	Winnett	0.5%	130	133	137	144
7S4	Wisdom	Wisdom	0.5%	230	236	242	254
02T	Wise River	Wise River	0.5%	500	513	526	552
OLF	Wolf Point	LM Clayton	2.1%	5,835	6,471	7,177	8,828
STATWIDE TOTAL			**1.80%**	**734,196**	**800,532**	**874,414**	**1,048,972**

Source: FAA Terminal Area Forecast, Wilbur Smith - Economic Impacts of Airports in Montana, 2009, CDM Smith
*May not sum due to rounding

Scenario Two resulted in increases for both based aircraft and general aviation operations. Statewide based aircraft experienced an average annual growth rate of 2.2 percent and an increase from 2,594 aircraft in 2013 to 4,022 in 2033. Statewide general aviation operations increased at a slightly lower average annual growth rate of 1.7 percent and increased from 734,196 to 1,048,972 for the planning period.

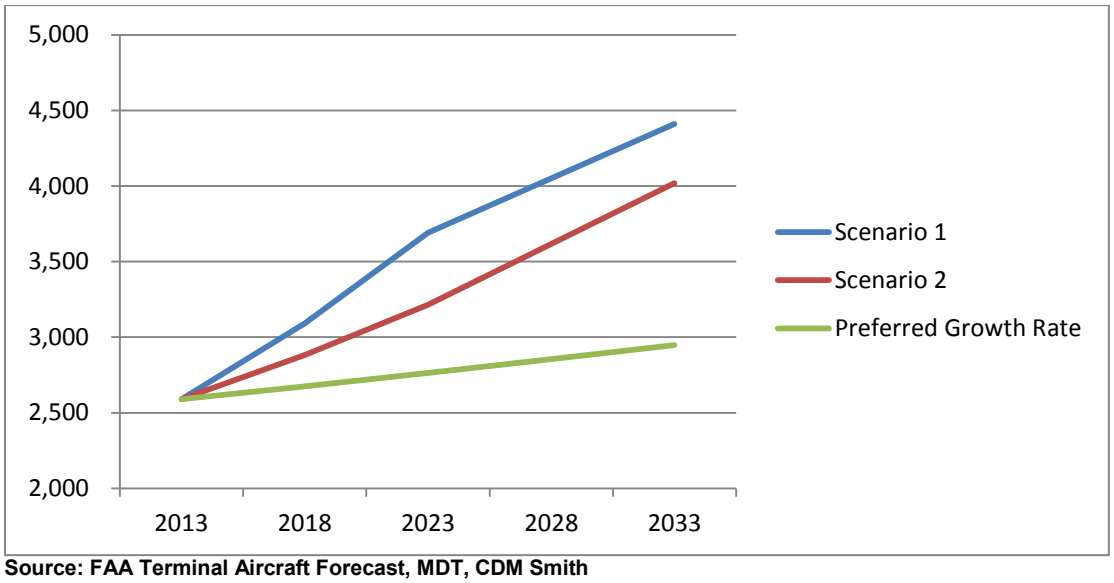
Comparison of Scenarios

The results from the two scenarios are compared in **Table 6-28**. In 2013, Montana system airports were home to 2,594 based aircraft. Scenario One produced a statewide projection of 4,416 based aircraft by the end of the planning period, and an average annual growth rate of 2.7 percent, while Scenario Two produced a statewide projection of 4,022 and an average annual growth rate of 2.2 percent for the 20-year planning period. By comparison, the previous preferred bottom-up projection found in Table 6-14 for based aircraft produced 2,951 based aircraft and an average annual growth rate of 0.65 percent. The comparison of based aircraft scenarios with the preferred growth rate is shown in **Figure 6-6**.

Table 6-28: Comparison Summary of Scenario One and Scenario Two

Scenario	2013	2018	2023	2033	AAGR 2013-2033
Scenario One					
Based Aircraft	2,591	3,092	3,690	4,411	2.7%
General Aviation Operations	692,385	826,317	986,155	1,178,753	2.7%
Scenario Two					
Based Aircraft	2,591	2,883	3,215	4,019	2.2%
General Aviation Operations	692,385	751,129	816,388	970,007	1.7%

Source: FAA Terminal Area Forecast, Wilbur Smith - Economic Impacts of Airports in Montana, 2009, CDM Smith

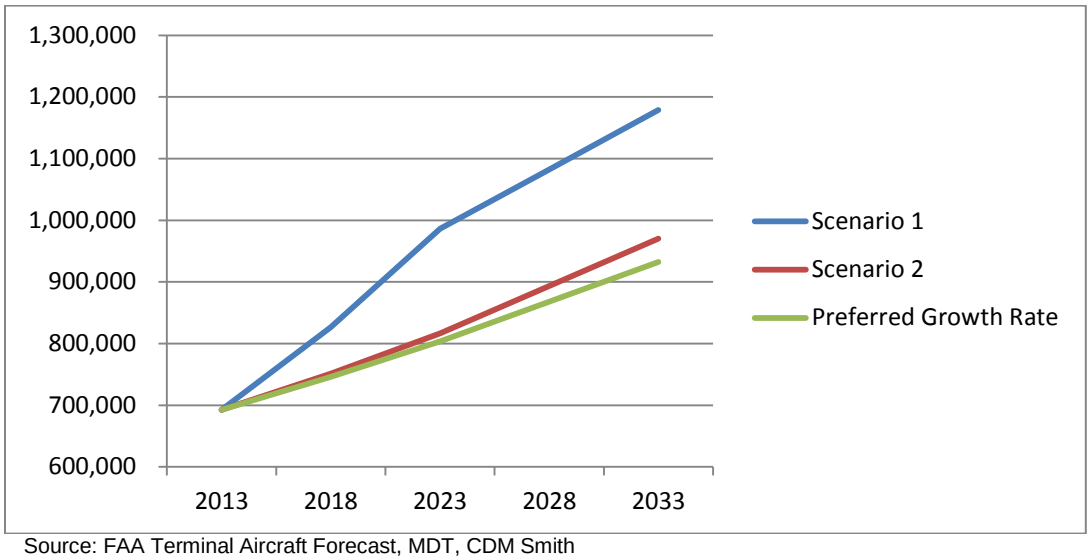


Source: FAA Terminal Aircraft Forecast, MDT, CDM Smith

Figure 6-6: Comparison of Based Aircraft Scenario Projections and Preferred Growth Rate

In 2013, general aviation operations totaled 734,196. Scenario One produced a statewide projection of 1,249,935 general aviation operations with an average annual growth rate of 2.7 percent, while Scenario Two produced a statewide projection of 1,048,972 operations by the end of the planning period, representing an average annual growth rate of 1.8 percent. By comparison, the previous preferred top-down methodology for general aviation operations presented in Table 6-21 produced 988,856 operations with a growth rate of 1.5 percent. The comparison of general aviation operations is shown in **Figure 6-7.**

Figure 6-7



Source: FAA Terminal Aircraft Forecast, MDT, CDM Smith

Figure 6-7: Comparison of General Aviation Operations Scenario Projection and Preferred Growth Rate

6.6 Forecast Implications to Aviation Activity in Montana

As aviation activity increases during the 20-year planning period demand for aviation services increases. Aircraft require fuel and repair services and a number of airports throughout Montana provide these services through full-service Fixed Base Operator (FBO), on the high end of the continuum, to self-serve credit card pumps found at unattended airports. This analysis identifies "triggering events" when the criteria for market driven forces are likely met.

Forecast Implications: AvGas Availability

Analysis of current AvGas fuel services, be it credit card pumps or FBO providers, located on Montana airports reveals that many airports with greater than 10 based aircraft supply AvGas to aircraft.[80] When utilizing the preferred forecast for based aircraft (found in Table 6-14) several airports are forecasted to reach more than 10 based aircraft within the 20-year planning period. These airports and the forecast year based aircraft reach the levels where AvGas service may be warranted are identified below in Table 6-29. Additionally, five of the seven airports presented in **Table 6-29** currently have greater than 10 based aircraft.

[80] There are currently 53 general aviation and EAS airports in Montana that provide avgas. Based aircraft numbers for these airports range from 0 to 100. Analysis of the based aircraft for these airports with AvGas service indicates a median of 10 based aircraft.

Table 6-29: Analysis of Current AvGas Fuel Service Needs

ID	Associated City	Airport Name	Region	Regional AAGR 2013-2033	2013	2018	2023	2033
3U3	Anaconda	Bowman Field	4	0.27%	10	10	10	11
M46	Colstrip	Colstrip	8	0.53%	11	11	12	12
5U1	Dutton	Dutton	6	0.52%	12	12	13	13
S69	Lincoln	Lincoln	3	0.61%	10	10	11	11
M75	Malta	Malta	9	0.18%	11	11	11	11
RED	Red Lodge	Red Lodge	8	0.53%	13	13	13	13
THM	Thompson Falls	Thompson Falls	1	0.82%	11	11	12	13

Source: Montana Department of Commerce - REMI, CDM Smith

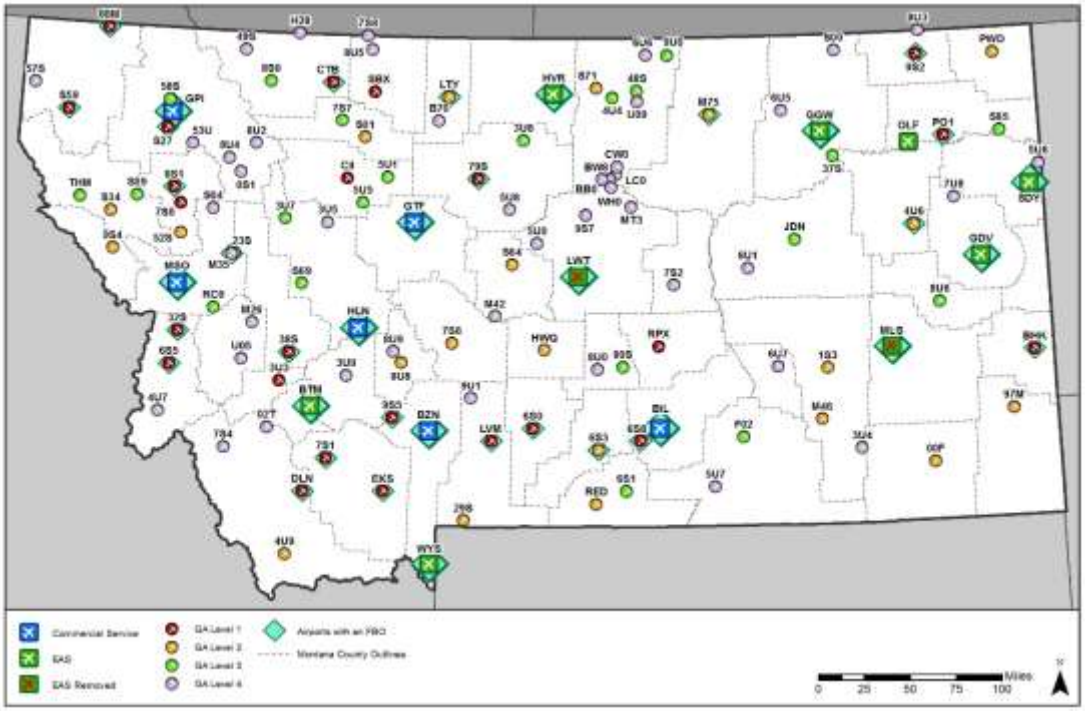
Forecast Implications: Full-Service FBO Availability

Similar analysis of current full-service FBO providers located on Montana airports reveal airports with greater than 21 based aircraft and more than 7,800 annual operations have sustainable full-service FBO operations on their airport.[81] While some airports with fewer based aircraft and operations currently have FBO operations, the criteria established for this analysis is considered a conservative estimate. When utilizing the preferred forecast for based aircraft (found in Table 6-20) only one airport is forecasted to reach both criteria within the 20-year planning period. Based on the forecasts, Shelby Airport located 90 miles north of Great Falls will likely have sufficient demand, based on forecasted activity in 2018, to offer full-service FBO services. It is important to point out that the airport currently has a FBO on the field offering fuel and hangar facilities, but does not yet offer major airframe and aircraft power-plant repair services.

[81] Full-service FBOs provide at a minimum fuel sales and aircraft power plant and airframe repair.

Source: Google Earth Pro, CDM Smith. Airports outlined in Table 6-29 are represented by a white triangle.

Figure 6-8: Location of AvGas Services in Montana



Source: Google Earth Pro, CDM Smith

Figure 6-9: Location of FBO Services in Montana

Forecast Implications: Second Home Ownership Impacts on General Aviation Operations

Montana is the fourth largest state with over 147,000 squares miles of land, 1,494 square miles of water, and 17 mountain ranges. Many people who value this vast and geographically diverse state as a popular destination decide to purchase second homes, vacation homes, or similar type properties. Home owners and tourists visiting these properties arrive via automobile, recreational vehicle, through one of the state's seven commercial or six essential air service airports, or at one of Montana's general aviation airports. One of the popular general aviation options includes air travel through the Yellowstone Club, which offers direct private jet charter flights to over a dozen cities across the U.S.

According to research at the University of Montana, second home ownership in Montana grew by 59 percent from 2000 to 2010. This research also concluded that highest percentage of second home ownership occurred within five of the state's counties: Madison, Granite, Meagher, Lake, Lincoln, and Flathead. The county with the highest second home ownership was Madison County, at 41.8 percent of all homes are vacation or second homes, followed by Granite County, at 41.7 percent. Other second home ownership percentages include Meagher County at 33.4 percent, Lake County at 24 percent, Lincoln County at 15 percent, and Flathead County at 14 percent.[82] Ravalli County had a second home ownership rate of 6 percent.

Forecasted general aviation operations were analyzed at airports in counties with significant second home ownership and are based on the estimated number of operations attributable to these homes. This figure was acquired by determining the number of itinerant operations for each airport located in a county with at least six percent second home ownership rates. In order to tie second home ownership to general aviation operations it was assumed that 10 percent of second home ownership rate could be applied to the itinerant operations at an airport in these counties. For example, Flathead County has a second home ownership rate of 14 percent and thereby it is assumed 1.4 percent of all GA itinerant operations at Flathead County airports are related to travel to these homes. At Ferndale Airport there were 2,500 annual operations. When multiplying 2,500 by 1.4 percent it is estimated that 35 annual operations at the airport are tied to second homes.

As mentioned previously, between 2000 and 2010 second home ownership grew 59 percent or 5.9 percent annually. In order to forecast general aviation operations related to second home ownership a top-down growth rate of 5.9 percent, was applied to Montana airports within these select markets across a 20-year planning period (**Table 6-30**). For general aviation airports, the most significant growth of forecasted itinerant operations related to second home ownership are anticipated at Ennis-Big Sky, Riddick Field, and Twin Bridges airports while Bozeman's commercial service airport will likely experience significant growth in general aviation traffic related to second homes.

Table 6-30: Second Home Ownership Impacts on General Aviation Itinerant Operations

ID	Associated City	Airport	National Growth Rate	2013	2018	2023	2033
BHK	Baker	Baker Municipal	2.9%	36	42	49	65
3U8	Big Sandy	Big Sandy	2.9%	12	14	16	21
6S0	Big Timber	Big Timber	2.9%	32	37	43	57
8S0	Browning	Starr-Browning Airstrip	2.9%	20	23	27	36

[82] Devlin, V. (2011). Select Montana Counties See Rise In Demand For Vacation Homes. *The Missoulian*. http://missoulian.com/business/local/select-montana-counties-see-rise-in-demand-for-vacation-homes/article_0dc9dbc0-948e-11e0-b4fa-001cc4c03286.html/

ID	Associated City	Airport	National Growth Rate	2013	2018	2023	2033
LTY	Chester	Liberty County	2.9%	17	19	22	30
4U6	Circle	Circle Town County	2.9%	12	14	16	21
S01	Conrad	Conrad	2.9%	51	58	67	90
CTB	Cut Bank	Cut Bank Municipal	2.9%	58	67	77	103
DLN	Dillon	Dillon	2.9%	82	95	109	145
97M	Ekalaka	Ekalaka	2.9%	7	8	9	12
EKS	Ennis	Ennis - Big Sky	2.9%	17	19	22	29
1S3	Forsyth	Tillitt Field	2.9%	36	42	49	65
GGW	Glasgow	Wokal Field/Glasgow Intl.	2.9%	66	76	87	116
GDV	Glendive	Dawson Community	2.9%	104	120	139	185
48S	Harlem	Harlem	2.9%	16	19	21	29
HWQ	Harlowton	Wheatland County	2.9%	19	22	26	34
HVR	Havre	Havre City-County	2.9%	190	219	253	336
JDN	Jordan	Jordan	2.9%	7	9	10	13
LWT	Lewistown	Lewistown Municipal	2.9%	115	132	153	203
S59	Libby	Libby	2.9%	52	60	70	93
M75	Malta	Malta	2.9%	38	44	51	68
MLS	Miles City	Frank Wiley Field	2.9%	168	193	223	297
S34	Plains	Plains	2.9%	21	24	28	37
PWD	Plentywood	Sher-Wood	2.9%	37	43	49	66
8S1	Polson	Polson	2.9%	89	103	119	159
PO1	Poplar	Poplar Municipal	2.9%	17	19	22	30
9S2	Scobey	Scobey Airport	2.9%	20	24	27	36
SBX	Shelby	Shelby	2.9%	64	74	85	113
8U6	Terry	Terry	2.9%	12	14	16	21
57S	Troy / Libby	Troy	2.9%	52	60	70	93
7S6	White Sulphur Springs	White Sulphur Springs	2.9%	19	22	25	33
OLF	Wolf Point	LM Clayton	2.9%	54	62	72	96

Source: *The Missoulian*, 2013; FAA Terminal Area Forecast, CDM Smith

Forecast Implications: Air Ambulance Operations in Montana

Air ambulance is a comprehensive term describing the use air transportation, airplane, or helicopter, to transport patients to and from healthcare facilities. According to the Government Accountability Office and FAA, an estimated 74 percent of nationwide air ambulances are rotorcraft, while the remaining are fixed-wing aircraft. Rotorcraft ambulances provide better access because of their ability to land in a variety of locations, while fixed-wing aircraft have the capacity to transport patients for longer distances at higher rates of speed. Each of these specially outfitted aircraft transports trauma victims as well as stabilized patients quickly over distance, terrain, or weather that is often impractical for traditional ground transportation. Much of Montana is considered rural, with difficult terrain and sometimes impassable roads depending on the time of year. Air ambulances serve as a vital asset for those rural communities without access to immediate medical resources.

The degree of air ambulance coverage in Montana is dependent on proximity to the state's larger communities, many of which have established air ambulance bases. According to the

Atlas & Database of Air Medical Services (ADAMS), Montana has 14 bases and 18 total air ambulance aircraft in the state, which includes seven rotorcraft and 11 fixed-winged aircraft.

Communities within 60 miles of a major hospital are typically served by either ground ambulance transport or rotorcraft air ambulance. While rural communities in Montana greater than 60 miles from a based air ambulance are more often served by fixed-wing air ambulances. Therefore, an analysis was conducted to estimate the current and future rural operations of fixed-winged air ambulance activity. To estimate rural air ambulance operations, information was gathered on Montana's 31 rural hospitals which through survey data indicate they rely on air ambulances. Based on hospital survey data it is estimated that for every 50 persons in a rural community 1 annual air ambulance operation takes place. **Table 6-31** outlines those communities in Montana located outside of a 60-mile radius from a based air ambulance.

Each of these select airport's base year air ambulance activity was then forecasted for the 20-year planning period. The formulation of the forecast's growth rate was a top-down methodology based on the ADAMS national air medical services trends which indicates air ambulance aircraft expanded at an annual rate of 2.9 percent between 2008 and 2014. This annual growth rate was applied to each Montana airport serving rural hospitals in the state. It is noteworthy to point out that these operations transport patients to nearby hospitals in Billings, Great Falls, and Missoula, as well as to facilities in Seattle, Salt Lake City, and Minneapolis.

Table 6-31: Fixed Wing Air Ambulance Operations in Montana to Select Rural Airports

Associated City	Airport Name	ID	National Growth Rate	2013	2018	2023	2033
Conrad	Conrad	S01	2.9%	51	58	67	90
Big Timber	Big Timber	6S0	2.9%	32	37	43	57
Dillon	Dillon	DLN	2.9%	82	95	109	145
Polson	Polson	8S1	2.9%	89	103	119	159
Plains	Plains	S34	2.9%	21	24	28	37
White Sulphur Springs	White Sulphur Springs	7S6	2.9%	19	22	25	33
Big Sandy	Big Sandy	3U8	2.9%	12	14	16	21
Poplar	Poplar Municipal	PO1	2.9%	17	19	22	30
Ennis	Ennis - Big Sky	EKS	2.9%	17	19	22	29
Plentywood	Sher-Wood	PWD	2.9%	37	43	49	66
Shelby	Shelby	SBX	2.9%	64	74	85	113
Glendive	Dawson Community	GDV	2.9%	104	120	139	185
Chester	Liberty County	LTY	2.9%	17	19	22	30
Forsyth	Tillitt Field	1S3	2.9%	36	42	49	65
Wolf Point	LM Clayton	OLF	2.9%	54	62	72	96
Lewistown	Lewistown Municipal	LWT	2.9%	115	132	153	203
Havre	Havre City-County	HVR	2.9%	190	219	253	336
Miles City	Frank Wiley Field	MLS	2.9%	168	193	223	297
Circle	Circle Town County	4U6	2.9%	12	14	16	21
Browning	Starr-Browning Airstrip	8S0	2.9%	20	23	27	36
Harlowton	Wheatland County	HWQ	2.9%	19	22	26	34
Ekalaka	Ekalaka	97M	2.9%	7	8	9	12
Scobey	Scobey Airport	9S2	2.9%	20	24	27	36
Glasgow	Wokal Field/Glasgow Intl.	GGW	2.9%	66	76	87	116
Libby	Libby	S59	2.9%	52	60	70	93
Harlem	Harlem	48S	2.9%	16	19	21	29
Terry	Terry	8U6	2.9%	12	14	16	21
Baker	Baker Municipal	BHK	2.9%	36	42	49	65
Jordan	Jordan	JDN	2.9%	7	9	10	13
Cut Bank	Cut Bank Municipal	CTB	2.9%	58	67	77	103
Malta	Malta	M75	2.9%	38	44	51	68

Source: Atlas & Database of Air Medical Services, CDM Smith

Forecast Implications: Aerial Wildfire Firefighting in Montana

The total landbase of Montana is just over 94 million acres with a total combined protected and unprotected wildness of nearly 10 million acres. Every year, the state experiences hundreds of wildfires across its forests and grasslands. Many of these fires are located in remote areas of the state, while others impede on the wildland-urban interface, threatening homes and other property. Whether necessary because of the sheer size of a remote fire, or because of the urgency of threatened property on the cusp of this interface, aviation-related wildfire suppression has been and continues to be a vital element for firefighting across Montana. A variety of components and characteristics pertinent to aerial wildfire suppression are listed below. **Figure 6-10** identifies total acres burned annually in Montana between 1998 and 2013. In 2012 fires consumed a peak 1.5 million acres. Average acres consumed during the time period averages 395,000 acres.

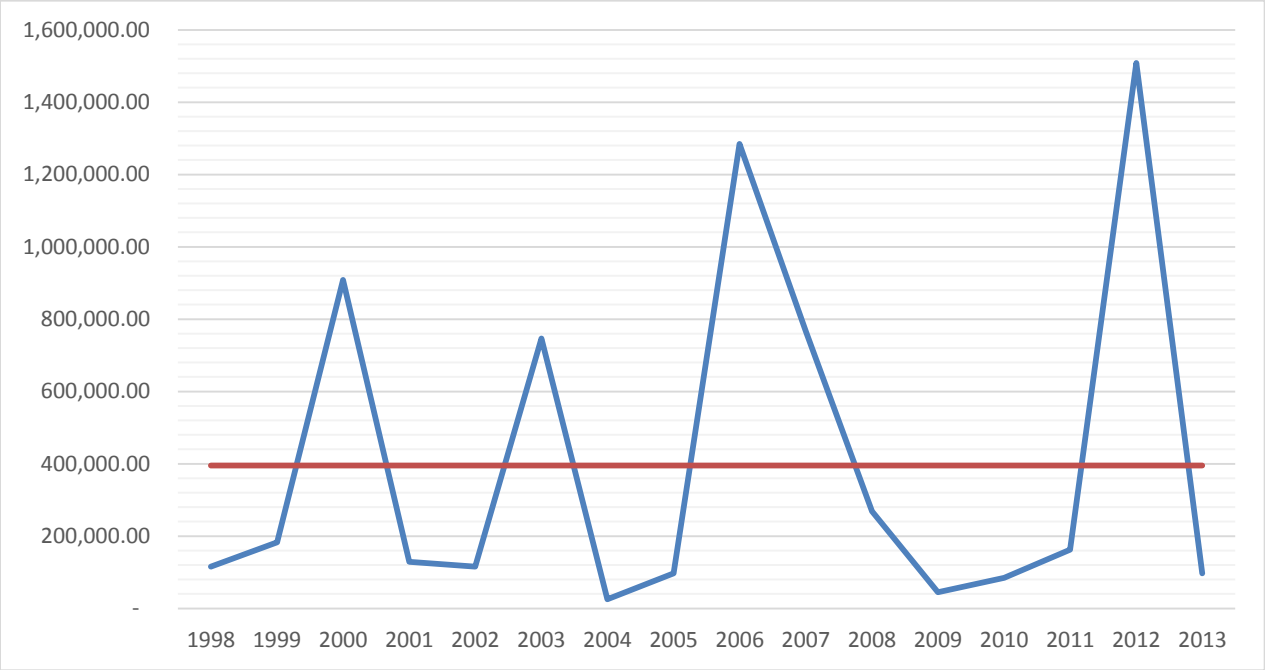


Figure 6-10: Acres Burned, 1998 - 2013 with Average Acres Burned Per Year

Source: National Interagency Fire Center (NIFC), NRCC, DNRC, CDM Smith

- Aerial firefighting is the use of aircraft in the attempt to suppress or contain wildfires.
  - Fixed-wing aircraft are used to deliver smokejumpers by air or to airports in close proximity of wildfires. These aircraft include airtankers or water bombers that suppress fires through the delivery of fire retardant and water. Another fixed-wing aircraft includes leadplanes, which serve as directional aircraft and assist airtankers in reaching the correct location to release fire suppression materials.
  - Rotorcraft and helicopters are used to deliver firefighters via rappelling, or through landing in remote locations often unreachable by other modes of transportation. Similar to fixed-wing aircraft, helicopters can release water and retardant onto fires. This practice for helicopters is often considered more precise than similar tactics with fixed-wing aircraft, as helicopters are able to reach obscure water sources and those areas inaccessible to other aircraft. Helicopters, however, have less water and retardant capacity than large tankers.

- Similar to many natural hazards, wildland fires often follows a cyclical pattern. Future events are difficult to forecast because of a high number of variables that dictate the intensity and size of wildfires. Forecast are therefore heavily dependent on historical data and previous trends. The following includes a sample of forecast variables.
    - Fuel levels fluctuate among areas burned. A forest fire active in an area that has not experienced a recent wildfire, or an area with increased fuel due to diseased trees or other circumstances, is likely to burn at a higher intensity than other areas.
    - Weather creates variation in annual statistics for wildfires. An extended winter with unusually high snowfall, or a shortened spring with lower levels of rainfall, will each proportionally affect the total annual acres burned.
    - The location of a fire greater determines a variety of factors. There is a higher likelihood that fires in eastern Montana are grass or brush fires, while western Montana, with its higher density of flora, fundamentally equates to a greater chance of forest fires. It is also important to note that data related to wildfires does not distinguish between these types of fires. The intensity and level of threat these fires have on the proximity to resources, property, and the wildland-urban interface, typically determines the degree of resources that are allocated to individual fires.
- The field of wildfire firefighting is dynamic and in a continual state of modification.
    - External forces such as budgetary restrictions, the increased use and transition towards aircraft contracting and public-private partnerships, and new technology available to firefighters all modify how wildfires are suppressed.

Forecasting Aerial Firefighting Activity

In order to forecast aerial firefighting activity in Montana, analysis of historic wildland fire trends is required. The following section details the aerial wildfire firefighting activity, state wildfire trends, and the number and type of aerial operations within Montana. Forecasts incorporate base year estimates related to an average year's fire activity.

From 1998 to 2013 wildfires in Montana annually consumed 395,500 acres on average over a wide spectrum of wildland fire incidents on both state and federal lands. According to the Montana Department of Natural Resources and Conservation's (DNRC) Bureau of Fire and Aviation Management, the department averages over 400 responses with aircraft dispatched to wildfire incidents in Montana every year. While roughly 75 percent of these fires are just under an acre, they often pose an immediate threat to personal property and state and local resources. The responsibility of initiating attacks on these fires is spearheaded by the MT DNRC, often with the assistance of local fire departments, the United States Forest Service (USFS), Bureau of Land Management (BLM), and various other government and contracted private entities. Agencies whose mission is to suppress wildland fires all agree that the initial attack and containment is the best method of preventing large wildland fires.

The DNRC and local fire departments are often responsible for containing small wildfire and grassfires before they become uncontrolled and highly destructive. These fires are usually engaged through the use of ground firefighting equipment and personnel, and with smaller aerial fire suppression tactics, such as helicopters and Single Engine Attack Tankers (SEAT). The DNRC's resources for fires that cannot be controlled via ground suppression consist of 10 aircraft, including seven helicopters and three fixed-wing aircraft, the latter of which is used primarily for fire patrol and personnel transportation. Other organizations operating aircraft in

Montana, specifically the USFS and BLM, provide suppression efforts on both large and small wildland fires throughout the state.

In total, there are 15 airports in Montana utilized by state and federal agencies with established bases geared to support aerial wildland firefighting. These efforts are conducted through either permanent USFS or BLM facilities located on an airport, or temporary, portable facilities when a remote airport is suitable for wildland firefighting. **Figure 6-11** identifies airports in Montana that are appropriated on a consistent basis for wildland firefighting. The fifteen airports utilize USFS or BLM small SEAT, or are considered airtanker bases. Other airports throughout the state are routinely used seasonally or temporarily for fixed wing or rotor aircraft firefighting operations.

Source: Interagency Airtanker Base Directory 2013, Google Earth Pro, CDM Smith

Figure 6-11: Location of On-Airport Aerial Wildfire Firefighting Facilities in Montana

Developing Base Year Wildland Fire Related Aviation Operations Estimates

USFS staff at the Northern Rockies Coordination Center (NRCC), whose jurisdiction Montana falls under, indicated annual aircraft operations data related to wildfires are not collected by the regional office. Data related to hours flown by contracted wildfire airtanker and helicopter companies as well as USFS fleet information is collected by the USFS. Hours flown data is utilized by agencies to keep track of wildland firefighting costs as well as safety performance. The USFS indicates that fire related flying time throughout the U.S. averages approximately 69,000 hours annually.[83] Since data related to annual take-off and landings related to wildland fires in Montana are unavailable, estimates were derived based on wildfire aircraft assignment data made available by DNRC data, as well as wildland fire flight time estimates from USFS.

While the DNRC will support the USFS and other agencies on large fire efforts with extend attack operations, its primary focus is on initial attack, which is why 75 percent of fire incidents

[83] USFS Report

they are respond to are less than one acre is size, while 18 percent of wildland fires are one to 100 acres in size. The majority of these small fires are supported by DNRC fire suppression crews, and fire engines and trucks. Aircraft assignment data indicates that approximately 23 percent of fires less than an acre in size are supported by DNRC wildland fire helicopters while other fixed-wing aircraft, such as SEAT aircraft, are dispatched approximately 14 percent of these same size fires. Interestingly airtankers are utilized only 2 percent of the time. Aircraft assignment data on larger fires ranging in size from one to 100 acres indicate that approximately 57 percent of fire incidents are supported by DNRC or USFS wildland fire helicopters, while other fixed-wing aircraft are dispatched for approximately 24 percent of these same size fires. Airtankers support 17 percent of wildland fires in the one to 100 acre range.

Since federal aircraft utilization and operations data is difficult to obtain, USFS studies were gleaned to find how aircraft are used in wildland firefighting efforts. One study indicated hours of operations for helicopters and airtankers by fire size and found that helicopters are assigned for much longer periods of time as compared to airtankers. Helicopters average nearly a week on large fires (>300 acres), and clearly illustrated the differences in how airtankers and helicopters are used.[84] Data indicate that helicopters have approximately 24 hours of flying time per fire incident for fires 100 to 300 acres in size and 15 hours of flying time for fires greater than 300 acres. Conversely, airtankers have very short time durations related to wildland fire assignments as they are, by design, transient in nature and are often released from one fire to ferry to another wildland fire. Helicopters are found to be the most heavily utilized aircraft type. Helicopters dedicated to firefighting provide very quick turn times and can support two missions per hour and often are “hot loaded” while the engine is running. Helicopters are used to drop water directly on fires or retardant on unburned areas to create a chemical fire break. Large airtankers provide one operation every 60 to 120 minutes depending on airport type and distance to the fire line. This longer duration of mission time is due to slower turn times on airports for refueling and retardant or water loading. At airports functioning as permanent bases airtankers can be turned in 40 to 45 minutes while airtanker turns at “ad hoc” airports can take 75 to 80 minutes since these airports are less geared to wildfire operations and the support equipment needed.

MT DNRC Wildland Fire Aircraft Operations

In order to determine base year wildfire related aircraft operations, historic aviation activity related to fires in DNRC jurisdictions was analyzed. Aircraft assignment data for fires DNRC responded to between 1998 and 2013 indicates the majority of incidents were for small fires. Aircraft assignment data indicate helicopters were not dispatched to each fire, but on average the equivalent of 0.22 helicopters were dispatched to each fire under one acre in size. For fires ranging in 1,000 to 10,000 acres in size, 1.4 helicopters were assigned to the fire for an average duration of 6.3 days. Fortunately, only 2.5 percent of fires in Montana were of this size. Airtankers assigned to fires ranging from 1,000 to 10,000 acres on average were estimated at 1.3 aircraft per incident. It is noteworthy to point out that the fire duration (average number of days per incident) does not translate directly into the number of days aircraft are assigned to it. For this analysis, it is assumed that aircraft are assigned to the incident and available to fly for 66 percent of the duration since it often takes several days to mount up a full initial attack with aviation resources on a wildfire and aircraft may not fly every hour due to maintenance, crew rest, and weather issues. Aircraft may also be reassigned to other fire incidents as part of the aviation resource management.

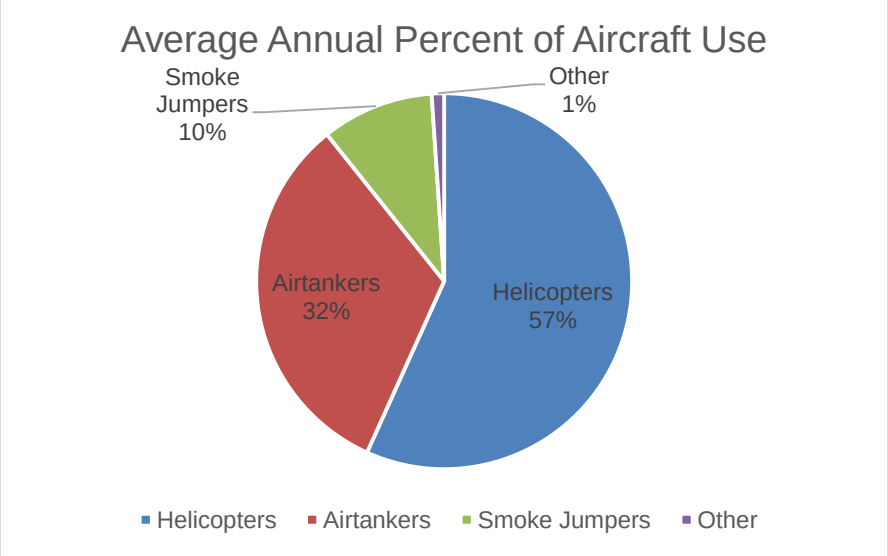
[84] AG-024B-C-12-0006, Final Report, Firefighting Aircraft Study (FAS).

Table 6-32 outlines aerial wildfire firefighting activity in Montana. This includes the average number of fires from 1998 to 2013 grouped by size of wildfire and the final acres burned, average percent number of days aircraft were assigned, average days per incident, and acre acres burned. The data also highlights the number of fires where a variety of aircraft were utilized to fight the fire and includes helicopters, airtankers, smoke jumpers, other aircraft (including lead aircraft), and the total aircraft. **Figure 6-12** interprets this aircraft data through presenting the average percent of aircraft usage in Montana from 1998 to 2013. As shown in the figure, 57 percent of all aircraft assignment were helicopters, 32 percent were airtankers, ten percent were smoke jumpers, and the remaining one percent were categorized as other.

Table 6-32: Average MT DNR Aerial Firefighting Resources Assignments Based on Wildland Fire Size

MT DNR LANDS AND AVIATION						
Number of Acres Burned	**<1**	**1 - 100**	**100 - 1,000**	**1,000 - 10,000**	**10,000 - 70,000**	**> 70,000**
Average Incidents 1998 - 2013	**302**	**74.4**	**15.3**	**10.1**	**1.9**	**0.5**
1998 - 2013 Incidents in Percent	**74.7%**	**18.4%**	**3.8%**	**2.5%**	**0.5%**	**0.1%**
Average # Days Aircraft Assigned	0.7	0.7	2.2	6.3	18.8	12.4
Average # Days of Incident	1	1	3.3	9.5	28.5	18.7
Average Acres	0.1	10.8	353	3,414	22,239	102,938
Average Helicopters Dispatched	0.2	0.6	1.1	1.4	2.1	2.3
Average Airtankers Dispatched	0	0.2	0.9	1.3	1.4	0.9
Average Smokejumpers Dispatched	0	0	0	0.1	0	-
Other Aircraft Dispatched	0.1	0.2	0.5	0.4	0.3	0.3
Residences Threatened	0.1	0.8	1.9	14.3	74.6	0.1

Source: Montana Fire and Aviation Management Bureau, CDM Smith



Source: Montana Fire and Aviation Management Bureau, CDM Smith

Figure 6-12: Average Percent of Aircraft Use

A number of key data points are used to derive an estimate of the aircraft operations per wildland fire incident. While average aircraft assignments provided in Table 6-32 above indicates a measure of resources assigned to each incident, operations estimates are reliant on

data inputs such as average hours of helicopter, airtanker and other aircraft operation each day an aircraft is assigned to an incident, and number of aircraft "turns" per hour. Review of a variety of studies and reports by a number of federal and state wildland firefighting agencies indicates that aircraft operations average approximately eight hours per day, but can be extended as long as 14 hours per day if fires are threatening structures and daylight hours allow continued operations. Nearly all aviation operations related to wildfire incidents are Visual Flight Rules (VFR) during daylight hours.

For this analysis, it was assumed that the typical day of wildfire suppression related flying is eight hours. Helicopter take-offs are assumed to take place on average every 30 minutes. This time allows for aircraft reload, fueling, take-off and flying the mission (10 minutes on the ground and 20 minutes flying) and landing. For airtankers, take-offs are assumed to take place every 60 minutes per aircraft. Using this information allows for an approximation of aircraft operations per wildfire incident. **Table 6-33** below identifies the methodology for estimating aircraft operations per fire incident by DNRC fire size.

Table 6-33: DNRC Aerial Firefighting Resources Operations Estimates Based on Wildland Fire Size

	<1	1 - 100	100 - 1,000	1,000 - 10,000	10,000 - 70,000	> 70,000
Helicopters Average Performance						
Hours of Operation/Incident	1.0	5.3	17.2	50.1	150.7	98.8
Minutes of Operation/Aircraft	60	316.8	1,034.8	3,005.4	9,040.1	5,928.7
Total Minutes of All Aircraft Ops/Incident	13.5	181.7	1,134.2	4,287.7	18,726	13,551.3
Take-offs Per Aircraft/Incident	0.5	6.1	37.8	142.9	624.2	451.7
Operations Per Day	1.4	18.4	35.1	45.7	66.3	73.1
Average Operations/Incident	**0.9**	**12.1**	**75.6**	**285.8**	**1,248.4**	**903.4**
Airtankers Average Performance						
Hours of Operation/Incident	1.0	5.3	17.2	50.1	150.7	98.8
Minutes of Operation/Aircraft	60	316.8	1,034.8	3,005.4	9,040.1	5,928.7
Total Minutes of All Aircraft Ops/Incident	1.3	53.9	912.8	3,907	12,268.7	5,081.7
Take-offs Per Aircraft/Incident	-	0.9	15.2	65.1	204.5	84.7
Operations Per Day	0.1	2.7	14.1	20.8	21.7	13.7
Average Operations/Incident	**-**	**1.8**	**30.4**	**130.2**	**409**	**169.4**
Smoke Jumpers Average Performance						
Hours of Operation/Incident	-	5.3	17.2	50.1	150.7	98.8
Minutes of Operation/Aircraft	-	316.8	1,034.8	3,005.4	9,040.1	5,928.7
Total Minutes of All Aircraft Ops/Incident	-	6	27.1	420.8	322.9	211.7
Take-offs Per Aircraft/Incident	-	0.1	0.5	7	5.4	3.5
Operations Per Day	-	0.3	0.4	2.2	0.6	0.6
Average Operations/Incident	**-**	**0.2**	**0.9**	**14**	**10.8**	**7.1**
Other AC Average Performance						
Hours of Operation/Incident	1.0	5.3	17.2	50.1	150.7	98.8
Minutes of Operation/Aircraft	60	316.8	1,034.8	3,005.4	9,040.1	5,928.7

	<1	1 - 100	100 - 1,000	1,000 - 10,000	10,000 - 70,000	> 70,000
Total Minutes of All Aircraft Ops/Incident	8.2	77.2	537.7	1,322.4	2,905.8	1,693.9
Take-offs Per Aircraft/Incident	0.3	2.6	17.9	44.1	96.9	56.5
Operations Per Day	0.8	7.8	16.6	14.1	10.3	9.1
Average Operations/Incident	**0.5**	**5.1**	**35.8**	**88.2**	**193.7**	**112.9**
Total Aircraft						
Average Operations/Incident	**1.5**	**19.3**	**142.8**	**518.3**	**1,861.8**	**1,192.8**

Source: DNRC Data, CDM Smith

As an example, helicopter operations estimates for wildland fires incidents ranging from 1,000 to 10,000 acres are based on several factors. First, the average duration for fires of this size is 9.5 days with helicopters assigned for 6.3 available days on average. DNRC data indicate 1.4 helicopters on average are dispatched to fires in this size category. By multiplying 6.3 days by 8 hours of operations and then by the number of helicopters assigned to the fire (1.4) one arrives at 4,288 minutes of total average helicopter operating time per incident. These total minutes are then divided by 30, which is the average length of time between take-offs (mission time and reload time). A total of 143 of helicopter take-offs or 286 operations (take-offs and landings), are estimated per incident for fires ranging from 1,000 to 10,000 acres in size.

As indicated in **Table 6-33**, the same level of analysis takes place for each aircraft type: helicopter, airtankers, smoke jumper aircraft, and other (lead aircraft, etc.) for all categories of wildland fires. Analysis includes a range of fires less than an acre is size, to fires over 70,000 acres. **Table 6-34** below summarizes total estimated aircraft operations related to fires under the jurisdiction of DNRC for any given year. Analysis of DNRC data indicates total fire acres supported by DNR aviation averaged 134,300 acres annually which generated the need for approximately 13,400 annual aircraft operations. It is important to point out that these aircraft operations include not only DNRC aircraft but also USDA and Department of Interior (DOI) aircraft supporting wildland firefighting in Montana.

Table 6-34: Baseline Aircraft Operations for DNRC Wildland Aerial Firefighting Efforts

	<1	1 - 100	100 - 1,000	1,000 - 10,000	10,000 - 70,000	> 70,000	Total
Helicopters	272	901.1	1,156.9	2,877.5	2,372	451.7	**8,031.1**
Airtankers	12.9	133.8	465.5	1,311	777	84.7	**2,784.9**
Smoke Jumper Aircraft	-	14.8	13.8	141.2	20.4	3.5	**193.8**
Other Aircraft	165.4	383	548.5	887.5	368.1	56.5	**2,408.8**
Total	**450.2**	**1,432.6**	**2,184.7**	**5,217.2**	**3,537.5**	**596.4**	**13,418.6**

Source: Montana Fire and Aviation Management Bureau, CDM Smith

Aerial Wildland Fire Fighting Related to USFS

In order to determine based year wildfire related aircraft operations aviation activity related to fires on lands within federal jurisdictions was analyzed separately. USFS wildfire data for fires greater than 100 acres[85] was utilized to determine average duration of wildfires ranging from: 100 – 300, 301 - 1,000, 1,001 - 10,000, 10,001 - 70,000 and greater than 70,000 acres. Data indicate fires within the 1,001 to 10,000 range comprise 34 percent of fires within the federal jurisdiction and are 3,221 acres in size on average. Aircraft utilization estimates where gleaned from the AVID 2013 study and are based on data from the Operational Loads Monitoring

[85] USFS Wildland Fire data for fires under 100 acres was not available.

System (OLMS), Automated Flight Following (AFF), Aviation Business System (ABS) and Resource Ordering and Status System (ROSS) databases.

As in the DNRC aircraft utilization analysis a number of key data points are used to derive an estimate of the aircraft operations per wildland fire incident. While average aircraft assignments provided in **Table 6-35** below provides a measure of resources assigned to each incident, operations estimates are reliant on data inputs such as average hours of helicopter, airtanker and other aircraft operation each day and number of turns per hour. For this analysis, it was assumed that the typical day of wildfire suppression on federal lands related flying is eight hours. Helicopter operations are assumed to take place on average every 30 minutes (10 minutes on the ground and 20 minutes flying). For airtankers operations are assumed to take place every 60 minutes. Using this information allows for an approximation of aircraft operations per wildfire incident. **Table 6-36** below identifies the methodology for estimating aircraft operations per fire incident by fire size.

Table 6-35: Average USFS Aerial Firefighting Resources Assignments Related to Wildland Fires in Montana - Based on Wildland Fire Size

USFS LANDS AND AVIATION					
Number of Acres	**100 - 300**	**301 - 1,000**	**1,000 - 10,000**	**10,000 - 70,000**	**> 70,000**
Average Incidents 1998 - 2013	**8.9**	**13.8**	**17.3**	**5.4**	**1.2**
1998 - 2013 Incidents in %	**19.1%**	**29.6%**	**37.1%**	**11.6%**	**2.6%**
Average # 8 hr. Days Helicopters	8	5.2	5.2	5.2	5.2
Average # 8 hr. Days Airtankers	0.4	1	1	1	1
Average Acres	166.9	568.9	3,221	24,879	117,151
Average Helicopters Dispatched	1.1	1.1	1.4	2.1	2.3
Average Airtankers Dispatched	0.9	0.9	1.3	1.4	0.9
Average Smokejumpers Dispatched	0	0	0.1	0	-
Other Aircraft Dispatched	0.5	0.5	0.4	0.3	0.3
Average Structures Destroyed	0.2	0.2	274	478	390.6

Source: USFS, CDM Smith analysis

Table 6-36: USFS Aerial Firefighting Resources Operations Estimates Based on Wildland Fire Size

	100 - 300	301 - 1,000	1,000 - 10,000	10,000 - 70,000	> 70,000
Helicopters Average Performance					
Hours of Operation/Incident	192	124.5	124.5	124.5	124.5
Minutes of Operation/Aircraft	11,520	7,470	7,470	7,470	7,470
Total Minutes of All Aircraft Ops/Incident	12,626.7	8,187.6	10,657.2	15,473.6	17,074.3
Take-offs Per Aircraft/Incident	420.9	272.9	355.2	515.8	569.1
Operations Per Day	105.2	105.2	137	198.9	219.4
Average Operations/Incident	**841.8**	**545.8**	**710.5**	**1,031.6**	**1,138.3**
Airtankers Average Performance					
Hours of Operation/Incident	3	8	8	8	8
Minutes of Operation/Aircraft	180	480	480	480	480
Total Minutes of All Aircraft Ops/Incident	158.8	423.4	624	651.4	411.4
Take-offs Per Aircraft/Incident	2.6	7.1	10.4	10.9	6.9
Operations Per Day	0.7	2.7	4	4.2	2.6
Average Operations/Incident	**5.3**	**14.1**	**20.8**	**21.7**	**13.7**

	100 - 300	301 - 1,000	1,000 - 10,000	10,000 - 70,000	> 70,000
Smoke Jumpers Average Performance					
Hours of Operation/Incident	64	64	41.5	41.5	41.5
Minutes of Operation/Aircraft	3,840	3,840	2,490	2,490	2,490
Total Minutes of All Aircraft Ops/Incident	100.6	100.6	348.6	88.9	-
Take-offs Per Aircraft/Incident	1.7	1.7	5.8	1.5	-
Operations Per Day	0.4	0.4	2.2	0.6	-
Average Operations/Incident	**3.4**	**3.4**	**11.6**	**3.0**	**-**
Other AC Average Performance					
Hours of Operation/Incident	64	64	41.5	41.5	41.5
Minutes of Operation/Aircraft	3,840	3,840	2,490	2,490	2,490
Total Minutes of All Aircraft Ops/Incident	1,995.5	1,995.5	1,095.6	800.4	711.4
Take-offs Per Aircraft/Incident	66.5	66.5	36.5	26.7	23.7
Operations Per Day	16.6	16.6	14.1	10.3	9.1
Average Operations/Incident	**133**	**133**	**73.0**	**53.4**	**47.4**
Total Aircraft					
Average Operations/Incident	**983.5**	**696.3**	**815.9**	**1,109.6**	**1,199.4**

Source: USFS, CDM Smith

As an example, airtanker operations estimates for wildland fires incidents ranging from 1,000 to 10,000 acres are based on similar factors found in our first example. For this example, the average duration for airtanker assignments to fires of this magnitude is one day. DNRC data indicate on average 1.3 tankers are dispatched to fires in this category and are applied here as well. By multiplying 1 day by 8 hours of operations and then by the number of airtankers assigned to the fire (1.3) one arrives at 624 minutes of average total airtanker operating time per incident. These total minutes are then divided by 60, which is the average length of time between take-offs (mission time and reload time). A total of 10.4 of airtanker take-offs or 20.8 operations (take-offs and landings), are estimated per incident for fires ranging from 1,000 to 10,000 acres in size on federal lands.

Table 6-37 below summarizes total estimated aircraft operations related to fires under the jurisdiction of USFS for any given year. Analysis of USFS fire burn data indicates total fire acres to federal lands in Montana averaged 340,000 acres annually between 1998 and 2013 which generated the need for 39,900 annual aircraft operations on average. It is important to point out that these aircraft operations include not only USDA and DOI aircraft supporting wildland firefighting in Montana, but also DNRC aviation operations data.

Table 6-37: Baseline Aircraft Operations for USFS Wildland Aerial Firefighting Efforts

	100 - 300	301 - 1,000	1,000 - 10,000	10,000 - 70,000	> 70,000	Total
Helicopters	7,491.9	7,532.6	12,291.3	5,570.5	1,365.9	**34,252.2**
Airtankers	47.1	194.8	359.8	117.3	16.5	**735.4**
Smoke Jumper Aircraft	29.8	46.3	201	16	-	**293.2**
Other Aircraft	1,184.00	1,835.8	1,263.60	288.1	56.9	**4,628.4**
Total	**8,752.8**	**9,609.5**	**14,115.8**	**5,991.9**	**1,439.3**	**39,909.2**

Source: USFS, CDM Smith

Based aircraft operations for both USFS and DNRC were tabulated into **Table 6-38**, which provides both the base year operations and the forecasted total aircraft operations for Montana wildland aerial firefighting efforts. Using the total operations as the base year, this figure was projected for the planning period between 2013 and 2033. The top-down methodology utilized in this forecast incorporated a growth rate of 1.27 percent. This growth rate is based on historic trends found in the USFS's annual number of hours flown between 2004 and 2013.

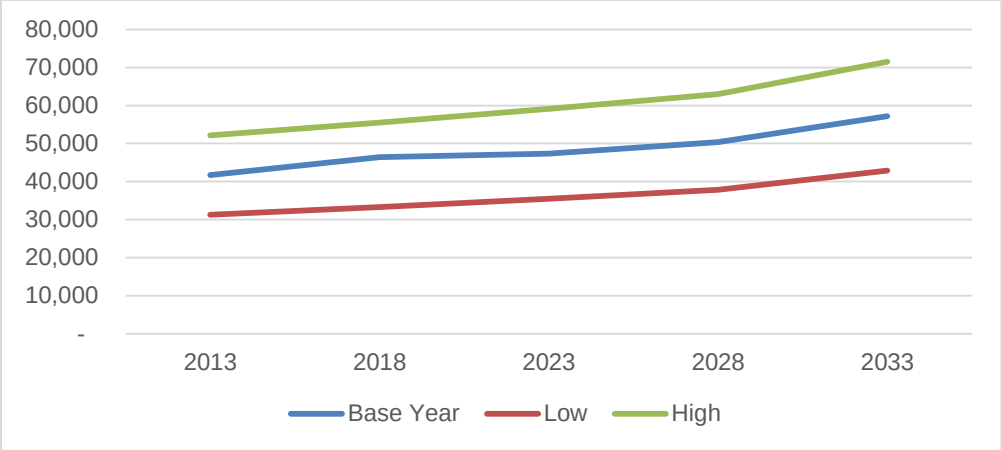
It is important to note that these forecasted aircraft operations for Montana wildfires are not necessarily attributed to on-airport operations. Over 70 percent of total operations are conducted by helicopters and often occur on off-airport facilities. These facilities include helibases, where firefighting mission are flown from and are frequently based; helispots, which are safe temporarily landing locations near fires used to conduct operations and collect water from nearby sources; and drop points, where helicopters off-load and collect supplies and personnel across various wildfire locations.

Given the cyclical nature of wildland fires in Montana, two additional forecasts are provided to anticipate a 25 percent deviation of operations from the base year data. For example, the total number of helicopter operations for the base year was 32,346. This figure is projected to increase to 44,376 by 2033; however, should there be a series of fire seasons with low levels of activity a forecast was prepared to reflect a 25 percent decrease from the base year. For the low year, helicopter operations are projected from 24,260 and increase to 33,282 by 2033. Alternatively, the high year is forecasted to increase from 40,433 to 55,470 by the same year 2033 and this forecast reflects a worst case scenario where a series of fire seasons with high levels of activity take place throughout the planning period. These three forecasted annual benchmarks for each set of data are graphed in **Figure 6-13**.

Table 6-38: Forecasted Aircraft Operations for Montana Wildfires

Base Year	DNRC	USFS	Total	Growth Rate	2018	2023	2028	2033
Helicopters	8,031	24,315	**32,346**	1.27%	34,458	36,707	39,104	44,376
Airtankers	2,785	515	**3,300**	1.27%	3,515	3,744	3,989	4,527
Smoke Jumper Aircraft	194	198	**392**	1.27%	417	444	473	537
Other Aircraft	2,409	3,254	**5,663**	1.27%	6,033	6,426	6,846	7,769
Total	**13,419**	**28,282**	**41,700**		**46,440**	**47,323**	**50,412**	**57,209**
Low Year								
Helicopters	6,023	18,236	**24,260**	1.27%	25,843	27,531	29,328	33,282
Airtankers	2,089	386	**2,475**	1.27%	2,636	2,808	2,992	3,395
Smoke Jumper Aircraft	145	148	**294**	1.27%	313	333	355	403
Other Aircraft	1,807	2,441	**4,247**	1.27%	4,524	4,820	5,134	5,827
Total	**10,064**	**21,211**	**31,275**		**33,317**	**35,492**	**37,809**	**42,907**
High Year								
Helicopters	10,039	30,394	**40,433**	1.27%	43,072	45,884	48,880	55,470
Airtankers	3,481	643	**4,124**	1.27%	4,394	4,681	4,986	5,658
Smoke Jumper Aircraft	242	247	**489**	1.27%	521	555	592	672
Other Aircraft	3,011	4,068	**7,079**	1.27%	7,541	8,033	8,557	9,711
Total	**16,773**	**35,352**	**52,125**		**55,528**	**59,153**	**63,015**	**71,511**

Source: National Interagency Fire Center, CDM Smith



Source: National Interagency Fire Center, Northern Rockies Coordination Center, DNRC, CDM Smith

Figure 6-13: Forecast Aerial Wildland Firefighting Operations - Potential Ranges

6.7 Summary

- On a statewide basis, total annual commercial enplanements at system commercial and EAS airports are projected to increase from 1,661,814 in 2013 to 2,776,704 by 2033.
- Airline operations are projected to increase from 380,587 in 2013 to 635,918 in 2033.
- Montana's growth in air cargo tonnage is projected to increase from 48,607 tons in 2013 to 73,657 tons in 2033.
- Based general aviation aircraft for all Montana's system airports are projected to grow from a 2013 level of 2,591 to 2,948 in 2033, representing a gain of approximately 18 aircraft per year.

- Total annual general aviation operations for all Montana's system airports are projected to grow from their 2013 level of 692,385 to 932,542 by 2033.

Table 6-35 presents a summary of the statewide totals for each aviation demand projection type, including commercial airline enplanements, commercial airline operations, based aircraft, and general aviation operations.

Table 6-39: Preferred Aviation Forecast Summary

Projection Type	2013	2018	2023	2033
Commercial Service Enplanements (top-down)	1,661,814	1,889,380	2,148,108	2,776,704
Commercial Airline Operations	380,587	432,704	491,957	635,918
Statewide Total Air Cargo Tons	48,607	53,930	59,835	73,657
Based Aircraft (bottom-up)	2,591	2,676	2,763	2,948
General Aviation Operations (top-down)	692,385	745,895	803,541	932,542

Source: CDM Smith

The projections provided in this chapter are considered planning estimates and are based on information gathered from all available sources. These projections were generated to a system planning, rather than a master planning, level of detail. Comprehensive airport development plans will continue to provide guidance for actual airport development; individual airport plans are developed from an examination of each airport's local conditions and operating environment.

7 CHAPTER SEVEN: AIRSPACE AND NAVAIDS / SYSTEM ADEQUACY ANALYSIS

This chapter is divided into two main sections. The first section presents an overview of emerging trends in airspace, navaids and communications technology. This discussion is followed by a geographic service analysis of the Montana airport system's instrument approaches. The second section contains a System Adequacy Analysis which uses performance measures to evaluate the airport system's current level of performance based on the functional roles established in Chapter 4.

7.1 Airspace and Navaids System

Various existing and planned air navigation technologies and programs affect Montana's airport system. This section summarizes goals of the various technologies and programs, discusses how they relate to each other, and identifies their implementation schedule. It also discusses policy and implementation issues for the Federal Aviation Administration (FAA) and the Montana Department of Transportation Aeronautics Division and recommendations for further study.

The discussion draws primarily on information from the FAA's NextGen program, as described in the NextGen Implementation Plan 2014. The NextGen Implementation Plan is a national FAA document that outlines FAA's corporate strategy, summarizes what's been done recently, and details plans for the upcoming years. It is the overarching document for development of the airspace and navigation aids (NAVAID) system in the US. As one of the key initiatives, the report outlines FAA's implementation strategy for performance-based navigation.

7.1.1 En Route Airways and the Transition to Performance Based Navigation (PBN) Technologies

Navigation in Montana in the past has been primarily provided by various kinds of groundbased stations that transmit radio navigation signals including non-directional beacons (NDB's) and VOR's.

Because signal strength, terrain, and other issues limit their effectiveness, ground-based navigation systems are being phased out and replaced by satellite-based global positioning systems (GPS), which are generally less expensive, provide greater precision than ground-based systems, and are usually not constrained by line-of-sight. GPS navigation has now been enhanced by a system called the Wide Area Augmentation System (WAAS), which provides a more accurate GPS signal than the basic GPS signal.

Under NextGen, navigation using GPS fits under a broad term called Performance Based Navigation (PBN). There are several types of PBN, including Area Navigation (RNAV) and Required Navigation Performance (RNP). RNAV enables an aircraft to operate on any flight path within coverage of ground- or space-based navigation aids, or a combination of both. RNAV is the broadest category and requires lower levels of navigation performance. An RNP

procedure requires specific aircraft navigation accuracy. An "RNP 0.3" procedure requires avionics that enable the aircraft to fly within 0.3 nautical miles (nm) of the approach path's centerline, comparable to an automobile staying within its highway lane. RNP Authorization Required requires the highest level of navigation performance, down to 0.1 nm accuracy.

The FAA is steadily deploying more PBN procedures for departures, high- and low-altitude routings, arrivals and approaches.

In Montana, RNAV and RNP are being deployed. **Table 7-1** shows that RNAV approaches have been established at 39 Montana airports. RNP approaches are available at 4 commercial service airports. Another RNP approach is planned at Billings Logan International in 2015. According to the 2012 Federal Radionavigation Plan, the FAA plans to gradually reduce the number of VOR stations to a minimum operating network (MON) by 2020. The MON will permit aircraft to conduct VOR navigation to a suitable destination in the event of a GPS outage due to radio frequency interference. FAA has also begun decommissioning stand-alone Non Directional Beacons (NDBs) as users equip with GPS. Before ground-based navigational aids are fully decommissioned and replaced, GPS has to provide equal or better accuracy and redundancy for both the enroute phase of flight and instrument approaches. NDBs used as compass locators, or as other required fixes for ILS approaches (e.g., initial approach fix, missed approach holding), where no equivalent ground-based means are available, may need to be maintained until the underlying ILS is phased out.

Table 7-1: Airports with RNAV and RNP Approach Procedures

ID	Associated City	Airport	RNAV	RNP
3U3	Anaconda	Bowman Field	x	
BHK	Baker	Baker Municipal	x	
BIL	Billings	Billings Logan International	x	(Planned 2015)
BZN	Bozeman	Bozeman Yellowstone International	x	
BTM	Butte	Bert Mooney	x	
CII	Choteau	Choteau	x	
4U6	Circle	Circle Town County	x	
M46	Colstrip	Colstrip	x	
S01	Conrad	Conrad	x	
CTB	Cut Bank	Cut Bank Municipal	x	
38S	Deer Lodge	Deer Lodge-City-County	x	
DLN	Dillon	Dillon	x	
EKS	Ennis	Ennis - Big Sky	x	
1S3	Forsyth	Tillitt Field	x	
79S	Fort Benton	Fort Benton	x	
GGW	Glasgow	Wokal Field/Glasgow International	x	
GDV	Glendive	Dawson Community	x	
GTF	Great Falls	Great Falls International	x	x

ID	Associated City	Airport	RNAV	RNP
6S5	Hamilton	Ravalli County	x	
HVR	Havre	Havre City-County	x	
HLN	Helena	Helena Regional	x	x
GPI	Kalispell	Glacier Park International	x	x
6S8	Laurel	Laurel Municipal	x	
LWT	Lewistown	Lewistown Municipal	x	
S59	Libby	Libby	x	
LVM	Livingston	Mission Field	x	
MLS	Miles City	Frank Wiley Field	x	
MSO	Missoula	Missoula International	x	x
PWD	Plentywood	Sher-Wood	x	
8S1	Polson	Polson	x	
PO1	Poplar	Poplar Municipal	x	
7S0	Ronan	Ronan	x	
RPX	Roundup	Roundup	x	
9S2	Scobey	Scobey	x	
SBX	Shelby	Shelby	x	
SDY	Sidney	Sidney-Richland Municipal	x	
32S	Stevensville	Stevensville	x	
WYS	West Yellowstone	Yellowstone	x	
OLF	Wolf Point	L M Clayton	x	

7.1.2 Instrument Approach System Adequacy

In addition to improving efficiency and safety at individual airports, a statewide system of instrument approach capabilities is important to the safety and efficiency of the entire airport system. To measure the ability of the state's system of Instrument Approach Procedures (IAPs) to serve the aviation market, geographic information systems (GIS) will be employed. Using 30-minute drive time market areas, it is possible to estimate the Montana population within 30 minutes of system airports with an IAP. To determine how much of the population is served by airports with different approach capabilities, three groups of airports are analyzed:

- Airports with IAP minimums of 3/4 mile or lower
- Airports with IAP minimums of 1 mile or lower
- Airports with any IAP

For each of these groups, the total Montana population within 30 minutes of these airports was calculated to provide a percentage of the statewide total. Approach capability data has been collected from airport approach plates, while population data is from the US Census Bureau.

The analysis indicates that 79.6% of Montana's population is within a 30 minute drive of an airport with some kind of IAP, while 70.7% are within an airport with IAP minimums of 1 mile or lower and 59.6% are with IAP minimums of 3/4 mile or lower.

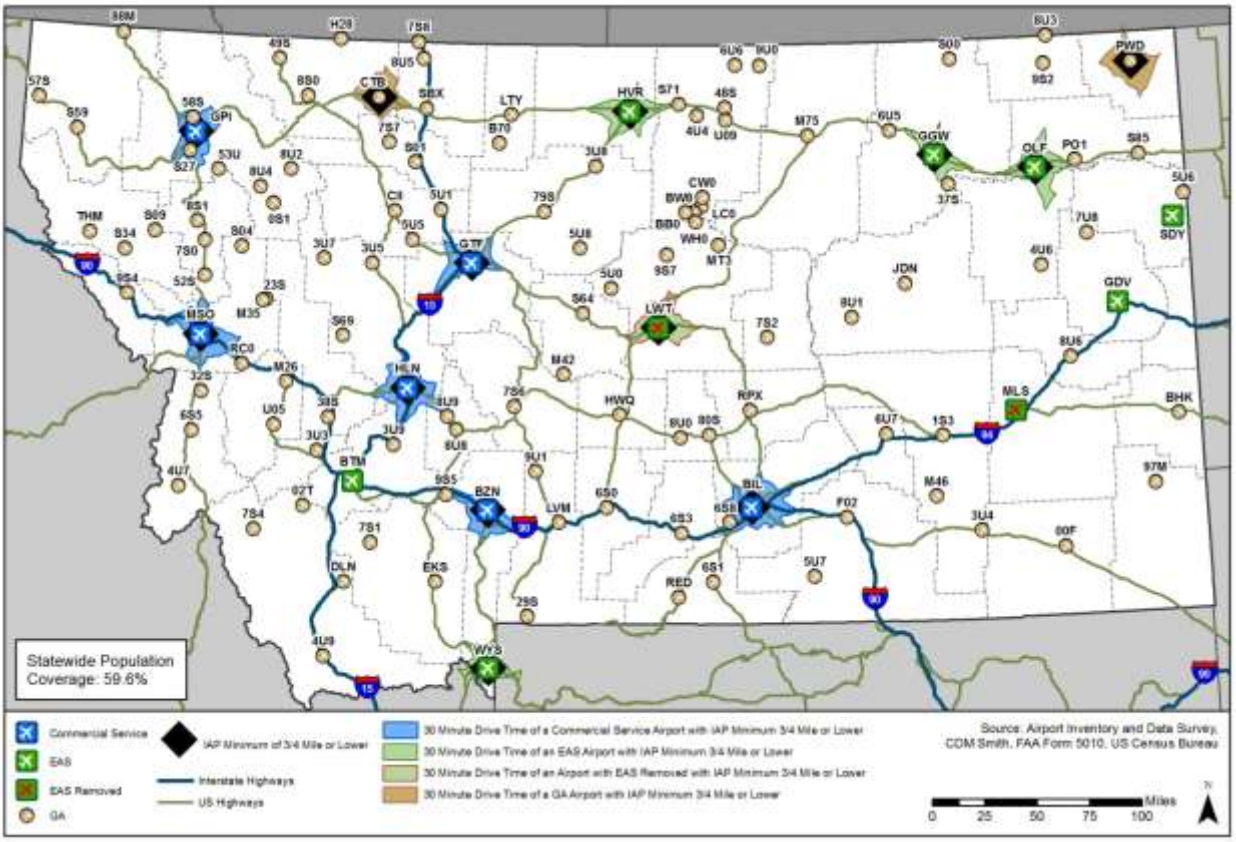


Figure 7-1: Statewide Population Within 30 Minute Drive-Time of an Airport with Instrument Approach Minimums ¾ Mile or Lower

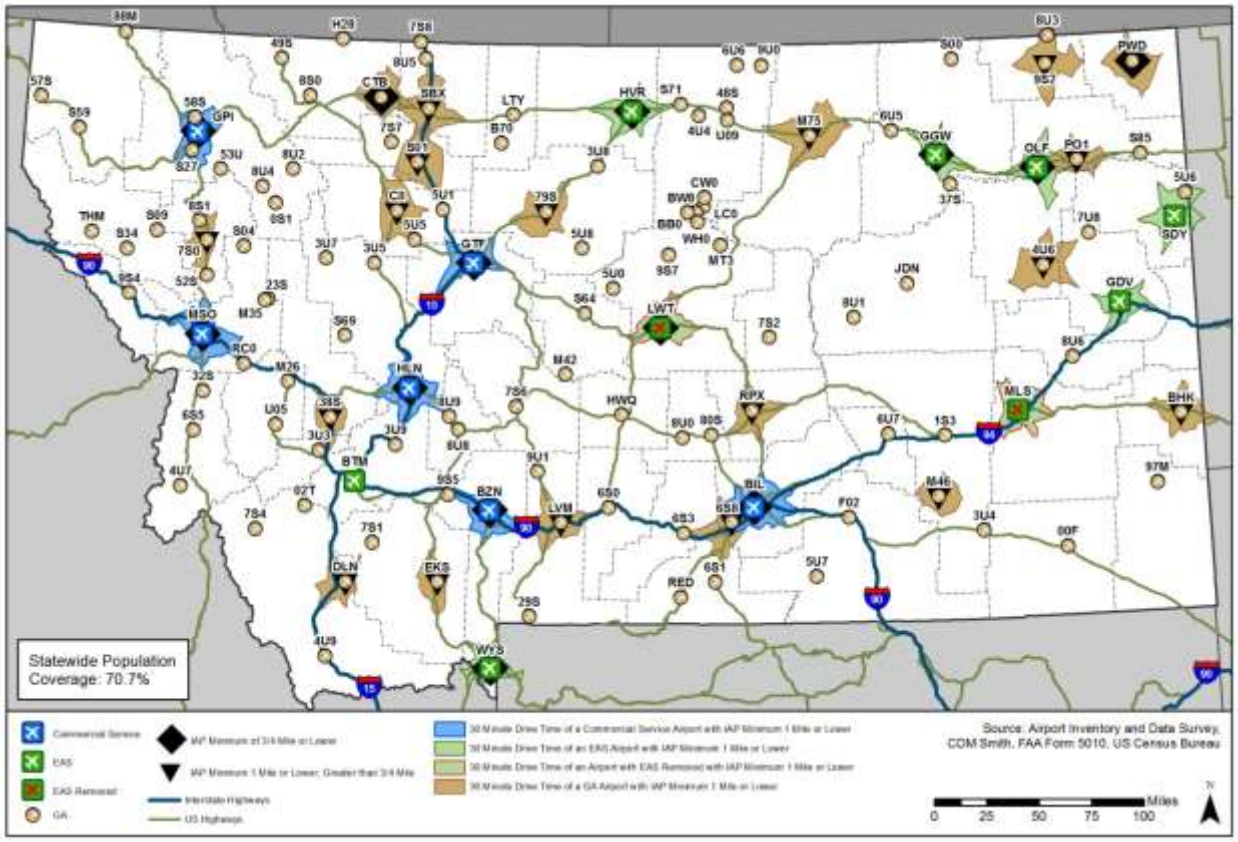


Figure 7-2: Statewide Population Within 30 Minute Drive-Time of an Airport with Instrument Approach Minimums 1 Mile or Lower

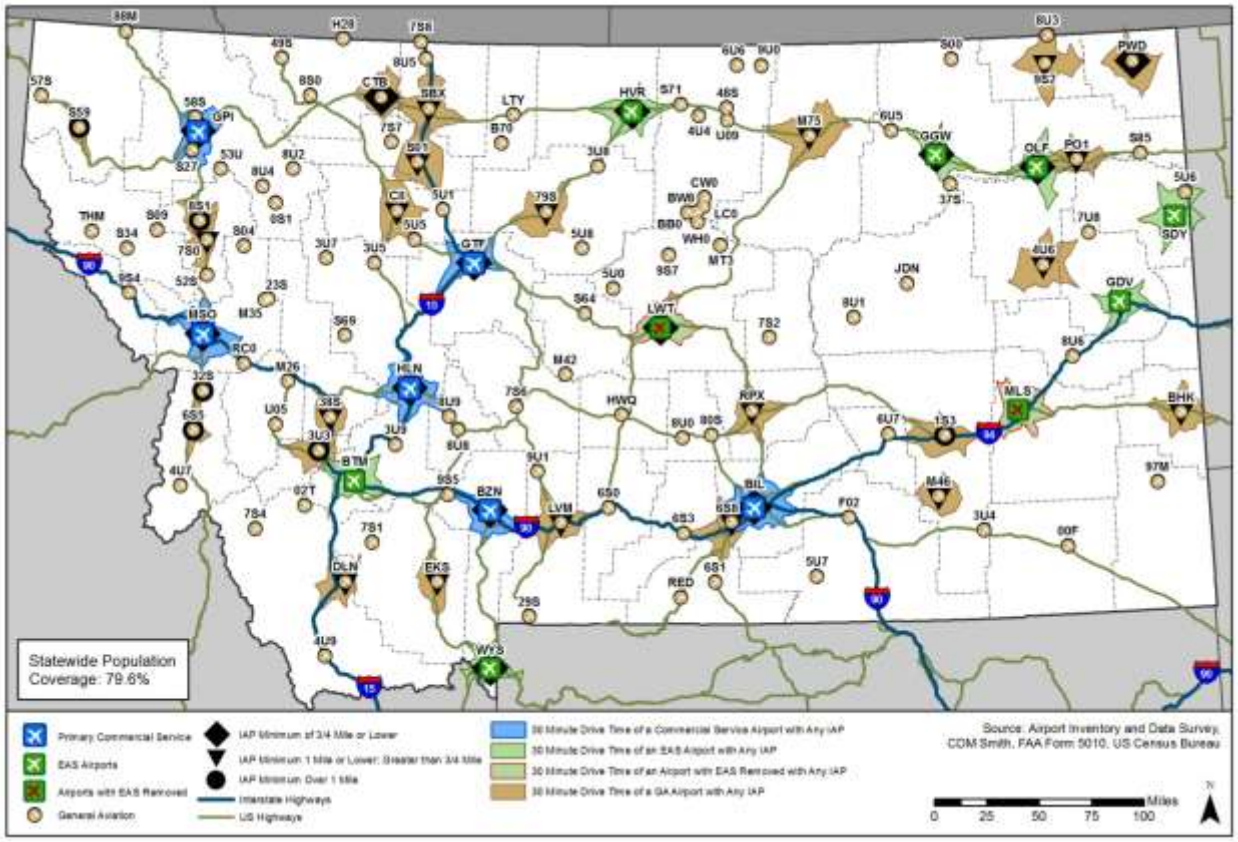


Figure 7-3: Statewide Population Within 30 Minute Drive-Time of an Airport with an Instrument Approach

7.1.3 Aviation Communications Trends

As noted in Chapter 2 System Inventory, air/ground voice communications used in Montana include 22 Flight Service Station (FSS) remote communications outlets (RCO's), 6 operating local control towers, and 59 airport Unicoms.

Currently, all communication between cockpit and controller is done through audio channels. Data Communications (Data Comm) is an initiative that FAA is developing under NextGen that uses messaging services, to deliver clearances, coordinates and commands. Pilots see the information, acknowledge, and act. The evolution of Data Comm in the operational environment will be based upon the incremental implementation of advanced communication capabilities. Data Comm represents the first phase of the transition from the current analog voice system to an International Civil Aviation Organization (ICAO) compliant system in which digital communication becomes an alternate and eventually predominant mode of communication.

Surveillance keeps track of aircraft position and altitude, which are important for air traffic control (ATC) and safety. Surveillance technologies include RADAR and ADS-B. RADAR, the standard method of surveillance to date, is available at four Montana airports: Billings Logan International (BIL), Bozeman Yellowstone International Airport (BZN), Great Falls International Airport (GTF), and Missoula International Airport (MSO). ADS-B (Automatic Dependent Surveillance - Broadcast) is now being implemented nationwide as part of the NextGen ATC

System. With ADS-B, the position information is more precise than with RADAR, and the information is updated quicker, which could allow reduced separation standards between aircraft in the future. With ADS-B, surveillance can more easily be provided over a greater area and to a lower altitude, greatly enhancing safety.

ADS-B requires equipment on-board each aircraft in order to relay that aircraft's position to the FAA and other aircraft with the proper equipment. The cost and means of equipping aircraft with this technology may present challenges to implementing the overall NextGen ATC System.

7.2 System Adequacy Analysis

The purpose of the System Adequacy Analysis is to determine how well each airport in the Montana system currently serves its market, and to assess the ability of the system to serve Montana geographically. The System Adequacy Analysis therefore involves two major components: facility and service benchmarks and a geographic service analysis.

7.2.1 Facility and Service Performance Measures

A previous chapter of the Montana State Aviation System Plan stratified the Montana airport system into several categories based on the markets that each of the state's public airports currently serves. These categories are Primary Commercial Service, EAS Commercial Service, and four levels of general aviation airports. For each category, a specific set of facility and service benchmarks have been set. These benchmarks are not requirements for each airport, but rather a tool for measuring the current performance of the system. These benchmarks can also be utilized as guidelines for improvement at individual airports looking to improve efficiency, capacity, and safety.

The system adequacy of the Montana airport system will be measured using the following seven performance measure categories:

- **Runway Length**: Different primary runway lengths are needed depending on the market served by each airport. In general, longer runways are needed to serve more demanding planes such as turbine aircraft. Aircraft with higher speeds and heavier payloads also require longer runway lengths.
- **Runway Lighting**: Runway lighting aids with night operations. Airports serving more demanding aircraft generally install higher intensity runway lighting, which aids in both night and low visibility operations.
- **Taxiway Type**: An airport's taxiway or system of taxiways affects operational safety, capacity, and efficiency. Airports without taxiways require aircraft to taxi on the runway itself, reducing the time that the runway can be used for take-offs and landings as well as increasing risk of collision. A full parallel taxiway allows aircraft to exit from the runway at either end, while partial parallel taxiways also greatly reduce runway occupancy times.
- **Instrument Approach Minimum**: Instrument approach procedures (IAPs) improve the utility of an airport during times of inclement weather. Montana airports employ a number of IAPs, varying from GPS approaches that utilize very little ground equipment to full Instrument Landing Systems (ILS). Different technologies, as well as factors such as surrounding

terrain, allow for aircraft landings at lower visibility and cloud ceiling minimums. For the purpose of this study, IAP capabilities will be measured based on visibility minimums in miles or a fraction of a mile.

- **Fuel Sales**: Aircraft fuel is among the most basic services that an airport can provide its customers. Turbine aircraft engines require Jet-A fuel for operation, while piston aircraft use aviation gas (AvGas). Certain airports in Montana also sell ethanol-free automotive gas (MoGas) for use in specially-certified aircraft. It is noteworthy to point out the fuel sales are strictly a market driven factor and MDT has no role in funding fueling facilities. It can however encourage the development of FBO businesses at Montana airports and assist in permits and applications as well as guidance on fuel farm design and regulations.
- **Automated Weather Reporting**: Weather conditions can greatly affect an aircraft's ability to land at an airport, specifically as they relate to visibility. Automated weather reporting systems assist pilots with flight planning and can also assist in flight diversion, when necessary. The two most common automated weather reporting systems are the Automated Weather Observation System (AWOS) or Automated Surface Observing System (ASOS).
- **Aircraft Parking**: Parking space is needed for transient aircraft. Airports may have either paved tie-down spaces on the airport apron or grass tie-downs. The type of tie-downs needed is determined by the aircraft utilizing the airport.
- **Rental Cars / Courtesy Car**: The availability of ground transportation is an important service for users of both commercial and general aviation airports. It is common practice for commercial airports to have on-site rental car businesses. At general aviation airports, where rental cars are not available, free of charge courtesy or crew car may offer airport patrons with another ground transportation option.

The following table details benchmarks for each airport role category:

Table 7-2: Performance Measure Benchmarks

Benchmark Category	Primary Commercial Service	EAS Commercial Service	GA Level 1	GA Level 2	GA Level 3	GA Level 4
Runway Length	6,000	5,000	4,000	3,500	3,000	Maintain
Runway Lighting	HIRL	MIRL	MIRL	MIRL	MIRL	Not an Objective
Taxiway Type	Full Parallel	Full Parallel	Partial Parallel	Turnarounds	Stub	Not an Objective
Instrument Approach Minimum	3/4 Mile or Lower	1 Mile or Lower	1 Mile or Lower	Any IAP	Not an Objective	Not an Objective
Fuel Sales	Jet-A and AvGas	Jet-A and AvGas	Jet-A and AvGas	AvGas or MoGas	AvGas or MoGas	Not an Objective
Automated Weather Reporting	AWOS or ASOS	AWOS or ASOS	AWOS or ASOS	AWOS or ASOS	Not an Objective	Not an Objective
Aircraft Parking	Tie-Downs	Tie-Downs	Tie-Downs	Tie-Downs	Tie-Downs	Tie-Downs
Rental Cars / Courtesy Car	Rental Cars	Rental Cars	Courtesy Car	Not an Objective	Not an Objective	Not an Objective

This data was collected during the inventory phase of the system plan. When necessary, data was supplemented through sources such as the 5010 Airport Master Record and airport approach plates.

Figure 7-4 summarizes the results of the performance benchmarking process. With 93 percent of all applicable system airports meeting goals for their respective roles, runway length was the best performing benchmark, followed by rental/courtesy car at 92 percent. At 58 percent, IAP minimums were identified as the benchmark with the most potential for improvement.

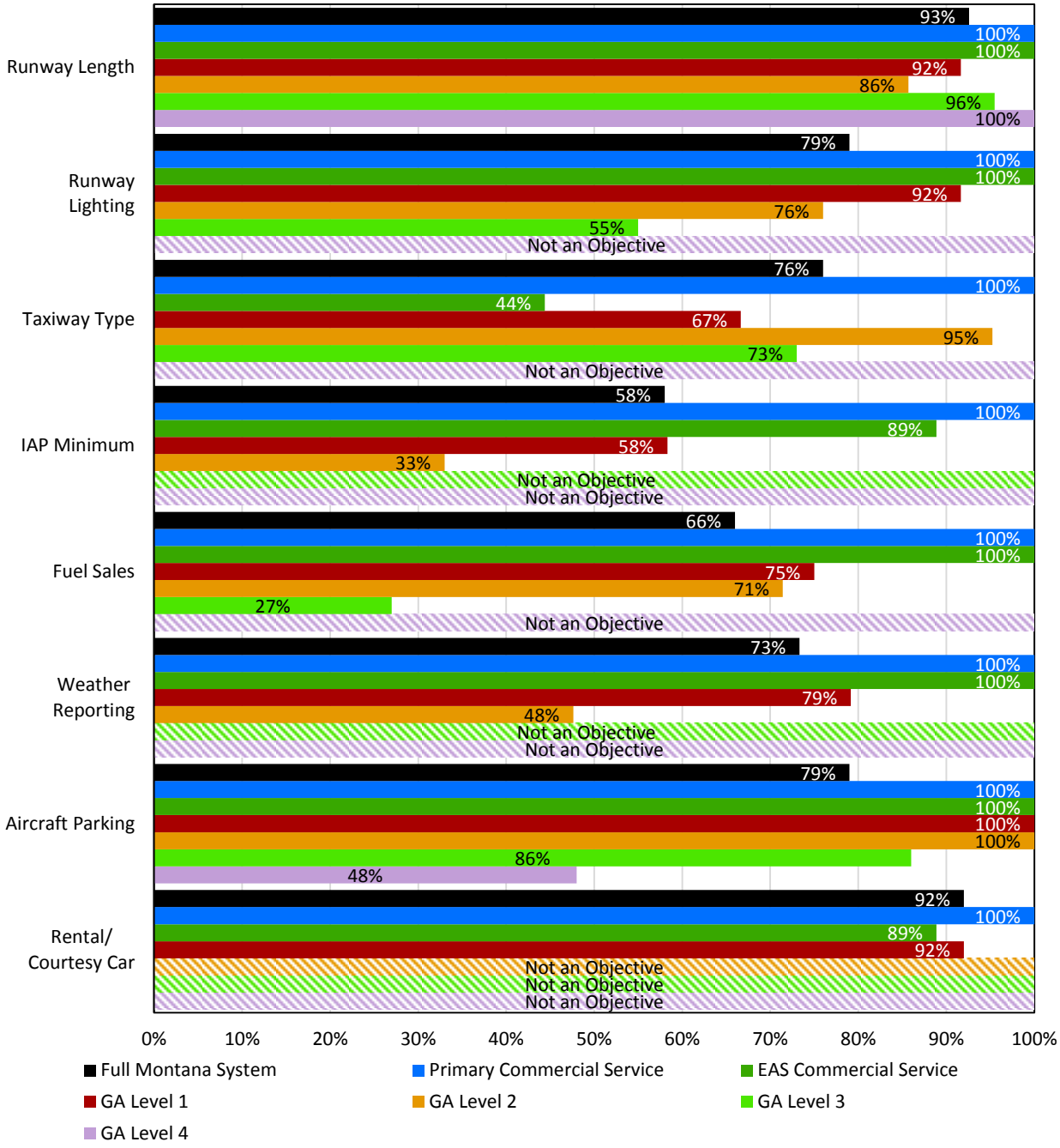


Figure 7-4: Summary of System Adequacy Analysis

The following sections detail benchmark performance at each airport in the Montana system. Included are figures that graphically depict the cumulative results of the system's performance. The inadequacies identified in the benchmarking process will lead directly to individual airport recommendations.

Runway Length

Table 7-3 details primary runway length benchmarks at Montana airports, while **Figures 7-5** and **7-6** summarize these benchmarks by full system and airport role. With 92.7 percent of all applicable system airports meeting runway length goals for their role, this benchmark performed very well. This benchmark was met by all airports in the Primary Commercial Service and EAS Commercial Service roles, and met by at least 85 percent of the airports in each of the top three GA roles. There was no specific benchmark for GA Level 4 airports, only to maintain current runway length.

Table 7-3: System Adequacy – Runway Length

FAA ID	Associated City	Airport_Name	Runway Length	Meets Benchmark
Primary Commercial Service				
BIL	Billings	Billings Logan International	10,521	Yes
BZN	Bozeman	Bozeman Yellowstone International	8,994	Yes
GTF	Great Falls	Great Falls International	10,502	Yes
HLN	Helena	Helena Regional	9,000	Yes
GPI	Kalispell	Glacier Park International	9,007	Yes
MSO	Missoula	Missoula International	9,501	Yes
EAS Commercial Service				
BTM	Butte	Bert Mooney	9,001	Yes
GGW	Glasgow	Glasgow International (Wokal Field)	5,002	Yes
GDV	Glendive	Dawson Community	5,704	Yes
HVR	Havre	Havre City-County	5,205	Yes
LWT	Lewistown	Lewistown Municipal	6,100	Yes
MLS	Miles City	Miles City	5,680	Yes
SDY	Sidney	Sidney-Richland Municipal	5,705	Yes
WYS	West Yellowstone	Yellowstone	8,400	Yes
OLF	Wolf Point	L. M. Clayton	5,091	Yes
GA Level 1				
3U3	Anaconda	Bowman Field	6,011	Yes
BHK	Baker	Baker Municipal	5,904	Yes
6S0	Big Timber	Big Timber	5,290	Yes
CII	Choteau	Choteau	5,001	Yes
CTB	Cut Bank	Cut Bank Municipal	5,302	Yes
38S	Deer Lodge	Deer Lodge-City-County	5,800	Yes
DLN	Dillon	Dillon	6,501	Yes
EKS	Ennis	Ennis - Big Sky	6,601	Yes
88M	Eureka	Eureka	4,200	Yes
79S	Fort Benton	Fort Benton	4,300	Yes
6S5	Hamilton	Ravalli County	4,200	Yes
S27	Kalispell	Kalispell City	3,600	No
6S8	Laurel	Laurel Municipal	5,200	Yes
S59	Libby	Libby	5,002	Yes
LVM	Livingston	Mission Field	5,701	Yes
8S1	Polson	Polson	4,195	Yes
PO1	Poplar	Poplar Municipal	4,403	Yes
7S0	Ronan	Ronan	4,800	Yes
RPX	Roundup	Roundup	5,099	Yes
9S2	Scobey	Scobey	4,020	Yes

FAA ID	Associated City	Airport_Name	Runway Length	Meets Benchmark
SBX	Shelby	Shelby	5,005	Yes
32S	Stevensville	Stevensville	3,800	No
9S5	Three Forks	Three Forks	5,100	Yes
7S1	Twin Bridges	Twin Bridges	4,299	Yes
GA Level 2				
00F	Broadus	Broadus	4,400	Yes
LTY	Chester	Liberty County	4,607	Yes
S71	Chinook	Edgar G. Obie	4,000	Yes
4U6	Circle	Circle Town County	4,100	Yes
M46	Colstrip	Colstrip	5,100	Yes
6S3	Columbus	Columbus (Wolterman Memorial)	3,814	Yes
S01	Conrad	Conrad	4,601	Yes
4U9	Dell	Dell Flight Strip	7,000	Yes
97M	Ekalaka	Ekalaka	3,800	Yes
1S3	Forsyth	Tillitt Field	4,799	Yes
29S	Gardiner	Gardiner	3,200	No
HWQ	Harlowton	Wheatland County at Harlowton	4,200	Yes
M75	Malta	Malta	4,500	Yes
S34	Plains	Plains	4,651	Yes
PWD	Plentywood	Sher-Wood	3,900	Yes
RED	Red Lodge	Red Lodge	4,000	Yes
52S	St. Ignatius	St. Ignatius	2,610	No
S64	Stanford	Stanford	4,200	Yes
9S4	Superior	Mineral County	3,450	No
8U8	Townsend	Townsend	4,000	Yes
7S6	White Sulphur Springs	White Sulphur Springs	6,100	Yes
GA Level 3				
3U7	Augusta	Benchmark	6,000	Yes
3U8	Big Sandy	Big Sandy	3,570	Yes
6S1	Bridger	Bridger Municipal	3,400	Yes
8S0	Browning	Starr-Browning Airstrip	4,051	Yes
4U4	Chinook	Hebbelman	3,650	Yes
RC0	Clinton	Rock Creek	4,100	Yes
S85	Culbertson	Big Sky Field	3,800	Yes
5U1	Dutton	Dutton	3,130	Yes
5U5	Fairfield	Fairfield	3,800	Yes
37S	Fort Peck	Fort Peck	4,100	Yes
00U	Hardin	Big Horn County	4,490	Yes
48S	Harlem	Harlem	4,100	Yes
S09	Hot Springs	Hot Springs	3,550	Yes
JDN	Jordan	Jordan	4,300	Yes
80S	Lavina	Lavina	3,460	Yes
S69	Lincoln	Lincoln	4,239	Yes
23S	Seeley Lake	Seeley Lake	4,575	Yes
8U6	Terry	Terry	4,300	Yes
THM	Thompson Falls	Thompson Falls	4,200	Yes
9U0	Turner	Turner	3,612	Yes
7S7	Valier	Valier	3,075	Yes

FAA ID	Associated City	Airport_Name	Runway Length	Meets Benchmark
58S	Whitefish	Whitefish	2,560	No
GA Level 4				
3U4	Ashland	St. Labre Mission	3,830	N/A
3U5	Augusta	Augusta	3,650	N/A
49S	Babb	Babb	3,860	N/A
53U	Bigfork	Ferndale Airfield	3,500	N/A
3U9	Boulder	Boulder	3,675	N/A
S04	Condon	Condon USFS	2,575	N/A
4U7	Conner	West Fork Lodge	2,600	N/A
5U0	Denton	Denton	2,550	N/A
M26	Drummond	Drummond	2,400	N/A
5U6	Fairview	Fairview	3,000	N/A
5U7	Fort Smith	Fort Smith Landing Strip	3,827	N/A
5U8	Geraldine	Geraldine	2,900	N/A
U09	Harlem	Fort Belknap Agency	3,200	N/A
6U5	Hinsdale	Hinsdale	2,200	N/A
6U6	Hogeland	Hogeland	3,140	N/A
6U7	Hysham	Hysham	3,060	N/A
0S1	Meadow Creek	Meadow Creek USFS	2,830	N/A
S00	Opheim	Opheim	2,675	N/A
U05	Philipsburg	Riddick Field	3,600	N/A
H28	Port of Del Bonita	Whetstone International	4,440	N/A
7U8	Richey	Richey	2,690	N/A
M42	Russian Flat	Russian Flat	3,000	N/A
8U0	Ryegate	Ryegate	3,440	N/A
8U1	Sand Springs	Sand Springs Strip	2,400	N/A
8U2	Schafer	Schafer USFS	3,200	N/A
8U3	Scobey	Scobey Border Station (East Poplar International)	3,330	N/A
M35	Seeley Lake	Lindey's Landing West Seaplane Base	14,000	N/A
8U4	Spotted Bear	Spotted Bear USFS	3,800	N/A
8U5	Sunburst	Sunburst	2,700	N/A
7S8	Sweetgrass	Ross International	2,900	N/A
B70	Tiber Dam	Tiber Dam	2,550	N/A
8U9	Townsend	Canyon Ferry	3,200	N/A
57S	Troy	Troy	3,570	N/A
9U1	Wilsall	Wilsall	3,100	N/A
9S7	Winifred	Winifred	4,400	N/A
CW0	Winifred	Cow Creek	2,200	N/A
BB0	Winifred	Black Butte North	1,800	N/A
BW8	Winifred	Bullwhacker	1,500	N/A
LC0	Winifred	Left Coulee	1,600	N/A
MT3	Winifred	Knox Ridge	2,100	N/A
WH0	Winifred	Woodhawk	1,200	N/A
7S2	Winnett	Winnett	3,130	N/A
7S4	Wisdom	Wisdom	3,445	N/A
02T	Wise River	Wise River	4,050	N/A

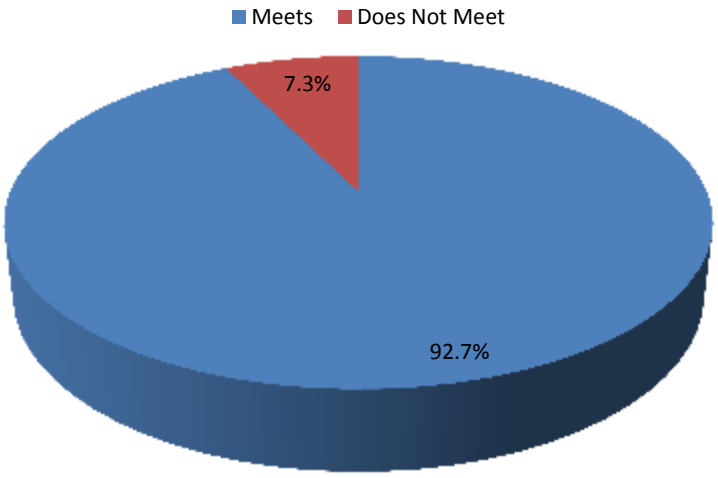


Figure 7-5: System Adequacy – Meets Runway Length Benchmark (Applicable Airports)

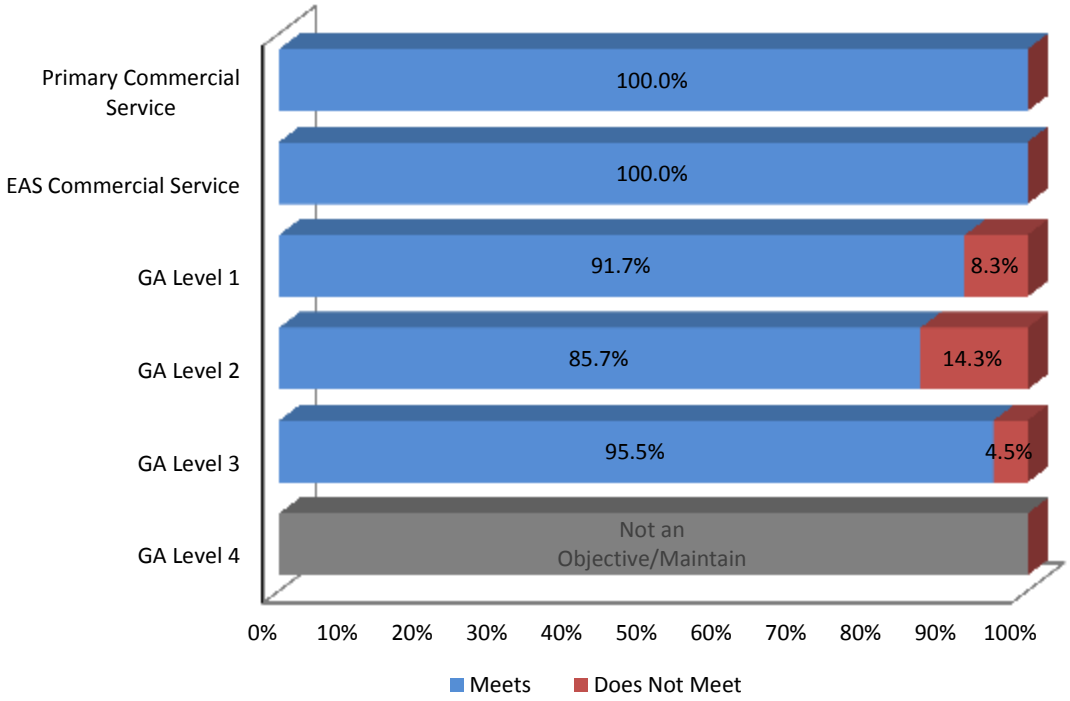


Figure 7-6: System Adequacy by Role – Meets Runway Length Benchmark

Runway Lighting

Table 7-4 details runway lighting benchmarks at each Montana system airport, while **Figures 7** and **8** summarize these benchmarks by airport role and the full system. System wide, 79.3 percent of applicable airports meet these benchmarks. All commercial service airports meet their benchmarks for runway lighting, while 91.7 percent of GA Level 1 and 81 percent of GA Level 2 airports meet the benchmark of having MIRL. With only 50 percent of the GA Level 3 role meeting the MIRL benchmark, this is a notable area for improvement. There is no runway lighting benchmark for GA Level 4 airports.

Table 7-4: System Adequacy – Runway Lighting

FAA ID	Associated City	Airport_Name	Runway Lighting	Meets Benchmark
Primary Commercial Service				
BIL	Billings	Billings Logan International	HIRL	Yes
BZN	Bozeman	Bozeman Yellowstone International	HIRL	Yes
GTF	Great Falls	Great Falls International	HIRL	Yes
HLN	Helena	Helena Regional	HIRL	Yes
GPI	Kalispell	Glacier Park International	HIRL	Yes
MSO	Missoula	Missoula International	HIRL	Yes
EAS Commercial Service				
BTM	Butte	Bert Mooney	MIRL	Yes
GGW	Glasgow	Glasgow International (Wokal Field)	MIRL	Yes
GDV	Glendive	Dawson Community	MIRL	Yes
HVR	Havre	Havre City-County	MIRL	Yes
LWT	Lewistown	Lewistown Municipal	MIRL	Yes
MLS	Miles City	Miles City	MIRL	Yes
SDY	Sidney	Sidney-Richland Municipal	MIRL	Yes
WYS	West Yellowstone	Yellowstone	HIRL	Yes
OLF	Wolf Point	L. M. Clayton	MIRL	Yes
GA Level 1				
3U3	Anaconda	Bowman Field	MIRL	Yes
BHK	Baker	Baker Municipal	MIRL	Yes
6S0	Big Timber	Big Timber	MIRL	Yes
CII	Choteau	Choteau	MIRL	Yes
CTB	Cut Bank	Cut Bank Municipal	MIRL	Yes
38S	Deer Lodge	Deer Lodge-City-County	MIRL	Yes
DLN	Dillon	Dillon	MIRL	Yes
EKS	Ennis	Ennis - Big Sky	MIRL	Yes
88M	Eureka	Eureka	Strobe	No
79S	Fort Benton	Fort Benton	MIRL	Yes
6S5	Hamilton	Ravalli County	MIRL	Yes
S27	Kalispell	Kalispell City	Non-Standard	No
6S8	Laurel	Laurel Municipal	MIRL	Yes
S59	Libby	Libby	MIRL	Yes
LVM	Livingston	Mission Field	MIRL	Yes
8S1	Polson	Polson	MIRL	Yes
PO1	Poplar	Poplar Municipal	MIRL	Yes
7S0	Ronan	Ronan	MIRL	Yes
RPX	Roundup	Roundup	MIRL	Yes
9S2	Scobey	Scobey	MIRL	Yes
SBX	Shelby	Shelby	MIRL	Yes
32S	Stevensville	Stevensville	MIRL	Yes
9S5	Three Forks	Three Forks	MIRL	Yes
7S1	Twin Bridges	Twin Bridges	MIRL	Yes
GA Level 2				
00F	Broadus	Broadus	MIRL	Yes
LTY	Chester	Liberty County	MIRL	Yes

FAA ID	Associated City	Airport_Name	Runway Lighting	Meets Benchmark
S71	Chinook	Edgar G. Obie	MIRL	Yes
4U6	Circle	Circle Town County	MIRL	Yes
M46	Colstrip	Colstrip	MIRL	Yes
6S3	Columbus	Columbus (Wolterman Memorial)	MIRL	Yes
S01	Conrad	Conrad	MIRL	Yes
4U9	Dell	Dell Flight Strip	MIRL	Yes
97M	Ekalaka	Ekalaka	MIRL	Yes
1S3	Forsyth	Tillitt Field	MIRL	Yes
29S	Gardiner	Gardiner	LIRL	No
HWQ	Harlowton	Wheatland County at Harlowton	MIRL	Yes
M75	Malta	Malta	None	No
S34	Plains	Plains	MIRL	Yes
PWD	Plentywood	Sher-Wood	MIRL	Yes
RED	Red Lodge	Red Lodge	MIRL	Yes
52S	St. Ignatius	St. Ignatius	LIRL	No
S64	Stanford	Stanford	MIRL	Yes
9S4	Superior	Mineral County	None	No
8U8	Townsend	Townsend	MIRL	Yes
7S6	White Sulphur Springs	White Sulphur Springs	MIRL	Yes
GA Level 3				
3U7	Augusta	Benchmark	None	No
3U8	Big Sandy	Big Sandy	MIRL	Yes
6S1	Bridger	Bridger Municipal	Non-Standard	No
8S0	Browning	Starr-Browning Airstrip	MIRL	Yes
4U4	Chinook	Hebbelman	MIRL	Yes
RC0	Clinton	Rock Creek	None	No
S85	Culbertson	Big Sky Field	MIRL	Yes
5U1	Dutton	Dutton	Non-Standard	No
5U5	Fairfield	Fairfield	Non-Standard	No
37S	Fort Peck	Fort Peck	None	No
00U	Hardin	Big Horn County	MIRL	Yes
48S	Harlem	Harlem	MIRL	Yes
S09	Hot Springs	Hot Springs	MIRL	Yes
JDN	Jordan	Jordan	MIRL	Yes
80S	Lavina	Lavina	None	No
S69	Lincoln	Lincoln	MIRL	Yes
23S	Seeley Lake	Seeley Lake	LIRL	No
8U6	Terry	Terry	MIRL	Yes
THM	Thompson Falls	Thompson Falls	MIRL	Yes
9U0	Turner	Turner	MIRL	Yes
7S7	Valier	Valier	None	No
58S	Whitefish	Whitefish	None	No
GA Level 4				
3U4	Ashland	St. Labre Mission	None	N/A
3U5	Augusta	Augusta	None	N/A
49S	Babb	Babb	None	N/A
53U	Bigfork	Ferndale Airfield	None	N/A
3U9	Boulder	Boulder	None	N/A

FAA ID	Associated City	Airport_Name	Runway Lighting	Meets Benchmark
S04	Condon	Condon USFS	None	N/A
4U7	Conner	West Fork Lodge	None	N/A
5U0	Denton	Denton	None	N/A
M26	Drummond	Drummond	None	N/A
5U6	Fairview	Fairview	None	N/A
5U7	Fort Smith	Fort Smith Landing Strip	None	N/A
5U8	Geraldine	Geraldine	None	N/A
U09	Harlem	Fort Belknap Agency	None	N/A
6U5	Hinsdale	Hinsdale	Non-Standard	N/A
6U6	Hogeland	Hogeland	None	N/A
6U7	Hysham	Hysham	LIRL	N/A
0S1	Meadow Creek	Meadow Creek USFS	None	N/A
S00	Opheim	Opheim	LIRL	N/A
U05	Philipsburg	Riddick Field	MIRL	N/A
H28	Port of Del Bonita	Whetstone International	None	N/A
7U8	Richey	Richey	LIRL	N/A
M42	Russian Flat	Russian Flat	None	N/A
8U0	Ryegate	Ryegate	None	N/A
8U1	Sand Springs	Sand Springs Strip	None	N/A
8U2	Schafer	Schafer USFS	None	N/A
8U3	Scobey	Scobey Border Station (East Poplar International)	None	N/A
M35	Seeley Lake	Lindey's Landing West Seaplane Base	Non-Standard	N/A
8U4	Spotted Bear	Spotted Bear USFS	None	N/A
8U5	Sunburst	Sunburst	None	N/A
7S8	Sweetgrass	Ross International	None	N/A
B70	Tiber Dam	Tiber Dam	None	N/A
8U9	Townsend	Canyon Ferry	None	N/A
57S	Troy	Troy	None	N/A
9U1	Wilsall	Wilsall	None	N/A
9S7	Winifred	Winifred	None	N/A
CW0	Winifred	Cow Creek	None	N/A
BB0	Winifred	Black Butte North	None	N/A
BW8	Winifred	Bullwhacker	None	N/A
LC0	Winifred	Left Coulee	None	N/A
MT3	Winifred	Knox Ridge	None	N/A
WH0	Winifred	Woodhawk	None	N/A
7S2	Winnett	Winnett	None	N/A
7S4	Wisdom	Wisdom	None	N/A
02T	Wise River	Wise River	None	N/A

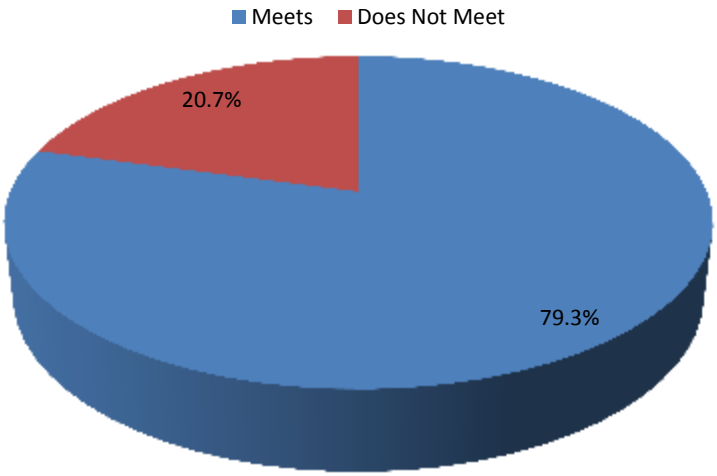


Figure 7-7: System Adequacy – Meets Runway Lighting Benchmark (Applicable Airports)

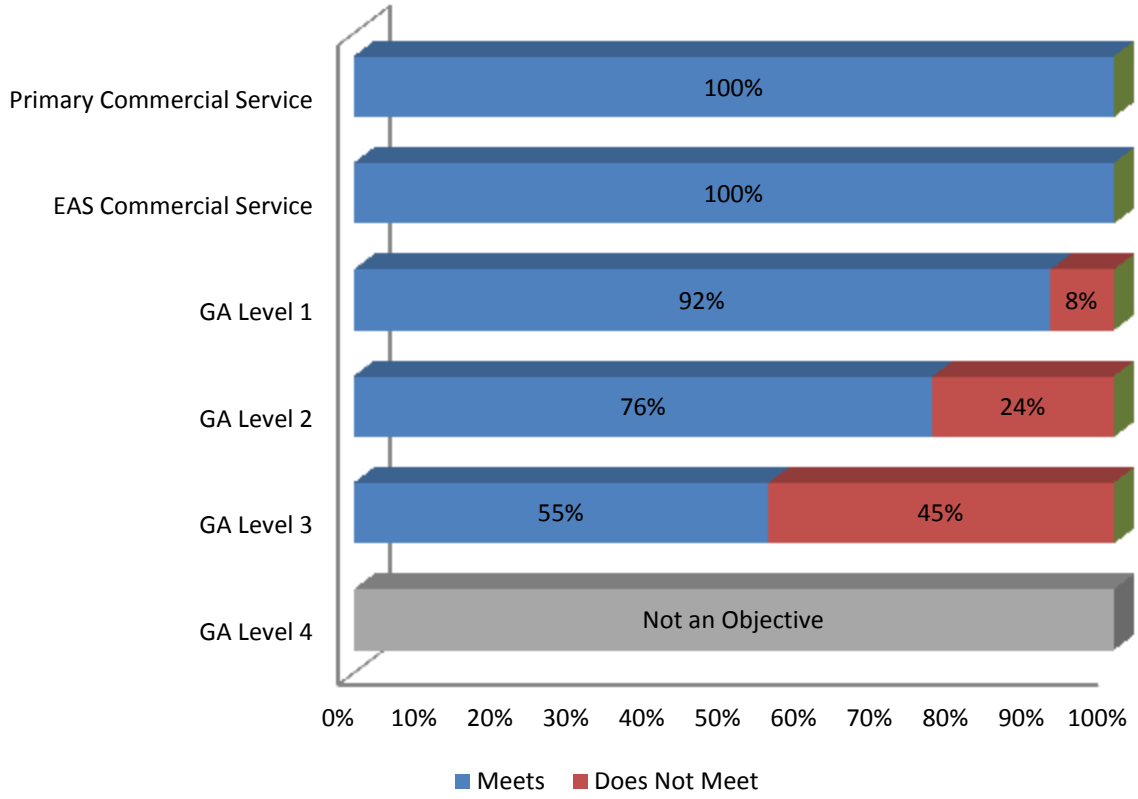


Figure 7-8: System Adequacy by Role – Meets Runway Lighting Benchmark

Taxiway Type

Table 7-5 details taxiway type benchmarks at Montana system airports, while **Figures 7-9** and **7-10** offer a summary of this analysis by full system and airport role. System wide, 69.5 percent of applicable airports meet their role's benchmark for taxiway type. Only Primary Commercial Service has 100 percent of its airports meeting this benchmark, while 95.2 percent of GA Level 2 airports meet their benchmarks. With three roles under 70 percent performance, there is opportunity to improve Montana airports' system of taxiways. There is no taxiway benchmark for GA Level 4 airports.

Table 7-5: System Adequacy – Taxiway Type

FAA ID	Associated City	Airport_Name	Taxiway Type	Meets Benchmark
Primary Commercial Service				
BIL	Billings	Billings Logan International	Full Parallel	Yes
BZN	Bozeman	Bozeman Yellowstone International	Full Parallel	Yes
GTF	Great Falls	Great Falls International	Full Parallel	Yes
HLN	Helena	Helena Regional	Full Parallel	Yes
GPI	Kalispell	Glacier Park International	Full Parallel	Yes
MSO	Missoula	Missoula International	Full Parallel	Yes
EAS Commercial Service				
BTM	Butte	Bert Mooney	Full Parallel	Yes
GGW	Glasgow	Glasgow International (Wokal Field)	Turnaround	No
GDV	Glendive	Dawson Community	Partial Parallel, Turnaround	No
HVR	Havre	Havre City-County	Full Parallel	Yes
LWT	Lewistown	Lewistown Municipal	Full Parallel	Yes
MLS	Miles City	Miles City	Turnaround	No
SDY	Sidney	Sidney-Richland Municipal	Partial Parallel	No
WYS	West Yellowstone	Yellowstone	Full Parallel	Yes
OLF	Wolf Point	L. M. Clayton	Partial Parallel	No
GA Level 1				
3U3	Anaconda	Bowman Field	Turnaround	No
BHK	Baker	Baker Municipal	Full parallel	Yes
6S0	Big Timber	Big Timber	Partial Parallel	Yes
CII	Choteau	Choteau	Turnaround	No
CTB	Cut Bank	Cut Bank Municipal	Turnaround	No
38S	Deer Lodge	Deer Lodge-City-County	Turnaround	No
DLN	Dillon	Dillon	Full Parallel	Yes
EKS	Ennis	Ennis - Big Sky	Partial Parallel and Turnaround	Yes
88M	Eureka	Eureka	Full Parallel	Yes
79S	Fort Benton	Fort Benton	Turnaround	No
6S5	Hamilton	Ravalli County	Full Parallel	Yes
S27	Kalispell	Kalispell City	Full Parallel	Yes
6S8	Laurel	Laurel Municipal	Full Parallel	Yes
S59	Libby	Libby	Full Parallel	Yes
LVM	Livingston	Mission Field	Turnaround	No
8S1	Polson	Polson	Full Parallel	Yes

FAA ID	Associated City	Airport_Name	Taxiway Type	Meets Benchmark
PO1	Poplar	Poplar Municipal	Partial Parallel, Turnaround	Yes
7S0	Ronan	Ronan	Full Parallel	Yes
RPX	Roundup	Roundup	Partial Parallel	Yes
9S2	Scobey	Scobey	Turnaround	No
SBX	Shelby	Shelby	Partial Parallel, Turnaround	Yes
32S	Stevensville	Stevensville	Partial Parallel, Turnaround	Yes
9S5	Three Forks	Three Forks	Partial Parallel, Turnaround	Yes
7S1	Twin Bridges	Twin Bridges	Turnaround	No
GA Level 2				
00F	Broadus	Broadus	Turnaround	Yes
LTY	Chester	Liberty County	Turnaround	Yes
S71	Chinook	Edgar G. Obie	Partial Parallel	Yes
4U6	Circle	Circle Town County	Turnaround	Yes
M46	Colstrip	Colstrip	Turnaround	Yes
6S3	Columbus	Columbus (Wolterman Memorial)	Full Parallel	Yes
S01	Conrad	Conrad	Turnaround	Yes
4U9	Dell	Dell Flight Strip	Turnaround	Yes
97M	Ekalaka	Ekalaka	Turnaround	Yes
1S3	Forsyth	Tillitt Field	Partial Parallel	Yes
29S	Gardiner	Gardiner	None	No
HWQ	Harlowton	Wheatland County at Harlowton	Turnaround	Yes
M75	Malta	Malta	Partial Parallel	Yes
S34	Plains	Plains	Turnaround	Yes
PWD	Plentywood	Sher-Wood	Full Parallel	Yes
RED	Red Lodge	Red Lodge	Turnaround	Yes
52S	St. Ignatius	St. Ignatius	Turnaround	Yes
S64	Stanford	Stanford	Turnaround	Yes
9S4	Superior	Mineral County	Partial Parallel	Yes
8U8	Townsend	Townsend	Turnaround	Yes
7S6	White Sulphur Springs	White Sulphur Springs	Turnaround	Yes
GA Level 3				
3U7	Augusta	Benchmark	Stub	Yes
3U8	Big Sandy	Big Sandy	Turnaround	Yes
6S1	Bridger	Bridger Municipal	Turnaround	Yes
8S0	Browning	Starr-Browning Airstrip	Stub	Yes
4U4	Chinook	Hebbelman	None	No
RC0	Clinton	Rock Creek	None	No
S85	Culbertson	Big Sky Field	Turnaround	Yes
5U1	Dutton	Dutton	Turnaround	Yes
5U5	Fairfield	Fairfield	Stub	Yes
37S	Fort Peck	Fort Peck	Stub	Yes
F02	Hardin	Fairgrounds Airpark	Turnaround	Yes
48S	Harlem	Harlem	Turnaround	Yes
S09	Hot Springs	Hot Springs	Stub	Yes

FAA ID	Associated City	Airport_Name	Taxiway Type	Meets Benchmark
JDN	Jordan	Jordan	Turnaround	Yes
80S	Lavina	Lavina	None	No
S69	Lincoln	Lincoln	Partial Parallel	Yes
23S	Seeley Lake	Seeley Lake	Full Parallel	Yes
8U6	Terry	Terry	Partial Parallel	Yes
THM	Thompson Falls	Thompson Falls	Partial Parallel, Turnaround	Yes
9U0	Turner	Turner	Turnaround	Yes
7S7	Valier	Valier	None	No
58S	Whitefish	Whitefish	None	No
GA Level 4				
3U4	Ashland	St. Labre Mission	None	N/A
3U5	Augusta	Augusta	None	N/A
49S	Babb	Babb	None	N/A
53U	Bigfork	Ferndale Airfield	None	N/A
3U9	Boulder	Boulder	None	N/A
S04	Condon	Condon USFS	None	N/A
4U7	Conner	West Fork Lodge	None	N/A
5U0	Denton	Denton	None	N/A
M26	Drummond	Drummond	None	N/A
5U6	Fairview	Fairview	None	N/A
5U7	Fort Smith	Fort Smith Landing Strip	None	N/A
5U8	Geraldine	Geraldine	None	N/A
U09	Harlem	Fort Belknap Agency	None	N/A
6U5	Hinsdale	Hinsdale	None	N/A
6U6	Hogeland	Hogeland	None	N/A
6U7	Hysham	Hysham	None	N/A
0S1	Meadow Creek	Meadow Creek USFS	None	N/A
S00	Opheim	Opheim	None	N/A
U05	Philipsburg	Riddick Field	None	N/A
H28	Port of Del Bonita	Whetstone International	None	N/A
7U8	Richey	Richey	None	N/A
M42	Russian Flat	Russian Flat	None	N/A
8U0	Ryegate	Ryegate	None	N/A
8U1	Sand Springs	Sand Springs Strip	None	N/A
8U2	Schafer	Schafer USFS	None	N/A
8U3	Scobey	Scobey Border Station (East Poplar International)	None	N/A
M35	Seeley Lake	Lindey's Landing West Seaplane Base	None	N/A
8U4	Spotted Bear	Spotted Bear USFS	None	N/A
8U5	Sunburst	Sunburst	None	N/A
7S8	Sweetgrass	Ross International	None	N/A
B70	Tiber Dam	Tiber Dam	None	N/A
8U9	Townsend	Canyon Ferry	None	N/A
57S	Troy	Troy	Turnaround	N/A
9U1	Wilsall	Wilsall	None	N/A
9S7	Winifred	Winifred	None	N/A

FAA ID	Associated City	Airport_Name	Taxiway Type	Meets Benchmark
CW0	Winifred	Cow Creek	None	N/A
BB0	Winifred	Black Butte North	None	N/A
BW8	Winifred	Bullwhacker	None	N/A
LC0	Winifred	Left Coulee	None	N/A
MT3	Winifred	Knox Ridge	None	N/A
WH0	Winifred	Woodhawk	None	N/A
7S2	Winnett	Winnett	Stub	N/A
7S4	Wisdom	Wisdom	None	N/A
02T	Wise River	Wise River	Turnaround	N/A

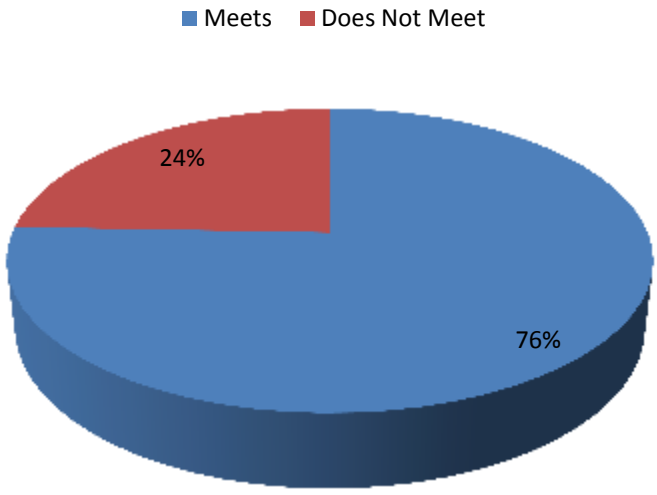


Figure 7-9: System Adequacy – Meets Taxiway Type Benchmark (Applicable Airports)

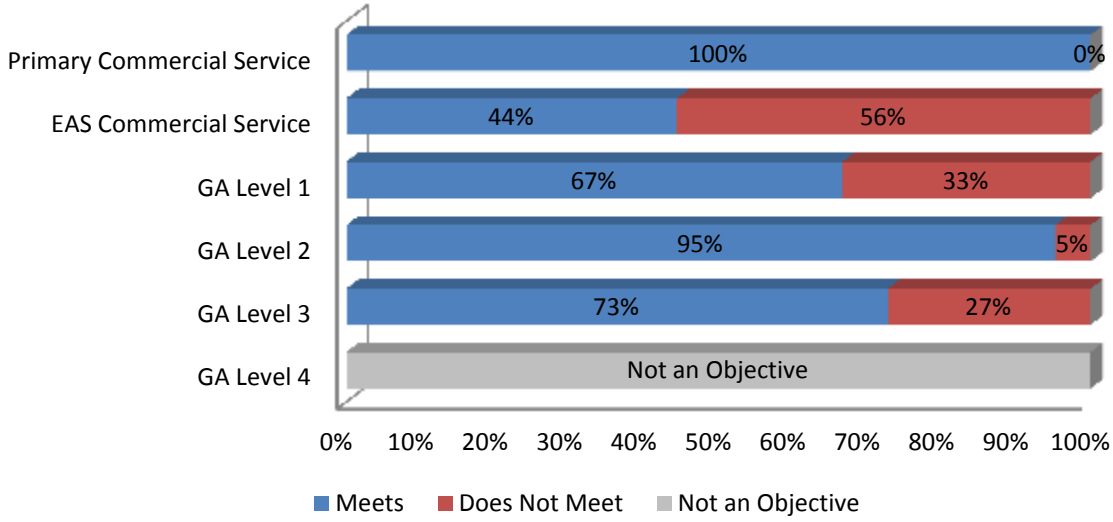


Figure 7-10: System Adequacy by Role – Meets Taxiway Type Benchmark

Instrument Approach Minimum

Table 7-6 details IAP minimum benchmarks at Montana system airports, while **Figures 7-11** and **7-12** summarize this analysis by airport role and full system. Statewide, 56.7 percent of applicable airports meet the IAP benchmark for their role. All airports in the Primary Commercial Service role meet these benchmarks, while 88.9 percent of EAS Commercial Service airports meet IAP goals. With only 58.3 percent of GA Level 1 airports and 28.6 percent of GA Level 2 airports meeting IAP benchmarks, there is room for improvement in the state's system of approach capabilities. IAP benchmarks do not apply to the GA Level 3 or GA Level 4 roles.

Table 7-6: System Adequacy – Instrument Approach Minimum

FAA ID	Associated City	Airport_Name	Instrument Approach Min.	Meets Benchmark
Primary Commercial Service				
BIL	Billings	Billings Logan International	1/2 Mile	Yes
BZN	Bozeman	Bozeman Yellowstone International	1/2 Mile	Yes
GTF	Great Falls	Great Falls International	3/8 Mile	Yes
HLN	Helena	Helena Regional	1/2 Mile	Yes
GPI	Kalispell	Glacier Park International	1/2 Mile	Yes
MSO	Missoula	Missoula International	1/2 Mile	Yes
EAS Commercial Service				
BTM	Butte	Bert Mooney	1 1/4 Mile	No
GGW	Glasgow	Glasgow International (Wokal Field)	3/4 Mile	Yes
GDV	Glendive	Dawson Community	7/8 Mile	Yes
HVR	Havre	Havre City-County	3/4 Mile	Yes
LWT	Lewistown	Lewistown Municipal	3/4 Mile	Yes
MLS	Miles City	Miles City	7/8 Mile	Yes
SDY	Sidney	Sidney-Richland Municipal	1 Mile	Yes
WYS	West Yellowstone	Yellowstone	1/2 Mile	Yes
OLF	Wolf Point	L. M. Clayton	3/4 Mile	Yes
GA Level 1				
3U3	Anaconda	Bowman Field	1 1/4 Mile	No
BHK	Baker	Baker Municipal	7/8 Mile	Yes
6S0	Big Timber	Big Timber	None	No
CII	Choteau	Choteau	1 Mile	Yes
CTB	Cut Bank	Cut Bank Municipal	3/4 Mile	Yes
38S	Deer Lodge	Deer Lodge-City-County	1 Mile	Yes
DLN	Dillon	Dillon	1 Mile	Yes
EKS	Ennis	Ennis - Big Sky	1 Mile	Yes
88M	Eureka	Eureka	None	No
79S	Fort Benton	Fort Benton	1 Mile	Yes
6S5	Hamilton	Ravalli County	1 1/4 Mile	No
S27	Kalispell	Kalispell City	None	No
6S8	Laurel	Laurel Municipal	1 Mile	Yes
S59	Libby	Libby	1 1/4 Mile	No
LVM	Livingston	Mission Field	1 Mile	Yes
8S1	Polson	Polson	1 1/4 Mile	No
PO1	Poplar	Poplar Municipal	1 Mile	Yes
7S0	Ronan	Ronan	1 Mile	Yes
RPX	Roundup	Roundup	1 Mile	Yes
9S2	Scobey	Scobey	1 Mile	Yes

FAA ID	Associated City	Airport_Name	Instrument Approach Min.	Meets Benchmark
SBX	Shelby	Shelby	1 Mile	Yes
32S	Stevensville	Stevensville	1 1/4 Mile	No
9S5	Three Forks	Three Forks	None	No
7S1	Twin Bridges	Twin Bridges	None	No
GA Level 2				
00F	Broadus	Broadus	None	No
LTY	Chester	Liberty County	None	No
S71	Chinook	Edgar G. Obie	None	No
4U6	Circle	Circle Town County	1 Mile	Yes
M46	Colstrip	Colstrip	1 Mile	Yes
6S3	Columbus	Columbus (Wolterman Memorial)	None	No
S01	Conrad	Conrad	1 Mile	Yes
4U9	Dell	Dell Flight Strip	None	No
97M	Ekalaka	Ekalaka	None	No
1S3	Forsyth	Tillitt Field	1 Mile	Yes
29S	Gardiner	Gardiner	None	No
HWQ	Harlowton	Wheatland County at Harlowton	None	No
M75	Malta	Malta	1 Mile	Yes
S34	Plains	Plains	None	No
PWD	Plentywood	Sher-Wood	3/4 Mile	Yes
RED	Red Lodge	Red Lodge	None	No
52S	St. Ignatius	St. Ignatius	None	No
S64	Stanford	Stanford	None	No
9S4	Superior	Mineral County	None	No
8U8	Townsend	Townsend	None	No
7S6	White Sulphur Springs	White Sulphur Springs	None	No
GA Level 3				
3U7	Augusta	Benchmark	None	N/A
3U8	Big Sandy	Big Sandy	None	N/A
6S1	Bridger	Bridger Municipal	None	N/A
8S0	Browning	Starr-Browning Airstrip	None	N/A
4U4	Chinook	Hebbelman	None	N/A
RC0	Clinton	Rock Creek	None	N/A
S85	Culbertson	Big Sky Field	None	N/A
5U1	Dutton	Dutton	None	N/A
5U5	Fairfield	Fairfield	None	N/A
37S	Fort Peck	Fort Peck	None	N/A
F02	Hardin	Fairgrounds Airpark	None	N/A
48S	Harlem	Harlem	None	N/A
S09	Hot Springs	Hot Springs	None	N/A
JDN	Jordan	Jordan	None	N/A
80S	Lavina	Lavina	None	N/A
S69	Lincoln	Lincoln	None	N/A
23S	Seeley Lake	Seeley Lake	None	N/A
8U6	Terry	Terry	None	N/A
THM	Thompson Falls	Thompson Falls	None	N/A
9U0	Turner	Turner	None	N/A

FAA ID	Associated City	Airport_Name	Instrument Approach Min.	Meets Benchmark
7S7	Valier	Valier	None	N/A
58S	Whitefish	Whitefish	None	N/A
GA Level 4				
3U4	Ashland	St. Labre Mission	None	N/A
3U5	Augusta	Augusta	None	N/A
49S	Babb	Babb	None	N/A
53U	Bigfork	Ferndale Airfield	None	N/A
3U9	Boulder	Boulder	None	N/A
S04	Condon	Condon USFS	None	N/A
4U7	Conner	West Fork Lodge	None	N/A
5U0	Denton	Denton	None	N/A
M26	Drummond	Drummond	None	N/A
5U6	Fairview	Fairview	None	N/A
5U7	Fort Smith	Fort Smith Landing Strip	None	N/A
5U8	Geraldine	Geraldine	None	N/A
U09	Harlem	Fort Belknap Agency	None	N/A
6U5	Hinsdale	Hinsdale	None	N/A
6U6	Hogeland	Hogeland	None	N/A
6U7	Hysham	Hysham	None	N/A
0S1	Meadow Creek	Meadow Creek USFS	None	N/A
S00	Opheim	Opheim	None	N/A
U05	Philipsburg	Riddick Field	None	N/A
H28	Port of Del Bonita	Whetstone International	None	N/A
7U8	Richey	Richey	None	N/A
M42	Russian Flat	Russian Flat	None	N/A
8U0	Ryegate	Ryegate	None	N/A
8U1	Sand Springs	Sand Springs Strip	None	N/A
8U2	Schafer	Schafer USFS	None	N/A
8U3	Scobey	Scobey Border Station	None	N/A
M35	Seeley Lake	Lindey's Landing West Seaplane Base	None	N/A
8U4	Spotted Bear	Spotted Bear USFS	None	N/A
8U5	Sunburst	Sunburst	None	N/A
7S8	Sweetgrass	Ross International	None	N/A
B70	Tiber Dam	Tiber Dam	None	N/A
8U9	Townsend	Canyon Ferry	None	N/A
57S	Troy	Troy	None	N/A
9U1	Wilsall	Wilsall	None	N/A
9S7	Winifred	Winifred	None	N/A
CW0	Winifred	Cow Creek	None	N/A
BB0	Winifred	Black Butte North	None	N/A
BW8	Winifred	Bullwhacker	None	N/A
LC0	Winifred	Left Coulee	None	N/A
MT3	Winifred	Knox Ridge	None	N/A
WH0	Winifred	Woodhawk	None	N/A
7S2	Winnett	Winnett	None	N/A
7S4	Wisdom	Wisdom	None	N/A
02T	Wise River	Wise River	None	N/A

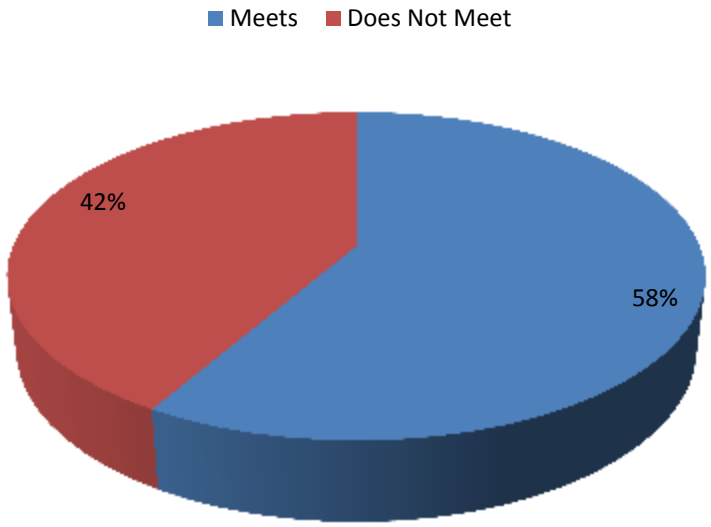


Figure 7-11: System Adequacy by Role –
Meets Instrument Approach Minimums Benchmark (Applicable Airports)

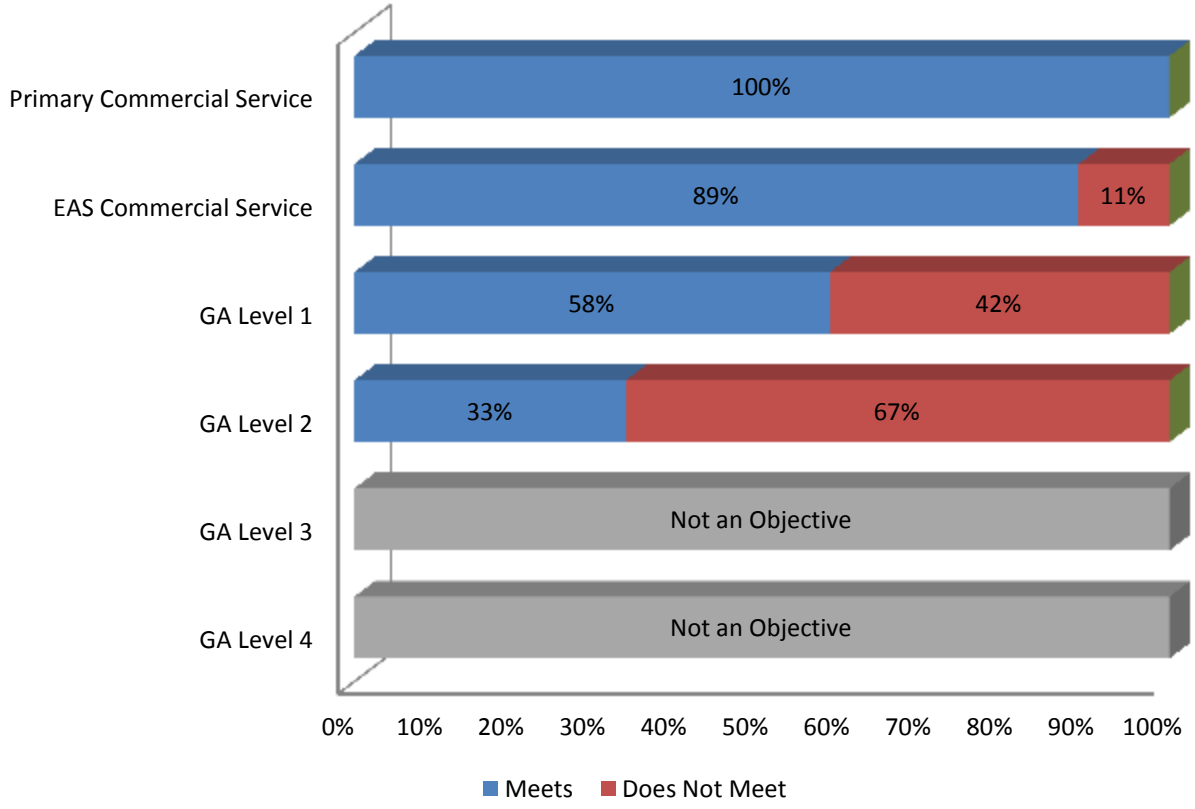


Figure 7-12: System Adequacy – Meets Instrument Approach Minimums Benchmark

Fuel Sales

Table 7-7 details fuel sales benchmarks at Montana system airports, while **Figures 7-13** and **7-14** summarize this analysis by airport role and full system. In total, 64.6 percent of applicable Montana airports meet their goals for the availability of aircraft fuel. All commercial service airports meet these benchmarks, while over 70 percent in both the GA Level 1 and GA Level 2 roles meet their fuel sales goals. However, only 22.7 percent of GA Level 3 airports meet the goal of providing either AvGas or MoGas sales. There is no fuel sales benchmark for GA Level 4 airports.

Table 7-7: System Adequacy – Fuel Sales

ID	Associated City	Airport	AvGas	Jet-A	MoGas	Meets Benchmark
Primary Commercial Service						
BIL	Billings	Billings Logan International	Yes	Yes	No	Yes
BZN	Bozeman	Bozeman Yellowstone International	Yes	Yes	No	Yes
GTF	Great Falls	Great Falls International	Yes	Yes	No	Yes
HLN	Helena	Helena Regional	Yes	Yes	Yes	Yes
GPI	Kalispell	Glacier Park International	Yes	Yes	No	Yes
MSO	Missoula	Missoula International	Yes	Yes	Yes	Yes
EAS Commercial Service						
BTM	Butte	Bert Mooney	Yes	Yes	No	Yes
GGW	Glasgow	Glasgow International (Wokal Field)	Yes	Yes	No	Yes
GDV	Glendive	Dawson Community	Yes	Yes	No	Yes
HVR	Havre	Havre City-County	Yes	Yes	No	Yes
LWT	Lewistown	Lewistown Municipal	Yes	Yes	No	Yes
MLS	Miles City	Miles City	Yes	Yes	No	Yes
SDY	Sidney	Sidney-Richland Municipal	Yes	Yes	No	Yes
WYS	West Yellowstone	Yellowstone	Yes	Yes	No	Yes
OLF	Wolf Point	L. M. Clayton	Yes	Yes	No	Yes
GA Level 1						
3U3	Anaconda	Bowman Field	No	No	No	No
BHK	Baker	Baker Municipal	Yes	Yes	No	Yes
6S0	Big Timber	Big Timber	Yes	Yes	No	Yes
CII	Choteau	Choteau	Yes	Yes	No	Yes
CTB	Cut Bank	Cut Bank Municipal	Yes	Yes	No	Yes
38S	Deer Lodge	Deer Lodge-City-County	Yes	Yes	No	Yes
DLN	Dillon	Dillon	Yes	Yes	No	Yes
EKS	Ennis	Ennis Big Sky	Yes	Yes	No	Yes
88M	Eureka	Eureka	Yes	No	No	No
79S	Fort Benton	Fort Benton	Yes	No	No	No
6S5	Hamilton	Ravalli County	Yes	Yes	No	Yes
S27	Kalispell	Kalispell City	Yes	No	No	No
6S8	Laurel	Laurel Municipal	Yes	Yes	No	Yes
S59	Libby	Libby	Yes	Yes	No	Yes
LVM	Livingston	Mission Field	Yes	Yes	No	Yes
8S1	Polson	Polson	Yes	Yes	No	Yes
PO1	Poplar	Poplar Municipal	Yes	Yes	No	Yes
7S0	Ronan	Ronan	Yes	Yes	No	Yes
RPX	Roundup	Roundup	Yes	Yes	No	Yes
9S2	Scobey	Scobey	Yes	Yes	No	Yes

ID	Associated City	Airport	AvGas	Jet-A	MoGas	Meets Benchmark
SBX	Shelby	Shelby	Yes	Yes	No	Yes
32S	Stevensville	Stevensville	Yes	No	No	No
9S5	Three Forks	Three Forks	Yes	No	No	No
7S1	Twin Bridges	Twin Bridges	Yes	Yes	No	Yes
GA Level 2						
00F	Broadus	Broadus	Yes	Yes	No	Yes
LTY	Chester	Liberty County	Yes	No	No	Yes
S71	Chinook	Edgar G. Obie	Yes	No	No	Yes
4U6	Circle	Circle Town County	Yes	No	No	Yes
M46	Colstrip	Colstrip	No	No	No	No
6S3	Columbus	Columbus (Wolterman Memorial)	Yes	No	No	Yes
S01	Conrad	Conrad	Yes	No	No	Yes
4U9	Dell	Dell Flight Strip	No	No	No	No
97M	Ekalaka	Ekalaka	Yes	No	No	Yes
1S3	Forsyth	Tillitt Field	No	No	No	No
29S	Gardiner	Gardiner	Yes	Yes	No	Yes
HWQ	Harlowton	Wheatland County at Harlowton	No	No	No	No
M75	Malta	Malta	Yes	Yes	Yes	Yes
S34	Plains	Plains	No	No	No	No
PWD	Plentywood	Sher-Wood	Yes	No	No	Yes
RED	Red Lodge	Red Lodge	No	No	No	No
52S	St. Ignatius	St. Ignatius	Yes	No	No	Yes
S64	Stanford	Stanford	Yes	No	Yes	Yes
9S4	Superior	Mineral County	Yes	No	No	Yes
8U8	Townsend	Townsend	Yes	No	No	Yes
7S6	White Sulphur Springs	White Sulphur Springs	Yes	No	No	Yes
GA Level 3						
3U7	Augusta	Benchmark	No	No	No	No
3U8	Big Sandy	Big Sandy	Yes	No	No	Yes
6S1	Bridger	Bridger Municipal	No	No	No	No
8S0	Browning	Starr-Browning Airstrip	No	No	No	No
4U4	Chinook	Hebbelman	Yes	No	No	Yes
RC0	Clinton	Rock Creek	No	No	No	No
S85	Culbertson	Big Sky Field	Yes	No	No	Yes
5U1	Dutton	Dutton	No	No	No	No
5U5	Fairfield	Fairfield	No	No	No	No
37S	Fort Peck	Fort Peck	Yes	No	No	Yes
00U	Hardin	Big Horn County Airport	No	No	No	No
48S	Harlem	Harlem	No	No	No	No
S09	Hot Springs	Hot Springs	No	No	No	No
JDN	Jordan	Jordan	No	No	No	No
80S	Lavina	Lavina	No	No	No	No
S69	Lincoln	Lincoln	No	No	No	No
23S	Seeley Lake	Seeley Lake	No	No	No	No
8U6	Terry	Terry	No	No	No	No
THM	Thompson Falls	Thompson Falls	No	No	No	No
9U0	Turner	Turner	Yes	No	No	Yes

ID	Associated City	Airport	AvGas	Jet-A	MoGas	Meets Benchmark
7S7	Valier	Valier	Yes	Yes	No	Yes
58S	Whitefish	Whitefish	No	No	No	No
GA Level 4						
3U4	Ashland	St. Labre Mission	No	No	No	N/A
3U5	Augusta	Augusta	No	No	No	N/A
49S	Babb	Babb	No	No	No	N/A
53U	Bigfork	Ferndale Airfield	No	No	No	N/A
3U9	Boulder	Boulder	No	No	No	N/A
S04	Condon	Condon USFS	No	No	No	N/A
4U7	Conner	West Fork Lodge	Yes	No	No	N/A
5U0	Denton	Denton	No	No	No	N/A
M26	Drummond	Drummond	No	No	No	N/A
5U6	Fairview	Fairview	No	No	No	N/A
5U7	Fort Smith	Fort Smith Landing Strip	No	No	No	N/A
5U8	Geraldine	Geraldine	No	No	No	N/A
U09	Harlem	Fort Belknap Agency	No	No	No	N/A
6U5	Hinsdale	Hinsdale	No	No	No	N/A
6U6	Hogeland	Hogeland	No	No	No	N/A
6U7	Hysham	Hysham	No	No	No	N/A
0S1	Meadow Creek	Meadow Creek USFS	No	No	No	N/A
S00	Opheim	Opheim	No	No	No	N/A
U05	Philipsburg	Riddick Field	No	No	No	N/A
H28	Port of Del Bonita	Whetstone International	No	No	No	N/A
7U8	Richey	Richey	No	No	No	N/A
M42	Russian Flat	Russian Flat	No	No	No	N/A
8U0	Ryegate	Ryegate	No	No	No	N/A
8U1	Sand Springs	Sand Springs Strip	No	No	No	N/A
8U2	Schafer	Schafer USFS	No	No	No	N/A
8U3	Scobey	Scobey Border Station	No	No	No	N/A
M35	Seeley Lake	Lindey's Landing West Seaplane Base	No	No	Yes	N/A
8U4	Spotted Bear	Spotted Bear USFS	No	No	No	N/A
8U5	Sunburst	Sunburst	No	No	No	N/A
7S8	Sweetgrass	Ross International	No	No	No	N/A
B70	Tiber Dam	Tiber Dam	No	No	No	N/A
8U9	Townsend	Canyon Ferry	No	No	No	N/A
57S	Troy	Troy	No	No	No	N/A
9U1	Wilsall	Wilsall	No	No	No	N/A
BB0	Winifred	Black Butte North	No	No	No	N/A
BW8	Winifred	Bullwhacker	No	No	No	N/A
CW0	Winifred	Cow Creek	No	No	No	N/A
MT3	Winifred	Knox Ridge	No	No	No	N/A
LC0	Winifred	Left Coulee	No	No	No	N/A
9S7	Winifred	Winifred	Yes	No	No	N/A
WH0	Winifred	Woodhawk	No	No	No	N/A
7S2	Winnett	Winnett	No	No	No	N/A
7S4	Wisdom	Wisdom	No	No	No	N/A
02T	Wise River	Wise River	No	No	No	N/A

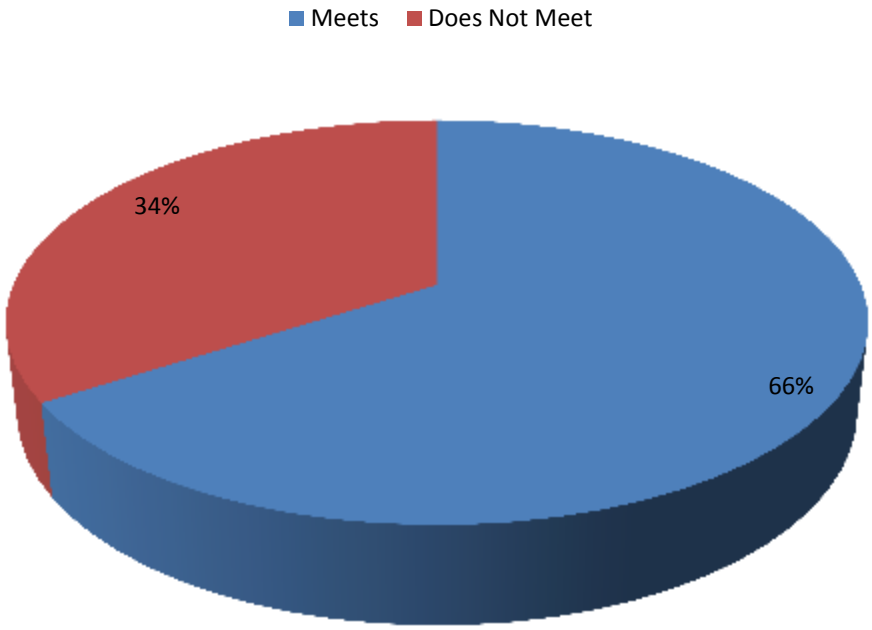


Figure 7-13: System Adequacy – Meets Fuel Sales Benchmark (Applicable Airports)

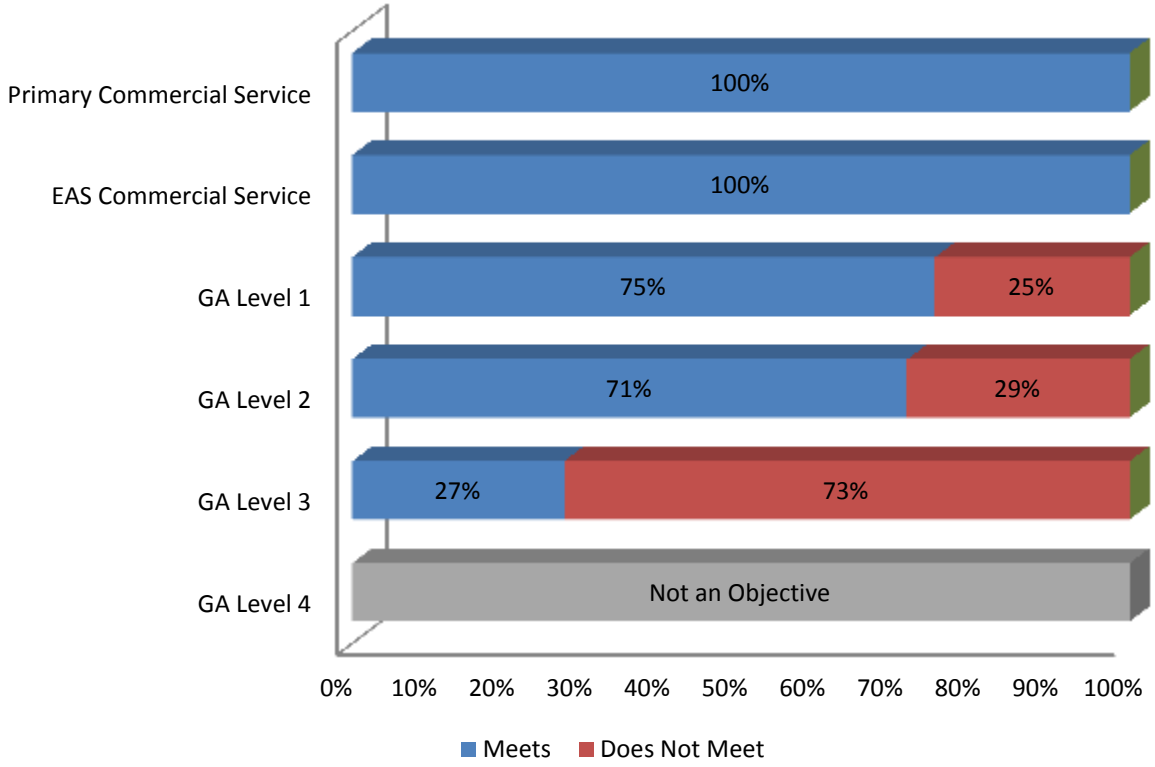


Figure 7-14: System Adequacy by Role – Meets Fuel Sales Benchmark

Automated Weather Reporting

Table 7-8 details airport benchmarks for automated weather reporting systems at Montana system airports, while **Figures 7-15** and **7-16** summarize this data by airport role and full system. All of the state's commercial service airports meet the benchmark of having on-site, automated weather reporting capabilities. Additionally, 79.2 percent of GA Level 1 airports meet these benchmarks. With only 47. 6 percent of GA Level 2 airports having automated weather reporting such as an ASOS or AWOS, this is a potential area for improving the efficiency and safety of Montana's system of airports. Automated weather reporting was not a benchmark goal for GA Level 3 or GA Level 4 airports.

Table 7-8: System Adequacy – Automated Weather Reporting

FAA ID	Associated City	Airport_Name	Automated Weather Reporting	Meets Benchmark
Primary Commercial Service				
BIL	Billings	Billings Logan International	ASOS	Yes
BZN	Bozeman	Bozeman Yellowstone International	ASOS	Yes
GTF	Great Falls	Great Falls International	ASOS	Yes
HLN	Helena	Helena Regional	ASOS	Yes
GPI	Kalispell	Glacier Park International	ASOS	Yes
MSO	Missoula	Missoula International	ASOS	Yes
EAS Commercial Service				
BTM	Butte	Bert Mooney	ASOS	Yes
GGW	Glasgow	Glasgow International (Wokal Field)	ASOS	Yes
GDV	Glendive	Dawson Community	AWOS III	Yes
HVR	Havre	Havre City-County	ASOS	Yes
LWT	Lewistown	Lewistown Municipal	ASOS	Yes
MLS	Miles City	Miles City	ASOS	Yes
SDY	Sidney	Sidney-Richland Municipal	AWOS III	Yes
WYS	West Yellowstone	Yellowstone	AWOS III P	Yes
OLF	Wolf Point	L. M. Clayton	ASOS	Yes
GA Level 1				
3U3	Anaconda	Bowman Field	AWOS AV	Yes
BHK	Baker	Baker Municipal	ASOS	Yes
6S0	Big Timber	Big Timber	AWOS A	Yes
CII	Choteau	Choteau	None	No
CTB	Cut Bank	Cut Bank Municipal	ASOS	Yes
38S	Deer Lodge	Deer Lodge-City-County	AWOS AV	Yes
DLN	Dillon	Dillon	ASOS	Yes
EKS	Ennis	Ennis - Big Sky	AWOS AV	Yes
88M	Eureka	Eureka	AWOS AV	Yes
79S	Fort Benton	Fort Benton	AWOS A	Yes
6S5	Hamilton	Ravalli County	AWOS AV	Yes
S27	Kalispell	Kalispell City	None	No
6S8	Laurel	Laurel Municipal	AWOS AV	Yes
S59	Libby	Libby	AWOS A	Yes
LVM	Livingston	Mission Field	ASOS	Yes

FAA ID	Associated City	Airport_Name	Automated Weather Reporting	Meets Benchmark
8S1	Polson	Polson	None	No
PO1	Poplar	Poplar Municipal	AWOS AV	Yes
7S0	Ronan	Ronan	AWOS III	Yes
RPX	Roundup	Roundup	AWOS	Yes
9S2	Scobey	Scobey	AWOS	Yes
SBX	Shelby	Shelby	None	No
32S	Stevensville	Stevensville	None	No
9S5	Three Forks	Three Forks	AWOS	Yes
7S1	Twin Bridges	Twin Bridges	AWOS	Yes
GA Level 2				
00F	Broadus	Broadus	None	No
LTY	Chester	Liberty County	None	No
S71	Chinook	Edgar G. Obie	AWOS AV	Yes
4U6	Circle	Circle Town County	None	No
M46	Colstrip	Colstrip	AWOS AV	Yes
6S3	Columbus	Columbus (Wolterman Memorial)	None	No
S01	Conrad	Conrad	AWOS	Yes
4U9	Dell	Dell Flight Strip	None	No
97M	Ekalaka	Ekalaka	AWOS	Yes
1S3	Forsyth	Tillitt Field	AWOS AV	Yes
29S	Gardiner	Gardiner	None	No
HWQ	Harlowton	Wheatland County at Harlowton	AWOS	Yes
M75	Malta	Malta	AWOS	Yes
S34	Plains	Plains	AWOS	Yes
PWD	Plentywood	Sher-Wood	AWOS AV	Yes
RED	Red Lodge	Red Lodge	AWOS	Yes
52S	St. Ignatius	St. Ignatius	None	No
S64	Stanford	Stanford	None	No
9S4	Superior	Mineral County	None	No
8U8	Townsend	Townsend	None	No
7S6	White Sulphur Springs	White Sulphur Springs	None	No
GA Level 3				
3U7	Augusta	Benchmark	None	N/A
3U8	Big Sandy	Big Sandy	None	N/A
6S1	Bridger	Bridger Municipal	None	N/A
8S0	Browning	Starr-Browning Airstrip	None	N/A
4U4	Chinook	Hebbelman	None	N/A
RC0	Clinton	Rock Creek	None	N/A
S85	Culbertson	Big Sky Field	None	N/A
5U1	Dutton	Dutton	None	N/A
5U5	Fairfield	Fairfield	None	N/A
37S	Fort Peck	Fort Peck	None	N/A
F02	Hardin	Fairgrounds Airpark	None	N/A
48S	Harlem	Harlem	None	N/A
S09	Hot Springs	Hot Springs	None	N/A

FAA ID	Associated City	Airport_Name	Automated Weather Reporting	Meets Benchmark
JDN	Jordan	Jordan	None	N/A
80S	Lavina	Lavina	AWOS	N/A
S69	Lincoln	Lincoln	None	N/A
23S	Seeley Lake	Seeley Lake	None	N/A
8U6	Terry	Terry	None	N/A
THM	Thompson Falls	Thompson Falls	None	N/A
9U0	Turner	Turner	None	N/A
7S7	Valier	Valier	None	N/A
58S	Whitefish	Whitefish	None	N/A
GA Level 4				
3U4	Ashland	St. Labre Mission	None	N/A
3U5	Augusta	Augusta	None	N/A
49S	Babb	Babb	None	N/A
53U	Bigfork	Ferndale Airfield	None	N/A
3U9	Boulder	Boulder	None	N/A
S04	Condon	Condon USFS	None	N/A
4U7	Conner	West Fork Lodge	None	N/A
5U0	Denton	Denton	None	N/A
M26	Drummond	Drummond	None	N/A
5U6	Fairview	Fairview	None	N/A
5U7	Fort Smith	Fort Smith Landing Strip	None	N/A
5U8	Geraldine	Geraldine	None	N/A
U09	Harlem	Fort Belknap Agency	None	N/A
6U5	Hinsdale	Hinsdale	None	N/A
6U6	Hogeland	Hogeland	None	N/A
6U7	Hysham	Hysham	None	N/A
0S1	Meadow Creek	Meadow Creek USFS	None	N/A
S00	Opheim	Opheim	None	N/A
U05	Philipsburg	Riddick Field	None	N/A
H28	Port of Del Bonita	Whetstone International	None	N/A
7U8	Richey	Richey	None	N/A
M42	Russian Flat	Russian Flat	None	N/A
8U0	Ryegate	Ryegate	None	N/A
8U1	Sand Springs	Sand Springs Strip	None	N/A
8U2	Schafer	Schafer USFS	None	N/A
8U3	Scobey	Scobey Border Station (East Poplar International)	None	N/A
M35	Seeley Lake	Lindey's Landing West Seaplane Base	None	N/A
8U4	Spotted Bear	Spotted Bear USFS	None	N/A
8U5	Sunburst	Sunburst	None	N/A
7S8	Sweetgrass	Ross International	None	N/A
B70	Tiber Dam	Tiber Dam	None	N/A
8U9	Townsend	Canyon Ferry	None	N/A
57S	Troy	Troy	None	N/A
9U1	Wilsall	Wilsall	None	N/A
9S7	Winifred	Winifred	None	N/A

FAA ID	Associated City	Airport_Name	Automated Weather Reporting	Meets Benchmark
CW0	Winifred	Cow Creek	None	N/A
BB0	Winifred	Black Butte North	None	N/A
BW8	Winifred	Bullwhacker	None	N/A
LC0	Winifred	Left Coulee	None	N/A
MT3	Winifred	Knox Ridge	None	N/A
WH0	Winifred	Woodhawk	None	N/A
7S2	Winnett	Winnett	None	N/A
7S4	Wisdom	Wisdom	None	N/A
02T	Wise River	Wise River	None	N/A

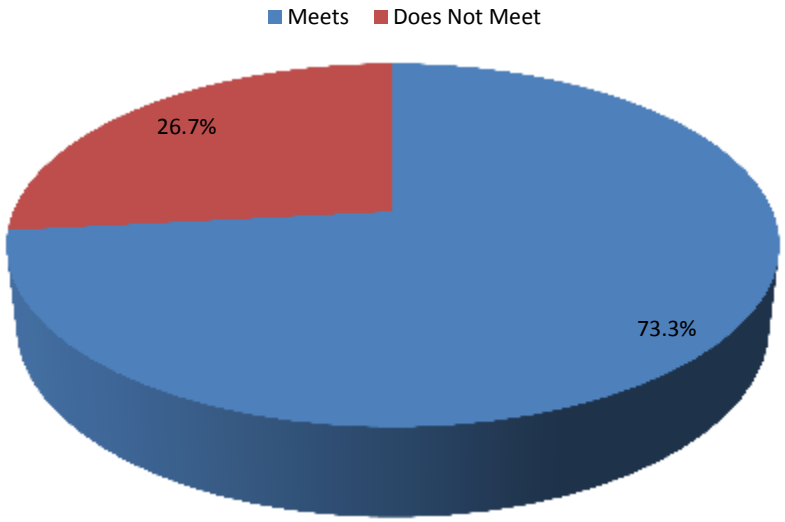


Figure 7-15: System Adequacy by Role – Meets Weather Reporting Benchmark (Applicable Airports)

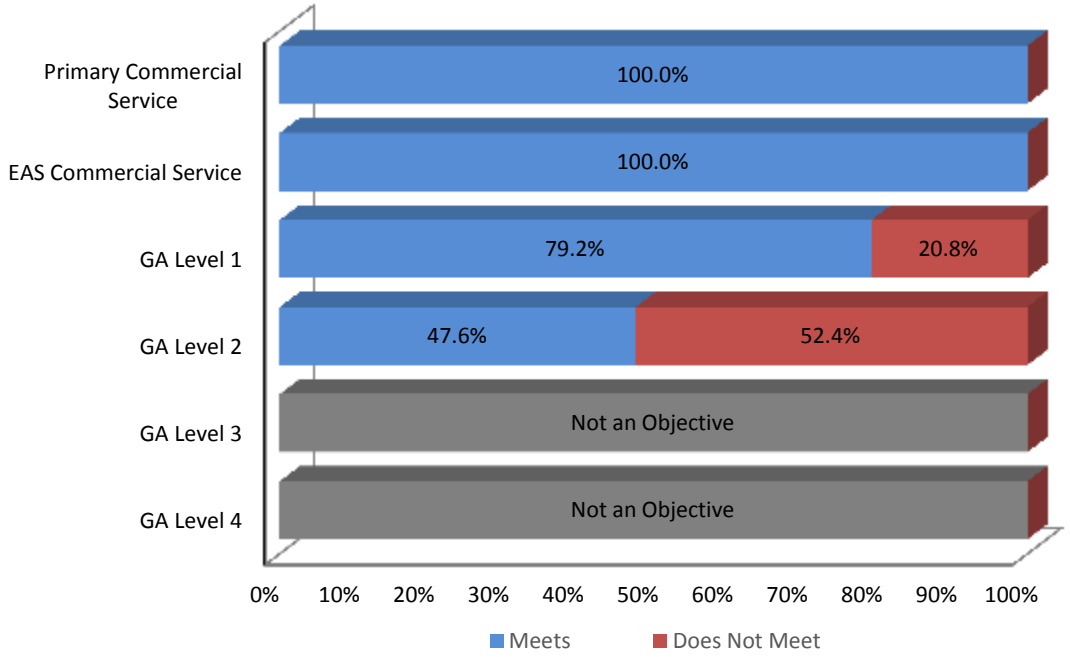


Figure 7-16: System Adequacy – Meets Weather Reporting Benchmark

Aircraft Parking

Table 7-9 details aircraft parking benchmarks at Montana system airports, while **Figures 7-17** and **7-18** summarize this analysis by airport role and full system. All airports in the state were set with the minimum benchmark of having tie-down parking spaces available. In total, 73 percent of the system has tie-down parking. This includes full compliance by all commercial service airports, and GA airports in the GA Level 1 and GA Level 2 categories. Only GA Level 4 has a significant number of airports that do not currently have tie-down spaces, at 34.1 percent of its airports meeting benchmarks.

Table 7-9: System Adequacy – Aircraft Parking

FAA ID	Associated City	Airport_Name	Aircraft Parking	Meets Benchmark
Primary Commercial Service				
BIL	Billings	Billings Logan International	Tie Downs	Yes
BZN	Bozeman	Bozeman Yellowstone International	Tie Downs	Yes
GTF	Great Falls	Great Falls International	Tie Downs	Yes
HLN	Helena	Helena Regional	Tie Downs	Yes
GPI	Kalispell	Glacier Park International	Tie Downs	Yes
MSO	Missoula	Missoula International	Tie Downs	Yes
EAS Commercial Service				
BTM	Butte	Bert Mooney	Tie Downs	Yes
GGW	Glasgow	Glasgow International (Wokal Field)	Tie Downs	Yes
GDV	Glendive	Dawson Community	Tie Downs	Yes
HVR	Havre	Havre City-County	Tie Downs	Yes
LWT	Lewistown	Lewistown Municipal	Tie Downs	Yes
MLS	Miles City	Miles City	Tie Downs	Yes
SDY	Sidney	Sidney-Richland Municipal	Tie Downs	Yes

FAA ID	Associated City	Airport_Name	Aircraft Parking	Meets Benchmark
WYS	West Yellowstone	Yellowstone	Tie Downs	Yes
OLF	Wolf Point	L. M. Clayton	Tie Downs	Yes
GA Level 1				
3U3	Anaconda	Bowman Field	Tie Downs	Yes
BHK	Baker	Baker Municipal	Tie Downs	Yes
6S0	Big Timber	Big Timber	Tie Downs	Yes
CII	Choteau	Choteau	Tie Downs	Yes
CTB	Cut Bank	Cut Bank Municipal	Tie Downs	Yes
38S	Deer Lodge	Deer Lodge-City-County	Tie Downs	Yes
DLN	Dillon	Dillon	Tie Downs	Yes
EKS	Ennis	Ennis - Big Sky	Tie Downs	Yes
88M	Eureka	Eureka	Tie Downs	Yes
79S	Fort Benton	Fort Benton	Tie Downs	Yes
6S5	Hamilton	Ravalli County	Tie Downs	Yes
S27	Kalispell	Kalispell City	Tie Downs	Yes
6S8	Laurel	Laurel Municipal	Tie Downs	Yes
S59	Libby	Libby	Tie Downs	Yes
LVM	Livingston	Mission Field	Tie Downs	Yes
8S1	Polson	Polson	Tie Downs	Yes
PO1	Poplar	Poplar Municipal	Tie Downs	Yes
7S0	Ronan	Ronan	Tie Downs	Yes
RPX	Roundup	Roundup	Tie Downs	Yes
9S2	Scobey	Scobey	Tie Downs	Yes
SBX	Shelby	Shelby	Tie Downs	Yes
32S	Stevensville	Stevensville	Tie Downs	Yes
9S5	Three Forks	Three Forks	Tie Downs	Yes
7S1	Twin Bridges	Twin Bridges	Tie Downs	Yes
GA Level 2				
00F	Broadus	Broadus	Tie Downs	Yes
LTY	Chester	Liberty County	Tie Downs	Yes
S71	Chinook	Edgar G. Obie	Tie Downs	Yes
4U6	Circle	Circle Town County	Tie Downs	Yes
M46	Colstrip	Colstrip	Tie Downs	Yes
6S3	Columbus	Columbus (Wolterman Memorial)	Tie Downs	Yes
S01	Conrad	Conrad	Tie Downs	Yes
4U9	Dell	Dell Flight Strip	Tie Downs	Yes
97M	Ekalaka	Ekalaka	Tie Downs	Yes
1S3	Forsyth	Tillitt Field	Tie Downs	Yes
29S	Gardiner	Gardiner	Tie Downs	Yes
HWQ	Harlowton	Wheatland County at Harlowton	Tie Downs	Yes
M75	Malta	Malta	Tie Downs	Yes
S34	Plains	Plains	Tie Downs	Yes
PWD	Plentywood	Sher-Wood	Tie Downs	Yes
RED	Red Lodge	Red Lodge	Tie Downs	Yes
52S	St. Ignatius	St. Ignatius	Tie Downs	Yes
S64	Stanford	Stanford	Tie Downs	Yes
9S4	Superior	Mineral County	Tie Downs	Yes

FAA ID	Associated City	Airport_Name	Aircraft Parking	Meets Benchmark
8U8	Townsend	Townsend	Tie Downs	Yes
7S6	White Sulphur Springs	White Sulphur Springs	Tie Downs	Yes
GA Level 3				
3U7	Augusta	Benchmark	Tie Downs	Yes
3U8	Big Sandy	Big Sandy	Tie Downs	Yes
6S1	Bridger	Bridger Municipal	Tie Downs	Yes
8S0	Browning	Starr-Browning Airstrip	Tie-Downs	Yes
4U4	Chinook	Hebbelman	None	No
RC0	Clinton	Rock Creek	Tie Downs	Yes
S85	Culbertson	Big Sky Field	Tie Downs	Yes
5U1	Dutton	Dutton	Tie Downs	Yes
5U5	Fairfield	Fairfield	Tie Downs	Yes
37S	Fort Peck	Fort Peck	Tie Downs	Yes
00U	Hardin	Big Horn County	Tie Downs	Yes
48S	Harlem	Harlem	Tie Downs	Yes
S09	Hot Springs	Hot Springs	None	No
JDN	Jordan	Jordan	Tie Downs	Yes
80S	Lavina	Lavina	Tie Downs	Yes
S69	Lincoln	Lincoln	Tie Downs	Yes
23S	Seeley Lake	Seeley Lake	Tie Downs	Yes
8U6	Terry	Terry	Tie Downs	Yes
THM	Thompson Falls	Thompson Falls	Tie Downs	Yes
9U0	Turner	Turner	Tie Downs	Yes
7S7	Valier	Valier	None	No
58S	Whitefish	Whitefish	Tie Downs	Yes
GA Level 4				
3U4	Ashland	St. Labre Mission	None	No
3U5	Augusta	Augusta	Tie-Downs	Yes
49S	Babb	Babb	Tie Downs	Yes
53U	Bigfork	Ferndale Airfield	Tie Downs	Yes
3U9	Boulder	Boulder	None	No
S04	Condon	Condon USFS	Tie Downs	Yes
4U7	Conner	West Fork Lodge	Tie Downs	Yes
5U0	Denton	Denton	None	No
M26	Drummond	Drummond	Tie Downs	Yes
5U6	Fairview	Fairview	Tie Downs	Yes
5U7	Fort Smith	Fort Smith Landing Strip	None	No
5U8	Geraldine	Geraldine	Tie Downs	Yes
U09	Harlem	Fort Belknap Agency	None	No
6U5	Hinsdale	Hinsdale	Tie Downs	Yes
6U6	Hogeland	Hogeland	None	No
6U7	Hysham	Hysham	Tie Downs	Yes
0S1	Meadow Creek	Meadow Creek USFS	Tie Downs	Yes
S00	Opheim	Opheim	None	No
U05	Philipsburg	Riddick Field	Tie Downs	Yes
H28	Port of Del Bonita	Whetstone International	Tie Downs	Yes
7U8	Richey	Richey	None	No

FAA ID	Associated City	Airport_Name	Aircraft Parking	Meets Benchmark
M42	Russian Flat	Russian Flat	None	No
8U0	Ryegate	Ryegate	Tie Downs	Yes
8U1	Sand Springs	Sand Springs Strip	None	No
8U2	Schafer	Schafer USFS	Tie Downs	Yes
8U3	Scobey	Scobey Border Station (East Poplar International)	None	No
M35	Seeley Lake	Lindey's Landing West Seaplane Base	None	No
8U4	Spotted Bear	Spotted Bear USFS	Tie Downs	Yes
8U5	Sunburst	Sunburst	None	No
7S8	Sweetgrass	Ross International	Tie Downs	Yes
B70	Tiber Dam	Tiber Dam	Tie Downs	Yes
8U9	Townsend	Canyon Ferry	None	No
57S	Troy	Troy	Tie Downs	Yes
9U1	Wilsall	Wilsall	None	No
9S7	Winifred	Winifred	Tie Downs	Yes
CW0	Winifred	Cow Creek	None	No
BB0	Winifred	Black Butte North	None	No
BW8	Winifred	Bullwhacker	None	No
LC0	Winifred	Left Coulee	None	No
MT3	Winifred	Knox Ridge	None	No
WH0	Winifred	Woodhawk	None	No
7S2	Winnett	Winnett	Tie Downs	Yes
7S4	Wisdom	Wisdom	None	No
02T	Wise River	Wise River	None	No

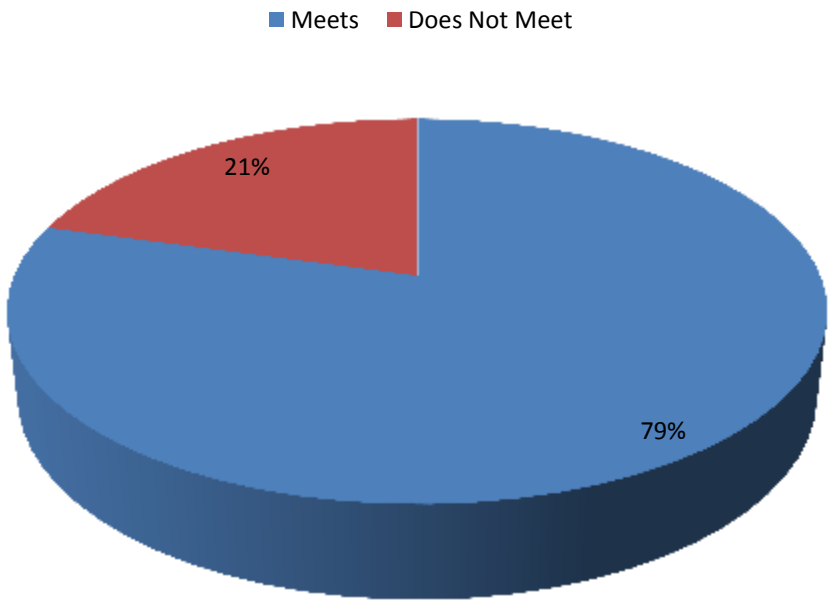


Figure 7-17: System Adequacy – Meets Aircraft Parking Benchmark (Applicable Airports)

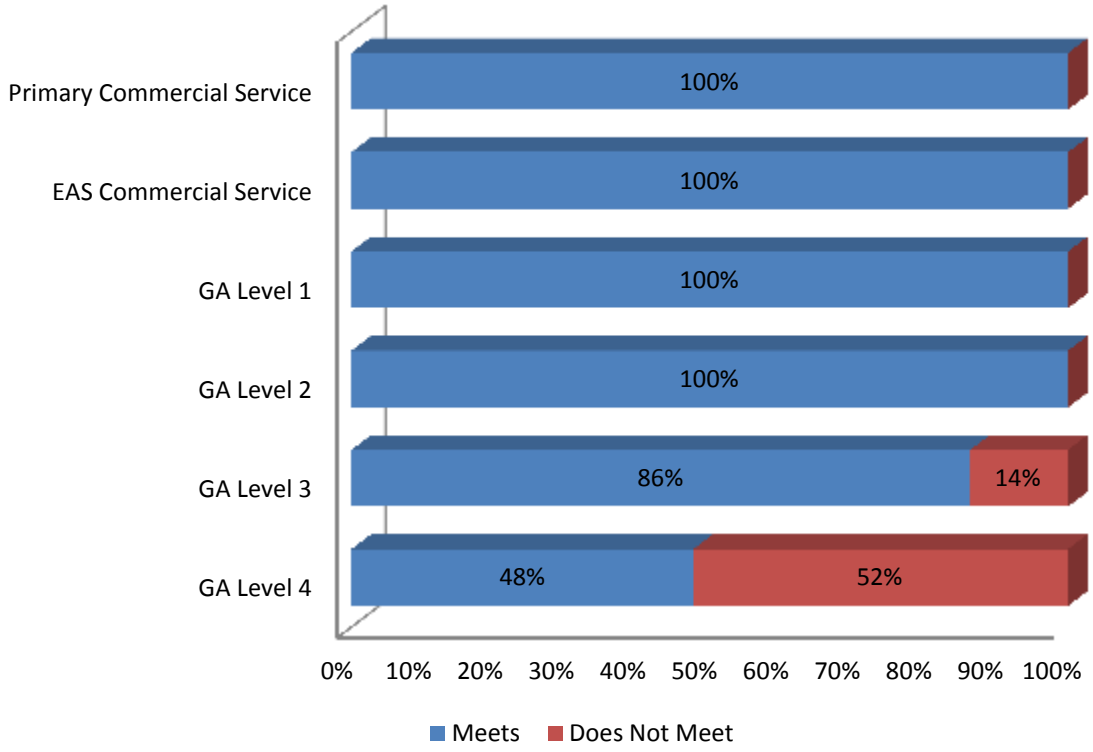


Figure 7-18: System Adequacy by Role – Meets Aircraft Parking Benchmark

Rental Car/Courtesy Car

Table 7-10 details rental and courtesy car benchmarks at Montana system airports, while **Figures 7-19** and **7-20** summarize this data by airport role and system. In total, 82.1 percent of the Montana system meets benchmarks for rental or courtesy car, including all Primary Commercial Service Airports, 88.9 percent of EAS Commercial Service Airports, and 75 percent of GA Level 1 airports. This was not a benchmark for airports in the GA Level 2, GA Level 3, or GA Level 4 roles.

Table 7-10: System Adequacy – Rental Car / Courtesy Car

FAA ID	Associated City	Airport_Name	Rental Car	Courtesy Car	Meets Benchmark
Primary Commercial Service					
BIL	Billings	Billings Logan International	Yes	No	Yes
BZN	Bozeman	Bozeman Yellowstone International	Yes	No	Yes
GTF	Great Falls	Great Falls International	Yes	No	Yes
HLN	Helena	Helena Regional	Yes	Yes	Yes
GPI	Kalispell	Glacier Park International	Yes	No	Yes
MSO	Missoula	Missoula International	Yes	Yes	Yes
EAS Commercial Service					
BTM	Butte	Bert Mooney	Yes	Yes	Yes
GGW	Glasgow	Glasgow International (Wokal Field)	Yes	Yes	Yes
GDV	Glendive	Dawson Community	Yes	Yes	Yes
HVR	Havre	Havre City-County	No	No	No
LWT	Lewistown	Lewistown Municipal	Yes	Yes	Yes
MLS	Miles City	Miles City	Yes	No	Yes
SDY	Sidney	Sidney-Richland Municipal	Yes	Yes	Yes
WYS	West Yellowstone	Yellowstone	Yes	No	Yes
OLF	Wolf Point	L. M. Clayton	Yes	No	Yes
GA Level 1					
3U3	Anaconda	Bowman Field	No	No	No
BHK	Baker	Baker Municipal	Yes	Yes	Yes
6S0	Big Timber	Big Timber	No	Yes	Yes
CII	Choteau	Choteau	No	Yes	Yes
CTB	Cut Bank	Cut Bank Municipal	Yes	Yes	Yes
38S	Deer Lodge	Deer Lodge-City-County	No	Yes	Yes
DLN	Dillon	Dillon	No	Yes	Yes
EKS	Ennis	Ennis - Big Sky	Yes	Yes	Yes
88M	Eureka	Eureka	No	Yes	Yes
79S	Fort Benton	Fort Benton	No	Yes	Yes
6S5	Hamilton	Ravalli County	Yes	Yes	Yes
S27	Kalispell	Kalispell City	Yes	No	Yes
6S8	Laurel	Laurel Municipal	No	Yes	Yes
S59	Libby	Libby	No	Yes	Yes
LVM	Livingston	Mission Field	Yes	No	Yes
8S1	Polson	Polson	No	Yes	Yes
PO1	Poplar	Poplar Municipal	No	Yes	Yes
7S0	Ronan	Ronan	No	Yes	Yes
RPX	Roundup	Roundup	No	Yes	Yes
9S2	Scobey	Scobey	No	No	No
SBX	Shelby	Shelby	No	Yes	Yes
32S	Stevensville	Stevensville	No	Yes	Yes

FAA ID	Associated City	Airport_Name	Rental Car	Courtesy Car	Meets Benchmark
9S5	Three Forks	Three Forks	No	Yes	Yes
7S1	Twin Bridges	Twin Bridges	No	Yes	Yes
GA Level 2					
00F	Broadus	Broadus	No	Yes	N/A
LTY	Chester	Liberty County	No	Yes	N/A
S71	Chinook	Edgar G. Obie	No	Yes	N/A
4U6	Circle	Circle Town County	No	No	N/A
M46	Colstrip	Colstrip	No	Yes	N/A
6S3	Columbus	Columbus (Wolterman Memorial)	No	Yes	N/A
S01	Conrad	Conrad	No	No	N/A
4U9	Dell	Dell Flight Strip	No	No	N/A
97M	Ekalaka	Ekalaka	No	No	N/A
1S3	Forsyth	Tillitt Field	No	Yes	N/A
29S	Gardiner	Gardiner	No	Yes	N/A
HWQ	Harlowton	Wheatland County at Harlowton	No	No	N/A
M75	Malta	Malta	No	Yes	N/A
S34	Plains	Plains	No	Yes	N/A
PWD	Plentywood	Sher-Wood	No	Yes	N/A
RED	Red Lodge	Red Lodge	Yes	No	N/A
52S	St. Ignatius	St. Ignatius	No	Yes	N/A
S64	Stanford	Stanford	No	No	N/A
9S4	Superior	Mineral County	No	Yes	N/A
8U8	Townsend	Townsend	No	Yes	N/A
7S6	White Sulphur Springs	White Sulphur Springs	No	Yes	N/A
GA Level 3					
3U7	Augusta	Benchmark	No	No	N/A
3U8	Big Sandy	Big Sandy	No	Yes	N/A
6S1	Bridger	Bridger Municipal	No	Yes	N/A
8S0	Browning	Starr-Browning Airstrip	No	No	N/A
4U4	Chinook	Hebbelman	No	No	N/A
RC0	Clinton	Rock Creek	No	No	N/A
S85	Culbertson	Big Sky Field	No	No	N/A
5U1	Dutton	Dutton	No	No	N/A
5U5	Fairfield	Fairfield	No	No	N/A
37S	Fort Peck	Fort Peck	No	Yes	N/A
F02	Hardin	Fairgrounds Airpark	No	No	N/A
48S	Harlem	Harlem	No	No	N/A
S09	Hot Springs	Hot Springs	No	Yes	N/A
JDN	Jordan	Jordan	No	No	N/A
80S	Lavina	Lavina	No	No	N/A
S69	Lincoln	Lincoln	No	No	N/A
23S	Seeley Lake	Seeley Lake	No	Yes	N/A
8U6	Terry	Terry	No	No	N/A
THM	Thompson Falls	Thompson Falls	No	Yes	N/A
9U0	Turner	Turner	No	No	N/A
7S7	Valier	Valier	No	No	N/A
58S	Whitefish	Whitefish	No	No	N/A

FAA ID	Associated City	Airport_Name	Rental Car	Courtesy Car	Meets Benchmark
GA Level 4					
3U4	Ashland	St. Labre Mission	No	No	N/A
3U5	Augusta	Augusta	No	No	N/A
49S	Babb	Babb	No	No	N/A
53U	Bigfork	Ferndale Airfield	No	No	N/A
3U9	Boulder	Boulder	No	No	N/A
S04	Condon	Condon USFS	No	No	N/A
4U7	Conner	West Fork Lodge	No	No	N/A
5U0	Denton	Denton	No	No	N/A
M26	Drummond	Drummond	No	No	N/A
5U6	Fairview	Fairview	No	No	N/A
5U7	Fort Smith	Fort Smith Landing Strip	No	No	N/A
5U8	Geraldine	Geraldine	No	No	N/A
U09	Harlem	Fort Belknap Agency	No	No	N/A
6U5	Hinsdale	Hinsdale	No	No	N/A
6U6	Hogeland	Hogeland	No	No	N/A
6U7	Hysham	Hysham	No	No	N/A
0S1	Meadow Creek	Meadow Creek USFS	No	No	N/A
S00	Opheim	Opheim	No	No	N/A
U05	Philipsburg	Riddick Field	No	No	N/A
H28	Port of Del Bonita	Whetstone International	No	No	N/A
7U8	Richey	Richey	No	No	N/A
M42	Russian Flat	Russian Flat	No	No	N/A
8U0	Ryegate	Ryegate	No	No	N/A
8U1	Sand Springs	Sand Springs Strip	No	No	N/A
8U2	Schafer	Schafer USFS	No	No	N/A
8U3	Scobey	Scobey Border Station (East Poplar International)	No	No	N/A
M35	Seeley Lake	Lindey's Landing West Seaplane Base	No	Yes	N/A
8U4	Spotted Bear	Spotted Bear USFS	No	No	N/A
8U5	Sunburst	Sunburst	No	No	N/A
7S8	Sweetgrass	Ross International	No	No	N/A
B70	Tiber Dam	Tiber Dam	No	No	N/A
8U9	Townsend	Canyon Ferry	No	No	N/A
57S	Troy	Troy	No	No	N/A
9U1	Wilsall	Wilsall	No	No	N/A
9S7	Winifred	Winifred	No	No	N/A
CW0	Winifred	Cow Creek	No	No	N/A
BB0	Winifred	Black Butte North	No	No	N/A
BW8	Winifred	Bullwhacker	No	No	N/A
LC0	Winifred	Left Coulee	No	No	N/A
MT3	Winifred	Knox Ridge	No	No	N/A
WH0	Winifred	Woodhawk	No	No	N/A
7S2	Winnett	Winnett	No	No	N/A
7S4	Wisdom	Wisdom	No	No	N/A
02T	Wise River	Wise River	No	No	N/A

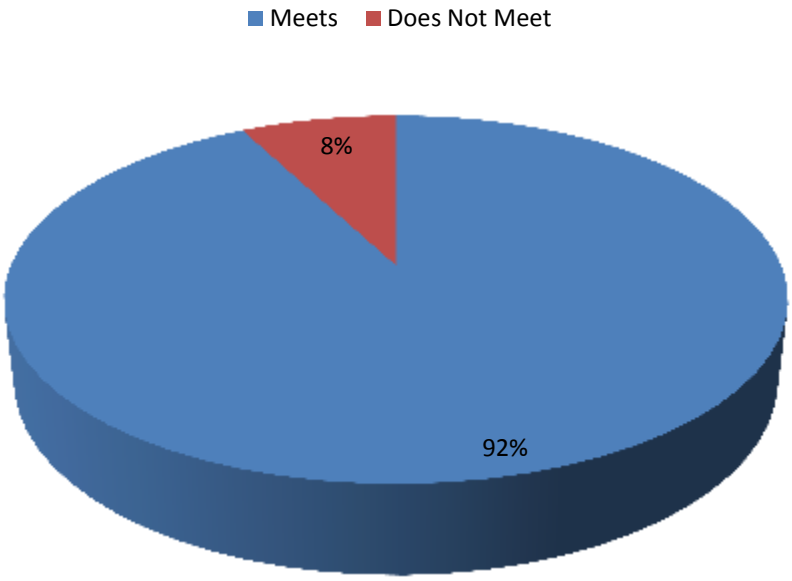


Figure 7-19: System Adequacy by Role – Meets Rental / Courtesy Car Benchmark

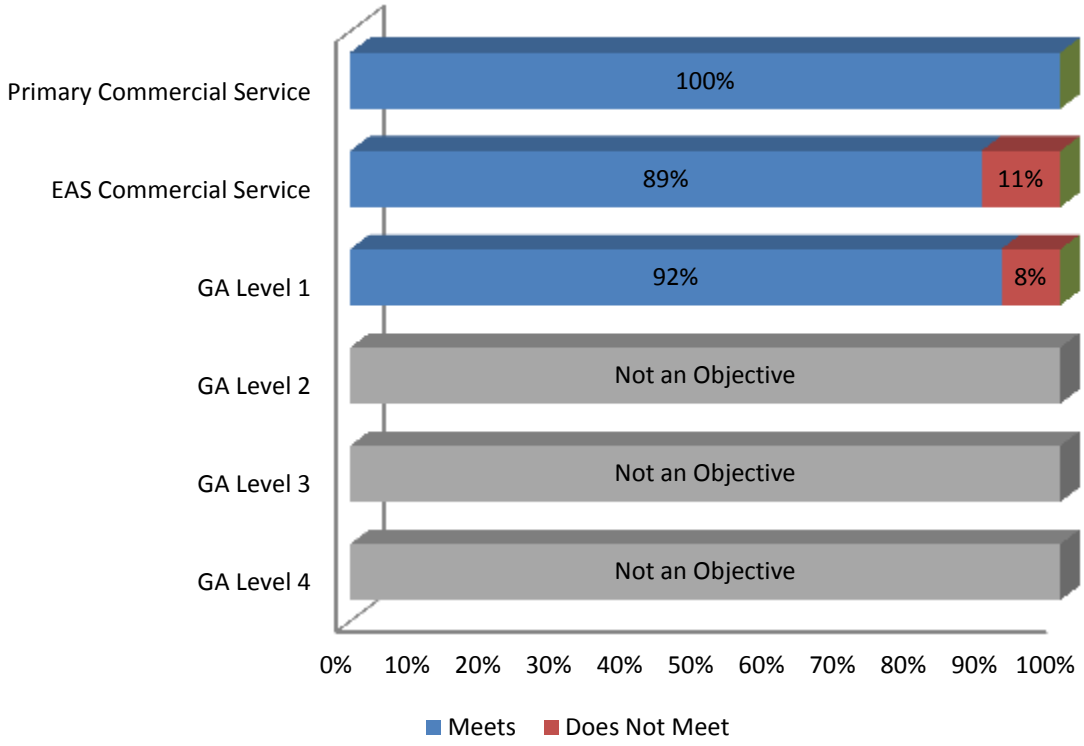


Figure 7-20: System Adequacy – Meets Rental / Courtesy Car Benchmark (Applicable Airports)

8 CHAPTER EIGHT: RECOMMENDATIONS

This chapter of the Montana State Airport System Plan (SASP) details various airport and system recommendations. The majority of these recommendations are based on benchmark deficiencies identified in the previous chapter. Each airport has been assigned an airport role level based on its current market, facilities, and services, and each role is held to certain benchmarking standards. Where an airport does not meet these benchmarks, a recommendation is made.

Several factors were analyzed both from a geographic stand point and in how they may be affected by the future growth forecasted previously in this plan. These factors include aviation fuel, specifically AvGas, FBO services, the geographic range of air ambulance operations and aerial wildland firefighting, as well as activity related to second home and vacation homeownership. Based on geographic or future demand, this analysis resulted in recommendations independent of the benchmarking process.

The chapter also analyzes several other factors that may lead to airport and system recommendations. Included are such factors as changes in Essential Air Service (EAS) activity, impacts of the Bakken oil and gas industry, and trends in the utilization of non-directional beacons (NDBs).

Finally, the chapter provides cost estimates in aggregate of recommended major projects, and an overview of funding options for achieving these goals.

8.1 Recommendations Related to Benchmark Deficiencies

The following sections detail deficiencies identified during the benchmarking process and make recommendations for individual airports. Note that these recommendations are based on a high level analysis of the system and must still be confirmed and supported by the airport master planning process.

8.1.1 Runway Length

Six Montana system airports do not currently meet runway length benchmarks for their respective roles, including two airports in the GA Level 1 group, three in GA Level 2, and one in GA Level 3. Runway length requirements are determined through the master plan process for each individual airport. The airports listed in **Table 8-1** are recommended for consideration for runway extensions from a system planning perspective.

Table 8-1: Recommendations Related to Runway Length Benchmarks

ID	Associated City	Airport	Runway Length Recommendations
GA Level 1			
S27	Kalispell	Kalispell City	Extend Primary Runway
32S	Stevensville	Stevensville	Extend Primary Runway
GA Level 2			
29S	Gardiner	Gardiner	Extend Primary Runway
52S	St. Ignatius	St. Ignatius	Extend Primary Runway
9S4	Superior	Mineral County	Extend Primary Runway
GA Level 3			
58S	Whitefish	Whitefish	Extend Primary Runway

Source: Airport Inventory and Data Survey, FAA Form 5010, CDM Smith

8.1.2 Runway Lighting

As shown in **Table 8-2**, 17 Montana system airports are recommended to improve their runway edge lighting based on their role benchmarks. This includes two airports in GA Level 1, four in GA Level 2, and 10 airports in the GA Level 3 role. All of these airports are recommended to have a MIRL system. Three of these airports currently have a LIRL system, while the remaining 14 currently have no runway edge lighting.

Table 8-2: Recommendations Related to Runway Lighting Benchmarks

ID	Associated City	Airport	Runway Lighting Recommendations
GA Level 1			
88M	Eureka	Eureka	Install MIRL
S27	Kalispell	Kalispell City	Install MIRL
GA Level 2			
29S	Gardiner	Gardiner	Upgrade to MIRL
M75	Malta	Malta	Install MIRL
52S	St. Ignatius	St. Ignatius	Upgrade to MIRL
9S4	Superior	Mineral County	Install MIRL
GA Level 3			
3U7	Augusta	Benchmark	Install MIRL
6S1	Bridger	Bridger Municipal	Install MIRL
RC0	Clinton	Rock Creek	Install MIRL
5U1	Dutton	Dutton	Install MIRL
5U5	Fairfield	Fairfield	Install MIRL
37S	Fort Peck	Fort Peck	Install MIRL
80S	Lavina	Lavina	Install MIRL
23S	Seeley Lake	Seeley Lake	Upgrade to MIRL
7S7	Valier	Valier	Install MIRL
58S	Whitefish	Whitefish	Install MIRL

Source: Airport Inventory and Data Survey, FAA Form 5010, CDM Smith

8.1.3 Taxiway Type

Table 8-3 details recommendations related to taxiway type benchmarks. Three EAS Commercial Service airports in total have taxiway recommendations, with one recommended to extend a current partial parallel taxiway to a full parallel, and the other two recommended to construct a new full parallel system. Additionally, eight airports in the GA Level 1 role are

recommended to upgrade from a turnaround or stub to a partial parallel taxiway, and six airports in the GA Level 2 and GA Level 3 roles are recommended to construct new turnaround or stub taxiway systems.

Table 8-3: Recommendations Related to Taxiway Type Benchmarks

ID	Associated City	Airport	Taxiway Type Recommendations
EAS Commercial Service			
GGW	Glasgow	Glasgow International (Wokal Field)	Upgrade to Full Parallel
MLS	Miles City	Miles City	Upgrade to Full Parallel
OLF	Wolf Point	L. M. Clayton	Extend to Full Parallel
GA Level 1			
3U3	Anaconda	Bowman Field	Upgrade to Partial Parallel
CII	Choteau	Choteau	Upgrade to Partial Parallel
CTB	Cut Bank	Cut Bank Municipal	Upgrade to Partial Parallel
38S	Deer Lodge	Deer Lodge-City-County	Upgrade to Partial Parallel
79S	Fort Benton	Fort Benton	Upgrade to Partial Parallel
LVM	Livingston	Mission Field	Upgrade to Partial Parallel
9S2	Scobey	Scobey	Upgrade to Partial Parallel
7S1	Twin Bridges	Twin Bridges	Upgrade to Partial Parallel
GA Level 2			
29S	Gardiner	Gardiner	Construct Turnaround
GA Level 3			
4U4	Chinook	Hebbelman	Construct Stub
RC0	Clinton	Rock Creek	Construct Stub
80S	Lavina	Lavina	Construct Stub
7S7	Valier	Valier	Construct Stub
58S	Whitefish	Whitefish	Construct Stub

Source: Airport Inventory and Data Survey, Google Maps, FAA Form 5010, CDM Smith

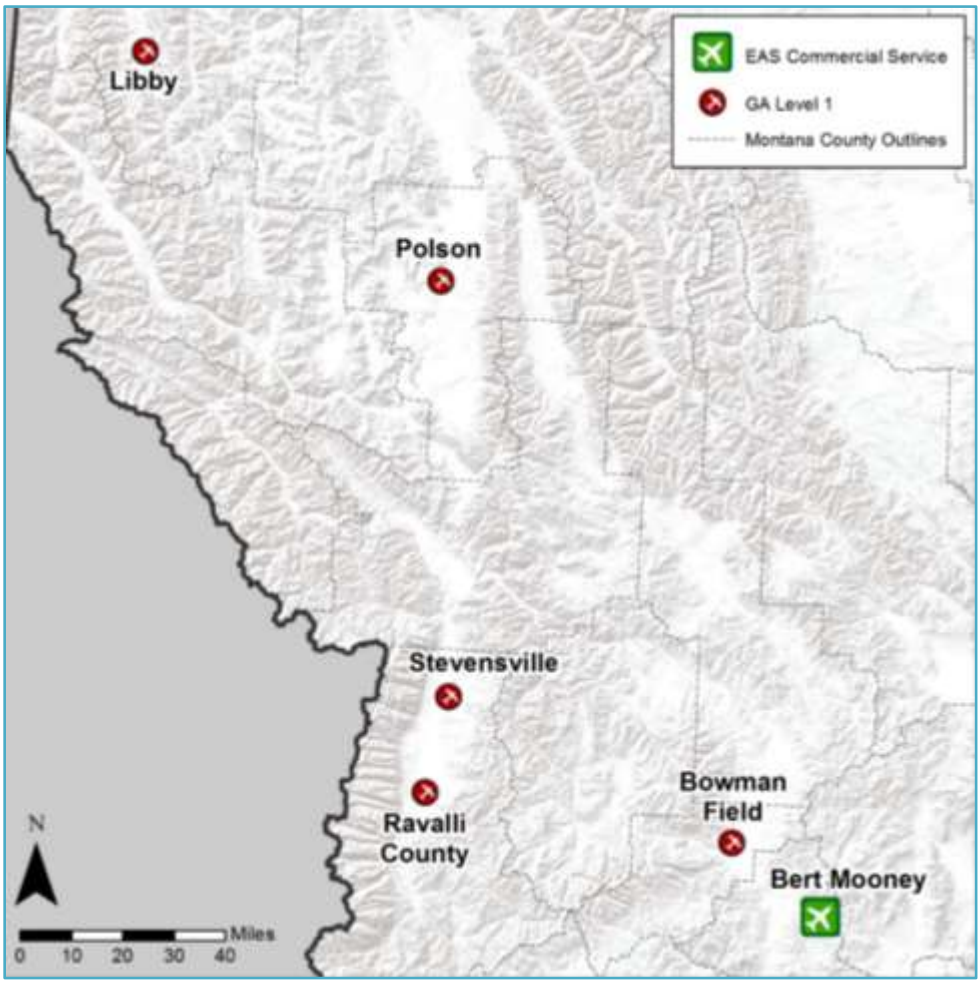
8.1.4 Instrument Approach Minimum

Table 8-4 details recommendations related to Instrument Approach Procedure (IAP) benchmark deficiencies at Montana airports. In total, 26 airports are recommended to publish a new or more advanced IAP than is currently in place. One airport in the EAS Commercial Service role and 10 in the GA Level 1 role are recommended to develop an IAP with a visibility minimum of 1 mile or lower. Additionally, 15 airports in the GA Level 2 role do not currently have a published approach, and are recommended to have a published IAP of any capability. Of the GA Level 1 airports recommended for an IAP with minimums of 1 mile or lower, six currently have an IAP with a visibility minimum of 1 1/4 miles. **Figure 8-1** maps the locations of these six airports within the mountainous western region of Montana. Because of this terrain, upgrading to an IAP with a minimum of 1 mile may not be economically or structurally feasible and would require additional analysis.

Table 8-4: Recommendations Related to IAP Benchmarks

ID	Associated City	Airport	IAP Recommendations
EAS Commercial Service			
BTM	Butte	Bert Mooney	Upgrade to IAP with 1 Mile or Lower Minimums
GA Level 1			
3U3	Anaconda	Bowman Field	Upgrade to IAP with 1 Mile or Lower Minimums
6S0	Big Timber	Big Timber	Develop IAP with 1 Mile or Lower Minimums
88M	Eureka	Eureka	Develop IAP with 1 Mile or Lower Minimums
6S5	Hamilton	Ravalli County	Upgrade to IAP with 1 Mile or Lower Minimums
S27	Kalispell	Kalispell City	Develop IAP with 1 Mile or Lower Minimums
S59	Libby	Libby	Upgrade to IAP with 1 Mile or Lower Minimums
8S1	Polson	Polson	Upgrade to IAP with 1 Mile or Lower Minimums
32S	Stevensville	Stevensville	Upgrade to IAP with 1 Mile or Lower Minimums
9S5	Three Forks	Three Forks	Develop IAP with 1 Mile or Lower Minimums
7S1	Twin Bridges	Twin Bridges	Develop IAP with 1 Mile or Lower Minimums
GA Level 2			
00F	Broadus	Broadus	Develop IAP
LTY	Chester	Liberty County	Develop IAP
S71	Chinook	Edgar G. Obie	Develop IAP
6S3	Columbus	Columbus (Wolterman Memorial)	Develop IAP
4U9	Dell	Dell Flight Strip	Develop IAP
97M	Ekalaka	Ekalaka	Develop IAP
29S	Gardiner	Gardiner	Develop IAP
HWQ	Harlowton	Wheatland County at Harlowton	Develop IAP
S34	Plains	Plains	Develop IAP
RED	Red Lodge	Red Lodge	Develop IAP
52S	St. Ignatius	St. Ignatius	Develop IAP
S64	Stanford	Stanford	Develop IAP
9S4	Superior	Mineral County	Develop IAP
8U8	Townsend	Townsend	Develop IAP
7S6	White Sulphur Springs	White Sulphur Springs	Develop IAP

Source: Airport Approach Plates, Airport Inventory and Data Survey, FAA Form 5010, CDM Smith



Source: CDM Smith

Figure 8-1: Mountainous Locations of Six Airports Recommended to Upgrade IAP from 1.25 Mile Minimum to 1 Mile Minimum

8.1.5 Fuel Sales

Recommendations related to fuel sales benchmarks are listed in **Table 8-5**. In total, 28 Montana system airports are recommended to add or upgrade fuel service. In the GA Level 1 role, only Bowman Field in Anaconda is without fuel service, but five other airports currently only offer AvGas and are recommended to add Jet-A sales. Five GA Level 2 airports and 10 GA Level 3 airports are recommended to provide sales of either AvGas or MoGas. While these airports are recommended to offer fuel sales to better serve their markets and roles within the state, aviation fuel is largely a market driven commodity, and each airport should discuss this need with its customer base to determine the best course of action.

Table 8-5: Recommendations Related to Fuel Sales Benchmarks

ID	Associated City	Airport	Fuel Sales Recommendations
GA Level 1			
3U3	Anaconda	Bowman Field	Provide Jet-A and AvGas Sales
88M	Eureka	Eureka	Provide Jet-A Sales
79S	Fort Benton	Fort Benton	Provide Jet-A Sales
S27	Kalispell	Kalispell City	Provide Jet-A Sales
32S	Stevensville	Stevensville	Provide Jet-A Sales
9S5	Three Forks	Three Forks	Provide Jet-A Sales
GA Level 2			
M46	Colstrip	Colstrip	Provide AvGas or MoGas Sales
1S3	Forsyth	Tillitt Field	Provide AvGas or MoGas Sales
HWQ	Harlowton	Wheatland County at Harlowton	Provide AvGas or MoGas Sales
S34	Plains	Plains	Provide AvGas or MoGas Sales
RED	Red Lodge	Red Lodge	Provide AvGas or MoGas Sales
GA Level 3			
6S1	Bridger	Bridger Municipal	Provide AvGas or MoGas Sales
5U1	Dutton	Dutton	Provide AvGas or MoGas Sales
5U5	Fairfield	Fairfield	Provide AvGas or MoGas Sales
48S	Harlem	Harlem	Provide AvGas or MoGas Sales
S09	Hot Springs	Hot Springs	Provide AvGas or MoGas Sales
JDN	Jordan	Jordan	Provide AvGas or MoGas Sales
80S	Lavina	Lavina	Provide AvGas or MoGas Sales
S69	Lincoln	Lincoln	Provide AvGas or MoGas Sales
8U6	Terry	Terry	Provide AvGas or MoGas Sales
THM	Thompson Falls	Thompson Falls	Provide AvGas or MoGas Sales

Source: Airnav.com, Airport Inventory and Data Survey, CDM Smith, FAA Form 5010

8.1.6 Automated Weather Reporting

Table 8-6 details recommendations related to automated weather reporting benchmarks at Montana system airports. In total, 16 airports are recommended to install either an AWOS or ASOS system, including five airports in the GA Level 1 role and 11 in the GA Level 2 role. Meeting benchmarks for automated weather reporting is also necessary when developing an IAP.

Table 8-6: Recommendations Related to Automated Weather Reporting Benchmarks

ID	Associated City	Airport	Automated Weather Reporting Recommendations
GA Level 1			
CII	Choteau	Choteau	Install AWOS or ASOS
S27	Kalispell	Kalispell City	Install AWOS or ASOS
8S1	Polson	Polson	Install AWOS or ASOS
SBX	Shelby	Shelby	Install AWOS or ASOS
32S	Stevensville	Stevensville	Install AWOS or ASOS
GA Level 2			
00F	Broadus	Broadus	Install AWOS or ASOS
LTY	Chester	Liberty County	Install AWOS or ASOS
4U6	Circle	Circle Town County	Install AWOS or ASOS
6S3	Columbus	Columbus (Wolterman Memorial)	Install AWOS or ASOS
4U9	Dell	Dell Flight Strip	Install AWOS or ASOS
29S	Gardiner	Gardiner	Install AWOS or ASOS
52S	St. Ignatius	St. Ignatius	Install AWOS or ASOS
S64	Stanford	Stanford	Install AWOS or ASOS
9S4	Superior	Mineral County	Install AWOS or ASOS
8U8	Townsend	Townsend	Install AWOS or ASOS
7S6	White Sulphur Springs	White Sulphur Springs	Install AWOS or ASOS

Source: Airnav.com, Airport Inventory and Data Survey, CDM Smith

8.1.7 Aircraft Parking

Table 8-7 details recommendations related to aircraft parking benchmarks. At a minimum, all system airports in Montana are recommended to have tie-down parking available. Three airports in the GA Level 3 role and nine in the GA Level 4 role are recommended to construct tie-down parking to meet this benchmark.

Table 8-7: Recommendations Related to Aircraft Parking Benchmarks

ID	Associated City	Airport	Aircraft Parking Recommendations
GA Level 3			
4U4	Chinook	Hebbelman	Install Tie-Downs
S09	Hot Springs	Hot Springs	Install Tie-Downs
7S7	Valier	Valier	Install Tie-Downs
GA Level 4			
3U4	Ashland	St. Labre Mission	Install Tie-Downs
3U5	Augusta	Augusta	Install Tie-Downs
53U	Bigfork	Ferndale Airfield	Install Tie-Downs
3U9	Boulder	Boulder	Install Tie-Downs
5U0	Denton	Denton	Install Tie-Downs
5U7	Fort Smith	Fort Smith Landing Strip	Install Tie-Downs
U09	Harlem	Fort Belknap Agency	Install Tie-Downs
6U6	Hogeland	Hogeland	Install Tie-Downs
S00	Opheim	Opheim	Install Tie-Downs
7U8	Richey	Richey	Install Tie-Downs
M42	Russian Flat	Russian Flat	Install Tie-Downs
8U1	Sand Springs	Sand Springs Strip	Install Tie-Downs
8U3	Scobey	Scobey Border Station (East Poplar)	Install Tie-Downs
8U5	Sunburst	Sunburst	Install Tie-Downs
9U1	Wilsall	Wilsall	Install Tie-Downs
BB0	Winifred	Black Butte North	Install Tie-Downs
BW8	Winifred	Bullwhacker	Install Tie-Downs
CW0	Winifred	Cow Creek	Install Tie-Downs
MT3	Winifred	Knox Ridge	Install Tie-Downs
LC0	Winifred	Left Coulee	Install Tie-Downs
WH0	Winifred	Woodhawk	Install Tie-Downs
7S4	Wisdom	Wisdom	Install Tie-Downs
02T	Wise River	Wise River	Install Tie-Downs

Source: Airnav.com, Airport Inventory and Data Survey, CDM Smith

8.1.8 Rental Cars/Courtesy Car

Recommendations related to benchmarks for rental cars and courtesy car service are listed in **Table 8-8**. Havre City-County airport in the EAS Commercial Service role already has courtesy car service but is recommended to add on-site car rental for customers. Additionally, five airports in the GA Level 1 role are recommended to add courtesy car service as a minimum option for their airport patrons.

Table 8-8: Recommendations Related to Rental/Courtesy Car Benchmarks

ID	Associated City	Airport	Rental/Courtesy Car Recommendations
EAS Commercial Service			
HVR	Havre	Havre City-County	Add Rental Car Service
GA Level 1			
3U3	Anaconda	Bowman Field	Add Courtesy Car Service
CII	Choteau	Choteau	Add Courtesy Car Service
79S	Fort Benton	Fort Benton	Add Courtesy Car Service
9S2	Scobey	Scobey	Add Courtesy Car Service
32S	Stevensville	Stevensville	Add Courtesy Car Service

Source: Airport Inventory and Data Survey

8.2 Recommendations on Airport Roles – Support Aviation and Local Economies

8.2.1 Recommendations Based on Changes in EAS Service

In Chapter Four, System Roles Analysis of the Montana Statewide Aviation System Plan Lewistown Municipal Airport and Miles City Airport were classified as Essential Air Service (EAS) Commercial Service airports. EAS service at these airports was discontinued in 2013. One of the primary reasons for the loss of this service was due to low passenger enplanements and high per passenger subsidies. Low enplanements can be attributed to the fact that these airports are in direct competition with Billings Logan International Airport, and in the case of Lewistown its proximity to both Billings and Great Falls International.

Recommendation: Given the fact that current levels of federal funding for EAS at rural airports in the western U.S. is declining and the fact that the Lewistown and Miles City air service markets compete with the convenience of automobile travel, it is unlikely that commercial air service will return to these markets during the planning period. As a result, it is recommended that these airports be placed in the GA Level 1 category.

8.2.2 Rural Airports to New Category "General Aviation Level Four – Remote"

Airport Classifications based on the stratification process presented in Chapter Four divided Montana's general aviation airports into four Categories. Airports in the GA Level 1 Class are comprised of the most developed general aviation airports in the state while the 44 airports in the GA Level 4 airports are the least developed. GA Level 4 airports have a wide variety of attributes and locations very from less than a mile to its associated city, or in a few instances 15 or 20 miles. Many of these remote airports are owned by the federal government, the state of Montana MDT, while a few are owned by counties or private owners.

Recommendation: It is recommended that a variety of airports currently designated with the role of GA Level 4 be separated into another category of airport. This new designation will not necessarily determine a change in priority or funding; it will simply disjoin the current role based on several criteria. The new role is notated as *GA Level 4 – Remote* and is composed, as the name implies, as the more remote airports within Montana's system of airports.

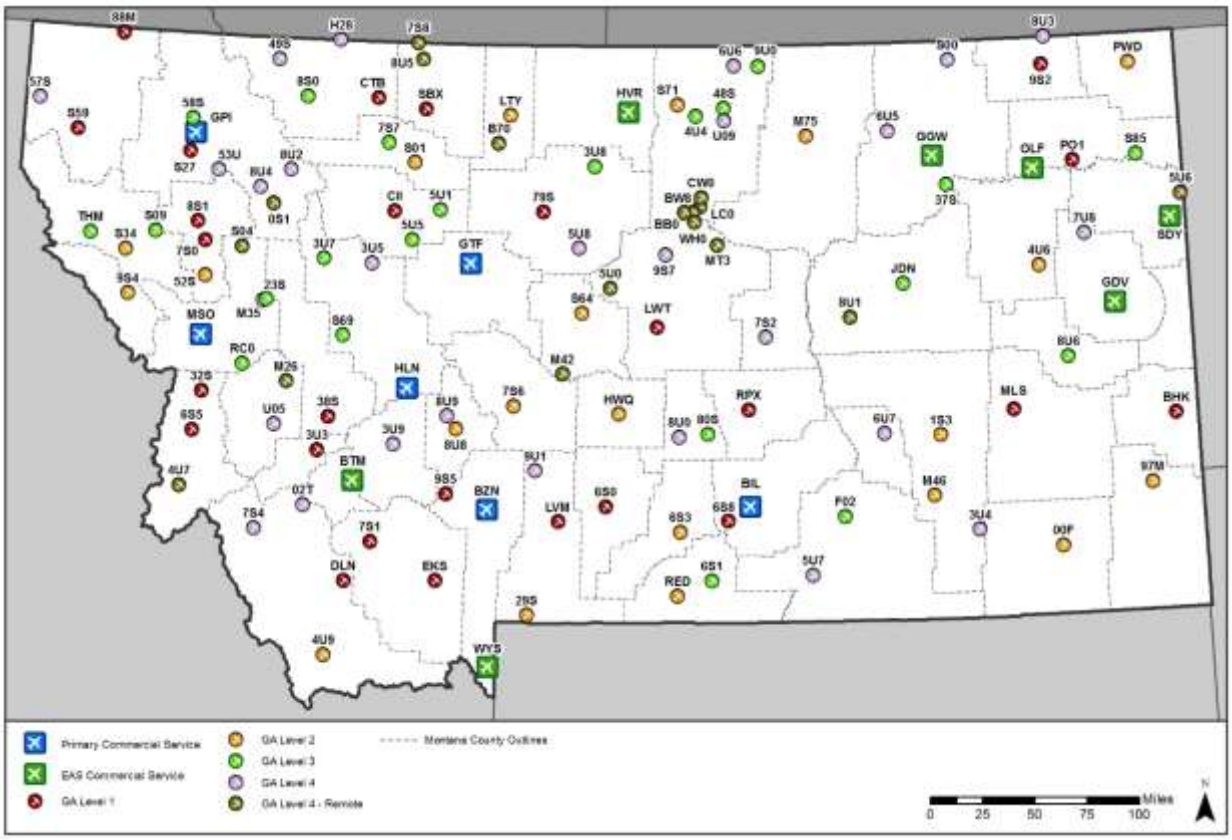
Even though they are similar size to other the remaining GA Level 4 airports, they are paired differently because of the certain characteristics. First, five of the 44 GA Level 4 airports fall under the federal National Plan of Integrated Airport System (NPIAS) airports. Each of these airports are eligible for FAA funds and were excluded from consideration for the new role and thereby remain GA Level 4. Second, all airports with runways lengths over three-thousand feet, those with any sort of runway lighting system, as well as those with any paved runways were removed from consideration. By sorting airports by these attributes it was found that 17 airports remain and comprise the most utilitarian, remote airports in Montana and are assigned to the *GA Level 4 – Remote* Category. **Table 8-9** identifies those airports recommended for

designation as *GA Level 4 – Remote* as well as their respective runway lengths and airport sponsors.

Table 8-9: Airports to New Category "GA Level 4 – Remote"

Associated City	Airport Name	Runway Length	Sponsor
Condon	Condon USFS	2,575	US FOREST SERVICE
Conner	West Fork Lodge	2,600	PRIVATE
Denton	Denton	2,550	TOWN OF DENTON
Drummond	Drummond	2,400	GRANITE COUNTY
Fairview	Fairview	3,000	SIDNEY RICHLAND
Meadow Creek	Meadow Creek USFS	2,830	US FOREST SERVICE
Russian Flat	Russian Flat	3,000	US FOREST SERVICE
Sand Springs	Sand Springs Strip	2,400	PRIVATE
Sunburst	Sunburst	2,700	TOOLE COUNTY
Sweetgrass	Ross International	2,900	MONTANA AERONAUTICS DIV
Tiber Dam	Tiber Dam	2,550	MONTANA AERONAUTICS DIV
Winifred	Cow Creek	2,200	BUREAU OF LAND MANAGEMENT
Winifred	Knox Ridge	2,100	BUREAU OF LAND MANAGEMENT
Winifred	Black Butte North	1,800	BUREAU OF LAND MANAGEMENT
Winifred	Left Coulee	1,600	BUREAU OF LAND MANAGEMENT
Winifred	Bullwhacker	1,500	BUREAU OF LAND MANAGEMENT
Winifred	Woodhawk	1,200	BUREAU OF LAND MANAGEMENT

Source: CDM Smith



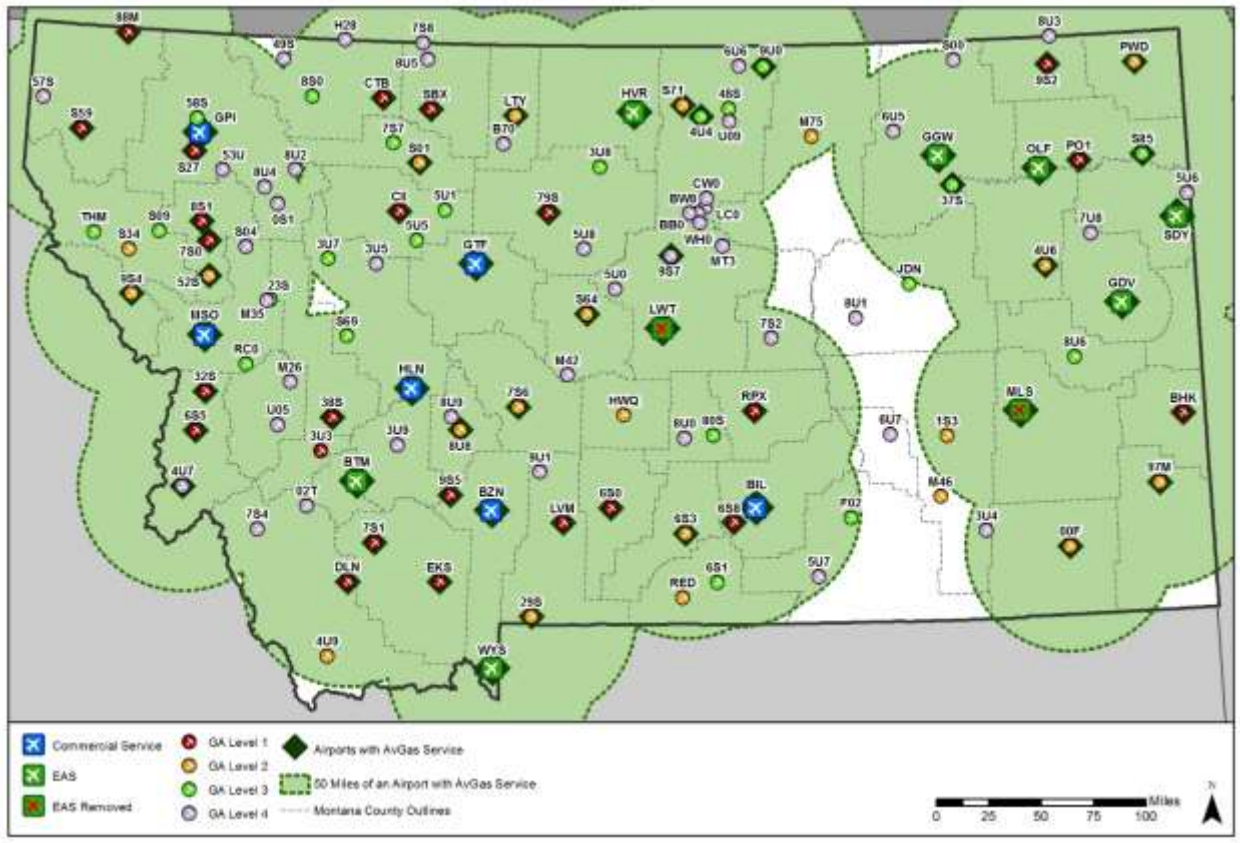
Source: CDM Smith

Figure 8-2: Recommended System Airports – Roles

8.3 Recommendations Based on Forecasts and Geographic Coverage

8.3.1 AvGas Coverage

After utilizing the preferred forecast for based aircraft, several airports are forecasted to reach more than 10 based aircraft within the 20-year planning period. These airports and the forecast year based aircraft reach the levels where AvGas service may be warranted are identified in Table 6-29. Airports that have no AvGas availability but with current or forecasted demand for AvGas include: Bowman Field, Colstrip, Dutton, Lincoln, Red Lodge, and Thompson Falls Airports. **Figure 8-3** identifies the locations of these airports in relation to other airports with fuel in Montana. This figure outlines a corridor of area without coverage in central eastern Montana.



Source: Airnav.com, Airport Inventory and Data Survey, CDM Smith, FAA Form 5010

Figure 8-3: Airports with AvGas Coverage

Recommendation: While AvGas services at airports are purely reliant on market driven forces, airport owners without AvGas availability should monitor their local market by speaking with pilots and aircraft owners regarding their need for AvGas. This may include discussions with local aircraft owners storing their aircraft on private airstrips. Future airport master plans for the airports listed in **Table 8-10** should include a review of the local AvGas market. Note that all of these airports also have recommendations under system benchmarks to upgrade aviation fuel service**.**

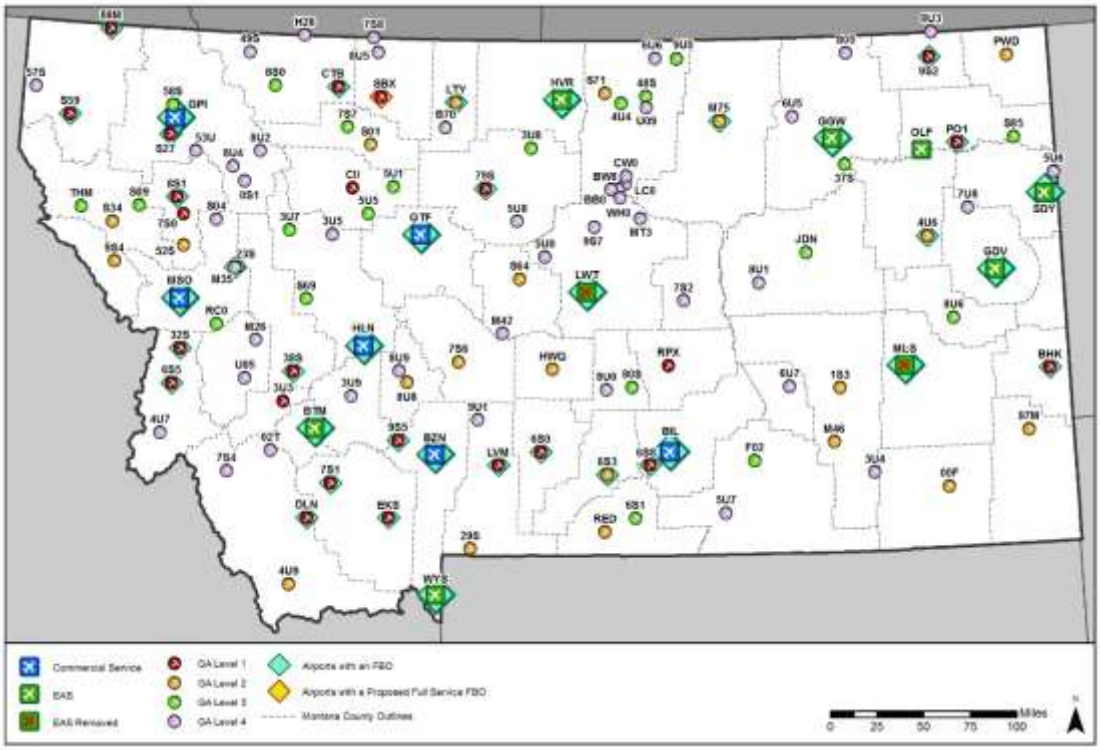
Table 8-10: Airports Recommended to Provide AvGas Service Based on Forecasts and Current Geographic Coverage

ID	Associated City	Airport	Current Aviation Fuel Service
GA Level 1			
3U3	Anaconda	Bowman Field	None
GA Level 2			
M46	Colstrip	Colstrip	None
RED	Red Lodge	Red Lodge	None
GA Level 3			
5U1	Dutton	Dutton	None
S69	Lincoln	Lincoln	None
THM	Thompson Falls	Thompson Falls	None

Source: CDM Smith

8.3.2 Recommendations Related to Full Service FBOs

The forecast analysis of current full-service Fixed Base Operators (FBO) located on Montana airports revealed airports with greater than 21 based aircraft and more than 7,800 annual operations are more likely to have sustainable full-service FBO operations on their airport. The criteria for utilized for this analysis was construed as a conservative estimate. The preferred forecast for based aircraft and aircraft operations indicates that only airport is forecasted to reach both criteria within the 20-year planning period. Based on the forecasts, Shelby Airport, located 90 miles north of Great Falls, will likely have sufficient demand to offer full-service FBO services. **Figure 8-4** identifies airports in Montana with FBO services. It is noteworthy to point out that the analysis also indicates that the current level FBO services in Montana basically meets current and future demand for these services.



Source: CDM Smith

Figure 8-4: Location of All FBO Services in Montana

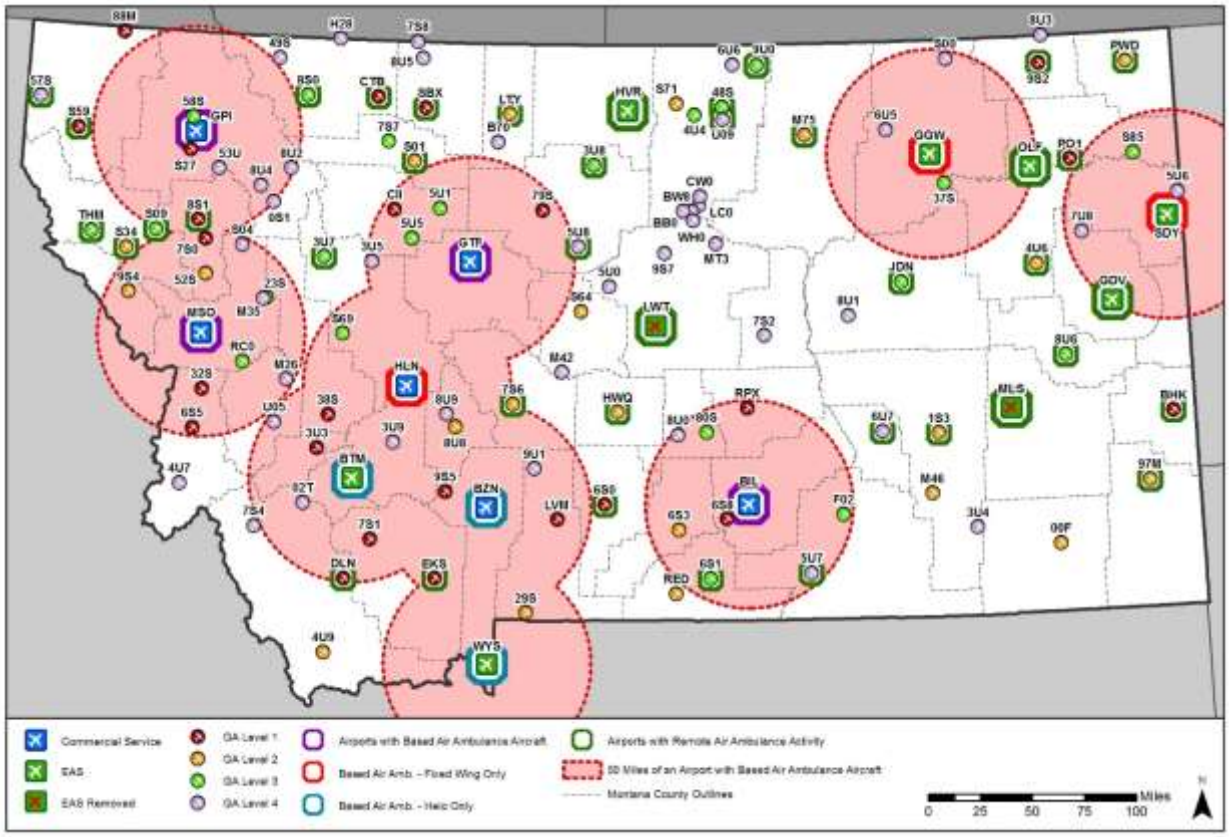
Recommendation: While FBO services at airports are purely reliant on market driven forces, government agencies at both the state and local level can encourage the development of FBOs at Montana airports. While MDT promotes all aviation related economic activity in the state, it can point prospective FBO businesses to state resources such as the Montana Department of Commerce, as well as local economic development agencies. Local airports can provide incentives to prospective FBOs through facilities rental agreements and local economic development incentives such as empowerment zone tax credits.

8.3.3 Recommendations Related to Air Ambulance Service

The degree of air ambulance coverage in Montana is dependent on proximity to the state's larger communities, many of which have established air ambulance bases. Analysis of airport inventory data and hospital survey data indicates that, in general communities, within 50 miles of a metropolitan areas in the state with both major hospitals and air rotorcraft or fixed-wing air ambulance bases rely mostly on helicopters or ground ambulance vehicles to transport patients and trauma victims. Research also indicates that rural communities in Montana greater than 50 miles from metro areas with based air ambulances are more often served by fixed-wing air ambulances due to the limited range and speed of helicopters. **Figure 8-5** identifies airports in Montana with air ambulance activity as well as metro areas with air ambulance bases. Note that airports with air ambulance activity are generally greater than 50 miles from a metro area. Nearly all of these airports have a hospital in the local community; however, a few airports reported activity, but do not have a local hospital nearby. Air ambulance bases in Montana support fixed wing, helicopters, or both types of aircraft. As indicated in Figure 7-6, a wide variety of airports experience air ambulance activity. In fact, all categories of airports in Montana see some air ambulance activity including GA Level 4 airports, which have minimal facilities.

Analysis was conducted to estimate the current and future rural operations of fixed-winged air ambulance activity. Each of these select airport's base year air ambulance activity was forecasted for the 20-year planning period (see the Forecast Chapter). The formulation of the forecast's growth rate of 2.9 percent between 2008 and 2014 was applied to each Montana airport serving rural hospitals in the state. As shown in **Table 8-11**, 42 of Montana's 126 system airports are considered remote airports serving air ambulance activity. It is noteworthy to point out that air ambulance transportation often extends beyond the boundaries of the state to TYPE #1 hospitals as far away as Salt Lake City, Seattle, and Minneapolis.

Recommendation: All Montana airports are important resources in the transport of patients and trauma victims to hospitals across the state, but airports that are greater than 50 miles from major metro areas in the state play an even greater role. As such, the air ambulance activity is a key element to be taken into consideration when considering future improvements at the more remote airports in Montana, and particularly those remote communities with a local hospital.



Source: ADAMS Air Ambulance Atlas, MDT Airport Management Inventory Form, MDT Hospital Survey

Figure 8-5: Airports Serving Air Ambulance Activity

Table 8-11: Remote Montana Airports Serving Air Ambulance Activity

ID	Associated City	Airport Name	GA Tier	Local Hospital Yes/No
BHK	Baker	Baker Municipal	GA Level 1	Yes
3U7	Augusta	Benchmark	GA Level 3	No
3U8	Big Sandy	Big Sandy	GA Level 3	Yes
6S0	Big Timber	Big Timber	GA Level 1	Yes
6S1	Bridger	Bridger Municipal	GA Level 3	No
8S0	Browning	Starr-Browning Airstrip	GA Level 3	Yes
LTY	Chester	Liberty County	GA Level 2	Yes
4U6	Circle	Circle Town County	GA Level 2	Yes
S01	Conrad	Conrad	GA Level 2	Yes
CTB	Cut Bank	Cut Bank Municipal	GA Level 1	Yes
DLN	Dillon	Dillon	GA Level 1	Yes
97M	Ekalaka	Ekalaka	GA Level 2	Yes
EKS	Ennis	Ennis - Big Sky	GA Level 1	Yes
1S3	Forsyth	Tillitt Field	GA Level 2	Yes
U09	Harlem	Fort Belknap Agency	GA Level 4	Yes
5U7	Fort Smith	Fort Smith Landing Strip	GA Level 4	No
5U8	Geraldine	Geraldine	GA Level 4	No
GGW	Glasgow	Wokal Field/Glasgow Intl.	EAS Commercial Service	Yes
GDV	Glendive	Dawson Community	EAS Commercial Service	Yes
48S	Harlem	Harlem	GA Level 3	Yes
HWQ	Harlowton	Wheatland County	GA Level 2	Yes
HVR	Havre	Havre City-County	EAS Commercial Service	Yes
S09	Hot Springs	Hot Springs	GA Level 3	No
6U7	Hysham	Hysham	GA Level 4	No
JDN	Jordan	Jordan	GA Level 3	Yes
LWT	Lewistown	Lewistown Municipal	EAS Commercial Service	Yes
S59	Libby	Libby	GA Level 1	Yes
M75	Malta	Malta	GA Level 2	Yes
MLS	Miles City	Frank Wiley Field	EAS Commercial Service	Yes
S34	Plains	Plains	GA Level 2	Yes
PWD	Plentywood	Sher-Wood	GA Level 2	Yes
8S1	Polson	Polson	GA Level 1	Yes
PO1	Poplar	Poplar Municipal	GA Level 1	Yes
9S2	Scobey	Scobey Airport	GA Level 1	Yes
SBX	Shelby	Shelby	GA Level 1	Yes
8S0	Browning	Starr-Browning Airstrip	GA Level 3	Yes
8U6	Terry	Terry	GA Level 3	Yes
THM	Thompson Falls	Thompson Falls	GA Level 3	No
57S	Troy	Troy	GA Level 4	No
9U0	Turner	Turner	GA Level 3	No
7S6	White Sulphur Springs	White Sulphur Springs	GA Level 2	Yes
OLF	Wolf Point	LM Clayton	EAS Commercial Service	Yes

Source: CDM Smith, MDT Airport Management Inventory Form, MDPT Hospital Survey

8.3.4 Recommendations Related to Airports Serving Vacation Home Owners

Montana serves as a popular destination where many individuals and families decide to purchase second homes, vacation homes, or similar type properties. It is estimated that a number of these home owners utilize Montana's general aviation airports where second home ownership is prevalent. The forecast of these general aviation operations is outlined in the Forecast Chapter.

Forecasted general aviation operations were analyzed at airports in counties with significant second home ownership and are based on the estimated number of operations attributable to these homes. This research concluded that highest percentage of second home ownership occurred within five of the state's counties: Madison, Granite, Meagher, Lake, Lincoln, and Flathead. Bozeman's commercial service airport will likely experience significant growth in general aviation traffic related to second homes as second home ownership related to the Yellowstone Club in Big Sky, Montana is a primary driver of this traffic.

Recommendation: While second home ownership in Montana has a positive impact on the local economy, the limited influence vacation homes have on general aviation operations remains finite. Some airports will see greater second home ownership related operations than others. It is recommended that those airports in counties with a higher percentage of second homes offer services which may benefit second home owners such as short-term covered aircraft storage, courtesy car or rental car availability, fuel sales, and available long-term car parking.

8.3.5 Recommendations Related to Wildland Aerial Firefighting Activity

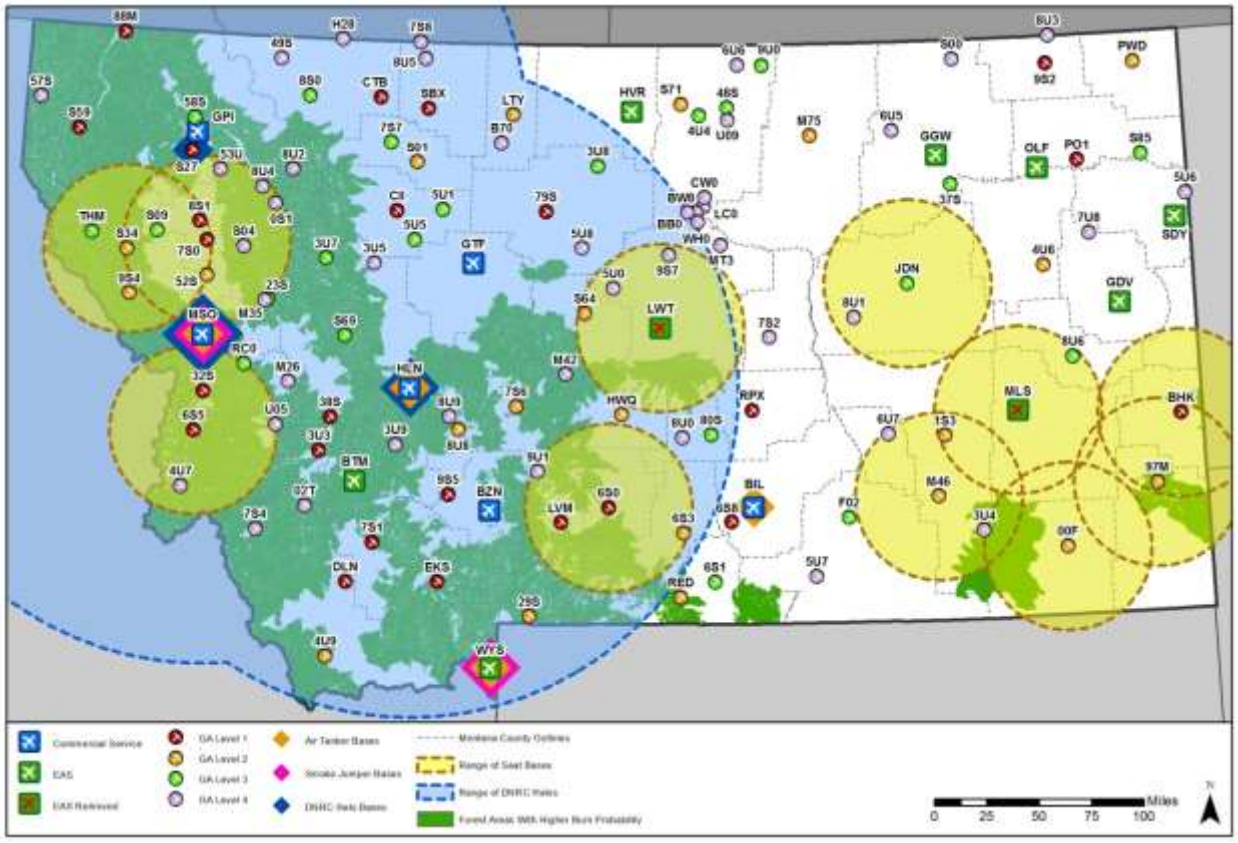
From 1998 to 2013, over 395,000 acres a year on average burned across state, federal, and private lands in Montana. The majority of wildland fires in Montana are located in the western portion of the state. With denser forests and concentrations of private property, this area of the Montana experiences more forest fires, and more fires that generally threaten the wildland-urban interface. While seventy-five percent of all wildland fire incidents are under an acre in size, these fires are often part of an initial fire attack, where local firefighters and agencies such as the Montana Department of Natural Resources (DNRC) spearhead suppression efforts before fires become unmanageable.

The initial suppression effort is considered the "initial attack", if the fire cannot be contained immediately or evolves into a longer duration event it is considered an "extended attack" wildland fire suppression effort. Larger scale fires and their suppression often involve multiple state and federal agencies, such as the DNRC, Bureau of Land Management (BLM), and the United States Forest Service (USFS). Containing these fires often involves the use of aerial firefighting equipment, aircraft, and smokejumpers. Fixed-wing aircraft and helicopters are each utilized in aerial firefighting. There are 15 airports in Montana utilized by state and federal agencies with established bases geared to support aerial wildland firefighting with helicopters, and air tankers. These facilities are either permanent DNRC, USFS, or BLM facilities located on an airport and in some cases more than one agency is located on the airfield. It is also noteworthy to point out that temporary, portable facilities can be set up at remote airport when it is suitable for wildland firefighting. **Table 8-12** outlines the airports in Montana which serve or support aerial firefighting operations.

As shown in **Figure 8-6**, there is a significant amount of coverage throughout Montana based on the type of aircraft involved in aerial firefighting effort. The ranges outlined in the figure includes Single Engine Attack Tanker (SEAT) bases and helicopters utilized by the DNRC. SEAT aircraft are fixed-wing aircraft, which are at optimal operational levels when within 40

miles of a fire. For helicopters, a range of 157 miles was given based on the DNRC's primary used of the Bell UH-1, also known as a "Huey." **Figure 8-6** also details the location of air tanker, smokejumper, and DNRC helicopter bases. These bases are location in the larger communities of Helena, Missoula, Billings, West Yellowstone, and Kalispell.

Figure 8-6
Airports Serving Aerial Wildland Firefighting Activity



Source: MDT Airport Management Inventory Form, Interagency Airtanker Base Directory 2013, CDM Smith

Since 2009, three airports in Montana no longer have permanent aerial wildland firefighting tanker or helitack bases due to relocation of assets. Each of these airports is located in western Montana and includes Bozeman's Gallatin Field, Dillon Airport, and Glacier Park International. These airports, however, may be utilized in the future as temporary air tanker bases.

Table 8-12: Airports Likely to Serve Aerial Wildland Firefighting Activity

ID	Associated City	Airport
Commercial Service and EAS		
GTF	Great Falls	Great Falls Intl.
GPI	Kalispell	Glacier Park Intl.
BZN	Bozeman	Bozeman Yellowstone Intl.
BTM	Butte	Bert Mooney
GA Level 1	**Associated City**	**Airport**
32S	Stevensville	Stevensville
38S	Deer Lodge	Deer Lodge-City-County
3U3	Anaconda	Bowman Field
6S0	Big Timber	Big Timber
6S5	Hamilton	Ravalli County
79S	Fort Benton	Fort Benton
7S0	Ronan	Ronan
7S1	Twin Bridges	Twin Bridges
88M	Eureka	Eureka
8S1	Polson	Polson
9S5	Three Forks	Three Forks
CII	Choteau	Choteau
CTB	Cut Bank	Cut Bank Municipal
DLN	Dillon	Dillon
EKS	Ennis	Ennis - Big Sky
LVM	Livingston	Mission Field
S27	Kalispell	Kalispell City
S59	Libby	Libby
SBX	Shelby	Shelby

Source: Interagency Airtanker Base Directory 2013, CDM Smith

Based aircraft operations for both USFS and DNRC were forecasted in Chapter 6, Table 6-38, which provided both the base year operations and the forecasted total aircraft operations for Montana wildland aerial firefighting efforts. Total operations for the planning period between 2013 and 2033 were projected utilizing an annual growth rate of 1.27 percent.

Given the cyclical nature of wildland fires in Montana, forecasts were provided to anticipate a 25 percent deviation of operations from the base year data. Base year data of 41,700 is projected to increase to 57,209 by 2033; however, should there be a series of fire seasons with low levels of activity a forecast was prepared to reflect a 25 percent decrease from the base year. For the low forecast, statewide operations are projected to increase to 42,907 by 2033. Alternatively, the high forecast is projected to increase to 71,511 by the same year. This forecast reflects a worst case scenario where a series of fire seasons with consistently high levels of activity take place throughout the planning period.

Recommendation: GA Level 1 airports in western Montana, in close proximity to forested areas, are likely candidates for temporary air tanker and helicopter base status. Because of the higher likelihood of fires near these airports, these airports need to take into consideration wildland fire aviation operations in their master plans and ALPs. It is also recommended that MDT provide these airports guidelines on aerial firefighting accommodation plans. Recommended

documentation on these procedures can be found in the Airport Cooperative Research Program's (ACRP) Synthesis 32: *Managing Aerial Firefighting Activities on Airports*.

8.4 Recommendations Based On Issues and Topics

8.4.1 Recommendations Related to EAS Airports

The U.S. Department of Transportation (USDOT) has declared seven airports in Montana eligible to received funding under the Essential Air Service (EAS) program. These airports include Bert Mooney, Glasgow International, Dawson Community, Havre City-County, Sidney-Richland Municipal, Yellowstone, and L.M. Clayton. This program allows scheduled air service within the community airports in Montana to connect area residents and businesses with the global airline network through subsidized flights. There are currently two carriers providing the state with EAS, and include Cape Air and Delta SkyWest.

As a federally subsidized program, the continuation of the EAS program at specific Montana airports is dependent on a variety of factors. These includes changes in federal legislation and funding, increasing carrier costs, fuel prices, limited passenger revenue and declining load factors, and pilot shortages. Discontinuation of EAS to those airports receiving funding would potentially create hardship on the traveling public in each airport's corresponding community. These impacts may include dramatic increase in airfare prices should carrier service continue in the market, and or increased travel times to more distant airports. These impacts are exacerbated by the limited economic infrastructure generally attributed to rural communities.

Recommendation: Because of these serious implications resulting from a potential loss in EAS service, it is recommended that to retain EAS services, local communities, state transportation officials, and airports continue to promote EAS by contacting related advocacy organizations and their federal congressional representatives, while staying abreast and informed about any related legislative provisions or bills. Continued promotion for EAS, and in particular for EAS presence in rural community airports, is essential for the markets directly impacted by the program's benefits.

8.4.2 Recommendations Related to Bakken Oil and Gas Development

The Bakken Shale Formation contains one of the most significant resources for oil and natural gas development. The extraction of these natural resources has created an economic boom in eastern Montana, as well as adjacent states. As a result, commercial service activity in this region is seeing improvements in passenger enplanements. The increase in recent airline passenger traffic at several commercial service airports in Montana reinforces the demand for continued aviation facilities and services.

The economic growth associated with the increase in resource extraction has occurred in the northeastern section of the state along the North Dakota and Canadian borders. The concentration of oil producing counties identified in this system plan include: Richland, Dawson, Fallon, and Wilbaux counties. Secondary growth counties include: Sheridan, Roosevelt, Daniels, McCone, and Prairie. An increase of population to these counties has provided substantial increased traffic to the region and therefore increased demand on area airports. Airports providing commercial services in the area include: L.M. Clayton, Dawson Community, and Sidney-Richland Airport. Additionally, a rise in general aviation business operations is often associated with this economic growth. In addition to the previously mentioned airports, Bakker Municipal Airport in Fallon County is the only general aviation airports within close proximity to the region that can accommodate general aviation business operations.

A reduction in the price of oil by nearly 50 percent in 2014 has created various levels of skepticism towards the profitability of the Bakken Formation. While profits have dropped and tax revenues for the boom towns of eastern Montana decease, the overall economic activity related to the extraction of oil has remained relatively stable. According to the U.S. Energy Information Administration, overall production of crude oil in Montana has averaged 81,000 barrels per day in 2014, while the average production per day for the second half of the year has continually increased. In bordering North Dakota, 1.19 million barrels of oil were produced in January 2015, which was only a small reduction from the record of 1.22 million barrels produced in December 2013.[86]

Recommendation: Although fluctuations in the price of oil and gas can be expected in coming years, the Bakken region stands to continue production and to generate demand for aviation services. Aviation demand will be comprised of both commercial air service as well as general aviation activity. While this economic growth and demand will likely take place on a number of system airports in the region, it is anticipated that Sydney Richland County Airport will see increases in passenger enplanements as the oil and gas industry stabilizes and workers and their families settle in the region. As a result, it may be worthwhile for airport management to consider whether to pursue non-EAS flights to markets such as Denver or Minneapolis.

8.4.3 Recommendations Related to NDB Phase Outs

A Non-Directional (radio) Beacon (NDB), as the name implies, transmits non-directional signals (either low or medium frequency) whereby the pilot of an aircraft properly equipped can determine bearing and “home” on the station. NDBs serve as en-route navigation aids, non-precision approaches and precision approach information as part of an ILS system. When a radio beacon is used in conjunction with the Instrument landing system, it is called a Compass Locator. Radio beacons are subject to disturbances that may result in erroneous bearing information. Such disturbances result from such factors as lighting, precipitations static, etc. At night, radio beacons are vulnerable to interference from distant stations.

NDB navigation consists of two parts — the Automatic Direction Finder (or ADF) equipment in the aircraft that detects an NDB's signal, and the ground-based NDB transmitter. NDB/ADF navigation is one of the oldest and most basic types of electronic navigation, providing a bearing to the transmitter, but not distance. It was used routinely as far back as World War II. Navigation using NDB is more labor intensive than more modern techniques such as GPS, requiring the pilot to employ formulas to compensate for crosswind drift and to calculate distance. Still, due to the low cost of ADF equipment, some pilots continue to utilize NDB/ADF navigation as a low cost alternative or backup to GPS.

Currently 21 NDBs in the State of Montana are owned, operated and maintained by the Montana Department of Transportation Aeronautics Division. There are 7 more federally owned NDB facilities in the state that are part of an instrument approach facility and procedure.
FAA’s Next Generation Air Transportation System (NextGen) initiative has begun the transition of the NAS from a ground based system to a satellite-based system. The FAA has begun decommissioning a few of its NDBs as they transition to the satellite based system. As the airspace system in Montana transitions from a ground-based system to a satellite based system, there may be an opportunity for the State to realize cost savings from decommissioning some underutilized NDBs over time.

[86] http://www.ktvq.com/story/28434098/bakken-oil-no-longer-booming

Recommendation: Decisions regarding whether to decommission certain NDB's and when to decommission them should be approached with caution and will require consideration of several factors. Key among these are utilization and prioritization.

- Are pilots in Montana generally continuing to utilize NDB/ADF for navigation purposes?
- Are aircraft utilizing the Montana airspace system equipped with GPS technology?
- Does the benefit of a ground-based back up system to GPS exceed the operating and maintenance costs of NDBs?
- Which NDBs are the most and least critical?

Before considering a phase-out of certain NDBs it will be necessary to gain an understanding of the level of utilization of NDBs by Montana pilots generally. This can be accomplished with periodic pilot surveys and discussions with pilot groups over time. The Montana aircraft registration form could also be modified to request that registrants indicate whether the aircraft is equipped with ADF. If an aircraft is not equipped with ADF, it would be assumed not to utilize NDB.

Some NDBs are more important to the aviation system than others. **Table 8-13** lists Montana's NDBs according to the following utilization criteria:

a. NDB is a stand-alone instrument approach to at least one runway end at an airport
b. NDB's used as a fix for an ILS approach
c. NDB and GPS approach are both provided to same runway (redundant)
d. NDB is provided for en-route VFR navigation only

NDBs that serve as the only instrument approach to a runway should not be decommissioned. Likewise, NDBs that are part of an active ILS approach should not be decommissioned. NDB approaches that serve in addition to a GPS approach for the same runway could be considered for decommissioning after weighing the cost of maintaining the system with the benefit of a back-up approach. Consideration for the equipage of the aircraft utilizing the approach should also be made to ensure that regular users of the approach are equipped with IFR certified GPS equipment. NDBs that are provided solely for en-route VFR navigation, either at airports with only VFR homing capabilities or in remote locations outside of an airport approach procedure, may be considered the lowest priority and could potentially be phased out as a cost saving measure if after careful consideration, the cost to maintain them exceeds their benefit to the system. Consideration could be accomplished, as noted, with periodic pilot surveys and discussions with pilot groups across the State.

Table 8-13: NDB Utilization Categories

NDB	Freq	Associated City	FAA ID	Associated Airport_Name
NDB Stand Alone Approach to At Least One Runway End				
BKU	344	Baker	BHK	Baker Municipal
CRD	293	Conrad	S01	Conrad
GDV	410	Glendive	GDV	Dawson Community
MKR	339	Glasgow	GGW	Glasgow International (Wokal Field)
OLF	404	Wolf Point	OLF	L. M. Clayton
SBX	347	Shelby	SBX	Shelby
SDY	359	Sidney	SDY	Sidney-Richland Municipal
FOR	236	Forsyth	1S3	Tillitt Field
TARGY (FAA)	415	West Yellowstone	WYS	Yellowstone
NDB Part of ILS				
BI (FAA)	251	Billings	BIL	Billings Logan International
SAK (FAA)	515	Kalispell	GPI	Glacier Park International
ITU (FAA)	371	Great Falls	GTF	Great Falls International
CVP (FAA)	335	Helena	HLN	Helena Regional
HAU (FAA)	386	Helena	HLN	Helena Regional
Redundant NDB and GPS Approaches				
CII	245	Choteau	CII	Choteau
NDB for Enroute Navigation Only				
CRR	2245	Circle	4U6	Circle Town County
EKS	286	Ennis	EKS	Ennis - Big Sky
EUR	392	Eureka	88M	Eureka
JDN	263	Jordan	JDN	Jordan
LYI	414	Libby	S59	Libby
LTY	323	Chester	LTY	Liberty County
INE (FAA)	521	Missoula	MSO	Missoula International
RPX	362	Roundup	RPX	Roundup
SCO	283	Scobey	9S2	Scobey
PWD	251	Plentywood	PWD	Sher-Wood
HWQ	242	Harlowton	HWQ	Wheatland County, Harlowton
ESY	338	West Yellowstone	WYS	Yellowstone

8.5 Estimated Costs – Major Projects by Airport and In Aggregate

The cost of maintaining and improving the Montana airport system is born by the airport sponsors, the state, and the FAA, with the FAA providing a significant portion of the funding support for general aviation capital projects at eligible airports. **Table 8-14** outlines the amount of AIP funding that the FAA has provided to Montana's commercial service and general aviation airports from 2006 - 2014. With 71 airports in the NPIAS, annual AIP entitlements alone average approximately $36.7 million.

Table 8-14: Historic AIP Funding to Montana Airports

Airport	2006	2007	2008	2009	2010	2011	2012	2013	2014
Commercial Service Airports	$21.4	$19.9	$19	$38.7	$18.6	$29.3	$22.8	$21.9	$16.5
General Aviation Airports	$11.2	$13.3	$12.7	$16.6	$20.3	$16.2	$9.6	$9.3	$12.8
Total	$32.6	$33.1	$31.7	$55.4	$38.8	$45.5	$32.4	$31.2	$29.3

Source: FAA

8.5.1 Total Project Costs and By Airport

To adequately plan for the aviation system's capital needs over the planning period, the costs of all system related capital projects at airports and other costs need to be taken into account. This data can be found in **Appendix E** and includes individual airport improvement costs related to runway extensions and lighting, upgrades to taxiways, approach, fuel, weather reporting, tie downs, and courtesy cars. **Table 8-15** outlines the total costs by project summary. Improvements related to fuel sales are not FAA funded.

Table 8-15: Montana Aviation System Total Costs by Project Summary

Project Summary	Costs
RW Length	$10,000,000
RW Lighting	$2,995,500
TW Upgrade	$35,535,250
Approach Upgrade	$3,900,000
Fuel Upgrade	$2,900,000
AWOS/ASOS	$2,000,000
Tie Downs	$135,000
Courtesy Car	$30,000
Total	**$57,495,750**

Source: CDM Smith

8.5.2 Total Costs and NPIAS vs. Non-NPIAS

The system plan improvements, discussed below, are estimated to cost more than $58.8 million. Table 8-16 outlines the total costs by airport role split between NPIAS and Non-NPIAS airports and outlines the total costs by airport role. Approximately 85 percent of costs are designated for NPIAS airports, while 15 percent are for Non-NPIAS airports in Montana. NPIAS airports are eligible for federal AIP funds but require supporting information to justify the improvement such as airport master plans and or airport layout plans.

Table 8-16: Montana Aviation System Needs NPIAS vs. Non-NPIAS

	NPIAS	Non-NPIAS	Total Costs
Total Primary Commercial Service	$ -	$ -	$ -
Total EAS Commercial Service	$ 14,648,250	$ -	$ 14,648,250
Total GA Level 1	$ 27,787,000	$ -	$ 27,787,000
Total GA Level 2	$ 7,052,500	$ 3,230,500	$ 10,283,000
Total GA Level 3	$ 808,750	$ 3,848,750	$ 4,657,500
Total GA Level 4	$ -	$ 120,000	$ 120,000
Total	**$ 50,296,500**	**$ 7,199,250**	**$ 57,495,750**

Source: CDM Smith.

8.6 Montana Airport Funding

The operation of an airport involves a variety of costs. The day-to-day operating expenses are generally the responsibility of the local sponsor, which endeavors to cover those costs through revenue generated by the airport in the form of leases, fuel fees, concession fees, and other rates and charges. At some airports, especially smaller general aviation airports, counties or local municipalities subsidize the operation of the airport when airport generated revenues are insufficient to cover all operating costs.

In addition to operating expenses, airports also incur capital costs from large projects that maintain, upgrade, or expand the airport's infrastructure. Most general aviation airports, and many commercial service airports, do not have the resources to afford these capital projects and turn to other funding sources to aid in the development of airport capital infrastructure. This is similar to other publicly held entities that provide a service to the general public (e.g., parks and roads).

Funding for capital projects on Montana's airports comes from a variety of sources. The three primary funding sources for general aviation airport projects include federal grants from the Federal Aviation Administration (FAA), Montana Department of Transportation (MDT) grants, and public/private funding. Public/private funding must be provided for all costs typically not eligible for federal or state grants.

8.6.1 Federal Aviation Administration Grants

Federal funding for airports most often comes from Federal Aviation Administration (FAA) grants. The FAA has a long history of grant funding intended to promote the development of airports to meet the nation's needs. After World War II, the federal government embarked on a Grants-In-Aid Program to units of state and local government. This early program, the Federal Aid Airport Program (FAAP), was authorized by the Federal Treasury Act of 1946 and provided its funding from the Treasury.

A more comprehensive program was established with the passage of the Airport and Airway Development Act of 1970. This act provided grants for airport planning under the Planning Grant Program (PGP) and for airport development under the Airport Development Aid Program (ADAP). These programs were funded from a newly established Airport and Airway Trust Fund, which received funds from taxes on airline tickets, airfreight, and aviation fuel. The authority to issue grants under these two programs expired on September 30, 1981.

The Airport Improvement Program (AIP) was established by the Airport and Airway Improvement Act of 1982. The initial AIP provided funding legislation through fiscal year 1992. Since then, Congress has authorized and appropriated funds for AIP projects on a yearly basis.

Funding for this program is generated from a tax on airline tickets, freight way bills, international departure fees, general aviation fuel, and aviation jet fuel. The FAA uses these funds to provide grants at eligible airports under the AIP.
Federal Airport Improvement Funds must be spent on FAA eligible projects as defined in FAA Order 5100.38 "Airport Improvement Program (AIP) Handbook." In general, the handbook states that:

- An airport must be in the currently approved National Plan of Integrated Airport Systems (NPIAS).
- Most public-use airports improvements are eligible for 90 percent federal funding, with the remaining 10 percent coming from local or state matching funds.

In addition, revenue-producing items such as aircraft self-serve fuel systems and hangars may be eligible for federal funding under certain conditions. All eligible projects must be depicted on an FAA-approved Airport Layout Plan.
In 2001, a non-primary airport entitlement program was authorized. This program provided up to $150,000 in FAA grant funds each year to general aviation airports that were listed in the NPIAS and were not a primary service airport providing airline service for passengers. Under this program, the FAA pays 90 percent of all engineering, inspection, testing, land acquisition, administrative, and construction costs for eligible projects. The sponsor must pay a local 10 percent match. When this program was renewed in 2004, certain revenue producing items of work, like T-hangars and fuel facilities, could be considered for funding by the FAA, but only once all safety related improvements had been completed. The FAA revised the requirements for such grants to require that there are no safety related needs for three years.
FAA grants are funded through the Aviation Trust Fund as collected through user-generated taxes and distributed in accordance with the FAA AIP by entitlement formula or discretionary provisions. There are three types of FAA grants.

8.6.2 FAA Entitlement Grants

Commercial service airports with greater than 10,000 passenger enplanements are eligible to receive primary entitlement grants. The amount of the grants are based on the level of passenger enplanements. In general, the basic formula provides increased funding as the number of passenger enplanements increase.
General aviation airports (and commercial service airports with fewer than 10,000 commercial enplanements) are eligible to receive non-primary entitlement grants of up to $150,000 per year. FAA entitlement funds provide for 90 percent of the cost of eligible projects with a 10 percent local match required. These funds can be dedicated for AIP-eligible projects and can be carried over and accumulate up to four years for a total of $600,000.

8.6.3 FAA Discretionary Grants

Any remaining AIP funds at the national level not mandated by set-asides or assigned to entitlements are designated as discretionary funds, and may be used for funding eligible FAA projects. Discretionary funds are airport and project specific, and based on the national priority system. Eligible discretionary projects are typically those that enhance airport capacity, address noise, or enhance safety and security, or are directed to certain national project priorities. Discretionary funds, which vary from year-to-year, provide for 90 percent of the cost of eligible projects with local or state funds providing the 10 percent match.

8.6.4 FAA State Apportionment Grants

FAA funds made available to states under various conditions, as apportioned based on an area/population formula within the 50 states. The distribution of these grants is decided through a collaborative effort between the FAA and Montana DOT.
Other sources of FAA funding include Facilities and Equipment funding for facilities such as air traffic control towers and some runway instrumentation. This funding is separate from the AIP program. Federal noise funds may also be available for noise mitigation projects.

8.6.5 Montana Department of Transportation Grants

The Montana Department of Transportation has a grant program for general aviation airports. The MDT Aeronatics Division grants pay up to 50 percent of the sponsor's local share of FAA eligible costs. In addition to the grants MDT has available, a sponsor may accept a loan up to 100% of the local match. Each year the Montana Aeronautics Board meets to decide how the loan and grant distribution is made. An airport that is not part of the NPIAS program, may also submit an application for a grant towards and improvement project at their respective airports as well, and often times, the non-NPIAS airports receive those grants or loans. The grant and loan program is funded by a two cent tax on aviation fuel sold in Montana. The commercial service airlines have the ability to request a refund of the tax that they have paid, so the amount available each year fluctuates depending on the requests by the airlines.

8.6.6 Local Funding

The sponsor of the airport typically provides local funding. Such funding must be used to make up the balance after FAA and MDT participation for the grant-eligible project costs. Sponsor funds are generated by airports from local taxes, fuel sales, lease agreements, and other similar incomes, and can be supplemented by local municipalities. Commercial service airports have the additional option of generating revenue through a passenger facility charge (PFC). With FAA approval, the airport can levy a PFC of up to $4.50 on each enplaning passenger.
Another potential source of local funds for airport improvements is from private investors and donors. Private investors may construct needed facilities as part of a lease agreement with an airport that will allow them to amortize their investments over time. This type of funding is particularly suitable for hangar development. In some instances airport users may agree to donate funds for specific improvements, such as lighting or navigational equipment, because it will assist them in conducting operations at the airport.

APPENDIX A AIRPORT INVENTORY AND DATA SURVEY

APPENDIX B EAS COMMUNITIES JUNE 2014

APPENDIX C FAA RESPONSE TO AOPA ON VOR DECOMISSIONS

APPENDIX D COMMUNICATIONS FREQUENCIES MONTANA AIRPORTS

APPENDIX E CAPITAL IMPROVEMENT COST ESTIMATES

FAA ID	Associated City	Airport_Name	RW Length	RW Lighting	TW Upgrade	Approach Upgrade	Fuel Upgrade	AWOS/ ASOS	Tie Downs	Courtesy Car	Total
EAS Commercial Service											
BTM	Butte	Bert Mooney				150,000					
GGW	Glasgow	Glasgow Intl.			5,000,000						
MLS	Miles City	Miles City			5,680,000						
OLF	Wolf Point	L. M. Clayton			3,818,250						
Total EAS Commercial Service			**-**	**-**	**14,498,250**	**150,000**	**-**	**-**	**-**	**-**	**14,648,250**
GA Level 1											
3U3	Anaconda	Bowman Field			3,005,500	150,000	300,000			5,000	
6S0	Big Timber	Big Timber				150,000					
CII	Choteau	Choteau			2,500,500			125,000		5,000	
CTB	Cut Bank	Cut Bank Municipal			2,651,000						
38S	Deer Lodge	Deer Lodge-City-County			2,900,000						
EKS	Ennis	Ennis - Big Sky									
88M	Eureka	Eureka		210,000		150,000	190,000				
79S	Fort Benton	Fort Benton			2,150,000		190,000			5,000	
6S5	Hamilton	Ravalli County				150,000					
S27	Kalispell	Kalispell City	1,250,000	205,000		150,000	190,000	125,000			
S59	Libby	Libby				150,000					
LVM	Livingston	Mission Field			2,850,500						
8S1	Polson	Polson				150,000		125,000			
9S2	Scobey	Scobey			2,010,000					5,000	
SBX	Shelby	Shelby						125,000			
32S	Stevensville	Stevensville	2,500,000			150,000	190,000	125,000		5,000	
9S5	Three Forks	Three Forks				150,000	190,000				
7S1	Twin Bridges	Twin Bridges			2,149,500	150,000				5,000	
Total GA Level 1			**3,750,000**	**415,000**	**20,217,000**	**1,500,000**	**1,250,000**	**625,000**	**-**	**30,000**	**27,787,000**

FAA ID	Associated City	Airport_Name	RW Length	RW Lighting	TW Upgrade	Approach Upgrade	Fuel Upgrade	AWOS/ ASOS	Tie Downs	Courtesy Car	Total
GA Level 2											
00F	Broadus	Broadus				150,000		125,000			
LTY	Chester	Liberty County				150,000		125,000			
S71	Chinook	Edgar G. Obie				150,000					
4U6	Circle	Circle Town County						125,000			
M46	Colstrip	Colstrip					110,000				
6S3	Columbus	Columbus (Wolterman Memorial)				150,000		125,000			
S01	Conrad	Conrad									
4U9	Dell	Dell Flight Strip				150,000		125,000			
97M	Ekalaka	Ekalaka				150,000					
1S3	Forsyth	Tillitt Field					110,000				
29S	Gardiner	Gardiner	1,250,000	185,000	320,000	150,000		125,000			
HWQ	Harlowton	Wheatland County at Harlowton				150,000	110,000				
M75	Malta	Malta		225,000							
S34	Plains	Plains				150,000	110,000				
RED	Red Lodge	Red Lodge				150,000	110,000				
52S	St. Ignatius	St. Ignatius	2,500,000	180,500		150,000		125,000			
S64	Stanford	Stanford				150,000		125,000			
9S4	Superior	Mineral County	1,250,000	197,500		150,000		125,000			
8U8	Townsend	Townsend				150,000		125,000			
7S6	White Sulphur Springs	White Sulphur Springs				150,000		125,000			
Total GA Level 2			**5,000,000**	**788,000**	**320,000**	**2,250,000**	**550,000**	**1,375,000**	**-**	**-**	**10,283,000**

FAA ID	Associated City	Airport_Name	RW Length	RW Lighting	TW Upgrade	Approach Upgrade	Fuel Upgrade	AWOS/ ASOS	Tie Downs	Courtesy Car	Total
GA Level 3											
3U7	Augusta	Benchmark		182,500							
3U8	Big Sandy	Big Sandy									
6S1	Bridger	Bridger Municipal		170,000			110,000				
8S0	Browning	Starr-Browning Airstrip									
4U4	Chinook	Hebbelman			100,000				5,000		
RC0	Clinton	Rock Creek		205,000	100,000						
5U1	Dutton	Dutton		156,500			110,000				
5U5	Fairfield	Fairfield		190,000			110,000				
37S	Fort Peck	Fort Peck		205,000							
48S	Harlem	Harlem					110,000				
S09	Hot Springs	Hot Springs					110,000		5,000		
JDN	Jordan	Jordan					110,000				
80S	Lavina	Lavina		173,000	100,000		110,000				
S69	Lincoln	Lincoln					110,000				
23S	Seeley Lake	Seeley Lake		228,750							
8U6	Terry	Terry					110,000				
THM	Thompson Falls	Thompson Falls					110,000				
7S7	Valier	Valier		153,750	100,000				5,000		
58S	Whitefish	Whitefish	1,250,000	128,000	100,000						
Total GA Level 3			**1,250,000**	**1,792,500**	**500,000**	**-**	**1,100,000**	**-**	**15,000**	**-**	**4,657,500**

FAA ID	Associated City	Airport_Name	RW Length	RW Lighting	TW Upgrade	Approach Upgrade	Fuel Upgrade	AWOS/ ASOS	Tie Downs	Courtesy Car	Total
GA Level 4											
3U4	Ashland	St. Labre Mission							5,000		
3U5	Augusta	Augusta							5,000		
53U	Bigfork	Ferndale Airfield							5,000		
3U9	Boulder	Boulder							5,000		
S04	Condon	Condon USFS									
4U7	Conner	West Fork Lodge									
5U0	Denton	Denton							5,000		
5U7	Fort Smith	Fort Smith Landing Strip							5,000		
U09	Harlem	Fort Belknap Agency							5,000		
6U6	Hogeland	Hogeland							5,000		
0S1	Meadow Creek	Meadow Creek USFS									
S00	Opheim	Opheim							5,000		
7U8	Richey	Richey							5,000		
M42	Russian Flat	Russian Flat							5,000		
8U1	Sand Springs	Sand Springs Strip							5,000		
8U2	Schafer	Schafer USFS									
8U3	Scobey	Scobey Border Station (East Poplar International)							5,000		
8U5	Sunburst	Sunburst							5,000		
8U9	Townsend	Canyon Ferry									
9U1	Wilsall	Wilsall							5,000		
BB0	Winifred	Black Butte North							5,000		
BW8	Winifred	Bullwhacker							5,000		
CW0	Winifred	Cow Creek							5,000		
LC0	Winifred	Left Coulee							5,000		
MT3	Winifred	Knox Ridge							5,000		

FAA ID	Associated City	Airport_Name	RW Length	RW Lighting	TW Upgrade	Approach Upgrade	Fuel Upgrade	AWOS/ ASOS	Tie Downs	Courtesy Car	Total
WH0	Winifred	Woodhawk							5,000		
7S2	Winnett	Winnett							5,000		
7S4	Wisdom	Wisdom							5,000		
02T	Wise River	Wise River							5,000		
Total GA Level 4			-	-	-	-	-	-	120,000	-	**120,000**
Total System			10,000,000	2,995,500	35,535,250	3,900,000	2,900,000	2,000,000	135,000	30,000	**57,495,750**

APPENDIX F AIRPORT DATA SHEETS