CHAPTER 1: AIRPORT/COMMUNITY OVERVIEW & AVIATION FORECASTS

Purpose and Scope

The information presented in this report represents the study findings for the 2020 Riddick Field Airport Planning Study prepared for Granite County, the airport owner. Airport planning documents are prepared in accordance with Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5070-6B, *Airport Master Plans*. This project was funded in part by the FAA under grant number AIP 3-30-0058-004-2021.

This study for the Riddick Field Airport will serve as an updated guide identifying future development necessary to accommodate existing and future aviation demands. The airport's current and forecasted safety, capacity and compatibility needs are addressed in this study. Many projects have been completed and new planning considerations have surfaced since the last Master Plan study was completed in 2004.

The airport sponsor and KLJ Engineering (KLJ) developed the scope for the project in cooperation with FAA Airports District Office and Montana DOT – Aeronautics Division officials to identify the specific needs and objectives of the airport owner. The scope includes work tasks with the purpose of documenting existing conditions, forecasting future aviation activity levels, identifying future facility requirements, formulating, and evaluating development alternatives, preparing implementation plans and engaging the public and other government agencies. Recommendations will be made for improvements that are triggered by safety requirements or demand thresholds.

The project received notice to proceed in September 2020 from the airport sponsor. The baseline project data is from inventory efforts completed in November 2020. Data from year 2019 was used to establish a baseline of existing airport information.

Previous Planning Studies

Granite County completed a Master Plan and Site Selection Study in 2004. The study recommended a new airport site due to the constraints on the existing airport site. There was lack of consensus and community support for the land acquisition that would be required, and the County determined to continue to maintain and improve the existing Riddick Field site.

Planning Objectives

Based on the background and planning considerations, the planning objectives for this study identify the methods used to meet the airport development goals outlined by the airport owner. The key project objectives are identified as follows:

- Existing pavements in need of rehabilitation
- Accommodate additional hangar demand
- Add instrument capabilities to the airfield

- Accommodate medical flights
- Inclusion into the NPIAS

Airport Planning Process

Guidelines for completing a Plan are set forth in FAA AC 150/5070-6B. Each planning study scope and level of effort is customized to fit each individual airport's needs and address critical issues. The Airport Planning process involves several coordinated steps. The planning study for Riddick Field (U05) consists of the following elements:

- **Pre-Planning** – Airport development concerns are identified and planning objectives prepared to address these issues. An overall vision for the study is formulated that will guide the process.
- **Inventory of Existing Conditions** – Overview of airport setting and environment; infrastructure and assets which includes airside, landside, and support facilities; airspace, navigational aids, and airport access utilizing data from an FAA Aeronautical Survey.
- **Forecast of Aviation Demand** – Using established forecasting methods, estimate current and project future airport activity for general aviation, air cargo, and passenger enplanements.
- **Facility Requirements** – Compare the existing facilities with the future demand and identify the facility requirements to satisfy the aviation safety, capacity, and compatibility needs.
- **Alternatives Development and Evaluation** – Identify and evaluate options considering both on-airport and off-airport impacts consistent with the study goals and objectives. A preferred alternative is selected.
- **Environmental Overview** – Provide an overview of anticipated environmental impacts as part of the development of alternatives.

Alternatives Analysis

The alternatives evaluation process is the most collaborative portion of the master plan study. The alternatives are reviewed and refined through meetings with federal/state agency representatives and the study's advisory group. Evaluation criteria is used to compare the alternatives. The alternative evaluation criteria for this study includes the following:

Operational Performance - How does each alternative allow the airport, and specifically the runway/taxiway system, to operate as a functional system, meet design standards, and meet the needs of the community.

Best Planning Tenets – What are the strengths and weaknesses of the alternatives as it relates to 1) flexibility to meet demand and react to unforeseen changes; 2) highest and best on- and off-airport land use; 3) feasibility to implement politically and within practical phases; and 4) ability to satisfy airport user needs.

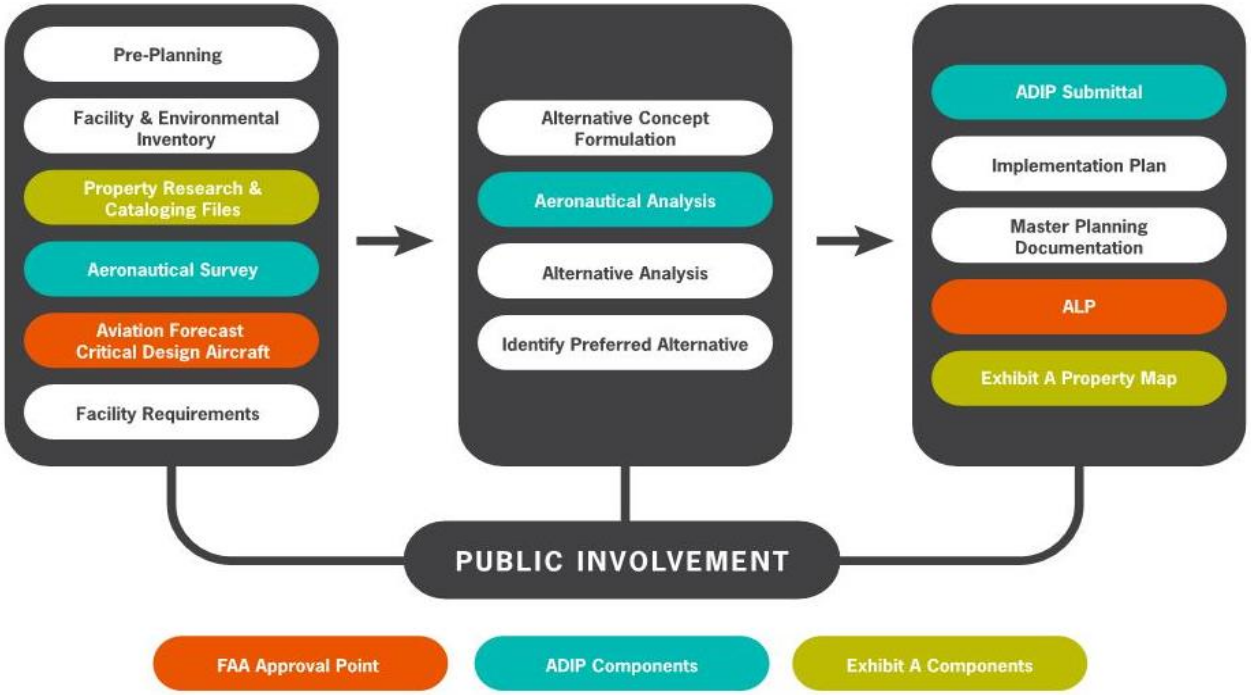
Environmental Factors – What are the potential effects of the alternatives upon the natural and built environment.

Fiscal Factors – How much will the options cost as compared to each other, while making the most use of federal, state and local resources.

- **Implementation Plan** – Provide a comprehensive plan for implementation of the preferred alternative including project triggers, sequencing, cost estimates, land use compatibility and environmental considerations.
- **Airport Layout Plan (ALP)** – Document the existing and planned airport facilities through a set of drawings approved by the airport sponsor, state, and FAA.

- **Stakeholder and Public Involvement** – Prepare and execute a plan to engage important airport stakeholder and the public throughout the study to gather their input and address their concerns.

Figure 1-1 – Airport Planning Process



Source: KLJ

Study Documentation & Approvals

The Master Plan Update was divided into chapters of information to document airport planning data, analysis, findings, and recommendation of the study. The following sections included in the narrative report:

- Chapter 1 – Airport, Community & Aviation Activity
- Chapter 2 – Runways & Taxiways
- Chapter 3 – Terminal Area & Support Facilities
- Chapter 4 – Implementation
- Chapter 5 – Airport Layout Plan

- Appendix A – Glossary of Terms
- Appendix B – General Aviation Airports 101
- Appendix C – Meetings and Public Involvement
- Appendix D – Runway Length
- Appendix E – Recycling Solid Waste

Each chapter was prepared separately and distributed to the airport owner for review and comment. After the airport owner's review, each draft chapter findings were made available to key airport

stakeholders including the State and FAA for input prior to a final review and approval by the airport owner. Each approved final draft chapter was then published on the airport's website for public viewing.

The airport planning study was adopted by Granite County on May 24, 2022. The ALP was submitted to the State and FAA for review and approval in August 2022.

Public Involvement

Public involvement is a key component to the successful development of an Airport Master Plan study. The purpose is to encourage information sharing and feedback from airport stakeholders including the airport owner, airport users/tenants, local government officials, resource agencies, elected and appointed officials and the public. Public involvement provides valuable input to assist the airport owner in decision making and develop consensus on study conclusions.

An Airport Planning Advisory Committee (APAC) was established to provide input throughout the life of the study. The purpose of the APAC was to facilitate group discussion and feedback from different stakeholder groups, providing recommendations to the airport owner. APAC members represented the following stakeholder groups:

- Granite County
- Town of Philipsburg
- Riddick Field Airport Users/Tenants
- Community/Area Businesses
- Montana DOT: Aeronautics Division
- Federal Aviation Administration (FAA): Helena Airports District Office

A project website (riddickfield.airportplan.net) was developed as a forum to share information about the project with the public. This website was used to distribute project documentation as well as collect feedback. Draft study documents were posted progressively and made available for review. An online comment form ran throughout the life of the project to provide feedback directly to the project team.

The County Commission met on May 24, 2022 for the purpose of soliciting input on the project's findings. See **Appendix C: Meetings and Public Involvement** for other information including copies of public involvement meeting agendas, attendees, presentations, and summaries.

Airport & Community Overview

The Riddick Field Airport (U05) is a general aviation airport serving the town of Philipsburg and surrounding areas of Granite County in western Montana. The public-use airport is owned and operated by Granite County. The airport is a critical community asset providing vital connectivity to the region.

Riddick Field has a single paved runway. Runway 16-34 is 3,600 feet long by 60 feet wide asphalt runway. The runway is lighted to accommodate night operations and serves visual only approaches.

The airport provides multiple aeronautical functions including emergency response, business, travel, agriculture support, and community access. Riddick Field is currently in the process of being included in the National Plan of Integrated Airport System (NPIAS). According to the Airport Master Record

(December 2020), the airport is home to 11 based aircraft and accommodates 1,700 annual flight operations.

History

Riddick Field was constructed in the 1960's through a federal grant FAAP 9-24-0070-C901 which was used to acquire land and pave a 3,600' x 60' runway and taxiways and apron and construct the access road. In 1984 a second grant, AIP 3-30-0058-01, was used to add medium intensity lighting and a new beacon and windcone along with pavement rehabilitation. In 2004, a federal grant, AIP 3-30-0058-03-2003 was used for the last Airport Master Plan and Site Selection Study. The planning study recommended to replace Riddick Field with a new airport on a new site approximately 3 miles northwest of Riddick Field in the same valley. The runway recommended was 6,300' x 75' for ARC B-II aircraft with 1 mile visibility instrument approach capabilities. The project was determined to be eligible for FAA funding however, the plans never materialized as there was not sufficient public support to relocate the facility.

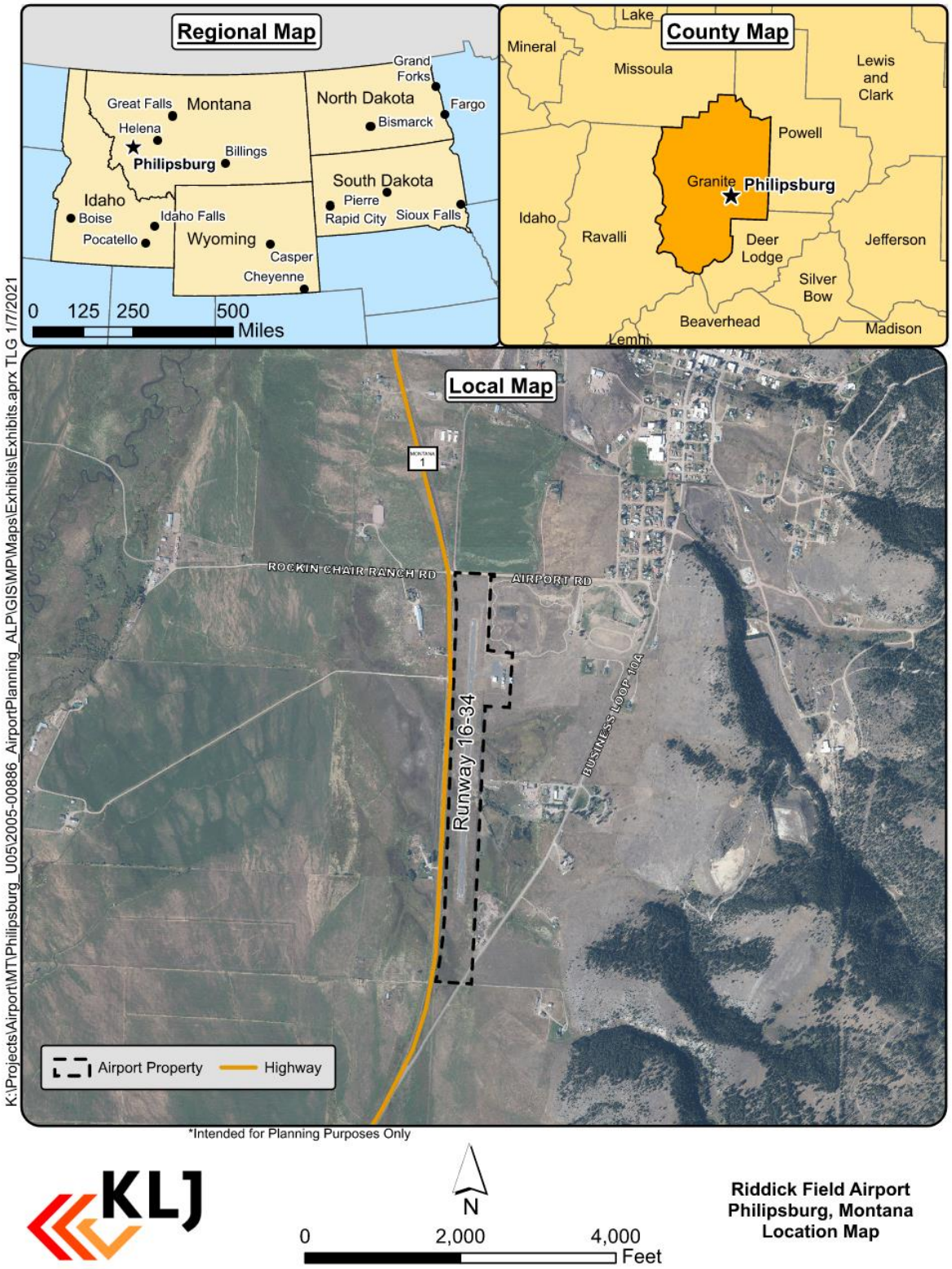
Location and Area Setting

The town of Philipsburg is located in south western Montana in Granite County. The community is nestled in a valley accessible by Montana Highway 1. Riddick Field is located 1 mile southwest of the Philipsburg central business district between Montana Highway 1 and Highway 10A. Access to the airport is by Airport Road and an unpaved access road.

The airport elevation is 5,212 feet above mean sea level (AMSL) with generally flat terrain immediately around the airport. Just beyond, the terrain rises as a mountain range exists to the east and south of the airfield. The primary land use surrounding the airport is agricultural and pastureland. In addition, the state highway is immediately adjacent to the airport on the western edge and runs parallel to the runway. A US Forest Service ranger station is also present along the eastern edge of the airfield.

Outside of the town of Philipsburg, the area is sparsely populated with the census reporting a population density in Granite County of 1.8 people per square mile while the State of Montana has an average of 7.09 people per square mile. **Figure 1-2 – Airport Location Map** provides an overview of the airport's local environment.

Figure 1-2 – Airport Location Map



Climate

Riddick Field is located between a semi-arid and humid continental climate zone. Winters are long and dry, but relatively mild, while summers are warm and distinctly wetter. The nearest weather station is located just next to the airfield at the United States Forest Service Ranger Station. This station reports an average annual temperature 42.3°F from 1981-2010 with an annual precipitation of 15.31 inches. Prevailing winds are from the south and are generally aligned with the airport's runway orientation.

Table 1-1 – Average Weather

Month	Precipitation (in.)	Average Low Temperature (°F)	Average High Temperature (°F)
January	0.49	16.3	35.4
February	0.54	16.7	38.1
March	1.00	22.6	46.3
April	1.46	27.6	54.3
May	2.54	34.0	62.6
June	2.36	40.5	70.4
July	1.45	43.8	79.8
August	1.59	42.4	80.3
September	1.43	35.4	70.2
October	1.18	28.8	57.8
November	0.68	21.5	42.9
December	0.59	14.0	32.9

Source: National Weather Service Climate 1981-2010 – Philipsburg Ranger Station

Airport Ownership & Management

Riddick Field is owned and operated by Granite County. An Airport Advisory Board is in place and provides recommendations to the Granite County Commission who is the decision-making body. The airport manager has typically been a member of the Airport Advisory Board. Maintenance of the airport is performed by the Airport Advisory Board members and county staff.

Land

The airport land consists of 51.59 acres owned by Granite County in fee simple. There is also a special use permit for 2.76 acres with the U.S. Forest Service for a central portion of the airport and there are 9.70 acres of avigation easements to protect runway approaches for height and incompatible land use.

Airport Role & Design

Riddick Field is a general aviation (GA) airport, meaning it accommodates aviation activities other than scheduled commercial air service. General aviation airports provide vital aeronautical functions serving the public interest including emergency response, critical community access, personal and business aviation, and commercial, industrial, and economic activities.

Public use airports in the United States with instrument procedures within 50 nautical miles are listed in **Table 1-2 – Surrounding Public Airports** to provide background into the other area airports.

Table 1-2 – Surrounding Public Airports

Airport Name / City	FAA ID	Location from Airport	Driving Distance /Time	Based Aircraft	Instrument Approach	Longest Runway
Riddick Field Airport / Philipsburg	U05	--	--	11	None	3,600 Feet
Bowman Field Airport / Anaconda	3U3	21 SE	47 m / 35 min	12	GPS	6,010 Feet
Deer Lodge-City-County Airport / Deer Lodge	38S	22 NE	59 m / 1 hr	18	GPS	5,800 Feet
Stevensville Airport / Stevensville	32S	33 W	105 m / 2 hrs	43	GPS	3,809 Feet
Ravalli County Airport / Hamilton	6S5	34 W	125 m / 2.25 hrs	107	GPS	4,200 Feet
Bert Mooney Airport / Butte	BTM	40 E	59 m / 1.25 hrs	36	ILS	9,000 Feet
Missoula International Airport / Missoula	MSO	48 NW	81 m / 1.25 hrs	169	ILS	9,501 Feet

Source: Airnav.com & MapQuest.com

Montana airports are classified into one of seven categories, each with a unique set of characteristics and services. These classifications are Commercial Service, Essential Air Service, Level 1 – General Aviation (GA), Level 2 – GA, Level 3 – GA, Level 4 – GA, and Level 4 Remote – GA. See **Appendix B: General Aviation Airports 101** for additional details. The 2015 Montana State Aviation System Plan (SASP) **classified Riddick Field as Level 4 – General Aviation airport**. Level 4 airports are described as maintaining a limited contributing role for the local economy and community access.

The National Plan of Integrated Airport Systems (NPIAS) identifies nearly 3,330 airports nationally that are included in the national airport system. The NPIAS, which is administered by the FAA, contains all commercial service airports, all reliever airports, and selected public-owned general aviation airports that link the community to the national air transportation system. In 2012 the FAA released the ASSET Report that further categorized the General Aviation airports in the NPIAS into 5 levels (National, Regional, Local, Basic and Unclassified).

Riddick Field is currently not included in the NPIAS, however the airport has started the process and is expected to be included. Once within the NPIAS, the Riddick Field would be classified as a non-primary general aviation airport. It would further be classified as a Basic Airport within the General Aviation category.

The FAA's Airport Reference Code (ARC) identifies a design category based on aircraft wingspan, tail height and approach speed for aircraft types that regularly use the airport. The existing airfield at Riddick Field is designed as ARC B-I(Small)-Visual with Taxiway Design Group (TDG) 1A standards.

Table 1-3 – Airport Role & Design summarizes the airport's role and design. See **Appendix B: General Aviation Airports 101** for more details on FAA design classifications.

Table 1-3 – Airport Role & Design

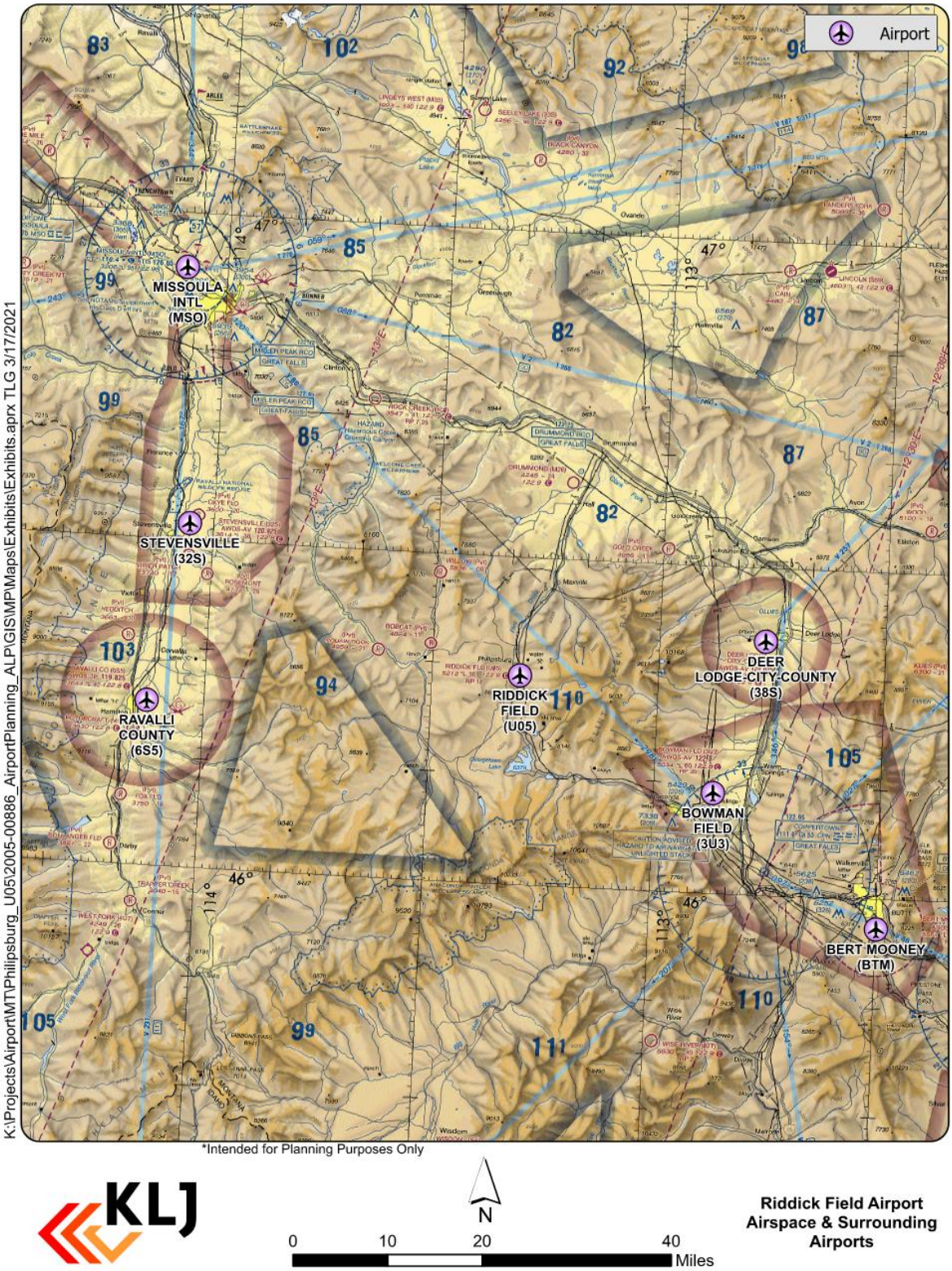
Airport ID	State Classification	FAA Classification	FAA GA Group	ARC	TDG
U05	Level 4 – General Aviation	General Aviation*	Basic*	B-I(Small)-VIS	1A

Source: MT SASP, ARC = Airport Reference Code, TDG = Taxiway Design Group
**Note: Upon inclusion to NPIAS*

Airport Service Area

The Airport Service Area is the geographic area which serves the basic public aviation needs. The core Riddick Field service area provides service to populations where Riddick Field will be the closest NPIAS airport. This would primarily cover the aviation needs of the Flint Creek Valley and areas within a 30-minute driving distance from the airport.

Figure 1-3 – Surrounding Airports



Aviation Activity

The Aviation Activity Forecast analyzes current and future airport activity at Riddick Field (U05). Forecasting provides an airport with a general idea of the magnitude of growth, as well as fluctuations in activity anticipated over the forecast period. They assist the Airport in determining existing and planned future facility needs based on airport activity level estimates and projections. Forecasts attempt to develop a realistic estimate of future changes.

Forecasting efforts are based on a "snapshot" of existing aviation trends and socioeconomic climate. As such, forecasting tends to be a dynamic element of airport master planning. When conditions change dramatically, forecasts should be reviewed and updated accordingly to reflect the changed environment.

Since the 2004 Airport Master Plan the area population remained steady. There has been an increase in second home development, tourist activity in downtown Philipsburg, and destination ranch activity such as the Ranch at Rock Creek.

The forecasts developed for U05 will be important to adequately plan, size, and sequence development of future facilities to meet future projected growth. Development at airports, however, is demand-based from actual numbers rather than forecasts.

To thoroughly analyze and develop a probable aviation forecast, a technical review has been completed using several methods to help quantify the potential aviation activity over the next 20 years.

Forecast Rationale

Forecasting the demand for airport use is a critical step in airport development. It allows an airport to examine its ability to satisfy the needs of the aircraft and people it serves, and to determine the approximate timing of necessary improvements by projecting airport user activity levels.

Forecasts developed for airport master plans and/or federal grants must be approved by the Federal Aviation Administration (FAA). It is the FAA's policy, listed in FAA AC 150/5070-6B, Airport Master Plans, that FAA approval of forecasts should be consistent with the Terminal Area Forecasts (TAF). Master plan forecasts for operations and based aircraft are consistent with the TAF if they meet the following criteria:

1. Forecasts differ by less than 10 percent in the five-year forecast and 15 percent in the 10-year period, or
2. Forecasts do not affect the timing or scale of an airport project, or
3. Forecasts do not affect the role of the airport as defined in the current version of FAA Order 5090.5, Formulation of the NPIAS and ACIP.

Forecasts that are inconsistent with the TAF require additional FAA review to confirm the planning assumptions and appropriate methodologies are used. The TAF model used for this report is from the 2019 FAA TAF published in January 2020. This is latest data available when the forecasting effort began for this study.

Factors Affecting Forecasts

FAA provides general guidance in evaluating factors that affect aviation activity. FAA AC 150-5070-6B states:

> *"Planners preparing forecasts of demand or updating existing forecasts should consider socioeconomic data, demographics, disposable income, geographic attributes, and external factors such as fuel costs and local attitudes towards aviation."*

For purposes of this forecast, the following defining factors have been used to develop the forecast:

1. Based on availability of data when the project began (September 2020), 2019 has been used as the baseline year.
2. FAA data from 2020 (where available) has been used to validate forecast assumptions and update the forecast baseline.
3. The forecast period is 20 years encompassing years 2021 through 2041.
4. The most recent 2019 estimates and future projections of socioeconomic and demographic trends have been utilized for the airport service area.
5. The core airport service area is considered Granite County and Philipsburg, MT for this forecasting effort.
6. Local input from airport management, airport tenants, airport users, potential airport service providers and facility developers, local business interests as represented by chamber of commerce and economic development types of organizations, was solicited to include a valid assessment of the socioeconomic and aviation environment in which the airport operates.

The forecasts prepared for the airport assume an unconstrained scenario where facilities are available for use to meet demand. Any constrained forecasts prepared will be noted throughout the document. Time periods include short-term (5-year), mid-term (10-year) and long-term (20-year) resulting in forecasts for years 2026, 2031, 2036 and 2041. Forecasts may be developed using a composite of methodologies over the planning period.

Socioeconomic Data

Socioeconomic information within the airport service area can provide insight into factors that affect aviation activity at an airport. Commonly evaluated metrics include population, employment, income, gross regional product, and retail sales. Historic trends, current data and forecast estimates are evaluated in this section to identify socioeconomic trends that may affect aviation activity forecasts at U05. Growth rates are used as a method to compare the airport service area to other regional, statewide, and national trends. For purposes of this forecast analysis, Granite County has been determined to represent the core local airport service area.

Aviation at a general aviation airport has very few objectively measurable activities that can be used to forecast the future. Based aircraft and leases are accurately measured, but airport operations are seldom measured with accuracy. Therefore, the exercise of including population, income and employment is add objectively measurable features of a community in relation to the state and country to use as a basis of the growth rates that might occur related to aviation activity in the community. The forecast annual growth rates in **Tables 1-4** through **1-7** will be used to determine aviation growth rates.

Population

Population is a basic indicator of people in the area and particularly shows trends of growth or decline in relation to other areas such as the state or country.

Table 1-4 – Population

Year	Philipsburg	Granite County	Montana	United States
1990	915	2,528	800,204	249,622,814
2000	910	2,849	903,773	282,162,411
2010	849	3,080	990,507	309,330,219
2018 (est.)	927	3,374	1,057,875	328,094,150
Historical Annual Growth Rate	*0.05%*	*1.03%*	*1.00%*	*1.01%*
2021		*3,421*	*1,079,287*	*335,015,608*
2026		*3,501*	*1,114,960*	*346,633,689*
2031		*3,583*	*1,149,214*	*357,927,450*
2036		*3,667*	*1,181,156*	*368,622,498*
2041		*3,753*	*1,210,572*	*378,657,556*
Forecast Annual Growth Rate		*0.46%*	*0.57%*	*0.61%*

Source: Woods & Poole Economics, U.S. Census Bureau

Income

Per Capital Personal Income (PCPI) was also considered as a factor affecting aviation activity. Those who have more disposable income may have a higher propensity to utilize the time savings of aviation, or simply more disposable income for leisure.

Table 1-5 – Per Capita Personal Income

Year	Granite County	Montana	United States
1990	$13,947	$15,469	$19,621
2000	$19,332	$23,195	$30,657
2010	$31,482	$35,899	$40,545
2018 (est.)	$40,279	$46,957	$53,517
Historical Annual Growth Rate	*3.86%*	*4.04%*	*3.65%*
2021	*$45,202*	*$52,961*	*$60,344*
2026	*$56,102*	*$66,469*	*$75,801*
2031	*$70,571*	*$84,826*	*$96,940*
2036	*$88,309*	*$107,929*	*$123,761*
2041	*$109,670*	*$136,487*	*$157,191*
Forecast Annual Growth Rate	*4.53%*	*4.84%*	*4.90%*

Source: Woods & Poole Economics, U.S. Census Bureau

Employment

Total employment is the measure of the active workforce.

The largest elements of employment in Granite County are State/Local Government, Farming, Retail and Accommodations/Food Services. These four areas represent 41% of the total employment in the county and 39% of the total earnings.

Table 1-6 – Airport Service Area Employment (2018)

Industry	Employment	% Total Employment	Earnings (millions)
State and Local Government	218	12.1%	$ 9.08
Farming	191	10.6%	$ 2.50
Retail	175	9.7%	$ 2.52
Accommodation and Food Services	164	9.1%	$ 4.05
Real Estate & Rental Leasing	144	7.9%	$ 1.56
Construction	136	7.5%	$ 3.61
Manufacturing	105	5.8%	$ 2.23
Forestry, Fishing, Related Activities	93	5.2%	$ 3.30
Arts, Entertainment, and Recreation	83	4.6%	$ 1.88
Finance & Insurance	82	4.5%	$ 2.23
Professional and Technical Services	68	3.8%	$ 0.94
Other Services (Except Public Administration)	64	3.6%	$ 1.63
Mining	46	2.6%	$ 0.61
Wholesale Trade	44	2.4%	$ 1.79
Federal Civilian Government	38	2.1%	$ 3.48
Transportation and Warehouse	36	2.0%	$ 1.23
Health Care and Social Assistance	26	1.4%	$ 0.58
Educational Services	17	0.9%	$ 0.25
Information	16	0.9%	$ 0.66
Federal Military	15	0.8%	$ 0.43
Utilities	11	0.6%	$ 0.87
Administrative and Waste Services	3	0.1%	$ 0.08
Management of Companies	-	-	-
All Industries	**100% (1,802)**		**100% ($45.57)**

Source: Woods & Poole Economics (2005 dollars)

Table 1-7 – Total Employment (in thousands)

Year	Granite County	Montana	United States
1990	1,340	433,395	138,330,914
2000	1,788	552,689	165,370,795
2010	1,485	616,340	172,901,697
2018 (est.)	1,802	687,160	199,425,624
Historical Annual Growth Rate	*1.06%*	*1.66%*	*1.31%*
2021	*1,854*	*714,189*	*207,309,629*
2026	*1,938*	*757,686*	*220,243,411*
2031	*2,019*	*799,980*	*233,060,108*
2036	*2,092*	*839,073*	*245,033,755*
2041	*2,168*	*876,105*	*256,368,096*
Forecast Annual Growth Rate	*0.78%*	*1.03%*	*1.07%*

Source: Woods & Poole Economics, U.S. Census Bureau

Based Aircraft

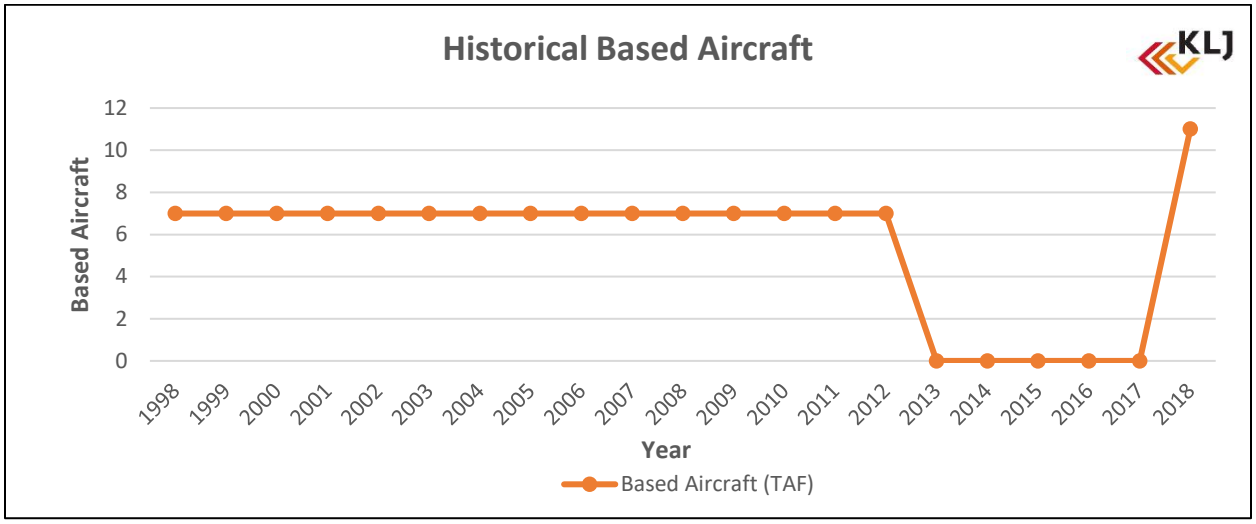
A based aircraft is an operational and airworthy aircraft claiming an airport as its home for most the year. The number and mix of based aircraft are an indication of the demands for airport facilities and services, such as tie-downs, hangars, and fuel facilities. The number of based aircraft also influences the volume of aircraft operations.

Historical Data

Historically, FAA records show the number of based aircraft at Riddick Field has maintained steady at 7 until more recently where it increased to 11. The based aircraft have all been single-engine piston aircraft. From 2013 through 2017, the FAA TAF and the Montana State Aviation System Plan (SASP) indicated that based aircraft at the airport dropped to 0. This however was likely the result of an error in reporting the aircraft and not the actual decline of based aircraft.

The National Based Aircraft Inventory Program (NBAIP) reported in December 2019 that there were 11 validated based aircraft at Riddick Field. This is consistent with the current TAF and information provided by the airport.

Figure 1-4 – Historical FAA TAF Based Aircraft



Source: FAA TAF

Table 1-8 – Based Aircraft Fleet Mix

Aircraft Type	Based Aircraft	Percent of Total
Single-Engine	11	100.0%
Total Based Aircraft	**11**	**100.0%**

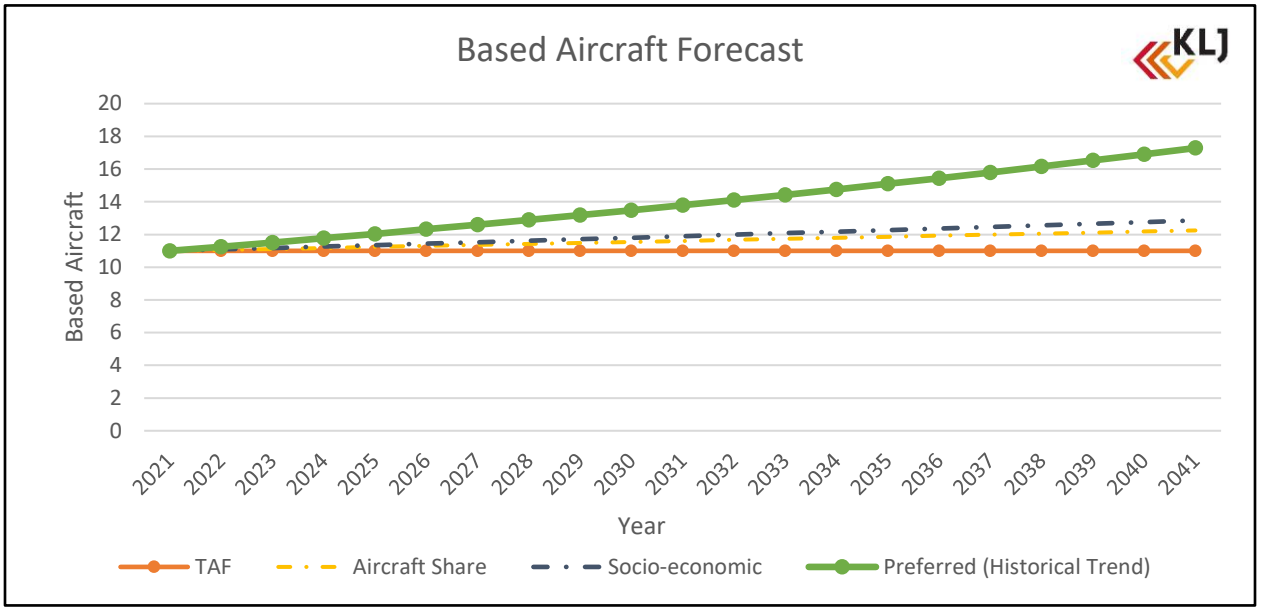
Source: FAA NBAIP (basedaircraft.com)

Forecast

Several current operators at U05 expressed an interest in building their own hangars and basing additional aircraft there. The airport manager indicated that he frequently hears from aircraft owners inquiring about availability of hangar space, although there is no wait list with specific tail numbers associated with it. The stakeholder outreach effort indicated that incremental hangar space would increase the based aircraft count at U05 by 2 to 4 aircraft over the next 10 years.

As discussed above the Montana SASP was not considered due to irregular reporting and the no growth scenario of the TAF was dismissed as unrealistic given the interest from surround tourism businesses and real estate. The 20-year historical trend was selected as preferred with CAGR of 2.29%. This would result in an increase of 6 aircraft by end of planning period

Figure 1-5 – Based Aircraft Forecasting Methods



Source: KLJ Analysis

Table 1-9 – Based Aircraft Forecast

Metric	2021	2026	2031	2036	2041	*CAGR*
Single-Engine	11	12	13	14	15	*1.75%*
Multi-Engine	0	0	1	1	2	-
Total Based Aircraft	**11**	**12**	**14**	**15**	**17**	***2.29%***

Source: KLJ Analysis. CAGR = Compounded Annual Growth Rate

Aircraft Operations

An operation is an aircraft landing or takeoff. Aircraft operations are split into two categories: local and itinerant. Local operations are performed by aircraft that remain in the local traffic pattern and stay within a 20–mile radius. These operations typically include practice landings, touch-and-go operations, practice approaches and maneuvering within the local area. The TAF Local operations are usually performed by recreational and flight training aircraft. Itinerant operations are performed by a landing aircraft arriving from outside the airport area (20 miles) or a departing aircraft that leaves the airport area. Itinerant operations are conducted in all types of aircraft.

Historical Data

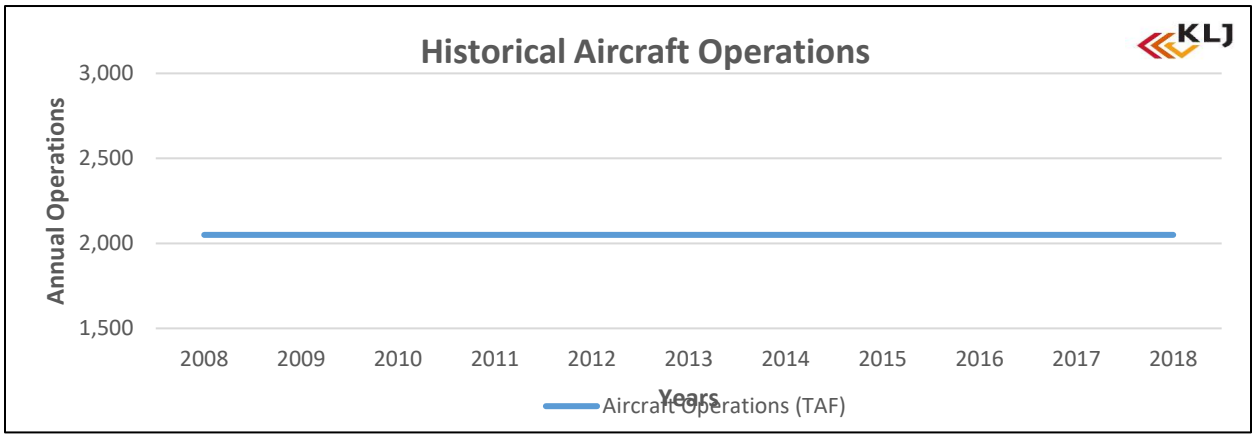
Riddick Field is a non-towered general aviation airport with no instrument approach procedures. Consequently, there is no accurate method to determine itinerant or local operations and estimations are used. The TAF estimated there were 2,050 aircraft operations in 2018 while the FAA Master Record estimated aircraft operations at 1,700 annual operations in 2019.

The reported total operations at U05 in the Montana SASP was 2,050 in 2013 and was estimated to grow to 2,761 by 2033. The SASP projected an annual growth rate of 1.50 percent for Riddick Field over the planning period. **Figure 1-6 – Aircraft Operations** shows baseline operations of 2,050 as reported in the TAF and SASP. Although not shown, the TAF split operations to 61% local and 39% itinerant. The

FAA TFMS data was examined as well, but this recording of instrument activity only showed 4 operations for U05 in 2019.

Additionally, a game camera was placed near the runway and taxiway photographing movements of aircraft passing the camera. The frequency of aircraft was tabulated from the images with the type of aircraft being determined by the registration numbers visible in the images. Approximately six months of data was collected from June 2020 – November 2020. The game camera data shown in **Table 1-10,** was used to help determine an overall estimated fleet mix. With a total of 197 operations, 68% were single engine piston and 26% were turboprop. The remainder were helicopter and multi-engine piston. According to the game camera, the airport has higher use in the summer but less activity later in fall and winter.

Figure 1-6 – Aircraft Operations



Source: FAA TAF

Table 1-10 – Game Camera Aircraft Data (06/2020-11/2020)

Make	Model(s)	Type	Operations
Cessna	170/172/175/180/182/206/210	Single-Engine Piston	83
Pilatus	PC-12	Turboprop	50
Ryan	Navion	Single-Engine Piston	32
Piper	Pacer/Tomahawk/Cherokee	Single-Engine Piston	7
Van's	RV-4/RV-10	Single-Engine Piston	6
Beechcraft	Bonanza	Single-Engine Piston	5
Beechcraft	Baron	Multi-Engine Piston	4
Bell	407/Huey	Helicopter	3
Robinson	R44	Helicopter	2
Tecnam	P92	Single-Engine Piston	2
Beechcraft	King Air 200	Turboprop	2
Piper	Aztec	Multi-Engine Piston	1

Source: KLJ Analysis

Forecasts

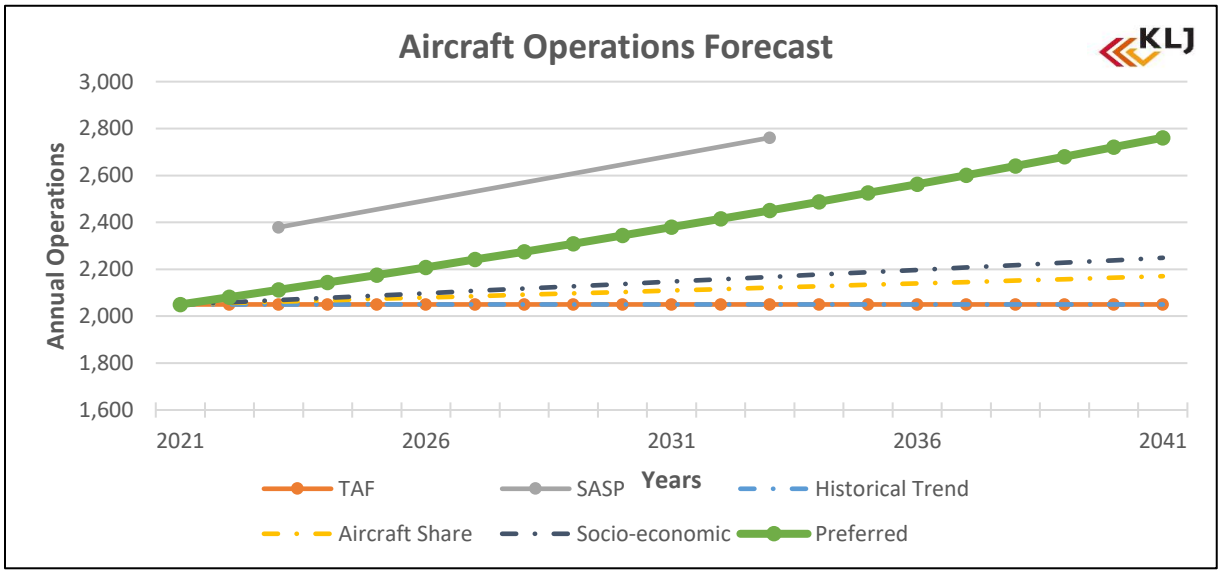
The airport users contacted all voiced concern regarding the current condition of the runway pavement. It is a deterrent to operating aircraft at U05, with many fearing damage to aircraft from crumbling pavement. If the pavement were improved the individuals contacted stated that they would fly 200-300

more operations annually than they currently operate, mostly with single-engine piston aircraft. If the pavement were upgraded, and runway lengthened, there would be more operations, and larger aircraft. Aircraft such as a Cessna Citation CJ2 or CJ3, Honda Jets and Mustangs would operate once or twice monthly at U05, flown by those with part-time residences in the area. Beechcraft King Air 200 type aircraft would operate over 500 operations annually if the runway length was extended. These operations would transport tourists to the Ranch at Rock Creek, and locals with part-time residences.

In **Figure 1-7** and **Table 1-11 – Aircraft Operations Forecast**, the preferred forecast used 2,050 operations as a starting point and used the SASP growth rate of 1.5% due to increasing tourism demand as runway is improved. This accounts for additional aircraft usage and additional medical transport flights. The distribution of operations was forecast as 55% itinerant and 45% local as more private flights, medical flights, and tourism will account for the increase operations while local flights remain steady.

Stakeholder outreach was conducted as part of the forecasting effort. Individuals representing local airport operators, medical services, tourism/recreation interests, government and civic groups, and local businesses and developers were interviewed. Those contacted all voiced concern regarding the current condition of the runway pavement and sited it as a deterrent to operating aircraft at U05. When the pavement is improved, an increase in the number of single-engine operations is expected. Additionally, some expressed interest in aircraft as large as B-II would use the airport, but this would likely also be dependent on the runway length. Therefore, the operations numbers may not support a larger critical design aircraft if the runway remains at its current 3,600' length with reconstruction. It is understood by the airport sponsor that demand may be constrained due to the airfield site restrictions.

Figure 1-7 – Aircraft Operations Forecast



Source: KLJ Analysis

Table 1-11 – Aircraft Operations Forecast

Metric	2021	2026	2031	2036	2041	*CAGR*
Air Taxi	100	100	100	100	100	0.00%
GA Itinerant Operations	700	850	1,018	1,207	1,419	3.59%
Itinerant Operation	800	950	1,118	1,307	1,519	3.26%

Civil Local	1,250	1,258	1,261	1,256	1,242	-0.03%
Local Operations	1,250	1,258	1,261	1,256	1,242	-0.03%
Total Operations	**2,050**	**2,208**	**2,379**	**2,563**	**2,761**	**1.50%**

Source: KLJ Analysis

Critical Design Aircraft

The critical design aircraft is identified as the most demanding aircraft or family of aircraft to regularly use the airport. A critical design aircraft type or family must operate at least 500 annual operations at the airport to be considered "regular" use by FAA for improvements to be justified for FAA funding. The methodology identified in FAA AC 150/5000-17, Critical Aircraft and Regular Use Determination was used for this analysis.

Figure 1-8 – Critical Design Aircraft

ARC A-I/Small Aircraft		**ARC A-II/Small Aircraft**	
Cessna 402		Pilatus PC-12	
ARC B-I/Small Aircraft		**ARC B-II/Small Aircraft**	
Piper Navajo		Beech King Air 90	
Citation CJ1		Beech King Air 200	
Helicopter (less than 7,000 lbs)		**ARC B-II**	
Aerostar 350		Air Tractor 802 Fire Boss (SEAT)	

Photography Source: Airliners.net

Existing

The existing critical design aircraft from operations data and based aircraft information was found to be the A/B-I (small) design group. As noted previously, further information on aircraft design groups can be found in **Appendix B – General Aviation Airports 101**. This A/B-I (small) group of aircraft includes most single-engine piston aircraft as well smaller multi-engine and turbojet aircraft. There are operations by A/B-II (small) aircraft, but not enough activity to account for more than 500 annual operations. **Figure 1-8 – Critical Design Aircraft** portrays sample aircraft from different design groups.

Future

For the future, the critical design aircraft at U05 could feasibly go on three different trajectories. These trajectories would take the critical design aircraft either to A/B-I(small); A/B-II or C/D-II but each of these three trajectories are dependent on the ability of the airport to physically meet the airfield design standards and runway length for the respective aircraft design group. The limitations of the existing site will therefore govern the future critical design. The airport sponsor reviewed the three options and determined to proceed with A/B-I(small) configuration. It is important to note that as a public use airport, the county cannot restrict aircraft from flying into the airport except due to pavement strength.

The future critical design aircraft for Riddick Field is therefore an A/B-I(small) with an intention of having instrument approach capabilities as low as 1-mile visibility (5000 feet). **Table 1-12 – Future Critical Design Aircraft Determination**, shows the respective standards and existing conditions dictating the future critical design aircraft.

Table 1-12 – Future Critical Design Aircraft Determination

	Existing A/B-I(S)- VIS	A/B-I(S)-5000	A/B-II-5000	C/D-II-5000
Aircraft[1]	Cessna 182 & Citation CJ1	Cessna 182 & Citation CJ1	King Air B200	Citation Ultra
Runway Safety Area (width)	120’	120’	150’	500’
Runway Object Free Area (width)[2]	250’	250’	500’	800’
Runway Protection Zone (Inner Width x Outer Width x Length)	250’x450’ x1000’	250’x450’ x1000’	500’x700’ x1000’	500’x1010’ x1700’
Separation from Runway Centerline				
20’ Building Restriction Line[3]	265’	390’	390’	390’
Parking Area	125’	125’	250’	400’
Parallel Taxiway	150’	150’	240’	300’
Runway Width	60’	60’	75’	100’
		Future		

Source: KLJ Analysis, S = Small Aircraft (12,500 lbs. or less)

[1] Aircraft meeting these design standards may still have limitations based on runway length which varies by each aircraft make and model.
[2] The property line and fence on the west side of the airport is 200 feet from the centerline, allowing a maximum 400 foot-wide object free area.
[3] The first airport hangar from the runway is 280 feet from the runway centerline and the next group of hangars are 395 feet from centerline.

Peak Activity & Fleet Mix

Peak demand periods help quantify aviation activity during busy periods. Time periods evaluated include the peak month, design day and design hour characteristics for airport operations. Peak periods are defined in FAA AC 150/5060-5, *Airport Capacity and Delay*. Peak activity is important when planning the size of facilities with fixed capacities. For Riddick Field the month of July was determined to be the busiest with leisure flight activity.

- **Peak Month:** The calendar month when peak operations occur
- **Design Day**: The average day in a peak month (peak month / 30)
- **Busy Day**: The busy day of a typical week in a peak month (Design Day + 15 percent)
- **Design Hour**: The peak hour within the design day (1/16 of Design Day + 15 percent)

Peak periods evaluated include the peak month, design day and design hour characteristics for airport operations. The results of the peak activity forecasts will be used to determine the airport facility requirements.

Airport Operations

Peaking tendencies for total airport operations were reviewed for preferred airport activity forecasts.

PEAK MONTH

Table 1-13 – Peak Month Operations Forecast

Metric	2021	2026	2031	2036	2041	CAGR
Annual Operations	2,050	2,208	2,379	2,563	2,761	1.50%
Peak Month (20%)	410	442	476	513	552	1.50%

Source: KLJ Analysis, CAGR = Compounded Annual Growth Rate

DESIGN/BUSY DAY

Table 1-14 – Design Day Operations Forecast

Metric	2021	2026	2031	2036	2041	CAGR
Peak Month	410	442	476	513	552	1.50%
Design Day	13.7	14.7	15.9	17.1	18.4	1.50%
Busy Day (Design Day + 15%)	15.7	16.9	18.2	19.6	21.2	1.50%

Source: KLJ Analysis, CAGR = Compounded Annual Growth Rate

DESIGN HOUR

Table 1-15 – Airport Operations Peak Forecast

Metric	2021	2026	2031	2036	2041	CAGR
Annual Operations	2,050	2,208	2,379	2,563	2,761	1.50%
Peak Month	410	442	476	513	552	1.50%
Design Day	13.7	14.7	15.9	17.1	18.4	*1.50%*
Design Hour (1/16 Design Day + 15%)	1.0	1.1	1.1	1.2	1.3	*1.50%*

Source: KLJ Analysis, CAGR = Compounded Annual Growth Rate

Fleet Mix

When determining a fleet mix of aircraft at a general aviation airport, information is typically limited to what the sponsor sees or who is based on the airfield. In addition, the other information from game cameras and the FAA's TFMS were also used to estimate fleet mix for U05.

The forecast has been distributed by fleet mix based on available local data, local user projections, broader industry trends and professional judgement to account for anticipated future user fleet mix changes. The overall estimated fleet mix share breakdown is identified in **Table 1-16 – Fleet Mix Share Breakdown** and forecast in **Table 1-17 – Total Operations Fleet Mix Forecast**.

Table 1-16 – Fleet Mix Share Breakdown

Metric	2021	2026	2031	2036	2041	CAGR
Single-Engine Piston	70.00%	66.25%	62.50%	58.75%	55.00%	-1.20%
Multi-Engine Piston	7.75%	8.56%	9.38%	10.19%	11.00%	1.77%
Turboprop	18.00%	20.00%	22.00%	24.00%	26.00%	1.86%
Turbojet	0.25%	0.69%	1.13%	1.56%	2.00%	10.96%
Helicopter	1.00%	1.25%	1.50%	1.75%	2.00%	3.53%
Ultralight/Other	3.00%	3.25%	3.50%	3.75%	4.00%	1.45%

Source: KLJ Analysis, CAGR = Compounded Annual Growth Rate

Table 1-17 – Total Operations Fleet Mix Forecast

Metric	2021	2026	2031	2036	2041	CAGR
Single-Engine Piston	1,435	1,463	1,487	1,506	1,519	0.28%
Multi-Engine Piston	159	189	223	261	304	3.29%
Turboprop	369	442	523	615	718	3.38%
Turbojet	5	15	27	40	55	12.62%
Helicopter	21	28	36	45	55	5.08%
Ultralight/Other	62	72	83	96	110	2.97%
Total Operations	**2,050**	**2,208**	**2,379**	**2,563**	**2,761**	**1.50%**

Source: KLJ Analysis

Forecast Summary

Table 1-18 – Aviation Activity Forecast Summary

	Activity Levels					Average Annual Compound Growth			
A. Forecast Levels	**2021**	**2026**	**2031**	**2036**	**2041**	**0-5 Years**	**0-10 Years**	**0-15 Years**	**0-20 Years**
Operations									
Itinerant									
Commuter/Air Taxi	100	100	100	100	100	0.00%	0.00%	0.00%	0.00%
General Aviation	700	850	1,018	1,207	1,419	3.96%	3.82%	3.70%	3.59%
Military	-	-	-	-	-	-	-	-	-
Total Itinerant Operations	800	950	1,118	1,307	1,519	3.50%	3.41%	3.33%	3.26%
Local									
Civil	1,250	1,258	1,261	1,256	1,242	0.13%	0.08%	0.03%	-0.03%
Military	-	-	-	-	-	-	-	-	-
Total Local Operations	1,250	1,258	1,261	1,256	1,242	0.13%	0.08%	0.03%	-0.03%
TOTAL OPERATIONS	2,050	2,208	2,379	2,563	2,761	1.50%	1.50%	1.50%	1.50%
Annual Instrument Approaches	6	7	8	9	10	2.48%	2.52%	2.55%	2.58%
Peak Hour Operations	1.0	1.1	1.1	1.2	1.3	1.50%	1.50%	1.50%	1.50%
Based Aircraft									
Single Engine	11	12	13	14	16	1.77%	1.76%	1.76%	1.75%
Multi Engine	0	0	1	1	2	-	-	-	-
Turbojet	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%
Helicopter	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%
TOTAL BASED AIRCRAFT	11	12	14	15	17	2.29%	2.29%	2.29%	2.29%
B. Operational Factors									
GA Ops per Based Aircraft	177	171	165	160	154	-0.70%	-0.70%	-0.70%	-0.70%

Source: KLJ Analysis. Note: Some figures are rounded

Forecast Comparison with FAA TAF

Proposed aviation activity forecasts must be reviewed and approved by FAA. A forecast is consistent with the FAA TAF if the proposed activity is within a certain tolerance of the official TAF forecast. If the proposed forecast is inconsistent with the TAF, then differences must be resolved for the forecast to be adopted by the FAA. Key activity measures that are reviewed include passenger enplanements, based aircraft and total operations. The 2019 FAA TAF issued January 2020 is used for comparison.

BASED AIRCRAFT

The airport's proposed forecast of based aircraft is projected to increase at a steady pace throughout the planning period based on national, state and local trends. The FAA TAF projects no based aircraft growth into the future. The FAA TAF projects no based aircraft growth into the future. The table below compares the proposed aviation forecast with the FAA's TAF forecast.

Table 1-19 – Based Aircraft vs. FAA TAF

Metric	2021	2026	2031	2036	2041	CAGR
U05 Based Aircraft Forecast	11	12	14	15	17	*2.29%*
2019 FAA TAF	11	11	11	11	11	*0.00%*
Difference	0.0%	11.9%	25.3%	40.3%	57.1%	-
Allowable Difference	-	10.0%	15.0%	-	-	-
Consistent with FAA TAF?	-	**NO**	**NO**	-	-	-

Source: KLJ Analysis, FAA Terminal Area Forecast (January 2016), CAGR = Compounded Annual Growth Rate

The airport's proposed forecast of based aircraft is **not consistent** with the FAA's TAF. It should be noted that TAF projections of based aircraft, when considering smaller general aviation airports, typically do not show any growth rate in forecasted numbers. Based on local, regional, and national aviation and economic outlooks, it does not appear aviation demand at Riddick Field will remain completely flat-lined for the planning period.

Any expected growth from an independent analysis usually does not meet near-term or long-term tolerance requirements of 10 percent and 15 percent, respectively. Recommendations from this planning study includes FAA review and approval of the proposed forecast, and submission of the forecast to update the airport's TAF going forward.

OPERATIONS

Total airport operations at U05 is primarily made up of general aviation traffic, with occasional air taxi traffic. Baseline forecasts assume the existing FAA TAF traffic estimates. General aviation operations are projected to increase at a steady rate through the planning period based on SASP forecasts supported by local trends. The table below compares the proposed aviation forecast with the FAA's TAF forecast.

Table 1-20 – Operations Forecast to FAA TAF

Metric	2021	2026	2031	2036	2041	CAGR
U05 Operations Forecast	2,050	2,208	2,379	2,563	2,761	*1.50%*
2019 FAA TAF	2,050	2,050	2,050	2,050	2,050	*0.00%*
Difference	0.00%	7.73%	16.05%	25.02%	34.69%	-
Allowable Difference	-	10.0%	15.0%	-	-	-
Consistent with FAA TAF?		**YES**	**NO**			

Source: KLJ Analysis, FAA Terminal Area Forecast (January 2020), CAGR = Compounded Annual Growth Rate

The airport's proposed total operations forecast is **not consistent** with the FAA's TAF in the long-term. Once again, the TAF projections of annual operations at smaller general aviation airports typically do not show any forecasted growth. It is not expected aviation demand at Riddick Field will remain completely flat-lined for the planning period based on local, regional, and national projections of economic growth and the aviation industry outlooks.

The expected growth from this independent analysis does not meet the long-term tolerance requirements. Recommendations from this master plan includes FAA review and approval of the proposed forecast.

Forecast Approval

The forecast approval for this planning effort is being considered in the midst of the COVID-19 Pandemic resulting in a high level of uncertainty of when and how activity levels might return to specific airports. As a result of these circumstances, the FAA has stipulated in their forecast approval, that any specific projects dependent on certain activity levels may require additional justification when the projects are formulated for consideration. The FAA approved the aviation forecasts prepared in this chapter for use in this master planning effort.

Environmental Inventory

Introduction

This section provides an overview of environmental conditions and issues at the airport and the immediate vicinity. This environmental review section is not intended to fulfill the requirement of environmental review required by National Environmental Policy Act (NEPA) or provide a definitive class of action determination for the proposed improvements. The purpose of this environmental review is to provide community, airport sponsor, and regulatory awareness of the importance of minimizing the environmental impacts this airport improvement area and to provide a general indication of the likely need for further investigation. Appropriate environmental documentation in accordance with FAA Order 5050.4B, *NEPA Instructions for Airport Actions* and FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures* is required to be completed prior to commencing with project actions.

Key environmental resources are described for the existing airport area. **Figure 1-9: Environmental Overview** provides a graphical depiction of the existing environmental conditions described in this section.

Relevant Environmental Features

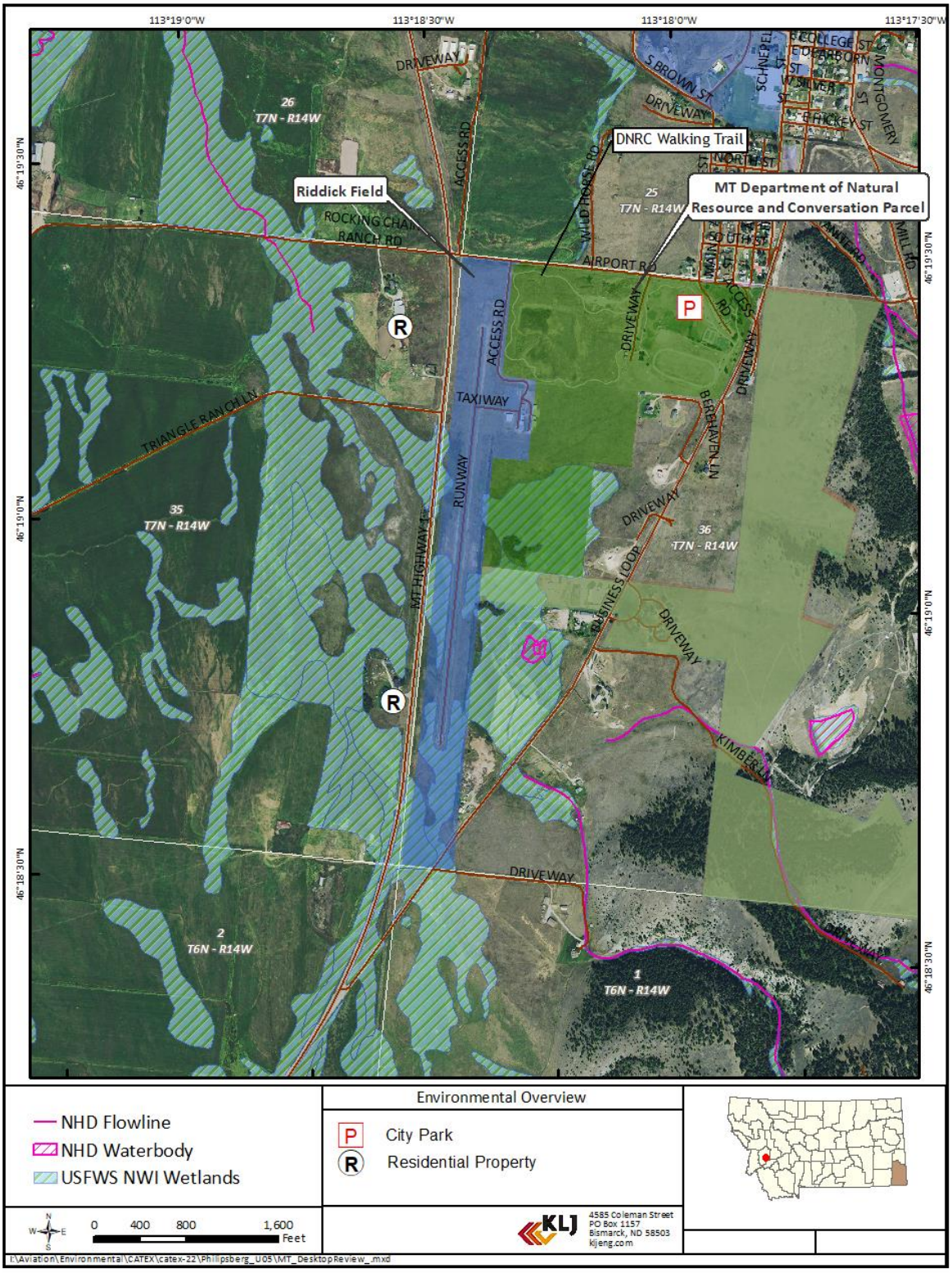
BIOLOGICAL RESOURCES


U05 Airport Setting

Biological resources include flora and fauna that are present in an area. U05 is located in the Middle Rockies Ecoregion according to US Geological Survey. Vegetation in this area consists of mostly foothills prairie, which is a transitional ecosystem between the mix grass prairie and montane/subalpine grasslands occurring adjacent to and within forested habitats. The primary plants that make up a foothill's prairie include rough fescue and bluebunch wheatgrass. Shrub cover is usually less than 10 percent and includes shrubby cinquefoil, woods' rose, snowberry, and common juniper. The surrounding area is used mostly as pasture to raise cattle and other livestock.

The following is not a complete list of fauna that could be present in the area; it represents the species most likely to be encountered. Wildlife species likely to be encountered in the area surrounding the airport include mule and white-tail deer, elk, bighorn sheep, moose, red fox, pronghorn, skunk, and maybe black bear. Other species know to occupy the area include bald eagles, bobcat, bison, golden eagle, gray wolf, mountain goat, mountain lion, river otter, and peregrine falcons.

Figure 1-9 - Environmental Overview Wetland Inventory



According to the U.S. Fish and Wildlife Services website, federally listed endangered, threatened, proposed or candidate species in Granite County include Canada lynx, north American wolverine, monarch butterfly, and whitebark pine. In accordance with Section 7 of the Endangered Species Act, consultation with USFWS to determine the potential for occurrences of federally-listed threatened and endangered species in the project area would be necessary. Prior to project implementation, further analysis is required to identify the potential for fish, wildlife and plant impacts as a result of any proposed projects.

DEPARTMENT OF SECTION 4(F) AND SECTION 6 (F)

Section 4(f) is applicable to projects which require the use of publicly-owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state, or local significance. There is a parcel of land owned by the Montana Department of Natural Resources and Conservation. A city park, Philipsburg Town Park is located on the northeast corner of this parcels. A walking trail was constructed within this parcels that is located to the north of the apron and hangar area. Parcels of land owned by the US Forest Service are also located immediately to the east of the Airport. **Figure 1-9: Environmental Overview** provides a graphical depiction of the areas surrounding the Airport property.

Projects impacting DNRC land would require additional coordination to determine the significance of the walking trail and park features to the recreation value of that parcel. Further review of the potential to impact Section 4(f) resources specifically regarding potential cultural sites or historic properties would be required at the environmental documentation phase of any projects that would require ground disturbance.

Section 6(f) from the Land & Water Conservation Fund Act provides that the Secretary shall not approve any program or project which requires the use of state and local parks, lakes, trails, beaches, and conservation lands, unless: (1) if the request complies with Section 4(f), (2) information is provided that is needed to make findings required under Section 6(f), and (3) coordination is carried out with the NPS and the state agency responsible for the Section 6(f) property. A review of Land Water Conservation Fund grants for Granite County indicates that twenty-eight grants have been issues for properties within the county. Most of these properties are not located near the Airport, however a grant from 1981 was used to fund a project at the Philipsburg Town Park located approximately ¼ mile east of the Airport. Proposed improvements are not anticipated to impact existing Section 6(f) properties; therefore, no further analysis is required.

HAZARDOUS MATERIALS

There are no reported spills or hazardous material leaks in or around U05. This is based on a review of the MT Department of Environment Quality and Environmental Protection Agency databases regarding underground storage tanks, abandoned mines, listings for superfund sites, and sites covered under the Resource Conservation and Recovery Act. Prior to acquisition of new land to be owned in fee title by an airport sponsor, FAA recommends that an Environmental Due Diligence Audit (EDDA) be performed. An EDDA includes a more detailed review of an area, relative to NEPA-level review, for the possible presence of environmental contamination.

SOLID WASTE

The airport has not produced significant amounts of solid waste including garbage, refuse or sludge as compared to the broader community. FAA requires a Solid Waste Management Plan to be developed as part of this Airport Master Plan study. A Solid Waste study is in **Appendix E: Recycling Solid Waste Plan**.

HISTORICAL, ARCHITECTUAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

Before a project that involves land, disturbance is implemented, an inventory to identify the potential for cultural resources would need to be conducted for the project area. Coordination with the State Historic Preservation Office (SHPO) is necessary for projects involving land disturbance. Additionally, any project affecting buildings that have the potential to be listed in the National Register of Historic (NRHP) places would require coordination with SHPO.

Structures that are more than 50 years old may be eligible for inclusion on the NRHP. Considering the airport was opened in 1986, no airport structures would be more than 50 years old.

Projects that involve ground surface disturbance in areas not previously disturbed by the construction of the Airport will also need to be surveyed by a qualified Archeologist and a determination of affect to historic properties would need to be obtained from the SHPO. Resolutions of any adverse effects would need to be coordinated with the SHPO. Further review regarding potential cultural sites historic properties may be required at the environmental documentation phase.

FARMLAND

Agricultural Land Uses Near of U05

Impacts to farmlands considered to be prime, unique or statewide or locally important need to be considered under NEPA. The Farmland Protection Policy Act (FPPA) of 1981 provides protection to prime and unique farmlands. The Act defines prime farmland as land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. Unique farmland is farmland that is used for production of specific high value food, feed, and fiber crops. Statewide farmland is of statewide importance for the production of food, feed, fiber, forage, and oil seed crops, and is determined by state agencies. Locally important farmland is where the production of food, feed, fiber, forage, and oilseed crops, are not identified as having national or statewide importance but identified by local agencies as important.

A search of the USDA Natural Resources Conservation Service (NRCS) web soil survey identified land located on and around the Airport is classified as farmland of statewide and local importance. There are small segments of land classified as prime farmland and prime farmland if irrigate west of the Airport. Further consultation with NRCS would be required during a project environmental review stage to calculate the Farmland Conversion Impact Rating to determine if land outside the existing airport property would be acquired and converted to airport property.

LAND USE

Compatible land uses are those that typically are not influenced by normal airport operations. The compatibility of existing land uses in the vicinity of an airport is usually associated with the extent of noise impacts occurring from airport property and safety concerns. Incompatible land uses are typically items such as fuel storage facilities, areas of public assembly, tree rows, high density residential areas, and areas that have the potential to attract hazardous wildlife. In general, U05 is surrounded by foothill pastureland and open spaces. There are two residential homes located approximately 500 feet and 700 feet to the west of Runway 16-34. MT Highway 1 runs parallel and approximately 260 feet west of the runway. Other land use considerations including surrounding physical land uses, airport zoning regulations and FAA airport design land use compatibility standards will be addressed later in this report.

Wildlife Hazards

FAA has implemented procedures and guidelines to mitigate wildlife damages to aircraft and aviation operations. Wildlife collisions have increased over the past two decades and reporting has increased awareness of hazards to human health, safety and financial losses.

Property surrounding U05 is private pastureland. The town of Philipsburg sewage disposal ponds are located approximately 1.7 miles to the north of the airfield and should be monitored to ensure the ponds are not attracting wildlife that could pose a danger to aircraft using U05.

U05 is surrounded by a barbed wire fence that provides protection for domestic animals but is not very effective for many species of wild animals such as deer. The Airport should monitor wildlife concerns and if an issue is identified a site visit from a qualified wildlife biologist could help to provide recommendations to reduce wildlife concerns at the airport. It is important to point out, because of the narrow land area that the airport sits on, there may not be the ability to add a wildlife fence to the west without impeding on the runway safety surfaces.

WATER RESOURCES

Wetlands

Wetlands are defined in Executive Order 11990, Protection of Wetlands, as those areas that are inundated by surface or groundwater with a frequency to support, and under normal circumstances does or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction. Three parameters that define a wetland as outlined in the US Army Corps of Engineers Wetland Delineation Manual are hydric soils, hydrophytic vegetation, and hydrology.

There are wetlands in the National Wetland Inventory (NWI) located on the Airport property. Notably there is a wetland complex surrounding the southern half of the runway, it was likely built through this wetland during the initial construction. Prior to project implementation, wetlands would require a field delineation to clearly identify their boundaries. Coordination with USACE would need to be completed at the environmental documentation phase. In addition to maintaining water quality in rivers and recharging groundwater among other positive benefits, wetlands may have the potential to attract wildlife that can be hazardous to aircraft using the Airport. Please refer to **Figure 1-9**.

Surface and Ground Waters

The Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977, provides the authority to establish water quality standards, control discharges into surface and subsurface waters, develop waste treatment management plans and practices, issue permits for discharges (Section 402) and for dredged or fill material (Section 404).

Airport activities can affect water quality. This is mainly due to stormwater runoff from paved areas. Providing treatment for stormwater runoff from runway, taxiway and apron areas through the use of best management practices and grassed swale areas would minimize potential impacts to water quality.

Drainage at U05 generally flows to manmade ditches located on both sides of the runway. Drainage from the east side of Runway 16-34 flows under the runway through a culvert located at the approximate midpoint of the runway. Drainage converges with the drainage ditch located between the runway and Highway 1 and then flows under the highway through another culvert into a natural drainage that ultimately flows to Flint Creek about one mile northwest of the airport. Flint Creek discharges into the Clark Fork River. The airport is located within the Clark Fork watershed.

Looking south, drainage ditch on east side of primary runway,

Environmental Features Not Relevant

AIR QUALITY CLASSIFICATION

The FAA Orders 1050.1F and 5050.4B outline procedures for determining when airport-related projects require an air quality analysis, and if so, what level of analysis may be necessary. The Airport is located within an area of attainment for all National Ambient Air Quality Standards (NAAQS); due to the small size of the airport and limited number of operations that would occur at the airport detailed analysis is very unlikely to be required.

CLIMATE

Although there are no federal standards for aviation-related Green House Gas (GHG) emissions, it is well-established that GHG emissions can affect climate. The Council on Environmental Quality (CEQ) has indicated that climate should be considered in NEPA analyses. As noted by CEQ, however, “it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions; as such direct linkage is difficult to isolate and to understand.”

With respect to GHG emissions, aviation activity at Riddick Field represents a small percentage of U.S. and global emissions; therefore, no further review is required.

COASTAL RESOURCES

Coastal Resources include Coastal Barriers and Coastal Zone Management. Coastal Barriers include islands that protect the mainland from storm or hurricane-driven winds or waves by providing a buffer to the shoreline. Coastal Barriers protect fish, wildlife, human life, and property along coasts and shorelines. Facilities are not recommended to be built within the Coastal Barrier Resource System (CBRS). Coastal Zone Management includes development provisions actions to protect major shorelines and associated recreational, historical, cultural, and aesthetic values. The area is not located near a coastal zone as defined in the Coastal Zone Management Act of 1972. No further analysis is required.

NATURAL RESOURCES AND ENERGY

Impacts on energy supplies and natural resources are related to changes of stationary facilities, such as airfield lighting or terminal building heating and expansion, as well as any increase of fuel consumption by aircraft or ground vehicles. Proposed improvements at U05 would require additional energy but is not anticipated to cause significant impacts to energy supplies or natural resources. No further analysis is required.

NOISE AND NOISE COMPATIBLE LAND USE

Noise emitted from aircraft can significantly affect the well-being of people living or working near an airport. The FAA requires noise studies for certain projects. If a project involves Airplane Design Groups I and II and has forecasted operations of less than 90,000 annual propeller operations or 700 annual adjusted jet operations such as the case at U05 then no further noise analysis is required.

SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE AND CHILDREN' S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Social impacts from a project depend on how that project affects the character, habits, and economic conditions of the people living within the affected area of the project. The project's effects on business, employment, transportation, utilities, etc. are factors that affect the social climate of a community. Any action that would either adversely or beneficially affect the factors stated above would be considered as having some type of social impact on the residents of a particular community. Due to the remote location of the Airport, adverse impacts to minority and low-income populations is very unlikely. Similarly, the location would preclude health and safety risks to children because the lack of people living near the area. No further analysis is required.

VISUAL IMPACTS

The aesthetic value of an area is influenced by its landscape and the viewer's response to the view, scenic resource, or man-made features. The extent of potential visual contrast/compatibility effects with adjacent landforms and land uses are addressed from the vantage point of those looking to an airport from outside the system.

WATER RESORCES

Floodplains

Floodplains constitute lands situated along rivers and their tributaries that are subject to periodic flooding on the average interval of 100 years or less. U05 is not located within a 100-year floodplain; therefore, no further analysis is required.

Wild and Scenic Rivers

No designated Wild and Scenic Rivers are located near U05. No direct or indirect impacts to wild scenic rivers would occur due improvement. No further analysis is required.

Conclusion

The information collected and documented in this Overview chapter provides a baseline foundation to update the Riddick Field long-range plan. This information will feed into future sections to determine how facilities will meet the projected airport needs based on aviation activity forecasts.