# CHAPTER 1: AIRPORT, COMMUNITY & AVIATION ACTIVITY

## Purpose and Scope

The information presented in this report represents the findings for the 2022 Airport Master Plan study prepared for the Laurel Airport Authority, the airport owner. Airport Master Plans 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 3-30-0047-024-2022.

This study for the Laurel Municipal Airport (6S8) 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 2016.

The airport sponsor and Kadrmas, Lee & Jackson (KLJ) developed the scope for the project in cooperation with FAA Airports District Office and Montana Department of Transportation 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 May 2022 from the airport sponsor. The baseline project data is from inventory efforts completed in 2022. Data from year 2019 through 2021 was used to establish a baseline of existing airport information.

## Planning Considerations

Planning considerations for an airport master plan are features, elements or events that should be evaluated because they have the potential to affect the airport facility over the long term. The 2016 Airport Master Plan had a focus on the crosswind runway at Laurel. Since then, the paved crosswind runway 14-32 was added as a 3002' x 60' runway.

## 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:

- Examine the primary runway length to meet the needs of the community

- Examine the demand for hangar space and configuration of hangars and terminal area to maximize the use of space while maximizing the functionality for each type of use, and
- Meet FAA design standards

# Master Plan Process

Guidelines for completing a Master Plan are set forth in FAA AC 150/5070-6B. Each master plan study scope and level of effort is customized to fit each individual airport's needs and address critical issues.

The Airport Master Planning process involves several coordinated steps. The master plan study for 6S8 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.
- **Facility & Environmental Inventory** – 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. Provide an overview of anticipated environmental impacts as part of the development of alternatives.
- **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 capacity 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. Select a preferred alternative.
- **Implementation Plan** – Provide a comprehensive plan for implementation of the preferred alternative including project triggers, sequencing, and cost estimates. This includes the Capital Improvement Plan (CIP), Financing/Business Practices Recommendations, Environmental Factors and Compatibility Issues.

### ***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.

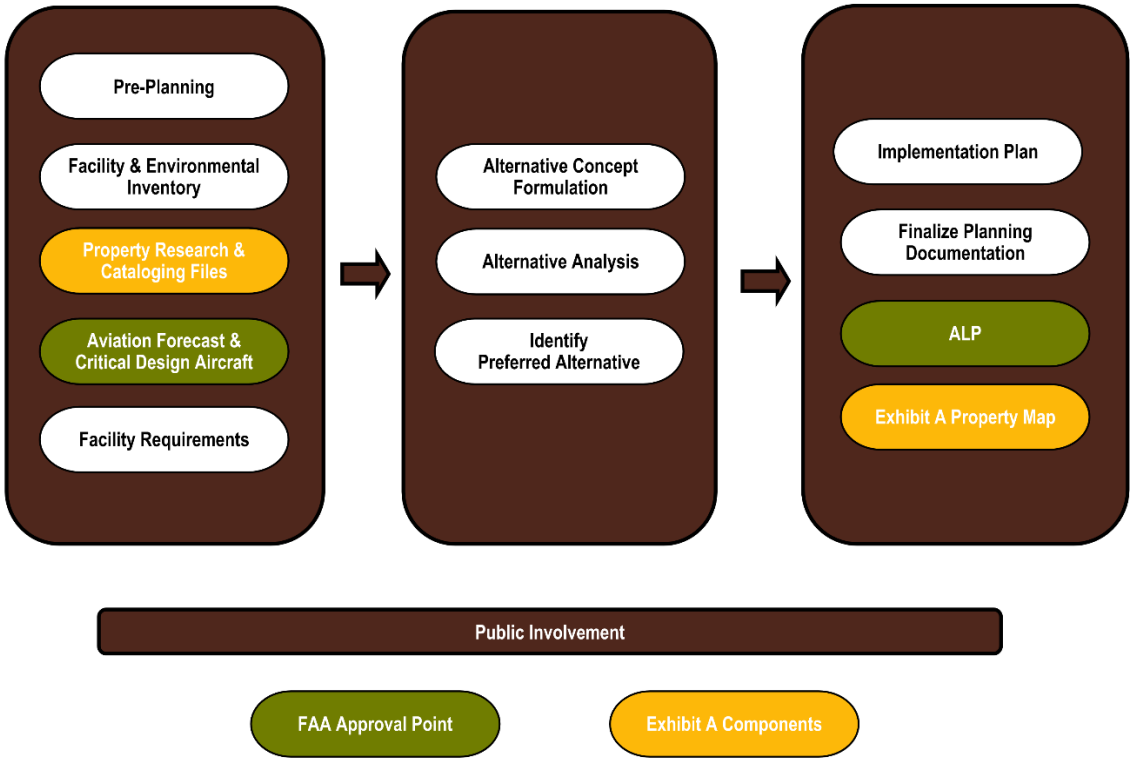
Best Planning Tenets – What are the strengths and weaknesses of the alternatives as it relates to 1) flexibility to meet demand and react to unforeseen changes; 2) highest and best on- and off-airport land use; 3) feasibility to implement politically and within practical phases; and 4) ability to satisfy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

- **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 Master Planning Process*




*Source: KLJ*

## Study Documentation & Approvals

The Master Plan Update was divided into chapters to document airport planning data, analysis, findings, and recommendation of the study. The following sections are 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 Plan

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 project website laurel.airportplan.net for public viewing.

The Master Plan Update was accepted by the Laurel Airport Authority in December 2023. The ALP was submitted to the State and FAA for review and approval in December 2023.

## 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.

The Laurel Airport Authority was established as the Planning Advisory Committee (PAC) to provide input throughout the life of the study. The purpose of the PAC was to facilitate group discussion and feedback regarding the draft planning materials. There were also stakeholders that were contacted in the planning process. These included the following stakeholder groups:

- City of Laurel
- Airport Users/Tenants
- Community/Area Businesses
- Montana DOT: Aeronautics Division
- Federal Aviation Administration (FAA): Helena Airports District Office

A project website, laurel.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.

A Public Meeting was held on September 26, 2023 to solicit 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

## *General*

The Laurel Municipal Airport is a general aviation airport serving the City of Laurel Montana and serves the Billings Metropolitan Statistical Area. The airport is categorized by the Federal Aviation Administration (FAA) as a Local Airport in the FAA's ASSET study. See **Appendix B: General Aviation Airports 101** for additional details about airport classifications.

## *Community History*

The Lewis & Clark Expedition were near Laurel in 1806 on their return trip from the Pacific Northwest when they camped at the confluence of the Clark Fork and Yellowstone River. The site became the town of Carlton, and the area began to see more settlers in the 1880's with dryland farms and ranches. The name was changed to Laurel in 1882 by a railroad official from North Carolina who named the city for his favorite shrub from his home state, Laurel. The city was incorporated in 1908 and became a shipping and servicing center for the Northern Pacific Railway. The area continues to have a mixture of agriculture, railroad and tourism activity and is impacted by the variety of changes that occur in each of these industries. Laurel is currently home to the largest railyard in Montana operated by Montana Rail Link. Laurel is also home to one of two refineries operated by Cenex-Harvest States with the other refinery in McPherson, Kansas.

## *Area Setting*

The Laurel Municipal Airport is located north of the City of Laurel in an agriculture area used for both ranching and planted crops. The airport is on rising terrain on the northern edge of the Yellowstone River valley at the beginning of hilly terrain which continues north of the airport. The city and airport are located in the far southwest corner of Yellowstone County. **Figure 1-2 – Airport Location Map** provides an overview of the airport's local environment.

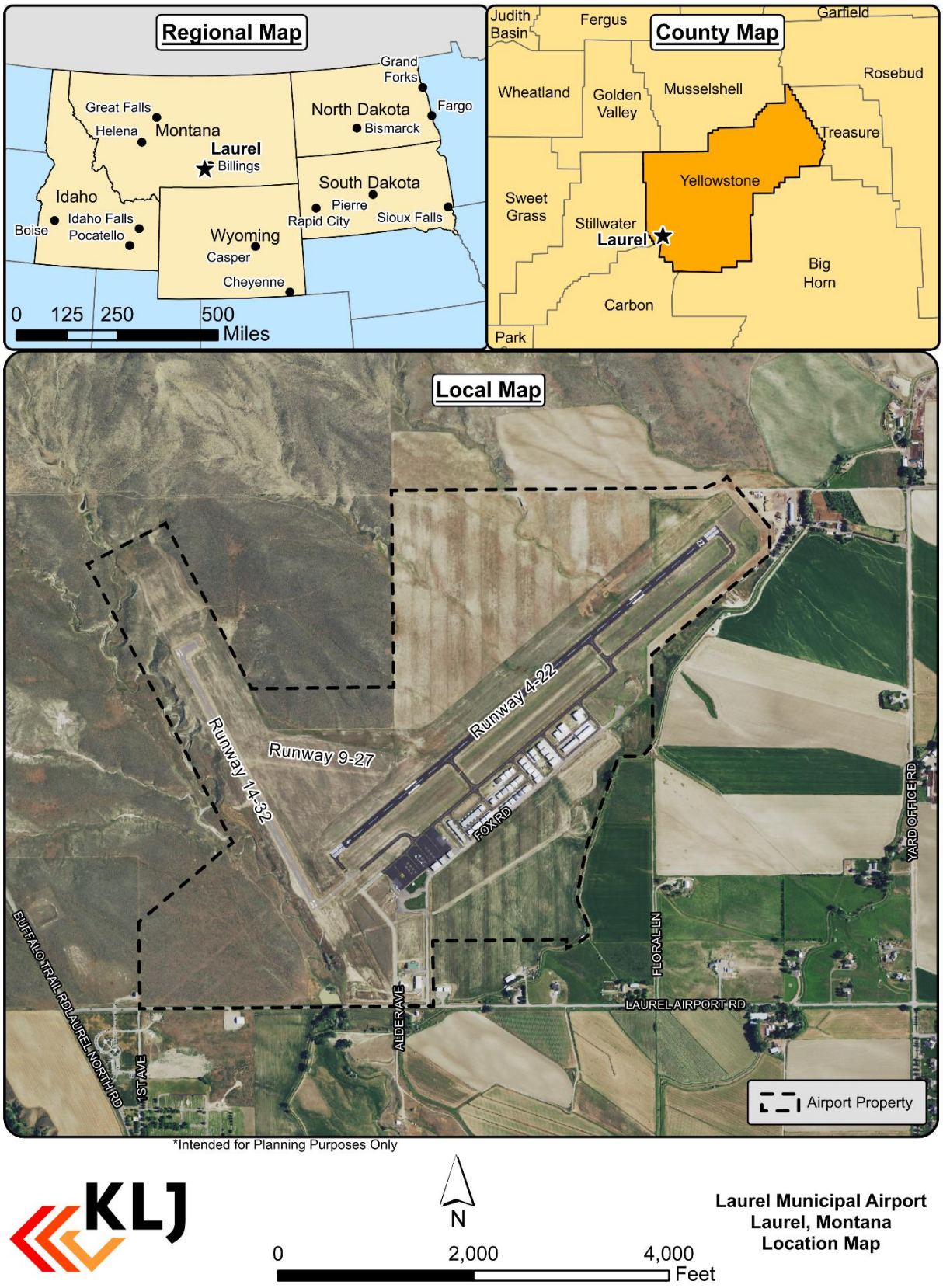
## *Climate*

The Laurel area experiences summers which are short, hot, and dry with clear skies. The winters are freezing, snowy and windy with partly cloudy skies. In the winters, the temperatures have an average low of 22 in the coldest month of December and for the summers, the average high is 89 in July. Winds are out of the west for most of the year. The area has annual rainfall of 7.9 inches per year with 8.3 inches of snow per year.

## *Location*

The Laurel Municipal Airport is accessed by Laurel Airport Road and further connected to the City of Laurel two miles to the south by Buffalo Trail Road. The City of Laurel is nine miles west of Billings Montana and is situated along Interstate 90.

*Figure 1-2 - Airport Location Map*



## *Airport Ownership & Management*

The airport is owned and operated by the Laurel Airport Authority which was created by the City of Laurel in 1981. The board meets on a monthly basis and the board members perform the day-to-day administrative functions for the airport. Maintenance at the airport is performed by board members, volunteers, and some part-time persons.

## *Airport History*

Prior to the current airport location, the first airports in the Laurel area were in several locations including south of Laurel in the current Laurel Industrial Park, another south of the Yellowstone River and north of the cemetery and another three miles west of Laurel. The current location was initially a private airport but was donated to the city in 1956 and an airport commission was formed. The Laurel Airport Authority was later created in 1981.

The first major improvements were in 1958 when the northwest-southeast runway (Runway 14-32) was paved at 2,850 feet. In 1969 a new primary southwest-northeast runway (Runway 4-22) was completed and paved which has most recently served as a taxiway. In 2001 a new Runway 4-22 was constructed 75' x 5,200' just 240 feet north of the previous Runway 4-22 which became a parallel taxiway. In 2018 a new Runway 14-32 was constructed 60' x 3,002' to replace the previous Runway 14-32 and correct for incompatible uses inside the Runway Protection Zone. A complete list of major airport development projects that received funding from FAA and the State can be found in **Table 1-1 – Airport Projects.**

*Table 1-1 – Airport Projects*

| Year | Project |
|---|---|
| 1958 | Runway 14-32 Constructed 2,850 feet long |
| 1969 | Runway 4-22 Constructed 3,800 feet long |
| 1988 | Parallel Taxiway for Runway 4-22 |
| 2001 | New Runway 4-22 (240' north of the previous runway) 5,200' x 75' |
| 2005 | Install Weather Reporting Equipment |
| 2007 | Miscellaneous Study, Aeronautical survey for WAAS approach, Install Airfield Guidance Signs, Install Weather Reporting Equipment, Rehabilitate Runway 4-22 |
| 2008 | Environmental Study |
| 2012 | Rehabilitate Apron, Rehabilitate Runway 4-22, Rehabilitate Taxiway |
| 2015 | Acquire Land for Approaches and Development |
| 2016 | Install Weather Reporting Equipment |
| 2016 | Acquire Land for Development, Construct Runway 14-32 |
| 2017 | Construct Runway 14-32 |
| 2017 | Construct Runway - 14/32, Install Miscellaneous NAVAIDS, Install Runway Vertical/Visual Guidance System 14-32 |
| 2020 | Seal Apron Pavement Surface/Joints |
| 2020 | Seal Taxiway Pavement Surface/Joints |
| 2020 | Seal Runway Pavement Surface/Joints |

*Source: FAA Records, KLJ Analysis*

## *Land*

The airport land was acquired starting in 1956, then expanded over the years in conjunction with airport development projects. The airport has a total 492.2 acres in fee simple and 14.6 acres in easement.

### *Airport Role & Design*

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

*Table 1-2 – Surrounding Public Airports*

| Airport Name / City | FAA ID | Location from Airport | Based Aircraft | Instrument Approach | Longest Runway |
|---|---|---|---|---|---|
| Laurel Municipal/ Laurel | 6S8 | - | 86 | 300' 1m | 5,199' |
| Billings Logan/ Billings | BIL | 11 NE | 170 | 200' ½ m | 10,518' |
| Woltermann Memorial/ Columbus | 6S3 | 21 W | 17 | Visual | 3,800' |
| Bridger Municipal/ Bridger | 6S1 | 26 S | 2 | Visual | 3,400' |
| Red Lodge/ Red Lodge | RED | 38 SW | 11 | Visual | 4,000' |
| Big Horn County/ Hardin | 00U | 46 E | 10 | 200' 1m | 4,491' |
| Roundup/ Roundup | RPX | 47 N | 15 | 300' 1m | 5,099' |
| North Big Horn County/ Cowley WY | U68 | 49 S | 14 | 300' 1m | 5,200' |
| Powell Municipal/ Powell WY | POY | 50 S | 26 | 200' 1m | 6,200' |
| Big Timber/ Big Timber | 6S0 | 52 W | 10 | 300' 1m | 5,285' |
| Wheatland County/ Harlowton | HWQ | 63 NW | 12 | 300' 1m | 4,200' |

*Source: AirNav*

The airport is part of the National Plan of Integrated Airport Systems (NPIAS) as classified by the Federal Aviation Administration (FAA). NPIAS airports are vital to the national air transportation system. According to FAA standards, the airport is classified as a Local airport.

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 details of the ARC are found in **Appendix B: General Aviation Airports 101**. For Laurel, the existing ARC is B-II-5000 which means the airport is designed for aircraft approach speeds up to 121 knots and wingspan up to 79 feet with approach minimums as low as 1 mile visibility.

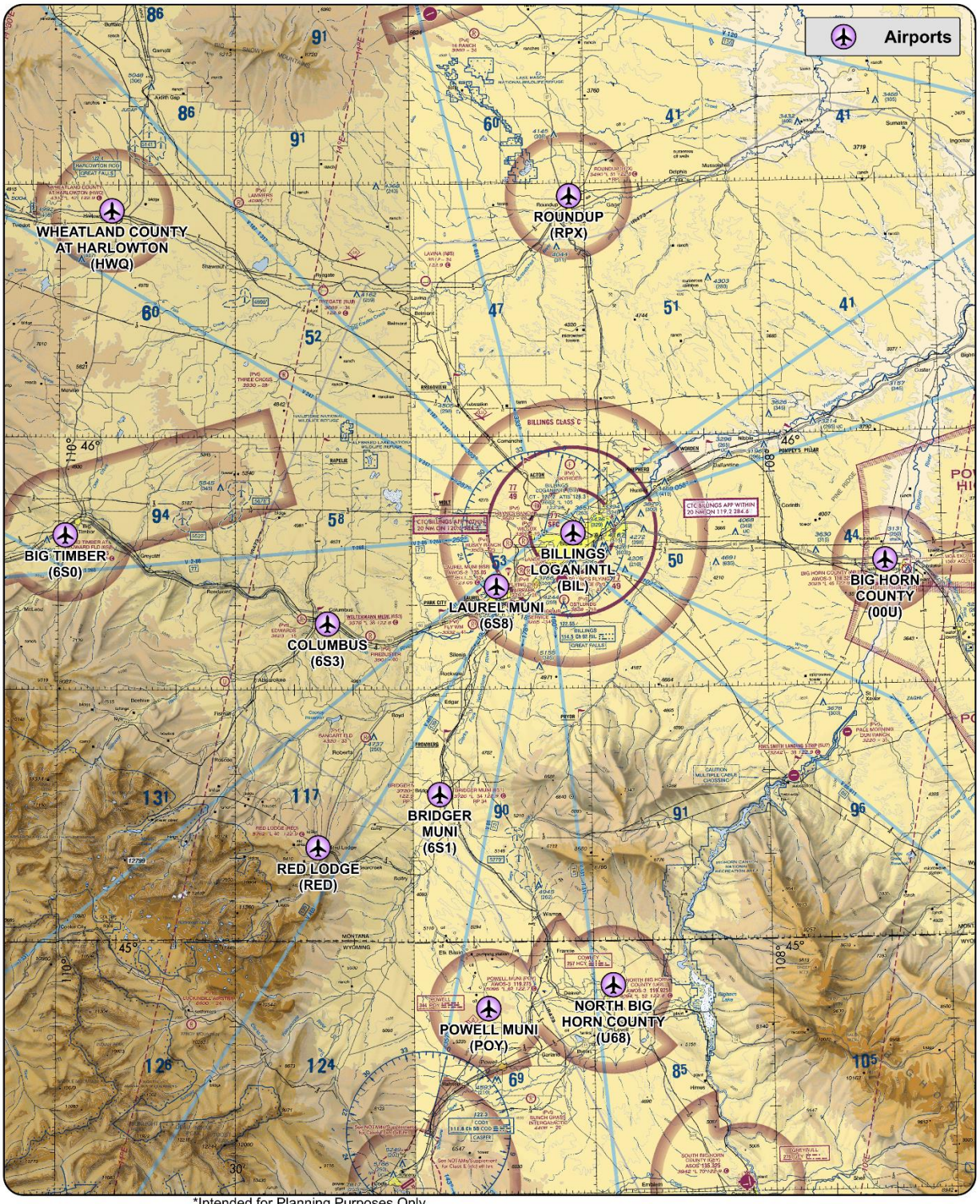
**Table 1-3** summarizes the airport's role and design in comparison with surrounding airports. See **Appendix B: General Aviation Airports 101** for more details on FAA and Montana design classifications.

*Table 1-3 – Airport Role*

| Airport ID | City, State | State Classification | FAA Classification | Based Aircraft | FAA GA Group |
|---|---|---|---|---|---|
| 6S8 | Laurel, MT | Level 1 | Non-Primary | 77 | Local |
| BIL | Billings, MT | Primary CS | Primary Small Hub | 170 | |
| 6S3 | Columbus, MT | Level 2 | Non-Primary | 12 | Basic |
| 6S1 | Bridger, MT | Level 3 | - | 2 | - |
| RED | Red Lodge, MT | Level 2 | Non-Primary | 19 | Local |
| 00U | Hardin, MT | - | Non-Primary | 10 | Basic |
| RPX | Roundup, MT | Level 1 | Non-Primary | 15 | Basic |
| U68 | Cowley, WY | Local | Non-Primary | 14 | Basic |
| POY | Powell, WY | Intermediate | Non-Primary | 23 | Local |
| 6S0 | Big Timber, MT | Level 1 | Non-Primary | 8 | Basic |
| HWQ | Harlowton, MT | Level 2 | Non-Primary | 12 | Basic |

*Source: 2022 NPIAS Report, 2015 MT SASP, 2016 WY SASP, basedaircraft.com*

*Figure 1-3 – Airspace & Surrounding Airports*



# Aviation Activity

The Aviation Activity Forecasts analyze current and future airport activity at Laurel. 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.

The forecasts developed for 6S8 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, Field Formulation of the National Plan of Integrated Airport Systems.

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 2021 FAA TAF published in January 2022. 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 (November 2022), Federal fiscal year 2021 (October 1, 2020 through September 30, 2021) has been used as the baseline year.
2. FAA data from 2022 (where available) has been used to validate forecast assumptions and update the forecast baseline.
3. The forecast period is 20 years encompassing years 2022 through 2042.
4. The most recent 2022 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 the City of Laurel, MT and the Billings MT Metropolitan Statistical Area (MSA) for this forecasting effort. The MSA includes Yellowstone, Stillwater and Carbon County, MT.

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 year 2027, 2032 and 2042. Forecasts may be developed using a composite of methodologies over the planning period.

## *Local Stakeholder Input*

Several stakeholders were contacted regarding their past, current and future use and development of facilities at 6S8:

**Aircraft Owners Based at 6S8** indicated a need for restrooms on the east end of the airfield; space for parking cars around the hangars; a terminal with meeting space, pilot lounge, and office space; repairs to access road; a turf runway closer and more usable than Runway 9-27 (too short, not easy to access and requires low approach over hangars); internet service other than just at the FBO; poor condition of airport sign; and timely maintenance of the airfield including snow removal and electrical/plumbing repairs.

**Aircraft Owners Interested in basing at 6S8** indicated a need for hangar space either to build or to rent on an incremental basis. Feedback indicated it is difficult for persons interested in getting a hangar to secure a hangar. When a hangar comes available, other existing hangar owners quickly acquire it and the hangar is no longer available. Feedback also indicated that to their knowledge some hangars are not being used to store aircraft.

**Operators Who May increase Operations at 6S8** indicated a need for full-service fueling; hangar space to overnight aircraft (Cessna Citation, Pilatus PC-12, Eclipse 500, King Air, etc.); longer runway; and better weather reporting.

# 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 6S8. Growth rates are used as a method to compare the airport service area to other regional, statewide, and national trends. For purposes of this study analysis, the City of Laurel has been determined to represent the core local airport service area. The data that follows includes the City of Laurel information when available.

## *Population*

Population is a basic indicator of the number of people in the area and therefore may utilize the airport.

*Table 1-4 – Population*

| Year | Laurel | Billings MSA | Montana | United States |
|---|---|---|---|---|
| 1990 | 5,865 | 128,207 | 800,204 | 249,622,814 |
| 2000 | 6,298 | 147,378 | 903,773 | 282,162,411 |
| 2010 | 6,718 | 167,553 | 990,507 | 309,330,219 |
| 2020 | 7,222 | 184,167 | 1,084,225 | 331,449,281 |
| *Historical Annual Growth Rate* | *0.69%* | *1.21%* | *1.02%* | *0.95%* |
| *2027* | *7,531* | *195,616* | *1,150,090* | *345,453,926* |
| *2032* | *7,798* | *202,365* | *1,186,945* | *356,413,897* |
| *2037* | *8,076* | *208,627* | *1,222,007* | *366,893,550* |
| *2042* | *8,363* | *214,410* | *1,255,311* | *376,916,244* |
| *Forecast Annual Growth Rate* | *0.70%* | *0.70%* | *0.67%* | *0.58%* |

*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 | Billings MSA | Montana | United States |
|---|---|---|---|
| 1990 | $26,968 | $24,464 | $31,031 |
| 2000 | $33,325 | $29,557 | $39,278 |
| 2010 | $40,815 | $38,015 | $42,497 |
| 2020 | $50,720 | $47,727 | $53,178 |
| *Historical Annual Growth Rate* | *2.12%* | *2.25%* | *1.81%* |
| *2027* | *$54,117* | *$50,814* | *$58,274* |
| *2032* | *$57,807* | *$54,701* | *$63,086* |
| *2037* | *$61,580* | *$58,731* | *$68,097* |
| *2042* | *$65,413* | *$62,892* | *$73,305* |
| *Forecast Annual Growth Rate* | *1.16%* | *1.26%* | *1.47%* |

*Source: Woods & Poole Economics in 2012 Constant Dollars, U.S. Census Bureau*

## *Employment*

Total employment is the measure of the active workforce. For the Billings MSA, the largest five industries are Health Care, Retail, Accommodations/Food Services, Construction, and State/Local Government. These five groups make up 47% of the total employment.

*Table 1-6 – Billings MSA Area Employment (2020)*

| Industry | Employment | Earnings (in millions) |
|---|---|---|
| Health Care and Social Assistance | 16,484 | $ 1,108.5 |
| Retail | 13,405 | $ 435.4 |
| Accommodation and Food Services | 9,765 | $ 221.5 |
| Construction | 8,577 | $ 496.2 |
| State and Local Government | 8,324 | $ 494.4 |
| Professional and Technical Services | 7,140 | $ 482.6 |
| Other Services (Except Public Administration) | 6,630 | $ 236.0 |
| Real Estate & Rental Leasing | 6,471 | $ 218.6 |
| Wholesale Trade | 5,896 | $ 431.1 |
| Transportation and Warehouse | 5,691 | $ 350.9 |
| Administrative and Waste Services | 5,577 | $ 207.5 |
| Finance & Insurance | 5,491 | $ 311.0 |
| Manufacturing | 4,470 | $ 369.1 |
| Arts, Entertainment, and Recreation | 3,014 | $ 55.8 |
| Farming | 2,691 | $ 88.9 |
| Federal Civilian Government | 1,990 | $ 202.4 |
| Mining | 1,682 | $ 243.5 |
| Educational Services | 1,507 | $ 39.4 |
| Information | 1,285 | $ 70.6 |
| Forestry, Fishing, Related Activities | 1,054 | $ 44.6 |
| Federal Military | 813 | $ 28.8 |
| Management of Companies | 705 | $ 54.7 |
| Utilities | 312 | $ 37.6 |
| **All Industries** | **100% (118,974)** | **100% ($ 6,229.5)** |

*Source: Woods & Poole Economics (2012 dollars)*

*Table 1-7 – Total Employment*

| Year | Billings MSA | Montana | United States |
|---|---|---|---|
| 1990 | 76,681 | 433,386 | 138,330,765 |
| 2000 | 97,830 | 552,696 | 165,370,755 |
| 2010 | 110,688 | 616,342 | 172,901,699 |
| 2020 | 118,974 | 668,310 | 190,776,766 |
| *Historical Annual Growth Rate* | *1.47%* | *1.45%* | *1.07%* |
| *2027* | *131,162* | *753,190* | *223,733,232* |
| *2032* | *136,763* | *794,277* | *237,417,579* |
| *2037* | *141,881* | *834,767* | *250,859,680* |
| *2042* | *146,548* | *875,020* | *264,133,081* |
| *Forecast Annual Growth Rate* | *0.97%* | *1.25%* | *1.51%* |

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

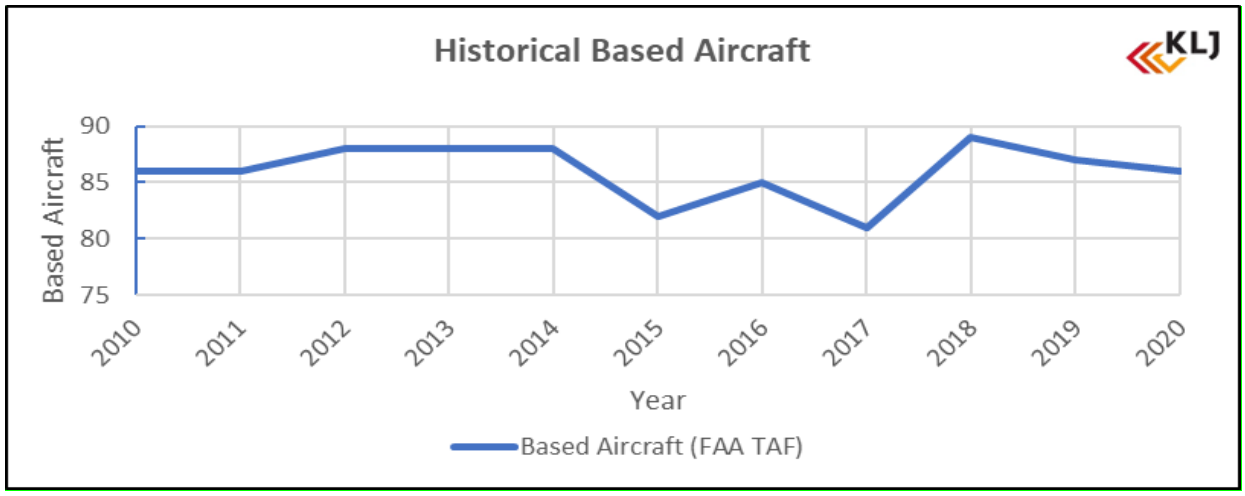
# Based Aircraft

A based aircraft is an operational and airworthy aircraft claiming an airport as its home for most of the year. The inventory of based aircraft is maintained using the National Based Aircraft Inventory Program (NBAIP) which is controlled by the FAA. It is important to point out that the NBAIP has been used since approximately 2010 as the official source of based aircraft. Airports and the FAA have had several years of adjustment to arrive at clear numbers of the actual based aircraft. This is estimated to be the reason for the considerable fluctuation in based aircraft between 80 and 90 aircraft over the last decade. Each airport is able to enter their aircraft into the NBAIP by N-Number. If for any reason that an aircraft is recorded at more than one airport, the aircraft is not counted in any airport's inventory. It is then up to the respective airport manager's to communicate with each other and resolve where the aircraft is located.

The historic records for 6S8 have shown a fluctuation in based aircraft. Prior to about 2011, the FAA records for based aircraft were solely based on a reported number from each airport manager with no confirmation of specific aircraft. Then in about 2011, the National Based Aircraft Inventory Program (NBAIP) was created to tie based aircraft numbers only to specific aircraft. The fluctuations over time at 6S8 have been a result of working out this reporting. The Airport Authority is now confident in the reported number of based aircraft in 2023. When the project started in 2022, the airport had recorded 77 based aircraft in the NBAIP but this was later corrected in August 2023 to 99 'validated' aircraft in the NBAIP. This number of 99 aircraft, see **Table 1-8 - Based Aircraft Fleet Mix**, will be used as the starting point for the forecast. It is important to note that Ultralight aircraft are not included in the FAA inventory of Based Aircraft but are recorded for planning purposes.

## *Historical Data*

*Figure 1-4 – Historical FAA TAF Based Aircraft*




*Source: FAA Terminal Area Forecast (TAF)*

*Table 1-8 – Based Aircraft Fleet Mix*

| Aircraft Type | Based Aircraft | Percent of Total |
|---|---|---|
| Single-Engine | 90 | 90.9% |
| Multi-Engine | 6 | 6.1% |
| Jet | 0 | - |
| Helicopter | 3 | 3.0% |
| **Total Based Aircraft** | **99** | **100.0%** |
| Ultralight/Other | 2 | |

*Source: Laurel Airport 5010*

## *Forecast*

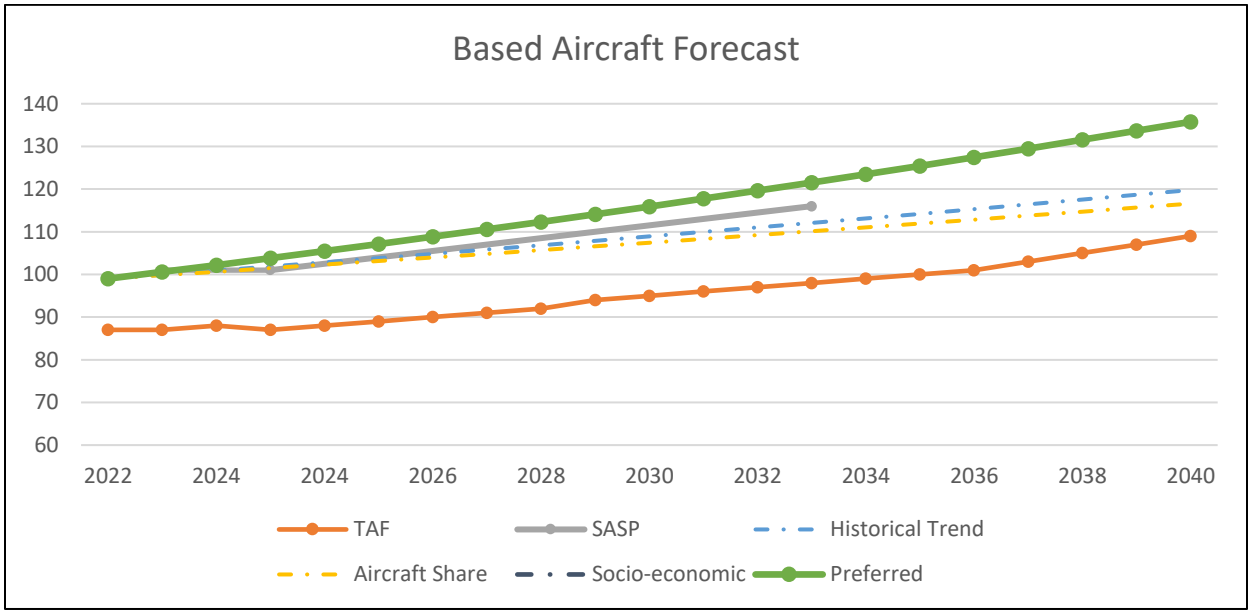
Local trends were evaluated when preparing this forecast of based aircraft at 6S8. It is estimated that based aircraft will grow at 6S8 for several reasons:

- 6S8 plays an important role in housing a number of personal and business use aircraft in the Billings area that choose to base at 6S8 rather than BIL. The population, per capita personal income, and employment will continue to grow in the region and 6S8 will have a share of this growth. This ranges from a 0.7% to 1.16% compound annual growth rate (CAGR).
- The State Airport System Plan from 2013 forecast a CAGR of 1.4% through the planning period. This forecast was prior to relocations which have occurred since the COVID-19 outbreak which made Montana very attractive home for individuals. The growth in Montana and the Billings metro area is expected to exceed the national trend of 0.82% CAGR in based aircraft.
- From a socio-economic perspective, a forecast of Gross Regional Product (GRP) was used to see what economic activity might occur into the future. The GRP CAGR is forecast to be 1.59% through the planning period. The GRP traditionally has a strong correlation with based aircraft since it is an indicator of economic activity at a very localized level.
- Over the past twenty plus years, the number of personal use hangars at the airport have grown from 17 in 1996 plus 18 T-Hangar/Open Hangar positions (totaling 35 spaces) to 37 hangars in 2022 plus 28 T-Hangar/Open Hangar positions (totaling 65 spaces[1]). This is a CAGR of 2.4% over the period and is the most statistically accurate growth indicator since errors were found in the historic record of based aircraft.
- Feedback from surveying existing and potential aircraft operators indicates there is a continued need for hangar space and with airfield improvements such as runway lengthening, full-service fueling, overnight hangar space, and improved weather reporting there may be additional itinerant operations.

**The preferred forecast for based aircraft was determined to be a 1.59% CAGR using the GRP growth and considering the SASP growth rate of 1.40% that was forecasted by the State. This is more conservative than the hangar space growth of 2.4% CAGR which is the most statistically accurate growth indicator.**

[1] There are currently 45 hangar buildings (3 FBO buildings, 37 personal use storage hangars, and 4 t-hangars/open-shade hangars).

*Figure 1-5 – Based Aircraft Forecasting Methods*




*Source: FAA TAF, 2013 Montana State System Plan, Woods & Poole Economic Forecast, KLJ Analysis*

*Table 1-9 – Based Aircraft Forecast*

| Metric | 2022 | 2027 | 2032 | 2037 | 2042 | *CAGR* |
|---|---|---|---|---|---|---|
| Single-Engine* | 90 | 97 | 105 | 113 | 122 | *1.54%* |
| Multi-Engine* | 6 | 7 | 7 | 8 | 9 | *1.91%* |
| Jet | - | - | - | - | - | *0.0%* |
| Helicopter | 3 | 3 | 4 | 4 | 5 | *2.38%* |
| **Total Based Aircraft** | **99** | **107** | **116** | **125** | **136** | ***1.59%*** |
| Ultralight/Other | 2 | 2 | 3 | 3 | 4 | *5.17%* |

*Source: KLJ Analysis. CAGR = Compounded Annual Growth Rate * Includes Piston and Turbo-Prop*

# General Aviation Operations

General Aviation (GA) is non-commercial aviation activity not classified in another category. At non-towered airports like 6S8, FAA estimates operations and classifies them as civil local or GA itinerant. Combined these include all types of general aviation operations.

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 in non-military aircraft. Local operations are usually performed by recreational and flight training aircraft. Civil local operations at 6S8 are conducted by a variety of flight schools that operate in the Billings area.

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.

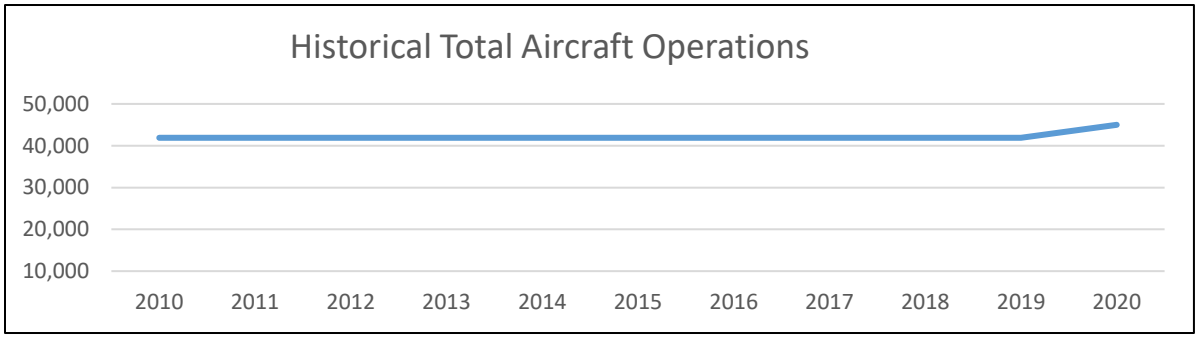
## Historical Data

The activity at 6S8 has historically been primarily conducted under visual flight rules (VFR) and thus there is only a small number of instrument flight rule (IFR) activity recorded by the FAA through the Traffic Flow Management System (TFMS). Activity recorded in the TFMS from 2008 to 2022 has ranged from 100 to 1,100 annual operations with the lowest being in 2022 and the highest in 2014.

This historic activity at 6S8 does not correspond to any particular national or state trends in active aircraft or annual hours flown. 6S8 appears to merely have consistent level of operations that corresponds with the number of based aircraft. 6S8 has continued use for flight training from small flight schools, flight instructors and to some extent use by the Rocky Mountain College flight training program based at BIS.

Historically 6S8 has on record a very high number of operations, 45,000 annually, which would translate to 150 operations a day considering seasonality (or 584 annual operations per based aircraft). This is much higher than what was observed or reported from interviews and appears to be based on activity that existed only when Rocky Mountain College was based at the airport prior to 2007 and was never adjusted afterwards in annual reports to the State's 5010 inspectors.

*Figure 1-6 – Historical General Aviation Operations*

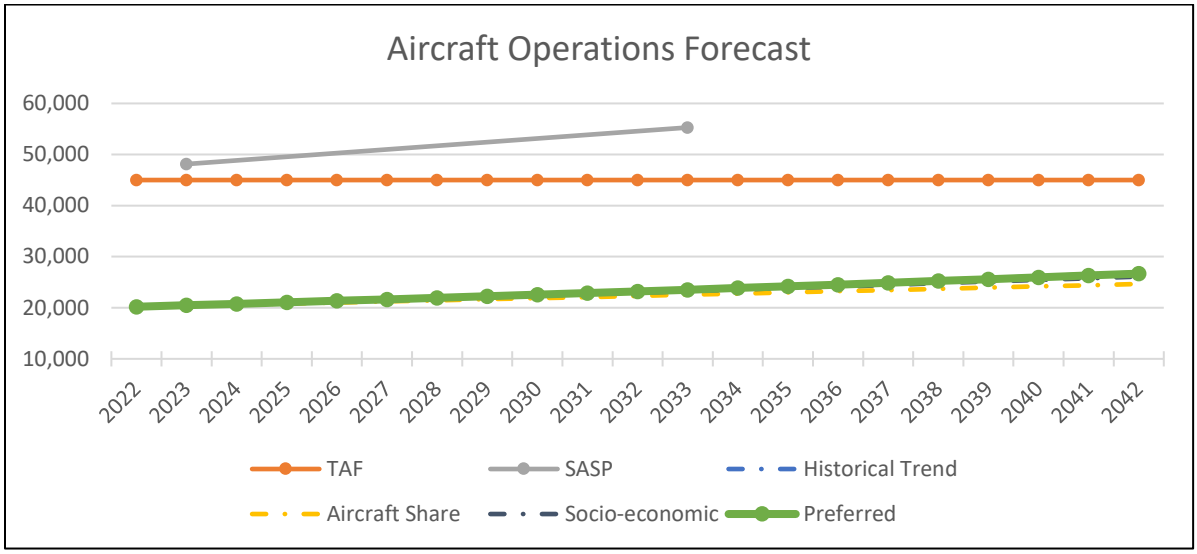



*Source: FAA Annual 5010 Reports*

## Forecast

Growth will continue for 6S8 but starting from a lower annual level of operations than has historically been recorded. Starting from a level of 20,200 annual operations, averaging 70 operations per day, (or 262 annual operations per based aircraft) and growing from there at 1.29% CAGR. The State Airport System Plan forecasted 1.4% CAGR and the Per-Capita Income shows a CAGR of 1.29%. The SASP growth rate of 1.4% was chosen as the appropriate metric for growth at 6S8 since it was consistent with the Per-Capita Income growth and the 5-year historical trend of 1.43% CAGR.

*Figure 1-7 – Aircraft Operations Forecasts*




*Source: FAA TAF, 2013 Montana SASP, Woods & Poole Economic Forecast, KLJ Analysis*

*Table 1-10 – General Aviation Operations Forecast*

| Metric | *2022* | 2027 | 2032 | 2037 | 2042 | *CAGR* |
|---|---|---|---|---|---|---|
| Air Taxi | *200* | 214 | 230 | 246 | 264 | *1.4%* |
| GA Itinerant Operations | *14,000* | 15,008 | 16,088 | 17,246 | 18,488 | *1.4%* |
| GA Local Operations | *6,000* | 6,432 | 6,895 | 7,391 | 7,923 | *1.4%* |
| Total GA Operations | *20,200* | 21,654 | 23,213 | 24,844 | 26,675 | *1.4%* |

*Source: KLJ Analysis. CAGR = Compounded Annual Growth Rate*

# Fleet Mix

The overall airport operations fleet mix combines commercial and general aviation operations using estimated percentages.

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. However, most operations conducted under IFR are tracked by FAA at airports that have Instrument procedures. The drawback of this data is it does *not* cover those aircraft operating under VFR or outside of a radar environment. For VFR flights, interpolation and estimating is required. Most corporate general aviation aircraft and commercial aircraft operate under IFR. Data for 6S8 was collected through a Freedom of Information Act (FOIA) request of the FAA's Traffic Flow Management System (TFMS) database.

TFMS data was used to determine an overall estimated fleet mix. Specifically, this data was used to determine proration percentages of aircraft types using the airport under IFR. This proration was then applied to existing and future airport operations at 6S8.

TFMS data was gathered from years 2008 through 2022. The fleet mix of aircraft identified in the following table is used for itinerant flights conducted under IFR. An aggregate of 2008-2022 aircraft types were ranked and the top 20 moved forward to help establish an overall IFR fleet mix.

Note in **Table 1-11** and **Table 1-12** that Ultralight/Other fleet are not recognized by the FAA in calculating operations and therefore are over and above the operations counts being forecasted for 6S8.

*Table 1-11 – Fleet Mix Share Breakdown*

| Metric | 2022 | 2026 | 2032 | 2037 | 2042 | CAGR |
|---|---|---|---|---|---|---|
| Single-Engine Piston | 90.0% | 90.0% | 90.0% | 90.0% | 90.0% | 0.0% |
| Multi-Engine Piston | 5.5% | 5.25% | 5.0% | 4.75% | 4.5% | -1.0% |
| Turboprop | 1.25% | 1.5% | 1.75% | 2.0% | 2.25% | 2.98% |
| Turbojet | 0.25% | 0.25% | 0.25% | 0.25% | 0.25% | 0.0% |
| Helicopter | 3.0% | 3.0% | 3.0% | 3.0% | 3.0% | 0.0% |
| | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | |
| Ultralight/Other | 1.5% | 1.75% | 2.0% | 2.25% | 2.5% | 2.59% |

*Source: KLJ Analysis, CAGR = Compounded Annual Growth Rate*

The total annual operations are prorated by the estimated fleet mix share percentage to yield a fleet mix operational forecast.

*Table 1-12 – Total Operations Fleet Mix Forecast*

| Metric | 2022 | 2026 | 2032 | 2037 | 2042 | CAGR |
|---|---|---|---|---|---|---|
| Single-Engine Piston | 18,180 | 19,489 | 20,892 | 22,396 | 24,008 | *1.40%* |
| Multi-Engine Piston | 1,111 | 1,137 | 1,161 | 1,182 | 1,200 | *0.39%* |
| Turboprop | 253 | 325 | 406 | 498 | 600 | *4.42%* |
| Turbojet | 51 | 54 | 58 | 62 | 67 | *1.40%* |
| Helicopter | 606 | 650 | 696 | 747 | 800 | *1.40%* |
| **Total Operations** | 20,200 | 21,654 | 23,213 | 24,884 | 26,675 | ***1.40%*** |
| Ultralight/Other | 303 | 379 | 464 | 560 | 667 | *4.02%* |

*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.

The majority of based aircraft and aircraft using 6S8 are A/B-I (Small) aircraft with the highest aircraft group meeting the 500 operations requirement being the A/B-II (Small) aircraft. The A and B approach category are combined by the FAA for design standards purposes and therefore are combined here for the discussion of critical design aircraft. Examples of these aircraft are shown in **Figure 1-8**. Note that the 'small' categorization refers to aircraft up to 12,500 pounds maximum gross takeoff weight. In summary the existing Critical Design Aircraft for 6S8 is the A/B-II (Small) aircraft.

*Figure 1-8 – Existing/Future Critical Design Aircraft Family*

| 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 |  |

*Photography Source: Airliners.net*

## *Future*

From research in the planning process and examining the forecast of activity through the planning period, it was determined that the **Critical Design Aircraft for 6S8 will remain the A/B-II (Small) aircraft**. This will provide the necessary protection for A/B-II (Small) aircraft even though the operations do not support that design yet. The ALP will be prepared for A/B-II (Small) and it is always understood that individual projects in the future will require justification at the time the projects are proposed.

# Annual Instrument Approaches

Annual instrument approaches (AIAs) are defined as an approach to an airport conducted in actual instrument meteorological conditions. For purposes of this definition, an approach initiated when the observed visibility is less than 3 miles, or the cloud ceiling is less than 1,000 feet.

To determine AIAs, the number of itinerant operations are totaled from the estimates and forecasts and compared to annual operations. The number of instrument flights are determined. It is generally assumed 12 percent of flights are operating on an IFR flight plan at 6S8, with all fixed-wing commercial operations operating under IFR. The number of AIA's in the future is expected to grow as itinerant traffic increases and more instrument-rated pilots equip aircraft to utilize approaches with new GPS technology. Local weather conditions are then reviewed. A total of 3.3 percent of the hourly weather observations are in conditions that require an instrument approach to be performed.

*Table 1-13 – Annual Instrument Approach Forecast*

| Metric | 2022 | 2027 | 2032 | 2037 | 2042 | CAGR |
|---|---|---|---|---|---|---|
| Annual Operations | 20,200 | 21,654 | 23,312 | 24,884 | 26,675 | *1.40%* |
| GA Itinerant Operations | 14,200 | 15,222 | 16,318 | 17,492 | 18,752 | *1.40%* |
| % IFR Itinerant Operations | 12.0% | 12.5% | 13.0% | 13.5% | 14.0% | *0.77%* |
| IFR Itinerant Operations | 1,880 | 2,090 | 2,321 | 2,575 | 2,852 | *2.11%* |
| IFR Approaches | 940 | 1,045 | 1,161 | 1,287 | 1,426 | *2.11%* |
| Instrument Approach Weather | | | 3.30% | | | |
| **Annual Instrument Approaches** | 31 | 34 | 38 | 42 | 47 | *2.11%* |
| **AIA as Percent of Itinerant** | 0.22% | 0.23% | 0.23% | 0.24% | 0.25% | *0.70%* |

*Source: KLJ Analysis*

Total AIAs for 6S8 are forecast to increase from 31 currently estimated to 47 at the end of the planning period for an average annual growth rate of 2.11 percent annually.

# Peak Activity

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.

- **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 (20 percent of Busy Day)

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. The methodology developed uses design periods to forecast use patterns rather than individual absolute peak periods.

## *Airport Operations*

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

### PEAK MONTH

*Table 1-14 – Peak Month Operations Forecast*

| Metric | 2022 | 2027 | 2032 | 2037 | 2042 | CAGR |
|---|---|---|---|---|---|---|
| Annual Operations | 20,200 | 21,654 | 23,213 | 24,884 | 26,675 | *1.40%* |
| Peak Month (15%) | 3,030 | 3,248 | 3,482 | 3,733 | 4,001 | *1.40%* |

*Source: KLJ Analysis, CAGR = Compounded Annual Growth Rate*

### DESIGN/BUSY DAY AND DESIGN HOUR

*Table 1-15 – Design Day Operations Forecast*

| Metric | 2022 | 2027 | 2032 | 2037 | 2042 | CAGR |
|---|---|---|---|---|---|---|
| Peak Month | 3,030 | 3,248 | 3,482 | 3,733 | 4,001 | *1.40%* |
| Design Day | 101 | 108 | 116 | 124 | 133 | *1.40%* |
| Busy Day (Design Day + 15%) | 116 | 124 | 133 | 143 | 153 | *1.40%* |
| Design Hour (20% of Busy Day) | 20.2 | 21.7 | 23.2 | 24.9 | 26.7 | *1.40%* |
| Design Hour Itinerant (10% of Itinerant Busy Day) | 7.1 | 7.6 | 8.2 | 8.7 | 9.4 | *1.40%* |

*Source: KLJ Analysis, CAGR = Compounded Annual Growth Rate*

# Forecast Summary

*Table 1-16 – Aviation Activity Forecast Summary*

| | Activity Levels | | | | | Average Annual Compound Growth Rates | | | |
|---|---|---|---|---|---|---|---|---|---|
| **A. Forecast Levels** | **2022** | **2027** | **2032** | **2037** | **2042** | **0-5 Years** | **0-10 Years** | **0-15 Years** | **0-20 Years** |
| **Operations** | | | | | | | | | |
| Itinerant | | | | | | | | | |
| Air Carrier | - | - | - | - | - | - | - | - | - |
| Commuter/Air Taxi | 200 | 214 | 230 | 246 | 264 | 1.40% | 1.40% | 1.40% | 1.40% |
| Total Commercial Operations | 200 | 214 | 230 | 246 | 264 | 1.40% | 1.40% | 1.40% | 1.40% |
| General Aviation | 14,000 | 15,008 | 16,318 | 17,493 | 18,752 | 1.40% | 1.40% | 1.40% | 1.40% |
| Military | - | - | - | - | - | - | - | - | - |
| Total Itinerant Operations | 14,200 | 15,222 | 16,318 | 17,493 | 18,752 | .0% | .0% | .0% | .0% |
| Local | | | | | | | | | |
| Civil | 6,000 | 6,432 | 6,895 | 7,391 | 7,923 | 1.40% | 1.40% | 1.40% | 1.40% |
| Military | - | - | - | - | - | - | - | - | - |
| Total Local Operations | 6,000 | 6,432 | 6,895 | 7,391 | 7,923 | 1.40% | 1.40% | 1.40% | 1.40% |
| **TOTAL OPERATIONS** | **20,200** | **21,654** | **23,213** | **24,884** | **26,675** | 1.40% | 1.40% | 1.40% | 1.40% |
| Annual Instrument Approaches | 31 | 34 | 38 | 42 | 47 | 2.14% | 2.13% | 2.12% | 2.11% |
| **Peak Hour Operations** | 20.2 | 21.7 | 23.2 | 24.9 | 26.7 | 1.40% | 1.40% | 1.40% | 1.40% |
| **Based Aircraft** | | | | | | | | | |
| Single Engine | 90 | 97 | 105 | 113 | 122 | 1.54% | 1.54% | 1.54% | 1.54% |
| Multi Engine | 6 | 7 | 7 | 8 | 9 | 1.91% | 1.91% | 1.91% | 1.91% |
| Turbojet | - | - | - | - | - | - | - | - | - |
| Helicopter | 3 | 3 | 4 | 4 | 5 | 2.42% | 2.41% | 2.39% | 2.38% |
| **FAA Total** | **99** | **107** | **116** | **125** | **136** | 1.59% | 1.59% | 1.59% | 1.59% |
| Ultralight/Other | 2 | 3 | 3 | 4 | 5 | 6.23% | 5.80% | 5.45% | 5.17% |
| **Total** | **101** | **110** | **119** | **130** | **141** | 1.69% | 1.69% | 1.69% | 1.69% |
| **B. Operational Factors** | | | | | | | | | |
| GA Ops per Based Aircraft | 202 | 200 | 198 | 196 | 195 | -0.19% | -0.19% | -0.19% | -0.19% |

*Source: KLJ & Consultant 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 based aircraft and total operations. The 2021 FAA TAF issued January 2022 is used for comparison.

## BASED AIRCRAFT

The airport's proposed forecast of based aircraft is above the FAA TAF for the 10-year forecast horizon. The 20-year forecast for facility planning purposes yields 136 based aircraft, 20.14 percent more than the FAA TAF at the end of the planning period.

*Table 1-17– Based Aircraft vs. FAA TAF*

| Metric | 2022 | 2027 | 2032 | 2037 | 2042 | CAGR |
|---|---|---|---|---|---|---|
| 6S8 Based Aircraft Forecast | 99 | 107 | 116 | 125 | 136 | *1.59%* |
| 2021 FAA TAF | 87 | 91 | 97 | 103 | 113 | *1.32%* |
| Difference | 13.79% | 17.73% | 19.52% | 21.80% | 20.14% | - |
| Allowable Difference | - | 10.0% | 15.0% | - | - | - |
| Consistent with FAA TAF? | - | **NO** | **NO** | - | - | - |

*Source: KLJ Analysis, FAA Terminal Area Forecast (January 2022), CAGR = Compounded Annual Growth Rate*

### OPERATIONS

The airport's proposed forecast of total operations is below the FAA TAF for the 10-year forecast horizon. The 20-year forecast for facility planning purposes yields 26,675 operations, 40.7 percent less than the FAA TAF at the end of the planning period.

*Table 1-18 – Total Operations vs. FAA TAF*

| Metric | 2022 | 2027 | 2032 | 2037 | 2042 | CAGR |
|---|---|---|---|---|---|---|
| 6S8 Operations Forecast | 20,200 | 21,654 | 23,213 | 24,884 | 26,675 | *1.29%* |
| 2021 FAA TAF | 45,000 | 45,000 | 45,000 | 45,000 | 45,000 | *0.0%* |
| Difference | -55.1% | -51.8% | -48.4% | -44.7% | -40.7% | - |
| Allowable Difference | - | 10.0% | 15.0% | - | - | - |
| Consistent with FAA TAF? | - | **NO** | **NO** | - | - | - |

*Source: KLJ Analysis, FAA Terminal Area Forecast (January 2022), CAGR = Compounded Annual Growth Rate*

## Forecast Approval

The FAA approved the aviation forecasts prepared in this chapter on January 31, 2024 for use in this master planning effort.

U.S. Department
of Transportation
**Federal Aviation
Administration**

Northwest Mountain Region
Colorado · Idaho · Montana · Oregon · Utah
Washington · Wyoming

Helena Airports District Office
2725 Skyway Dr., Suite 2
Helena, MT 59602

January 31, 2024

Shane Linse, Chairman
Laurel Airport
PO Box 242
Laurel, MT 59044

Laurel Municipal Airport (6S8)
Laurel, MT
Forecast Approval
*(* Corrected Graphic from 1/18/2024 Letter)*

Dear Mr. Linse:

The Federal Aviation Administration (FAA) reviewed forecast information for the Laurel Municipal Airport. The revised forecast was received August 18, 2023 and originally approved on January 18, 2024. This letter addresses a graphic correction in Table 1-16. The FAA approves the below forecast:

*Table 1-16 – Aviation Activity Forecast Summary*

| | Activity Levels | | | | | Average Annual Compound Growth Rates | | | |
|---|---|---|---|---|---|---|---|---|---|
| **A. Forecast Levels** | 2022 | 2027 | 2032 | 2037 | 2042 | 0-5 Years | 0-10 Years | 0-15 Years | 0-20 Years |
| **Operations** | | | | | | | | | |
| Itinerant | | | | | | | | | |
| Air Carrier | - | - | - | - | - | - | - | - | - |
| Commuter/Air Taxi | 200 | 214 | 230 | 246 | 264 | 1.40% | 1.40% | 1.40% | 1.40% |
| Total Commercial Operations | 200 | 214 | 230 | 246 | 264 | 1.40% | 1.40% | 1.40% | 1.40% |
| General Aviation | 14,000 | 15,008 | 16,318 | 17,493 | 18,752 | 1.40% | 1.40% | 1.40% | 1.40% |
| Military | - | - | - | - | - | - | - | - | - |
| Total Itinerant Operations | 14,200 | 15,222 | 16,318 | 17,493 | 18,752 | .0% | .0% | .0% | .0% |
| Local | | | | | | | | | |
| Civil | 6,000 | 6,432 | 6,895 | 7,391 | 7,923 | 1.40% | 1.40% | 1.40% | 1.40% |
| Military | - | - | - | - | - | - | - | - | - |
| Total Local Operations | 6,000 | 6,432 | 6,895 | 7,391 | 7,923 | 1.40% | 1.40% | 1.40% | 1.40% |
| **TOTAL OPERATIONS** | **20,200** | **21,654** | **23,213** | **24,884** | **26,675** | 1.40% | 1.40% | 1.40% | 1.40% |
| Annual Instrument Approaches | 31 | 34 | 38 | 42 | 47 | 2.14% | 2.13% | 2.12% | 2.11% |
| **Peak Hour Operations** | 20.2 | 21.7 | 23.2 | 24.9 | 26.7 | 1.40% | 1.40% | 1.40% | 1.40% |
| **Based Aircraft** | | | | | | | | | |
| Single Engine | 90 | 97 | 105 | 113 | 122 | 1.54% | 1.54% | 1.54% | 1.54% |
| Multi Engine | 6 | 7 | 7 | 8 | 9 | 1.91% | 1.91% | 1.91% | 1.91% |
| Turbojet | - | - | - | - | - | - | - | - | - |
| Helicopter | 3 | 3 | 4 | 4 | 5 | 2.42% | 2.41% | 2.39% | 2.38% |
| **FAA Total** | **99** | **107** | **116** | **125** | **136** | 1.59% | 1.59% | 1.59% | 1.59% |
| Ultralight/Other | 2 | 3 | 3 | 4 | 5 | 6.23% | 5.80% | 5.45% | 5.17% |
| **Total** | **101** | **110** | **119** | **130** | **141** | 1.69% | 1.69% | 1.69% | 1.69% |
| **B. Operational Factors** | | | | | | | | | |
| GA Ops per Based Aircraft | 202 | 200 | 198 | 196 | 195 | -0.19% | -0.19% | -0.19% | -0.19% |

*Source: KLJ & Consultant Analysis. Note: Some figures are rounded*

U.S. Department
of Transportation
**Federal Aviation
Administration**

Northwest Mountain Region
Colorado · Idaho · Montana · Oregon · Utah
Washington · Wyoming

Helena Airports District Office
2725 Skyway Dr., Suite 2
Helena, MT 59602

The FAA also approves protection for A/B-II (Small) aircraft for the existing and future critical aircraft. While this approval and subsequent ALP protects for A/B-II (Small) airport design standards, all future development will need to be justified by current activity levels at the time of proposed implementation of any infrastructure reconstruction or construction. We found the forecast to be supported by reasonable planning assumptions and current data. Your forecast appears to be developed using acceptable forecasting methodologies.

The approval of the forecast and critical aircraft does not constitute a commitment on the part of the United States to participate in any development recommended in the master plan or shown on the ALP.

All future development will need to be justified by current activity levels at the time of proposed implementation. The approval of the forecast and critical aircraft does not automatically constitute a commitment on the part of the United States to participate in any development recommended in the master plan or shown on the ALP. Further, the approved forecasts may be subject to additional analysis or the FAA may request a sensitivity analysis if this data is to be used for environmental or Part 150 noise planning purposes.

If you have questions, please call me at 406-441-5233.

Sincerely,

Digitally signed by JARED LEE WINGO
Date: 2024.01.31 15:14:04 -07'00'

Jared L. Wingo
(Acting) Community Planner
Helena ADO

Cc: Kent Penney, KLJ

# 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.

## *Relevant Environmental Features*

### BIOLOGICAL RESOURCES

*6S8 Airport Setting*

Biological resources include flora and fauna that are present in an area. 6S8 is in the Northwestern Great Plains Ecoregion according to US Geological Survey. Vegetation in this area consists of mostly mixed grass prairie, which is an intermediate ecosystem between a short grass and a tall grass prairie. The primary plants that make up a mixed grass prairie include western wheatgrass, green needle grass, blue grama, buffalograss, sideoats grama, and little bluestem. Common forbs and shrubs found in the area are purple coneflower, American vetch, Missouri greenrod, silver leaf scurfpea, and silver sagebrush. 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, antelope, jackrabbit, cottontail-rabbit, coyote, badgers, raccoons, skunks, prairie dogs, turkey, pheasant, and grouse.

According to the U.S. Fish and Wildlife Services website, federally listed endangered, threatened, proposed or candidate species in Yellowstone County include the Northern Long-Eared Bat, Monarch Butterfly, Little Brown Bat, Rufa Red Knot, Bald Eagle, Black-footed Ferret, Gray Wolf, Greater Sage-Grouse, Sprague's Pipit, Mountain Plover, and Golden Eagle. 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 are no known publicly owned lands from parks, recreation areas, or refuge areas within the immediate vicinity of the Airport. 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 (LWCF) grants for Yellowstone County indicates that 60 projects have been funded in the county since 1966. These properties are not located near the Airport. Proposed improvements are not anticipated to impact existing Section 6(f) properties; therefore, no further analysis is required.

## HAZARDOUS MATERIALS

No spills or hazardous material leaks have been reported near 6S8, according to checks of the Montana Department of Environment Quality and Environmental Protection Agency databases. These databases include information on underground storage tanks, Superfund sites, and areas governed by the Resource Conservation and Recovery Act. Before an airport sponsor acquires new land for ownership, the Federal Aviation Administration advises conducting an Environmental Due Diligence Audit (EDDA). An EDDA provides a thorough examination of a site to assess potential 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

A file search was completed by the Montana State Historical Preservation Office (SHPO). There are five historic sites and one prehistoric isolated fine record at SHPO. They include the Cove Ditch (24YL276) located to the southeast of the Airport, the Reiter Farmstead (24YL1803) located off the Runway 22 end, two historic material scatters (24YL1800 and 24YL1801), and a historic structure with farm equipment and historic materials that is located adjacent to Cove Ditch. The Cove Ditch is National Register of Historic Places (NRHP) eligible. The remaining sites were not recommended of inclusion to the NRHP. There is a potential that undiscovered cultural features exist on and around the Airport. Additional research, including an updated field survey, may be necessary to adequately assess the area's potential to contain historic properties.

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 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 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 1967, some airport structures may be more than 50 years old.

All projects that involve ground surface disturbance in areas not previously disturbed by the construction of the Airport will need a determination of affect to historic properties in consultation with SHPO. Resolutions of any adverse effects would need to be reviewed 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 6S8*

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 to produce 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 not Prime Farmland. There are segments of land classified as

Farmland of Statewide Importance and Prime Farmland if Irrigated. There is an irrigation cove ditch south of the airport, but no extensions have been constructed to irrigate the airport lands. 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, 6S8 is surrounded by prairie pastureland and open spaces. There are five homes located to the south and east of the airport. The closest one is approximately 1,200 feet east of the Runway 22 End. 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 6S8 is private pastureland. The Yellowstone River is three miles south of the airport and can be a source of wildlife and waterfowl activity.

6S8 is surrounded by a barbed wire fence that keeps out most cattle but is not sufficient protection for large mammals such as deer, antelope and coyotes from crossing over the Airport property including operations areas such as the runway. 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.

## 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 no wetlands in the National Wetland Inventory (NWI) located on the Airport property. 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

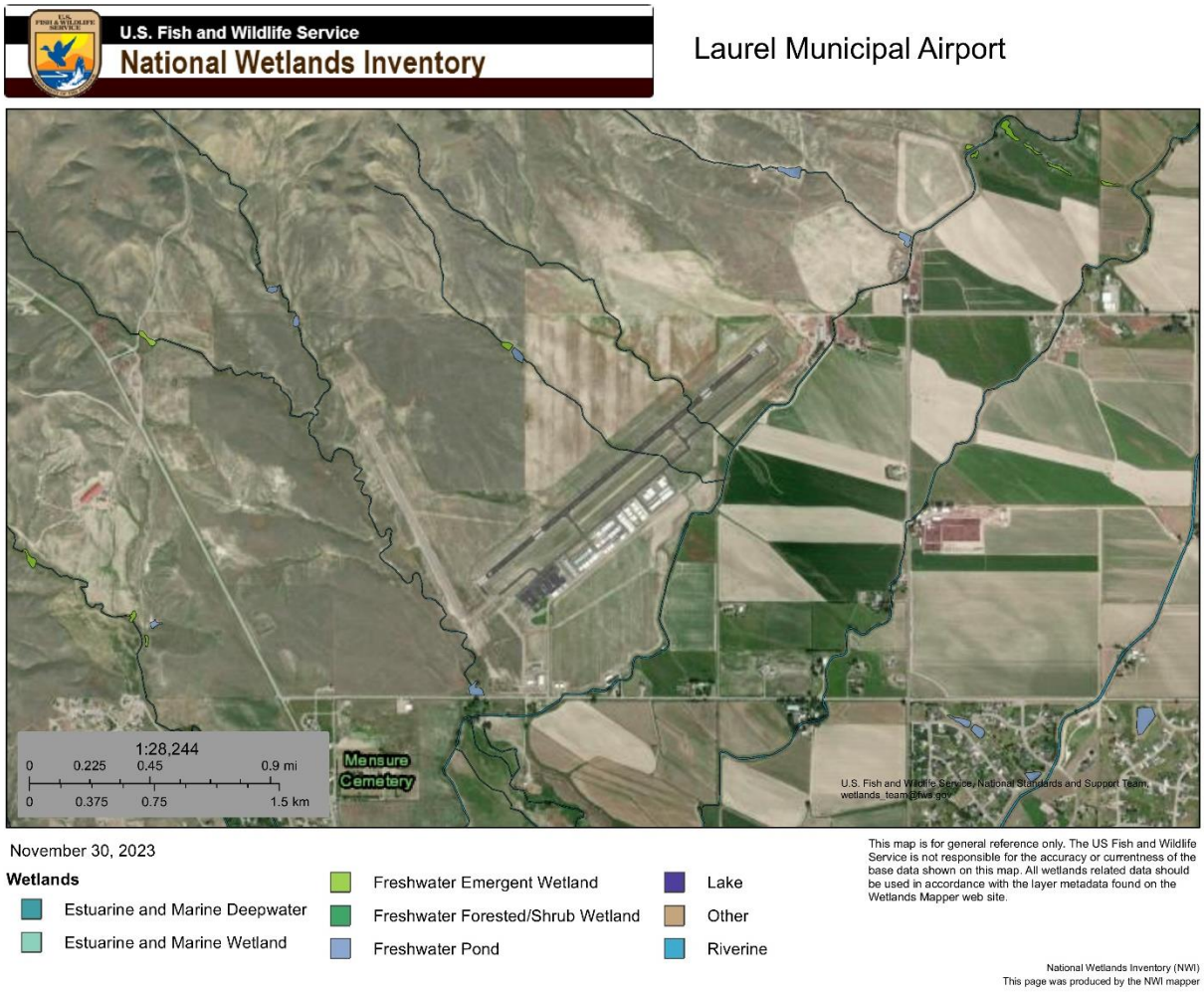
benefits, wetlands may have the potential to attract wildlife that can be hazardous to aircraft using the Airport. Please refer to National Wetland Inventory.

### *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.

Notably there is a riverine channel west of the runways flowing to a freshwater pond south of the airport. The flow is from north and to south. The area has not developed wetland characteristics most notably wetland vegetation and hydrology. There is a man-made irrigation ditch located along the southern property line of the airport. The airport is located within the Yellowstone River watershed.



### *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 6S8 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 6S8 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 rural location of the Airport, adverse impacts to minority and low-income populations are very unlikely. Similarly, the location would preclude health and safety risks to children because the lack of people living in 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. 6S8 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 6S8. 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 Laurel Municipal Airport 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.