

2016

# WYOMING STATE AVIATION SYSTEM PLAN

Executive Summary



**Devils Tower (cover)**

Elevation: 5,114'

Location: Northeast Wyoming (*Crook County*)

Devils Tower (no apostrophe according to the U.S. Board on Geographic Names) was the first United States National Monument, established by President Theodore Roosevelt in 1906. There are multiple theories of how Devils Tower was formed, the most famous of which purports that the tower is the remaining center of an explosive volcano. The tower was first scaled in 1893. Roughly 400,000 tourists visit the monument each year.



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## Welcome to the 2016 Wyoming State Aviation System Plan (WYSASP)!

The 2016 WYSASP is an update to the *2009 Statewide Airport Inventory and Implementation Plan*. The WYSASP offers vital knowledge to each and every Wyoming resident and represents

a tremendous state asset for our citizens – an aviation system that connects our communities to each other and to the national aviation system. With an area of nearly 98,000 square miles of rough and remote terrain, **Wyoming relies on a network of 40 publicly owned aviation system airports** to deliver essential transportation connections throughout the state.

**More than \$115 million in state funds, as well as an estimated \$257 million in federal funds and \$39 million in local funds, have been invested in Wyoming airports since 2007 to provide efficient travel options.** Without a properly functioning and well-planned aviation system, Wyoming could lose valuable business and economic opportunities, as well as diminish the safety of our communities. In addition to the recreational and economic advantages, Wyoming's aviation system provides critical access for medical patient and doctor transport, especially when hours of ground travel time are not a feasible option.

To support the viability of Wyoming's aviation system for current and future users, the state implemented an airport system planning process, which was conducted by the Wyoming Department of Transportation (WYDOT) Aeronautics Division and the Federal Aviation Administration (FAA).

Most community planning efforts start from the ground up; they identify issues and then seek solutions. **System plans differ in that they are top-down studies designed to assist agencies and community leaders in understanding a myriad of topics viewed as a whole.** Most airports in the Wyoming aviation system have already accomplished local level planning, addressing the concerns and needs of their respective communities. However, the WYSASP aggregates the assets that exist, develops priorities and needs, and reports the findings – both strengths and shortfalls – for the greater community, the State of Wyoming, as a whole.

**Aviation provides necessary access to Wyoming's natural treasures.** While the natural geography and landscape of Wyoming help drive its economy, they also present a challenge to aviation. High altitude airports surrounded by rising, sometimes extreme, terrain present obstacles to aviation operations, requiring longer runways, frequent wintertime snow removal, and limits to instrument approaches that restrict airport access during poor weather conditions. The terrain also physically separates rural regions, making commercial air service and general aviation access a vital component of Wyoming's transportation system. All of these elements make for a challenging system to develop, maintain, and manage at both the local and state level, which make a comprehensive system plan necessary.



## 2016 WYSASP OVERVIEW

The WYSASP consists of a detailed study of the 40 public-use airports in the State of Wyoming, resulting in the documentation of the airports and airport-related facilities needed to meet the current and future air transportation needs of the state. Specifically, the WYSASP includes the following:

- An updated system-wide inventory of airport facilities and services,
- Updated statewide and individual airport activity forecasts,
- Development of quantifiable criteria for evaluating system plan goals, performance measures, and objectives, including individual airport report cards for all of Wyoming's public-use airports,
- A method for triggering an airport classification change,
- An updated Wyoming Aviation System Plan map,
- Evaluation of the previous (2009) and current (2016) system plans, and a comparison of the performance of the system under the two plans,
- A Return on Investment (ROI) analysis of WYDOT's Air Service Enhancement Program (ASEP),
- An Air Service Market Research (ASMR) report of all commercial services statewide,
- Individual and system-wide recommendations, including connection to the existing Priority Rating Models (PRM) for Airport Improvement Program projects and ASEP projects, and
- A trends and technologies discussion, which may impact aviation activities in Wyoming during the 20-year planning period.



The purpose of system planning is to facilitate coordination between local, state, and federal agencies in maintaining and promoting a safe and efficient national aviation system.

The development and upkeep of Wyoming's airport system is a collaborative effort between multiple entities, but is led by the WYDOT Aeronautics Division, who uses the WYSASP to assess needs and develop statewide aviation goals and objectives.

Through the WYDOT Aeronautics Division, the State of Wyoming:

- Is dedicated to supporting and maintaining a **safe, reliable, and efficient state aviation system**,
- **Prioritizes and disperses state** capital grant **funds**,
- Works with the FAA to manage, prioritize, and disburse grant funds from the **federal Airport Improvement Program** (a user-based funding source), and
- Manages legislatively-funded **support for commercial air service**.

Airport system plans typically consider a 20-year planning horizon; however, maintaining an updated system plan is important as the needs of each state change incrementally over time.





## SUMMARY OF 2016 SYSTEM GOALS

An essential feature of an aviation system plan is the creation of goals to guide the future development of the system and performance measures to evaluate the system's adequacy in meeting those goals. The purpose of this process is to maximize the value and use of the aviation system to Wyoming citizens. These goals were carried forward from the 2009 system plan.

- Provide a safe and secure integrated aviation system for its users and the general public,
- Maintain an aviation system to support current and future demand while optimizing public and private investment,
- Promote an aviation system that is environmentally responsible,
- Promote educational activities and raise public awareness of the aviation system and its value,
- Provide accessible, cost-effective, and reliable transportation options, and
- Sustain and provide a system of Commercial Service airports that provides convenient and reliable access to the national transportation system at a competitive price.

A system-wide inventory of facilities and services was conducted to identify the assets in Wyoming's aviation system, and to compare them to the performance measures and objectives that were established for this plan. Having an updated inventory of all system features provides funding agencies and stakeholders with an accurate snapshot of existing conditions. This is critical when evaluating system performance, identifying necessary improvements, and prioritizing funding requests.

A listing of airport uses inventoried for the system plan is included in the chart below. Knowing the varied uses of Wyoming's airports is critical in determining system-wide needs and classifying airports. The data collected during the inventory was used to classify each airport based on the five categories listed below. The five categories were further broken down by airport classification.



- Types of Facilities and Services Offered,
- Type of Aircraft Accommodated,
- Type of Community Served,
- Economic Impact, and
- Based Aircraft.

A significant investment has been made in Wyoming's aviation system. Keeping a record of the infrastructure, facilities, and services present at the 40 system airports provides a historical look at the progress and enhancement of the system as a whole.



As part of the study, forecasts of future aviation activity for Wyoming’s airports were developed and detailed projections for each individual airport can be found in the technical report. These forecasts, which do not replace local planning forecasts, include the aviation activities for aircraft operations, based aircraft, and enplanements for the next 20 years. Forecasting serves several purposes, including:

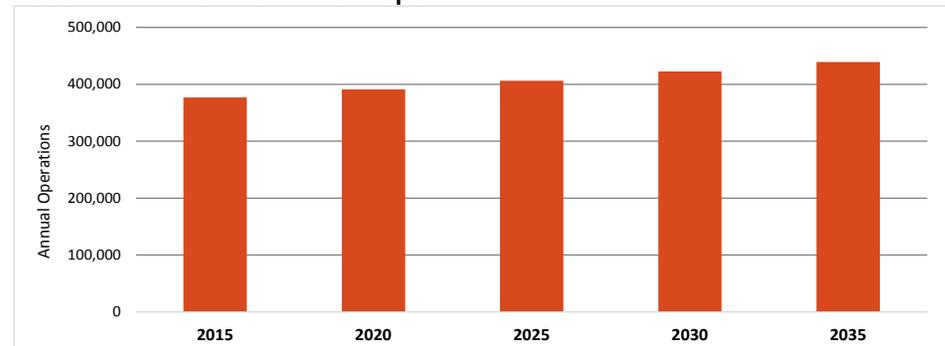
- Evaluating if the current system can meet future demands,
- Estimating future capital improvement projects that may be necessary at airports as the result of changes in activity, and
- Assisting in classification of airports within the Wyoming system.

An **operation** is defined as a take-off or a landing by an aircraft. During the planning period, operations are forecast to increase 16.5% with a compound annual growth rate (CAGR) of 0.8%. Similar growth is expected in **based aircraft** with an increase of 15.5% or 0.7% CAGR. The CAGR used to determine these forecasts is based on each county’s estimated population growth during the planning period.

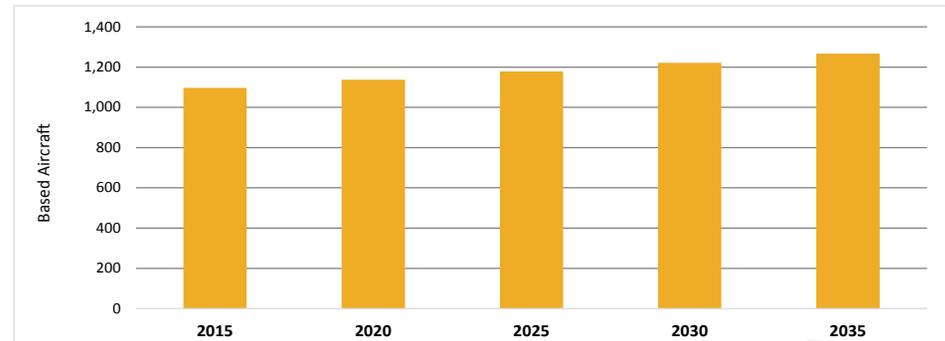
An **enplanement** is considered one boarded revenue (paying) passenger. Enplanement forecasts are influenced by numerous factors, including changes in air service, type of aircraft, and flight frequencies.

Statewide, enplanements are forecast to increase approximately 28% over the entire system during the planning period (equal to 1.23% compound annual growth). For historical context, the compound annual growth in enplanements for Wyoming Commercial Service airports, from 2001 through 2015, was 2.52%. This difference indicates that the growth rate for enplanements at Wyoming Commercial Service airports is forecast to slow by approximately half.

**Forecast of Statewide Aircraft Operations**



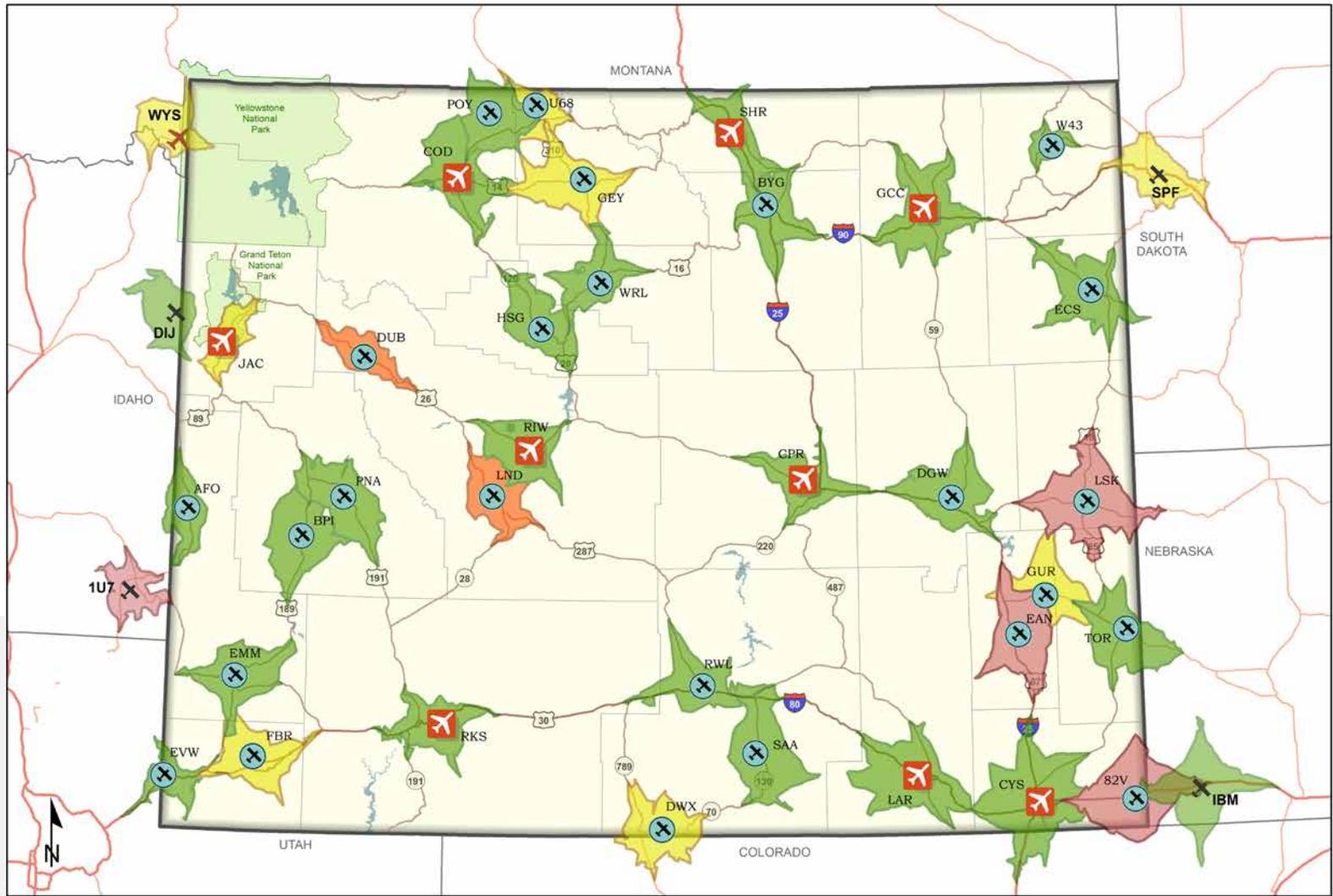
**Forecast of Statewide Based Aircraft**



**Forecasts of Enplanements at Commercial Service Airports**

	Enplanement Change	Percent Change	CAGR
	2015-2035	2015-2035	2015-2035
Casper-Natrona County International Airport	24,022	23.8%	1.07%
Cheyenne Regional Airport-Jerry Olson Field	451	18.7%	0.86%
Gillette-Campbell County Airport	8,301	26.4%	1.18%
Jackson Hole Airport	100,380	32.6%	1.42%
Laramie Regional Airport	1,772	12.9%	0.61%
Riverton Regional Airport	409	11.6%	0.55%
Rock Springs-Sweetwater County Airport	2,321	13.6%	0.64%
Sheridan County Airport	163	14.9%	0.70%
Yellowstone Regional Airport	4,117	12.4%	0.59%
<b>TOTAL ENPLANEMENTS</b>	<b>141,936</b>	<b>27.80%</b>	<b>1.23%</b>

With a population widely dispersed over a large land area, providing adequate coverage for medical air transportation is critical in Wyoming. By utilizing the public airports throughout the state and in neighboring states, 78.5% of Wyoming citizens are within a 30 minute drive of an airport that supports medical evacuations without any limiting factors. Furthermore, 91.2% of the population is within a 30 minute drive of an airport that can support medical evacuations, including those that may have limiting factors such as the unavailability of fuel or an approach used by pilots to land at airports in low visibility or with low clouds. Additional drive time analyses can be found in the technical report.



**Percent of Population and Area within 30 minute Drive Time of Airports Supporting Medical Evacuations**

- Legend**
- Commercial (Out of State)
  - General Aviation (Out of State)
  - Commercial
  - General Aviation
  - Water Bodies
  - National Park

Criterion/Map Key	Medical Operations Criteria			
	Criteria Met (Yes/No)			
Runway Length > 5,000 ft	Yes	Yes	Yes	Yes
Approach Non-Precision or better	Yes	Yes	No	No
24 hr Jet A Fuel Availability	Yes	No	Yes	No

Percent of WY Population				Total
78.5%	7.0%	3.2%	2.5%	91.2%

Wyoming's classification system recognizes all 40 system airports and their importance to aviation transportation in the state. Since approximately three-quarters (31 out of 40) of the airports in Wyoming's aviation system are at the general aviation service level, Wyoming developed a unique classification system that reflects the varied nature of Wyoming's airports. At the same time, the state recognizes that airports with similar roles should be grouped together and aim to meet or maintain certain facilities, design standards, and services.

The effort to provide tailored airport categories for Wyoming resulted in a classification system that groups airports by facility and service characteristics, determines airport roles for each classification, outlines facilities and services required to meet present and future airport roles, and creates facility and service objectives in each airport category to meet system goals.



**Commercial Service Airports:** Serve major populations, economic centers, and areas of tourism providing a connection to national and global economies and are designed to accommodate commercial air service and business general aviation activity consistent with user demand.



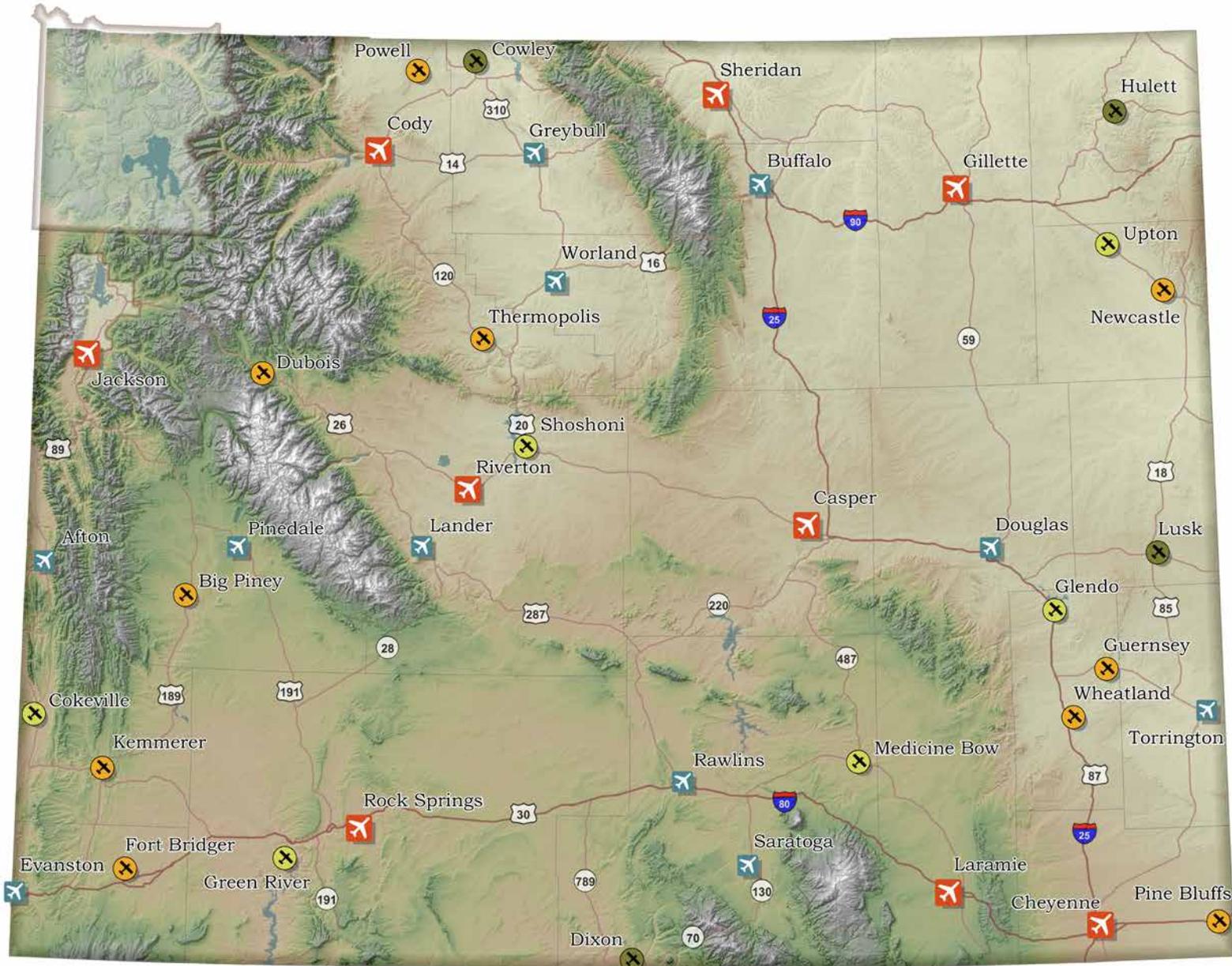
**Business Airports:** Serve multi-county areas and economic centers providing a connection to state and national economies and are intended to accommodate larger business jet activity and support tourism and recreational demand.



**Intermediate Airports:** Serve counties and medium to small communities to support local economies and are intended to accommodate medium to small business jet activity and recreational users.



**Local Airports:** Serve smaller communities and have the basic facilities intended to accommodate recreational users and support emergency use. Local airports are divided into paved and non-paved airports.



 **Commercial Service**

 **Business**

 **Intermediate**

 **Local Paved**

 **Local Non-Paved**

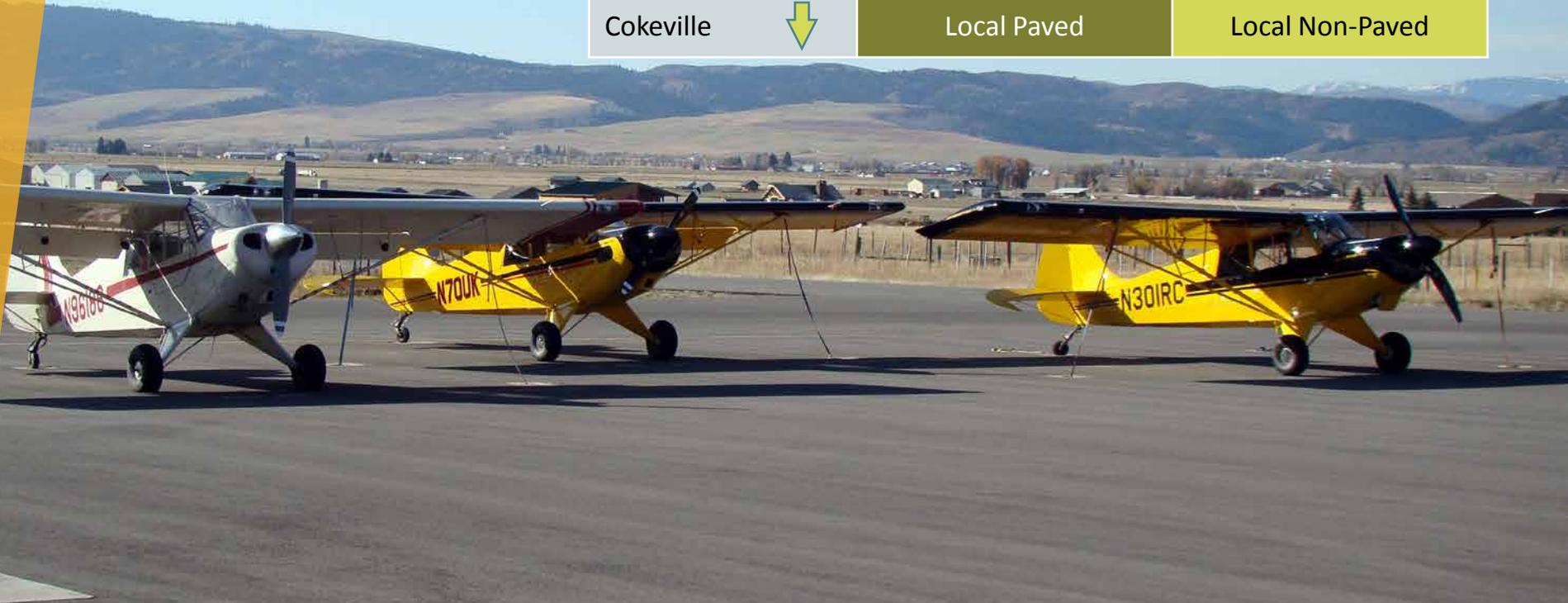
# AIRPORT CLASSIFICATION

Afton, WY

The method for classifying airports was updated by using metrics that are similar to the previous system plan, and adding specific, quantifiable criteria. This improved classification system provides transparency and a triggering mechanism for airports changing classification. It also gives airports, and their sponsors, the opportunity to understand what circumstances may cause their airport to move up or down between classifications.

Nine airports changed classification from the 2009 system plan to the 2016 update; eight moved up in category, while one moved down.

City		2009 Classification	2016 Classification
Buffalo	↑	Intermediate	Business
Lander	↑	Intermediate	Business
Rawlins	↑	Intermediate	Business
Torrington	↑	Intermediate	Business
Dubois	↑	Local Paved	Intermediate
Fort Bridger	↑	Local Paved	Intermediate
Pine Bluffs	↑	Local Paved	Intermediate
Thermopolis	↑	Local Paved	Intermediate
Cokeville	↓	Local Paved	Local Non-Paved



Evaluation of system performance is a key element of the WYSASP. This analysis gives decision makers, the citizens of Wyoming, and WYDOT Aeronautics a holistic view of achievements and opportunities for improvement in the state’s aviation system, and is the basis for the WYSASP recommendations. Looking at each goal as a whole, it becomes evident how the system is generally performing and areas for improvement may be identified.

2009 / 2009	Evaluation of the Wyoming aviation system using the data directly from the 2009 <i>Wyoming Statewide Airport Inventory and Implementation Plan</i> .
2009 / 2016	Evaluation of the airport system carried forward from the 2009 <i>Wyoming Statewide Airport Inventory and Implementation Plan</i> using the data collected in the 2016 WYSASP.
2016 / 2016	Evaluation of the current system in the 2016 classifications using the data collected in the 2016 WYSASP.

The following tables illustrate the present status of each performance measure based on the system plan’s six goals. Additionally, each table presents an analysis based on the 2009 system plan, using first the 2009 data and then the 2016 data. Dashes indicate that the performance measure or objective did not exist in the 2009 study.

Goal: Provide a safe and secure integrated aviation system for its users and the general public. Performance Measure: Percent of Airports Meeting the...	2009 / 2009	2009 / 2016	2016 / 2016	Met?	Performance Target (2016/2016)
Runway Safety Area (RSA) Objective	54%	97%	100%	✓	100%
Primary Runway Edge Lighting Objective	78%	90%	90%	✓	89%
Perimeter Fencing Objective	78%	78%	80%	✗	81%
Weather Reporting Facilities Objective	91%	97%	100%	✓	100%
Runway Protection Zone (RPZ) Ownership Objective	27%	8%	17%	✗	50%
Runway Visual Aids Objective	-	71%	71%	✗	87%
Airport Visual Aids Objective	-	100%	100%	✓	81%
Apron Area Lighting Objective	-	75%	70%	✗	85%
Apron Size Objective	-	97%	97%	✗	100%
Snow Removal Equipment (SRE) Objective	-	23%	21%	✗	100%

<b>Goal: Maintain an aviation system to support current and future demand while optimizing public and private investment.</b> Performance Measure: Percent of Airports Meeting the...	<b>2009 / 2009</b>	<b>2009 / 2016</b>	<b>2016 / 2016</b>	<b>Met?</b>	<b>Performance Target (2016/2016)</b>
Pavement Condition Index (PCI) Rating of Acceptable	86%	80%	82%	X	100%
Pavement Management Plan (PMP) Objective	89%	91%	94%	X	100%
Master Plan Objective	54%	91%	94%	✓	65%
Airport Layout Plan (ALP) with Exhibit "A" Objective	51%	76%	76%	X	100%

<b>Goal: Promote an aviation system that is environmentally responsible.</b> Performance Measure: Percent of Airports Meeting the...	<b>2009 / 2009</b>	<b>2009 / 2016</b>	<b>2016 / 2016</b>	<b>Met?</b>	<b>Performance Target (2016/2016)</b>
Land Use Protection Plan Objective	40%	29%	29%	X	90%
Deicing Containment Objective	40%	56%	56%	X	100%
Wildlife Hazard Assessment Objective	-	100%	100%	✓	92%
Sustainability Objective	-	69%	68%	X	100%

<b>Goal: Promote educational activities and raise public awareness of the aviation system and its value.</b> Performance Measure: Percent of Airports with...	<b>2009 / 2009</b>	<b>2009 / 2016</b>	<b>2016 / 2016</b>	<b>Met?</b>	<b>Performance Target (2016/2016)</b>
Marketing Efforts	63%	81%	75%	✓	73%
Annual Air Show, Fly-in, or other Public Event	38%	40%	41%	X	46%

Goal: Provide accessible, cost-effective, and reliable transportation options. Performance Measure: Percent of ...	2009 / 2009	2009 / 2016	2016 / 2016	Met?	Performance Target (2016/2016)
Wyoming Population within 90 Minute Drive Time of a Commercial Service Airport and 30 Minute Drive Time of All Other System Airports	98%	98.8%	98.8%	✓	95%
Wyoming Population within: 60 Min. Drive Time of Baseline Air Service Airports *	-	78.7%	78.7%	✓	75%
90 Min. Drive Time of Baseline Air Service Airports *	-	90.4%	90.4%	✓	90%
120 Min. Drive Time of Baseline Air Service Airports *	-	98.8%	98.8%	✓	95%
Wyoming Population and Area within a 30 Minute Drive Time of All Airports Serving GA (all airports) (Population/Area)	-	91.2% / 21.3%	91.2% / 21.3%	✓	80%
Wyoming Population within a 90 Minute Drive Time of an Airport Offering Air Charter Service	87%	85%	85%	✓	85%
Economic Centers Located within 60 Minute Drive Time of a Commercial or Business Airport	90%	100%	100%	✓	100%
Wyoming Population within 30 Minute Drive Time to an Airport that Supports Medical Operations (5,000+ feet of runway, non-precision [or better] approach, and 24 hour Jet A fuel availability)	-	78.5%	78.5%	✗	80%
Airports with a Terminal Building	100%	97%	100%	✓	100%

\* Baseline Air Service Airports have a minimum of 11 round trips per week and include the following: two round trips per weekday, one round trip per weekend, and flights must be to small hubs or larger.

Goal: Sustain and provide a system of Commercial Service Airports that provides convenient and reliable access to the national transportation system at a competitive price. Performance Measure: Percent of Airports...	2009 / 2009	2009 / 2016	2016 / 2016	Met?	Performance Target (2016/2016)
Maintaining Critical Air Service (defined as daily scheduled service to one hub airport)	-	100%	100%	✓	100%
Increasing or Sustaining Economic Benefit, or Facilitating New or Existing Business Opportunities, by Providing Adequate Air Service to Wyoming Communities	-	100%	100%	✓	100%
Increasing or Maintaining Consistency of Service, On-Time Performance, and Reliability	-	56%	56%	✗	100%
Increasing the Number of Wyoming Passengers Originating Flights in Wyoming Rather Than Other States	-	56%	56%	✗	100%
Increasing or Sustaining the Frequency of Flight Operations from Commercial Wyoming Airports to Regional Airport Hubs	-	22%	22%	✗	100%
Delivering Competitive Airfare for Wyoming Passengers	-	22%	22%	✗	100%
Raising the Minimum Number of Enplanements at Airports Facing a Potential Loss of Federal Airport Improvement Program (AIP) Funding	-	0%	0%	✗	100%

## WYOMING PRIORITY RATING MODELS

For years, the State has managed both federal and state funding programs for aviation system airports by utilizing the Wyoming Priority Rating Model (PRM) for Airport Improvement Program (AIP) projects and the PRM for Air Service Enhancement Program (ASEP) projects. These innovative models were developed and have been periodically updated by Wyoming Aeronautics Commissioners, WYDOT Aeronautics staff, airport managers, and consultants. They are not part of the WYSASP, but are valuable related **tools** to **evaluate** and **rank** projects for planning, budgeting, and granting. They allow the state to prioritize projects that further the established goals of the WYSASP and the Wyoming Aeronautics Commission.

The 2016 WYSASP goals closely identify with the project purposes listed in the PRM for AIP projects as follows:

- **Safety** - projects that are generally defined as improvements to existing infrastructure, facilities and equipment, which support the daily functions of the airport, support the short-term and long-term operations of the airport, and provide for the safety of airport personnel and airport users,
- **Security** - projects that provide for facilities or equipment that are designed to prevent or deter persons or vehicles from unauthorized access to airside operations, and provide facilities or equipment designed to aid in providing secure (and safe) movement in and around all airport facilities,
- **Maintenance** - projects that facilitate the existing operations of the airport,
- **Enhancement** - projects directed towards creating new or expanded facilities that accommodate more passengers, cargo, aircraft operations, or based aircraft; or the enhancement of airport use and efficiency, and
- **Planning** - projects directed to a comprehensive or specific issue/location study of short-term or long-term airport needs; resultant recommendations support the development of a project or program of projects.

The ASEP PRM gauges the merits of a potential minimum revenue guarantee (MRG) grant to a community for airline service. The ASEP PRM evaluates to what degree a potential grant would meet the statutorily intended benefits of the ASEP including, meeting a 10,000 enplanement threshold for FAA entitlement funds, capacity growth, increasing commercial flight operations within the state, reducing passenger leakage to out of state airports, improving reliability and on-time performance, and lowering air fares. The ASEP PRM also takes into account community involvement in air service development, economic impacts, and differentiating characteristics of the proposed grant. Scores from the ASEP PRM are then compared against other proposed air service MRGs.

**Through the PRM documents, points are awarded to projects based on each proposed project’s overall potential contribution to the achievement of state system plan goals or ASEP benchmarks.** If a project supports WYSASP system performance measures, ASEP benchmarks, or Commission priorities, it is awarded additional points. A proposed project can earn another point if it supports the current classification facility and service objective identified in the airport’s individual report card.

The PRM and the ASEP PRM were both used to help develop the WYSASP recommendations. The WYSASP performance measures that missed their assigned targets by 15% or more were connected with their respective aviation system plan goals and their PRM project purposes or the ASEP PRM as listed in the table on page 22.

### **System accomplishments since 2009:**

- All paved airports now have on-site weather reporting systems,
- All paved airports now have FAA-compliant Runway Safety Areas (RSAs),
- Number of airports with deicing containment increased by 16%,
- All economic centers are within a 60-minute drive time of Commercial Service or Business airports due to four airports moving up to the Business classification (an economic center is defined by the annual retail sales within a community or area),
- Number of airports with Pavement Management Plans increased from 89% to 94%,
- Number of airports with runway edge lighting increased by 12%,
- Number of airports with perimeter fencing increased from 78% to 80%,
- Nearly all airports meet the master plan objective (up 40%),
- Three-quarters of airports meet the Airport Layout Plan objective (up 25%), and
- More airports are employing marketing efforts (up 12%) and hosting public events (up 3%).



**The \$21 million invested in the 60 ASEP grant projects produced a total economic impact of over \$523 million for an average return of \$23.28 of economic benefit for every \$1 invested.**

The ROI analysis completed as part of the WYSASP estimated the economic benefit for each flight supported through WYDOT’s Air Service Enhancement Program (ASEP) from 2004-2015. The direct impact of each ASEP-supported flight was analyzed based on two categories: 1) off-airport visitor spending, and 2) on-airport related activities, such as businesses and organizations engaged in day-to-day airport operations and projects.

In addition to measuring the direct impacts of each flight, estimates of the re-circulation and re-spending of direct impacts within the economy, known as multiplier effects, were also made. Multiplier effects include indirect impacts (that occur when businesses spend their revenue on business expenses such as payroll or equipment) and induced impacts (that occur when employees spend their earnings on goods and services in the local economy).

Number of Routes Subsidized	Total Amount of Revenue Guarantees	Total Enplanements	Total Jobs Supported	Total Economic Impact	State Tax Revenue
60	\$21,550,602	464,700	6,365	\$523,283,240	\$30,800,170

Airport	ASEP Investment	Total Economic Output	ROI
Cody	\$2,297,924	\$66,638,324	28.00
Casper	\$1,953,520	\$16,136,400	7.26
Cheyenne	\$2,250,000	\$7,839,204	2.48
Gillette	\$6,651,105	\$29,973,759	3.51
Jackson	\$1,452,393	\$376,195,556	258.02
Riverton	\$128,934	\$3,078,553	22.88
Rock Springs	\$6,816,726	\$23,421,443	2.44
All Airports	\$21,550,602	\$523,283,240	23.28

Note: During the analysis period, Laramie and Sheridan did not participate in an ASEP grant and, therefore, were not included in the ROI analysis.



Air service at Wyoming's 10 commercial service airports was examined to understand each airport's air service requirements and how these airports could best meet the region's future transportation and economic development needs. (Note, it was during this analysis that Worland Municipal Airport lost commercial air service due to termination of the airport's eligibility to participate in the Essential Air Service [EAS] program.)

General conclusions from the Air Service Market Research (ASMR) report include the following:

- Airline business model and fleet changes impact commercial air service in Wyoming,
- Continued increases in average seats per departure may result in frequency reductions or the loss of commercial air service in small communities,
- Wyoming's seats per capita is nearly double the national average and ranks as the 23rd highest among the 50 states,
- While visitor travel remains strong and creates seasonal opportunities for some communities, Wyoming has low numbers for originating local market,
- Airline fares and revenues have increased at a rate faster than the national average, but air service performance for most of the individual airlines serving Wyoming was typically below the national average,
- With the exception of Jackson, no new airline opportunities were identified at Wyoming's Commercial Service airports, although there is a strong opportunity for improved passenger growth at Wyoming's EAS airports (Cody and Laramie), and
- Five of Wyoming's 10 commercial service airports saw origin and destination (O&D) passengers and revenues increase or remain unchanged since 2005, indicating strong air service performance. However, the other half of the airports saw significant decreases in passengers and revenues.

Several trends and new technologies in the aviation industry are currently impacting or are anticipated to impact aviation in Wyoming during the planning period. While some are specifically related to commercial service or general aviation, many are impacting the aviation industry as a whole.



**Unmanned Aerial Systems (UAS)**

One of the fastest growing trends in the aviation industry, including Wyoming, is the increasing use of UAS, sometimes referred to as drones or Unmanned Aerial Vehicles (UAVs).

UAS are not new; however, advances in technology have allowed mass marketing of UAS to the general public, rather than a niche group of hobbyist operators. If UAS operators are unaware of their proximity to airports and/or operate in flight paths, they could pose a threat to aircraft.



**Airport Sustainability**

To secure future success, airports throughout the nation and Wyoming are commonly integrating sustainable practices into their planning processes, construction projects, and daily operations. Sustainable practices evaluate how programs and initiatives impact existing and future users while considering the wider impact on the surrounding community and natural environment.



**Commercial Air Service Trends**

Recent national trends, such as improved fares and increased capacity, are affecting commercial air service in Wyoming. These trends, which are likely to continue to affect the state, are driven by several factors including the availability of pilots, aircraft fleet changes (resulting in larger aircraft flying less frequently in Wyoming), and seasonal tourism demands.



**NextGen Airspace Modernization**

NextGen is a comprehensive collection of technologies and procedures that enable aircraft to move more directly from Point A to Point B. This helps passengers reach their destinations on time, while reducing fuel burn and lessening impact on the environment.



**Airports GIS**

To assist in the transition to NextGen, the FAA began the Airports GIS (AGIS) program in 2010. The purpose of AGIS is to provide a web-based repository for all airport data that can be managed by the FAA and the airport sponsor. AGIS provides a single standard for the collection of airport data and attributes, which can be used for accurate planning and engineering functions, thus benefitting system airports.



**Avgas Replacement Fuel**

The lead in 100LL avgas assists in engine reliability and performance, but also creates lead emissions, which can be harmful to air quality. The goal is to find a fuel that can be used in the current general aviation fleet without aircraft or ground system modifications. Depending on the fuel developed, aircraft nationwide may need to be retrofitted, and airport distribution systems may need to be updated to support the new fuel.



**General Aviation Trends**

As of May 2017, student, recreational, and private pilots may use the provisions of the FAA BasicMed program in lieu of the traditional medical certificate. Under BasicMed, pilots work with their regular physicians to determine fitness for flight instead of a designated FAA medical examiner, thus reducing one of the barriers to pilot certification.

Out of the 36 total performance measures examined through the WYSASP, 14 fell short of their target by 15% or more. Performance measures that did not meet their targets indicate the need for system-wide recommendations (listed on the following page).

Five of the performance measures fall under the ASEP PRM. This is an important conclusion in the WYSASP study because it has the potential to influence how the Wyoming Aeronautics Commission and WYDOT Aeronautics choose to direct the limited dollars available to the aviation system. Of the remaining nine performance measures that missed their assigned targets, four pertain to airport enhancement, three are safety-related, and one each fall into the maintenance and planning categories.

Since only three of the measures are considered safety-related, this indicates that nearly all of the highest priority performance measures have been successfully met. It is also indicative of aviation system success that the three remaining safety performance measures are important, but not related to the runway - the center of the airport. Wyoming's winters can wreak havoc on airport activity, thus the snow removal equipment objective should remain a priority. This is especially true for airports that serve remote population centers since they may be the only transportation option for public safety and welfare at times. Additionally, runway visual aids are a key safety feature, especially in mountainous terrain where these visual cues may be critical during nighttime and adverse weather conditions. The last measure listed in the table addresses a need for both safety and security with apron lighting. Most of the airports in the aviation system are not attended at night, so visibility on the apron for movement of aircraft is critical.

# RECOMMENDATIONS

Performance Measure	System Plan Goal	PRM Project Purpose	Target %	Actual %
Raising the Minimum Number of Enplanements at Airports Facing a Potential Loss of Federal Airport Improvement Program (AIP) Funding	Sustain and provide a system of Commercial Service Airports that provides convenient and reliable access to the national transportation system at a competitive price.	ASEP PRM	100%	0% (0 out of 3 airports)
Snow Removal Equipment (SRE) Objective	Provide a safe and secure integrated aviation system for its users and the general public.	Safety	100%	21% (7 out of 34 airports)
Increasing or Sustaining the Frequency of Flight Operations from Commercial Wyoming Airports to Regional Airport Hubs	Sustain and provide a system of Commercial Service Airports that provides convenient and reliable access to the national transportation system at a competitive price.	ASEP PRM	100%	22% (2 out of 9 airports)
Delivering Competitive Airfare for Wyoming Passengers	Sustain and provide a system of Commercial Service Airports that provides convenient and reliable access to the national transportation system at a competitive price.	ASEP PRM	100%	22% (2 out of 9 airports)
Land Use Protection Plan Objective	Promote an aviation system that is environmentally responsible.	Enhancement	90%	29% (10 out of 34 airports)
Deicing Containment Objective	Promote an aviation system that is environmentally responsible.	Enhancement	100%	56% (5 out of 9 airports)
Increasing or Maintaining Consistency of Service, On-Time Performance, and Reliability	Sustain and provide a system of Commercial Service Airports that provides convenient and reliable access to the national transportation system at a competitive price.	ASEP PRM	100%	56% (5 out of 9 airports)
Increasing the Number of Wyoming Passengers Originating Flights in Wyoming Rather Than Other States	Sustain and provide a system of Commercial Service Airports that provides convenient and reliable access to the national transportation system at a competitive price.	ASEP PRM	100%	56% (5 out of 9 airports)
RPZ Ownership Objective	Provide a safe and secure integrated aviation system for its users and the general public.	Enhancement	50%	17% (5 out of 30 airports)
Sustainability Objective	Promote an aviation system that is environmentally responsible.	Enhancement	100%	68% (23 out of 34 airports)
ALP with Exhibit A Objective	Maintain an aviation system to support current and future demand while optimizing public and private investment.	Planning	100%	76% (25 out of 33 airports)
Acceptable PCI (70+) Objective	Maintain an aviation system to support current and future demand while optimizing public and private investment.	Maintenance	100%	82% (28 out of 34 airports)
Runway Visual Aids Objective	Provide a safe and secure integrated aviation system for its users and the general public.	Safety	87%	71% (24 out of 34 airports)
Apron Lighting Objective	Provide a safe and secure integrated aviation system for its users and the general public.	Safety	85%	70% (14 out of 20 airports)

The missed performance measures, ROI analysis, ASMR report, and trends and technology data were all integral factors in developing the WYSASP recommendations.

**Recommendations related to missed performance measures:**

- Satisfy the few remaining safety-related WYSASP performance measures at individual airports, when practical, prudent, and feasible based on local planning efforts, and
- Utilize the WYSASP goals and Priority Rating Model documents to prioritize funding for remaining projects.

**Recommendation associated with the ROI analysis:**

- Continue to support the ASEP for Wyoming's Commercial Service airports to foster the statewide economic benefits of commercial air service.

**Recommendations drawn from individual airport conclusions outlined in the Air Service Market Research report:**

- Focus on supporting existing commercial air service at five of the nine Commercial Service airports in Wyoming (Cody, Casper, Gillette, Laramie, and Sheridan),
- Consider community incentives to entice a regional airline in Cheyenne,
- Consider expanding seasonal services or larger aircraft to existing markets at Jackson,
- Focus on community education regarding new air service opportunities and procedures at Riverton, and
- Improve load factor and revenue per available seat mile at Rock Springs.

**Recommendation based on trends and technology data:**

- Remain attentive to current and future aviation trends and technologies to ensure Wyoming airports and the aviation system as a whole are able to adapt to and capitalize on upcoming changes and developments.

Staying true to the WYSASP and the PRM documents will optimize public and private investment providing a safe and efficient system of airports. As stakeholders collaborate to address the few remaining safety measures, the aviation system will naturally be able to shift the focus to measures that improve aviation travel for Wyoming's citizens and visitors.

As the system matures, focus can also be directed towards meeting the goals and objectives for airport land use protections. Meeting these important enhancement, maintenance, and planning performance measures will ensure that the aviation system in Wyoming stays viable and useful throughout the planning period and beyond.

Our airport system in Wyoming is as unique as our communities. From urban to remote, pavement to dirt, our airports follow local conditions and demands to serve residents, which is why aviation is so critically important to our vast distances and dispersed population. It is hoped that by recognizing the importance of airport system planning, the Wyoming State Aviation System Plan will be used now and in the future to guide decision making and facility investment.

