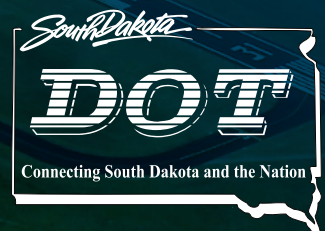


SOUTH DAKOTA  2020

# State Aviation System Plan

## Executive Summary








## 2020 SDSASP

The aviation system in South Dakota comprises 56 airports, including five commercial service airports and 51 general aviation (GA) airports. Each airport in the system serves a critical purpose, and as a whole, they support many of the industries and activities that make South Dakota a great place to work, live, and visit. Tourism, agriculture, manufacturing, emergency response, aerial firefighting, and more all depend on the state's network of airport facilities. The South Dakota Department of Transportation Office of Aeronautics (SDDOT) is responsible for helping maintain and enhance the aviation system so that it is safe, efficient, well-maintained, and accessible to all.

Through an analysis of on-airport activities, socioeconomic data, and industry trends, projections of future aviation demand were forecasted over a 20-year planning horizon. These projections indicate that aviation activity in South Dakota will continue to grow at a steady pace, making it even more critical that SDDOT and aviation stakeholders work together to plan and prepare for needed changes. The 2020 SDSASP outlines specific facilities and services required to meet the needs of current and future users.



### Airport Roles

-  **Commercial Service** Supports some level of scheduled airline service (domestic and international) in addition to supporting a full range of GA aircraft and operations.
-  **Large General Aviation** Supports all GA aircraft and accommodates corporate aviation activity including business jets, helicopters, and other GA activity. Primary users are business related. These airports service a large geographic region or experience high levels of GA activity.
-  **Medium General Aviation** Supports most twin- and single-engine aircraft and may accommodate occasional business jets. These airports support regional transportation needs.
-  **Small General Aviation** Supports primarily single-engine GA aircraft but can accommodate smaller twin-engine GA aircraft. These airports support local air transportation needs and special-use aviation activities.
-  **Basic Service\*** Supports primarily single-engine GA aircraft, special-use aviation activities, and access to remote areas or provides emergency service access.

\*Basic Service airports that do not receive federal funding were excluded from the 2020 SDSASP and do not appear on the map.

## Facility and Service Targets

It is important to recognize that airports within the system serve different roles, as shown on the map to the left. Some support high levels of commercial service and GA business activity, while others provide access to remote areas, support agricultural spraying operations, and more. Since each airport is unique in the types and levels of activities they serve, it is important that their physical characteristics and attributes be tailored to the roles they fulfill. To help guide the future development of system airports, a set of Facility and Service Targets (FSTs) were established for each airport role. These FSTs are used to identify and emphasize areas of improvement that will benefit individual airports and make the system stronger as a whole.

DESCRIPTION	COMMERCIAL SERVICE	LARGE GA	MEDIUM GA	SMALL GA	BASIC SERVICE
<b>Airside Facilities</b>					
<b>Airport Reference Code</b>	C-II	C-I	B-II	B-I or below	A-I
<b>Primary Runway Length</b>	Minimum 6,500'	Minimum 5,000'	Minimum 4,200'	Minimum 3,000'	Not a Target
<b>Primary Runway Width</b>	Minimum 100'	Minimum 100'	Minimum 75'	Minimum 60'	Minimum 50'
<b>Primary Runway Surface</b>	Paved	Paved	Paved	Paved	Not a Target
<b>Primary Taxiway Type</b>	Full Parallel	Full Parallel	Turnarounds Meet Standards (Both Ends)	Exits as Needed	Not a Target
<b>Primary Runway Approach</b>	Precision	Non-precision	Non-precision	Visual	Visual
<b>Primary Runway Lighting</b>	MIRL	MIRL	MIRL	LIRL	Not a Target
<b>Primary Taxiway Lighting</b>	MITL	MITL	MITL	Not a Target	Not a Target
<b>Visual Guidance Slope Indicator</b>	Both Runway Ends (or PI)	Both Runway Ends (or PI)	Both Runway Ends	Not a Target	Not a Target
<b>Runway End Identifier Lights - as Required</b>	Both Runway Ends (or PI)	Both Runway Ends (or PI)	Both Runway Ends	Not a Target	Not a Target
<b>Rotating Beacon</b>	Yes	Yes	Yes	Yes	Not a Target
<b>Lighted Wind Indicator</b>	Yes - Multiple as Needed	Yes	Yes	If Open at Night	If Open at Night
<b>Remote Communication Outlet (RCO)</b>	Tower or RCO	Not a Target	Not a Target	Not a Target	Not a Target
<b>Wind Coverage or Crosswind Runway</b>	Crosswind Runway or 95% Wind Coverage for NPIAS Facilities	Crosswind Runway or 95% Wind Coverage for NPIAS Facilities	Crosswind Runway or 95% Wind Coverage for NPIAS Facilities	Not a Target	Not a Target
<b>Landside Facilities</b>					
<b>Covered Storage</b>	100% of Based Aircraft	100% of Based Aircraft	100% of Based Aircraft	100% of Based Aircraft	Not a Target
<b>Overnight Storage for Business Aircraft</b>	Typical Average Aircraft/Business User Demand	Typical Average Aircraft/Business User Demand	Typical Average Aircraft/Business User Demand	Not a Target	Not a Target
<b>Aircraft Apron</b>	100% of Average Daily Transients	100% of Average Daily Transients	100% of Average Daily Transients	50% of Average Daily Transients	Not a Target
<b>Terminal/Administration Building</b>	Yes	Yes	Yes	Waiting Area	Not a Target
<b>Paved Entry/Terminal Parking</b>	Yes	Yes	Yes	Not a Target	Not a Target
<b>Services</b>					
<b>Fuel</b>	Jet A & 100LL	Jet A & 100LL	100LL	Not a Target	Not a Target
<b>Comp Plan Define Land Uses</b>	Yes	Yes	Yes	Yes	Yes
<b>Emergency Plan</b>	Yes	Yes	Yes	Yes	Yes
<b>Airport Layout Plan (ALP)</b>	ALP Update Within Last 8 Years	ALP Update Within Last 10 Years	ALP Update Within Last 10 Years	Yes	Not a Target
<b>Weekday Hours of Operation</b>	Standard Business Hours/After Hours On Call	Standard Business Hours/After Hours On Call	Standard Business Hours/After Hours On Call	On Call	Not a Target
<b>Weekend Hours of Operation</b>	Standard Business Hours/After Hours On Call	Standard Business Hours/After Hours On Call	Standard Business Hours/After Hours On Call	On Call	Not a Target
<b>Ground Transportation</b>	Yes (Any Ground Transportation)	Yes (Any Ground Transportation)	Yes (Any Ground Transportation)	Not a Target	Not a Target
<b>Food and Beverage</b>	Yes (Vending)	Yes (Vending)	Yes (Vending)	Not a Target	Not a Target
<b>Posted Contact Information</b>	Yes	Yes	Yes	Yes	Yes
<b>Internet Access</b>	Yes	Yes	Yes	Not a Target	Not a Target
<b>Restroom</b>	Yes	Yes	Yes	Yes	Not a Target
<b>Pilot Area</b>	Yes	Yes	Yes	Not a Target	Not a Target
<b>Security Plan</b>	Yes	Yes	Yes	Yes	Yes
<b>Rental Aircraft</b>	Based	Available	Available	Not a Target	Not a Target
<b>Flight Training</b>	Available	Available	Available	Available	Not a Target
<b>Aircraft Maintenance/Repair</b>	Major	Minor	On Call	Not a Target	Not a Target
<b>Aircraft Charter</b>	Based	Available	Available	Available	Not a Target
<b>Minimum Fixed-Base Operator (FBO) Standards</b>	Yes	Yes	Yes	Not a Target	Not a Target
<b>Weather Reporting</b>	Yes	Yes	Yes	Not a Target	Not a Target

LIRL = Low Intensity Runway Lighting    MIRL = Medium Intensity Runway Lighting    MITL = Medium Intensity Taxiway Lighting    NPIAS = National Plan of Integrated Airport Systems    PI = Precision Instrument Approach

## Goals, Objectives, and Performance

The 2020 SDSASP system goals embody the mission of SDDOT and emphasize a system that is safe and secure, meets current and future needs, and is accessible to users.

To gauge the system's success in achieving these three goals, objectives—referred to as Performance Measures (PMs) and Performance Indicators (PIs)—were established to track progress. A key distinction between PMs and PIs is that PMs measure attributes for which SDDOT has the ability to impact via funding, policy, and/or priority, while PIs measure aspects of the system that cannot be influenced by SDDOT and are informational only. Future performance targets are set for all PMs, whereas PIs have no associated targets but can be used to help inform recommendations. All PMs, PIs, and future performance targets were developed with input from industry stakeholders serving on the Project Advisory Committee (PAC). A listing of PAC members is provided on the back page.

- » **Safety and Security:** To provide a safe and secure system of airports
- » **Maintenance and Development of Infrastructure:** To provide an airport system that meets current and future user needs
- » **Accessibility to Users:** To provide a system of airports that is accessible from the ground and the air

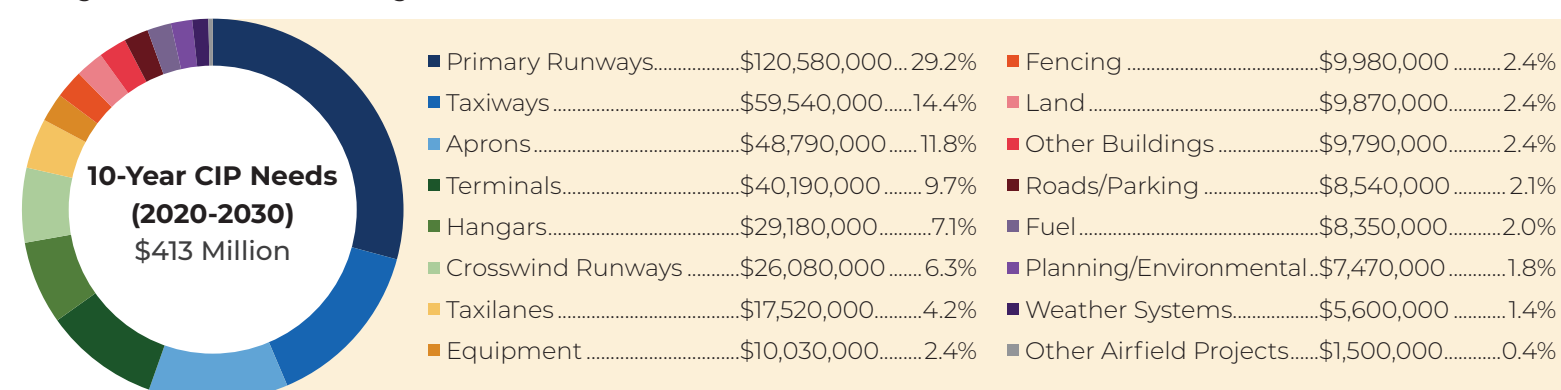
## Project Recommendations

Identifying recommendations to improve the aviation system to continue to meet goals and support future demands is one of the most important outcomes of the 2020 SDSASP. Recommendations were identified through a data-driven analysis of PMs and FSTs and through collaboration with SDDOT and the PAC. Recommendations were made for both capital projects and services. Some examples include:

- » **Land acquisition**
- » **Runway pavement rehabilitation**
- » **Approach clearing**
- » **Apron expansion**
- » **Airside lighting**
- » **Fuel system installation**
- » **Hangar construction**
- » **AWOS/ASOS installation**
- » **NAVAID installation**
- » **User/visitor amenities enhancement**

## System-wide Cost Estimates

Considering projects listed on airport Capital Improvement Plans (CIPs) along with SDSASP-recommended projects provides a more complete picture of the financial resources needed to maintain and improve the system over the 20-year planning horizon. Financial needs were assessed by developing planning-level cost estimates for recommended projects and combining those with the costs reflected on individual airport CIPs for planned projects (removing any duplication between the two). SDSASP-recommended projects account for a 20-year timeframe. Since airport CIPs were only available for a 10-year timeframe (through 2030), the 20-year needs were projected using annualized costs through 2040.

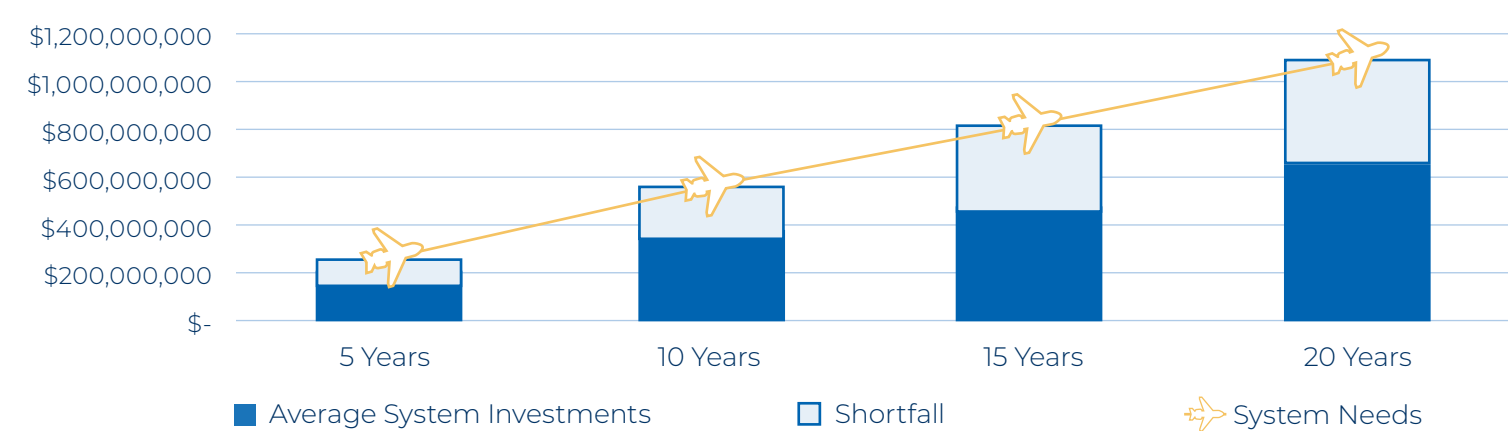


Project Category	Estimated Funding Needs (2020-2040)
2020 SDSASP Performance Measure Recommendations	\$28,730,000
2020 SDSASP Facility and Service Target Recommendations	\$90,120,000
20-Year Airport Capital Improvement Plan Projects	\$983,650,000
<b>20-Year Total Estimated Funding Needs</b>	<b>\$1,102,500,000</b>

## Anticipated Funding Needs

The process of identifying recommended projects and estimating costs over the next 20 years reveals that South Dakota's total system investment needs are approximately \$1.1 billion dollars, or \$55 million per year through 2040. Historically, the average annual investment in South Dakota's airports has been around \$32 million, producing an annual shortfall of approximately \$23 million in needed funds to maintain and enhance the state's system of airports. Over the 20-year planning horizon, this gap expands considerably, reaching \$450 million by 2040 if no additional federal, state, or local funding is made available beyond the historical amounts.

### Total Funding Needs and Shortfall (2020-2040)



## SOUTH DAKOTA AVIATION USER EXPERIENCES

The 2020 SDSASP captures the importance of aviation in South Dakota through the lens of those with unique personal and professional experiences. These stories depict the real-life experiences of how aviation has benefitted communities, individuals, and businesses alike. The stories share the experiences of medical pilots, airport managers, aerial firefighters, a medical transport patient, and more. Brief highlights of the stories are shared here, and complete stories are included in Appendix H of the 2020 SDSASP.

Huron Regional Airport is home to the largest agricultural spraying operations in the state, supporting one of South Dakota's top industries.

Students from all over the world train at Madison Municipal Airport's flight school. South Dakota's distinct seasons and varied weather prepare pilots to operate in changing conditions.

Community awareness and support are key to the continued success of the state's airports. Airports like Clark County host events such as annual fly-in breakfasts that encourage local residents to visit the airport and learn more about its operation.

Custer County Airport is home to the nation's second-longest running helitack program, the Black Hills Helitack. The crew is responsible for providing the initial attack on wildland fires in the Black Hills Fire Protection District.

Medical air evacuation saves lives every day in South Dakota, including the life of a City of Phillip finance officer who suffered a burst brain aneurysm six years ago. An avid supporter of her local airport before the incident, she shares her story and the importance of the airport not only for life-saving operations but also for the economic impact it provides to the local community.



### GOAL: SAFETY AND SECURITY

Performance Measures	2020 System Performance	Future Performance Target
Airports with clear Part 77 approaches on their primary runways	64%	100%
Airports with clear Part 77 approaches on their nonprimary runway(s)	88%	100%
Airports that control (through fee simple or easements) the land in the RPZs of their primary runways	63%	100%
Airports that control (through fee simple or easements) the land in the RPZs of their nonprimary runway(s)	35%	100%
Airports that meet SDDOT annual inspection standards for RSAs	100%	100%
Performance Indicators	2020 System Performance	
Airports with adopted compatible land use zoning (including height and noise)	43%	
Part 139 airports with adopted wildlife plans in accordance with appropriate FAA regulations	100%	
Airports with perimeter fencing appropriate to airport role	86%	
Airports with UAS activity at and/or around their airport	55%	
Airports with UAS monitoring and tracking programs in place	2%	



### GOAL: MAINTENANCE AND DEVELOPMENT OF INFRASTRUCTURE

Performance Measures	2020 System Performance	Future Performance Target
Airports without substantial operations by aircraft with an ARC higher than the critical aircraft	84%	100%
Airports with an average primary runway PCI of 70 or greater	67%	76%
Airports with an average nonprimary runway PCI of 70 or greater	56%	78%
Airports with an average taxiway PCI of 60 or greater	89%	76%
Airports with an average apron PCI of 50 or greater	84%	62%
Performance Indicators	2020 System Performance	
Airports meeting their facility targets	N/A	
Airports meeting their service targets	N/A	
Airports with adequate apron space for seasonal fluctuations in operations	64%	
Airports with a recent master plan	13%*	
Airports with at least one cultural resource at their airport	9%	
Airports with a full airport cultural survey	21%	

\*Analysis based on applicable airports only. Ninety-five percent of system airports have an ALP on file with SDDOT.



### GOAL: ACCESSIBILITY TO USERS

Performance Measures	2020 System Performance	Future Performance Target
Population within a 30-minute drive of an airport with 24-hour fuel availability (Jet A, 100LL, or both)	82%	83%
Population within a 30-minute drive of an airport with an AWOS or ASOS (certified weather systems)	70%	75%
Performance Indicators	2020 System Performance	
Population within a two-hour drive of a commercial service airport	96%	
Population within a 30-minute drive of a GA airport	63%	
Land area in the state with ADS-B coverage including FIS	79%	
Population within a 30-minute drive of an airport with a crosswind runway	76%	
Population within a 30-minute drive of an airport with storage for large aircraft (King Air 250 - 60' x 80')	74%	
Population within a 30-minute drive of an airport with at least a non-precision approach	74%	
Airports with service by a transit agency	74%	
Population within a 30-minute drive of an airport that can support fixed-wing and rotorcraft medical flights (non-precision approach and certified weather)	69%	
Population within a 30-minute drive of an airport without services needed for medical operations	18%	
Population within a 30-minute drive of an airport that can support business activity (5,000+ runway, weather, precision approach, Jet A fuel)	61%	

ARC = Airport Reference Code  
ADS-B = Automatic Dependent Surveillance - Broadcast  
ASOS = Automated Surface Observation System

AWOS = Automated Weather Observation System  
FAA = Federal Aviation Administration  
FIS = Flight Information Services

PCI = Pavement Condition Index  
RPZ = Runway Protection Zone  
RSA = Runway Safety Area  
UAS = Unmanned Aircraft System



## 2020 South Dakota AEIS

In conjunction with the 2020 SDSASP, the 2020 Aviation Economic Impact Study (AEIS) was conducted to quantify and document the economic impact generated and supported by the system airports on an annual basis. Airports drive economic activity by providing linkages between businesses, customers, suppliers, goods, visitors, and more. These impacts are generated by on-airport activities such as aircraft operations, business tenants, and capital construction, and off-airport activities such as visitor spending. Considering the direct and multiplier impacts of these activities, it is estimated that South Dakota's aviation system generates approximately \$907 million in economic impact on an annual basis.



The total number of jobs or employees related to aviation, including on-airport jobs (like airport management) and off-airport jobs (like hotel staff).

**Jobs: 8,880**



The sum of wages, salaries and benefits from industry-related jobs.

**Earnings: \$363.7 million**



The dollar value of final goods and services produced locally because of industry-related economic activity. This is a new indicator for the 2020 study.

**GDP: \$449.9 million**

### Total Annual Output: \$907.4 million

The dollar value of industrial output produced. Sometimes referred to as "economic activity," it reflects the spending by firms, organizations, and individuals.

## Unique Activities in South Dakota

South Dakota airports support several special activities across the state by serving as gateways to one-of-a-kind pheasant hunting experiences and the world-famous Sturgis Motorcycle Rally. Both events attract tens of thousands of visitors to the state each year, many of whom opt to travel through one of the system airports. Airports in South Dakota not only support heavy seasonal traffic for unique tourist experiences, but also play a crucial role in one of South Dakota's most important industries: agriculture. Almost half of the airports in the system support this industry, serving as bases for aerial agriculture applicators that apply fertilizers, crop protectants, and more to the state's cropland. South Dakota airports host some of the largest agricultural firms in the country that work hard alongside farmers to increase crop yields that can lead to increased value of exported commodities. The impacts of these three special activities are presented below. These figures are accounted for in the total system impact of \$907 million but are separated here for clarity.

### PHEASANT HUNTING

**Jobs:** 695  
**Earnings:** \$19.9 million  
**Total Annual Output:** \$56.0 million

### STURGIS MOTORCYCLE RALLY

**Jobs:** 80  
**Earnings:** \$2.3 million  
**Total Annual Output:** \$6.6 million

### AGRICULTURAL AVIATION

**Jobs:** 130  
**Earnings:** \$6.0 million  
**Total Annual Output:** \$8.8 million

### PAC MEMBERS

**FAA**  
 Brian Schuck  
 Sandy DePottey

**Medevac Providers**  
 Brandon Bell  
 Mike Christianson  
 John Graney

**SD Aeronautics Commission**  
 Eric Odenbach

**SD Airport Management Association**  
 Patrick Dame

**SD Aviation Association**  
 Paul Soulek

**SD Office of Economic Development**  
 Jennifer Ondell  
 Amy Gabriel

**SD Office of Rural Health**  
 Andy Klitzke

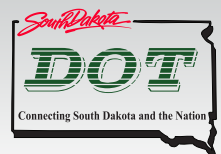
**SD Pilots Association**  
 John Barney  
 Steve Hamilton

**SDDOT Project Development**  
 Steve Gramm  
 Sarah Gilkerson

### SOUTH DAKOTA DEPARTMENT OF TRANSPORTATION

Becker-Hansen Building  
 700 E. Broadway Ave  
 Pierre, SD 57501

<https://dot.sd.gov/transportation/aviation/office-of-aeronautics-services>



**Kimley»Horn**

**InterVISTAS**

