

Wisconsin Department of Transportation
BUREAU OF AERONAUTICS
2018 Annual Report



**Providing leadership to maintain
and develop a safe and efficient
air transportation system**



Appleton International Airport, Fixed Base Operator Facility

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- To print this PDF guide, do so on an 8.5 by 11 inch paper, selecting the “portrait” and “actual size” settings for best results.
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Director's Message



I am pleased to present the Wisconsin Department of Transportation, Bureau of Aeronautics (BOA) 2018 Annual Report. This report reviews the aviation activity and initiatives in Wisconsin that occurred during last year.

Our mission is to provide leadership to maintain and develop a safe and efficient air transportation system. In addition, we focus on providing quality service to Wisconsin's citizens who utilize the many diverse aviation services throughout the state. The bureau's team of aviation specialists assist airport sponsors by providing professional guidance to manage and utilize the airport to its safest and fullest potential for the community it supports.

The BOA staff managed over \$75 million in funding and 60+ airport projects in 2018. Airport development and safety projects varied widely, from pavement reconstruction to obstruction removal to constructing facilities to purchasing snow removal equipment.

As a Block Grant state for the Federal Aviation Administration (FAA), we are committed to developing and maintaining the current and future distribution of federal airport improvement grants for eligible airports in the state airport system. In addition, our

statewide aviation initiatives directly support important programs such as the Automated Weather Observation System, the Pavement Condition Evaluation Program, and the Airport Pavement Marking Program. The bureau provides engineering, environmental, land use and planning expertise to airport sponsors from the initial planning stages to completion of an airport project.

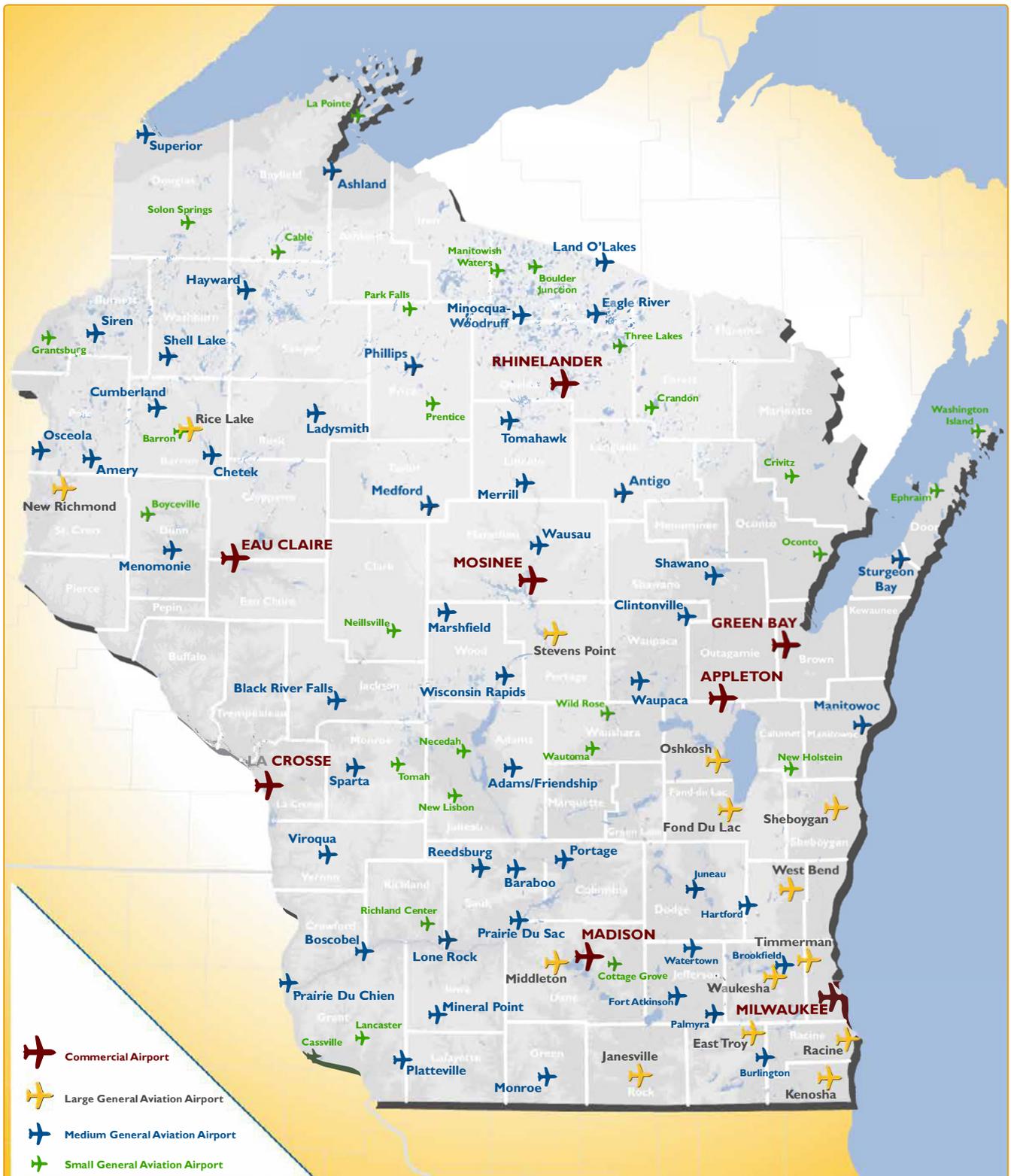
Aviation education and outreach is a statewide effort that is actively sponsored by the bureau. Pilot and aircraft maintenance safety courses, youth aviation education, unmanned aircraft systems (UAS) education, as well as airport security are only part of our commitment to engage with the Wisconsin aviation community. The new Fly Wisconsin Airport Passport program promotes safety and education by encouraging recreational flights to Wisconsin's public use airports. It also supports general aviation airports, area businesses and tourism. The program is a collaboration between the BOA and the Wisconsin Airport Management Association.

This report describes our bureau's commitment to a safe and efficient aviation infrastructure, as well as aviation education and a host of other aeronautical assistance to Wisconsin's aviation community. We look forward to another successful year.

David M. Greene
Director



Wisconsin State Airport System Map



Facts and Figures



EAA AirVenture, Wittman Regional Airport

Service Providers

Commercial airports	8
Commercial airlines serving the state	10
Cargo-air charter	4
Airports with based jets	32
Airports with 5000-foot or greater runways	41

Registered Aircraft

Airplanes	4,934
Rotorcrafts	103
Ultralights	67
Sailplanes	40
Lighter-than-air	56
Light-sport	232
Seaplanes	62

Weather Gathering and Dissemination Systems



State-owned automated weather observation system (AWOS)	51
Federal-owned automated surface observation system (ASOS)	18

Landing Facilities in Wisconsin

Airports in the State Airport System	97
Privately-owned, public use airports	31
Private use airports	426
Heliports (public and private)	155
Seaplane bases (public and private)	27

Source: FAA

Facts and Figures



UW Health Med Flight helicopter

Air Medical Services Based in Wisconsin

SERVICE NAME	BASE SITE	CITY
Eagle III (fixed wing only)	Austin Straubel International Airport County Rescue Service Eagle III	Green Bay Green Bay
Express Air Medical Transport (fixed wing only)	Austin Straubel International Airport	Green Bay
Flight for Life	Fond du Lac County Airport Waukesha County Airport	Fond du Lac Waukesha
Gunderson MedLink AIR	Gundersen Luther Medical Center	La Crosse
Ministry Spirit Medical Transportation	Howard Young Medical Center Ministry St. Joseph's Hospital	Woodruff Marshfield
Thedastar Air Medical	Theda Clark Medical Center	Neenah
UW Health Med Flight	University Hospital Iowa County Airport	Madison Mineral Point
Aspirus MedEvac	Wausau Downtown Airport	Wausau
Mayo Clinic Medical Transport	Chippewa Valley Regional Airport	Eau Claire
Life Link III	Rick Lake Regional Airport	Rice Lake
North Memorial Air Care	Burnett County Airport	Siren
Travel Care International (fixed wing only)	John H Batten Airport	Racine

Source: FAA 2016

Facts and Figures

Airport Operations at Towered Airports

LOCATION/COMMERCIAL AIRPORTS	CY2014	CY2015	CY2016	CY2017	CY 2018	% CHANGE (17-18)
Milwaukee - General Mitchell International	113,286	111,509	113,715	112,345	111,712	-1%
Madison - Dane County Regional	78,956	78,206	81,419	83,529	87,578	5%
Eau Claire -Chippewa Valley Regional	21,454	22,347	22,509	20,149	21,836	8%
Green Bay - Austin Straubel International	41,853	46,720	49,479	45,358	47,752	5%
Appleton - Appleton International	32,980	33,679	34,302	32,234	34,458	7%
La Crosse - La Crosse Municipal	19,562	22,942	19,323	18,416	19,608	6%
Mosinee - Central Wisconsin	13,266	12,640	12,375	12,424	12,624	2%
Subtotal	321,357	328,043	333,122	324,455	335,568	3%
LOCATION/GENERAL AVIATION TOWERED AIRPORTS	CY2014	CY2015	CY2016	CY2017	CY 2018	% CHANGE (17-18)
Oshkosh - Wittman Regional	64,146	64,717	66,950	62,952	74,558	18%
Waukesha - Crites Field	41,711	34,237	38,178	33,543	44,044	31%
Kenosha - Kenosha Regional	48,734	53,139	46,868	48,722	59,128	21%
Janesville - Southern Wisconsin Regional	34,894	32,070	31,222	32,606	37,674	16%
Milwaukee - Lawrence Timmerman	31,467	26,751	24,875	27,730	26,030	-6%
*Sparta - Ft. McCoy-Sparta	12,476	17,170	19,978	10,669	10,108	-5%
Subtotal	233,428	228,084	228,071	216,222	251,542	16%
Total Towered Operations	554,785	556,127	561,193	540,677	587,110	9%

*Sparta-Ft.McCoy is a joint use military/general aviation airport; Source: FAA Air Traffic Activity System - Airport Operations 2/5/19

Air Carrier Enplanements

LOCATION/COMMERCIAL AIRPORTS	CY2014	CY2015	CY2016	CY2017	CY2018	% CHANGE (17-18)
Milwaukee - General Mitchell International	3,228,607	3,229,897	3,327,536	3,414,477	3,548,817	4%
Madison - Dane County Regional	833,634	826,640	903,155	943,363	1,082,529	15%
Green Bay - Austin Straubel International	302,568	295,245	292,868	283,823	324,840	14%
Appleton - Appleton International	249,656	258,321	270,633	281,552	360,107	28%
Mosinee - Central Wisconsin	125,395	126,016	119,222	116,404	128,181	10%
La Crosse - La Crosse Municipal	98,869	94,874	94,047	92,101	98,744	7%
Rhineland - Rhineland-Oneida County	20,819	20,673	20,414	23,014	24,931	8%
Eau Claire - Chippewa Valley Regional	20,433	19,332	21,304	22,822	23,734	4%
Total	4,879,981	4,870,998	5,049,179	5,177,556	5,591,883	8%

Source: FAA Air Carrier Activity Information System (ACAIS) 01/15/19; 2018 preliminary airport data

Enplaned Freight at Commercial Airports

LOCATION/COMMERCIAL AIRPORTS	CY2014	CY2015	CY2016	CY2017	CY2018	% CHANGE (17-18)
Milwaukee - General Mitchell International	81,352,020	80,986,752	80,336,000	79,214,423	79,010,065	0%
*Madison - Dane County Regional	25,761,103	25,505,736	15,090,373	13,267,346	14,297,349	8%
Green Bay - Austin Straubel International	216,392	168,252	181,034	206,259	155,695	-25%
Appleton - Appleton International	9,334,863	9,223,635	9,685,052	10,156,234	10,978,383	8%
Mosinee - Central Wisconsin	1,160,971	884,214	979,526	847,160	771,232	-9%
Rhineland-Rhineland-Oneida County	1,794,887	1,851,153	1,693,783	1,501,408	1,562,840	4%
Total - Pounds	119,620,236	118,619,742	107,965,768	105,192,830	106,775,574	2%
Million pounds	119.6	118.6	108.0	105.2	106.8	2%

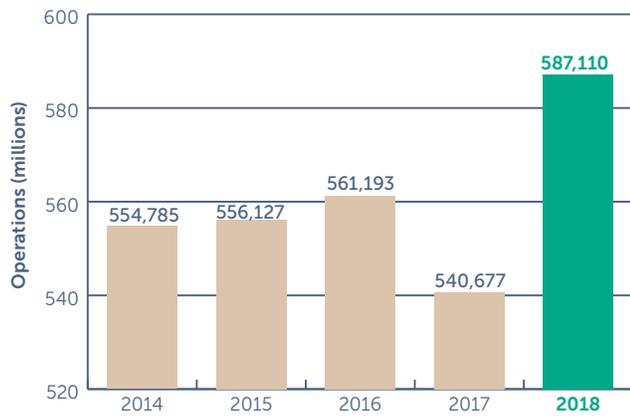
Source: BTS T-100 Market; 2018 Airports. *Note: Dane County Regional Airport (Fedex internal reporting error in 2015 was self-corrected in 2016)

Facts and Figures

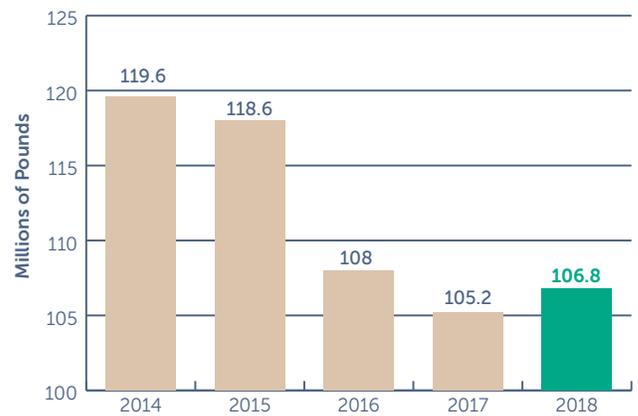


Freight operation at Batten International Airport, Racine

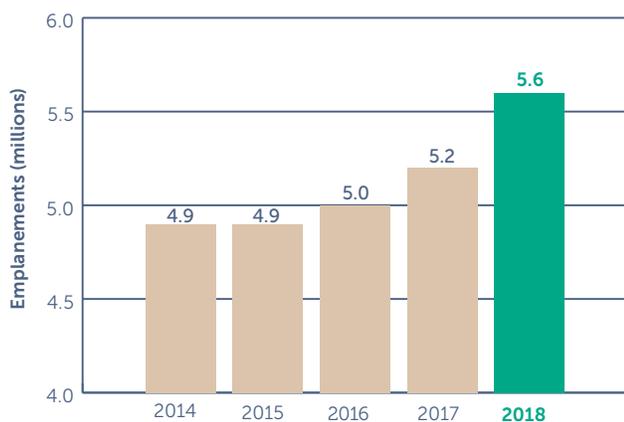
Operations at Towered Airports



Enplaned Freight at Commercial Airports



Passenger Enplanements by Year (millions)

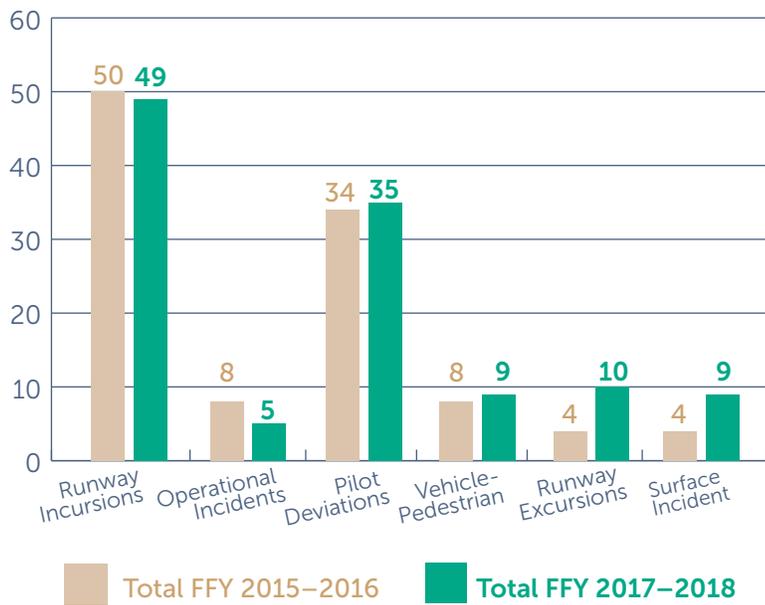


Facts and Figures

Airport Runway Safety

In an effort to improve airport runway safety in the state, the BOA has partnered with the FAA’s Runway Safety Action Team to increase outreach and participation from all major airport interests including tenants, fixed base operators, airport operations and maintenance personnel. Participants are asked to help develop recommendations and solutions to enhance surface safety. Meetings have been held throughout the state.

Runway Incidents at Towered Airports



Source: FAA

Pilot Guide to Airport Signs and Markings

Airport Markings

- HOLDING POSITION:** Hold Short of Intersecting Rwy Also Land and Hold Short Marking
ATC permission is ALWAYS required to cross from the solid side to the dashed side
- MOVEMENT AREA BOUNDARY:** Defines Boundary of Movement Area and Non-Movement Area
- HOLDING POSITION WITH ENHANCED TAXIWAY CENTERLINE**
- ILS CRITICAL AREA:** Hold Short During IMC Conditions
- SURFACE PAINTED HOLDING POSITION:** Hold Short of Intersecting Runway on Twy
- SURFACE PAINTED TAXIWAY DIRECTION:** Direction & Designation of Intersecting Twy
- SURFACE PAINTED TAXIWAY LOCATION:** Identifies Twy on Which Aircraft is Located
- TAXIWAY/TAXIWAY HOLDING POSITION:** Hold Short of Intersecting Taxiway When Directed by ATC
- TAXIWAY EDGE:** Defines Edge of Usable Full Strength Taxiway Pavement; Adjoining Pavement NOT Usable
- DASHED TAXIWAY EDGE:** Defines Edge Taxiway Where Adjoining Pavement or Apron IS Available for Taxi

References: Aeronautical Information Manual (AIM), AC 90-67 Light Signals from the Control Tower for Ground Vehicles, Equipment, and Personnel, AC 150/5340-1 Standards for Airport Markings, and AC 150/5340-18 Standards for Airport Sign Systems.



Wind turbine

Tall Structures and Airspace Studies

The bureau issues permits for the construction of tall structures under the provisions of Wisconsin State Statute 114.135, Airport Protection. The bureau also initiates studies for on-airport, non-rule-making action studies. The push for very tall, utility scale wind turbines has slowed somewhat, however, there is still interest in wind projects throughout the state.

In 2018 the BOA issued 19 tall structure permits, of which one was for a 50-turbine wind farm.

Facts and Figures



JD Bake Memorial Airport pavement project, Oconto

Wisconsin Airport Pavement Health



Pavement condition ratings are a primary indicator of the long-term structural health of the state's airport system. Every year the bureau inspects and rates one third of the pavements of Wisconsin's public-use airports using a pavement condition index (PCI). The index is used to evaluate the relative condition of a given section of pavement on a scale range from 0 (failed) to 100 (excellent). In 2017, 85 percent of the airport pavements (runways, taxiways and aprons) at the 97 airports in the State Airport System Plan were rated fair or above.



Rhineland-Oneida County Airport broom truck

Funding

In 2018, more than \$75 million in federal, state, and local funds supported 62 airport improvement projects (AIP). The funding is prioritized to maintain the safety and utility of Wisconsin's statewide system of airports.

Funding Breakout (in millions)

AIRPORT TYPE	FAA	STATE	SPONSOR	TOTAL
Primary commercial service	30,278,000	6,871,000	6,431,000	43,580,000
General aviation	20,428,000	7,993,000	2,581,000	31,002,000
Statewide Projects	0	975,000	0	975,000
TOTAL	\$50,706,000	\$15,839,000	\$9,012,000	\$75,557,000

*Includes only projects which include federal (AIP) and/or state funds, or that was administered by the State

2018 Work Items Funded

TYPE OF WORK	# OF PROJECTS	AMOUNT FUNDED
Rehabilitation of existing pavement	18	18,514,000
New pavement	10	19,571,000
Airport rescue & fire-fighting (ARFF) training facility	1	12,785,000
Approach clearing and obstruction removal	2	153,000
Runway lighting and pavement marking	5	3,875,000
Navigational aids	3	440,000
Buildings	6	15,241,000
Equipment	5	801,000
Land	2	1,301,000
Fuel facilities	7	1,351,000
Fence	1	234,000
General planning	2	636,000
Statewide support (nonconstruction, including wildlife hazard assessments)	0	655,000
TOTAL	62	\$75,557,000

*Includes all costs: construction, planning, engineering and administration
 *Includes only projects which include federal (AIP) and/or state funds, or that was administered by the State

Number of Airport Projects in 2018

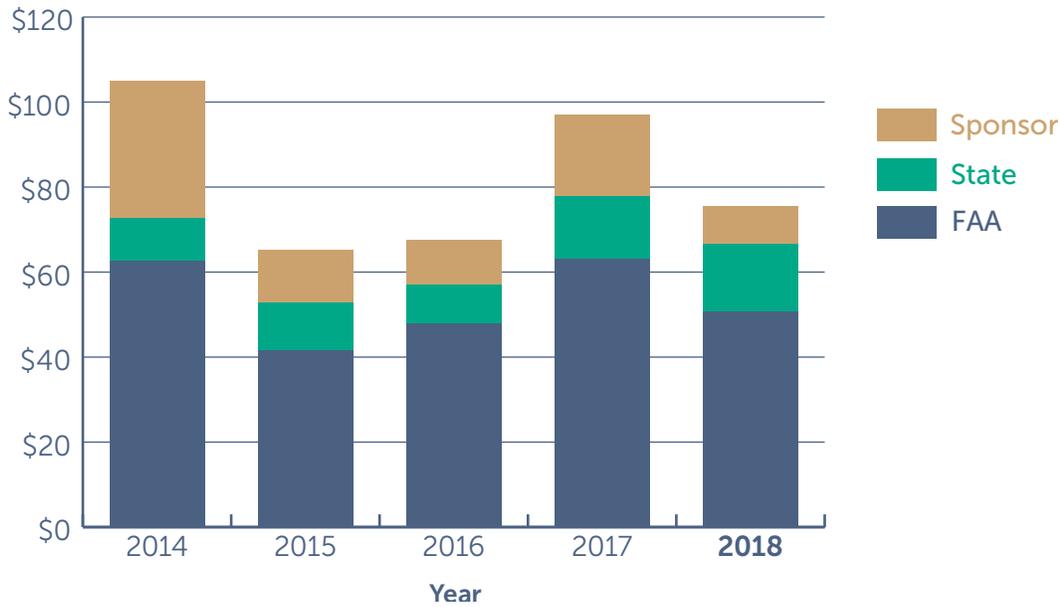
Federal AIP aid (includes state match)	41
State aid	15
Sponsor only	3
Statewide (AWOS, Pilot Weather Briefing System, etc.)	3
TOTAL PROJECTS	62



JFK Memorial Airport Rotating Beacon

Funding

Funding History for Airport Improvement Projects (millions)



Shawano Municipal Airport Terminal Construction

Airport Facilities

Airports address passenger safety, multi-modal access, and facilities to house aircraft and maintenance equipment. The bureau has responded to these needs over the past year with both federal and state aid.

These facilities have been constructed: 2018 Airport Facilities

Snow removal equipment facilities	2
Airport terminal reconstruction and expansion	3
ARFF facility renovation	1
Passenger boarding bridges	4

Unmanned Aircraft Systems (UAS)

Unmanned Aircraft Systems (UAS), commonly referred to as “drones”, have entered the national airspace as a major user. The bureau’s director is a member of the FAA’s Drone Advisory Committee, which helps the FAA prioritize its efforts to integrate drones in the national airspace. The bureau also has information on the department’s website that will help to inform and educate Wisconsin’s aviation community.

The FAA is currently reporting 12,519 registered UAS hobby pilots and 1,980 UAS Part 107 (commercial) pilots in Wisconsin. The bureau encourages all UAS pilots to be actively engaged with existing and emerging FAA regulatory and safety initiatives concerning the use of drones.

Fly Wisconsin Airport Passport Program

wisconsin.gov/FlyWI



The Fly Wisconsin Airport Passport program promotes safety and education by encouraging recreational flight to Wisconsin’s public use airports.

It also supports general aviation airports, area businesses and tourism. It is a collaborative program of the BOA and the Wisconsin Airport Management Association (WAMA).

Any licensed pilot, from any state, and their passenger(s) may participate. Pilots and their passengers may earn three different levels of recognition awards by flying into airports, attending annual FAA safety seminars and visiting Wisconsin’s aviation attractions. Since the program started in 2017, over 1,100 participants have registered.

NextGen

www.faa.gov/nextgen

As of January 1, 2020, aircraft operating in most controlled airspace in the National Airspace System are required to be equipped with ADS-B Out. Since the FAA published the NextGen initiative, the BOA has been an advocate for getting the word out to our Wisconsin

aviation community regarding the deadline, requirements, equipage incentive program and effected airspace. We are also working with the airports to identify and review runway approaches that need further clearing. Our hope is the proactive approach leads to an informed and safe transition and enhances the safety of future aeronautical operations.

Airport Operations and Land Use Symposium

This yearly two-day symposium is an excellent opportunity for airport owners, managers, and aviation consultants to become familiar with a variety of airport operations subjects, as well as compatible land uses, environmental topics, implementing land use plans, and regulatory land use tools. The 2018 symposium topics included addressing the potential wildlife hazards of off-airport developments; general aviation airport security, FAA flight procedures, non-aeronautical development in relation to airports, as well a discussion of Wisconsin pilot deviations, incidents and accidents.



Aviation Careers and Education (ACE)

The Aviation Careers and Education (ACE) program provides paid internship opportunities to socially and economically disadvantaged high school students from Milwaukee. The interns become limited-term employees with WisDOT for seven weeks during the summer, gaining valuable educational work experiences. A variety of businesses located at General Mitchell International Airport serve as a host site for the WisDOT interns. In 2018, 35 Milwaukee high school students participated in the program, getting first-hand experience as interns in the aviation field.



Baraboo-Dells Regional Airport early stage construction project

Airport Safety and Pilot Education

The BOA conducted 40 airport safety inspections at public-use airports in the state. Continuing education programs are held annually for pilots, flight instructors and aircraft mechanics. The bureau also continues to administer a statewide aviation weather dissemination system.

2018 Bureau Aviation Related Events

- ACE program
35 attendees
- Airport engineers workshop
68 attendees
- Airport operations and land use seminar
84 attendees
- Airport sponsor workshop
65 attendees
- Aviation mechanic seminar
183 attendees

Airport Projects Recognized

D. L. Gasser Construction Company, Baraboo-Wisconsin Dells Regional Airport

The bureau recognized D. L. Gasser Construction Company for their work at the Baraboo-Wisconsin Dells Regional Airport in Baraboo. This \$2.2 million-dollar project reconstructed the 5,000-foot-long primary runway and widened by 25 feet to 100 feet wide. The project also included all new high efficiency LED runway edge lighting and relocated a connecting taxiway to meet current design safety standards. The company seamlessly and efficiently combined the federally funded runway reconstruction, along with the state-funded runway widening work in a single construction project. Despite the unprecedented rain throughout the 2018 construction season, the project remained on schedule and on budget.

Bureau Staff Recognized

2018 Star Performer Award



Hal Davis
Josh Holbrook

The bureau presented its annual Star Performer Awards to Howard (Hal) Davis, an aviation consultant/compliance manager, and Josh Holbrook, a transportation civil engineer. The Star Performer Award is presented to those who improve program efficiency, savings and performance levels, demonstrate leadership and vision, and provide exceptional customer service.

2018 Spirit Award

Lynne Cloud

The bureau presented its annual "Spirit Award" to Lynn Cloud, environmental analysis review specialist, advanced. This Spirit Award is given to WisDOT staff that work outside the bureau to recognize overall performance in service to the bureau, or exceptional performance on a job that had a significant impact on the betterment of the mission of the bureau.

Wisconsin Airport Management Association Awards

Mary Strait
Kim Kaarto

The Wisconsin Airport Management Association (WAMA) recognized two bureau employees at the 2018 Wisconsin Aviation Conference.

Mary Strait, airport program engineer, received the WAMA Person of the Year Award. This award is presented to persons who have distinguished themselves in Wisconsin aviation during the past calendar year.

Kim Kaarto, airport engineering specialist, received the WAMA Airport Engineering Award. This is awarded to persons who have made significant professional contributions in the airport engineering or architecture fields in Wisconsin.

Publications

wisconsin.gov/av-pubs



The following is an example of publications available from the BOA. These publications and others may also be found on the department's website.

- Airport Development Handbook
- Airport Directory and Pilot's Guide
- Avigation Easements Brochure
- Aviation websites
- Fuel Services in Wisconsin
- Points of Interest near Wisconsin Airports
- State Airport System Plan 2030
- Wildlife Hazards Brochure
- Wisconsin Aeronautical Chart
- Wisconsin Airport Maintenance Programs Brochure





wisconsindot.gov/av-pubs

