2014 NORTH DAKOTA STATE

AVIATION SYSTEM PLAN

EXECUTIVE SUMMARY

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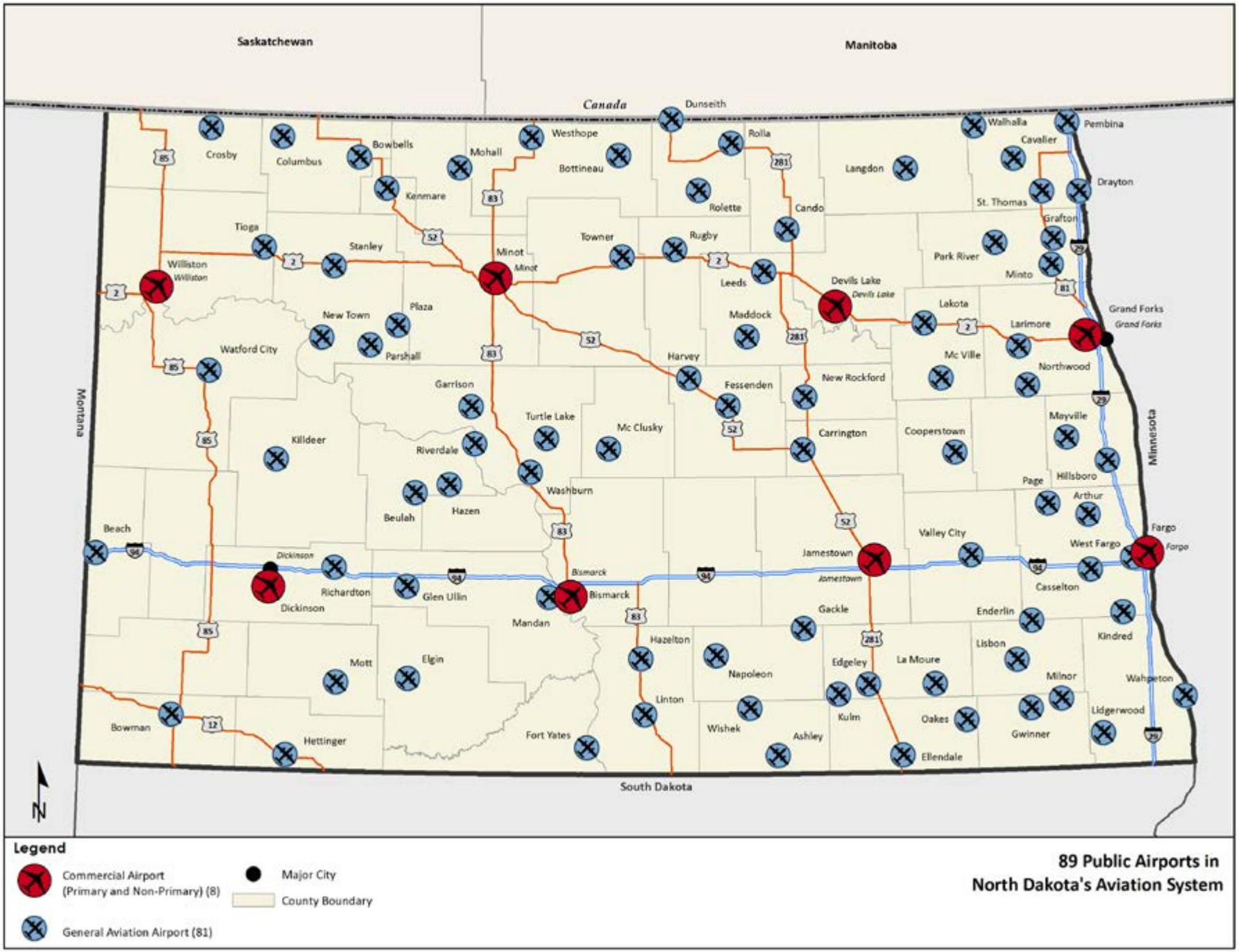
INTRODUCTION

North Dakota's aviation system of 89 public use airports have proven to be a vital resource to what is currently the most prolific state economy in the nation. No other region has recently seen such a jump in economic standing, like these communities within the 70,000 square miles that make up the Peace Garden State. North Dakota's long-time staple exports, such as sunflowers, wheat, soybeans, corn, livestock, heavy mechanical equipment, and transmission of electricity by coal-fired lignite, have now been joined by petroleum products, such as crude oil, biodiesel, natural gas and ethanol. The demand for infrastructure from these industries is exponential. Airports are no exception to these demands.

The goal of the 2014 North Dakota State Aviation System Plan (NDSASP) is to provide the necessary guidance to manage this growth and to provide the safest operating atmosphere, while prioritizing development and preserving the rich heritage of aviation in North Dakota.

NDAC Mission

The North Dakota Aeronautics Commission (NDAC) was established by the State Legislature in 1947 to serve the public by providing economic and technical assistance for the aviation community while ensuring the safe and cost effective advancement of aviation in North Dakota.


Saskatchewan
Manitoba
Canada
Dunseith
Pembina
Walhalla
Cavalier
Drayton
St. Thomas
Grafton
Park River
Minto
Grand Forks
Grand Forks
Larimore
Northwood
Lakota
Devils Lake
Devils Lake
Leeds
Rolla
Rolette
Cando
Langdon
Rugby
Towner
Minot
Minot
Bottineau
Westhope
Mohall
Bowbells
Kenmare
Crosby
Columbus
Tioga
Stanley
Williston
Williston
New Town
Plaza
Parshall
Watford City
Harvey
Fessenden
Maddock
New Rockford
Mc Ville
Garrison
Turtle Lake
Mc Clusky
Carrington
Cooperstown
Mayville
Hillsboro
Page
Arthur
Fargo
Fargo
West Fargo
Casselton
Valley City
Jamestown
Jamestown
Killdeer
Riverdale
Washburn
Beulah
Hazen
Beach
Dickinson
Dickinson
Richardton
Glen Ullin
Bismarck
Bismarck
Mandan
Gackle
Enderlin
Kindred
Lisbon
Hazelton
Napoleon
Edgeley
La Moure
Milnor
Wahpeton
Lidgerwood
Gwinner
Oakes
Ellendale
Kulm
Wishek
Ashley
Linton
Fort Yates
Hettinger
Bowman
Mott
Elgin
Montana
Minnesota
South Dakota
N
Legend
Commercial Airport
(Primary and Non-Primary) (8)
General Aviation Airport (81)
Major City
County Boundary
89 Public Airports in
North Dakota's Aviation System

89 SYSTEM AIRPORTS in Alphabetical Order by City

Airport	Associated City
Arthur Airport	Arthur
Ashley Municipal	Ashley
Beach	Beach
Beulah Municipal Airport	Beulah
Bismarck Municipal	Bismarck
Bottineau Municipal	Bottineau
Bowbells Municipal	Bowbells
Bowman Municipal	Bowman
Cando Municipal	Cando
Carrington Municipal	Carrington
Casselton Robert Miller Regional	Casselton
Cavalier Municipal	Cavalier
Columbus Municipal	Columbus
Cooperstown Municipal	Cooperstown
Crosby Municipal	Crosby
Devils Lake Regional	Devils Lake
Dickinson-Roosevelt Regional	Dickinson
Drayton Municipal	Drayton
Intl Peace Garden	Dunseith
Edgeley Municipal	Edgeley
Elgin Municipal	Elgin
Ellendale Municipal	Ellendale
Sky Haven Airport	Enderlin
Hector International	Fargo
Fessenden-Streibel Municipal	Fessenden
Standing Rock	Fort Yates
Gackle Municipal	Gackle
Garrison Municipal	Garrison
Glen Ullin Regional	Glen Ullin
Hutson Field	Grafton
Grand Forks International	Grand Forks
Gwinner-Roger Melroe Field	Gwinner
Harvey Municipal	Harvey
Hazelton Municipal	Hazelton
Mercer County Regional	Hazen
Hettinger Municipal	Hettinger
Hillsboro Municipal	Hillsboro
Jamestown Regional	Jamestown
Kenmare Municipal	Kenmare
Weydahl Field	Killdeer
Robert Odegaard Field	Kindred
Pruetz Municipal	Kulm
La Moure Rott Municipal	La Moure
Lakota Municipal	Lakota
Robertson Field	Langdon
Larimore Municipal	Larimore
Leeds Municipal	Leeds
Lidgerwood Municipal	Lidgerwood
Linton Municipal	Linton
Lisbon Municipal	Lisbon
Maddock Municipal	Maddock
Mandan Municipal	Mandan
Mayville Municipal	Mayville
Mc Clusky Municipal	Mc Clusky
Mc Ville Municipal	Mc Ville
Milnor Municipal	Milnor
Minot International	Minot
Minto Municipal	Minto
Mohall Municipal	Mohall
Mott Municipal	Mott
Napoleon Municipal	Napoleon
Tomlinson Field	New Rockford
New Town Municipal	New Town
Northwood Muni-Vince Field	Northwood
Oakes Municipal	Oakes
Page Regional	Page
Park River - W C Skjerven Field	Park River
Parshall-Hankins	Parshall
Pembina Municipal	Pembina
Trulson Field Airport	Plaza
Richardton Airport	Richardton
Garrison Dam Recreational Airpark	Riverdale
Rolette Airport	Rolette
Rolla Municipal	Rolla
Rugby Municipal	Rugby
St. Thomas Municipal	St. Thomas
Stanley Municipal	Stanley
Tioga Municipal	Tioga
Towner Municipal	Towner
Turtle Lake Municipal	Turtle Lake
Barnes County Municipal	Valley City
Harry Stern	Wahpeton
Walhalla Municipal	Walhalla
Washburn Municipal	Washburn
Watford City Municipal	Watford City
West Fargo Municipal	West Fargo
Westhope Municipal	Westhope
Sloulin Field International	Williston
Wishek Municipal	Wishek

PURPOSE OF AIRPORT SYSTEM PLANNING

The North Dakota Aeronautics Commission (NDAC) has undertaken an update to the previous North Dakota State Aviation System Plan (2007 NDSASP) due to changing aeronautical conditions and the rapid growth the state's aviation system is experiencing. The 2014 NDSASP (this document) takes a renewed look at the needs of the State as a whole. This plan provides a tool to assess, manage, and develop the State's aviation system, while providing an added resource to assist with planning for the Federal Aviation Administration (FAA), NDAC, the State Legislature, the North Dakota Aviation Council, local agencies, and 89 airport sponsors. The goal of system planning is to identify the needs of the State as a whole, and develop a roadmap for the allocation of available local, state, and federal resources to meet these needs in a responsible manner. Typically, a system plan will cover a time frame of 20 years; however, it is common for plans to be updated more frequently due to changing conditions and system development.

The FAA requires all states to produce a state system plan that addresses their aviation needs to obtain federal dollars to meet these needs. *Advisory Circular (AC) 150/5070-7*, The Airport System Planning Process, outlines the FAA-required content of system plans. This *AC* has been followed throughout the development of the 2014 NDSASP.

The FAA is responsible for overseeing the development of the aviation system in the United States. The National Plan of Integrated Airport Systems (NPIAS) is the program through which the FAA conducts national planning efforts and produces an annual plan for more than 3,300 airports included in the system. To be included in the NPIAS, an airport must meet certain criteria. Only those airports that are included in the NPIAS are eligible for federal funding through a program called the Airport Improvement Program (AIP). Of the 89 public-use airports in North Dakota (eight commercial service and 81 general aviation [GA]), 53 (60 percent) are included in the NPIAS.

The 36 remaining airports are still included in North Dakota's aviation system; however, they do not qualify for federal AIP aid. These non-NPIAS airports are often municipally-owned and receive some support from their local community. Regardless of the inclusion in the NPIAS, all 89 airports in North Dakota's aviation system constitute an important air transportation resource that should be protected.

IMPORTANCE OF AVIATION TO THE STATE OF NORTH DAKOTA

Due to the vast size of the state and limited rural transit options to move people and goods around, aviation continues to be a critical method of transportation in North Dakota. Many industries rely on air transportation in the State, whether for the transport of employees and materials for businesses, the transport of patients and medical supplies for life-saving operations, the spraying of crops to yield large harvests, flight training, weather research and modification, just-in-time air cargo deliveries of parts for oil drilling machinery, the protection of our country's northern border, or testing of state-of-the-art unmanned aerial vehicles (UAVs). The University of North Dakota (UND), located in Grand Forks, is the state's premier aviation school that has the largest civilian fleet in the world. In 2010, North Dakota's aviation system generated $1.1 billion of economic activity and supported 9,792 jobs according to the North Dakota Economic Impact of Aviation 2010. With the continued robust development in the state, these figures are expected to have increased since 2010.

The commercial service and general aviation airports located throughout the State offer various levels of service and facilities. Some of the smaller airfields in the State, however, are host to some of the most important operations such as agricultural spraying, medical flights, and border surveillance. As such, airports of all sizes and types need to be maintained in a similar manner to continue safe, modern, and efficient operations.

AIRPORT CLASSIFICATIONS

No two airports within North Dakota's aviation system are the same, and as a result, it is important to classify airports according to their role within the overall system. For this 2014 update of the NDSASP, the NDAC elected to use the same classifications and criteria used in FAA's study General Aviation Airports: A National Asset (known as the ASSET Study) to classify North Dakota's GA airports at the state level. Classification of airports serving commercial air service is based upon their categorization in the National Plan of Integrated Airport Systems (NPIAS) as Primary or Non-Primary, while classification of GA airports in the system is based upon ASSET criteria (shown in **Table 1**). The integration of the ASSET and NPIAS classifications and criteria into the NDSASP allows for consistency at the federal and state level.

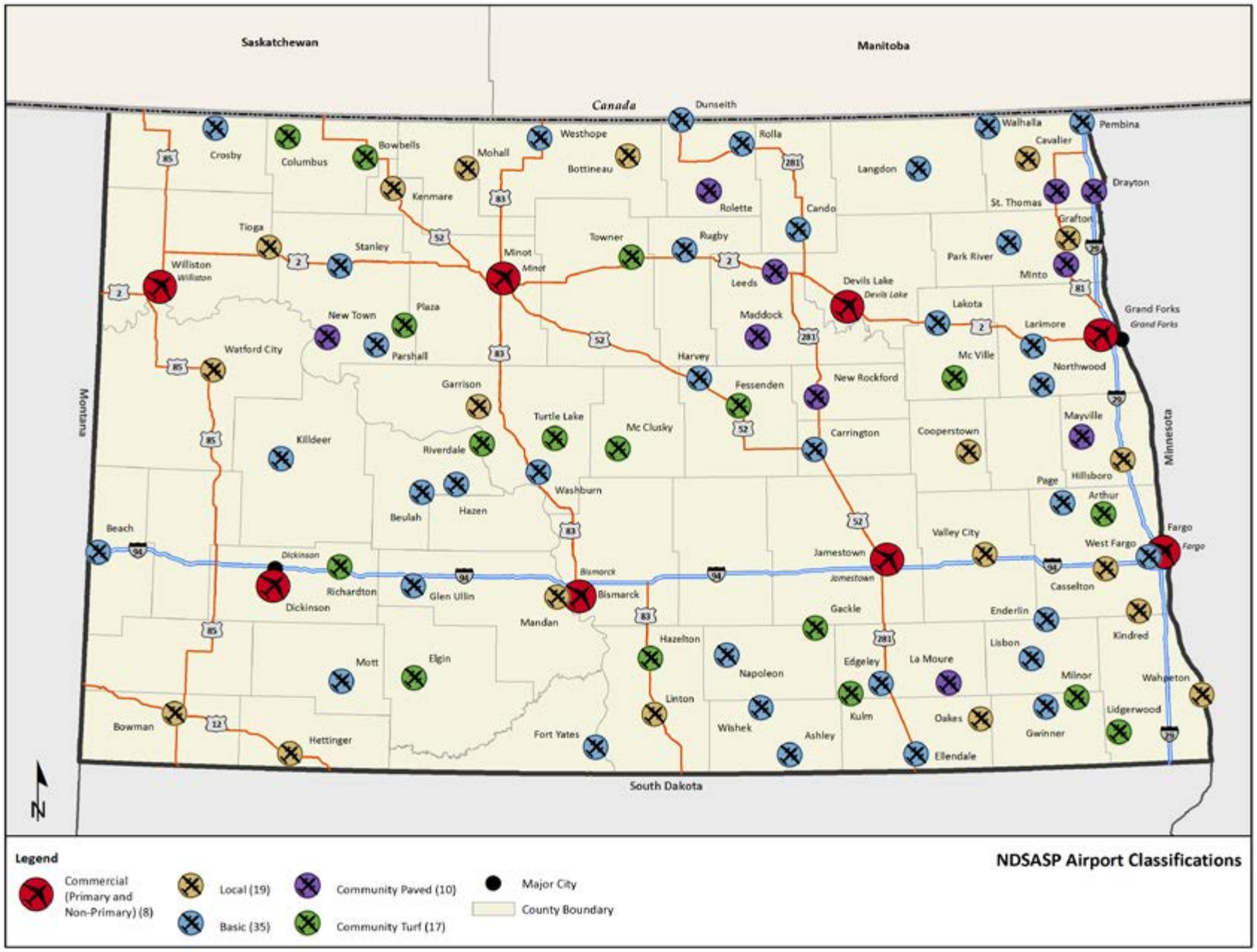
For the 36 airports in North Dakota's aviation system that are not included in the NPIAS, the same criteria was applied to classify them into one of the four ASSET classifications – National, Regional, Local, or Basic. Airports that did not meet the criteria for inclusion in these classifications were categorized into one of two additional classifications developed by NDAC – Community Paved (for airports with paved runways) and Community Turf (for airports with turf/gravel runways). A total of eight classifications are used in this NDSASP update. **Figure 1** illustrates the classification of system airports.

Table 1 – ASSET Classifications and Criteria

National	Regional	Local	Basic
• 5,000+ instrument operations, 11+ based jets, 20+ international flights, or 500+ interstate departures; or • 10,000+ enplanements and at least 1 charter enplanement by a large certificated air carrier, or • 500+ million pounds of landed cargo weight	• Metropolitan Statistical Area (Metro or Micro) and 10+ domestic flights over 500 miles, 1,000+ instrument operations, 1+ based jet, or 100+ based aircraft; or • The airport is located in a metropolitan or micropolitan statistical area, and the airport meets the definition of commercial service	• 10+ instrument operations and 15+ based aircraft; or • 2,500+ passenger enplanements	• 10+ based aircraft; or • 4+ based helicopters; or • The airport is located 30+ miles from the nearest NPIAS airport; or • The airport is identified and used by the U.S. Forest Service, or U.S. Marshals, or U.S. Customs and Border Protection (designated, international, or landing rights), or U.S. Postal Service (air stops), or has Essential Air Service; or • The airport is a new or replacement facility activated after January 1, 2001; and • Publicly owned or privately owned and designated as a reliever with a minimum of 90 based aircraft

Source: FAA General Aviation Airports: A National Asset, 2012.

Figure 1 – System of 89 Public Airports by Classification



AIRPORT CLASSIFICATION FACILITY AND SERVICE OBJECTIVES

In addition to the performance measures and benchmarks established system-wide, the NDAC has developed a set of facility and service objectives for each GA airport classification in the NDSASP (National, Regional, Local, Basic, Community Paved, and Community Turf). These objectives are tailored toward the various roles that airports in each classification fill.

The facility and service objectives shown in **Table 2** and **Table 3** are targets that each airport should work toward as the system evolves. These objectives are not required for inclusion in any airport classification, but serve as targets for each airport to meet as they are able. NDAC will use these objectives, in addition to the system performance measures and benchmarks, to assist airports in planning site-specific improvements in the future.

Table 2 – NDSASP Airport Objectives - Airside

	National*	**Regional***	**Local**	**Basic**	**Community** (Paved/Turf)
Airside Facilities					
Primary Runway Length	5,000 feet or greater	3,800 feet or greater	3,300 feet or greater	3,000 feet or greater	2,500 feet or longer (paved) or Turf – Maintain existing length
Primary Runway Width	75 feet	75 feet	60 feet	NPIAS – 60 feet; on-NPIAS - Maintain existing	NPIAS - 120 feet; Non-NPIAS - Maintain existing 80 feet
Taxiway Type	Full Parallel	Partial Parallel	Connecting Taxiways	Connecting Taxiways	Connecting Taxiways
Approach Type	Non-Precision with Vertical Guidance (LPV)	Non-Precision with Vertical Guidance (LPV)	Non-Precision (GPS)	Non-Precision (GPS)	Visual
Lighting	MIRL and MITL	MIRL and MITL	MIRL	LIRL	LIRL (for paved)
Visual Aids	Rotating Beacon, Lighted Wind Indicator, Segmented Circle	Rotating Beacon, Lighted Wind Indicator, Segmented Circle	Lighted Wind Indicator, Segmented Circle	Wind Indicator	Wind Indicator
NAVAIDS	REILs, ODALs, VGSI (VASIs/PAPIs)	REILs, VGSI (VASIs/PAPIs)	VGSI (VASIs/PAPIs) if GPS IFR procedures	Non Required	Not an Objective
Weather	ASOS or AWOS	ASOS or AWOS	ASOS or AWOS	Not an Objective	Not an Objective
Perimeter Fencing	Full Perimeter Fencing	Full Perimeter Fencing	Partial Perimeter Fencing	Partial Perimeter Fencing	Partial Perimeter Fencing

*As of 2014 no airports are classified in this category.
*As of 2014 no airports are classified in this category.
MIRL = Medium Intensity Runway Lighting
LIRL = Low Intensity Runway Lighting
MITL = Medium Intensity Taxiway Lighting
ASOS = Automated Surface Observing Systems
AWOS = Automated Weather Observing Systems
REILs = Runway End Identifier Lights
ODALs = Omni-Directional Approach Lights
VGSI = Visual Guidance Slope Indicators
VASIs = Visual Approach Slope Indicators
PAPIs = Precision Approach Path Indicators

Table 3 – NDSASP Airport Objectives - Landside

	National*	Regional*	Local	Basic	Community (Paved/Turf)
Landside Facilities					
Hangar Spaces	75% of based aircraft	75% of based aircraft	75% of based aircraft	50% of based aircraft	50% of based aircraft
Hangars for Transient Aircraft	Yes	Yes	Yes	Yes	Not an Objective
Terminal/ Administration Bldg	1,000 square feet	750 square feet	500 square feet	500 square feet	400 square feet
Aircraft Maintenance Facility	Yes	Yes	Not an Objective	Not an Objective	Not an Objective
Landside Services					
FBO Office	Yes	Yes	Yes	Not an Objective	Not an Objective
Agricultural Spraying	Yes	Yes	Yes	Yes	Yes
Aircraft Maintenance Staff	Based	Based	On-Call	Not an Objective	Not an Objective
Fuel	Jet A and 100LL (both credit card)	100LL, Jet A as needed (both credit card)	100LL (credit card)	100LL	Private emergency sales
Terminal/Pilot's Lounge	Phone, Restrooms, Flight Planning/Lounge	Phone, Restrooms, Flight Planning/Lounge	Phone and Restrooms	Phone and Restrooms (desired)	Phone and Restrooms (desired)
Ground Transportation Services	Yes	Yes	Yes	Not an Objective	Not an Objective
Security	Terminal and Ramp Lighting, Controlled Airfield Access, and Police Patrol	Terminal and Ramp Lighting, Controlled Airfield Access, and Police Patrol	Terminal and Ramp Lighting, Controlled Airfield Access, and Police Patrol	Appropriate Access Restrictions	Appropriate Access Restrictions
Signage	Adequate signage to locate airport from access road & welcoming signage	Adequate signage to locate airport from access road & welcoming signage	Adequate signage to locate airport from access road & welcoming signage	Adequate signage to locate airport from access road & welcoming signage	Not an Objective
Snow Removal Equipment	Yes	Yes	Yes	Yes	Not an Objective

* As of 2014 no airports are classified in this category.

* As of 2014 no airports are classified in this category.

FORECASTS

North Dakota is experiencing a growing economy in agriculture, tourism, small business, and an "oil boom" which is driving economic and population growth. An analysis of statewide socioeconomic trends (including employment, income per capita, total retail sales, and population) identified unique growth patterns around oil production areas in the west and larger metropolitan areas on the State's east side. As a result, aviation forecasts for operations, based aircraft, and enplanements were developed based on county-level growth rates using a combination of Woods & Poole economic data and a population forecast done for the North Dakota Statewide Housing Assessment Resource Project (SHARP).

Table 4 provides a summary of the system forecasts for based aircraft and operations, while **Table 5** summarizes projected enplanements at the eight commercial service airports. Overall, operations are anticipated to increase by nearly 30% by 2035 and based aircraft are forecasted to increase by nearly 35% by 2035.

Table 4 – NDSASP Forecasts for Based Aircraft and Operations

	Base Year Operations	Forecast of Operations					Based Aircraft		
Category	2013	2018	2025	2030	2035	% Growth 2013-2035	2013	2035	% Growth 2013-2035
ND Commercial Service Airports*	622,317	665,729	726,746	769,244	813,406	30.7%	749	1,090	45.5%
ND General Aviation Airports**	302,335	307,090	340,774	359,067	378,802	25.3%	1,092	1,391	27.4%
TOTAL All North Dakota Airports	924,652	972,819	1,067,520	1,128,311	1,192,208	28.9%	1,841	2,481	34.8%

* Source FAA's Terminal Area Forecast (TAF) and/or Mead & Hunt methodology, or airport master plans
**Source: 2013 Base Year Operations and 2013 Based Aircraft numbers were taken from the FAA 5010 forms for each airport unless otherwise noted. For all GA airports, Forecast of Operations and 2035 Based Aircraft numbers were developed using the Mead & Hunt methodology.

Table 5 – NDSASP Forecasts for Enplanements

Passenger Enplanements for Commercial Service Airports						
COMMERCIAL SERVICE AIRPORTS	Base Year	Forecast				
	2013	2018	2025	2030	2035	%Growth 2013-2035
Bismarck, Bismarck Municipal Airport	246,435	298,274	356,101	402,141	456,532	85.3%
Devils Lake, Devils Lake Regional Airport #	4,224	4,326	4,472	4,580	4,690	11%
Dickinson, Dickinson Theodore Roosevelt Regional Airport**	35,082	82,992	136,989	169,589	176,164	402.1%
Fargo, Hector International Airport***	398,677	481,639	530,038	582,029	638,353	60.1%
Grand Forks, Grand Forks International Airport	144,836	160,509	185,366	205,454	227,731	57.2%
Jamestown, Jamestown Regional Airport #	5,664	5,931	6,325	6,623	6,934	22.4%
Minot, Minot International Airport	222,056	299,236	413,868	479,580	539,763	143%
Williston, Sloulin Field International Airport*	81,108	156,037	314,926	334,189	334,189	312%
TOTAL ENPLANEMENTS	1,138,082	1,488,943	1,948,085	2,184,184	2,384,356	109.5%

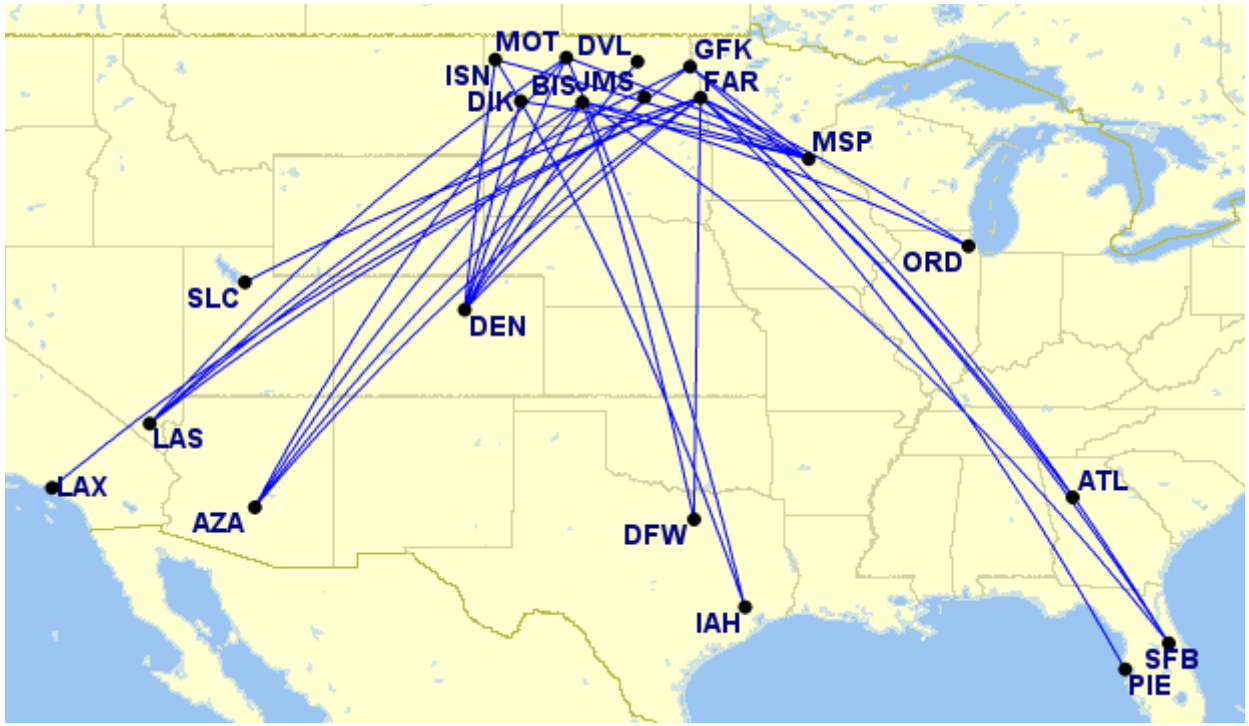
Source: TAF Enplanement Forecasts from FAA TAF, Aug 9, 2013 except as noted
#Source: 2013 base year number was calculated based on the June 2014 – October 2014 enplanement average from the North Dakota Aeronautics Commission averaged out amongst 12 months. Forecast years were calculated using the CAGR rate from the Mead & Hunt methodology applied to the base year.
*Source: TAF Enplanement Forecasts from FAA TAF, March 20, 2014
**Source: Airport Master Plan Update (Chapter 3 – Aviation Forecasts), May 2014, Trillion Aviation and KLJ
***Source: Master Plan Update (Forecast Chapter), Mead & Hunt, 2014

SYSTEM GROWTH

The eight commercial service airports in the state have seen tremendous growth. Since the last system plan was completed in 2007, the number of enplanements in North Dakota has nearly doubled from 652,380 to over 1.1 million in 2013 (see **Table 5**). Average daily airline departures in North Dakota have increased from 52 to 75, and the number of non-stop destinations has grown from 5 to 12 (shown in **Figure 2**). Only two of the commercial service airports (Devils Lake and Jamestown) are supported through the Essential Air Service (EAS) program, and all eight airports now have jet service.

Enplanement forecasts from the 2007 system plan have been exceeded significantly, shown in **Table 6**. The largest increase was seen in Minot with an enplanement total in 2007 of 70,554, jumping to 224,421 in 2013 (an increase of more than 150,000 enplanements).

Figure 2 – Non-Stop Commercial Service Destinations from North Dakota Airports in 2014



Destination Airport Codes	
ATL	Atlanta, Georgia
AZA	Phoenix, Arizona
DEN	Denver, Colorado
DFW	Dallas/Fort Worth, Texas
IAH	Houston, Texas
LAS	Las Vegas, Nevada
LAX	Los Angeles, California
MSP	Minneapolis, Minnesota
ORD	Chicago, Illinois
PIE	Tampa, Florida
SFB	Orlando, Florida
SLC	Salt Lake City, Utah

Table 6 – Historic and Forecasted Annual Enplanements

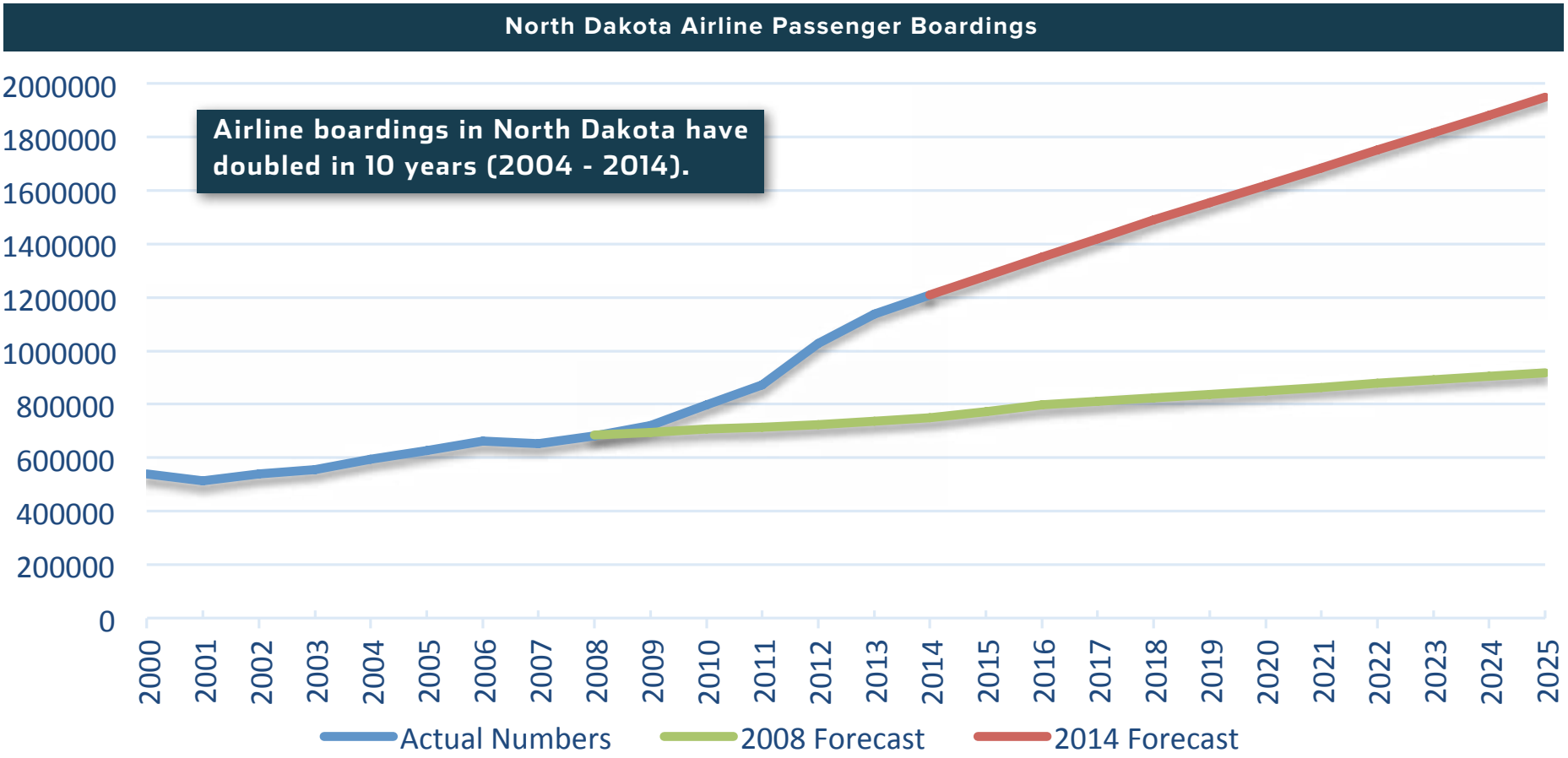
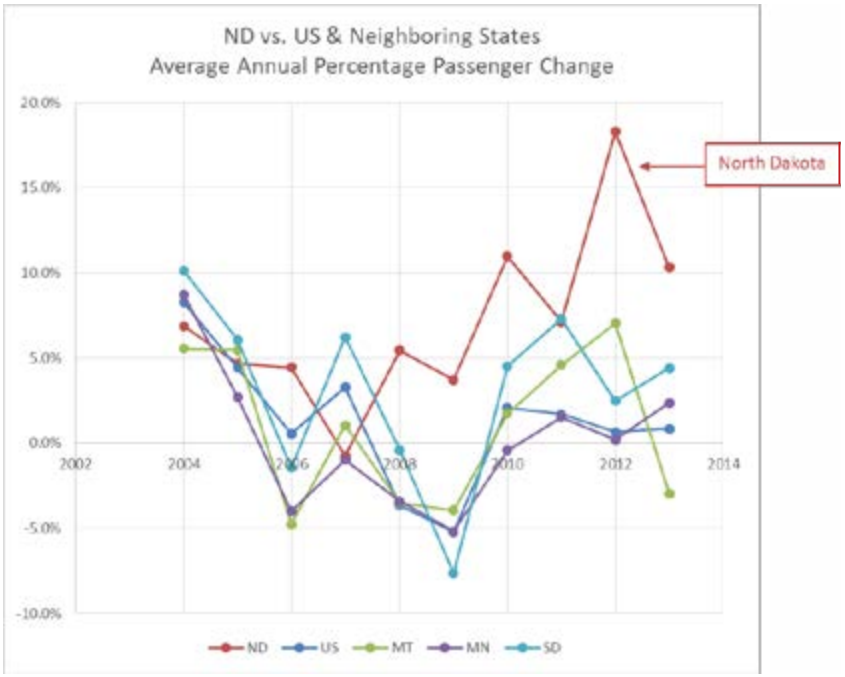


Table 7 – Percent Change in Reported Outbound Onboard Passengers

	US	MT	MN	SD	ND
2013	0.8%	-3.0%	2.4%	4.4%	10.3%
2012	0.6%	7.1%	0.2%	2.5%	18.3%
2011	1.7%	4.6%	1.5%	7.3%	7.1%
2010	2.1%	1.7%	-0.4%	4.5%	11.0%
2009	-5.2%	-3.9%	-5.2%	-7.6%	3.7%
2008	-3.6%	-3.5%	-3.4%	-0.4%	5.5%
2007	3.3%	1.0%	-1.0%	6.2%	-0.7%
2006	0.6%	-4.8%	-4.0%	-1.4%	4.4%
2005	4.5%	5.5%	2.7%	6.1%	4.7%
2004	8.3%	5.5%	8.7%	10.1%	6.9%

Source: US DOT T-100 Outbound Onboard Passengers Note: 2014 YTD through May vs. 2013 YTD through May

Figure 3 – ND Compared to US and Regional Average Annual Passenger Change



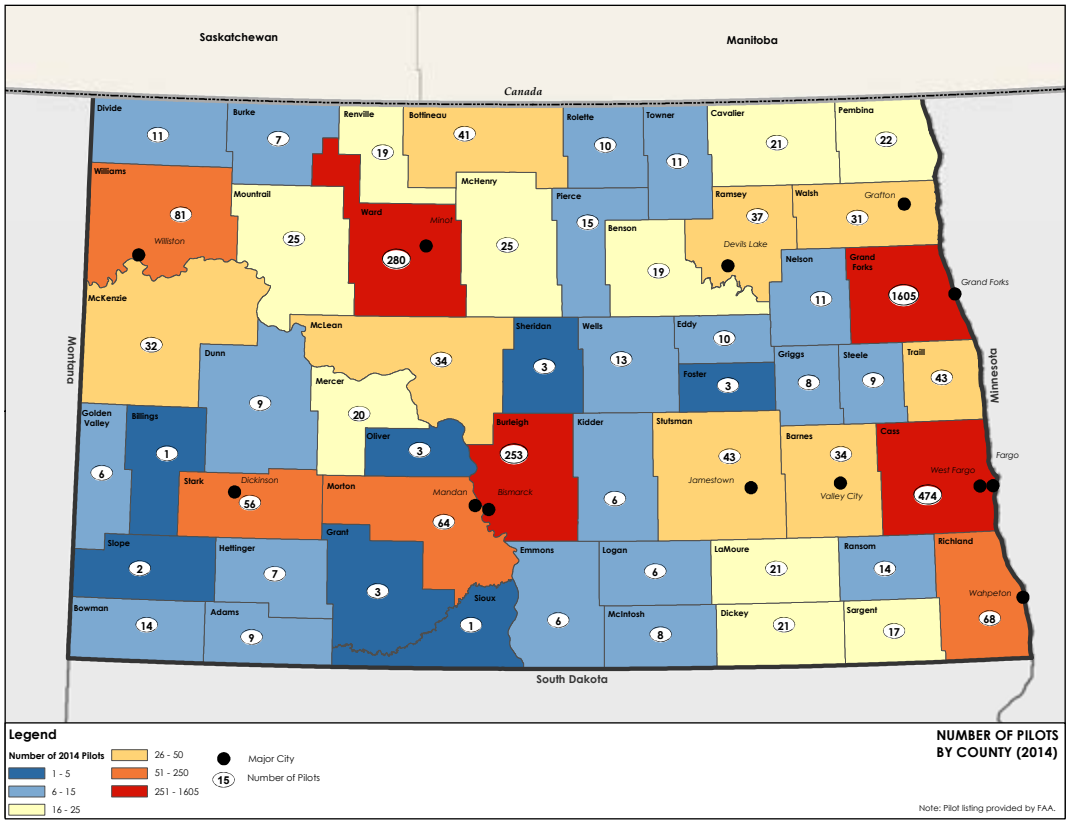
When compared to the surrounding states of South Dakota (SD), Minnesota (MN), and Montana (MT) as shown in **Table 7** and **Figure 3**, a remarkable increase in passenger growth rates is isolated to the state of North Dakota (ND).

While the neighboring states have generally followed the U.S. trend, North Dakota's passenger enplanements have far exceeded this pattern since 2007.

SYSTEM GROWTH *(continued)*

Aircraft registrations and pilot licensure is on the rise in the state. Since the last system plan update in 2007, an additional 380 aircraft have been registered in the state (an increase of 23 percent) according to the North Dakota Aeronautics Commission's (NDAC's) official record. Additionally, the total number of licensed pilots in North Dakota has increased from approximately 2,400 to nearly 3,600 total (an increase of 48 percent) according to the Federal Aviation Administration's (FAA's) official record. Although the overall pilot increase is around 1,200, a cross-reference between the official pilot listing from 2007 and 2014 identified the true number of new pilots to be more than 2,400. This indicates that between 2007 and 2014, about 2,400 new pilots were registered in the state, while 1,200 pilots left or stopped flying. **Figure 4** shows the number of pilots by county as of 2014. Grand Forks is home to UND's aviation school, therefore, a large number of pilots are shown in Grand Forks County.

Figure 4 – Pilots by County 2014



Source: FAA Pilot Listing, mapped by Mead & Hunt, Inc.

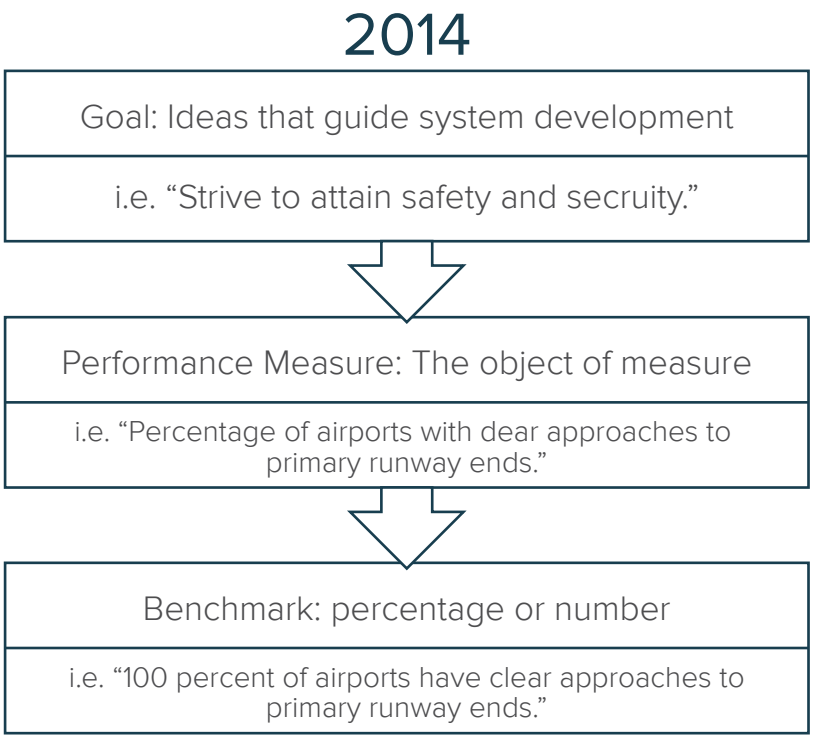
SYSTEM GOALS AND PERFORMANCE MEASURES

A critical step in the system planning process is the development of goals and performance measures upon which the plan will be built and success, measured. System goals and performance measures establish a guide for future system development and progress. Typically, several performance measures developed for each goal provide narrower areas of focus and can be evaluated.

The goals established for this system plan update are directly related to the mission of the NDAC, and include the following:

- Strive to attain safety and security
- Accommodate accessibility needs
- Enhance air access to airports
- Support North Dakota's economy
- Enhance quality of life
- Preserve North Dakota airport assets

All map images on pages 21-25 are available in larger, more detailed formats in the full technical report.



GOAL: STRIVE TO ATTAIN SAFETY AND SECURITY

Maintain Clear Approaches

Maintaining clear approaches to all runway ends is critically important to preserve the safety of operations at an airport. An approach is defined as a three dimensional surface extending from the end of a runway which is used by aircraft taking off and landing at an airport. When obstructions exist (such as trees and other structures) that penetrate this three dimensional surface, approach minimums can be raised which limits the usability of an airport in times of reduced visibility. A sample 20:1 approach is shown in **Figure 5**.

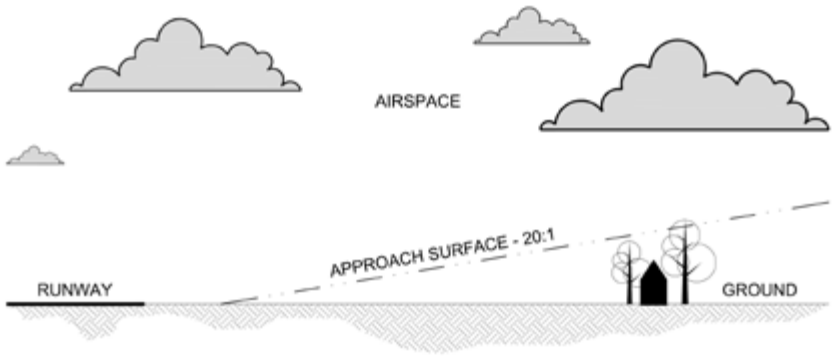
The approach size reflects the recent effort of the FAA to mitigate obstructions to the 20:1 approaches at airports. On November 15th, 2013 the FAA issued a Memorandum titled Mitigation of obstructions within the 20:1 Visual Area Surface. This memo outlined procedures for identifying, verifying, and mitigating approach obstructions at all airports in order to maintain safe operations. If obstructions to the 20:1 surface are not addressed at an airport, the FAA can restrict operations resulting in loss of airport access. Solutions to clear approaches of obstructions include relocating or displacing thresholds (which reduces the usable length of a runway), removing the obstruction, and others.

This performance measure is aimed at providing clear 20:1 approaches at system airports, and achieving system compliance with the regulations established in the recently released FAA memo. In order to achieve this benchmark, the 20:1 approach to both ends of an airport's primary runway must be clear.

Benchmark: 100% of Airports have Clear Approaches to their Primary Runway Ends

Performance: 65% of Airports have Clear Approaches to their Primary Runway Ends

Figure 5 – Profile View of a 20:1 Runway Approach



Maintain Clear Runway Protection Zones

This performance measure is related to the two-dimensional surface underneath a runway's approach, known as the Runway Protection Zone (RPZ). This area is trapezoidal in shape, and is intended to protect people and property on the ground in the event of an aircraft overrun or undershoot. The RPZ begins 200 feet from the end of the runway, and its size is dependent upon the design of the associated runway, as shown in **Figure 6**. Structures and wetlands within the RPZ have always been discouraged, however recently the FAA has also ruled roads to be an incompatible use within this zone. Since roads have historically been a compatible use within this zone, a number of airports have roads within their RPZs, hence most of the system airports have one or more incompatible uses within their RPZs (the majority are roads).

Mitigating incompatible uses within airport-owned RPZs can be accomplished by filling wetlands (and creating them elsewhere), removing structures, and re-locating roads. If an airport does not own the land within their RPZs, acquisition of an avigation easement (purchase of the air rights above a property), or purchase of the property in its entirety will be required.

Benchmark: 100% of Airports with No Wetlands, Roads and/or Structures in their RPZs

Performance: 4.5% of Airports with No Wetlands, Roads and/or Structures in their RPZs

Figure 6 – Plan View of a Sample RPZ

GOAL: ACCOMMODATE ACCESSIBILITY NEEDS

Provide Access to Commercial Service Airports

Providing reasonable access to the State's eight commercial service airports is critical for business, medical, and leisure travelers. A drive time of 60 minutes was considered reasonable to reach these airports, shown in **Figure 7.**

Benchmark: 50% of Area and 90% of Population within 60 Minutes of a Commercial Service Airport

Performance: 40% of Area and 80% of Population within 60 Minutes of a Commercial Service Airport

Provide Access to NPIAS Airports

An airport must be included in the NPIAS to be eligible for federal AIP funding. Airports that are included in the NPIAS must meet certain criteria and be located at least a 30 minute drive time from the nearest NPIAS airport. North Dakota's aviation system has 53 airports that are included in the NPIAS.

Benchmark: 90% of Population within 30 Minutes of a NPIAS Airport

Performance: 89% of Population within 30 Minutes of a NPIAS Airport

Provide Access to Public Use Airports

Providing access for airport users to all 89 airports is important. A drive time of 30 minutes was considered reasonable to each of the 89 system airports, shown in **Figure 8.**

Benchmark: 95% of Population within 30 Minutes of Any Public Airport

Performance: 93% of Population within 30 Minutes of Any Public Airport

Provide Access to Airports Serving Aerial Applicators

Many of the airports support operations by aerial applicators who utilize special aircraft to apply fertilizers, pesticides, and other products to crops. Agricultural spraying helps meet production needs that ground-only operations are not able to meet. Annually, 4-5 million acres in North Dakota have aerial applicator services.

Benchmark: 80% of Area within 30 Minutes of an Airport Serving an Aerial Applicator

Performance: 52% of Area within 30 Minutes of an Airport Serving an Aerial Applicator

Figure 7 – 60 Minute Drive Time to Commercial Service Airports

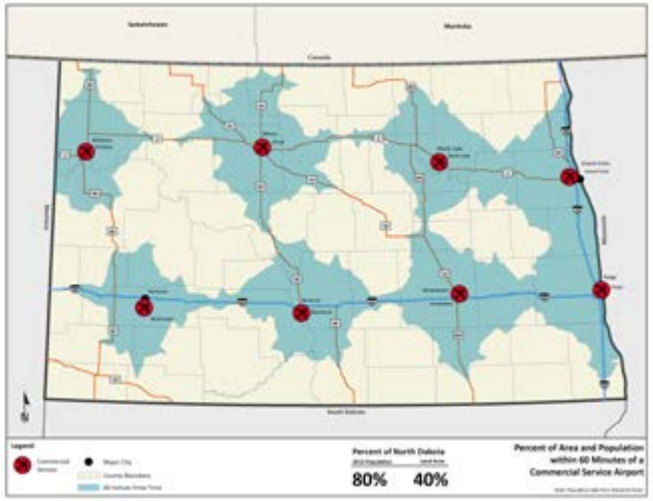
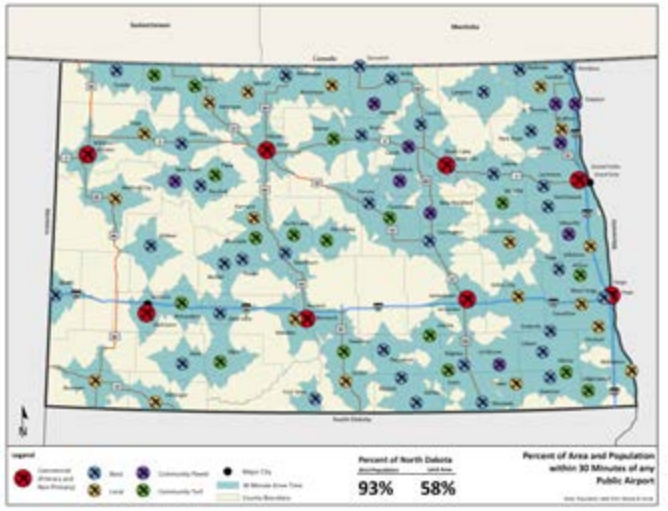


Figure 8 – 30 Minute Drive Time to all Public Use Airports



GOAL: ENHANCE AIR ACCESS TO AIRPORTS

Provide Access to Airports with On-Site Weather Reporting

Weather reporting systems provide critical information to pilots when preparing for flight and traveling en route about on-site airfield conditions such as visibility, ceiling height, atmospheric conditions, wind speed and direction, and barometric pressure. Airports that have weather reporting systems, Automated Surface Observing Systems (ASOS) or Automated Weather Observing Systems (AWOS), can be more attractive to pilots, especially when operating during times of inclement weather. A distance of 30 nautical miles was considered reason able for pilot access to airports with weather reporting, shown in **Figure 9.**

Benchmark: 80% of Area and 90% of Population within 30 Nautical Miles of an Airport with On-Site Weather Reporting

Performance: 87% of Area and 97% of Population within 30 Nautical Miles of an Airport with On-Site Weather Reporting

Provide Access to Airports with Non-Precision Approaches

Non-precision approaches provide pilots with horizontal (lateral) guidance when landing at an airport. This type of approach helps pilots align with the center of the runway upon approach and landing. This guidance is especially helpful when trying to land in times of inclement weather, crosswinds, and reduced visibility. It is important that pilots have access to land at airports with this type of approach when needed, and that non-precision approaches are offered at many of the system airports. A distance of 30 nautical miles was considered reasonable for pilot access to airports with non-precision approaches, shown in **Figure 10.**

Benchmark: 90% of Area and 100% of Population within 30 Nautical Miles of an Airport with a Non-Precision Approach

Performance: 88% of Area and 98% of Population within 30 Nautical Miles of an Airport with a Non-Precision Approach

Figure 9 – 30 Nautical Mile Coverage of Airports with On-Site Weather Reporting

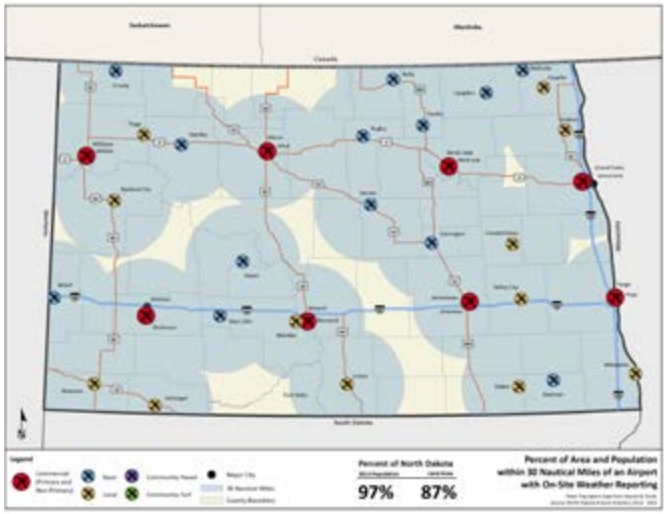
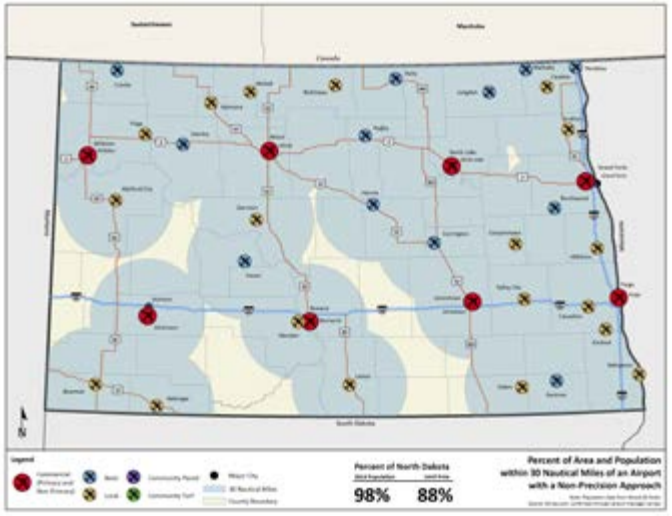


Figure 10 – 30 Nautical Mile Coverage of Airports with Non-Precision Approaches



Provide Access to Airports with Vertically-Guided Approaches

Two types of runway approaches have vertical guidance – precision approaches and non-precision approaches with vertical guidance. As the name indicates, these types of enhanced approaches provide pilots with vertical guidance (as well as horizontal guidance) when landing at an airport. This guidance is helpful when landing in times of inclement weather or reduced visibility.

Benchmark: 80% of Area and 90% of Population within 30 Nautical Miles of an Airport with a Vertically-Guided Approach

Performance: 70% of Area and 92% of Population within 30 Nautical Miles of an Airport with a Vertically-Guided Approach

GOAL: SUPPORT NORTH DAKOTA'S ECONOMY

Provide Access to Airports with Jet A Fuel

The provision of aircraft fuel throughout the aviation system is critical for the operation of aircraft to and from system airports. Jet A fuel is designed for use in aircraft powered by turbine engines.

Benchmark: 30% of Area and 75% of Population within 30 Minutes of an Airport with Jet A Fuel

Performance: 24% of Area and 77% of Population within 30 Minutes of an Airport with Jet A Fuel

Provide Access to Airports with 100LL Fuel

100 low lead (LL) fuel is designed for use in aircraft with piston engines. This fuel is the most commonly used fuel in the general aviation community. A drive time of 30 minutes or less was considered reasonable to airports with 100LL fuel, shown in **Figure 12.**

Benchmark: 60% of Area and 90% of Population within 30 Minutes of an Airport with 100LL Fuel

Performance: 42% of Area and 88% of Population within 30 Minutes of an Airport with 100LL Fuel

Figure 11 – Airports with Jet A Fuel

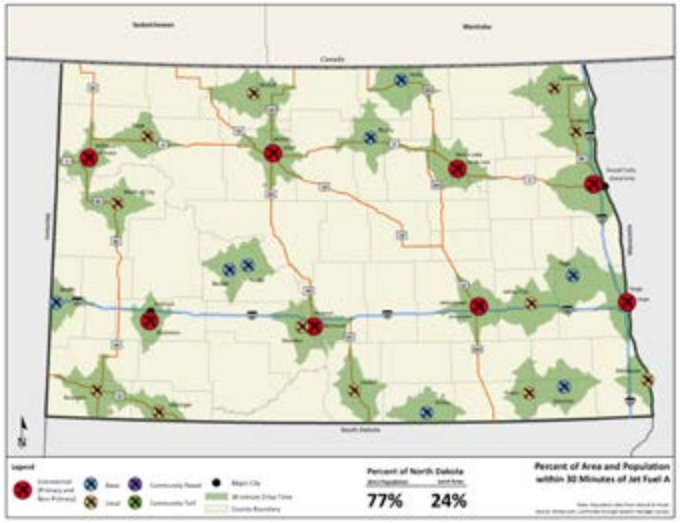
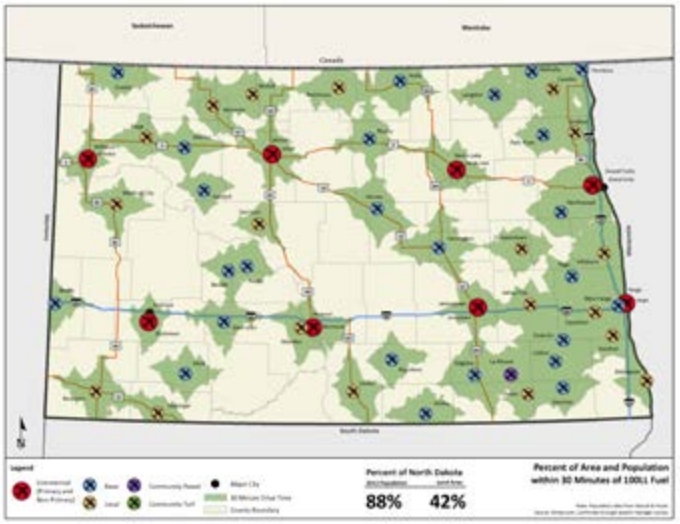


Figure 12 – 30 Minute Drive Time to Airports with 100LL Fuel



Provide Access to Airports with Large Runways

Airports that have runways of 5,000 feet or longer are often capable of supporting use by larger aircraft, such as corporate jets. By providing runways that can handle this type of use, North Dakota's aviation system supports a variety of aviation users from small recreational aircraft to cargo aircraft, charters, and corporate aircraft.

Benchmark: 75% of Population within 30 Minutes of a Large Aircraft Runway

Performance: 68% of Population within 30 Minutes of a Large Aircraft Runway

Provide Access to Airports that Support use by King Air Aircraft

Beechcraft King Air aircraft are considered to be representative of typical business aircraft and are classified with an Airport Reference Code (ARC) of B-II. Airports that can support use by this type of aircraft often support their area's business community which benefits the local, regional, and state economy. In order to support use by this aircraft (or similar aircraft), an airport needs approximately 3,800 feet or more of runway length and an ARC of B-II or greater. A 30 minute drive time was considered reasonable to airports that are able to support the use of King Air aircraft, shown in **Figure 14.**

Benchmark: 90% of Population within 30 Minutes of an Airport able to Support the use of King Air Aircraft

Performance: 76% of Population within 30 Minutes of an Airport able to Support the use of King Air Aircraft

Figure 13 – Large Aircraft Runways

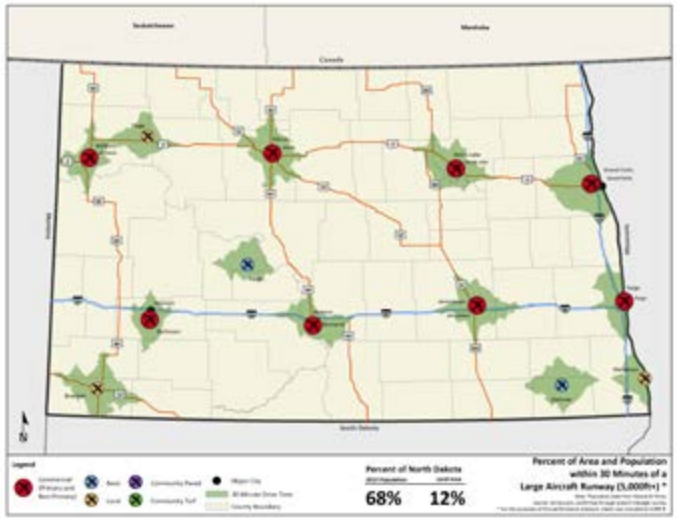
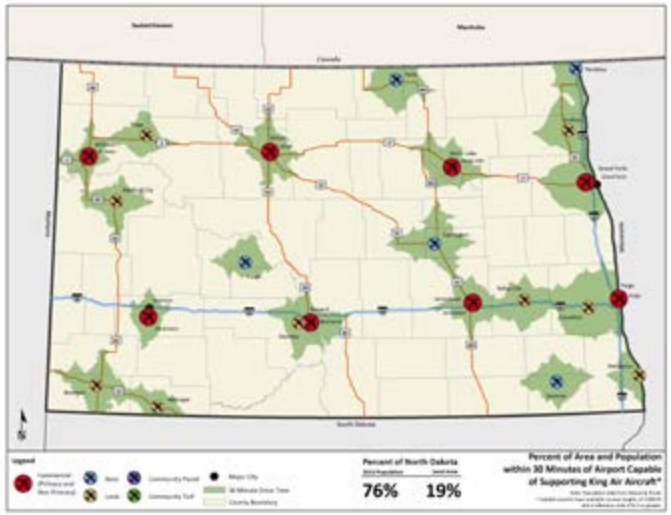


Figure 14 – 30 Minute Drive Time to Airports Able to Support King Air Aircraft



GOAL: ENHANCE QUALITY OF LIFE

Provide Airport Access for Hospitals and Clinics

It is critical that hospitals and clinics are within a reasonable distance of a local airport in the event that air transportation is needed (for passengers, supplies, medical staff, etc.). A 30 minute drive time was considered reasonable to GA airports, while a 60 minute drive time was considered reasonable to commercial service airports. In order to meet this benchmark, all hospitals and clinics must be within either a 30 minute drive time to a GA airport or 60 minute drive time to a commercial service airport, shown in **Figure 15**.

Benchmark: 100% of Communities with a Hospital and/or Clinic should be served by an Airport

Performance: 94% of Communities with a Hospital and/or Clinic within Service Area of a Public-Use Airport

Provide Access to Airports that Support use by Fixed-Wing Emergency Aircraft

Providing air access is critical during emergencies. As such, it is important for system airports to be able to support the use of fixed-wing aircraft that are used for emergency transportation (such as Pilatus and King Air aircraft). In order to serve these types of operations, a runway length of 3,500+ feet and a non-precision approach is often needed. A drive time of 30 minutes was considered reasonable to airports that can support fixed-wing emergency operations, shown in **Figure 16.**

Benchmark: 90% of Population within 30 Minutes of an Airport Capable of Supporting Fixed-Wing Emergency Aircraft

Performance: 81% of Population within 30 Minutes of an Airport Capable of Supporting Fixed-Wing Emergency Aircraft

Figure 15 – Airport Coverage of Hospitals and Clinics

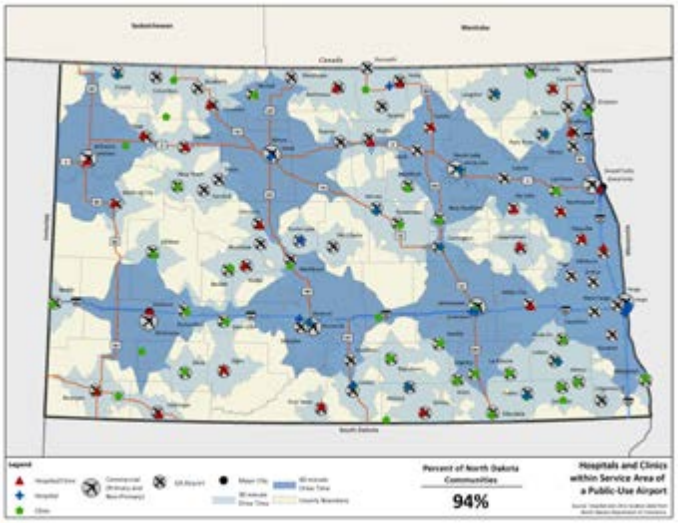
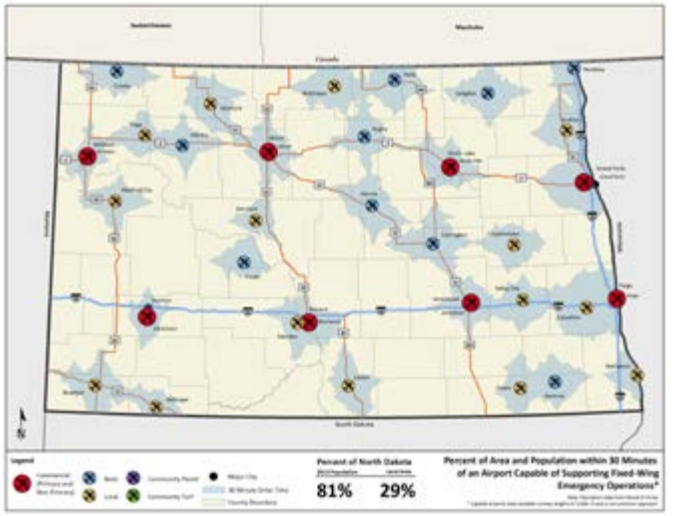


Figure 16 – 30 Minute Drive Time to Airports Capable of Supporting Fixed-Wing Emergency Aircraft



GOAL: PRESERVE NORTH DAKOTA AIRPORT ASSETS

Meet State Pavement Condition Index Thresholds

The Pavement Condition Index (PCI) rating system is used to assess the condition of pavement surfaces at airports, and assigns a score ranging from zero to 100. Pavements with higher PCIs are in better condition than those with lower PCIs (an example of pavement in need of repair is shown in **Figure 17**).To maintain system pavements in good condition, NDAC has set a primary runway PCI threshold of 60 or greater for paved GA airports and 65 or greater for commercial service airports. System-wide, North Dakota has over 25 million square feet of runway pavement which has to be maintained. When other airport pavements are included (taxiways, aprons, etc.), the system has a total of nearly 52 million square feet of pavement.

Benchmark: 100% of Airports Should Meet the State PCI Threshold (60 for Paved GA, 65 for Commercial Service)

Performance: 73% of Airports Meet the State PCI Threshold

Keep Updated Airport Layout Plans

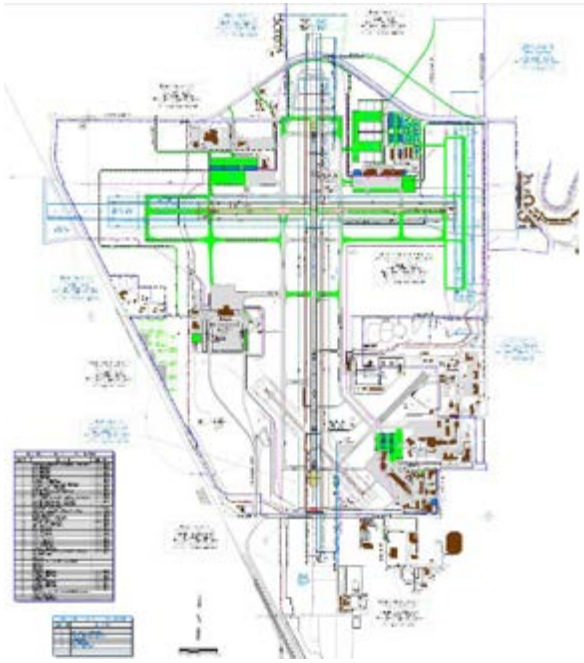
Airport Layout Plans (ALPs) depict existing, future and ultimate development (a sample ALP is shown in **Figure 18**). They are used to coordinate land use, acquisition or release of land and communicate with federal and local decision makers regarding development needs. Having an updated ALP is beneficial for all airports and mandatory for those included in the NPIAS as their projects must be shown on an approved ALP.

Benchmark: 100% of NPIAS Airports should have an Approved ALP within the Last 10 Years

Performance: 66% of NPIAS Airports have an Approved ALP within the Last 10 Years

Figure 17 – Example of Pavement with a Low PCI

Figure 18 – Sample ALP Sheet in North Dakota



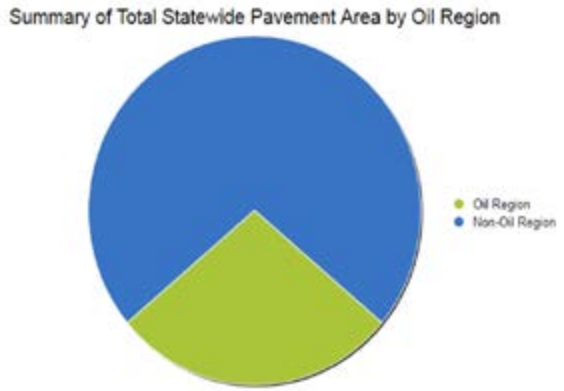
Airport Pavement Conditions

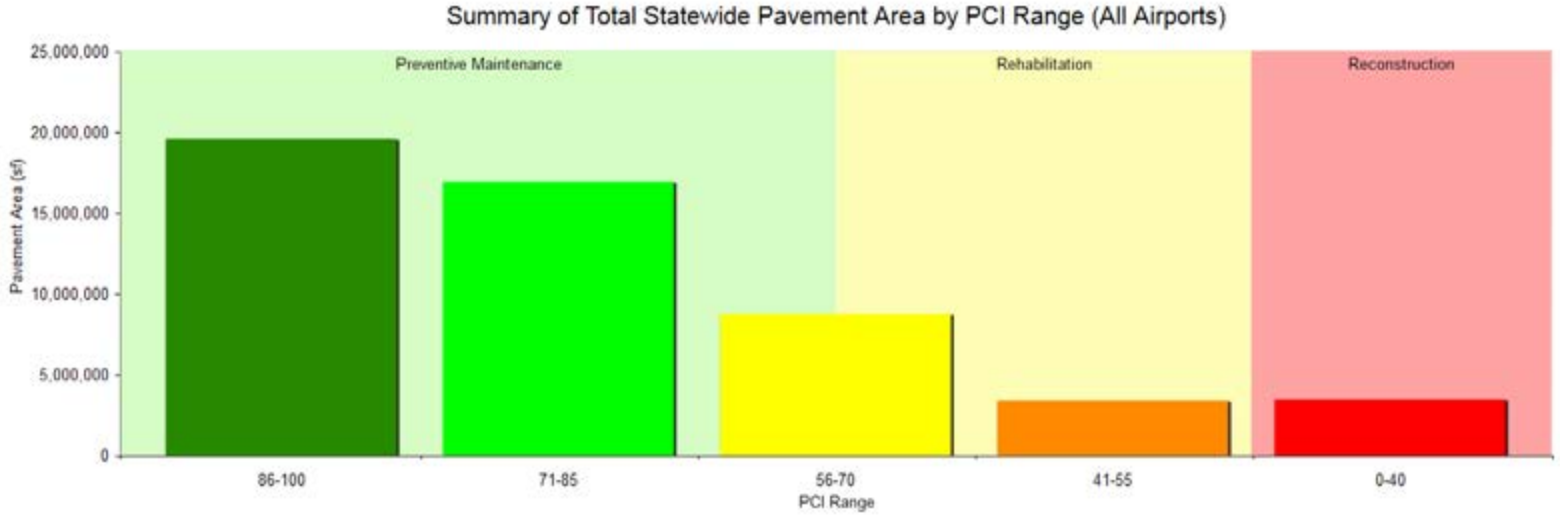
The North Dakota Aeronautics Commission completes a Pavement Condition Index Study every three years. This study allows for a visual inspection and inventory of all of the pavement at the North Dakota Airports and helps to provide information on where dollars are recommended to be appropriated to provide the most cost beneficial result. The last study was completed in 2012 and the results can be found on the Aeronautics Commission website at: http://www.nd.gov/ndaero/airport/idea/index.html

Fact - How much pavement is there? Approximately 52 million square feet of pavement exists on our airports.

Where is the pavement at? 72% of the pavement exists at the airports outside of the oil producing counties and 28% exists within the oil producing counties.

In general terms, pavements above a PCI of 70 that are not exhibiting significant load-related distress will benefit from preventive maintenance actions, such as crack sealing and surface treatments. Pavements with a PCI of 40 to 70 may require major rehabilitation, such as an overlay. Often, when the PCI is less than 40, reconstruction is the only viable alternative due to the substantial damage to the pavement structure.





FUNDING

The availability of funding is essential to the continued operation of North Dakota's aviation system. Of the 89 airports in the system, 53 (60 percent) of them are eligible for federal funding from the FAA to assist with the costs of eligible projects. In order to be eligible for FAA funding, an airport must be included in the NPIAS. An airport must meet specific criteria to be included in the NPIAS. The remaining 36 airports in the system that are non-NPIAS rely solely on funding assistance from other federal agencies, the State, local municipalities, and private entities.

This summary provides a snapshot of the 2015 Capital Improvement Plan (CIP) program for the 56 public airports in North Dakota that participated (as of May 2014). Airport CIP data changes continually as projects come under contract, change scope, or are abandoned.

2015-2016 Major Projects

In the next legislative biennium (2015-2016), a total of nearly $360 million has been shown by North Dakota's airports on their CIPs. This funding is requested from a variety of sources at the federal, state, and local levels. When historical and anticipated funding levels are considered (about $150M for this timeframe), a shortfall of nearly $210 million exists between what is requested and what is anticipated. A breakdown of funding requests by major project type is shown in **Figure 19.**

2015-2024 Major Projects

Between 2015 and 2024, a total of nearly $850 million in project requests has been planned by North Dakota's airports on their CIPs. This funding is anticipated from a variety of sources at the federal, state, and local levels. A breakdown of funding requests by major project type is shown in **Figure 20.**

Figure 19 – 2015-2016 Total Funding Requests: $358.44M

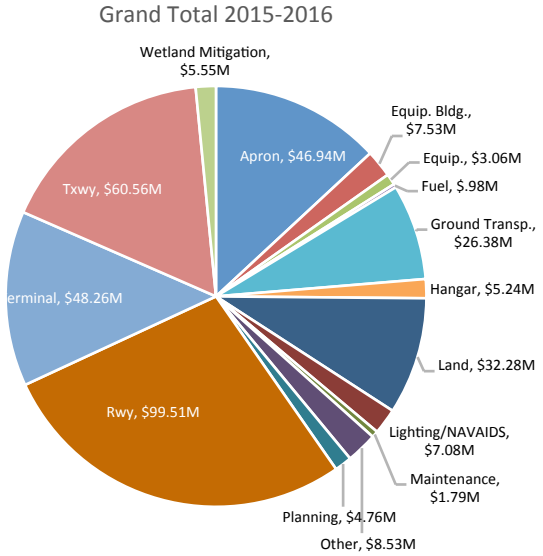
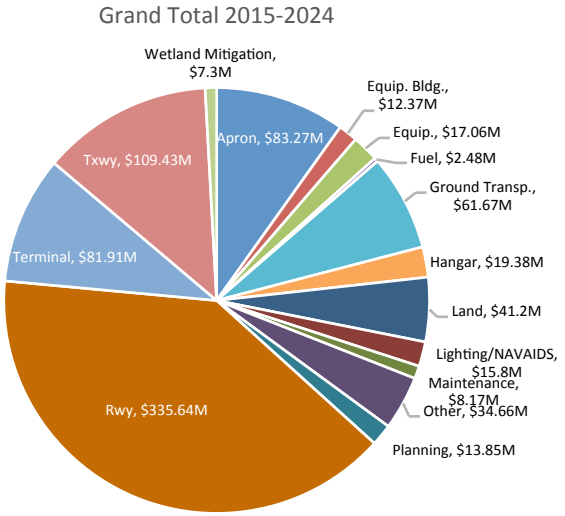
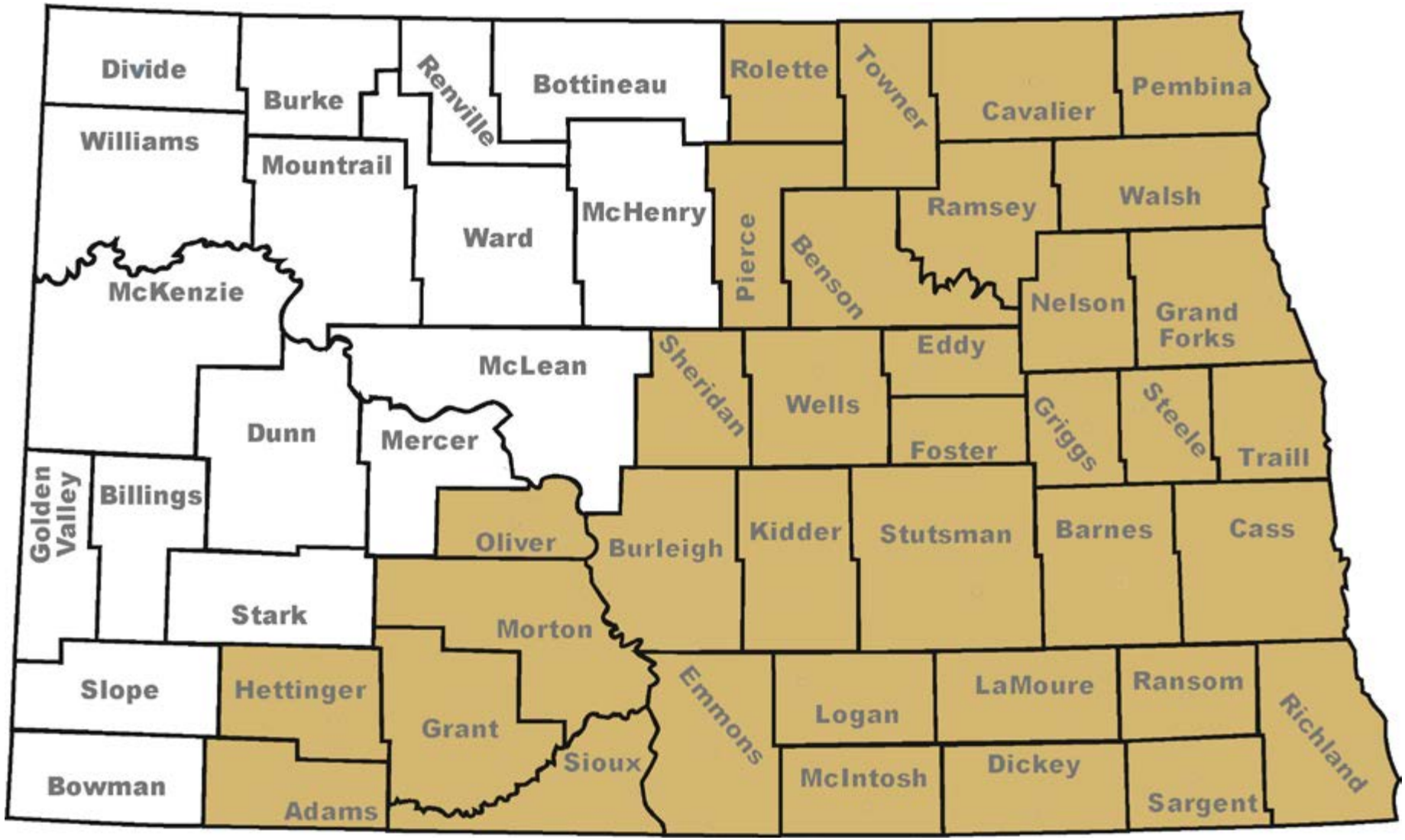


Figure 20 – 2015-2024 Total Funding Requests: $844.36M





White: Oil Producing Counties **Yellow:** Eastern Counties

FUNDING *(Oil Producing Counties)*

General Aviation

The 24 GA airports that are within the oil producing counties are experiencing great pressure from increased operations in the western region of the state. As a result, numerous projects are included on the CIPs of these impacted airports that are a direct result of increased traffic.

Commercial Service

The three commercial service airports in the oil producing counties (Dickinson, Minot, and Williston) are also feeling the pressure of increased operations. At these three airports, there has been a significant increase in GA operations, as well as commercial service operations. Enplanements recorded at these airports are exponential and the level of activity is far exceeding the capacity of current infrastructure. Numerous projects are listed on these airport's CIPs that once completed, will increase the capacity at each. The requested funding for these three airports alone, far exceeds the funding requested by the other five commercial service airports in the central and eastern regions of the state.

Key Findings:

- Pavement projects are being requested at a number of airports to increase operational capacity (runways, taxiways, etc.). Apron projects are also common to support an increase in transient (visitor) traffic.
  - Nearly $240 million is requested for pavement-related projects (runways, taxiways, and aprons) over the ten-year period.
- Terminal capacity is an issue at the three commercial service airports in western North Dakota. Each of these airports have requested funding for terminal expansion or new terminals.
  - Terminal projects make up the second most expensive category, with funding requests of nearly $70 million over the ten-year period.

Figure 21 – 2015-2016 Oil Producing Requests: $251.1M

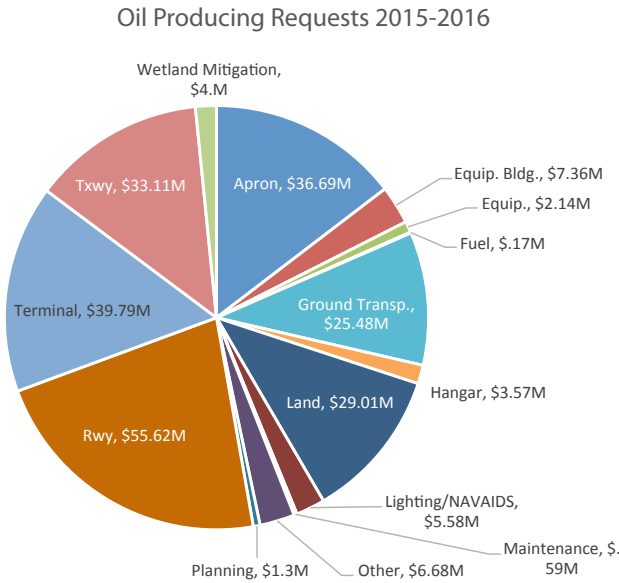
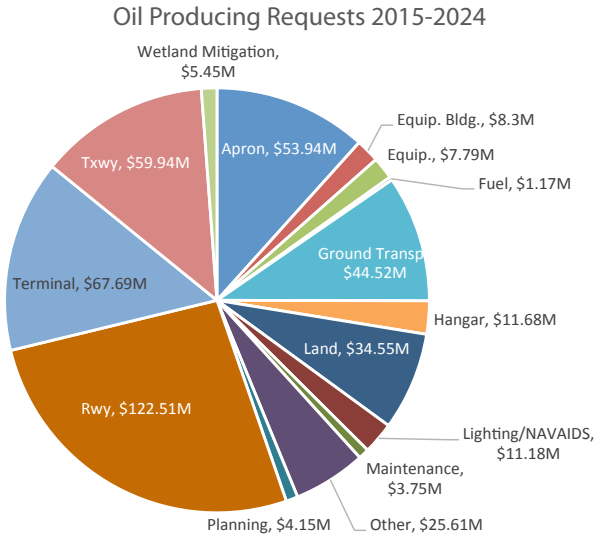


Figure 22 – 2015-2024 Oil Producing Requests: $462.22M



General Aviation

Although the 57 GA airports located in the eastern counties are not located within what are considered the oil producing counties, they are still experiencing continued growth by existing users as well as new users (some of which are related to the oil boom).

Commercial Service

Five of North Dakota's eight commercial service airports are located in the eastern counties (Bismarck, Devils Lake, Fargo, Grand Forks, and Jamestown). These airports are still experiencing an increase in use despite their location outside of the oil producing counties. With an increase in both GA and commercial service traffic, these airports have included both airside (runways, taxiways, etc.) and landside (terminals, parking lots, etc.) projects on their CIPs.

Key Findings:

- Although there are more GA and commercial service airports it the eastern counties, funding requests for airports in the eastern counties is less than half of what is requested by airports in the oil producing counties for the 2015-2016 time period, and in the ten-year period, requests are $80 million less.
- Funding requests by GA airports are generally focused on the maintenance of existing pavements, rather than the construction or extension of new.
- Both maintenance projects and new construction projects are requested by the five commercial service airports in the eastern counties. Most of the major projects planned are pavement rehabilitation projects.
- Over $290 million is requested for pavement-related projects (runways, taxiways, and aprons) over the ten-year period.
- Over the ten-year period, the funding requested for runway projects makes up over half of the total funding requested between 2015 and 2024.

Figure 23 – 2015-2016 Eastern Requests: $107.36M

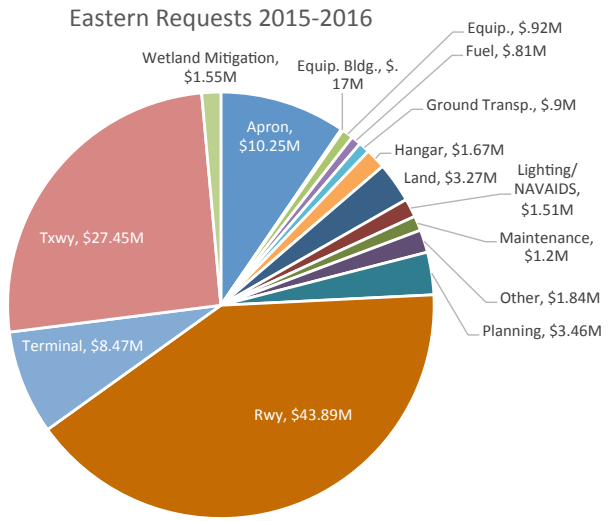
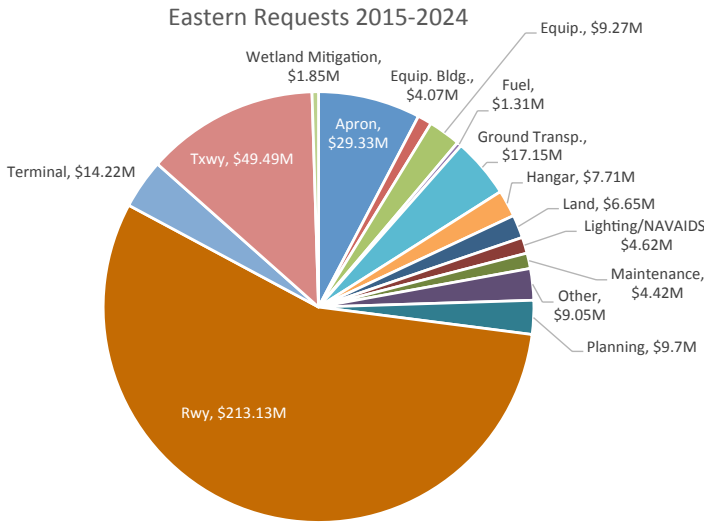


Figure 24 – 2015-2024 Eastern Requests: $381.97M



Economic Impacts

North Dakota's "oil boom" is driving economic and population growth. North Dakota now ranks 2nd (behind Texas) in the most oil-rich states, according to USA Today. In 2013, the State accounted for over 11.5% of total U.S. crude oil production; a 177% increase in production from 2010 to 2013. Proven oil reserves in the State have more than doubled in the last few years and during the ten year period between 2003 and 2013, oil production in North Dakota increased by almost 1,000 percent.

As a result of the oil boom in North Dakota, the number of oil-related jobs (production, gathering, fracking, drilling) continues to rise year after year and the State has consistently had the lowest unemployment rate in the US since 2009.

The demand for air access to North Dakota has been boosted by oil-related businesses and employees, new residents, and visitors. North Dakota's aviation industry has seen tremendous growth in the number of licensed pilots, registered aircraft, based aircraft, operations, and enplanements. Commercial air service in North Dakota has expanded at all eight commercial service airports in the system. All eight airports now have jet service by mainline air carriers.

Unlike the national trends of fewer flights but with larger airplanes, North Dakota has experienced a continued increase in the number of flights from 2010 – 2014 as airlines began responding to the increase in demand as a result of economic and population growth.

Researchers studying the economic impact of oil and gas extraction and its potential impact on employment and population have forecast that the industry will continue to expand exploration and extraction activity well into the middle 2030s. With oil activity expected to continue for several years, it is anticipated that the demand for expanded air service in the State will continue as well.

Pilot Shortage

The US is experiencing a shortage in airline pilots which is impacting regional as well as mainline carriers. Impacts from this shortage are being seen in North Dakota, most notably the discontinuation of regional service in North Dakota by Great Lakes Airlines. The airline discontinued service to Devils Lake and Jamestown in January 2014, and service to Dickinson and Williston in March 2014 due to a lack of pilots.

This pilot shortage is occurring for several reasons, including a long-anticipated wave of pilot retirements, recent changes in training

requirements for new pilots (1,500 hours of flight experience instead of 250), rest requirements, and minimal compensation that regional airlines are able to offer new pilots.

Reduction in new-pilot availability has impacted mainline carriers who are recalling furloughed pilots in an effort to replace those who are retiring. The rate of retirement is only expected to increase over the next several years as thousands of senior pilots at major airlines hit the mandatory retirement age of 65. Schools like UND are helping to solve this issue by training new pilots.

Reduction in route frequency and financial hardship for smaller carriers could result across the US as a result of this industry wide pilot shortage.

Demand for commercial air travel to North Dakota's airports is strong and mainline air carriers have added new regional 50-100 seat aircraft service to the airports that were previously served by Great Lakes.

Aircraft Related Topics

Unmanned Aerial Vehicles (UAVs): UAVs are becoming a larger player in the aviation industry as civilian uses increase. UAVs are aircraft that are operated remotely. In addition to military applications, UAVs can perform a wide variety of tasks in civilian environments including remote sensing, transport, scientific research, and search and rescue operations. Local and state agencies can use UAVs to monitor engineering sites, waterways, pipelines, high crime areas, crowded settings, traffic, security situations, pollution levels, forest fire movement and crop surveillance, among many other applications. Given the increased interest in utilizing these aircraft for civilian purposes, it is anticipated that UAV use will become more prevalent in North Dakota, as well as nationwide. The State was recently chosen as one of six FAA Unmanned Aircraft Systems (UAS) test sites, where research will be conducted to identify how to best integrate UAS into the national airspace system. The Northern Plains UAS Test Site is headquartered in Grand Forks.

Light Sport Aircraft (LSA): In July 2004, the FAA issued the light sport aircraft/sport pilot (LSA/SP) rule that opened the door for growth in the general aviation market. Aircraft can be certified as light sport aircraft if they fall within the weight specifications and other guidelines defined by the FAA. Such aircraft include powered and glider airplanes, gyroplanes, powered parachutes, weight-shift control trikes, free balloons, and airships. These aircraft are designed to reduce the costs associated with maintaining and operating a traditional recreational airplane, which in turn has the potential to benefit recreational aviation in North Dakota. Growth forecasted in this segment of general aviation has the potential to increase aviation activity levels even further throughout the State.

Airline Fleet Changes: Unlike the national trends of fewer flights but with larger airplanes, North Dakota experienced a continued increase in the number of flights from 2010 – 2014 as airlines began responding to the increase in demand as a result of economic and population growth. Whereas the US has been experiencing a steady increase in the number of seats per flight flown, North Dakota experienced a slight decline – from 64 to 57 seats per departure – between January 2010 and April 2011. This reflects the use of smaller, regional aircraft for many of these flights. In 2014, the number of flights has leveled off and even declined slightly. At the same time, the number of seats per operation is climbing back up – indicating a shift by commercial carriers to larger gauge aircraft that are now making their way into the state's commercial aviation system.

NextGen

NextGen is the transformation of the National Airspace System (NAS) from a ground based system of air traffic control to a satellite based system of traffic management. When NextGen becomes fully developed, the system will allow a larger number of aircraft to safely fly closer together on more direct routes, resulting in reduced delays and unprecedented benefits for both the economy and the environment

through reduced carbon emissions and fuel consumption.

One of the technologies supporting the NextGen system includes Automatic Dependent Surveillance – Broadcast (ADS-B). ADS-B allows pilots in the cockpit and air traffic controllers on the ground to track aircraft traffic with more accuracy than other systems, specifically radar. ADS-B relies on the Global Navigation Satellite System to determine an aircraft's precise location. The position data is combined with other information such as aircraft type, speed, altitude, and flight number. The information is converted into a digital message and broadcasted via a radio transmitter.

The airspace in North Dakota is used for commercial, private, and military aviation on a daily basis. Specific sections of the airspace (known as "classes") are reserved for various types of operations in order to accommodate use by a variety of aircraft at any given time. In some instances, sections of the airspace can be reserved for use by the military, often for training operations. Operations by non-military aircraft in these reserved areas are restricted in order to provide a clear area for military activity.

A proposal to expand one of these training areas known as the Powder River Training Complex is being reviewed by the U.S. Air Force (USAF) and the FAA. If expanded, the training area would reach into the southwestern portion of North Dakota and could interrupt the increased traffic around several GA airports (including the new Bowman Regional Airport) as well as the traffic in and out of Dickinson. The expanded training area could be used three to six hours a day, 240 days a year, which would restrict numerous operations.

Should this area be implemented as proposed, there may be impacts on the airspace in southwestern North Dakota. NDAC is providing the USAF and FAA with comments regarding their concerns on these possible impacts

Airports GIS

In response to Executive Order 12906, the FAA implemented the Airports Geographic Information System (Airports GIS) Program

in 2010 which is aimed at creating standard formats for the collection and input of aviation data. The standardization and centralization of data into a shared electronic environment is expected to improve the FAA's overall operational efficiency and provide enhanced access to data for analysis and decision making. It is expected to enhance communication and collaboration between the FAA and airport sponsors on airport planning and development projects, support NextGen initiatives, and streamline data sharing among agencies within the industry.

The Airports GIS is a web-based information repository for survey data, which is managed jointly by the FAA and the airport sponsor.

This system will be used for the development of electronic Airport Layout Plans (eALPs) and will serve as a platform to enable data sharing for both the planning and engineering required by NextGen.

The end result will be a standardized GIS presentation of the ALP drawing set, a query driven airport database, and an active archiving of previous ALP data sets.

RECOMMENDATIONS

With aviation use at an all-time high in North Dakota, it is critical that the system be maintained and developed in a way that supports continued use by existing and new users. When reviewing current system performance to meet system goals, three primary areas of recommended improvement were identified:

1. Land Use and Safety
2. Airport Services and Facilities
3. Airport Planning

Land Use and Zoning

As development continues to encroach upon airports across the country, appropriate land use planning efforts are more critical than ever before. Since development near airports can impact aircraft operations and vice versa, it is advantageous to plan appropriately to encourage compatible development near airports:

- Clear approaches to primary runway ends
- Mitigate incompatible land uses within Runway Protection Zones (RPZs)
- Gain control of land within RPZs
- Adopt local height zoning that aligns with Federal Aviation Regulation (FAR) Part 77

Airport Services and Facilities

The services and facilities that an airport offers can often be a deciding factor in whether a user will use a particular airport. With an increase in GA traffic, it is important that airports in the system have the core services that will attract and support these users. Many of the services and facilities are currently found at system airports, however they should be maintained and in some instances, a few of them could be offered at additional airports in order to meet system benchmarks:

- 100LL fuel
- Ground transportation
- GA and commercial service terminals with adequate capacity to support passenger demand
- Facilities to support use by King Air aircraft (or other corporate aircraft such as a Cessna Conquest, Cessna Citations, and Dassault Falcons)
- Facilities and space needed to serve aerial applicators

Airport Planning

Planning for safe aircraft and airport operations and the future development of aviation facilities is necessary to maintain these valuable transportation assets and investment. Two specific planning efforts are recommended for airports to meet system goals and benchmarks:

- Wildlife Management Plans
- Airport Layout Plans (ALPs)

Wildlife Management Plans are recommended for airports classified as Local or above, and updated ALPs are recommended for all airports included in the NPIAS.

North Dakota Aeronautics Commission
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