2.0 Classification Review and Update

The Bureau of Aeronautics (BOA) recognizes the importance of taking a proactive approach to ensure aviation's role in the statewide transportation system. Updating the airport classification as part of the State Airport System Plan 2030 provides BOA an opportunity to review changes in the state aviation environment. Further, this effort serves as a plan for how BOA can respond to the future needs and challenges that they may face in relation to the overall Wisconsin Airport System.

The Wisconsin State Airport System Plan (SASP) 2030 provides an outlook for the state's aviation needs. As Wisconsin airports continue to evolve, their roles established in this review should serve as a general guide and frame of reference for balanced development. Note that individual airport master plans provide more detailed and accurate design, planning and environmental analysis than any element of the SASP and may conclude with different recommendations.

Airports contribute to meeting air transportation and economic needs in different ways and at varying levels. To determine how each airport contributes and what role it plays in the aviation system, an analysis of factors that typically define an airport's role were evaluated. The role classification process used to evaluate the Wisconsin Airport System included the following steps:

1. Establish purpose/need of role review and update
2. Identify performance categories and defining factors
3. Evaluate and classify existing system
4. Define role classifications
5. Develop recommended system
   - Current coverage analysis
   - Projected growth
   - Coverage voids
   - Future role recommendations to fill voids

2.1 Purpose of the Classification Review and Update 2011

It is important for Wisconsin to have a system of airports that supports current as well as long-term air transportation and economic needs. The strategy for meeting those needs is founded on the classification and identification of airports that can best serve Wisconsin's anticipated population and employment growth. While all airports contribute to the economy and transportation infrastructure, not all airports serve the same role or contribute in the same manner.

In recent years, Wisconsin's demographics, economy, aviation activities, and physical facilities at its airports have experienced tremendous change. These changes are coupled with those witnessed in the overall aviation industry. The Wisconsin State Airport System Plan, Airport Classification Review and Update 2010 used 2005 data, and this now requires updating. This most recent update expanded upon the FAA airport classification system, which segments the Wisconsin Airport System general aviation (GA) airports through the definition of appropriate service areas.

In addition to factors used in both the FAA classification system and the existing Wisconsin Airport System, the role an airport plays is dependent upon a variety of factors that include both aviation and non-aviation elements. Subcategories of these factors may include economic indicators, aviation activity, physical facilities, airport accessibility and community planning efforts. Note that these subcategories are consistent with those identified by the United States Department of Transportation (U.S. DOT) for determining an airport's role.

2.2 Tasks Involved in the Review and Update

The following subsections provide a brief explanation of the tasks involved with the review and update of Wisconsin's role classification:

- **Background data**: In order to update the SASP role classifications, it is important to have a solid understanding of the existing conditions within each individual airport, the State of Wisconsin and the overall aviation industry. This includes:
  - A review of the previous role classification
  - An update to the demographic trend analysis
- **Role classification process**:
  - Evaluation of the existing system, including consideration of aviation and non-aviation performance factors
  - Review/update of current airport role classifications
- **Recommended system**:
  - Future role classifications

2.3 Background

Prior to updating current roles or analyzing the future system's needs, it is essential to review those roles established in the Wisconsin State Airport System Plan, Airport Classification Review and Update 2010. This review also includes conducting a demographic trend analysis to provide a basis for understanding potential changes in future airport needs.

2.3.1 Wisconsin SASP Classification Review and Update 2010

This update will continue use of the role classification definitions identified in the Classification Review and Update 2010. The roles are as follows:

- **Commercial Service** – Commercial service airports support regularly scheduled year-round commercial airline service and support the full range of GA activity to domestic and international destinations.
- **Large GA** – Large GA airports support all GA aircraft that include daily operations of all types of business jets. These airports generally serve as domestic transportation centers and may support international business activity.
- **Medium GA** – Medium GA airports support most single and multi-engine GA aircraft, including those aircraft commonly used by businesses. These airports support regional and in-state air transportation needs.

- **Small GA** – Small GA airports primarily support single-engine GA aircraft, but may also accommodate small twin-engine GA aircraft and occasionally business aircraft activity.

These classifications serve as the baseline for airport roles with possible refinements as the evaluation of the system progresses. The 2010 evaluation process reviewed and assigned each airport to one of the four classifications listed above.

2.3.2 Analysis of Demographic Trends

A review of demographic trends provides insight on how airport roles reflect existing and projected shifts in various population and economic metrics. Examination of demographic data helps to identify trends that either directly or indirectly influence the demand for aviation services in the state and in specific areas. In general, areas experiencing strong population and economic growth in certain demographic factors tend to have a greater demand for aviation services. Conversely, those areas experiencing stagnant or limited growth may have a lower propensity to use aviation services.

Historic and forecasted demographic trends for Wisconsin were examined at the county level and include the following factors:

- Population
- Employment
- Per capita income

2.3.2.1 Population

According to the U.S. Census, Wisconsin's total population increased from approximately 4.9 million in 1990 to approximately 5.7 million in 2010, representing an average annual growth rate of approximately 0.75 percent. The state's population is projected to experience an average annual growth rate of approximately 0.74 percent between 2010 and 2035, reaching an estimated total population of roughly 6.8 million in 2030. [1]

As reflected in the data, the state's population density and growth is primarily concentrated in the regions surrounding the Madison, Milwaukee and Green Bay areas. In 2010, the southeastern Wisconsin counties accounted for almost 50 percent of the state's total population, with many of these same counties projected to remain as the fastest growing populations in the state over the projection period. **Table 2-1** details the counties expected to experience the most rapid growth. Some of the counties projected to increase population at a rate over 1 percent annually include Pierce and St. Croix counties near the Twin Cities; Dane, Sauk and Green counties near Madison; and Ozaukee, Washington and Waukesha counties near Milwaukee. However, Milwaukee County itself is expected to lose population over the projection period.

[1] Woods & Poole Economics, Inc. 2010

Table 2-1
Wisconsin Counties with Highest Projected Population Growth, 2010-2035

County	Projected Population AAGR	Projected Total Population Growth
St. Croix	1.71%	53%
Adams	1.62%	50%
Dane	1.55%	47%
Eau Claire	1.52%	46%
Washington	1.35%	40%
AAGR - Average Annual Growth Rate		

Source: Woods & Poole Economics, Inc. 2011

2.3.2.2 Employment

Employment in Wisconsin experienced an average annual growth rate of approximately 1.01 percent from 1990 to 2010, significantly greater than that of population growth. The average annual growth rate for the state from 2010 to 2035 is forecasted to be approximately 1.03 percent.[2]

Table 2-2 identifies those counties projected to experience the highest levels of employment growth in terms of jobs, their anticipated average annual growth rates and total employment growth over the projection period. No Wisconsin counties are anticipated to lose employment over the projection period. Similar to population growth, many of the counties expected to experience the most rapid growth are concentrated around the metropolitan areas of Milwaukee and Madison, as well as Twin Cities in Minnesota.

Table 2-2
Wisconsin Counties with Highest Projected Employment Growth, 2010-2035

County	Projected Employment AAGR	Projected Total Employment Growth
Adams	1.56%	47%
Eau Claire	1.56%	47%
Kenosha	1.46%	44%
Calumet	1.45%	43%
Dane	1.44%	43%
AAGR - Average Annual Growth Rate		

Source: Woods & Poole Economics, Inc. 2011

[2] Woods & Poole Economics, Inc. 2010

2.3.2.3 Per Capita Income

From 1990 to 2010, per capita personal income in Wisconsin increased at an average annual growth rate of 3.63 percent, from approximately $18,000 to over $36,000. During the projection period of 2010 to 2035, per capita income in the state is expected to increase at a higher rate: 4.87 percent annually.[3]

Table 2-3 identifies counties forecasted to experience the highest levels of personal income growth over the projection period, their anticipated average annual growth rate and the total growth rate. With the exception of Grant County, the highest projected increases in per capita income are in counties with populations currently under 20,000. Many of these counties are clustered in the southwestern corner of the state near the Iowa and Illinois borders.

Table 2-3
Wisconsin Counties with Highest Projected Per Capita Income Growth, 2010-2035

County	Projected Per Capita Income AAGR	Projected Total Per Capita Income Growth
Kewaunee	5.42%	274%
Lafayette	5.21%	256%
Richland	5.16%	252%
Grant	5.14%	250%
Crawford	5.09%	246%
AAGR - Average Annual Growth Rate		

Source: Woods & Poole Economics, Inc. 2011

2.3.3 Evaluation of Existing System

To achieve a balance in evaluating airport needs throughout the state, the analysis considered both aviation and non-aviation factors in identifying each airport's current role in the system. These factors represent the following four performance categories:

- Activity
- Economic
- Accessibility
- Facilities

Within each of these categories, defining factors were used to evaluate each airport's role. The defining factors were applied equally to all airports, regardless of the size of the airport, annual passenger enplanements or type of aviation services currently offered at the airports. This evaluation process provides a means to group airports by functional role based on the demand for aviation in a region.

[3] Woods and Poole Economics, Inc. 2011

2.3.3.1 Adjustments to the Classification Process

Table 2-4 details the original performance categories and defining factors used in 2010. As part of this classification update, a review of the 2010 methodology was conducted and adjustments were made to the process where needed.

Table 2-4
2010 Classification Evaluation Process

Performance Category	Activity	Economics	Facilities	Accessibility
	Weight=25%			
Defining Factor	Total based aircraft	Percent of itinerant operations to total operations	Primary runway lengths	Population within a 30-minute drive time
	Based multi-engine aircraft	Gross regional product	Approach type	Employment within a 30-minute drive time
	Based jet aircraft	Retail sales	Presence of ASOS/AWOS*	Number of square miles within a 30-minute drive time
	Registered pilots within a 30-minute drive time			
	Total annual operations			

*Automated surface observing system (ASOS) or automated weather observing system (AWOS) on-site

Source: Wilbur Smith Associates

Certain adjustments were made to the 2010 classification process in order to emphasize a needs-driven classification process. Total operations and percent of itinerant operations to total operations were eliminated as defining factors because aircraft operations data for non-towered airports is primarily subjective and generally understood to be an estimate. The numeric value associated with presence of automated surface observing system (ASOS) or automated weather observing system (AWOS) was reduced since the initial numeric value was found to be driving smaller GA facilities into higher classifications based solely on their weather reporting abilities.

The weights assigned to each performance category were adjusted based on review of initial plan results and the above adjustments to defining factors. The weight of the activity category was increased to 30 percent, while the weight of the facilities category was reduced to 20 percent. The economic and accessibility categories remained at 25 percent each.

Table 2-5 details the revised classification system utilized in this plan.

Table 2-5
Updated Evaluation Process

Performance Category	Activity	Economics	Facilities	Accessibility
	Weight=30%	Weight=25%	Weight=20%	Weight=25%
Defining Factor	Total based aircraft	Gross regional product	Primary runway lengths	Population within a 30-minute drive time
	Based multi-engine aircraft	Retail sales	Approach type	Employment within a 30-minute drive time
	Based jet aircraft		Presence of ASOS/AWOS[1] (numeric weight reduced)	Number of square miles within a 30-minute drive time
	Registered pilots within a 30-minute drive time			

Notes: [1] Automated surface observing system (ASOS) or automated weather observing system (AWOS) on-site

Sources: Wilbur Smith Associates and Wisconsin Department of Transportation Bureau of Aeronautics

2.3.3.2 Updated Role Classification Process

Each of the performance categories and their associated defining factors analyzed for each airport in this process are briefly discussed in the following sections.

2.3.3.2.1 Activity

The evaluation considered the levels and types of aviation activity currently occurring at each airport. In general, an airport's total number of based aircraft and the number of aircraft that are twin-engine aircraft or larger provides an indication of the role that an airport plays. Additionally, higher concentrations of pilots usually signal higher demand levels and greater rates of airport utilization. The following factors reflect the data measured for this performance category:

- **Total based aircraft –** Higher numbers of based aircraft reflect the role the airport is playing in meeting air transportation and economic needs of the market area it serves. Airports were rated on the total number of permanently based aircraft.
- **Based multi-engine aircraft –** Airports were rated based on the number of permanently based multi-engine aircraft.
- **Based jet aircraft –** Airports were rated based on the number of permanently based jet aircraft, which is a strong indicator of business aviation activity.
- **Registered pilots within a 30-minute drive time –** Airports were rated based on the estimated number of pilots within a 30-minute drive time of each Wisconsin airport. A geographic information system (GIS) analysis evaluated data relative to specific airport drive-time areas to complete this and all drive-time analyses. The analysis applied a 30-minute drive time to all airports to conduct and compare system airports by their defining factors. This drive time correlates to the FAA's NPIAS criteria of a 30-minute service area to ensure this measure's direct applicability to the NPIAS. Also note that the GIS-developed drive times were based on the Wisconsin road network and considered the quantity and quality of

roads leading to each airport. Posted speed limits and non-peak driving conditions were used to develop the drive time areas.

2.3.3.2.2 Economics

As a result of the critical role that Wisconsin airports play in supporting and leading economic growth, it is important to examine factors that could help define the role that each airport serves in supporting the state's economy. The two factors considered in this performance category include the following:

- **Gross regional product** – Airports were analyzed by the total 2010 gross regional product captured within a 30-minute drive time. The associated counties that have a higher gross regional product were noted to likely have more demand for aviation services.
- **Retail sales** – Airports were analyzed based on the total retail sales captured within a 30-minute drive time. Similar to gross regional product, those counties having higher retail sales are more likely to have more demand for aviation services.

2.3.3.2.3 Facilities

Airports were also rated based on their physical facilities. Airports that have longer runways and more precise instrument approach capabilities (precision, near-precision or non-precision) tend to play a more prominent role within an airport system. The following facility factors analyzed included:

- **Primary runway length** – Airports were evaluated based on the length of their primary runway.
- **Approach types** – Airports were evaluated based on the type of the most demanding approach available/published. The following categories were used:
  - Precision approach – provides vertical and course guidance that meet stringent International Civil Aviation Organization (ICAO) requirements
  - Near-precision approach – provides vertical and course guidance
  - Non-precision approach – provides course guidance only
  - Visual approach – no instrument guidance
- **Presence of ASOS/AWOS** – Airports were evaluated based on the existence of these weather reporting and observing systems.

2.3.3.2.4 Accessibility

Airports were evaluated based on several factors that measured the overall accessibility of the facility to the state's general population and its employees in terms of square-mile coverage throughout Wisconsin. Again, 30-minute drive-time service areas for each airport were used as the key tool for identifying how much of the state's population and employment base lay within these service areas.

Demand for both aviation and aviation-related services typically correlate with various socio-economic/demographic indicators such as population and employment/business activity. The specific accessibility measures examined include the following:

- **Population within a 30-minute drive time** – Airports were rated based on U.S. 2010 Census Block data of total population within their 30-minute drive-time service areas.

- **Employment within a 30-minute drive time** – Airports were rated based on total county employment (jobs) within their 30-minute drive-time service areas.
- **Number of square miles within a 30-minute drive time** – Airports were rated based on the number of square miles within their 30-minute drive-time areas.

2.4 Classification of the Wisconsin System of Airports

The classification of the Wisconsin Airport System identifies the relative role that each public airport is currently fulfilling. Identifying current roles for all GA airports in Wisconsin is essential to determining the future role for all airports.

To determine each GA airport's current role, a mathematical process linked each defining factor to a numeric value ranging from 1 to 10 for all airports. This process assigned a score of 10 to the airport with the highest value for each defining factor, which would represent those airports that currently best meet or fulfill the factor. The airport with the lowest value received a score of 0. All values in between were assigned a score of 1 to 9 depending on their distribution from the highest and lowest scores. Once all factors were scored, they were totaled by their specific performance category. After this process, the performance category scores were weighted in the manner detailed above: 30 percent for activity, 20 percent for facilities and 25 percent each for economics and accessibility.

Based on review of the total score for each of the 98 system airports, BOA determined score values at which each classification would be defined. This method replaced the method of using the standard deviation to define breakpoints for each classification that was done in the Classification Review and Update 2010.

2.4.1 Data Anomalies

The BOA analyzed the initial GA classification results to identify and evaluate any anomalies. In reviewing the results, it was determined that the designations of large GA for Brookfield (Capitol Drive Airport) and Madison (Blackhawk Airfield) were the result of the proximity of these airports to major socioeconomic centers and not their existing infrastructure or individual activity levels. The analysis reviewed historical improvements, maintenance, types of aircraft using the airports and airport-related zoning for these facilities. Based on the results of this additional analysis, these two airport classifications were adjusted to medium GA and small GA, respectively.

2.4.2 Existing Classification Results

Figure 2-1 and **Table 2-6** present existing roles for Wisconsin System Airports. Existing airport roles serve as a baseline for current and future system analysis. Detailed scoring results of this process are represented in **Appendix B**.

Figure 2-1 – Existing Wisconsin Airport Classifications

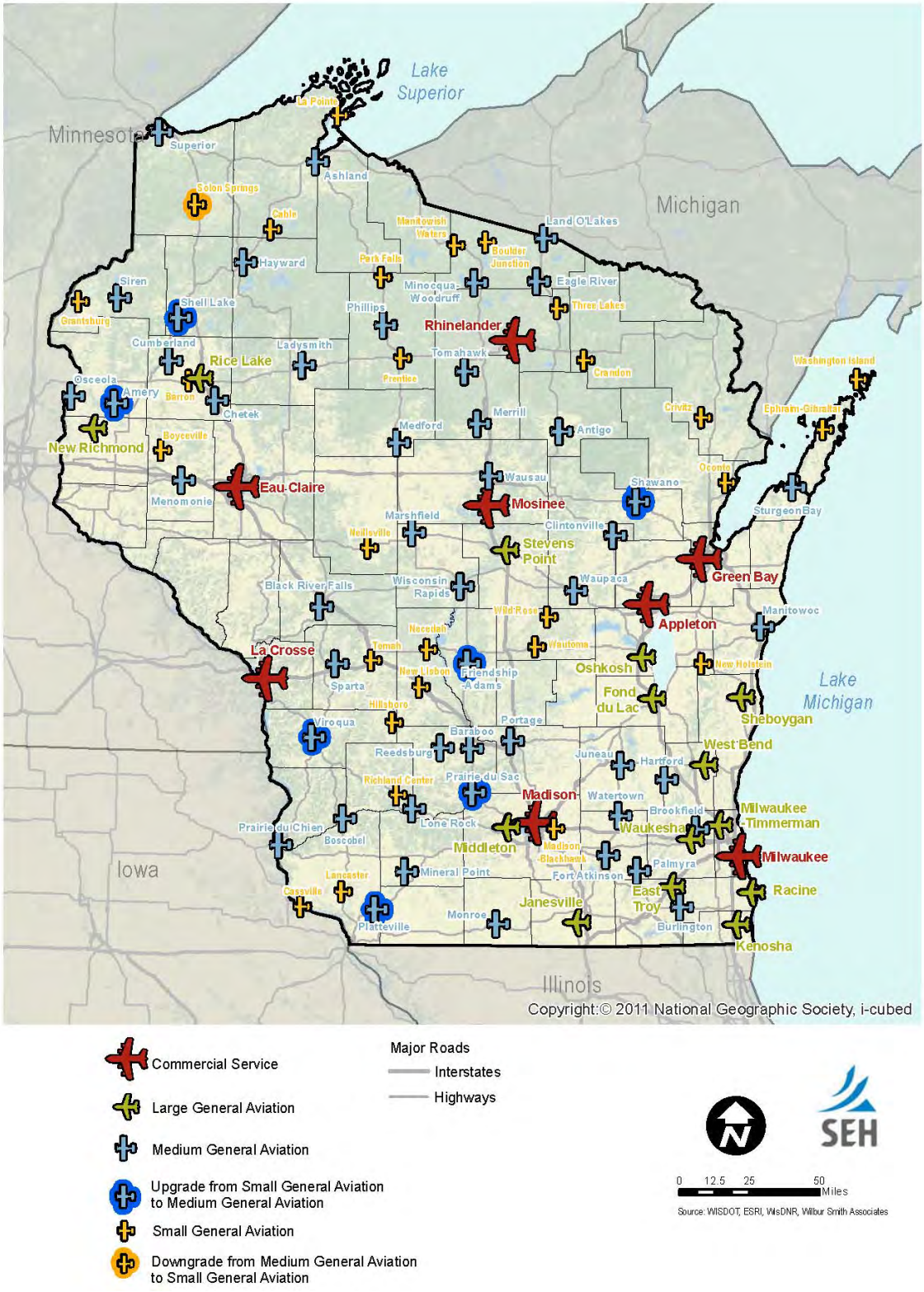


Table 2-6
Existing Airport Role Classifications

FAA ID	City	Airport Name	Role
ATW	Appleton	Outagamie County Regional Airport	Commercial Service
EAU	Eau Claire	Chippewa Valley Regional Airport	Commercial Service
GRB	Green Bay	Austin Straubel International Airport	Commercial Service
LSE	La Crosse	La Crosse Regional Airport	Commercial Service
MSN	Madison	Dane County Regional Airport	Commercial Service
MKE	Milwaukee	General Mitchell International Airport	Commercial Service
CWA	Mosinee	Central Wisconsin Airport	Commercial Service
RHI	Rhinelander	Rhinelander-Oneida County Airport	Commercial Service
57C	East Troy	East Troy Municipal Airport	Large GA
FLD	Fond du Lac	Fond du Lac County Airport	Large GA
JVL	Janesville	Southern Wisconsin Regional Airport	Large GA
ENW	Kenosha	Kenosha Regional Airport	Large GA
C29	Middleton	Middleton Municipal Airport-Morey Field	Large GA
MWC	Milwaukee	Lawrence J. Timmerman Airport	Large GA
RNH	New Richmond	New Richmond Regional Airport	Large GA
OSH	Oshkosh	Wittman Regional Airport	Large GA
RAC	Racine	John H. Batten Airport	Large GA
RPD	Rice Lake	Rice Lake Regional - Carl's Field	Large GA
SBM	Sheboygan	Sheboygan County Memorial Airport	Large GA
STE	Stevens Point	Stevens Point Municipal Airport	Large GA
UES	Waukesha	Waukesha County Airport	Large GA
ETB	West Bend	West Bend Municipal Airport	Large GA
AHH	Amery	Amery Municipal Airport	Medium GA[1]
AIG	Antigo	Langlade County Airport	Medium GA
ASX	Ashland	John F. Kennedy Memorial Airport	Medium GA
DLL	Baraboo	Baraboo-Wisconsin Dells Airport	Medium GA
BCK	Black River Falls	Black River Falls Area Airport	Medium GA
OVS	Boscobel	Boscobel Airport	Medium GA
02C	Brookfield	Capitol Drive Airport	Medium GA
BUU	Burlington	Burlington Municipal Airport	Medium GA
Y23	Chetek	Chetek Municipal - Southworth Airport	Medium GA
CLI	Clintonville	Clintonville Municipal Airport	Medium GA
UBE	Cumberland	Cumberland Municipal Airport	Medium GA
EGV	Eagle River	Eagle River Union Airport	Medium GA
61C	Fort Atkinson	Fort Atkinson Municipal Airport	Medium GA
63C	Friendship-Adams	Adams County Legion Field	Medium GA[1]
HXF	Hartford	Hartford Municipal Airport	Medium GA
HYR	Hayward	Sawyer County Airport	Medium GA

Table 2-6 (Continued)
Existing Airport Role Classifications

FAA ID	City	Airport Name	Role
UNU	Juneau	Dodge County Airport	Medium GA
RCX	Ladysmith	Rusk County Airport	Medium GA
LNL	Land O'Lakes	King's Land O'Lakes Airport	Medium GA
LNR	Lone Rock	Tri-County Regional Airport	Medium GA
MTW	Manitowoc	Manitowoc County Airport	Medium GA
MFI	Marshfield	Marshfield Municipal Airport - Roy Shwery Field	Medium GA
MDZ	Medford	Taylor County Airport	Medium GA
LUM	Menomonie	Menomonie Municipal - Score Field	Medium GA
RRL	Merrill	Merrill Municipal Airport	Medium GA
MRJ	Mineral Point	Iowa County Airport	Medium GA
ARV	Minocqua-Woodruff	Lakeland Airport/Noble F. Lee Memorial Field	Medium GA
EFT	Monroe	Monroe Municipal Airport	Medium GA
OEO	Osceola	L. O. Simenstad Municipal Airport	Medium GA
88C	Palmyra	Palmyra Municipal Airport	Medium GA
PBH	Phillips	Price County Airport	Medium GA
PVB	Platteville	Platteville Municipal Airport	Medium GA[1]
C47	Portage	Portage Municipal Airport	Medium GA
PDC	Prairie du Chien	Prairie du Chien Airport	Medium GA
91C	Prairie du Sac	Sauk Prairie Airport	Medium GA[1]
C35	Reedsburg	Reedsburg Municipal Airport	Medium GA
EZS	Shawano	Shawano Municipal Airport	Medium GA[1]
SSQ	Shell Lake	Shell Lake Municipal Airport	Medium GA[1]
RZN	Siren	Burnett County Airport	Medium GA
CMY	Sparta	Sparta / Fort McCoy Airport	Medium GA
SUE	Sturgeon Bay	Door County Cherryland Airport	Medium GA
SUW	Superior	Richard I. Bong Airport	Medium GA
TKV	Tomahawk	Tomahawk Regional Airport	Medium GA
Y51	Viroqua	Viroqua Municipal Airport	Medium GA[1]
RYV	Watertown	Watertown Municipal Airport	Medium GA
PCZ	Waupaca	Waupaca Municipal Airport	Medium GA
AUW	Wausau	Wausau Downtown Airport	Medium GA
ISW	Wisconsin Rapids	Alexander Field-South Wood County Airport	Medium GA
9Y7	Barron	Barron Municipal Airport	Small GA
BDJ	Boulder Junction	Boulder Junction Payzer Airport	Small GA
3T3	Boyceville	Boyceville Municipal Airport	Small GA
3CU	Cable	Cable Union Airport	Small GA
C74	Cassville	Cassville Municipal Airport	Small GA
Y55	Crandon	Crandon Municipal Airport	Small GA

Table 2-6 (Continued)
Existing Airport Role Classifications

FAA ID	City	Airport Name	Role
3D1	Crivitz	Crivitz Municipal Airport	Small GA
3D2	Ephraim-Gibraltar	Ephraim-Gibraltar Airport	Small GA
GTG	Grantsburg	Grantsburg Municipal Airport	Small GA
HBW	Hillsboro	Joshua Sanford Field	Small GA
4R5	La Pointe	Major Gilbert Field	Small GA
73C	Lancaster	Lancaster Municipal Airport	Small GA
87Y	Madison	Blackhawk Airfield	Small GA
D25	Manitowish Waters	Manitowish Waters Airport	Small GA
DAF	Necedah	Necedah Airport	Small GA
VIQ	Neillsville	Neillsville Municipal Airport	Small GA
8D1	New Holstein	New Holstein Municipal Airport	Small GA
82C	New Lisbon	Mauston-New Lisbon Union Airport	Small GA
OCQ	Oconto	J Douglas Bake Memorial Airport	Small GA
PKF	Park Falls	Park Falls Municipal Airport	Small GA
5N2	Prentice	Prentice Airport	Small GA
93C	Richland Center	Richland Airport	Small GA
OLG	Solon Springs	Solon Springs Municipal Airport	Small GA[2]
40D	Three Lakes	Three Lakes Municipal Airport	Small GA
Y72	Tomah	Bloyer Field	Small GA
2P2	Washington Island	Washington Island Airport	Small GA
Y50	Wautoma	Wautoma Municipal Airport	Small GA
W23	Wild Rose	Wild Rose Idlewild Airport	Small GA

Notes:
[1] Role upgrade (small GA to medium GA)
[2] Role downgrade (medium GA to small GA)

Source: Wilbur Smith Associates

2.5 Future Role Evaluation

A core element of the goal to provide the state with an airport system that meets the long-term transportation and economic needs is the identification of airports needed to serve Wisconsin's future population and economic growth centers. The future role evaluation considers forecasted changes in population and economic centers to determine future aviation needs, allowing the state to design a system that functions at its highest level.

2.5.1 Current Coverage

Wisconsin's high-density population areas and economic centers are important in the analysis of the current performance of the system. An analysis of where growth in population and economic centers is projected leads to recognition of the need for and feasibility of airports to function in different future system roles.

Figures 2-2 and **2-3** depict the associated drive-time service areas for commercial service airports (60 minutes) and large GA airports (45 minutes), respectively. Using a GIS analysis, it was determined that 88 percent of Wisconsin's current population lies within a 60-minute drive time of a commercial service airport or a 45-minute drive time of a large GA airport. These combined areas cover 36 percent of the total land area of Wisconsin.

By adding the 30-minute drive-time service areas of medium GA airports, coverage increases to 95 percent of statewide population and 48 percent of the total land area. **Figure 2-4** maps the drive-time service areas of commercial service and large GA drive-time areas along with medium GA airports (shown in blue).

Figure 2-5 adds the small GA 30-minute drive-time service areas (shown in yellow) to the analysis, increasing coverage to 97 percent of population and 55 percent of total land area.

These maps reveal areas of the state not currently served by the Wisconsin Airport System. The northern corners of the state, as well as much of Pierce, Pepin and Buffalo counties along the Mississippi River, have potential voids in service. Both the northwestern and northeastern areas of Wisconsin adjacent to Lake Superior and Lake Michigan attract tourists for numerous outdoor activities such as boating, hiking, camping and other adventurous sports.

Figure 2-2 – Wisconsin Population Within 60 Minutes of a Commercial Service Airport

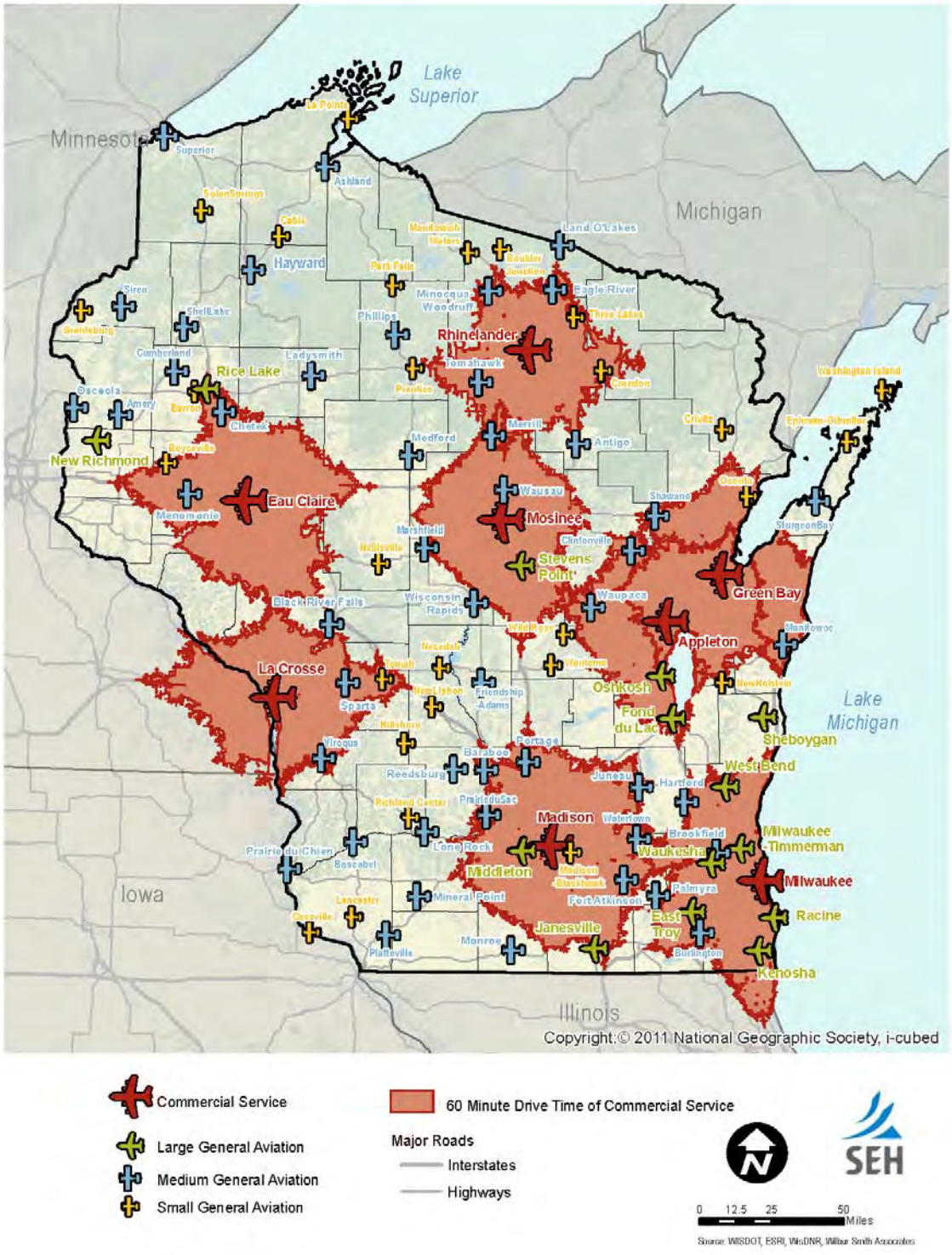


Figure 2-3 – Wisconsin Population Within 60 Minutes of a Commercial Service Airport or 45 Minutes of a Large GA Airport

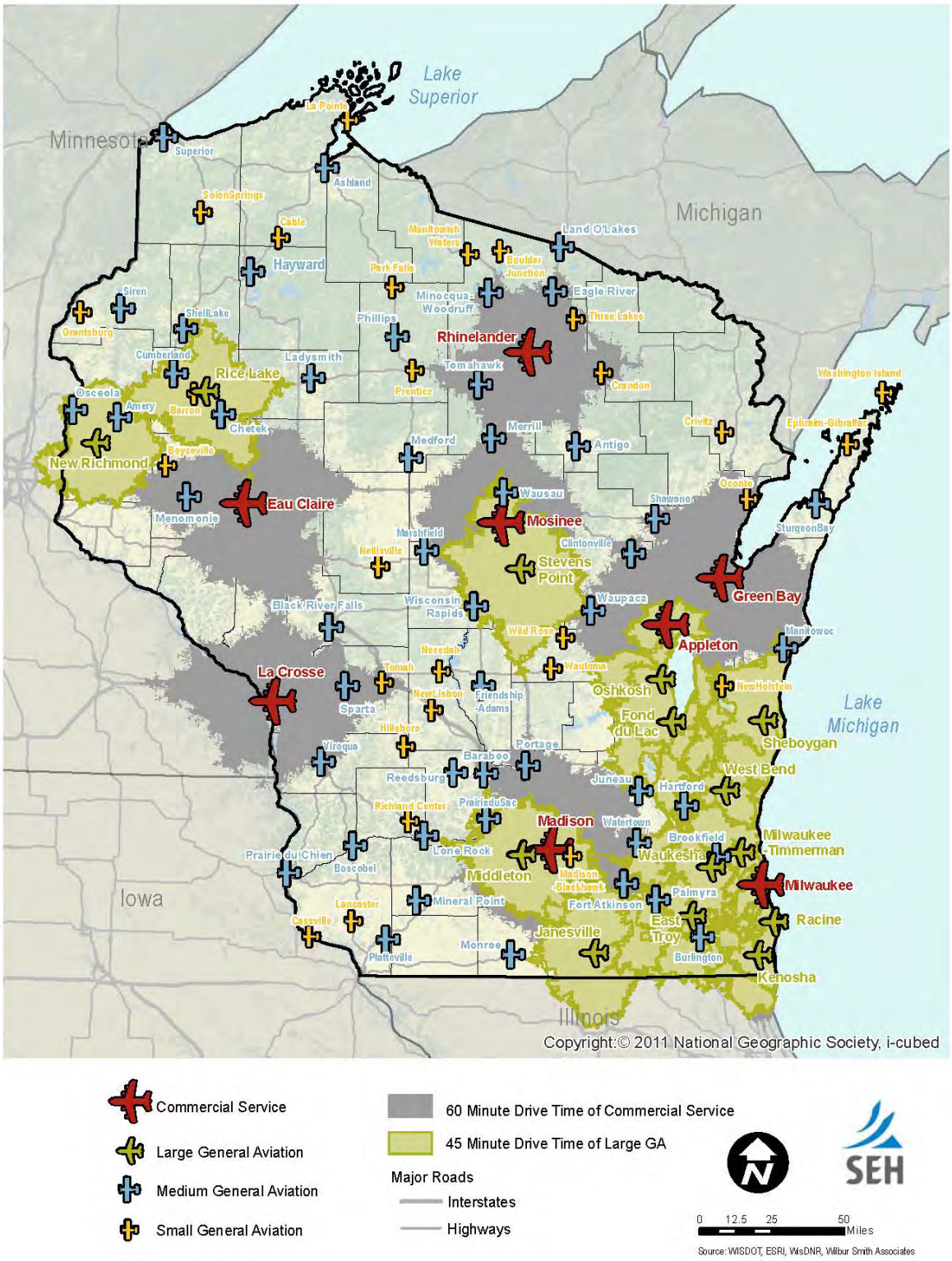


Figure 2-4 – Wisconsin Population Within 60 Minutes of a Commercial Service Airport, 45 Minutes of a Large GA Airport, or 30 Minutes of a Medium GA Airport

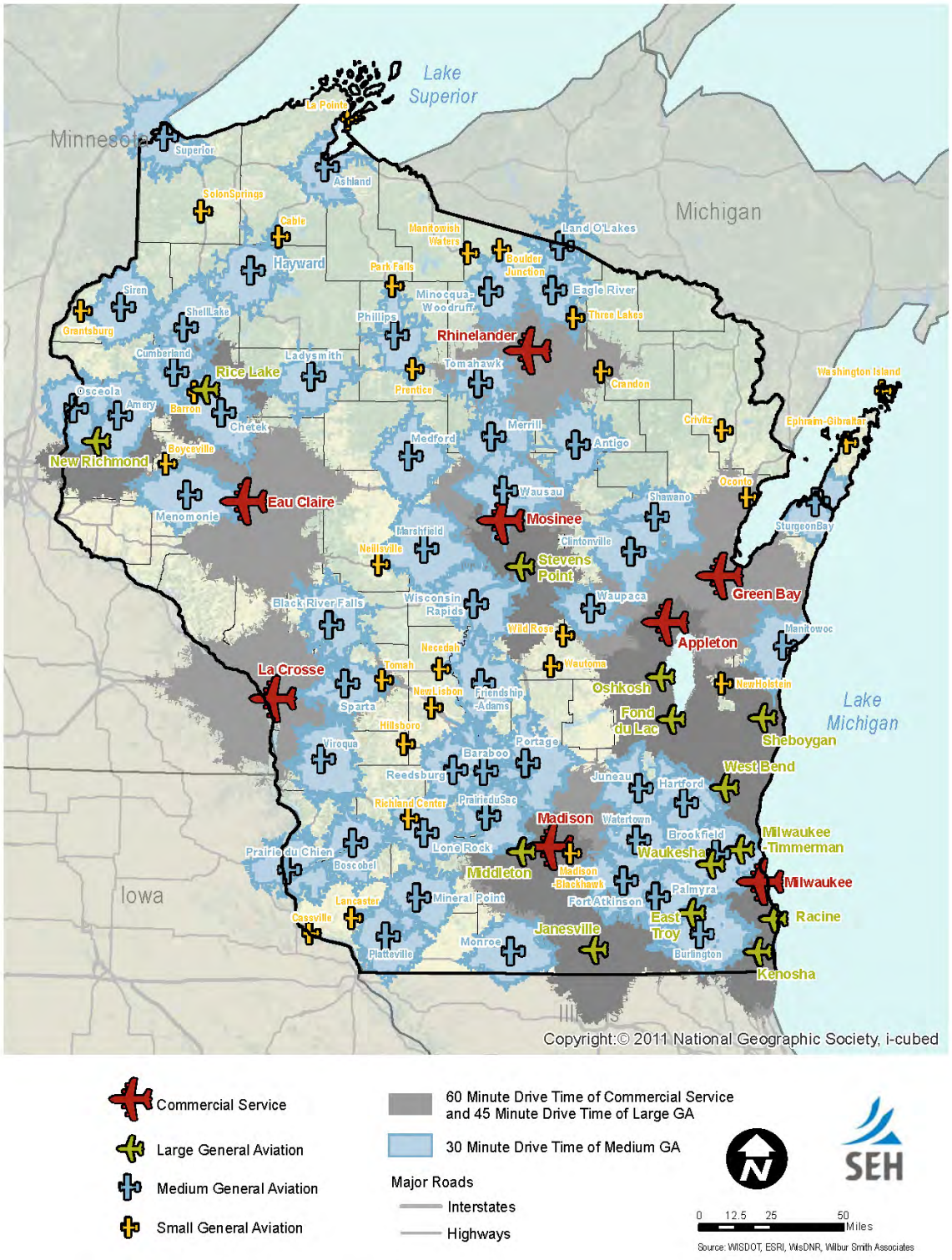
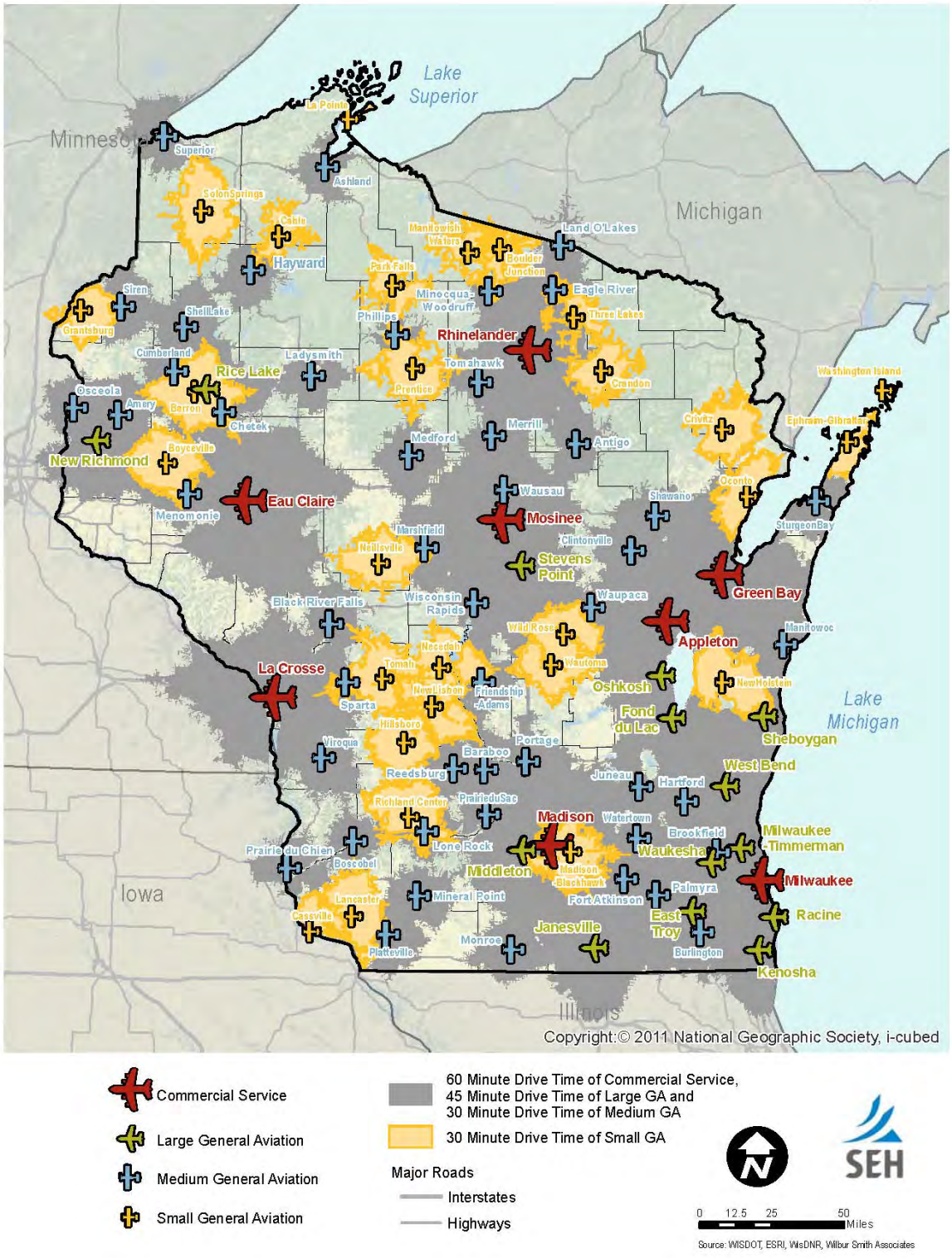


Figure 2-5 – Wisconsin Population Within 60 Minutes of a Commercial Service Airport, 45 Minutes of a Large GA Airport, or 30 Minutes of a Medium GA or Small GA Airport



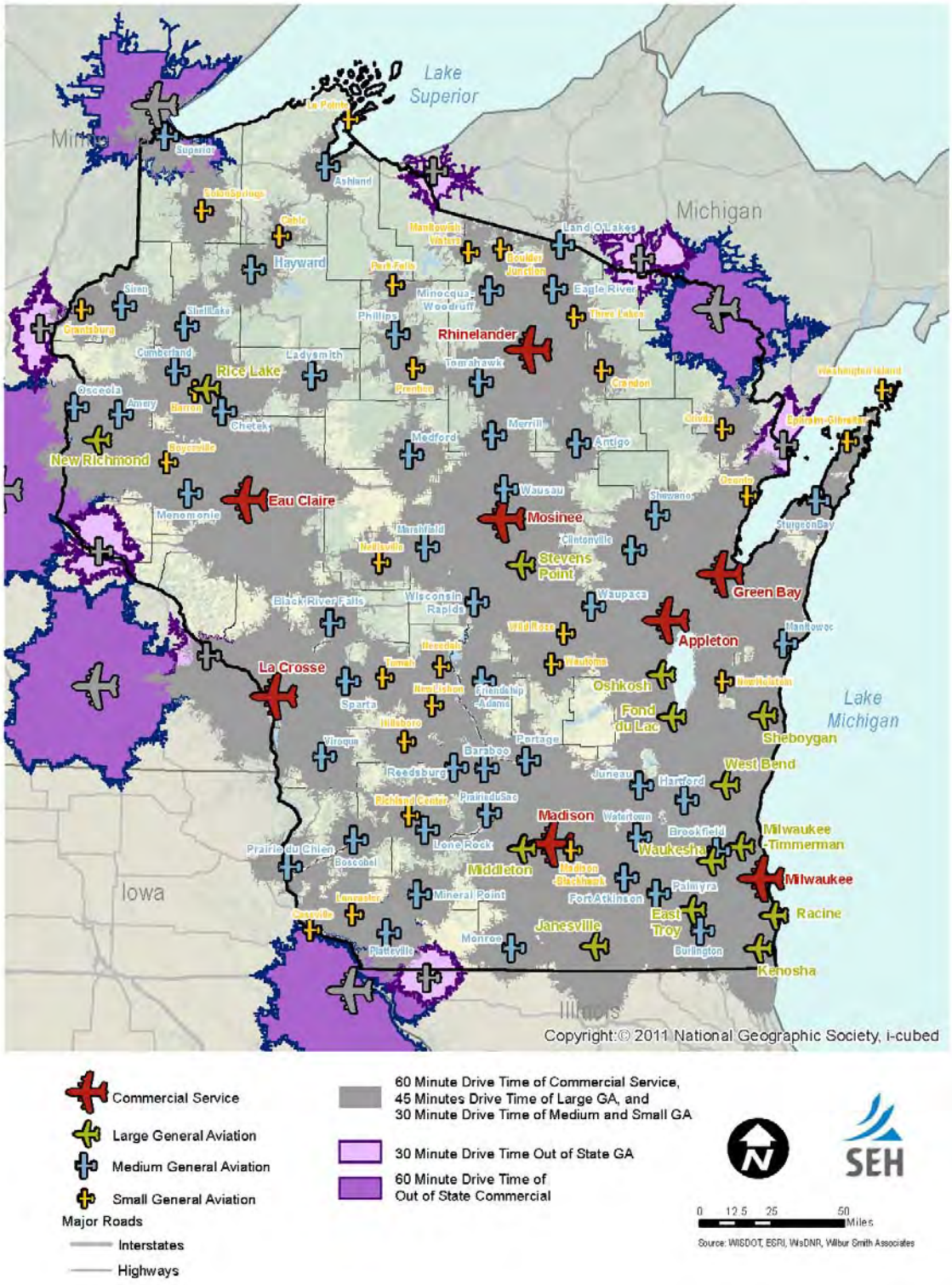
Some of these voids are covered by the service areas of several out-of-state commercial service and GA airports in Minnesota, Iowa, Illinois and Michigan's Upper Peninsula. **Table 2-7** details the out-of-state airports most likely to serve various regions of Wisconsin.

Table 2-7
Out-of-State Airports Serving Wisconsin

FAA ID	Associated City	Airport Name	Airport Type
DBQ	Dubuque	Dubuque Regional Airport	Commercial Service
DLH	Duluth	Duluth International Airport	Commercial Service
IMT	Iron Mountain Kingsford	Ford Airport	Commercial Service
MSP	Minneapolis	Minneapolis-St. Paul International Airport	Commercial Service
RST	Rochester	Rochester International Airport	Commercial Service
7A4	Apple River	Foster Field	GA
Y73	Iron River	Stambaugh	GA
IWD	Ironwood	Gogebic-Iron County Airport	GA
MNM	Menominee	Menominee-Marinette Twin County Airport	GA
RGK	Red Wing	Red Wing Regional Airport	GA
ROS	Rush City	Rush City Regional Airport	GA
ONA	Winona	Winona Municipal Airport - Max Conrad Field	GA

Figure 2-6 maps these airports and their drive-time areas: 60 minutes for commercial service and 30 minutes for GA. These areas increase the coverage of Wisconsin's total population from 97 percent to 98 percent and the land coverage from 55 percent to 57 percent.

Figure 2-6 – Wisconsin Population Within 60 Minutes of a Commercial Service Airport, 45 Minutes of a Large GA Airport, or 30 Minutes of a Medium, Small, or Out-of-State GA



Tables 2-8 and **2-9** summarize the coverage of Wisconsin's population and total land area by existing airport roles, showing how coverage increases as an additional role is added to the total.

Table 2-8
Population Coverage by Existing Airport Role

Existing Role Drive Time Areas	By Existing Role		Combined Areas	
	Population	Percent of Total	Population	Percent of Total
Commercial Service	4,504,230	79%	-	-
Large GA	3,875,018	68%	4,991,131	88%
Medium GA	2,845,949	50%	5,398,997	95%
Small GA	781,144	14%	5,515,507	97%
Out-of-State Airports	224,133	4%	5,570,219	98%

Source: Wilbur Smith Associates

Table 2-9
Land Area Coverage by Existing Airport Role

Existing Role Drive Time Areas	By Existing Role		Combined Areas	
	Area (Square Miles)	Percent of Total	Area (Square Miles)	Percent of Total
Commercial Service	18,496	28%	-	-
Large GA	11,342	17%	23,330	36%
Medium GA	16,387	25%	31,538	48%
Small GA	7,667	12%	35,807	55%
Out-of-State Airports	2,565	4%	37,291	57%

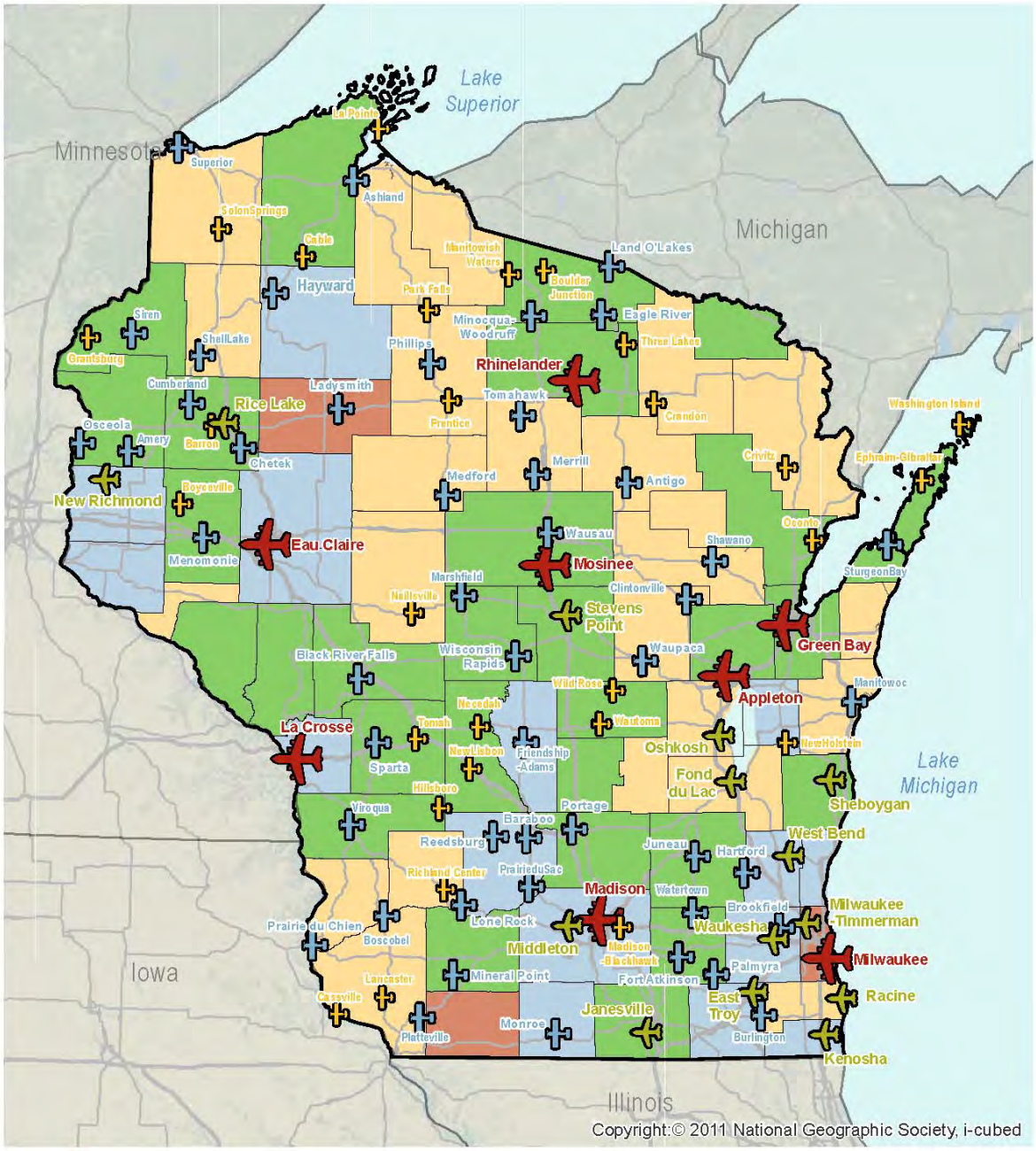
Source: Wilbur Smith Associates

2.5.2 Projected State Population Growth

Projected population growth rates help define future aviation needs. Between 2010 and 2035, 11 counties are projected to experience more than a 30 percent increase in total population growth. Much of Wisconsin's future growth will occur in existing urbanized areas and along its highway transportation corridors. The projected average annual growth rate of Wisconsin counties is shown in **Figure 2-7**. There are several counties projected to experience an average annual growth rate in excess of 0.5 percent over the forecast period.

Figure 2-8 depicts the current coverage provided by the existing system of commercial service and large GA airports with the areas of projected population growth. As shown, many of the high-growth counties (shown in green and blue) lay outside the current 60- or 45-minute drive time of a commercial service or large GA airport.

Figure 2-7 – Population Growth Areas



Commercial Service
Large General Aviation
Medium General Aviation
Small General Aviation

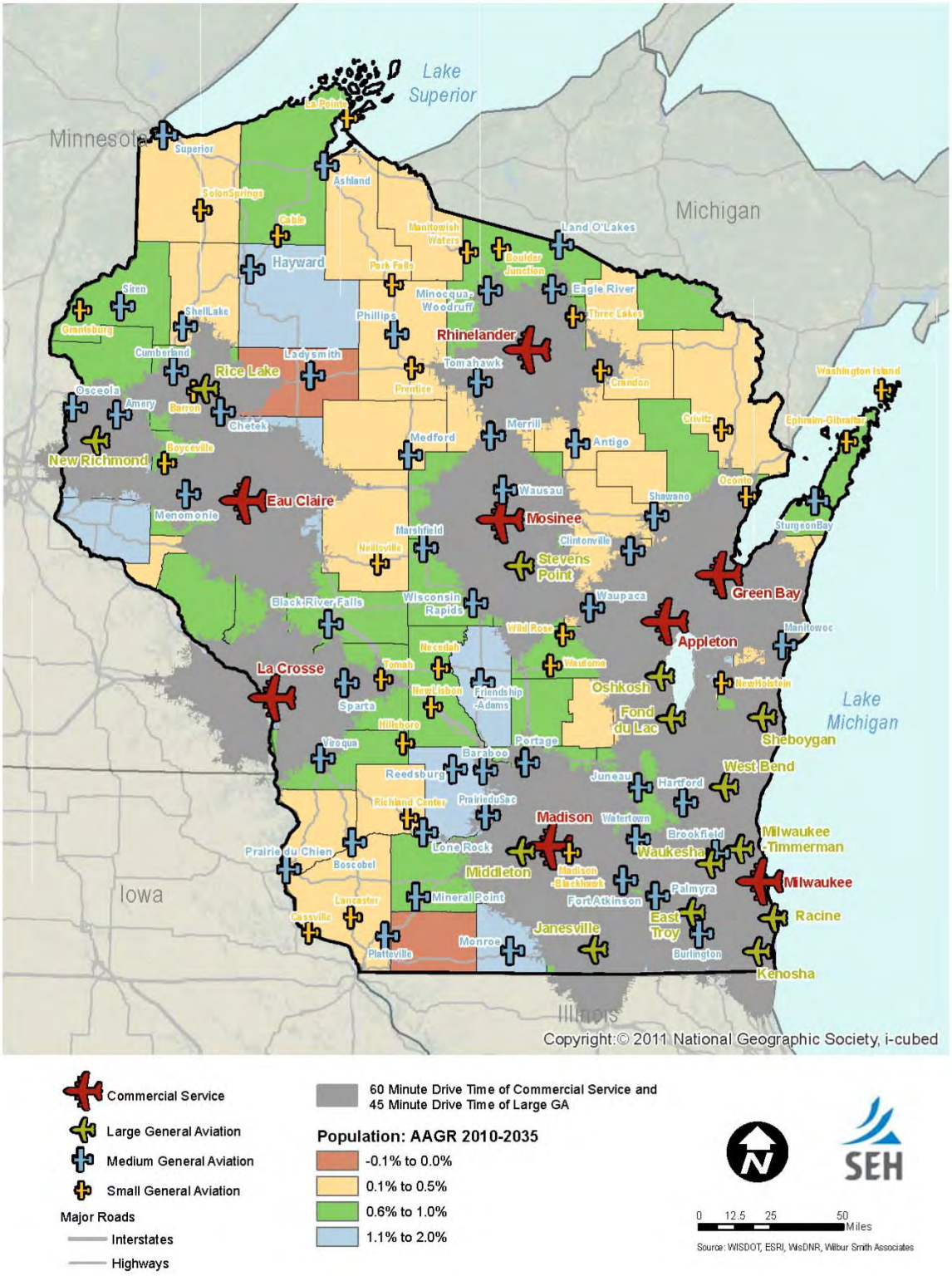
Major Roads
Interstates
Highways

Population: AAGR 2010-2035
-0.1% to 0.0%
0.1% to 0.5%
0.6% to 1.0%
1.1% to 2.0%

0 12.5 25 50 Miles

Source: WISDOT, ESRI, WisDNR, Wilbur Smith Associates

Figure 2-8 – Coverage of Population Growth Areas - Commercial Service and Large GA Airports



2.5.3 Future System Role Recommendations

It is reasonable to assume that the areas of the state projected to have the highest rates of population and economic growth require facilities and services provided by commercial service, large or medium GA airports to meet demand.

Given the financial condition of many commercial airlines and the varying market densities within Wisconsin, identifying the need for additional commercial service airports is unrealistic at this time. Unlike GA airports, providing additional facilities or services at an airport does not guarantee the development of airline service at commercial service airports. Airlines themselves decide which airports they will serve, and that is often an extremely complex decision that typically considers a wide range of factors ranging from industry economics to airport facilities to local market characteristics and beyond.

To determine if there is the need for additional large GA and medium GA airports, the analysis examined geographic and socioeconomic coverage in areas throughout the state. This analysis identified that some medium GA and small GA airports be "upgraded" from their existing categories to meet projected future demand. The analysis did not identify the need for any new airports. To address coverage voids related to projected growth and changing socioeconomic conditions in Wisconsin, four airports are recommended to be upgraded from their existing role (listed in **Table 2-6**) at some point within the planning period. The airports recommended to upgrade to a future role of large GA are the following:

- Ashland (John F. Kennedy Memorial)
- Hayward (Sawyer County)
- Medford (Taylor County)

In addition, one airport is recommended to be upgraded from small GA to medium GA within the planning period:

- Oconto (J. Douglas Bake Memorial)

Figure 2-9 and **Table 2-10** provide a summary of future airport role classification changes recommended above to ensure that Wisconsin has a balanced and diversified system of public airports to meet its air transportation and economic needs during the planning period.

Figure 2-10 reveals additional population and land area coverage provided by the proposed role upgrades based on current population data. When the four airports are upgraded in the future as noted above, 98.2 percent of Wisconsin's total population and 59 percent of the state's total land area are within acceptable access of a system airport (within 60 minutes of a commercial service airport, 45 minutes of a large GA airport, or 30 minutes of a medium or small GA airport).

Figure 2-9 – Future Wisconsin Airport Classifications

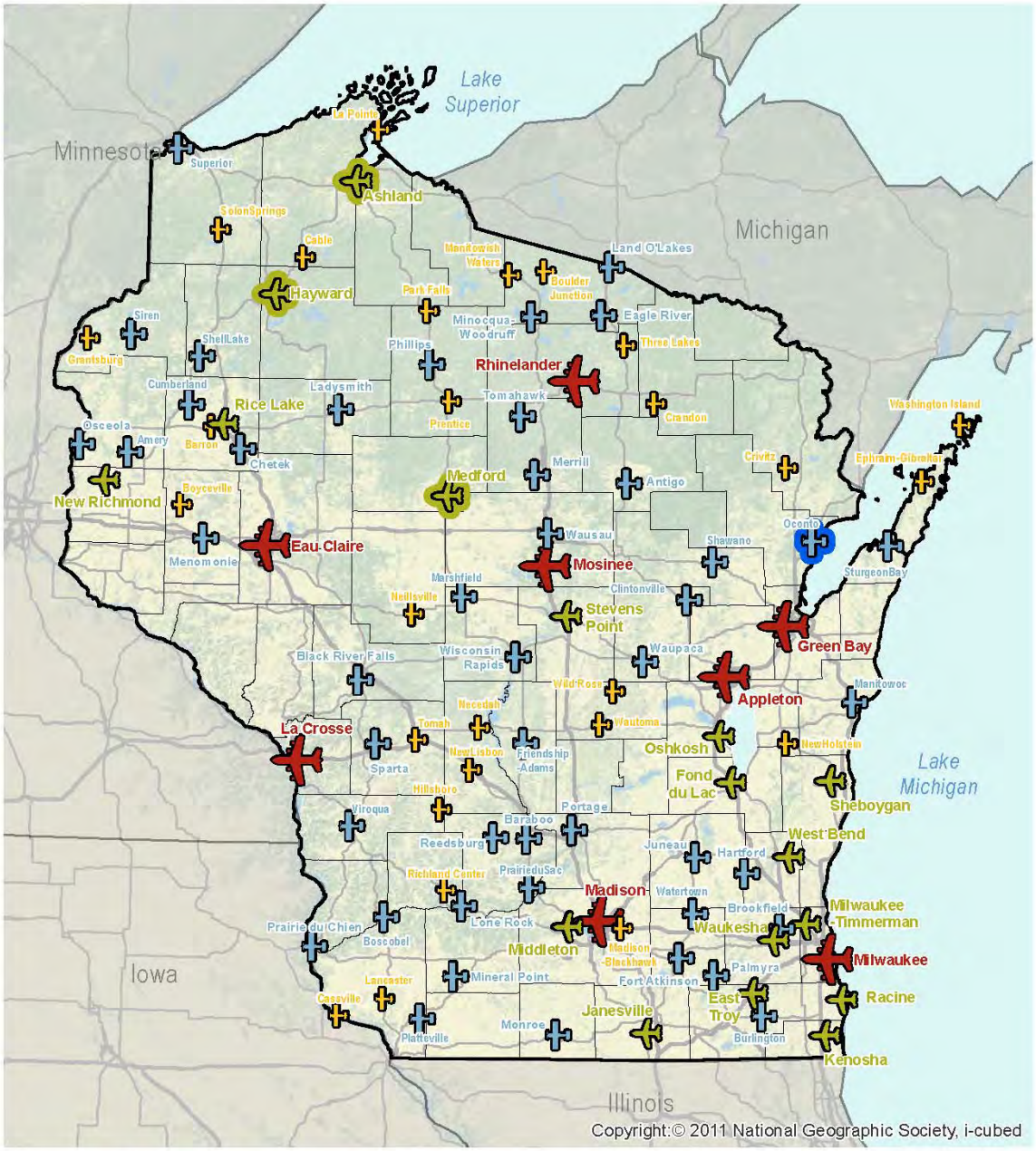


Table 2-10
Future Airport Role Classifications

FAA ID	City	Airport Name	Future Role
ATW	Appleton	Outagamie County Regional Airport	Remain Commercial Service
EAU	Eau Claire	Chippewa Valley Regional Airport	Remain Commercial Service
GRB	Green Bay	Austin Straubel International Airport	Remain Commercial Service
LSE	La Crosse	La Crosse Regional Airport	Remain Commercial Service
MSN	Madison	Dane County Regional Airport	Remain Commercial Service
MKE	Milwaukee	General Mitchell International Airport	Remain Commercial Service
CWA	Mosinee	Central Wisconsin Airport	Remain Commercial Service
RHI	Rhinelander	Rhinelander-Oneida County Airport	Remain Commercial Service
ASX	Ashland	John F. Kennedy Memorial Airport	Upgrade from Medium to Large GA[1]
57C	East Troy	East Troy Municipal Airport	Remain Large GA
FLD	Fond du Lac	Fond du Lac County Airport	Remain Large GA
HYR	Hayward	Sawyer County Airport	Upgrade from Medium to Large GA[1]
JVL	Janesville	Southern Wisconsin Regional Airport	Remain Large GA
ENW	Kenosha	Kenosha Regional Airport	Remain Large GA
MDZ	Medford	Taylor County Airport	Upgrade from Medium to Large GA[1]
C29	Middleton	Middleton Municipal Airport-Morey Field	Remain Large GA
MWC	Milwaukee	Lawrence J. Timmerman Airport	Remain Large GA
RNH	New Richmond	New Richmond Regional Airport	Remain Large GA
OSH	Oshkosh	Wittman Regional Airport	Remain Large GA
RAC	Racine	John H. Batten Airport	Remain Large GA
RPD	Rice Lake	Rice Lake Regional - Carl's Field	Remain Large GA
SBM	Sheboygan	Sheboygan County Memorial Airport	Remain Large GA
STE	Stevens Point	Stevens Point Municipal Airport	Remain Large GA
UES	Waukesha	Waukesha County Airport	Remain Large GA
ETB	West Bend	West Bend Municipal Airport	Remain Large GA
AHH	Amery	Amery Municipal Airport	Remain Medium GA
AIG	Antigo	Langlade County Airport	Remain Medium GA
DLL	Baraboo	Baraboo-Wisconsin Dells Airport	Remain Medium GA
BCK	Black River Falls	Black River Falls Area Airport	Remain Medium GA
OVS	Boscobel	Boscobel Airport	Remain Medium GA
02C	Brookfield	Capitol Drive Airport	Remain Medium GA
BUU	Burlington	Burlington Municipal Airport	Remain Medium GA
Y23	Chetek	Chetek Municipal - Southworth Airport	Remain Medium GA
CLI	Clintonville	Clintonville Municipal Airport	Remain Medium GA
UBE	Cumberland	Cumberland Municipal Airport	Remain Medium GA

Table 2-10 (Continued)
Future Airport Role Classifications

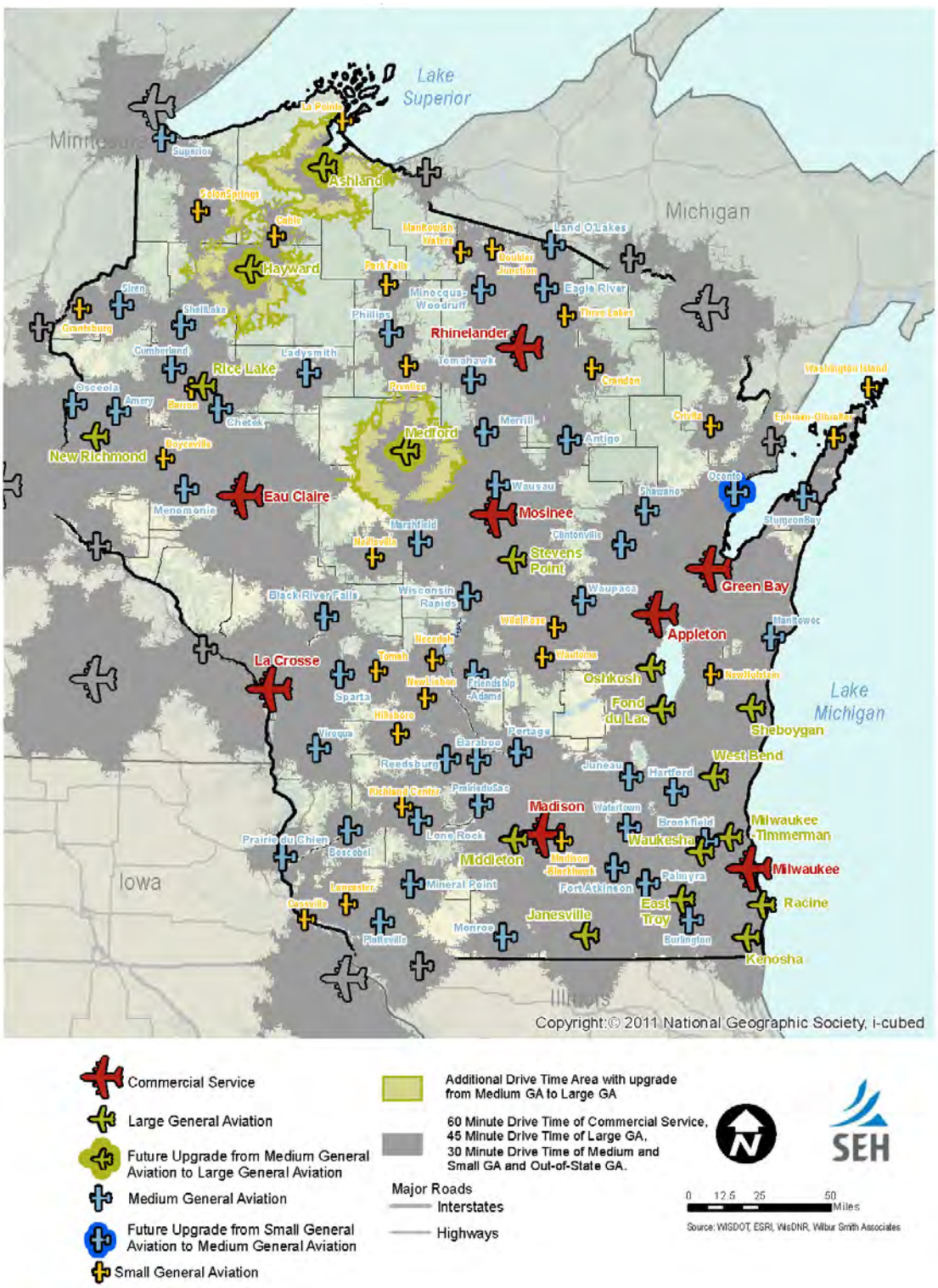
FAA ID	City	Airport Name	Future Role
EGV	Eagle River	Eagle River Union Airport	Remain Medium GA
61C	Fort Atkinson	Fort Atkinson Municipal Airport	Remain Medium GA
63C	Friendship-Adams	Adams County Legion Field	Remain Medium GA
HXF	Hartford	Hartford Municipal Airport	Remain Medium GA
UNU	Juneau	Dodge County Airport	Remain Medium GA
RCX	Ladysmith	Rusk County Airport	Remain Medium GA
LNL	Land O'Lakes	King's Land O'Lakes Airport	Remain Medium GA
LNR	Lone Rock	Tri-County Regional Airport	Remain Medium GA
MTW	Manitowoc	Manitowoc County Airport	Remain Medium GA
MFI	Marshfield	Marshfield Municipal Airport - Roy Shwery Field	Remain Medium GA
LUM	Menomonie	Menomonie Municipal - Score Field	Remain Medium GA
RRL	Merrill	Merrill Municipal Airport	Remain Medium GA
MRJ	Mineral Point	Iowa County Airport	Remain Medium GA
ARV	Minocqua-Woodruff	Lakeland Airport/Noble F. Lee Memorial Field	Remain Medium GA
EFT	Monroe	Monroe Municipal Airport	Remain Medium GA
OCQ	Oconto	J Douglas Bake Memorial Airport	Upgrade from Small to Medium GA[1]
OEO	Osceola	L. O. Simenstad Municipal Airport	Remain Medium GA
88C	Palmyra	Palmyra Municipal Airport	Remain Medium GA
PBH	Phillips	Price County Airport	Remain Medium GA
PVB	Platteville	Platteville Municipal Airport	Remain Medium GA
C47	Portage	Portage Municipal Airport	Remain Medium GA
PDC	Prairie du Chien	Prairie du Chien Airport	Remain Medium GA
91C	Prairie du Sac	Sauk Prairie Airport	Remain Medium GA
C35	Reedsburg	Reedsburg Municipal Airport	Remain Medium GA
EZS	Shawano	Shawano Municipal Airport	Remain Medium GA
SSQ	Shell Lake	Shell Lake Municipal Airport	Remain Medium GA
RZN	Siren	Burnett County Airport	Remain Medium GA
CMY	Sparta	Sparta / Fort McCoy Airport	Remain Medium GA
SUE	Sturgeon Bay	Door County Cherryland Airport	Remain Medium GA
SUW	Superior	Richard I. Bong Airport	Remain Medium GA
TKV	Tomahawk	Tomahawk Regional Airport	Remain Medium GA
Y51	Viroqua	Viroqua Municipal Airport	Remain Medium GA
RYV	Watertown	Watertown Municipal Airport	Remain Medium GA
PCZ	Waupaca	Waupaca Municipal Airport	Remain Medium GA
AUW	Wausau	Wausau Downtown Airport	Remain Medium GA

Table 2-10 (Continued)
Future Airport Role Classifications

FAA ID	City	Airport Name	Future Role
ISW	Wisconsin Rapids	Alexander Field-South Wood County Airport	Remain Medium GA
9Y7	Barron	Barron Municipal Airport	Remain Small GA
BDJ	Boulder Junction	Boulder Junction Airport	Remain Small GA
3T3	Boyceville	Boyceville Municipal Airport	Remain Small GA
3CU	Cable	Cable Union Airport	Remain Small GA
C74	Cassville	Cassville Municipal Airport	Remain Small GA
Y55	Crandon	Crandon Municipal Airport	Remain Small GA
3D1	Crivitz	Crivitz Municipal Airport	Remain Small GA
3D2	Ephraim-Gibraltar	Ephraim-Gibraltar Airport	Remain Small GA
GTG	Grantsburg	Grantsburg Municipal Airport	Remain Small GA
HBW	Hillsboro	Joshua Sanford Field	Remain Small GA
4R5	La Pointe	Major Gilbert Field	Remain Small GA
73C	Lancaster	Lancaster Municipal Airport	Remain Small GA
87Y	Madison	Blackhawk Airfield	Remain Small GA
D25	Manitowish Waters	Manitowish Waters Airport	Remain Small GA
DAF	Necedah	Necedah Airport	Remain Small GA
VIQ	Neillsville	Neillsville Municipal Airport	Remain Small GA
8D1	New Holstein	New Holstein Municipal Airport	Remain Small GA
82C	New Lisbon	Mauston-New Lisbon Union Airport	Remain Small GA
PKF	Park Falls	Park Falls Municipal Airport	Remain Small GA
5N2	Prentice	Prentice Airport	Remain Small GA
93C	Richland Center	Richland Airport	Remain Small GA
OLG	Solon Springs	Solon Springs Municipal Airport	Remain Small GA
40D	Three Lakes	Three Lakes Municipal Airport	Remain Small GA
Y72	Tomah	Bloyer Field	Remain Small GA
2P2	Washington Island	Washington Island Airport	Remain Small GA
Y50	Wautoma	Wautoma Municipal Airport	Remain Small GA
W23	Wild Rose	Wild Rose Idlewild Airport	Remain Small GA
Notes: [1] Future role change			

Source: Wilbur Smith Associates

Figure 2-10 – Wisconsin Population Within 60 Minutes of Future Commercial Service Airport, 45 Minutes of Future Large GA Airport, or 30 Minutes of a Future Medium, Future Small, or Out-of-State GA



2.6 Conclusion

The classification review and update 2011 is one element of the larger system planning process used by the BOA in its evaluation of the entire airport system. Identification of airport roles is essential to providing a top-down view of the system's ability to meet certain demands. In addition to analyzing airport roles, the system planning process, which includes other elements such as forecasts, performance measurement and analysis, implementation plan development, and policy analysis, provides a basis for understanding the statewide aviation needs and the effectiveness of the investments in the system.