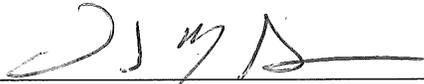


APPROVAL

System-plan Environmental Evaluation (SEE)
for
Wisconsin State Airport System Plan

Submitted by the
State of Wisconsin, Department of Transportation
On
September 15, 2014

**Comments on the Wisconsin State Airport System Plan 2030 were accepted from
July 15 to August 29, 2014.**



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9.0 System-Plan Environmental Evaluation (SEE)

This chapter presents a system-plan environmental evaluation (SEE) for the system plan. WisDOT’s Administrative Code, Trans 400, *Wisconsin Environmental Policy Act (WEPA) Procedures for Department Actions*, requires a system-plan environmental evaluation (SEE) to be completed for state system plans if they include major or significant new proposals. Trans 400 implements the Wisconsin environmental policy act and “*establishes the policy by which the department will consider environmental effects of its major actions on the quality of the human environment, by identifying actions under the jurisdiction of the department that have the potential to affect the quality of the human environment, by determining the appropriate environmental analysis and documentation necessary for each action, by ensuring an opportunity for public participation in the process, and by establishing procedures by which the department will consider the effects of its actions on the quality of the human environment.*”

As described in Trans 400, the analysis in a SEE may be qualitative and reflect the broad level of generality of system plans. Therefore, as compared to individual project environmental reviews, the SEE is more conceptual, qualitative and general.

WisDOT, including BOA, strives to protect and enhance the quality of the human environment in carrying out its mission. While the SEE is a broad level analysis of the potential impacts to the human environment, individual improvements identified in the system plan will require environmental review under WEPA and potentially the National Environmental Policy Act (NEPA). Public involvement, interagency coordination and consultation, and a systematic interdisciplinary approach to the analysis will be considered in the implementation of the system plan and individual improvements recommended in the plan.

9.1 Comparison of the No Action and Proposed Action

To better understand the potential impacts of adoption of the SASP update, the two plan alternatives evaluated in the SEE are the proposed action (SASP update) and the no action alternative which represents continued use of the unrevised *Wisconsin State Airport System Plan 2020*.

9.1.1 Proposed Action – Adoption of SASP Update

The proposed action, adoption of the *Wisconsin State Airport System Plan 2030* (proposed action) includes the airport improvements outlined in this document. The improvements for each individual airport are documented in **Chapter 7** and consist of the following types of airside, landside and administrative improvements;

Airside:

- Runway length
- Runway width
- Taxiway type
- Pavement condition
- Runway and taxiway lighting
- Visual aids and approach lighting
- Approach capability
- Weather reporting
- Runway safety area
 - FAR Part 77 approach surface



Landside:

- Fuel
- GA terminal/administration building
- Auto parking
- Ramp space
- Operations/maintenance building
- Snow removal and deicing
- Transient aircraft storage

Administrative:

- Land use zoning ordinance & height limitation zoning ordinance
- Wildlife hazard assessment
- Stormwater management plan
- Runway protection zone ownership

The recommended airside, landside and administrative improvements for each airport in the system are documented in **Chapter 7** and are based on the typical facility and service attributes (FSAs) presented in **Chapter 5** and the goals and measures presented in **Chapter 6**.

9.1.2 No Action – Continued use of unrevised SASP

The no action alternative includes continued use of the existing plan, the *Wisconsin State Airport System Plan 2020*. The existing plan classifies the airports as air carrier/cargo, transport/corporate, general utility or basic utility and identifies airport improvement needs. These improvement needs generated three categories of capital projects: pavement projects, instrument approach capability projects and airport service level projects. **Table 9-1** indicates the improvement needs outlined in the *Wisconsin State Airport System Plan 2020*. This system plan was published in 2000 and no longer accurately represents the facilities, activity levels and services provided by the Wisconsin Airport System.

**Table 9-1
Wisconsin State Airport System Plan 2020
Recommended Airport Development**

Airport Classification	Pavement Condition Indices	Instrument Approach Capability Minimums	Airport Service Level Supplemental Operations Thresholds
Air carrier/cargo	Runways: 70 PCI Taxiways: 60 PCI Aprons: 60 PCI	200 foot ceiling ½ mile visibility	None applied
Transport/corporate	Runways: 65 PCI Taxiways: 55 PCI Aprons: 55 PCI	200 foot ceiling ½ mile visibility	Parallel taxiway on primary runway requires more than 20,000 annual operations. Parallel taxiway on crosswind runway requires more than 30,000 annual operations
General utility	Runways: 55 PCI Taxiways: 45 PCI Aprons: 45 PCI	>400 foot ceiling ≥ 1 mile visibility	
Basic utility	Runways: 55 PCI Taxiways: 45 PCI Aprons: 45 PCI	>400 foot ceiling ≥ 1 mile visibility	

Source: Wisconsin State Airport System Plan 2020



The proposed action contains a more detailed evaluation of facilities and services at system airports and, as a result, includes more types and quantities of improvements than the no action. As such, the potential environmental impacts of the proposed action are more than the no action.

9.2 Qualitative Assessment of Impacts

This section provides a qualitative assessment of the potential impacts of the proposed action as compared to the no action alternative. This assessment includes resources and matters identified for evaluation in Trans 400 (**Sections 9.2.2 through 9.2.10**) as well as other resources.

As previously discussed, the SEE is a broad level analysis of the system plan and implementation of individual improvements identified in the plan will require environmental review under WEPA and potentially NEPA. Public involvement, interagency coordination and consultation, and a systematic interdisciplinary approach to the analysis will be considered in the implementation of the system plan and individual improvements recommended in the plan. For all resources, BOA is committed to avoiding and minimizing losses where possible and mitigating losses where necessary.

9.2.1 Air Quality

The U.S. Environmental Protection Agency (EPA) uses six criteria pollutants as indicators of air quality and has established for each a maximum concentration above which adverse effects on human health may occur. These threshold concentrations are called National Ambient Air Quality Standards.

The Clean Air Act, which was last amended in 1990, requires EPA to set National Ambient Air Quality Standards (40 CFR part 50) for pollutants considered harmful to public health and the environment. The Clean Air Act established two types of national air quality standards. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children and the elderly. Indirect standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation and buildings.

The Clean Air Act established National Ambient Air Quality Standards for six pollutants, termed "criteria pollutants." The six criteria pollutants are: ozone, which includes 1-hour ozone and 8-hour ozone; carbon monoxide; nitrogen dioxide, sulfur dioxide, particulate matter, which includes PM-10 and PM-2.5; and lead. When an area does not meet the air quality standard for one of the criteria pollutants, it may be subject to the formal rule-making process which designates it as non-attainment. As of January 2012, two Wisconsin counties are designated non-attainment for the 8-hour ozone standard: Kenosha and Sheboygan. Three Wisconsin counties are currently designated non-attainment for the particulate matter 2.5 standard: Milwaukee, Racine and Waukesha.

The system plan environmental evaluation includes, as required in Trans 400, an evaluation of the potential effects to air quality in non-attainment areas. The eight (8) system airports located in these counties include: Kenosha (Kenosha County), Sheboygan (Sheboygan County), General Mitchell International Airport and Milwaukee-Timmerman (Milwaukee County), Racine and Burlington (Racine County), and Waukesha and Brookfield (Waukesha County).

A comparison of the proposed action resultant air quality with National Ambient Air Quality Standards should be considered if pollutant levels are likely to exceed the standards. The level of operations at general aviation and commercial service airports is a primary indicator of the potential for air quality



concerns. For airports, the primary air pollutant of concern is carbon monoxide (CO). Aircraft emit moderate amounts of CO while they are taxiing, and airport ground delays could potentially cause CO emissions to approach the National Ambient Air Quality Standards. Actions that would not increase airport capacity, thereby leading to increased congestion of roadways or airfields and the relocation of aircraft or vehicular activity closer to sensitive receptors, are not likely to exceed the standards for CO. Both the no action and proposed action alternatives outline improvements that would potentially decrease congestion at airports and have the potential to improve air quality, although, it may be minimal.

FAA guidance in Order 1050.1E, Section 2.4b, states that procedures for air quality analyses are provided in the report *Air Quality Procedures for Civilian Airports and Air Force Bases*. In that report, National Ambient Air Quality Standards assessments are required if a project at an airport would have forecasted aviation activity of more than 180,000 annual operations. Of the eight airports located in non-attainment areas, only General Mitchell International Airport exceeded this threshold of annual operations in 2010. However, it is interesting to note that, as detailed in **Chapter 4**, annual operations at General Mitchell International are forecasted to decrease and not surpass 180,000 annual operations throughout the 20-year planning term. While the forecasted decrease in operations at General Mitchell International is not a result of recommendations in the proposed action, the decrease in operations may result in increased air quality.

9.2.2 Community

9.2.2.1 Ground and Air Traffic Congestion effects for Green Bay, Madison and Milwaukee

The improvements identified in the proposed action for Green Bay, Madison and Milwaukee include acquisition of runway protection zones, adoption of land use zoning ordinances, adoption of a vehicle pedestrian ordinance, improvements to pavement condition and construction of additional transient aircraft parking areas (ramp space). Because these improvements do not expand airport capacity or usage, proposed improvements will not likely increase vehicle or aircraft congestion on or surrounding these airports. The addition of new transient aircraft parking will provide organizational space for aircraft awaiting departure during peak aircraft operation hours and has the potential to decrease runway and taxiway congestion on an airport during these peak hours.

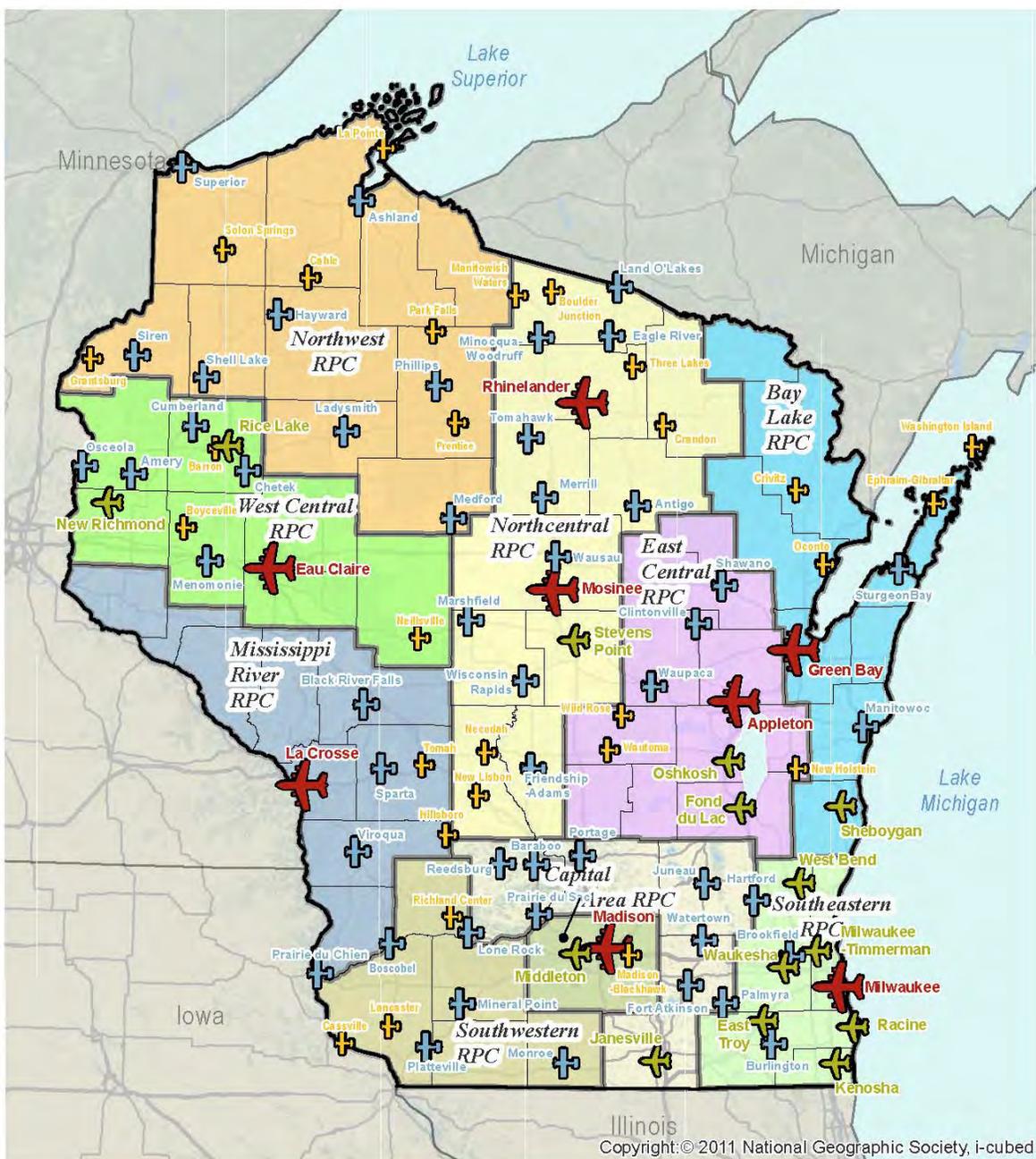
9.2.2.2 Regional Development Plans

This section evaluates the relation of the proposed action to adopted regional development plans and goals as required in Trans 400.

There are nine regional planning commissions in the State of Wisconsin, and all but five of the 72 counties are members of such commissions. The eleven regional planning commissions and the airports included in each are identified on **Figure 9-1**. Eighty-seven of the 98 system airports are included in the boundaries of a regional planning commission. Just as the constituent counties for each planning commission vary greatly, the regional development plans for each planning commission vary in complexity and scope. The following sections are summaries of the discussions of and recommendations for aviation in the regional development plans.



Figure 9-1 – Wisconsin Regional Planning Commissions



-  Commercial Service
-  Large General Aviation
-  Medium General Aviation
-  Small General Aviation

- Major Roads
-  Interstates
 -  Highways





0 12.5 25 50 Miles

Source: WISDOT, ESRI, WisDNR, Wilbur Smith Associates



9.2.2.2.1 Southeastern Wisconsin Regional Planning Commission

The Southeastern Wisconsin Regional Planning Commission (SEWRPC) has a Regional Airport System Plan for Southeastern Wisconsin: 2010, adopted in November, 1996. This plan was prepared and adopted by the regional planning commission and is one of the plan elements which together comprise the comprehensive plan for the region. According to the plan, it is consistent with all other regional comprehensive, regional development, planning efforts. In addition, SEWRPC also has adopted a regional land use plan, a water resource management plan and a regional surface transportation system plan.

The Regional Airport System Plan includes the following airport system development objectives:

- **Objective 1:** An integrated regional airport system which will effectively serve the existing and probable future interregional and intraregional air travel demand with appropriate types and adequate levels of service; alleviate air traffic congestion; and reduce travel times between the region, its component parts, and other regions.
- **Objective 2:** A regional airport system which will minimize accident exposure and provide increased travel safety.
- **Objective 3:** A regional airport system which will be compatible with the existing land use patterns and adopted land use plans.
- **Objective 4:** A regional airport system which will be properly related to the underlying and sustaining natural resource base and will minimize the existing and potentially adverse effects up on that natural resource base.
- **Objective 5:** A regional airport system which will promote flexibility, allowing air transportation service to adopt readily to changes in the demands for air transportation and to changes in aviation technology.
- **Objective 6:** A regional airport system which will be intermodal in nature and properly related to, and integrated with, other transportation systems serving the region.
- **Objective 7:** A regional airport system which will be properly related to the regional public utility systems, permitting the efficient and economic provision of necessary public utility services to airport and airport-related land use development.
- **Objective 8:** A regional airport system which will be located and designed to maintain a high aesthetic quality, with proper relation of the facilities to the landscape and cityscape.
- **Objective 9:** A regional airport system which will be economical and efficient, meeting all other objectives at the lowest possible cost.

The proposed action is consistent with the objectives outlined in the *SEWRPC Regional Airport System Plan*.

9.2.2.2.2 Capital Area Regional Planning Commission

The Capital Area Regional Planning Commission includes Dane County and the cities and villages with incorporated areas within the county. Adopted on June 26, 1997, *The Dane County Land Use and Transportation Plan* includes the goal to provide an integrated, all-mode transportation system which offers the efficient, effective and safe movement of people and goods and provides mode choice wherever possible while enhancing and, where relevant, preserving the character and livability of the neighborhoods and residential areas where transportation facilities are located. A plan objective includes providing safe and convenient airport facilities to meet air transportation needs for the region. The *Wisconsin State Airport System Plan 2030* is consistent with the goals of the *Dane*



9.2.2.2.3 East Central Wisconsin Regional Planning Commission

The East Central Wisconsin Regional Planning Commission has adopted the *Year 2030 Regional Comprehensive Plan* (April, 2008). Encouraging development of alternative modes of transportation and identification and preservation of transportation corridors and facilities are identified as regional transportation goals. In addition, the plan encourages development of a transportation system that minimizes environmental disruption and strives to maintain a quality environment. No specific aviation goals or policies are included in the plan. The improvements outlined in the Wisconsin Airport System Plan 2030 are consistent with the goals established in the *Year 2030 Regional Comprehensive Plan* for east central Wisconsin.

9.2.2.2.4 Northwest Regional Planning Commission

Regional transportation issues are included in the *2012 Northwest Region annual Comprehensive Economic Development Strategy*. This plan identifies a regional objective to encourage orderly and sound land use development based on acceptable resource management procedures and to promote development of a safe and efficient multi-modal transportation system. The comprehensive development strategy identifies the future projects identified in **Table 9-3** at airports in the region.

**Table 9-2
Comprehensive Economic Development Strategy Projects**

Airport	Projects
Ashland	Reconstruct Runway 13/31 Energy efficiency project
Park Falls	Resurface apron area Develop hangar area Update airport layout plan Reconstruct/expand airport auto parking Land acquisition in the runway approach areas Expand airport taxiways and apron
Prentice	Develop airport hangar
Cable	Airport expansion
La Pointe	Extend runway to 75' x 5,000' Security perimeter fence Rehab airfield lighting Install AWOS Airplane anchorage area

Sources: Northwest Regional Planning Commission, *2012 Annual Update Comprehensive Economic Development Strategy*

The recommendations outlined in the *Wisconsin State Airport System Plan 2030* are not in conflict with the comprehensive development strategy developed by the Northwest Regional Planning Commission.

The regional planning commission also works closely with the Duluth-Superior Metropolitan Interstate Council, a bi-state Metropolitan Planning Organization, on transportation issues including airports.



9.2.2.2.5 Bay-Lake Regional Planning Commission

The Bay-Lake Regional Planning Commission adopted their comprehensive plan in 2005. This plan includes the policy to assist in initiating an inventory of regional airports and facilitate a discussion of developing strategies to upgrade and expand uses for the facilities in order to help create economic opportunities for local communities. The plan also includes a policy to support expansion of general aviation and freight aviation at the municipal airports in the region as recommended in the Wisconsin airport system plan so long as it does not adversely impact surrounding areas. Preservation and enhancement of aviation facilities is also promoted in the plan. Coordinating land use and transportation decisions is identified as an objective including limiting incompatible land uses by airports. The recommendations outlined in the *Wisconsin State Airport System Plan 2030* are not in conflict with the comprehensive economic development strategy.

9.2.2.2.6 Mississippi River Regional Planning Commission

The Mississippi Regional Planning Commission is currently in the process of completing a comprehensive plan. However, transportation issues are included in the regional comprehensive economic development strategy prepared annually. The *2012 Comprehensive Economic Development Plan* encourages efficient multi-modal transportation system throughout the region and further developing the transportation infrastructure. The recommendations outlined in the *Wisconsin State Airport System Plan 2030* are consistent with the comprehensive economic development strategy.

9.2.2.2.7 West Central Wisconsin Regional Planning Commission

The West Central Wisconsin Comprehensive Plan was adopted in 2010 and includes broad advisory goals and policy recommendations for the region. Eleven system airports are located in this region. Transportation goals included in the plan are to have a safe, sustainable and accessible transportation system while meeting the multi-modal mobility needs of the region. Additional goals include efficiently connecting neighborhoods and communities with each other and world while moving people and freight using a variety of transportation options, and cooperatively maintaining, sustaining and enhancing transportation infrastructure and services.

The plan identifies airports as a vital part of the regional transportation network and also identifies that land uses surrounding airports in the region are one of the biggest challenges for airports. The plan goes on to acknowledge that airport land use plans are encouraged by WisDOT in order to document anticipated airport growth, safety needs and compatible land use development. Land use plans and well as height limitation zoning ordinances are included in the recommendations in the *Wisconsin State Airport System Plan 2030*.

The region also has a long range transportation plan which was updated in 2010. The recommendations in this plan include regulating development activities around Eau Claire (Chippewa Valley Regional Airport) in order to maintain the operational effectiveness of the airport.

The recommendations in this system plan update are not in conflict with the *West Central Wisconsin Comprehensive Plan*.

9.2.2.2.8 North Central Wisconsin Regional Planning Commission

Nineteen of the system airports are located in the North Central Wisconsin Regional Planning Commission region. The *North Central Wisconsin Regional Comprehensive Plan* was adopted in



2003. The goals in this plan include fostering the economic development and productivity of the region through an efficient transportation system. Additional goals include providing for an integrated, efficient and economical transportation system that affords mobility, convenience, and safety and that meets the needs of all citizens, including transit dependent and disabled citizens. The plan recommends that the region work with local airports to develop and adopt airport master plans. In addition, the plan emphasizes the importance of maintaining the existing transportation infrastructure. The proposed action is not in conflict with the goals outlined in the *North Central Wisconsin Regional Comprehensive Plan*.

9.2.2.2.9 Southwestern Wisconsin Regional Planning Commission

The Southwestern Wisconsin Regional Planning Commission is in the process of developing a regional comprehensive plan. The region addresses regional transportation issues in their 5-year and annual comprehensive economic development strategy. The 5-year strategy (2009-2014) outlines action steps for its goal of upgrading the regional transportation system. The action steps include: beginning dialogue on regional transportation planning, establishing a regional capital improvement plan for transportation planning, assessing and prioritizing regional transportation needs and links to the tri-state system, working regionally to influence project selection, and researching feasibility of regional transit systems. The 2011 annual update of the comprehensive economic development strategy mirrors the goals and action steps in the 5-year plan. The *Wisconsin State Airport System Plan 2030* is consistent with the goals outlined in the comprehensive economic development strategy.

9.2.2.2.10 Summary

The goals and recommended improvements of the *Wisconsin State Airport System Plan 2030* are consistent with the varying regional development plans of the Regional Planning Commissions.

9.2.3 Energy

The effects of airport development on energy are generally related to the amount of energy required for stationary facilities (i.e., terminal building cooling or heating equipment, electrical lighting for the interior of buildings and the airfield and runway navigational systems) and movement of aircraft and ground vehicles.

Both the proposed action and the no action alternative recommend installation of additional stationary facilities at system airports including terminal buildings, approach and runway lighting, weather reporting facilities and hangars. The proposed action alternative recommends more energy using stationary facilities than the no action alternative. These additional facilities have the potential to increase the energy usage of an airport. However, both plans also recommend facilities, such as parallel taxiways that may lead to decreases in congestion and aircraft idling time. Facilities that decrease congestion have the potential to decrease energy consumption. Since proposed action includes more types and quantities of improvements than the no action alternative, the proposed action would likely lead to greater consumption than the no action alternative.

9.2.4 Economic Growth

Wisconsin's economic growth relies heavily on the ability of the transportation system to safely transport people, goods, services and information reliably and dependably through the state. The effects of airport development on economic growth are generally positive. Improved transportation is



often coupled with employment opportunities, commodity exchange and an increase in tourism.

Population and employment growth are probable after airport improvements occur at many of the system airports. Employment opportunities arise from planning construction, and operation of airport improvements. These increases in the labor force lead to population growth which increases demand for goods and services.

With improvements to local and regional airports, commodity exchange becomes easier and more reliable. New and improved methods of accomplishing traditional tasks such as growing crops or products for manufacturing will further stimulate demand for goods and services.

Much like goods and services, tourism is often linked to transportation improvements. Tourism brings in income in payment for goods and services. It also creates opportunities for employment in the service sector of the economy.

Overall, the proposed action may lead to more economic growth for local economies than the no action alternative since the proposed action includes more improved airport facilities to serve local transportation needs. In addition, the planning, construction and operational costs of improved airport facilities provides for employment opportunities which lead to population growth and ultimately an increase in the demand for goods and services.

While the proposed improvements outlined in the proposed action are likely to produce economic growth, they may have the potential to negatively affect the environment. Federal and state regulations often enforce strict guidelines for natural resources management and mitigation, which is often costly. The following paragraphs explore potential impacts to Wisconsin's natural resources and how state and federal regulations may dictate allowable actions.

9.2.5 Farmlands

According to the report, *The Status of Working Lands in Wisconsin* produced by the University of Wisconsin, Madison in 2008, the state's productive agricultural and forest lands, identified as *working lands*, cover over 21 million acres. These lands are on the decline from loss and fragmentation due to the decreasing profitability of working lands, population growth, increasing land prices and decreasing housing density. Agricultural land decreased at a rate of four percent between 2000 and 2005 while forest land decreased at a rate of one percent. Agricultural use makes up the largest land use (over 45%) in Wisconsin followed by forest (over 35%). Conversion of agricultural land is occurring at a greater rate in three regions of Wisconsin including the southeast, northcentral and northwest portions of the state. The 19 counties in these regions account for nearly 60 percent of the agricultural loss between 2000 and 2005.

In 1984, the federal government passed the Farmland Protection Policy Act (FPPA). The FPPA is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Airport improvements would be potentially be subject to the Agriculture and Food Act of 1981 (Public Law 97-98) containing the Farmland Protection Policy Act (FPPA) subtitle I of Title XV, Section 1539-1549.

Recommendations in both the no action and proposed action have the potential to impact agricultural land that will be acquired by the airports for improvements. These lands are farms that exist



nearby lands that may be impacted by airport improvements. Improvements identified in the no action and proposed action alternatives that have the potential to impact farmlands include runway extensions, parallel taxiways, acquisition of runway protection zones, approach capability improvements and approach lighting. Some airport projects will result in the loss of farmlands.

Dependent upon current land uses, farmland soils will be impacted in several ways by airport improvements. Potential impacts include soil compaction, increased impervious surfaces and increased soil erosion. Utilization of best management practices during construction of airport improvements (BMPs) ensure that soil loss and contamination will be minimal.

Because the proposed action includes more types and quantities of improvements than the no action alternative, it is likely that the proposed action will have more farmland impacts than the no action alternative.

9.2.6 Historical and Archeological Resources

The National Historic Preservation Act of 1966, as amended, establishes the Advisory Council on Historic Preservation and the National Register of Historic Places. Section 106 of the National Historic Preservation Act requires consideration of the effects of undertaking on properties on or eligible for inclusion in the National Register of Historic Places. Compliance with Section 106 requires consultation with the State Historic Preservation Officer if there is a potential adverse effect to historic properties on or eligible for listing on the National Register of Historic Places.

The Wisconsin Archeological Survey (WAS) *Guidelines for Conservation Archeology in Wisconsin* provides guidelines for archeological research conducted in compliance with federal and state historic preservation legislation. This legislation includes Sections 106 and 110 of the National Historic Preservation Act, and Chapters 44.40 and 157.70 of the Wisconsin Statutes.

The improvements recommended in this plan have the potential to impact soils that have not been previously disturbed. Therefore, there is the potential for impacts to archeological resources. In addition, there is the potential that properties on or eligible for listing in the National Register of Historic Places are located on or near system airports and have the potential to be impacted by the recommended improvements.

Because the proposed action includes more types and quantities of airport improvements as compared to the no action alternative, it is likely that the proposed action may impact more previously undisturbed land or properties on or eligible for listing on the State or National Register of Historic Places than the no action alternative.

9.2.7 Noise

Airport noise is measured by the Day-Night Sound Level (DNL) which is the logarithmic average of sound levels in decibels (dB) and is based on a 24-hour Equivalent Sound Level (Leq). DNL (also known as Ldn) has been equated through social surveys with public reactions to different noise levels. DNL values incorporate a 10-dB penalty for noise events occurring between 10:00 PM and 7:00 AM to account for increased noise sensitivity at night. The FAA considers a noise impact would be



significant if an action would cause noise sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe.

The DNL measurement was developed under the direction of the EPA to measure the cumulative impact of multiple noise events in an average day. The U.S. Departments of Housing and Urban Development, Transportation, and Defense recognize it as a proper basis for land use planning around airports. The recognized tool used to predict anticipated DNL coverage for a project, such as that outlined earlier, is the Integrated Noise Model (INM) developed by the FAA.

At most general aviation and smaller commercial service airports, the DNL 65 dB noise contour does not extend off of airport property. Many of the improvements recommended in this plan include improvements that do not result in a change in the number of aircraft operations or type of operations at an airport (i.e. fee or easement acquisition of the runway protection zone, adoption of a land use zoning ordinance, etc.) and thus no changes in noise impacts would be anticipated. However, some improvements recommended in the proposed action do have the potential to increase operations or cause a change in the types of aircraft operating at an airport. Since the proposed action includes a more detailed evaluation of facilities and services at system airports and, as a result, includes more types and quantities of improvements than the no action, the improvements identified in the proposed action may be more likely to increase operations or cause a change in the type of aircraft operating at an airport. Therefore, an increase in noise and impacts may occur as the result of these improvements when compared to the no action alternative.

9.2.8 Sensitive Land and Water Resources

Wisconsin has a diverse ecological landscape due to a variety of influences including glacial geology, topography, climate and aquatic features. Sensitive land and water resources are valuable assets and include undeveloped areas of native plant communities, parks, wetlands, lakes and other aquatic resources associated with Lake Superior and Lake Michigan.

The recommended improvements to Wisconsin's airport facilities have the potential to negatively affect sensitive land and water resources. Federal and state guidelines exist to regulate the loss or degradation of these resources. In situations where a negative effect on sensitive resources is unavoidable, project proponents are required to compensate and mitigate for these losses. WisDOT has many years of experience in resource mitigation and will continue these practices for airport projects, under both the proposed action alternative and the no action alternative.

The following sections describe the current state of Wisconsin's resources, and the potential effects on these resources as a result of airport improvements, for a variety of resources including: water quality, wetlands and surface waters, habitat, rare species and public lands.

9.2.8.1 Water Quality

Wisconsin's waters are an important ecological and economic resource. Water quality standards have been set under Section 303 of the Clean Water Act, and waters that do not meet these standards are considered impaired. Waters may be considered impaired for a variety of designated uses including



fish consumption, swimming, habitat suitability and others. In Wisconsin, there are approximately 15,000 lakes and approximately 84,000 miles of streams and rivers in the state, of which 700 lakes, rivers or streams are considered impaired.

Improvements that create new impervious surfaces may have a negative impact on water quality from increased stormwater runoff. Potential pollutants such as antifreeze, de-icing fluid and salt may affect the quality of nearby waters. Stormwater Management Plans are recommended for all system airports as part of the proposed action (See **Section 5.4.5**). System airports have and will continue to incorporate effective runoff controls to minimize the potential effects on water quality, especially from deicing chemicals in both the proposed action and no action alternatives. The recommendations in this system plan include improvements that increase impervious surface at various airports in each classification.

The scale of potential impacts on Wisconsin's water quality varies based on the type of airport improvements. The greatest impacts would result from projects that increase impervious surfaces including construction or expansion of runways, taxiways or other airport facilities. Other airport improvements such as clearing trees, property acquisition or improving runway safety areas would not likely result in significant negative effects on water quality.

The proposed action contains a more detailed evaluation of facilities and services at system airports and, as a result, includes more types and quantities of improvements than the no action. As such, the potential water quality impacts of the proposed action are more than the no action.

9.2.8.2 Wetlands & Surface Water Resources

Wetlands are defined in federal Executive Order 11990 as follows:

“Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.”

Wetlands in Wisconsin were defined by the State Legislature in 1978. According to this definition, a wetland is:

“an area where water is at, near, or above the land surface long enough to be capable of supporting aquatic or hydrophytic (water-loving) vegetation and which has soils indicative of wet conditions.”

Wetlands are important ecological systems that provide habitat for a broad range of flora and fauna, including rare and sensitive species. Additionally, wetlands provide water storage to mitigate flooding and act as buffers to improve water quality. The Wisconsin DNR estimates that over half of the state's 10 million acres of pre-settlement wetlands have been lost. The federal government adheres to a “no net loss” policy, requiring that wetland losses be mitigated by creating wetland of equal or greater quality elsewhere. Improving Wisconsin's airport facilities as recommended in this plan, would require additional development and construction activities that would likely cause impacts to wetlands. These impacts could include draining, filling or changing the type of existing wetlands. Wetland avoidance and minimization measures, such as relocating a proposed project away from wetland areas, may not always be possible while at the same time adhering to FAA design standards. Furthermore, on site wetland mitigation



increases habitat for waterfowl and other wildlife that could pose hazard to aircraft. However, projects must still meet “no net loss,” and this is typically accomplished by creating wetland off site or purchasing wetland credits from a previously established wetland bank according to the DOT-DNR Cooperative Agreement and the Wetland Mitigation Banking Technical Guideline.

The scale of potential wetland impacts varies based on the type of airport improvements. Airport improvements such as construction of new runways, taxiways or improving runway safety areas would likely impact more wetlands than improvements such as airfield lighting upgrades, weather reporting facilities, and terminal building services. In general, commercial service airports and large general aviation airports are located in more developed areas with fewer existing wetlands.

The proposed action contains a more detailed evaluation of facilities and services at system airports and, as a result, includes more types and quantities of improvements than the no action. As such, the potential wetland impacts of the proposed action are more than the no action.

9.2.8.3 Habitat

Habitats are environments inhabited by animals and plants. The native ecological plant community, presence of invasive species and size of the contiguous habitat all affect a habitat’s quality. Typical habitat impacts include fragmenting large areas of native habitat, degrading quality or otherwise impacting existing habitat and introducing non-native invasive species into native habitats. Implementing the improvements recommended in the proposed action may require development in native areas and may have an impact on plant and wildlife habitat.

The scale of impacts to habitat is directly related to the footprint of proposed construction in natural areas surrounding existing airports. Improvements to existing facilities in mowed or currently paved areas would not likely have significant habitat impacts, whereas improvements to instrument approach minimums, construction of new or longer runways or taxiways could cause more extensive impacts to habitats. Commercial service airports and large general aviation airports are generally located in more developed areas. Old field or prairie communities may exist within the airport environment, but it is likely that any native habitats have been impacted during previous airport construction activities. However, habitat impacts may still occur as a result of the proposed action improvements at commercial service and large general aviation airports. Medium and small general aviation airports are more commonly located in rural areas and generally require more improvements that impact native habitat. Improvements to medium and small general aviation airports such as runway extensions, instrument approach improvements and taxiways would likely cause impacts to native habitat.

Because the proposed action includes more types and quantities of improvements than the no action alternative, the footprint of impacts for the proposed action is higher when compared to the no action. Therefore, the potential for habitat impacts is higher with the proposed action than the no action alternative.

9.2.8.4 Threatened and Endangered Species

Wisconsin is home to over 100 threatened and endangered species of animals and approximately 130 species of plants. Species are listed as threatened and endangered for a variety of reasons including habitat loss, habitat degradation, competition with invasive species or simply because they are on the edge of their



native home range. The Wisconsin DNR manages the state's endangered and threatened species program.

The greatest threat to threatened and endangered species is habitat loss or degradation. As discussed previously in the habitat section, the scale of impact to threatened and endangered species as a result of improving system airports depends on the size of the footprint to native habitat in which threatened and endangered species may exist. The Wisconsin DNR manages a state Natural Heritage Inventory which documents the location of threatened and endangered species statewide. The extent of native plant communities impacted by airport improvement projects is often minimal. Nevertheless, native plant communities and threatened and endangered species may be impacted by the improvements outlined in the proposed action.

Similar to the habitat impacts discussed in **Section 9.2.8.3**, the footprint of impacts from the proposed action is larger than the no action alternative. Therefore, the proposed action may impact higher amounts of threatened and endangered species than the no action alternative.

9.2.8.5 Public Lands

Public lands in Wisconsin include over 2.5 million acres local and county parks; approximately 1.5 million acres of state lands including parks, forests, trails, wildlife management areas and other natural areas; and approximately 2.5 million acres of federal lands including wildlife refuges, national forest land, and national park land. Two agencies, the Board of Commissioners of Public Lands (BCPL) and the Department of Natural Resources (DNR), manage state public land, and two agencies, the National Park Service and the Forestry Service, manage federal public land.

Public lands are valuable recreational, aesthetic and economic resources, and impacts to public lands should be minimized. Section 4(f) legislation was established under the Department of Transportation (DOT) Act of 1966 (now codified at [49 USC 303](#), and [23 USC 138](#)) and provides protection for publicly owned land in public parks, recreation areas, or wildlife and waterfowl refuges of national, state or local significance, or lands from an historic site of national, state or local significance. Any part of a publicly owned park, recreation area, refuge or historic site is presumed to be significant unless there is a statement of insignificance relative to the whole park by the federal, state or local official having jurisdiction thereof. Section 6(f) of the Land and Water Conservation Fund Act (16 USC, Section 4601) prevents conversion of lands purchase or developed with Land and Water Conservation Fund Act funds to non-recreational uses.

The improvements outlined in the proposed action have the potential to impact public lands. Projects such as acquiring fee/easement ownership of the runway protection zone, runway extensions, and approach improvement may impact public lands that surround airports.

Because the proposed action includes more types and quantities of improvements than the no action alternative and the improvements identified in the proposed action may impact areas outside of airport property, the proposed action may impact more public lands than the no action alternative.

9.2.9 Indirect Effects

Indirect effects include those impacts from potential future actions that may occur as a indirect result of the proposed action. It is likely that indirect impacts outside of those addressed in this chapter may occur in relation to the improvements presented in the proposed action. These indirect



effects are often difficult to establish. Indirect effects from airport improvements can be either positive, negative or a combination of both.

Major development projects often involve the potential for induced or indirect impacts on surrounding communities. These indirect impacts may involve shifts in population, changes in economic climate or shifts in levels of public service demand. Assessment of socioeconomic impacts is typically associated with major development at commercial service airports that involve terminal building development, major roadway alignments and similar work. The potential for indirect effects exists for both the proposed action and the no action alternatives.

The potential for indirect effects is greater with the proposed action than with the no action alternative, since the proposed action evaluates and includes recommendations for more facilities and services than the no action. Indirect effects, as with all other resources, will be evaluated with each individual project and avoided or minimized where possible and mitigated when necessary.

9.2.10 Cumulative Effects

Cumulative effects include the additive, multiplicative or synergetic consequences of transport activities. Based on the potential direct and indirect effects discussed, water quality, wetlands, endangered and threatened species, agriculture and air quality have the greatest potential for cumulative impacts from the proposed action.

The potential for cumulative effects is greater with the proposed action than with the no action alternative since the proposed action evaluates and includes recommendations for more facilities and services than the no action. Cumulative effects, as with all other resources, will be evaluated with each individual project and avoided or minimized where possible and mitigated when necessary.

9.3 Selected Alternative

The proposed action, adoption of the State Airport System Plan 2030, was selected as the preferred alternative. The no action, continued use of the unrevised SASP, was not selected as it no longer accurately represents the facilities, activity levels and services currently provided by the Wisconsin Airport System.

As previously discussed, the SEE is a broad level analysis of the system plan and implementation of individual improvements identified in the plan will require environmental review under WEPA and potentially NEPA. Public involvement, interagency coordination and consultation, and a systematic interdisciplinary approach to the analysis will be considered in the implementation of the system plan and individual improvements recommended in the plan. For all resources, BOA is committed to avoiding and minimizing losses where possible and also for mitigating losses where necessary.

