Issue Identification

As part of the development of MASP 2008, the study team, including members of MDOT and the Steering Committee, examined issues affecting air transportation in Michigan. The results of that examination are summarized below.

Preservation of Endangered Airports

Currently, there are 235 public-use airports in operation throughout Michigan. At any given time, several of these facilities are under pressure from local officials and/or developers to close and be converted to an alternate use. Pressure is most often exerted on small general aviation airports operating in, or adjacent to, their service communities. This is a particular concern to airports operating in southeast Michigan, where additional airport closures would threaten overall regional capacity.

Generally, public-use airports, from a preservation perspective, fall into one of four categories:

- The airport is the only public-use facility serving the area and should be preserved because of the access it provides to the community and access to outside services.
- The airport is in an area where regional capacity is stressed and the airport needs to be preserved to assure continued regional capacity.
- The airport relieves demand on a larger airport by allowing lower performance aircraft to utilize a smaller facility. At busy airports, a mix of slower and faster aircraft adversely impacts operational capacity. Preservation of a smaller airport that would provide an alternative to a very busy airport would benefit both types of aircraft operations.
- The airport duplicates service that is already provided by another airport in reasonable proximity. Where a community is served by more than one airport, care should be taken to assure the continued operation of the airport that is best suited to respond to the current and ultimate aviation needs of the community.

Emerging Aviation Technologies

National projections show that air traffic volume will double by the year 2025. The FAA estimates that present national air system capacity will reach maximum by 2015. To handle demand and improve operational capacity, the FAA has implemented the "Next Generation Air Transportation System," (NextGen) as authorized by Congress in 2003 in the VISION 100, "Century of Aviation Reauthorization Act" (P.L. 108-176). The goal of NextGen is to implement new technologies, such as satellite-based navigation, surveillance, and networking to safely and efficiently improve operational capacity at the nation's airports and to be responsive to evolving business models utilizing aviation transportation.

Two of these technologies are now being implemented, both of which have received FAA funding. First, the "Automatic Dependent Surveillance Broadcast" is a satellite-based system that will allow the controller, the pilot, and other aircraft to see the same information at the same time, thereby offering significant safety and efficiency

improvements over traditional land-based radar systems. Secondly, the "System-Wide Information Management" is part of implementing NextGen's network-enabled operations. This system will link information of all kinds (position, weather, restricted airspace notices, et cetera) to all relevant users in the system.

Beyond the NextGen initiatives, projected development of Very Light Jet (VLJ) aircraft could significantly expand the availability of charter jet service to general aviation airports with runway lengths of approximately 3,000 feet. Some analysts project that VLJs could compete as an alternative to commercial air travel. Assuming VLJ service becomes more widely available over the next decade, some general aviation airports may choose to make jet fuel and other services available to accommodate this market. Widespread availability of VLJs as an air-taxi alternative to commercial airline regional and hub service will depend on low cost projections and high demand to become a reality. These uncertainties keep the future viability of VLJs an open question among aviation experts.

Early on in developing the MASP 2008, discussions were held on the feasibility of adopting a facility goal for promoting statewide availability of jet fuel at all airports having a minimum runway length of 4,000 feet. This discussion resulted in a decision not to set a statewide goal for fuel availability because, 1) it is difficult to predict the demand for jet fuel at specific airports of this size; and 2) on-site jet fuel at locations where no regular demand develops could result in significant economic hardship to airport operators and environmental impacts that result from the need to dispose of unused fuel stored beyond its useful life. It was determined that a better strategy would be to monitor increased demand for jet fuel in annual programming meetings between MDOT, Bureau of Aeronautics and Freight Services, staff and local airport sponsors and thereby plan for availability of this fuel as demand develops in various areas of the state.

Airport Security

The September 11, 2001 attacks on America focused increased national and international attention on airport security issues, particularly on the security of passengers boarding larger commercial aircraft. Airports of all sizes play a central role in interstate commerce and national economic activity. Airport security policy requires broad national uniformity. Government policy and planning for increased airport and aviation security is an important area for federal action and leadership. The federal Transportation Safety Administration has established a nationwide program for air passenger screening and airport perimeter security at commercial service airports.

States and individual airport facilities may also play a role in promotion of security-related activities. Following the September 11, 2001 attacks, a variety of Michigan-based professional aviation organizations, including the Michigan Association of Airport Executives and the General Aviation Committee of the MAC, met to discuss issues and possible actions to improve security at the state's general aviation airports. The consensus view resulting from these discussions was that increased vigilance for unusual or suspicious activity, and consistent reporting by airport staff and aircraft operators, was the single most effective security measure to be undertaken by the aviation industry at the state level.

The MASP core team (MDOT Aeronautics and Planning staff) carefully evaluated the potential for adding a specific goal to install airport perimeter fencing at selected facilities statewide. Initially, the intention was to target fencing to address two separate security issues: 1) prevention of animal incursion onto airport runways; and 2) reduction in likelihood of incursions onto airport property by unauthorized persons. After careful consideration, the core team concluded that attempting a blanket statewide policy goal for perimeter fences would be counterproductive, because 1) the incidence of animal incursion varies widely, depending on locality; and 2) determinations of likelihood of unauthorized incursions onto airport property and the general status of security measures at individual facilities can more properly be assessed on a case-by-case basis due to the unique features and characteristics of each facility. Accordingly, it was determined that careful annual assessment of individual airport fencing needs should more properly be addressed in annual programming meetings conducted by MDOT Bureau of Aeronautics and Freight Services staff with individual airport sponsors.

Preservation of Airport Infrastructure

MDOT's emphasis on maintaining the integrity of pavement at airports throughout Michigan should continue. As pavement ages, more and more funding resources are being focused on preservation efforts. In 2006, MDOT authorized a three-year agreement with AP Tech, Inc. to survey and evaluate the pavement condition of 80 airports. The resulting data will provide the department and local airport sponsors with the information needed to assist in management of pavement life and the appropriate timing of pavement rehabilitation/reconstruction actions. With the release of the MASP 2008, AP Tech is in the final year of its three-year contract. MDOT intends to renew this program indefinitely and will enter another consultant selection process in the fall of 2008.

Access to Population Centers

Significant population centers generate and attract a wide range of general aviation operations, including flights for business, freight, cargo, medical emergencies, search and rescue, law enforcement training, et cetera. The presence of a year-round general aviation facility to serve these needs is an essential component of a well-rounded, full-service community.

Access to Business Centers

Significant economic and manufacturing production centers require a wide range of transportation facilities to respond to product and people-moving needs. Airports can respond to product movement needs by permitting the rapid, timely movement of parts and products critical to economic vitality. Timely movement of executives, key personnel, and clients between production centers also can be accomplished through development of general aviation airport facilities that provide a full range of services.

Access to Tourism/Convention Areas

In Michigan, the tourism and convention industry is a four-season, rapidly expanding component of the state's overall economic well-being. Access to tourist and convention areas, not only from within Michigan but also from throughout the midwest and the nation, can be effectively provided through properly developed airport

facilities. In a number of locations, primarily in northern Michigan and in shoreline communities, the local area is as dependent on the tourism/convention industry as the Detroit area historically has been on the automobile industry.

Access to Isolated Areas

There are seven populated Great Lakes islands, that for at least a portion of the winter months, are without ferry service and, consequently, seasonally isolated. During these periods, air transportation provides the only reliable access between the mainland and the island. Island populations are dependent on aviation to provide emergency and other essential access. In 1996, both the Michigan State Transportation Commission and the MAC adopted an Island Transportation Policy. Islands affected by this policy include Beaver, Bois Blanc, Drummond, Harsens, Mackinac, Neebish, and Sugar.

Compatible Land Use and Zoning

Historically, airports were developed in rural areas near the communities they serve. Over time, urban development has grown out to the airport environs, often resulting in commercial and residential land use not ideally compatible with airport operations and raising concern regarding safety and noise. Effective local zoning can help prevent such problems by adopting reasonable and enforceable standards that include compatible land use near airports. To that end, the state provides that the MAC may adopt an airport approach plan, which includes compatible land use near airports, for each public-use airport. These airport approach plans will be provided to each affected (zoned) municipality to be included in their master plan. Each publicly owned airport may also adopt its own zoning guidelines. These plans also will be included in the community's master plan. Zoning decisions are the responsibility of the local government and local airport zoning board.

Interface with Other Modes of Transportation

Rather than viewing an airport as the beginning or ending point of a trip, an airport should be viewed as a transfer point from one mode of transportation to another. The efficient and effective movement of people and goods is dependent on an appropriately developed airport, appropriate access to the airport, and efficient transfer from surface mode to air mode. At the most demanding airports, this may entail highways that can accommodate significant traffic volumes, public transportation services, and significant passenger and cargo movements. A variety of access enhancement actions may be appropriate, ranging from infrastructure improvements to traffic control devices.

All-Weather Airport Access

During periods of low clouds and reduced visibility, an airport can only be used with the aid of instruments that allow flight through poor weather conditions. By using Instrument Flight Rules, a pilot can fly an aircraft when cloud ceilings and visibility limits do not allow flight by visual means.

The precision of the navigational landing aids, both in the cockpit and on the ground, determines the minimum altitude and visibility a pilot can encounter safely in order to see and land. The higher the minimums, the more frequently a pilot has to divert to an alternate airport during periods of adverse weather conditions. An airport's

utility to the business community, as well as other users, is enhanced by increasing the precision of the navigational landing aids available. In Michigan, this is particularly important since the Great Lakes often influence weather conditions that impact aircraft operations. With that in mind, the MAC, in 1999, adopted an All Weather Airport Access Plan. Features of the plan are incorporated into the MASP 2008.

Airport Services

The range of service provided at airports varies significantly. Basic aircraft services include fuel, aircraft repair, and hangar facilities available during normal business hours. Basic pilot services include telephone, restrooms, and access to shelter.

MI Transportation Plan

MI Transportation Plan identifies key goals and strategies to support the essential role of transportation in Michigan's economy. Part of the MI Transportation Plan process was the development of a variety of technical reports, including an Aviation Technical Report. The report identifies several aviation-related segments that directly contribute to Michigan's economic performance. Key segments included are: recreational, business, charter, and on-demand shipping. As stated in the Aviation Technical Report, "In order to support the state's economic vitality, Michigan's transportation system must ensure the aviation system provides seamless and complete access to key activities." Key activities include the provision of high-value economic services, business hospitality, recreation, just-in-time inventory systems, and other supply chain activities. All key activities are directly supported by Michigan's aviation system.

In developing the MI Transportation Plan, MDOT sought extensive public involvement from stakeholders from a wide variety of organizations representing both providers and consumers of transportation services, including aviation services. MDOT met and discussed transportation issues and developed the following four statewide transportation goals, which have since been adopted by the State Transportation Commission:

1. **Stewardship**: Preserve transportation system investments, protect the environment, and utilize public resources in a responsible manner (previously Environment and Aesthetics; Preservation; Land Use Coordination; Moving into 21st Century).
2. **System Improvement:** Modernize and enhance the transportation system to improve mobility and accessibility (previously Basic Mobility; Service Coordination; Intermodalism; Moving into 21st Century).
3. **Efficient and Effective Operations:** Improve the efficiency and effectiveness of the transportation system and transportation services and expand MDOT's coordination and collaboration with partners (previously Service Coordination; Land Use Coordination; Basic Mobility; Intermodalism; Moving into 21st Century).
4. **Safety and Security:** Continue to improve transportation safety and ensure the security of the transportation system.

In addition to the aforementioned goals, the MI Transportation Plan identifies the following six key strategies to help achieve Michigan's transportation goals:

1. **Focus Improvements on Corridors of Highest Significance:** In order to be an appropriate steward of the public trust and make the most effective use of limited transportation revenue, MDOT will focus on improvement to the condition and efficient operation of multimodal corridors of highest significance to the Michigan economy.
2. **Measure Performance for all modes:** MDOT will set goals for highway condition and operation safety, and set goals for condition and performance of other transportation modes, by establishing targets, measuring performance, and investing appropriately to achieve improvement.
3. **Integrate the Transportation System:** The public has expressed a wish for more modal choices. Michigan must plan and invest now to ensure a greater array of well-connected transportation options.
4. **Encourage Context Sensitive Solutions:** MDOT will engage in dialogue with local entities and groups to ensure that transportation projects "fit into local communities," including consideration of community values, while making sound design choices that follow federal standards and meet or exceed regulatory requirements. Stakeholder input is a key component for good transportation decision-making.
5. **Avoid, Minimize or Mitigate for Adverse Impacts:** MDOT will work closely with federal, state, and local agencies and groups, from the initial stages of planning, to ensure appropriate stewardship and preservation of Michigan's cultural and natural resources.
6. **Identify Appropriate Funding:** Current transportation revenue projections over the next 30 years are not sufficient to sustain good conditions of highways and bridges, or to improve operations, integration among modes, or the performance of non-highway modes. The public supports new and innovative transportation funding solutions, as necessary, but a new focus on operations and integrated transportation will help move Michigan closer to its goals regardless of the level of funding.

MASP Goals

The MASP goals established in MASP 2008 continue to reflect the ongoing direction of aviation and airport service needs in Michigan. These goals are closely aligned with the above transportation goals and strategies established in MDOT's MI Transportation Plan.

The MASP 2008 goal statements can be divided into "system goals" and "facility goals." System goals relate to the capability of system airports to respond to the air transportation needs of Michigan's residents, visitors, and the business community. Facility goals relate to the establishment of minimum airport development standards that adequately describe essential airport facility characteristics.

Serve Significant Population Centers

Provide service to significant population centers through year-round general aviation facilities. This goal directly facilitates the MI Transportation Plan goals for System Im-

provement and Safety and Security, and is supported by the key strategy of focusing improvements on the Corridors of Highest Significance.

Serve Significant Business Centers

Support an airport system that adequately and effectively responds to the critical business aviation needs of the state. This goal also directly facilitates the MI Transportation Plan goals for System Improvement and is supported by the key strategy of focusing improvements on the Corridors of Highest Significance.

Serve Significant Tourism/Convention Centers

Support an airport system that adequately and effectively responds to the significant tourism/convention aviation needs of the state. This goal also directly facilitates the MI Transportation Plan goals for System Improvement and is supported by the key strategy of focusing improvements on the Corridors of Highest Significance.

Provide the General Population Access to the Aviation System

Preserve and develop the system of airports necessary to respond to basic aviation needs of the general population. This goal directly facilitates the MI Transportation Plan goal for Stewardship and is supported by the key strategy of integrating the transportation system.

Provide Adequate Land Area Coverage

Preserve and develop the system of airports necessary to provide basic land area coverage. This goal directly facilitates the MI Transportation Plan goals for System Improvement, Safety and Security, and Efficient and Effective Operations, and is supported by the key strategy of integrating the transportation system.

Preserve Regional Capacity

Preserve adequate airport capacity in each region of the state to assure continued, effective air transportation. This goal directly facilitates the MI Transportation Plan goals for System Improvement, Safety and Security, and Efficient and Effective Operations, and is supported by the key strategies of focusing improvements in Corridors of Highest Significance and integrating the transportation system.

Serve Isolated Areas

Support aviation facilities capable of providing essential transportation services during times of the year when other transportation modes are unavailable to isolated areas. This goal directly facilitates the MI Transportation Plan goals for System Improvement, and Safety and Security, and is supported by the key strategy of integrating the transportation system.

MASP Facility Goals

Primary Runway System

Tier 1, Tier 2, and Tier 3 category airports should have a complete primary runway system, including a paved runway of appropriate length and width, and a parallel taxiway, if warranted by activity level or other standards. This goal directly facilitates the MI Transportation Plan goals for System Improvement, Safety and Security, and Efficient and Effective Operations and is supported by the key strategy of focusing improvements in Corridors of Highest Significance.

Pavement Condition

Tier 1, Tier 2, and Tier 3 category airports should have pavement in their primary runway system in good or better condition. This goal directly facilitates the MI Transportation Plan goals for System Improvement, Safety and Security, and Efficient and Effective Operations, and is supported by the key strategy of focusing improvements in Corridors of Highest Significance.

Lighting and Visual Aids

Tier 1, Tier 2, and Tier 3 category airports should have appropriate runway edge lighting systems and visual aids, including a rotating beacon, Precision Approach Path Indicator (PAPI) lights, Runway End Identifier Lights (REIL), a segmented circle, and lighted wind indicator.

Approach Protection

Tier 1, Tier 2, and Tier 3 category airports should have a current approach protection plan, approved by the MAC, filed with the appropriate local authorities.

Basic Pilot and Aircraft Services

Tier 1, Tier 2, and Tier 3 category airports' basic services should include a 24-hour accessible shelter, a telephone, a restroom, fuel, and aircraft parking. Tier 1 and Tier 2 category airports should also include aircraft maintenance and airport staff availability. This goal facilitates the MI Transportation Plan goal for System Improvement.

All-Weather Access

Tier 1 and Tier 2 category airports should be accessible in all types of weather conditions. Every airport should have an appropriate, published Instrument Approach Procedure, an Automated Weather Observation System (AWOS), and a weather briefing system for pilots. This goal directly facilitates the MI Transportation Plan goals for System Improvement, Safety and Security, Efficient and Effective Operations, and is supported by the key strategy of integrating the transportation system.

Year-Round Access

Tier 1 and Tier 2 category airports should be open throughout the year. Each airport should have timely snow removal capabilities and a primary runway that is unaffected by spring thaw conditions. This goal facilitates the MI Transportation Plan goals for system improvement and safety and security, and is supported by the key strategy of integrating the transportation system.

Landside Access

Tier 1 and Tier 2 category airports should have at least one mode of landside transportation service between the airport and the surrounding community, whether those services are made available by private firms or public transportation systems. This goal directly facilitates the MI Transportation Plan goals for System Improvement, Safety and Security, and Efficient and Effective Operations, and is supported by the key strategies of integrating the transportation system and focusing improvements on Corridors of Highest Significance.

Relationship between MASP Goals and MI Transportation Plan Goals

The correlation between the MI Transportation Plan goals and the goals of the MASP, System and Facility Goals, are displayed in Table 8. This link clearly shows that system preservation and service to business and tourism/convention centers should have a high emphasis throughout the plan.

Table 8

Relationship of MASP Goals to MI Transportation Plan Goals

MASP Goals	MI Transportation Plan			
	Stewardship	System Improvement	Efficient/Effective Operation	Safety and Security
MASP System Goals				
Preserve General Population Access/Land Coverage	H	H	H	H
Preserve Regional Capacity	H	H	H	M
Serve Population Centers	H	H	H	H
Serve Business & Tourism/Convention Centers	H	H	H	M
Serve Isolated Areas	H	M	H	H
MASP Facility Goals				
Primary Runway System	H	H	H	H
Pavement Condition	H	H	H	H
All Weather Access	H	H	H	H
Year-Round Operation	H	H	H	M
Pilot Services	H	H	H	M
Lighting and Visual Aids	L	M	M	H
Approach Protection	L	M	M	H
Airport Zoning	H	M	M	M
Landside Access	H	H	H	M

Notes: "H" indicates a high linkage between MASP and MI Transportation Plan.
"M" indicates a moderate linkage between MASP and MI Transportation Plan.
"L" indicates a low linkage between MASP and MI Transportation Plan.