

Funding Michigan's Aviation Needs 2009-2030

Public Act 221 of 2007

Citizens Advisory Committee
Aviation Subcommittee

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Executive Summary

As we move into the second century of flight, Michigan must intensify our efforts to build a safe, modern, and innovative air transportation system. To realize this vision, we must capitalize on this opportunity to establish reliable, flexible, and sufficient funding sources that respond to the economic development and job creation needs of the state.

The current system for funding airport development and addressing aviation needs is antiquated and dangerously unresponsive to modern demands. As air transportation has evolved from the sands of Kitty Hawk to the far reaches of outer space, the State of Michigan continues to rely on funding mechanisms and tax rates that remain unchanged after nearly 80 years. In fact, the base rate for our primary funding mechanism, the aviation fuel excise tax, has never been adjusted and remains at 3¢ per gallon. The only change to the excise tax on aviation fuel was a 1.5¢ per gallon *refund* to interstate airlines which was instituted in 1945. The result has been a decline in aviation fuel tax revenues even before indexing for inflation.

We have before us a unique opportunity to transform the way we invest in our aviation infrastructure to assure that we continue to address not only our transportation needs but those of future generations. As outlined in **Public Act 221 of 2007**, the Transportation Funding Task Force (TF2) and the Citizen's Advisory Committee (CAC) are tasked with reviewing strategies to replace or supplement state motor fuel taxes and other revenue-generating sources. To that end, the Aviation Subcommittee of the CAC has set about quantifying needs, suggesting alternative funding mechanisms, and developing recommendations (contained in the full report).

Quantifying Needs

As the Subcommittee concurred with the methodology behind the recently completed State Long Range Transportation Plan, this document served as the baseline for needs determination. Needs were also quantified through 2030 to maintain consistency with the SLRTP.

Furthermore, to maintain uniformity with the parallel efforts of other CAC Subcommittees, three funding scenarios were developed.

The first scenario entitled "**Do Nothing**," reflects a stagnation of aviation and airport development programs and a annual loss of an estimated \$16 million in federal funding.

Under the "Do Nothing" scenario, our failure to address basic infrastructure and service needs will lead to a degraded airport system in need of major rehabilitation within the near future. In fact, if forced to abandon our preventative maintenance programs, the average airport pavement would require major rehabilitation as soon as 2012. This is unacceptable for a transportation mode that, by design, allows much lower tolerance for poor pavement condition. In addition, it is likely that cessation of our air service program may contribute to the elimination of service at one or more of our air carrier airports. Crucial aviation safety programs will also be terminated or reduced in scope.

Next, a "**Good**" scenario was examined which allows for a modest increase in funding and a partial reinstatement of previously curtailed or eliminated programs. In addition, all the backlogged aviation infrastructure needs, outlined in the State Long Range Transportation Plan, are addressed. However, some of the State/Local programs, such as the Air Service Program, will be funded at only half the amount needed to truly preserve air service in light of the existing turmoil in the airline industry.

The "Good" alternative also establishes a long sought after, and desperately needed, Aviation Economic Development Fund to rapidly address aviation-related job creation and economic development initiatives. In order to meet the goals under this scenario, \$42 million in additional state funding would be required.

A "**Better**" scenario is the third alternative quantified by the Subcommittee. As with the "Good" scenario above, all backlogged aviation infrastructure needs are met. In addition, funding for previously ineligible, but necessary, capital projects would be available. These would include improvements to intermodal connectivity, precision instrument approaches (to allow landing in poor weather), general aviation terminals, and other necessary improvements. Under this "Better" scenario, it is assumed that we will be able to fully meet all of the goals outlined in our primary asset management guidance document, the **Michigan Aviation System Plan**. To meet the needs outlined in this scenario, an additional \$76.1 million in annual state funding would be required.

The ultimate or "**Best**" scenario, while not defined numerically, would provide efficient, seamless, and cutting-edge transportation services to

Michigan citizens. Flexible and adequate revenue sources would be required to meet this challenge. Under a "Best" scenario, the state would act in a proactive fashion to address forecast needs. Michigan would be positioned to lead the nation or, perhaps, the world in innovative aviation programs and facilities. Design specifications for our infrastructure would no longer be constrained by funding that only allows short-term fixes to our runways, taxiways, and other capital needs.

Funding Options

After quantifying needs, the Subcommittee examined various funding options that would address the shortfalls presented by the "Good" and "Better" funding scenarios.

While federal funding remains the primary funding source for the majority of the airport capital projects, the primary charge of the CAC and TF2 was to identify funding needs and examine alternatives to state funding mechanisms. However, proposed alternatives must place particular emphasis on ensuring maximum leverage of federal dollars. This is particularly important as, under the federal Airport Improvement Program, every dollar of state investment can leverage up to \$38 in federal funding.

A number of state revenue sources provide funds to address the administrative and capital requirements of Michigan's aviation programs. Primary among those sources is the aviation fuel tax which constitutes approximately 80% of the State Aeronautics Fund (SAF). By statute, the SAF is the repository of aviation-related revenue. Other sources of revenue include: aircraft registration, airport licensing, aircraft dealer licensing, and federal reimbursement for airport inspection.

After consideration of various funding options and recommendations for improvement, the Subcommittee focused on alternatives that would address both program administration costs and projected funding shortfalls under the above scenarios. The funding options are detailed in Table 7 and Appendix E.

Conclusion

As home to the world's first paved airport and mass-produced all-metal airliner, Michigan has a rich history of aviation innovation. In that spirit, we must consider new funding methods to address our state's aviation system needs. Continuing with "business as usual" will invite a degradation of our airport infrastructure and negatively affect job creation, economic development, and quality of life.

Despite the current funding challenges, Michigan continues to offer one of the most complete and well-planned aviation systems in the nation. This didn't occur by accident but rather by a commitment of the state to maintain an active role in planning and overseeing aviation development. This commitment is evidenced by the state's decision to become a "block grant" state. One of only 9 block grant states in the nation, this classification enables state -not federal- control of airport planning, programming, and development.

As the global economy continues to challenge our ability to adapt and compete, Michigan must seize the opportunity to ensure a cohesive and integrated aviation system that, when properly funded, will be responsive to the needs of our citizenry.

Public Act 221 of 2007

Citizens Advisory Committee *Aviation Subcommittee*

Subcommittee Members

William Gehman (Chairman)

Linda Atkinson

Daniel DeGraaf

Michael Fikes

James Koslosky

Keith Ledbetter

Sylvester Payne

Kirk Steudle

Robert Struck

Representing

Michigan Business Aviation Association

General Public

Michigan Concrete Paving Association

Michigan Building and Construction Trades Council

Michigan Association of Airport Executives

Michigan Infrastructure and Transportation Association

Michigan Public Transit Association

Michigan Department of Transportation

Michigan Association of Counties

MDOT Support

Rob Abent

Matthew Brinker

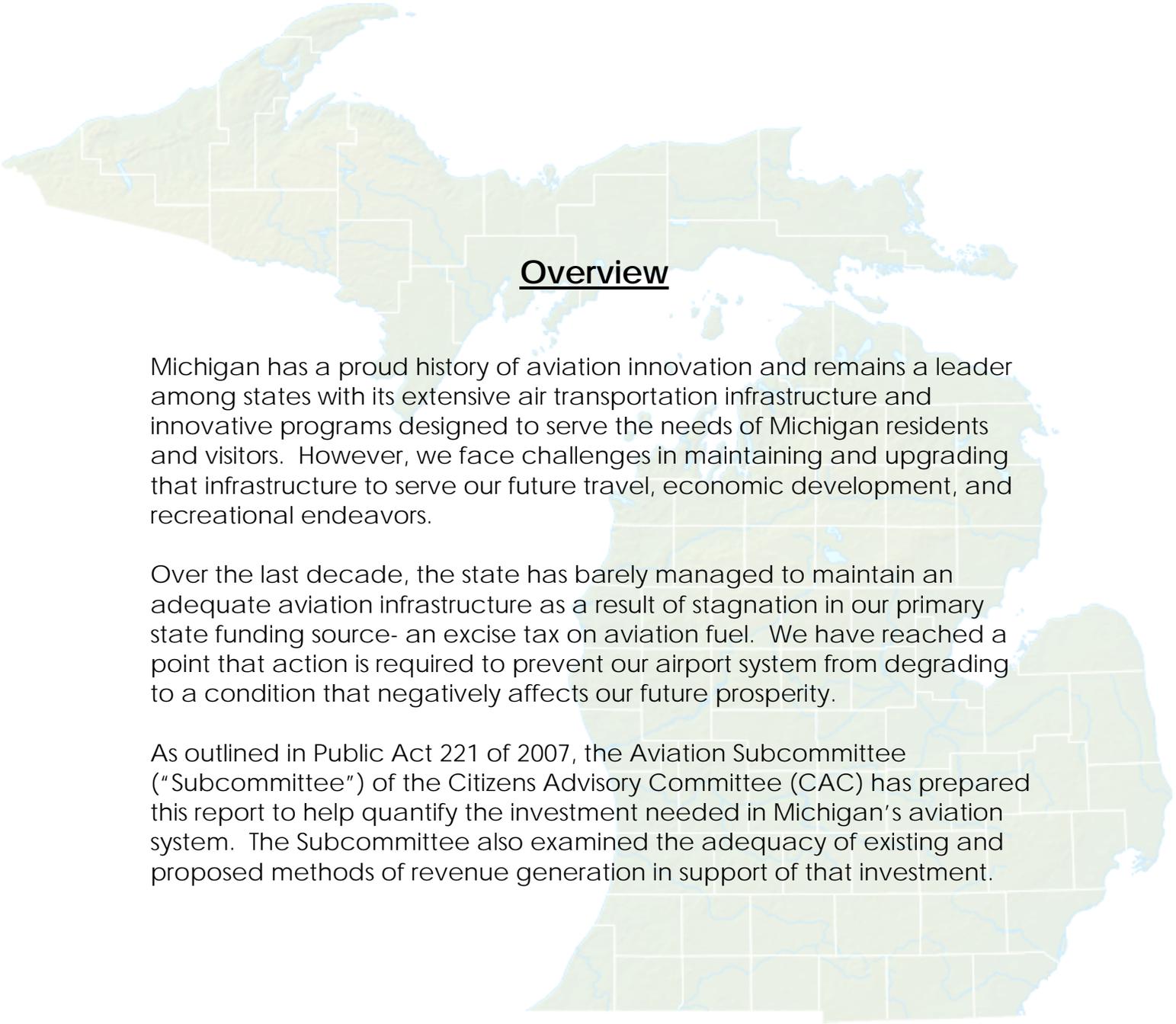
Chris Hundt

Representing

Bureau of Aeronautics & Freight Services

Bureau of Aeronautics & Freight Services

Bureau of Transportation Planning



Overview

Michigan has a proud history of aviation innovation and remains a leader among states with its extensive air transportation infrastructure and innovative programs designed to serve the needs of Michigan residents and visitors. However, we face challenges in maintaining and upgrading that infrastructure to serve our future travel, economic development, and recreational endeavors.

Over the last decade, the state has barely managed to maintain an adequate aviation infrastructure as a result of stagnation in our primary state funding source- an excise tax on aviation fuel. We have reached a point that action is required to prevent our airport system from degrading to a condition that negatively affects our future prosperity.

As outlined in Public Act 221 of 2007, the Aviation Subcommittee ("Subcommittee") of the Citizens Advisory Committee (CAC) has prepared this report to help quantify the investment needed in Michigan's aviation system. The Subcommittee also examined the adequacy of existing and proposed methods of revenue generation in support of that investment.

Aviation in Michigan

As a result of its large size and unique peninsular geography, Michigan relies on a comprehensive aviation system that includes:

- ❖ *235 Public-use Airports*
- ❖ *18,600 Active Pilots*
- ❖ *7,800 Registered Aircraft*
- ❖ *30 Scheduled Airlines*
- ❖ *6 Aircraft Manufacturers*
- ❖ *131 Aircraft and Component Repair Stations*
- ❖ *6 Military Aviation Facilities*

Economic Impact of Michigan's Airports

In 2006, approx. 56 million passengers used Michigan airports including 40 million airline passengers and approximately 16 million general aviation passengers. In that same year, approximately 1 billion pounds of air cargo moved via Michigan's airport system.

As evidenced by recent economic impact studies at the state's largest passenger and cargo airports, Michigan airports offer a substantial economic impact (Appendices A & B). This is true not only because of job creation and income generation but also because of their role as gateways to global markets. These facilities provide a link to what has become an increasingly integrated world economy.

Adequately addressing airport infrastructure needs also aids in economic development by recruiting or retaining businesses that rely on corporate aircraft. For example, the major runway extension project at Southwest Michigan Regional Airport (Benton Harbor) has become a fundamental part of the effort to keep Whirlpool Corporation headquartered in the community.

In addition, supporting the needs of overnight package delivery services by developing air cargo hubs is essential to, not only ensure success in retaining cargo airlines, but also for the myriad economic benefits they make possible to manufacturing and service industries. This is also true for the non-hub airports that feed into those hubs as they provide local communities a link to national and international commerce.

Detroit Metro Airport

Serving nearly 36 million passengers in 2007, Detroit Metro handles more passengers than any other Michigan Airport. The airport also ranks 12th in the US and 22nd in the world.

Not surprisingly, the airport creates an enormous economic benefit for the entire State of Michigan including:

- ❖ Over \$7.6B in annual demand for goods & services
- ❖ Over \$2B in annual income for state residents
- ❖ Over 70,000 jobs for state residents

Willow Run Airport

As the state's largest dedicated cargo airport, Willow Run provides a vital economic link for Wayne County and the State. Serving as a vital conduit for domestic and international freight, the airport serves the growing regional needs for high-priority air shipments. Willow Run greatly benefits the state as it generates:

- ❖ Over \$214M in total annual economic impact
- ❖ Over \$63M in annual income for state residents
- ❖ Over 2,200 jobs for state residents

General Aviation (GA)

In addition to air carrier airports, general aviation facilities (airports serving aviation activity other than the airlines & military) also provide a substantial economic impact.

- ❖ GA contributes approximately \$11B to Michigan's economy
- ❖ Over 1,000 companies, with one million employees, operate aircraft in Michigan
- ❖ Michigan ranks 5th, nationwide, in based business aircraft

As the state's economic base migrates from domestic manufacturing toward a more diverse, high-tech economy, the importance of maintaining and developing our airport assets becomes increasingly important.

Michigan Airport System Plan- Summary

As part of the process to determine the investment priorities for Michigan's aviation infrastructure, the Subcommittee deferred to the recently-drafted 2008 Michigan Airport System Plan (MASP).

The MASP (Appendix C) is a comprehensive asset management tool designed to prioritize investment in Michigan's system of airports and aviation infrastructure through the year 2030. As such, the MASP guides MDOT staff in airport system planning and capital development.

A key function of the MASP is to identify those airports that can best respond to state goals and objectives. Therefore, a series of system goals, related to the State Long Range Plan, were identified as follows:

- ❖ Airports should serve significant population centers
- ❖ Airports should serve significant business centers
- ❖ Airports should serve significant tourism/convention centers
- ❖ Airports should provide access to the general population
- ❖ Airports should provide adequate land area coverage
- ❖ Airports should provide adequate regional capacity, and
- ❖ Airports should serve seasonally isolated areas

In turn, all airports, following a rigorous analytical process, were assigned to one of three tiers based on their contribution to the system goals.

Tier 1 airports respond to critical/essential state airport system goals. These airports should be developed to their full and appropriate level.

Tier 2 airports complement the essential/critical state airport system and/or respond to local community needs. Focus at these airports should be on maintaining infrastructure with a lesser emphasis on facility expansion.

Tier 3 airports duplicate services provided by other airports and/or respond to specific needs of individuals and/or small business.

The following table summarizes the system standards and indicates the number of airports included in Tier 1 or Tier 2 for each system goal. A number of airports respond to more than one system goal.

Table 1: Composite Alternative Summary

System Goal	Apt Class	Service Area	Service Goal	Tier 1	Tier 2
Population Centers	C-II	30 min	95%	32	10
Business Centers	C-II	30 min	95%	36	14
Tourism Centers	B-II	30 min	95%	39	9
General Population Access	B-II	45 min	95%	28	4
Land Area Coverage	B-I	30 miles	95%	50	0
Regional Capacity	B-I	NA	125%	64	15
Isolation	B-I or Heliport	NA	100%	7	0
Overall				87	24

Source: MDOT BAFS & Bureau of Transportation Planning (BTP)

In addition to establishing system goals, a series of facility goals were developed that identify the basic components of an airport. These facility goals are specific for each airport classification. Facility goals were established as follows:

- ❖ Primary Runway System
- ❖ Pavement Condition
- ❖ Lighting and Visual Aids
- ❖ Approach Protection
- ❖ Basic Pilot and Aircraft Services
- ❖ All-Weather Access
- ❖ Year-Round Access
- ❖ Landside Access

All airports were evaluated to determine whether they currently meet each facility standard and the extent and cost associated with responding to deficiencies through the year 2030. The following table identifies the number of Tier 1 airports meeting the facility standards:

Table 2: Number of Airports Meeting Facility Goal Standards

Facility Goal	System Goal						
	Population Centers	Business Centers	Tourism Centers	General Population	Land Cover	Regional Capacity	Isolation
Number of Tier 1 Airports	32	36	39	28	50	64	7
Primary Runway System	84%	75%	77%	96%	94%	94%	57%
Pavement Condition	88%	83%	87%	93%	82%	86%	57%
Lighting and Visual Aids	78%	64%	79%	82%	80%	85%	43%
Approach Protection	100%	100%	100%	100%	100%	100%	100%
Basic Pilot & Aircraft Svs.	88%	89%	82%	89%	84%	88%	43%
All-Weather Access	91%	67%	92%	96%	84%	77%	43%
Year-Round Access	100%	100%	95%	100%	96%	100%	57%
Landside Access	97%	97%	95%	96%	86%	89%	57%

Source: MDOT BAFS&BTP

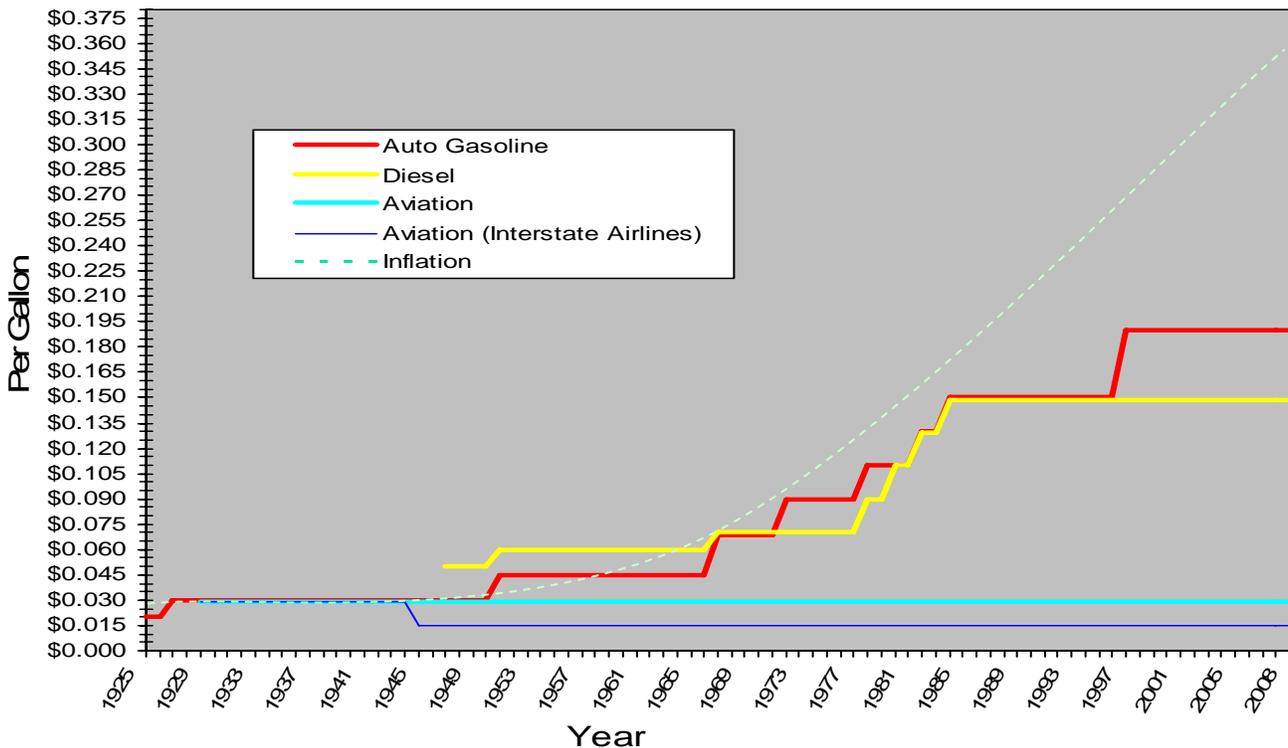
The goals described in this plan, coupled with the individual facility requests submitted to MDOT by airport sponsors, will culminate in an aviation investment strategy. This strategic plan, developed subsequent to the MASP 2008, will aid in determining project selection priorities.

Program Challenges

Addressing aviation infrastructure and program needs creates many of the same challenges faced by other modes of travel. Cost increases for construction material have far outpaced the overall inflation rate. The asphalt and concrete used to construct runways, and adjoining pavement, cost far more now than it did even 5 years ago. The Bureau of Labor Statistics Producer Price Index for highway and street construction has increased by more than 54% since 2003. Over the same period, the Consumer Price Index has risen by less than a third of that amount – only 15.4%.

While construction costs have increase dramatically, revenues have not kept pace. The vast majority of state revenue used for aviation programs and improvements is generated by the aviation fuel tax. As shown in Figure 1, the aviation fuel tax was enacted in 1929 and, unlike rates for motor fuels, has never been increased. In fact, it has only been adjusted once and that was to provide a *rebate* for interstate airlines. The result has been a stagnation of aviation fuel tax revenue over the past two decades.

Figure 1: Historical Motor and Aviation Fuel Tax Rates



Source: Michigan Department of Treasury

Capital Improvement Program

The State's largest aviation program is the Airport Improvement Program which provides funding for capital projects at 78 Michigan airports. Capital projects include runway construction & rehabilitation, airport lighting, terminal construction, land acquisition, and other infrastructure improvements.

Michigan is one of only 9 FAA-designated block grant states. As such MDOT has direct control over the allocation of federal funding for airport capital projects. This status affords MDOT the ability to prioritize funding to meet the state's most vital aviation needs.

Aviation safety requirements have also been addressed through the Airport Safety and Protection Bond Program (ASAP), which was authorized in FY 2002 and ended in FY 2007. The program functioned as a stop-gap measure by providing \$60 million over five years to fund a state/local infrastructure program. While the funding source for this program has expired, safety needs remain unmet and the infrastructure added through this program will need to be maintained and eventually replaced.



State/Local Programs

In addition to the Airport Improvement Program and ASAP, there are a number of State/Local programs designed to address Michigan's aviation needs. Unfortunately, we have been forced to suspend or curtail a number of these vital programs in order to preserve a basic level of service across our state aviation system. Affected programs include:

- ❖ *All Weather Airport Access Program*- This program provides all weather access for pilots utilizing Michigan airports. A number of airports have a demonstrated need for Airport Weather Observations Systems available under this program. However, funding restraints have limited our ability to provide the systems at a rate affordable to many smaller public-use airports.



- ❖ *Crack Seal and Pavement Marking*- Offering both a preventative maintenance and safety benefit, this program is currently funded at only 16 of the 133 paved public-use airports. Even with that limited scope, the program only offers half the needed funding at those airports.



- ❖ *Airport Rescue and Fire Fighting Training Program*- Under this program, MDOT purchased a mobile fire fighting trainer that enabled Michigan airports to train their fire fighting personnel on-site. While the mobile trainer is still available, grants to cover the cost of this FAA-required training are no longer provided.



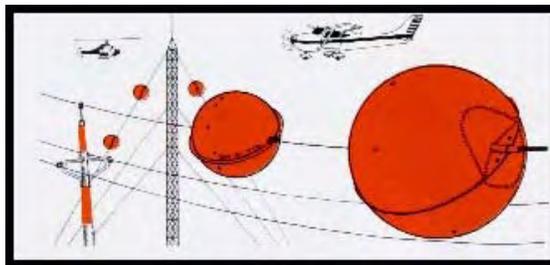
- ❖ *Air Service Program* - Intended to recruit and retain air service at the state's 18 air carrier airports, this program was highly regarded and became a national model for other states interested in developing air service. The program has been suspended.



- ❖ *Airport Inspection Program* – A program to inspect public use airports for compliance with safety provisions of the Federal Aviation Regulations and the Michigan Aeronautics Code. Previously under this program, MDOT was able to conduct annual inspections at 214 of Michigan's public use airports. Budget constraints have forced us to change to a 3-year inspection cycle.



- ❖ *Airport Approach & Runway Marking Equipment*- For decades, MDOT partnered with public-use airports to increase safety by providing marking equipment for approach hazards and turf runways. This effort also provided wind direction indicators. Equipment is no longer made available due to funding shortages.



Needs Analysis

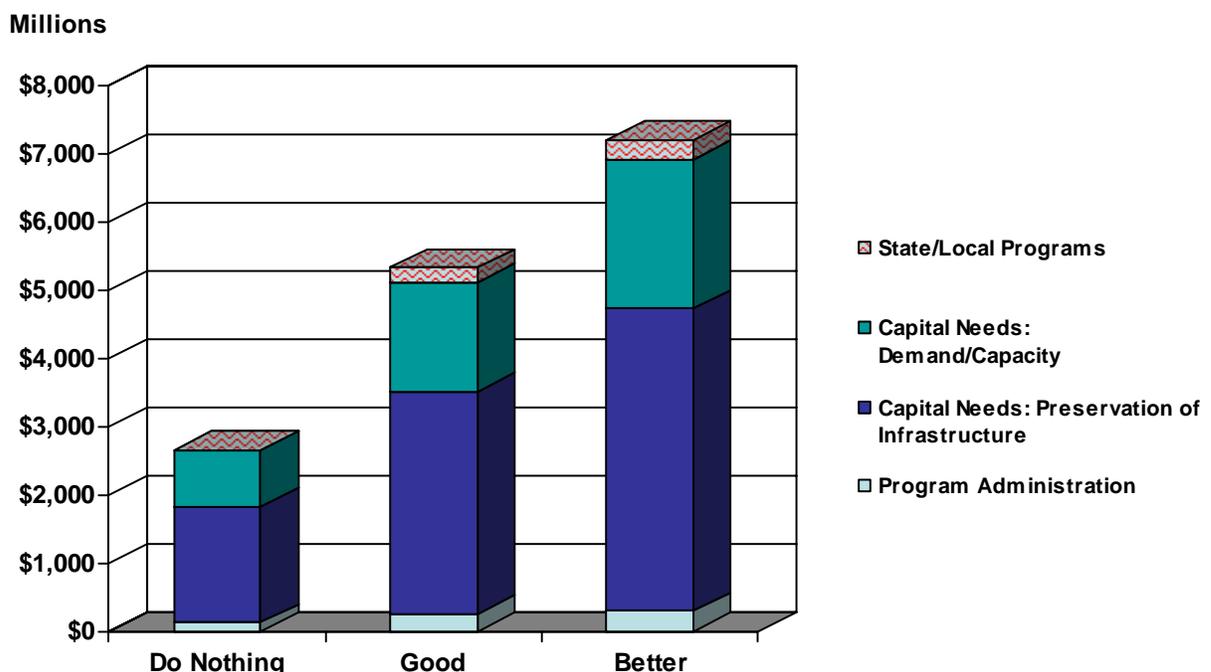
The Subcommittee set about reviewing the current funding mechanisms and necessary investment levels established for Michigan’s aviation system. The Subcommittee determined a review through 2030 was appropriate to maintain consistency with the recently adopted State Long –Range Transportation Plan.

In order to quantify the level of funding necessary to support the state’s air transportation network, the Subcommittee set about developing the following projections based on “Do Nothing,” “Good,” and “Better” funding scenarios.

Capital needs are broken down into two categories- *Preservation of Infrastructure* and *Demand/Capacity*. The *Preservation of Infrastructure* category includes projects such as runway rehabilitation, airport lighting, and terminal buildings. The *Demand/Capacity* category includes projects to specifically address growth in demand for equipment or infrastructure and may include safety enhancements such as runway extensions.

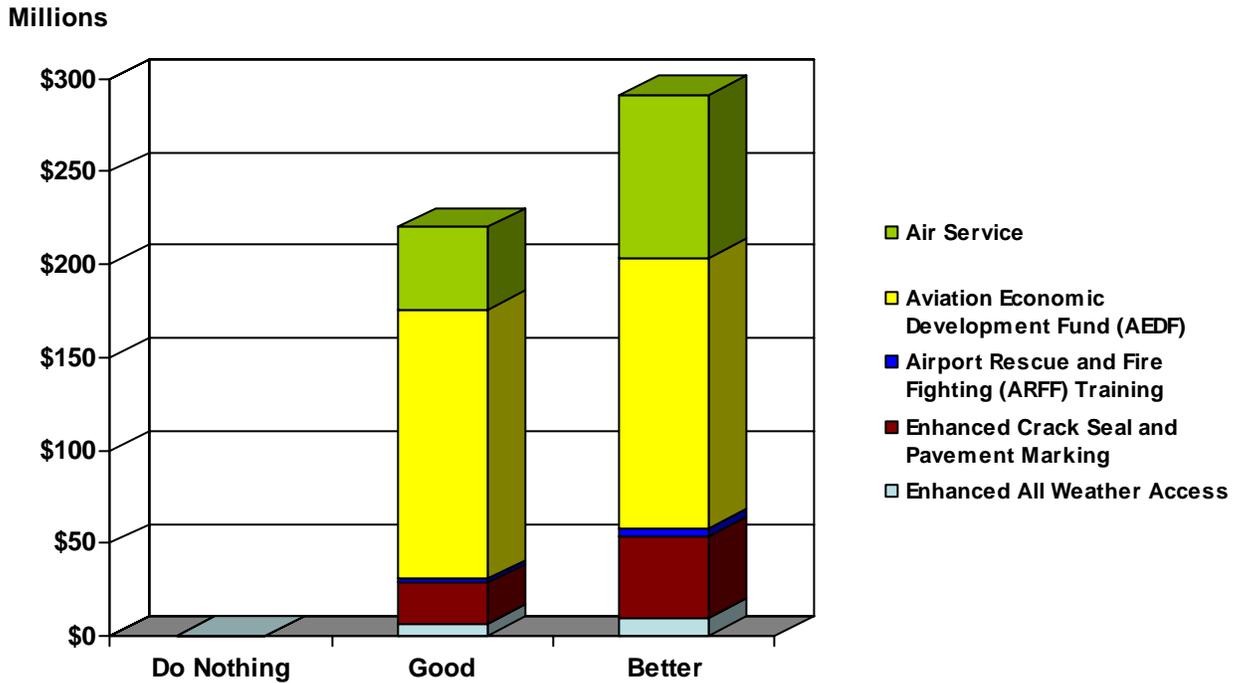
Program needs are provided in detail at the end of this section (Table 7) and in graphical form below. We also defined a “Best” funding scenario which has been described in narrative form only.

Figure 2: Michigan Aviation Funding- Total Needs (2009-2030)



Source: MDOT BAFS

Figure 3: State/Local Programs- Total Needs (2009-2030)



Source: MDOT BAFS

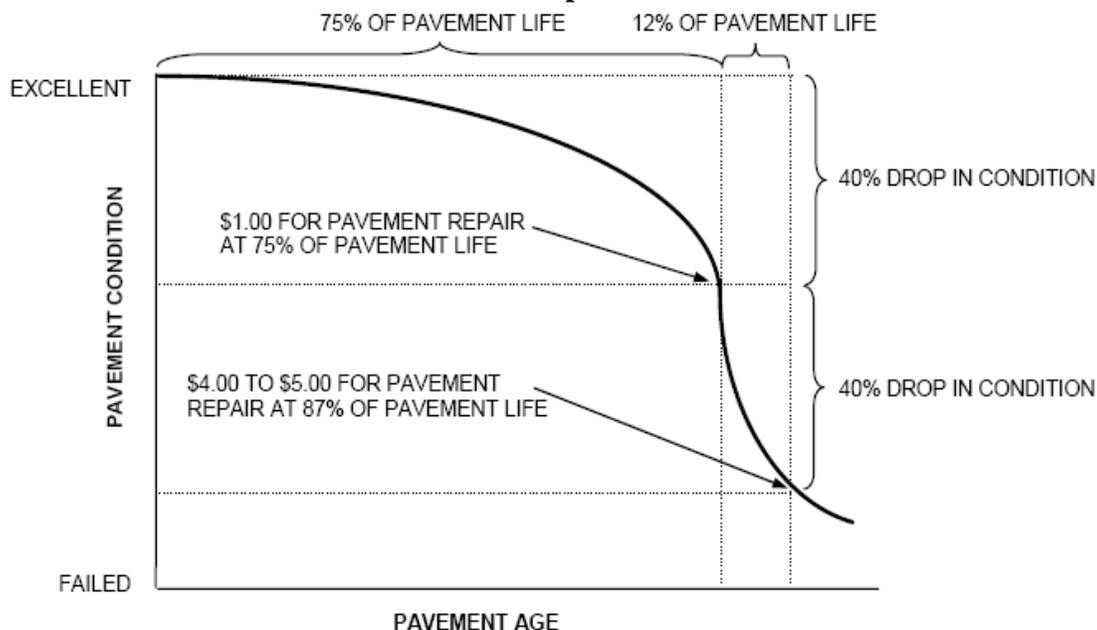
Do Nothing

In effect, we have been operating under a “Do Nothing” scenario in recent decades as we have failed to modernize our approach to funding vital aviation programs. There has *never* been an adjustment to the 3¢ per gallon base rate charged against aviation fuel purchases. The only alteration of the aviation fuel tax rate occurred with PA 327 of 1945 which created a 1.5¢ per gallon *rebate* for interstate airlines.

Most of the programs described above have been curtailed over the last three years. If we continue a “Do Nothing” approach, these programs will be eliminated completely. This will have a dramatic effect on Michigan’s aviation infrastructure.

For example, if we abandon preventative maintenance efforts, such as the Crack Seal and Pavement Marking program, the average airport pavement condition will deteriorate to a level requiring major rehabilitation within 4 years. Furthermore, as described in the Michigan Statewide Pavement Management Report (Appendix D), costs will increase exponentially (Figure 4).

Figure 4: Pavement Condition vs. Cost of Repair



Source: MDOT BAFS & AP Tech, Inc.

Under a “Do Nothing” scenario, none of our existing backlog of capital needs, referenced in State Long-Range Transportation Plan, would be addressed. Furthermore, our ability to fully match federal dollars for discretionary capital programs would not be possible. Average annual federal revenue projected to be lost by the state amount to approximately \$16M.

In addition, continuing to under-fund initiatives such as the Air Service Program, may contribute to the cessation of airline service at several air carrier airports. This is particularly true given the financial state of the airline industry. Also, safety needs, addressed by the all weather access, airport inspection, and approach marking programs; will also go unmet.

Under a “Do Nothing” scenario the funding levels will be as follows:

Table 3: Average Annual Funding Needs Under a “Do Nothing” Scenario

<i>Capital- Preservation of Infrastructure</i>	\$77,050,000
<i>Capital- Demand/Capacity</i>	\$37,950,000
<i>All Weather Airport Access</i>	\$0
<i>Crack Seal and Pavement Marking</i>	\$0
<i>Airport Rescue and Fire Fighting Training</i>	\$0
<i>Air Service</i>	\$0
<i>Program Administration</i>	\$6,000,000
Total	\$121,000,000

Source: MDOT BAFS

Good

A "Good" funding scenario allows for a modest increase in funding and a reinstatement of state/local programs on a reduced scale. The capital needs, including the backlog described in the State Long-Range Transportation Plan, are addressed. Funding at this level would allow MDOT to respond to community needs in a more complete fashion.

The Air Service Program would receive only 50% of necessary funding for projects that have become increasingly important to retain service in light of challenges posed by airlines' mounting operational costs. While not meeting needs in their entirety, funding at the level specified in Table 5 would allow progress to be made in attaining the program goals. These include improving accessibility, creating and/or maintaining jobs, and facilitating development of scheduled passenger and freight service.

The need for vibrant economic development mechanism for aviation related projects has been apparent for some time. Unfortunately, aviation related projects are not eligible under MDOT's existing Transportation Economic Development Fund which only addresses highway, road, and street needs.

To address this challenge, a new program called the Aviation Economic Development Fund (AEDF) is envisioned as a critical tool for strengthening Michigan's aviation infrastructure. Concurrently, the program would stimulate economic activity and job creation. It would provide a small pool of funds that could be mobilized quickly to address public aviation infrastructure needs thereby supporting job providers looking to locate or expand in Michigan. Under the "Good" scenario, this important program would be funded at its estimated annual need of \$6.6 million.

The "Good" funding scenario would permit the reinstatement of critical safety and security programs through the All Weather Airport Access and Airport Rescue and Fire Fighting Training programs. It would also move us in the direction of being better able to ensure that Michigan airports have the resources necessary to get the maximum life out of their existing pavements by investing in preventive maintenance when appropriate.

While the "Good" funding scenario would put us on course to improve the aviation infrastructure in Michigan, it would not eliminate the difficult decisions about what specific projects to fund as the needs will continue to outweigh available revenue.

Table 4: Average Annual Funding Needs Under a “Good” Scenario

<i>Capital- Preservation of Infrastructure</i>	\$147,400,000
<i>Capital- Demand/Capacity</i>	\$72,600,000
<i>All Weather Airport Access</i>	\$300,000
<i>Crack Seal and Pavement Marking</i>	\$1,000,000
<i>Airport Rescue and Fire Fighting Training</i>	\$100,000
<i>Aviation Economic Development Fund</i>	\$6,600,000
<i>Air Service</i>	\$2,000,000
<i>Program Administration*</i>	\$12,000,000
<i>Total</i>	<i>\$242,000,000</i>

* This additional administrative funding would restore the airport inspection schedule to an annual basis vs. every 3rd year. It would also restore approach and turf runway marking equipment.

Source: MDOT BAFS

Total additional state funding, to meet annual needs under the “Good” scenario, is \$42,000,000 (Table 6).

Better

Under this scenario, all backlogged, maintenance/repair, and new capital needs would be met. In addition, funds for previously ineligible, but necessary, capital projects would also be available. These projects could include investment in intermodal connectivity, precision instrument approaches, general aviation terminals, and other highly sought after improvements. Funding of state/local programs and administrative needs would be accomplished at an acceptable level.

The “Better” scenario will position the state to be much more proactive in preserving pavements, preparing emergency personnel, and promoting safety. Also, it is logical to assume that under such a scenario, we will be able to fully meet all of our goals outlined in the Draft Michigan Aviation System Plan (Appendix C).

Table 5: Average Annual Funding Needs Under a “Better” Scenario

<i>Capital- Preservation of Infrastructure</i>	\$201,000,000
<i>Capital- Demand/Capacity</i>	\$99,000,000
<i>All Weather Airport Access</i>	\$450,000
<i>Crack Seal and Pavement Marking</i>	\$2,000,000
<i>Airport Rescue and Fire Fighting Training</i>	\$200,000
<i>Aviation Economic Development Fund</i>	\$6,600,000
<i>Air Service</i>	\$4,000,000
<i>Program Administration*</i>	\$14,000,000
<i>Total</i>	<i>\$327,250,000</i>

* This additional administrative funding would restore the airport inspection schedule to an annual basis vs. every 3rd year. It would also restore approach and turf runway marking equipment.

Source: MDOT BAFS

Total additional state funding, to meet annual needs under the “Better” scenario, is \$76,100,000 (Table 6).

Table 6: Summary- Average Annual & Total Funding Needs (2009-2030)

	<u>Do Nothing</u>	<u>Good</u>	<u>Better</u>
Capital- Preservation of Infrastructure	\$77,050,000	\$147,400,000	\$201,000,000
Capital- Demand/Capacity	\$37,950,000	\$72,600,000	\$99,000,000
<i>Total Capital Needs</i>	<i>\$115,000,000</i>	<i>\$220,000,000</i>	<i>\$300,000,000</i>
Enhanced All Weather Access (new AWOS)*	\$0	\$300,000	\$450,000
Enhanced Crack Seal and Pavement Marking Program*	\$0	\$1,000,000	\$2,000,000
Airport Rescue and Fire Fighting Training Program*	\$0	\$100,000	\$200,000
Aviation Economic Development Fund (AEDF)*	\$0	\$6,600,000	\$6,600,000
Air Service Program*	\$0	\$2,000,000	\$4,000,000
<i>Sub Total</i>	<i>\$115,000,000</i>	<i>\$230,000,000</i>	<i>\$313,250,000</i>
Program Administration	\$6,000,000	\$12,000,000	\$14,000,000
Annual Total:	\$121,000,000	\$242,000,000	\$327,250,000
Total (2009-2030):	\$2,662,000,000	\$5,324,000,000	\$7,199,500,000
Anticipated Annual Revenues:	\$121,000,000	\$137,000,000	\$137,000,000
Revenues Shortfall by Scenario:	-	\$105,000,000	\$190,250,000
Revenues Shortfall Breakdown:			
<i>Federal (40%)</i>	-	\$42,000,000	\$76,100,000
<i>State (40%)</i>	-	\$42,000,000	\$76,100,000
<i>Local (20%)</i>	-	\$21,000,000	\$38,050,000

* Program implemented exclusively with State/Local funds

Source: MDOT BAFS

Best

Achieving Michigan's best possible aviation infrastructure may be difficult and unlikely in the short term. In fact, it is challenging to even define what our "Best" funding scenario might be. This is particularly true given the state's current economic challenges.

As a state, we need to look forward in the coming decades to realize our true potential to provide efficient, seamless, and cutting edge air transportation to Michigan citizens. Securing flexible and adequate revenue sources will be essential to realizing that vision.

Technological advances are providing the opportunity to modernize our airports and air transportation system at an unprecedented rate. Will Michigan airports be ready for the evolution toward very light jets (VLJs)? Will our state have the infrastructure in place to address the exponential growth of air cargo and e-commerce? As we continue our migration toward the next generation of air traffic flow management and airline evolution, will we be prepared or will we be left behind?

No longer constrained by funding inadequacies, under a "Best" scenario the Subcommittee envisions an aviation system that is free to fully address capacity needs in a *proactive* fashion. This includes project development based on projected growth over the long term. The same holds true for project design specifications and infrastructure repair as they would no longer be limited by funding shortages that allow only short-term fixes. The state would also be better positioned to effectively address unfunded federal mandates without hampering essential projects and programs.

Resources would also be available, by example, to partner on a bold plan to transform 25,000 acres in Southeast Michigan into an airport city or "aerotropolis." As envisioned, the area around and between Detroit Metro and Willow Run Airports would be transformed into an airport-centric commercial and residential development. Spokes of light industry, warehousing, logistics management, entertainment complexes, retail, and the like would radiate outward and transform the entire area into a vibrant airport community.

A "Best" funding scenario would also allow the state to help fund more innovative new projects such as the recently completed 80,000ft² hangar at Oscoda- Wurtsmith Airport. This mammoth facility can fully house a

Boeing 747-8 to accommodate maintenance operations during inclement weather. This project adds 200 jobs to the 800 currently employed at the airport in support of aircraft maintenance companies.



LaDonna Marie Photography

In addition, fully funding our aviation system would enable the state to address the regional shipping needs necessitated by the growth of internet purchasing and e-commerce. A perfect example is the impressive 160,000ft² Air Cargo and Trade Center at Gerald R. Ford International Airport. This complex is three times larger than the previously cargo facility and positions the airport to address a substantial portion of Michigan's air cargo demand for years to come.

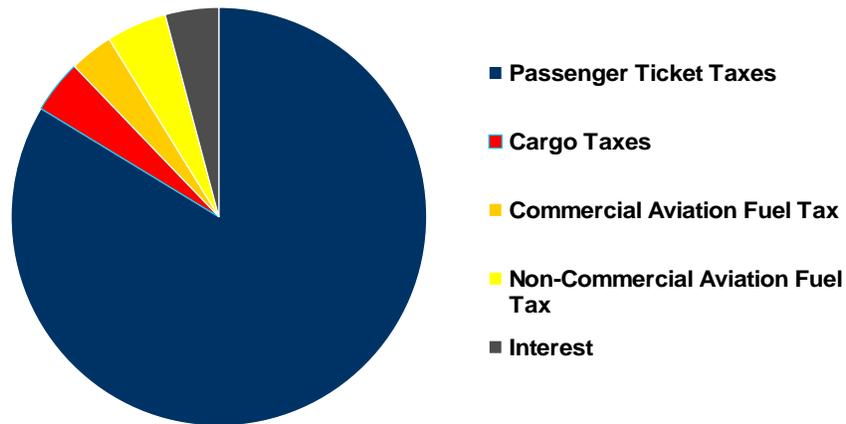
Now is the time to begin looking at what it will take to lead our state toward this "Best" scenario.

Funding Options

There are a number of funding options that may be used to generate the necessary resources to address Michigan’s aviation system needs under a “Good” or “Better” funding scenario.

Federal funding, derived from the Airport and Airway Trust Fund (AATF), is the primary funding source for airport capital projects. The AATF is comprised of a number of sources as shown below:

Figure 5: Federal Airport and Airway Trust Fund (AATF) Revenue Sources



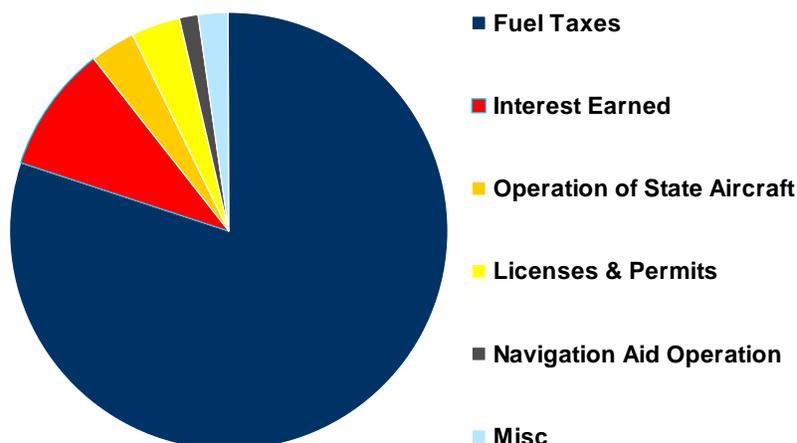
Fiscal Year: 2005

Source: FAA

While it is important to consider federal sources of revenue, the CAC and Transportation Funding Task Force were tasked with identifying funding needs and how to best structure state funding mechanisms. Therefore, particular emphasis must be placed on ensuring adequate state funding to assure maximum leverage of federal dollars as well as preservation of MDOT’s vital state/local aviation programs.

A number of state revenue sources provide funds to address the administrative and capital requirements of Michigan’s aviation programs. The State Aeronautics Fund (SAF) is the primary repository for this aviation-related revenue.

Figure 6: State Aeronautics Fund Revenue Sources



Fiscal Year: 2005

Source: MDOT BAFS

As shown above, the excise tax on aviation fuel is the single greatest source of revenue for the SAF. Aviation fuel tax revenue will become an even greater proportion of the SAF as revenue from the airport parking tax will eventually dwindle as it is a net amount offset by debt service on bonds. The bonds were issued to fund the, now fully-obligated ASAP Program.

Average SAF revenues from 1998-2007 amounted to \$9,467,677. This figure does not include one-time General Fund contributions for construction of the McNamara Terminal at Detroit Metro Airport.

MDOT receives revenue from a number of license, permit, and registration fees as well as the aviation fuel excise tax. As shown below, there are several options available for addressing revenue shortfalls within the framework of our existing fee/tax structure.

Table 7: Options for Increasing Revenue to the State Aeronautics Fund

Revenue Source	Current Rate	Change	New Revenue
<i>Aircraft Registration</i>	\$.01 per lb. of max. gross weight	Increase by \$.01	\$248,000
<i>Airport Licensing</i>	\$25 annual renewal	Increase by \$25	\$20,400
<i>Aircraft Dealer Licensing</i>	\$25 annual renewal	Increased by \$75	\$38,000
<i>Tall Structure Permit</i>	No charge	\$50 -\$250 Based on Height	\$105,250
<i>Aviation Fuel Tax</i>	\$.03 per gal.*	Appendix E	Appendix E
<i>Aviation Sales Tax</i>	Nothing returned to SAF	Appendix E, Option 14	Appendix E, Option 14

Source: MDOT BAFS

With the exception of the aviation fuel excise tax, restructuring existing revenue generating mechanisms provides little additional revenue as proposed above. However, these changes would assist in defraying the administrative costs of the individual programs.

There are also options, outside our traditional funding structure, that were briefly discussed by the Subcommittee. These include:

- ❖ A portion of the sales tax on aviation- related products (similar to CTF)
- ❖ Statewide airport parking tax
- ❖ Statewide Rental Car Tax
- ❖ Value-based aircraft registration fees
- ❖ Personal property tax in lieu of aircraft registration fees

Efficiencies & Inefficiencies

As we work through our funding challenges we are presented with a unique opportunity to hone our approach to addressing transportation needs. Efficiencies have been realized in a number of areas which have helped not only realize budgetary savings, but build a better aviation system for the state.

Airport Pavement Management System

In an effort to objectively quantify the condition of our airport runway and taxiway pavement, MDOT, with assistance from Applied Pavement Technologies, Inc. set about developing the Airport Pavement Management System (Appendix D)

The Airport Pavement Management System (APMS) compliments the Michigan Airport System Plan by providing a valuable asset management function.

Specifically, the APMS enables MDOT to:

- ❖ Objectively monitor the condition of the pavement system
- ❖ Select more cost-effective maintenance and repair treatments
- ❖ Extend pavement life through the application of preventive maintenance actions, such as crack sealing and joint sealing
- ❖ Track the performance of selected treatments
- ❖ Provide information needed to justify and secure funding
- ❖ Show the impact of funding decisions
- ❖ Assure best return on investment
- ❖ Communicate pavement conditions and needs
- ❖ Assist Michigan airports in meeting federal requirements for implementing a pavement maintenance management system

To save major rehabilitation cost, **the Subcommittee recommends that MDOT reinforce the requirement that airports maintain and closely follow their pavement management plan.** Compliance with this requirement should be a consideration as MDOT prioritizes pavement rehabilitation projects during the funding allocation process. The Subcommittee believes

it is important that airports do everything they can to preserve their existing pavement if they are to be considered a candidate to receive funding to reconstruct their runways or other infrastructure.

Also, while not specifically addressed in the plan, consideration should be given to the future use of emerging technologies in pavement management. Of particular interest is the automated evaluation of

pavement condition through the use of pavement imaging software and vehicle mounted pavement survey equipment. Future use of these systems for airports could further enhance the objectivity and accuracy of pavement data compared to the manual system in use today. It would also allow a more frequent inspection cycle.

Michigan Airport System Plan

As previously mentioned in this report, the Michigan Airport System Plan (MASP) provides another important asset management tool. The MASP greatly increases MDOT's efficiency in planning projects by categorizing airports in a tier-based prioritization system (Appendix C). The MASP enables maximum return on MDOT's investment dollars which is particularly important given the current funding shortage.

The Subcommittee concurs and recommends that the majority of State and Federal funds should be allocated to the most important airports in the state. Therefore, a minimum of 95% of State and Federal funds should be used on the Tier 1 and Tier 2 airports. These two tiers represent approximately 95 of the 235 public use airports.



Processing of Federal Funding

Unfortunately, the state's process of authorizing federal Airport Improvement Program funds is one area that has become highly inefficient.

As mentioned previously, Michigan benefits from our status as a block grant state since we enjoy a great deal of discretion in determining our airport funding priorities. However, as part of that process, authority to utilize federal funds allocated to Michigan airports must be given by the state legislature in the form of a Capital Outlay Appropriation. As this is primarily an authorization to utilize federal funding, it should be a simple "pass through" function.

However, as currently structured, the capital outlay budget includes not only airport improvement projects but unrelated funds for university and community college programs. As such, the airport capital appropriations have become intertwined with a drastically more controversial authorization process. The resulting delays have endangered Michigan's airport infrastructure and our ability to compete with neighboring states for substantial federal funding.

It's worth noting that airport capital projects are the only transportation projects appropriated via Capital Outlay.

The Subcommittee recommends separating these airport project funds from the Capital Outlay process and moving them into the Transportation Appropriation. In addition the Subcommittee recommends establishing "firewalls" to help protect state airport funding from being used for non-aeronautical purposes.

Construction Time Frame

Another concern is the extended amount of time necessary to complete airport projects. As an example, construction of a new runway takes approximately 10 years, on average, from concept development to project completion.

This hampers our ability to address aviation needs in a flexible and timely manner and is another reason we urgently need to address the state's aviation funding crisis in the near future.

Improving Aviation Programs

Along with increasing efficiencies, members of **the Subcommittee also recommend improving the state's aviation programs by developing initiatives to recruit aviation-related businesses to the state.**

Our economy continues to evolve to include not only manufacturing but high-technology industries. Therefore, we should capitalize on our automotive-related expertise and transfer beneficial processes and knowledge where appropriate to encourage aviation-related businesses to locate in Michigan.

The Subcommittee also recommends that, as we evaluate funding and infrastructure needs, particular emphasis should be lent to emerging air cargo demand. Feeder service, provided by smaller cargo airlines, has become an increasingly important link for many medium to small communities throughout the state.

Interactions with Other Modes & Funding Sources

Intermodal Development

To provide a seamless transportation experience for Michigan citizens, **the subcommittee recommends improving airport intermodal connectivity.** Without adequate surface access, airports are left unable to capitalize on capacity enhancement projects. Due consideration must be given to airport projects that also accommodate access points such as rail spurs for cargo movement, improved road/highway access, light-rail connections, and bus access.

Economic Development Funds

In the absence of an established AEDF (described under the "Good" scenario) **the subcommittee recommends making airport-related projects eligible for funding under the Transportation Economic Development Fund.**

Conclusion

To compete in a global economy, Michigan must develop and maintain a modern system of airports that provides air access to all areas of the state. We must be able to respond to individual and corporate needs with an adequate airport infrastructure that facilitates economic development and job creation as well as improving the quality of life for Michigan residents. With a "Do Nothing," approach; we will not be able to address these needs and a substantial decline in the state's airport system will occur.

As previously mentioned, Michigan has led the nation, and world, in establishing many aviation milestones. Our success did not come easily; it was the result of innovative thinking by those willing to try new approaches to meeting the challenges of transportation in the modern world. We must keep this in mind as we move our state forward during the second century of flight.