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1975 UPDATE:

REPORT ON A STUDY

OF

MICHIGAN'S AVIATION DEVELOPMENT PROGRAM

Michigan Aeronautics Commission
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Transportation
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UPDATED REPORT OF A STUDY OF MICHIGAN'S AVIATION DEVELOPMENT PROGRAM 1975

In 1970 a report was submitted to the Michigan Aeronautics Commission which discussed the state of the development program for aviation. This report was a comprehensive examination of aviation as it stood at that time in Michigan. Because of a number of far-reaching factors both within and outside aviation, it is necessary that the study be updated.

Aviation Growth

The growth and projected growth of all factors in aviation makes it apparent that a system of development is a pressing need today and will be in the future. In spite of the setback in the rate of growth in aviation caused by the economic recession and the energy crisis, growth has occurred and is projected to continue both in the State of Michigan and in the United States, as a whole.

In discussing the importance of aviation growth in the United States, perhaps the greatest factor accounting for the increase in activity has been the acceptance of air travel as a significant mode of transportation by the general public. A decade ago comparisons were made in the airline/railroad ratio. Consider the following:

	<u>Airline</u>		<u>Railroad</u>
1951	25%	to	75%
1964	75%	to	25%

Thus, we show at that time that in little more than a decade, the travel habits of the public had undergone a complete reversal. It should be pointed out today, that with the advent of the energy crisis, the railroad, as a major mode of public transportation, is now attracting greater numbers. However, it is safe to say that aviation, for the foreseeable future, will continue to be the major carrier of passengers for long distance, especially where time is a major factor.

As important as airline travel is in the United States, at most airports it is often second to general aviation in number of passengers carried. In fact, general aviation aircraft in the United States outnumbers airline aircraft 153,540 to 2,667 or a ratio of about 75:1. The tables and graphs in the Appendix to this report portray the growth of aviation within Michigan.

Of particular interest in this regard, is that the number of registered aircraft in Michigan has grown from 3,108 in 1950 to 6,275 in 1975, an increase of over 100%. In fact since 1970, registered aircraft in the State of Michigan has gone from 5,504 to

its present 6,275, an increase of over 14% (Table I). Other significant statistics show the following:

1. The increase in control tower operations was 78% over the last 10 year period in Michigan (Table II).
2. The estimated aircraft operations at non-tower airports, which were measured by mechanical traffic counters, show increases during the past 10 years (Table III).
3. The total number of airline passengers in Michigan has increased 33% during the past 10 years (Table IV).
4. The total number of pounds of airline cargo has shown a 46% increase throughout the state, during the past 10 years (Table V).
5. The amount of federal aid spent on airports in Michigan is approximately \$88 million in the two major programs (Federal-Aid Airport Program and Airport Development Aid Program) between 1948 and 1975 (Table VIII).
6. Both the number and dollar value of general aviation aircraft deliveries have steadily increased throughout the 1960's and the 1970's (Table IX).

These growth rates are even more significant when set against the background of energy shortages and economic recession. It should be understood at this point that it is not possible to predict the effect of these two adverse factors. Statistical analysis of the various aviation trend indicators over the past few years shows that the effect of the energy crisis and the economic recession are mixed. For example, the number of registered aircraft in the state in 1974-75 did not show an increase over 1973-74. This is the first year that an increase over the previous year did not occur since records began in 1945-46.

However, the number of airline passengers and activity of business aircraft have shown increases in 1975 over 1974 (Table X). It is generally agreed in the airline industry that the long-term effects of the energy crisis on aviation cannot now be completely assessed.

Aviation Problems

The previous section of this report showed the growth experienced in aviation in the State of Michigan over the past two decades. In the 1970 report, the task of discussing factors involving the growth of aviation was much easier. At that time, two assumptions were made in planning for aviation facilities to meet this growth, these were:

1. Every community in Michigan should have reasonable access to the airport system through an airport appropriate to the needs of the system. This was detailed in the basic principle for the State Airport Plan: Minimum facilities--every community, or combination of two or more communities of 1,000 or more population, would be eligible to receive state aid for the development of at least a turfed airport having a minimum of one runway 2,500 ft. in length, 20:1 clear approach and service facilities.

Communities of less than 1,000 population, exhibiting special aeronautical needs may be considered.

Objective--Proposed minimum facilities may be located adjacent to the populated area or not more than 15 minutes ground time from the airport to any location in that populated area.

2. The development of an equitable system is vital to the future economic growth of the state. An airport system is adequate only to the degree that airports contained therein provide service to all parts of the state. An individual airport is a vital economic factor to the community in the same way that utilities, fire and police protection, and other community services, are valuable to industry.

While we believe that these two assumptions are still valid, recent events have had a great influence on aviation. As mentioned earlier in this report, since the time of the 1970 report, the two major factors influencing the rate and type of growth in aviation in the State of Michigan have been the energy crisis and the economic recession. As in other fields of endeavor, in aviation, these two factors are interrelated. The energy crisis had a significant effect upon transportation in the United States. In fact, it is still being felt. The problem in assessing the impact of the energy crisis is that general aviation indicators showed expected decreases, while others actually increased. The scarcity of fuel, along with the economic downturn, has limited the use of aviation as a travel mode by the owners of aircraft who use aviation for recreational travel or for practice flying. This is apparent in explaining the operations (aircraft movements) particularly from the control tower airports in Michigan. However, the number of business and industrial type operations have shown significant increases according to the same tower statistics. A widely accepted reason for this increase is that as driving becomes less advantageous to businessmen, primarily because of the lower highway speed limits, the utilization of the aircraft becomes more advantageous. In addition, the cost of aviation fuel is not as high in relation to the ever-increasing cost of automobile fuel. It is difficult to assess the ultimate impact upon aviation of the energy crisis. Both airline aviation and general aviation will be significantly affected because of the energy

crisis. In discussion later of the State Airport System Plan, we will address the question of the impact of the energy crisis on airport development in Michigan. Perhaps the thing to note in the effect of this situation on aviation operations is that at this point no exact projections can be made. In addition to the energy crisis, the United States, and particularly in the State of Michigan, has been in the grip of a severe economic turn down. As noted in the Governor's "Economic Report of 1975":

"As anticipated, 1974 was a difficult year for the economy. The expected mid-year recovery did not materialize and instead of a modest gain in real output, a decline of 2.2 percent was recorded. Nineteen seventy-five begins in the midst of a deepening recession which is particularly severe in Michigan. The decline in real output is expected to continue until mid-year when the long, slow process of recovery will begin."

In addition, the Governor's report does not expect a speedy recovery, particularly in the State of Michigan. Although some gradual signs of economic turn around are beginning to be seen, concern is expressed that the continued crisis in energy with its corresponding higher cost of fuel will retard the expected economic growth. Obviously, because automobile manufacturing is the mainstay of Michigan industries, the energy crisis is responsible for more of the economic turn down in this state than in most other states.

In summary, it should be understood that until more information is understood regarding the future economic outcome of energy supply in this state, transportation forecasting will be a difficult and risky proposition. For instance, as Table X shows, the number of deliveries of general aviation aircraft per year has almost doubled since 1970; the average billing per aircraft has increased about 30%; the total billings for the industry has increased over 150%, while some of the increase may be attributed to general inflationary price rises, it is apparent that the industry has remained healthy enough to double its orders for aircraft.

Therefore, we should understand that in spite of our economic and energy problems in this state, pent-up demand and new growth will make it necessary for us to provide needed facilities for aviation in the years ahead. In fact, as the discussion of the State Airport System Planning will show, the needed aviation facilities in the urban areas of this state have reached critical stages.

Previous Studies

At the time of the 1970 report on aviation development in the State of Michigan, the Michigan Aeronautics Commission was in the process of completing a 5-year Needs Study. This Needs Study, published in 1971, recommended expansion or improvement at 137 existing locations as well as the development of 73 new airports

to complete the State Airport System. The total estimated cost of the system as that report defined it was over \$229 million for the 5-year period (1970-75), as shown as follows:

1971	\$ 51,342,000
1972	65,871,000
1973	51,850,000
1974	24,559,000
1975	<u>36,143,000</u>
	\$ 229,765,000

Funding for such a program would require the following:

	<u>Federal Funds</u>	<u>State & Local Funds</u>
1971	\$ 23,747,000	\$ 27,595,000
1972	31,004,000	34,867,000
1973	14,745,000	37,055,000
1974	6,951,000	17,608,000
1975	12,269,000	23,874,000

This 5-year study addressed only immediate needs. The immediate needs were derived on the basis of subjective analysis of the State Airport System as it was then and as staff members perceived it would be in the period following. It was evident that a more detailed, long-range study of aviation needs and demands was necessary before adequate recommendations could be made for an aviation system in the State of Michigan. To fill the need for this long-range planning, the Michigan Aeronautics Commission received a System Planning Grant in the amount of \$446,000, two-thirds of which, or \$297,000, was federal funds and \$149,000 was state contribution, mainly in the form of personnel services. The purpose of this study was to provide information on which to build a system of airports which would best serve the needs of air carrier and general aviation in Michigan for the next 20 years.

The study was in process for over three years during which time Interim Reports were issued and as an avenue of coordination, meetings were held with local and regional officials throughout the state. The final report was approved by both the Michigan Aeronautics Commission and the State Highway Commission. The report recommended an air carrier and general aviation system for three time periods--short, intermediate and long-range. The study contains individual forecasts, recommendations and overall system cost estimates. As in the case of the 5-year Needs Study, it was made clear that these findings and recommendations were based on demand for aviation services, and the number of recommendations that become reality depends on many factors, the foremost of these factors being the local initiative in raising local funding. The number of airports in the proposed system plan is shown on Page 7.

Since the end of the study, aviation planners on the state level have been working with their counterparts on the regional and

local level in developing individual airport master plans. Both the Federal Aviation Administration and the State of Michigan require that the general concept of the airport in the master plan must be in agreement with that of the State Airport System Plan. It is anticipated adjustments will be made as situations change. In some cases, airport development might occur faster than originally anticipated. Conversely, development might occur much slower than anticipated. A summary of the cost of the recommended development of the State Airport System Plan for each of the three time periods is shown on Page 7.

ESTIMATED COST OF STATE
AIRPORT SYSTEM PLAN RECOMMENDATIONS
(MILLIONS OF 1970 DOLLARS)

	<u>Short- Range</u>	<u>Inter- mediate</u>	<u>Long- Range</u>	<u>Total</u>
Air Carrier/Reliever	\$294	\$123	\$139	\$556
General Aviation	<u>79</u>	<u>29</u>	<u>21</u>	<u>129</u>
Total	\$373	\$152	\$160	\$685

The comparisons of estimated cost and revenues show the following differences between estimated cost and revenues:

	<u>Short- Range</u>	<u>Inter- mediate</u>	<u>Long Range</u>	<u>Total</u>
Air Carrier/Reliever	-\$ 94	\$ 3	\$ 73	-\$ 18
General Aviation	<u>- 62</u>	<u>- 11</u>	<u>19</u>	<u>- 54</u>
Total	-\$156	-\$ 8	\$ 92	-\$ 72

Available funds to finance airport development were also estimated in the study. The sources include:

- Federal Funds, through the Airport Development Aid Program (ADAP) and FAA Facility & Equipment Funds
- State Funds, through MAC revenues from a tax imposed on aviation fuel
- Local Funds, primarily through long-term borrowing. The estimated funds available by source for airport development in millions of 1970 dollars are shown on Page 10.

Sources: It is apparent that deficiencies are estimated for both the air carrier and general aviation system with the largest shortfall expected for general aviation airports. At the time the State Airport System Plan was issued in 1974, it was recognized that unless new funds were available for airport development, subsequent delays in implementing the general aviation system and some delays for the air carrier system could be expected.

NUMBER OF AIRPORTS IN PROPOSED STATE SYSTEM

	Short Range (1973-1977)	Intermediate Range (1978-1982)	Long Range (1983-1992)
A. Airports in both State and National System Plans			
1. Airports serving air carriers and general aviation.			
*Existing.....	20	18	20
**New.....	<u>0</u>	<u>2</u>	<u>1</u>
Subtotal	20	20	21
2. Airports serving general aviation only			
Existing.....	81	113	131
New.....	<u>25</u>	<u>5</u>	<u>0</u>
Subtotal	106	118	131
B. General Aviation Airports in State (but not National) System Plan			
Existing.....	25	35	32
New.....	<u>18</u>	<u>10</u>	<u>0</u>
Subtotal	43	45	32
Total Airports in State Plan	169	183	184

*An airport is categorized as "existing" if it was planned for the prior period. For the Short-range period, the "prior period" is 1970.

**In some cases, a detailed site selection study might find that an existing airport location is suitable.

Source: Michigan State Airport System Plan, 1974.

There are two obvious approaches to dealing with the anticipated shortage of resources to fund estimated Michigan Airport System Plan costs: additional funds could be sought or planned development could be delayed (or deleted). More specific options are outlined below, and those that appear promising or likely are later incorporated in overall comparisons of MASP resources and costs.

1. Seek to increase State Funding

Although State resources are a small fraction of the total required to fund the MASP (see Table 10 and Figure 17), an increase in these funds might encourage some vital airport development.

A tax on aviations fuel provides the bulk of the funds for State contribution to airport development. Michigan's fuel tax is significantly higher than that of surrounding states. For air carriers, one-half of the tax is refunded. Without the refund, out-of-state purchases of fuel would further be encouraged. A concerted effort by several states to raise fuel taxes would, if successful, avoid this problem, but such an effort does not appear to be in prospect. The possibility of sharply increased federal taxes on general aviation, as recommended by a current federal airport cost allocation study, would cause resistance to further state taxes on general aviation--and may also slow the growth of general aviation compared with this study's projections.

2. Seek to increase the Contribution of Local Funds to Airport Development

Increases in local funds are outside the State's ability to influence, except by encouragement. To the extent that local funding takes place through issuance of revenue bonds, the state should selectively encourage initiation of grant applications. In most cases, however, it seems unlikely that local airports authorities will be eager to use local funds for improvements that are eligible for Airport Development Aid Program (ADAP) funds. Even to reach the local cost levels would require strenuous efforts, and to then substitute local funds for some items in which later prove to be eligible for ADAP will be regarded as an added burden.

Because of its size, Detroit Metropolitan Airport may elect to compensate for shortages in ADAP and State funds by increased local resources. Detroit has greater financial ability (through airport fees and charges) and more incentive than other Michigan airports to use local funds. However, here the matching local funds are derived entirely from airport revenues.

3. Anticipate a Slower Rate of Grant Submissions than Planned

The state plan can only be implemented on the initiative of locally owned and controlled airports, and it is not certain at what rate future ADAP grant requests will be submitted. Local enthusiasm for implementing the MASP is questionable in light of anticipated shortages of appropriated ADAP funds.

4. Defer Noncritical Airport Improvements

Planned airport improvements that are not closely related to safety or to achieving needed capacity could in theory be deferred until more urgent improvements are funded. Historically, because grant applications have exceeded available funds, the MAC shares with the FAA the difficult judgment as to which grants should be deferred. These decisions require assessment of the relative merits of each grant request received.

It is beyond the scope of the present study to identify specific airport development that have been planned but might be deferred. However, those new airports included in the MASP solely by reason of convenient ground access are obvious candidates.

In November of 1974, a proposal was defeated by the Michigan voters for a one billion dollar Transportation Bond Issue. Of this one billion dollars, \$100 million was earmarked for aviation. Approximately seven million was to be used in support of commuter airlines of the state, but the remaining 93 million dollars (\$41 million, general aviation and \$52 million airlines) was to partially meet the deficit of \$164 million which is estimated to occur in the short range and intermediate periods of the MASP.

Since the bond proposal was defeated, there remains a financial need for a method of financing aviation development in the State of Michigan to meet the projected demands. This subject will be addressed in the following sections of this report.

FEDERAL AND STATE PARTICIPATION IN AVIATION PROGRAMS

Federal

At the time this is written, no new legislation has been passed by Congress regarding airport development. The 1970 Act expired on June 30, 1975 and various proposals have been made for new legislation.

In the 1970 Act, Congress imposed a minimum annual registration fee of \$25 plus 2¢ per pound over the maximum allowable gross weight for piston aircraft 2501 pounds and over, and 3-½¢ per pound for turbine powered craft. Indications are that these charges will continue to be imposed in any new airport development legislation.

SOURCES OF ESTIMATED FUNDS AVAILABLE
(in millions of 1970 dollars)

<u>Air Carrier/Reliever</u>	<u>Short Range</u>	<u>Interim Range</u>	<u>Long Range</u>	<u>Total</u>
Federal	58	53	111	222
State	5	7	17	29
Local	<u>137</u>	<u>66</u>	<u>84</u>	<u>287</u>
TOTAL-Air Carrier/Reliever 200		126	212	538
 <u>General Aviation</u>				
Federal	9	9	18	36
State	3	4	12	19
Local	<u>5</u>	<u>5</u>	<u>10</u>	<u>20</u>
TOTAL - All Aviation	<u>17</u> 217	<u>18</u> 144	<u>40</u> 252	<u>75</u> 613

Source: MAC, MSASP, 1974

State

Currently State funds, available for aviation development, are derived from the aviation fuel tax and registration fees.

Historically, State funds for airport development have been made available to local governments on a matching basis. Thus, resulting in the potential financing of a project as follows: Federal funds - 75%, State funds - 12½%, Local funds - 12½%.

In considering various approaches that might develop additional revenues, certain assumptions were made:

- a. The direct user should pay a reasonable share of the development costs.
- b. There exists a general public benefit in the air transportation system and the general public should financially support the program.
- c. The climate for aviation systems in the State must be competitive with other states (i.e., user taxes must not be excessive).
- d. The local sponsor must provide a reasonable share of development costs.
- e. User tax levies recently imposed by Congress must be considered.

In addition, the State imposes a fee on all aircraft registered in Michigan of 1/2 cent per pound net empty weight. This fee, in lieu of personal property, has not been altered since 1939 except for removal of a \$50.00 ceiling. In the fiscal year ending July, 1975, total registration fee for 6,275 aircraft - \$57,133. With state and federal registration fees on owners and users of aircraft, the cost of aircraft of ownership and operation is at a high level and a further increase in this area does not appear reasonable. This is especially true considering the rising cost of fuel and other operating items. In our study, we have examined landing fees as a source of revenue for the State and the local sponsor.

a. Current Landing Fees

1. Airlines -

Landing fees are levied against commercial carriers by the owners of airline airports, usually on a landing weight basis or schedule basis.

2. General Aviation -

At times, airport owners have attempted to levy a landing fee on other aircraft, but the cost of

collecting such fees on an equitable basis and the adverse reaction of users has caused their practice to be largely discontinued.

3. The air carrier landing fee is the local government's principle source of developing airport operating revenues. For example, \$158,187 or 29% of revenues generated at Capital City Airport in Lansing are derived from landing fees.

b. Our findings indicate that:

1. It would be feasible to administer and collect a State landing fee on scheduled aircraft.
2. It would be neither administratively or economically feasible to collect a State landing fee on non-scheduled aircraft.
3. Since the landing fee on scheduled carriers is the principle source of local operating revenue, strenuous opposition to a State-imposed landing fee may be expected from local government.
4. To develop significant new revenues, the level of a State-imposed landing fee would greatly exceed the average fee currently levied.
5. Addition of a State fee would place Michigan airports in a non-competitive position with neighboring states.
6. Excessive landing fees are a strong deterrent to increased frequency of schedules.

On the basis of this study, this source does not appear suitable for additional revenue.

Local Airline Ticket Tax

A great deal of effort was expended in exploring this possible sources. Table XI was developed and utilized in this study.

It may be noted, from this table, that an estimated \$173.7 million is generated annually in passenger ticket sales involving approximately 5 million enplaning passengers averaging \$126 per ticket. Similar statistics concerning freight shipments, indicated a gross revenue development of approximately \$21.7 million annually.

Thus,

1. A \$1.00 ticket tax would product \$5 million annually.
2. A 2% ticket tax would generate approximately \$8.6 million annually.

3. A 2% freight waybill tax would generate approximately \$500,000 annually.

It is obvious that significant revenue increases could be generated by this source. Furthermore, the base would be broad enough so that the tax on any one individual would not be burdensome.

The Federal Aviation Act of 1970 prohibited local airline ticket taxes as a method of raising revenue. It can be assumed that any new federal legislation would continue to prohibit local airline ticket taxes. Therefore, this approach is currently doubtful as a viable alternative. However, we feel that there is some potential for this source of revenue if legal problems were resolved.

Fuel Tax

This area of taxation was examined in great detail. Factors considered important in conducting this study were:

a. Current taxation -

State of Michigan as compared to other states, particularly bordering states. Michigan is one of 16 states that levies a tax on aviation fuel.

Comparing Michigan's tax rate with adjacent states:

Michigan (1)	1-1/2¢ to 3¢
Ohio	None
Illinois	None
Wisconsin	None
Indiana	None
Pennsylvania (2)	1¢ to 1-1/2¢
Minnesota (3)	1/2¢ to 5¢

- (1) Tax amounts to 1-1/2¢ net to the airlines; 3¢ to all other civil users.
(2) 1¢ on jet fuel; 1-1/2¢ on aviation gasoline.
(3) Tax varies depending upon volume purchased in the State.

In 1974-75, Michigan fuel tax developed the following revenues:

Air Carrier	\$2,076,741
General Aviation	<u>1,335,420</u>
TOTAL	\$3,412,161

b. Federal and local taxes imposed on aviation fuel -

In July, 1970, Congress imposed a Federal tax of 7¢ per gallon on all civil aviation fuel except that utilized by commercial aviation. At the same time, it eliminated the 2¢ Federal tax on aviation gasoline used by commercial aviation.

Local taxes, in the form of flowage fees, ranging from 3¢ to 5¢ per gallon, are currently imposed on fuel for all users except scheduled air carriers at a significant number of Michigan airports.

c. Equitability of a fuel tax -

The current State tax contains certain inequities:

1. Provides for a refund to scheduled interstate carriers, but not to other users.
2. Fuel usage is not a completely accurate measure of system usage or benefits derived. At the time of the 1970 report, a comparison was made of the use of Michigan airports and the fuel tax paid by three carriers. This situation has not materially changed since 1970.

	<u>% of passengers enplaned</u>	<u>% of landings</u>	<u>% of fuel tax revenue contributed</u>
Airline "A"	17.5	38.8	5.7
Airline "B"	24.0	12.9	35.9
Airline "C"	15.2	10.7	8.3

d. The Ability of Industry to Absorb Tax

The aviation industry, as a whole, has been as severely affected by the economic recession and energy crisis as any other segment of society. In fact, because of its very nature as a transportation service, it has probably received the primary impact of these shocks.

For the first time in recent memory, the Civil Aeronautics Board has allowed airlines to work out multi-schedules as a means of reducing operations and thus reducing fuel needs. New factors, in addition to the fuel cost, both on the domestic scene and in international matters, have added to the problems facing air carriers in the United States. These factors include, but are not limited to, competition from national airlines in other countries; liberal requirement for non-scheduled airlines on charter operations, competition from third level carriers and general economic-oriented avoidance of airline trips by the public.

As Table IV shows, while there are great increases in passengers over the ten year period 1964-1974, the latter half of this period 1969-1974 shows significantly lower increases; and in a few cases, actual decreases.

The future for air carrier service and the airline industry is difficult to predict because of these significant factors which are unknown at this time.

In other areas of aviation, Table X shows the number of operations at control tower airports in Michigan for the first six months of 1975 compared to the same period in 1974. The figures show the number of operations increased from 897,000 to 938,000, a gain of 4.5%. This gain was recorded in the face of the economic recession and the energy crisis. Further explanation of these statistics indicated that itinerant operations (mainly business-oriented) have increased while local operations (most of them student-oriented) have shown sharp decreases. In addition, contacts with businesses and airport managers throughout the state have revealed another affect of the energy crisis--to avoid slow driving dictated by the 55 mile per hour highway speed limit, business firms have taken to general aviation in higher numbers than ever experienced. Statistics of the General Aviation Manufacturer's Association lend credence to this situation by showing as they do in Table IX that the number of general aviation aircraft sold by the manufacturers has virtually doubled in the last few years.

The previous pages of this report illustrate that Michigan is in a competitive disadvantage with regard to attracting fuel purchases compared to its immediate neighbors--Ohio, Illinois, Wisconsin, Indiana which have no state tax on aviation fuel. In addition, Pennsylvania and Minnesota have a tax rate less than that imposed by Michigan. Considering the federal tax of 7¢ per gallon and local flowage fees, taxation of general aviation aircraft has probably passed the saturation point. Therefore, we conclude it is not reasonable to attempt to secure significant increases in revenues from general aviation.

In consideration of the inequities of fuel tax systems, the 1970 Study to determine modifications in this system was reviewed and revised because of changing conditions during the past five years.

Proposed Fuel Tax Schedule

Numerous methods were explored and the following procedure appeared worthy of further consideration:

1. Increase the basic tax on aviation fuel to \$.04 per gallon.

2. Eliminate the present 1-1/2¢ refund to scheduled interstate carriers.
3. Establish a sliding scale tax based on volume purchase, as follows:

0 - 100,000 gallons	4¢
100,001 - 1,000,000 gallons	3¢
1,000,001 - 10,000,000 gallons	2¢
10,000,001 - 20,000,000 gallons	1½¢
20,000,001 - 30,000,000 gallons	1¢
30,000,001 - over	½¢

Table XII presents an analysis using the above schedule, based on the total aviation fuel purchased in the State of Michigan during the period 1974-1975. It also provides a projection of the estimated effect of such a schedule on projected 1980 aviation fuel. A study of the chart reveals the following:

1. The proposed tax schedule would result in the highest increase to air carrier being \$61,000, a sum which would be experienced by two carriers.
2. Only one carrier would show a reduction in amount paid under the new schedule.
3. Based on the new schedule and its affect on 1974-1975 gas purchases, tax revenues to the state would be increased by over \$445,000 for general aviation for a total increase of over \$715,000.
4. Projecting fuel purchases to 1980, the increase in tax revenue to the state under the proposed tax rates would be over \$255,000 for air carrier and \$467,000 for general aviation for a total increase of \$723,000.

It should be pointed out that between the time of the 1970 Report and this report, the energy crisis and its resultant rise in the fuel crisis have caused the air carriers and general aviation users to sharply curtail fuel purchases. For instance in 1970, the air carrier with the highest fuel purchase had over 58 million gallons and there were four carriers with purchases of over 20 million gallons. In 1975, the highest usage of fuel among the carriers is 36 million gallons with three carriers over 20 million gallons. Another indication of the reduction in fuel use is shown as follows:

	Total Gallons <u>1969-70</u>	Total Gallons <u>1974-75</u>	<u>% Change</u>
Airlines	180,885,228	138,458,339	-23.4
General Aviation	<u>27,420,858</u>	<u>44,517,345</u>	+62.3
TOTAL	208,306,086	182,975,684	-12.1

Please note air carrier fuel purchases decreased over 23% in the 5-year period between reports. On the other hand, general aviation fuel purchases increased over 62% in the same period. The total aviation fuel purchased in the state during this period decreased by 12%.

For purposes of forecasting, we calculate a 5% increase in gallons of fuel purchased. In view of the unknown nature of the energy situation, realistic forecasts of fuel consumption cannot be made. One important factor that was true in 1970 is still in effect. That is that Michigan imposes a fuel tax while neighboring states do not. There is an increasing tendency on the part of the airlines to purchase fuel elsewhere whenever possible. This fact convinces us that equity demands a sliding scale for high volume purchases.

However, because of the uncertainty of future fuel purchases by either the air carriers or general aviation users, it is not possible to design a schedule which would provide a break for high volume purchasers of aviation fuel and at the same time provide more revenues for the State of Michigan. In addition, because of the high cost of fuel and the existing taxes on that commodity, additional charges for operating aircraft in this state would be prohibitive to the growth and the use of both general aviation and air carriers.

General Fund Monies

One of our basic assumptions that has not changed since the 1970 report is that the air transportation system provides a general public benefit to all communities in this state and should therefore receive an appropriate amount of financial support from the general public. The portion of general aviation that provides this benefit is business flying which represents the largest category. This type of flying represents anywhere from 55%-70% of the general aviation activity in the United States today. The reason for this is businessmen use general aviation aircraft to save time transporting people and products and to keep their production lines moving. Various studies have shown the correlation between the use of business aircraft and the financial success of the firms that operate them. The key words in business aviation are the advantages in speed, mobility, convenience and safety.

Surveys in Michigan have shown one value of general aviation to communities throughout the state. In addition, a survey conducted by the Minneapolis-St. Paul Metropolitan Airports Commission determined that for every \$1,000 dollars invested in their airport system, local industry gains \$2 million in additional business.

Certainly any company engaged in a profit-making business and every gainfully employed individual receives a benefit from a well-developed transportation system. The degree of success of every business and the economic future of every individual is directly related to the economic climate of the area in which the

business and individuals are located. Without adequate transportation facilities, the economic climate would, indeed, be adverse.

Since the majority of all scheduled intercity passenger traffic today is carried by air and that freight movement by air is growing at a tremendous rate, air transportation must be considered essential to any total transportation system.

Therefore, until such time as the aviation tax base has been expanded to the point that it can support the development of the system, general fund support at the State level is not only appropriate, but desirable if the State is to maintain its competitive position with other states.

Today there are a great many demands made of the State's general fund. However, since appropriations from this fund for airport development purposes should be considered in the light of capital investment, as opposed to operational expenditure, the use of general fund monies should be considered if the State desires to expedite the development of its airport system. It is difficult to determine the level of support that would be justified. However, we feel that it would not be unreasonable for the general fund to provide support at the level of 20% to 25%.

Local Funds

Local airport development funds are generated, primarily, from:

1. general tax revenues
2. government bonds
3. revenue bonds
4. airport operating revenues

In most areas of the State, millage limitations have been reached with all revenues committed.

Bonding limits have been reached in many areas. The ability to sell revenue bonds is dependent upon potential airport revenues and a great majority of our airports do not have sufficient revenue potential to support this type of financing.

Airport operating revenues depend largely on large volumes of air traffic which precludes many of our cities outside of Detroit from counting on this source for significant revenues.

One course of action seems to offer promise, that is, expand the support base for the individual airports and provide the operating unit with a modest taxing authority. We are convinced that since an airport generally serves an area much larger than the area encompassed by the owning entity, it is now necessary to expand the support base. The trend will be toward county or multi-county or multi-local unit ownership and operation of airports.

It seems highly desirable that the State, by appropriate legislative action, should encourage this consolidation and provide a proper means of funding.

Legislation has been introduced which would supercede the existing State Airport Authority Act. The major features of the proposed legislation are that:

1. Two or more political subdivisions by resolution of a majority of the membership of each legislative body may join to form an airport authority.
2. Each unit of government comprising the authority, after ascertaining the amount of money to be raised, may levy a tax not to exceed 3/4 mill on each dollar of assessed valuation as last equalized by the state. This tax would be levied outside of present millage limitations for purposes of operating and developing an appropriate airport system.

Assuming 1975 to be a typical program year and using it as a basis for future projections, the total amount of local funds over the next five years would amount to \$60 million.

With this approach an airport authority would provide the necessary public input for the public benefit generated by the airport system. In addition, because of the broad tax base and low millage, it would not result in an undue burden to the tax payer. An obvious advantage to the entire region would be the ability to plan and develop needed airport facilities on a comprehensive basis. To examine the availability of local funds raised through this basis, an analysis was made of the state equalizing valuation and the 3/4 mill tax in each of the fourteen State Planning and Development Regions which is on the following page.

General Transportation Fund

A bill was introduced in the State Legislature to create a General Transportation Fund. This fund is to provide needed monies to establish public transportation procedures and administrative practices for which there is a clear requirement for uniformity statewide. This bill would enable the state and local governments to plan and provide for current and long-range and development of public transportation in areas for which an eligible authority or eligible governmental agency does not exist.

The key to the utilization of this act as a means of financing the aviation portion of public transportation is that it be amended to include scheduled air carrier facilities. This is because air carriers fit the legislative definition of "public transportation vehicles." Therefore, under this interpretation, the air carrier needs of the state as identified by the State Airport System Plan can be addressed through this activity. As is stated earlier in this report, of the \$164 million deficit in the first two periods of the State Airport Plan, \$91 million or 55% are attributed to the air carrier portion of the airport system. Therefore, by the use of this General Transportation Fund, over half of the anticipated deficit in needed funds could be addressed by this method.

TOTAL STATE EQUALIZED VALUATION
AS A SOURCE OF LOCAL FUNDING
BY STATE PLANNING AND DEVELOPMENT REGION

	Total State Equalized Valuation	Total Using 3/4 Mill of each Dollar (x.00075=)
REGION 1	\$30,553,475,910.00	\$22,915,106.93
REGION 2	1,584,136,610.00	1,188,102.46
REGION 3	2,748,328,413.00	2,061,245.31
REGION 4	1,657,293,337.00	1,242,970.00
REGION 5	3,588,090,219.00	2,691,067.66
REGION 6	2,211,615,299.00	1,658,711.47
REGION 7	4,937,470,074.00	3,703,102.56
REGION 8	3,994,667,003.00	2,996,000.25
REGION 9	1,536,346,540.00	1,152,259.91
REGION 10	1,563,077,647.00	1,172,308.24
REGION 11	262,049,647.00	196,537.24
REGION 12	759,819,119.00	569,864.34
REGION 13	390,634,925.00	292,976.19
REGION 14	<u>1,648,631,209.00</u>	<u>1,236,473.41</u>
TOTAL	\$57,435,635,952.00	\$43,076,725.97

Sources: Factors, Assessed Valuation and Units Portion
of State Equalized Valuation, 1975.

Bond Issue

As stated earlier in the report, a bond issue proposal was defeated by Michigan voters. Of the \$1 billion total, \$100 million was earmarked for aviation which was to be distributed as follows:

Air Carrier	\$ 52 million
General Aviation	41 million
Commuter Airlines	<u>7 million</u>
TOTAL	\$100 million

This \$100 million was arbitrarily assigned to aviation. Because of the needed facilities in Michigan, we suggest that the new bond proposal, which is planned for the November 1976 election, have aviation allocated funds at the amount of the total deficit, \$164 million plus the rise in price levels since the time of the State Airport Plan bringing this to an aviation allocation of \$225 million.*

Federal Collection of State Taxes

Because Michigan is at a disadvantage in its competitive position with neighboring states regarding a fuel tax, it might be desirable for the Federal Government to collect and disburse both national and state aviation fuel taxes. For example, the federal tax might be raised from 7¢ per gallon on all civil aviation fuel to 10¢ a gallon. Of this 10¢ a gallon, 5¢ would be returned to the state on the basis of direct percentage contribution of taxes by the state's aviation users to the Federal Government. In that way, states that need aviation development funds the most because of high activity would be reimbursed the most from federal tax collections.

STATE'S FINANCIAL ASSISTANCE PROGRAM FOR AIRPORT DEVELOPMENT

Presently the State Matching Program authorizes the Commission to make allocations to local units of government on a dollar for dollar matching basis. Our experience indicates that there are certain deficiencies in this method. The program does not differentiate between communities, either to their ability to develop local funds through a tax base or their ability to generate revenues through airport operations. Currently the more affluent communities and the more active airports tend to develop more rapidly than less affluent or less active areas. Their deficiencies do not lead to a balanced system; nevertheless, the development of a balanced system is considered highly essential. Therefore, studies were undertaken to determine if a change in the formula might provide better utilization of State funds and tend to develop a more capable airport system.

*Estimates of the price level increase were derived from statistics compiled by the U.S. Department of Labor, Bureau of Labor Statistics.

In developing these studies, it was assumed that certain communities would require less than dollar for dollar matching from the State, while others would require a greater percentage of State dollars. In order to provide a system that would identify those communities theoretically able to develop more tax revenues and to identify the potential individual tax burden on each taxpayer in a specific community in relation to the development costs of an airport, the State Equalized Valuation of each local airport owner seemed to offer the best possibility.

We reviewed each community having an airport development need. First, we obtained the State's equalized valuation of the local unit of government, then divided that valuation by \$1,000 units of the SEV. This gave a factor which could be used to compare one community with another. The following examples, taken from the 1970 report, illustrate this procedure:

City	Estimated Airport Development Cost	SEV	Cost to SEV Ratio
Alma	\$ 372,900	37,301,875 ÷ 1,000 = 37,301 units	372,900 ÷ 37,301 = 9.9
Au Gres	170,000	2,000,586 ÷ 1,000 = 2,001 units	170,000 ÷ 2,001 = 84.9
Cadillac	962,900	31,256,842 ÷ 1,000 = 31,256 units	962,900 ÷ 31,256 = 30.8
Detroit City	1,066,550	5,188,215,960 ÷ 1,000 = 5,188,215 units	1,066,550 ÷ 5,188,215 = .2

The above examples illustrate there is a wide variation in the burden on local taxpayers, occasioned by necessary airport development.

The airport system was then divided into two categories consisting of the primary and secondary elements--the primary consisting, principally, of the airline and reliever airports and the secondary consisting of all other publicly-owned airports.

The following procedure was then applied to the primary system. A graph was plotted, using the SEV factors developed for each airport starting with:

0 to 2-1/2 factor = 50%
 5 = 55%
 10 = 60%
 20 = 65%
 40 = 70%
 50 & over = 75%

The maximum percentage allowable for State participation could then be computed for each airport in the primary system. Since available State funds might not reasonably be expected to fully finance some of the more extensive projects, the constraint of \$1 million was established as the maximum of State funds at any one location.

Up to this point, the procedure addressed itself to the theoretical ability of local units of government to raise tax monies to support airport development. Then, to take into consideration the revenue development capabilities of individual airports, an

additional graph was developed, based on the number of enplaned airline passengers. Exclusive of Detroit Metropolitan Wayne County Airport, where traffic far exceeds that of any other airline airport in Michigan, the average passenger enplanement was approximately 60,000 passengers annually. This figure was used as the base figure and a graph was developed as follows:

<u>Number of Enplaned Airline Passengers</u>	<u>Percent Factor</u>
15,000	+90
20,000	+80
25,000	+70
30,000	+60
35,000	+50
40,000	+40
45,000	+30
50,000	+20
55,000	+10
60,000	0
120,000	-10
240,000	-20
480,000	-30
1,000,000	-40

The individual airline airports were then plotted on this graph and the resultant percentage figure was applied to the percentage figure developed under the SEV chart. These two factors then indicated the maximum State participation in any project. For example, according to the 1975 program, the total of state and local funding requirements total \$121,250 for Pellston, which has a SEV factor of 6.44 or 56%. In addition, Pellston had 22,000 enplaned passengers, allowing an additional 80% of 56%, bringing the participation percentage to the maximum 90% or \$109,125. The local share of the total cost would be only \$12,125.

This method attempts to recognize not only ability to pay, but, also, ability to develop revenues and adjusts State assistance accordingly. State participation would range from a low of 10% to a maximum of 90%, not to exceed \$1,000,000 annually at any one location.

For the secondary system, a somewhat different approach was taken. Recognizing that Federal funding available to the secondary-type airport was approximately 1/8 that made available for the primary system, it was felt that a base for State participation should be set at 50% with the maximum being established at 90% or \$1,000,000, whichever was the lesser. A graph was plotted using the SEV factor of 1 equaling 50%, graduating to 50 or over, equaling 90%.

No successful method was developed that would tend to indicate the ability of such airports to generate revenue. Therefore, in this category no consideration was given this factor. Under this procedure it would be possible for the State to vary its percentage

of contribution between 50% and 90% depending upon tax burden placed on each individual community.

Priority for Review of Airport Projects

The present system of priorities is based, primarily, on the availability of local matching funds. Since procedures discussed in this report could alter that situation, we examined priorities in an effort to assure the development of a balanced airport system. Our studies suggest the following:

Primary (Air Carrier and Reliever Airports)

1. Reliever airports
2. Regional airports
3. Airports requiring runway extension
4. Airports requiring development for increased capacity for aircraft and persons

Secondary (General Aviation Airports)

1. Communities having no publicly-owned airport
2. Communities requiring runway extension to enhance the economic development of the area
3. Communities requiring airport development for increased capacity for aircraft operations and persons
4. New replacement airports

Development Priority

1. Master planning
2. Land
3. New airport
 - A. Paved airports
 - a. Runway, taxiway, apron and lighting
 - b. Terminal building and service facilities
 - c. Landing aids
 - B. Sod airports
 - a. Runway, aircraft parking area
 - b. Terminal shelter and service facilities
4. Runways, taxiways, or aprons (new or extensions)
5. Terminal buildings, parking, entrance road
6. Lighting systems
7. Fire and crash building
8. Landing aids
9. Hangar area development
10. Field maintenance equipment buildings

In formulating the State Airport System Plan, various criteria was employed for both air carrier and general aviation airports. In the air carrier system, after a study of several alternatives, the system as it is today was recommended for 1990 with the following exceptions:

1. Site 107 - A new short-haul air carrier airport is recommended in the general area of northern Oakland and Macomb Counties.
2. Battle Creek/Kalamazoo - A general location of a regional airport to serve the two communities of Battle Creek and Kalamazoo is recommended as the best alternative to provide air carrier service to the two cities. Under this alternative, the two existing airports would continue to serve general aviation activity.
3. Sault Ste. Marie - A new air carrier airport location for Sault Ste. Marie is recommended for the 1990 system. Because of its relative geographical isolation from other Michigan airports, the traveler benefits found in the analysis justified the extended construction cost of a new airport.

In addition, at a few locations (Jackson, Manistee, Escanaba-Iron Mountain-Menominee) the State Airport System Plan recommends either a change in aircraft equipment or routing structure. The specifics of these recommendations are as follows:

1. Jackson-Economic improvements can be made to Reynolds Airport in Jackson to accommodate scheduled commercial air service, so long as large expenditures for new runways are not required. In addition, analysis indicates that 1990 air service in Jackson will closely resemble the service of 1970 if this service is provided with aircraft of 50 seats or more.

2. Manistee - To improve frequency of air carrier service at Manistee and to avoid costly airport development, it is recommended that service at Manistee be provided by smaller aircraft. With the smaller aircraft, flights per day would increase from one to three and the runway necessary to accommodate these smaller aircraft would be of less width and length than the ones required for larger commercial aircraft.

3. Escanaba-Iron Mountain-Menominee - It is recommended that air carrier service continue at all three airports through 1990, but that air traffic from Iron Mountain and Escanaba be routed through Menominee, thus justifying frequent nonstop service from Menominee to Detroit and Chicago.

The recommended 1990 system for general aviation includes 162 airports, of which 59 are new. In general, there were two basic measures as to whether a particular airport was included in the 1990 general aviation system phase of the study. These were:

1. To provide aviation capacity sufficient to accommodate forecast levels of general aviation activity in a given geographic area.

2. To provide a reasonable geographic distribution of airports throughout the state.

SUMMARY OF CONCLUSIONS

1. Michigan State Airport System Plan has provided a basis for development, but funding levels show a shortage.
2. The extent and resolution of energy and economic problems are uncertain.
3. The current options for meeting the shortage do not offer adequate solutions.
 - a. Addition of a landing fee would place Michigan at a competitive disadvantage to other states.
 - b. Airline ticket taxes are currently prohibited by federal legislation and will probably remain so.
 - c. Michigan's neighboring states do not levy an aviation fuel tax as does this state, and this contributes to the inequities of the current fuel tax system in this state.
4. The aviation industry is in a poor financial state and beset by uncertainty over the energy situation. Thus, the ability of the industry to absorb new taxes is very low.
5. Because of aviation's benefits to the state as a whole and to each community, the expenditure of general fund monies on airports as an economic stimulator should be undertaken.
6. The provisions of the General Transportation Fund for expenditures on public transportation should include the scheduled air carrier part of aviation. This would reduce the anticipated deficit in development funds substantially.
7. The airport authority legislation now pending in the state would allow a wider base of local financing for airports and would facilitate planning and development of regional airport systems.

RECOMMENDATIONS

1. Legislation should be enacted that would:

a. Permit the Aeronautics Commission to participate with local units up to 90% of local costs or \$1 million, whichever is the lesser.

b. Provide for General Fund support to the State Aeronautics Fund in the amount of \$1 million annually until local units have had sufficient time to form airport authorities.

c. Supercede the existing Airport Authority Act (Act 206, Public Acts 1957) as proposed in House Bill 4968 and Senate Bill 868, 1975 Session which would permit two or more political subdivisions to form an airport authority and be authorized to levy a tax not to exceed 3/4 mill on each dollar of assessed valuation as last equalized by the state.

d. Amend Act 195, Public Acts, 1975 to include funds for improvement of scheduled air carrier facilities.

2. The Michigan Aeronautics Commission should consider seeking federal legislation to provide for sharing with the states the revenue generated by federal aviation fuel tax.

3. Continuous monitoring of aviation sources and disbursement of funds be undertaken so that funding requests may be directed to the proper sources.

APPENDIX

TABLE I

REGISTERED AIRCRAFT

	<u>Michigan</u>	<u>Michigan % of United States</u>	<u>United States</u>
1955	2,564	3.01	85,320
1960	3,136	2.98	105,309
1965	3,943	2.78	142,078
1970	5,504	3.63	151,600
1975	6,275	--	185,350 ¹
1980 ² Forecast	9,380		
1985 ³	11,945		
1990 ²	14,510		

Sources: MICHIGAN DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION, Bureau of Transportation Planning, Aircraft Registration Summary, 1955-1975.

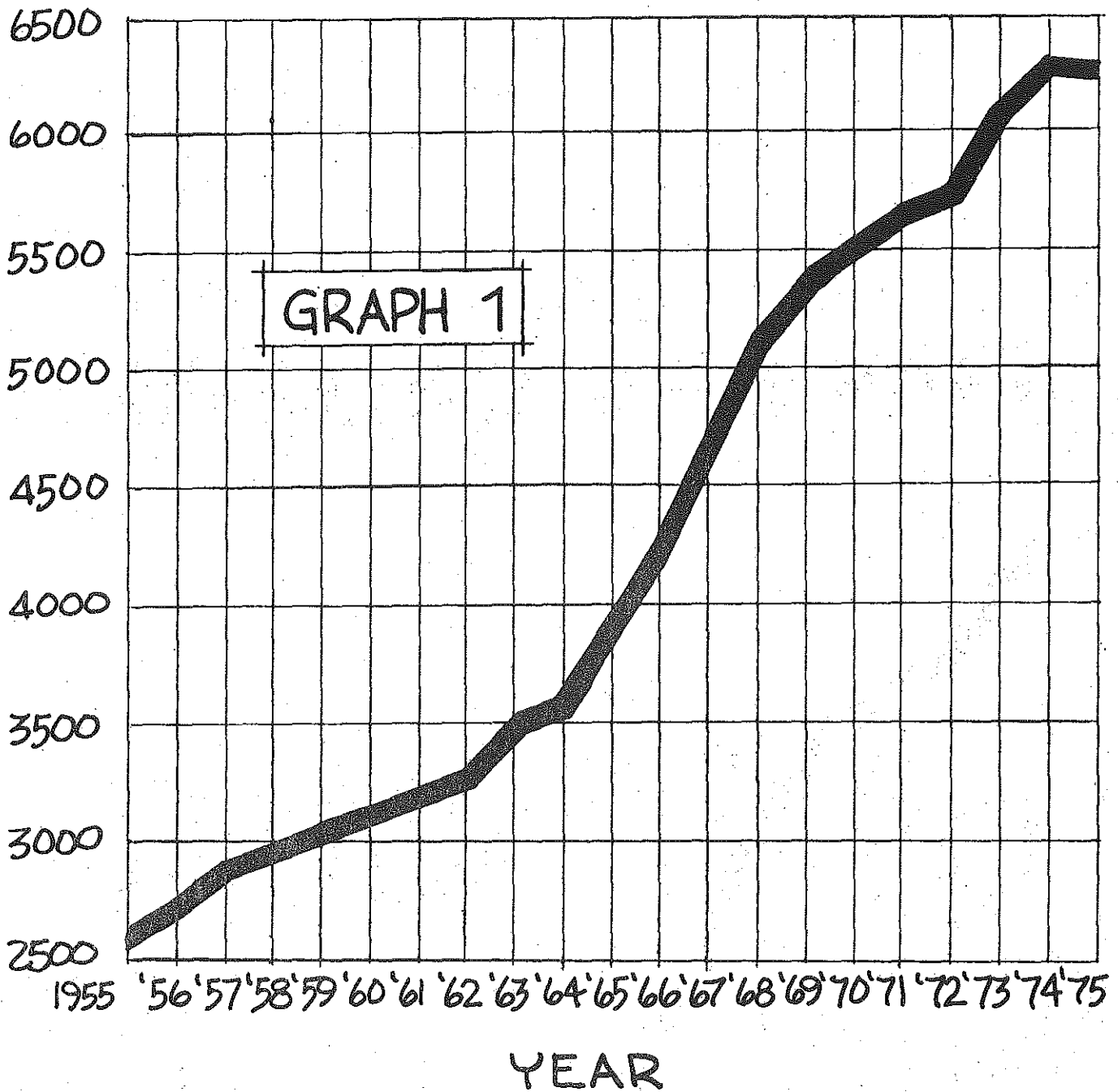
U.S. DEPARTMENT OF TRANSPORTATION, Federal Aviation Administration, FAA Statistical Handbook of Aviation, Calendar Year 1973.

¹1974 was the last year available for U.S. Registered Aircraft.

²The source for Michigan registered aircraft projections is the Michigan State Airport System Plan for the years 1980 and 1990.

³The Michigan State Airport System Plan did not contain a registered aircraft projection for 1985. Therefore, a simple average was utilized between the 1980 and 1990 figures.

STATE OF MICHIGAN REGISTERED AIRCRAFT



SOURCE :

REGISTRATION RECORDS
MICHIGAN AERONAUTICS
COMMISSION

PREPARED BY:

AVIATION PLANNING, MODAL
PLANNING DIVISION, BUREAU
OF TRANSPORTATION PLANNING
MDSH&T.

TABLE II - CONTROL TOWER AIRPORTS-COMPARATIVE OPERATIONS

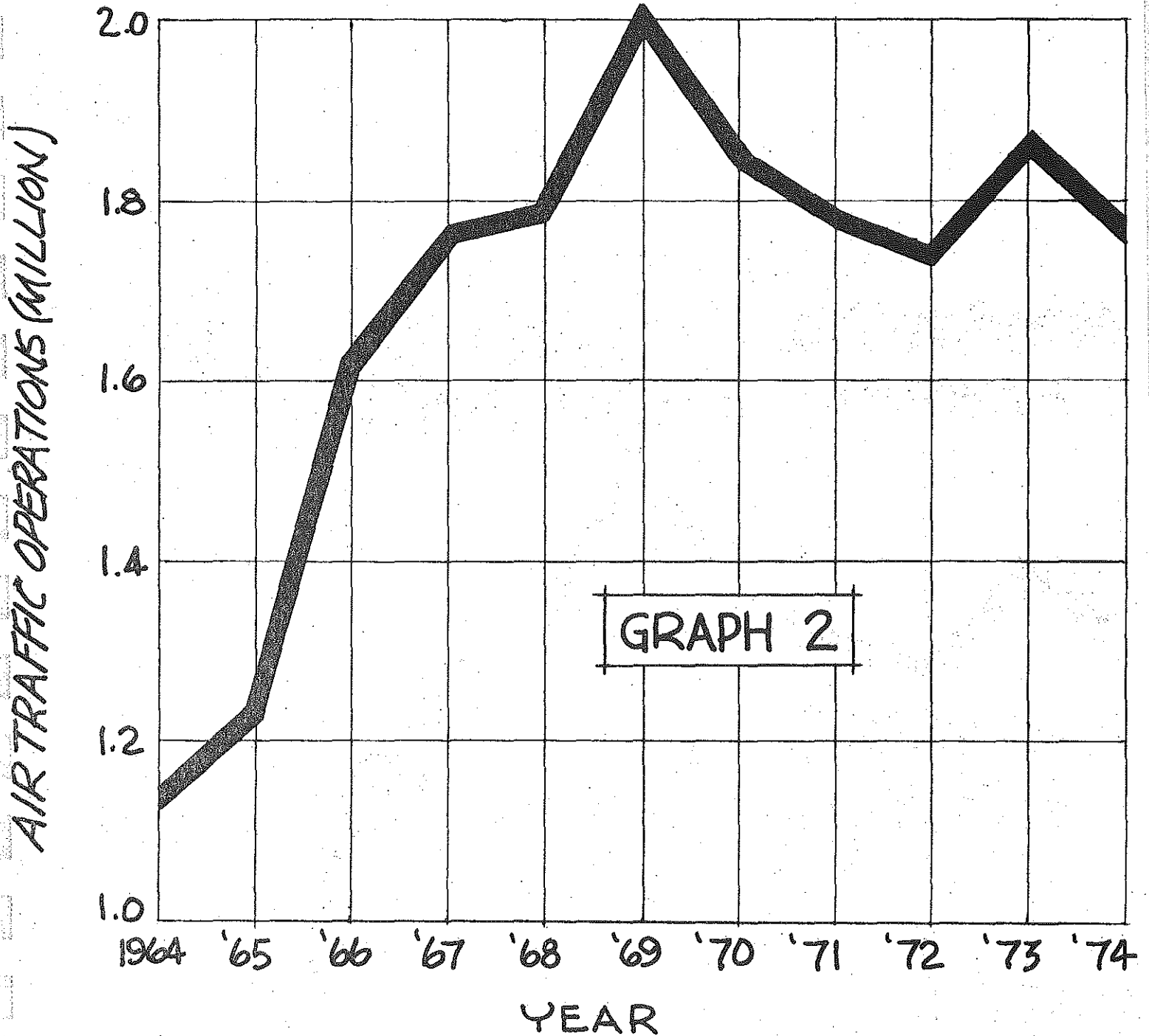
<u>CITY</u>	<u>AIRPORT</u>	1964	1969	1974	% Increase 1964-1969	% Increase 1969-1974
Ann Arbor	Municipal	*2	*2	125,627	--	--
Battle Creek	W.K. Kellogg Regional Airfield	47,738	98,122	71,557	106	-27
Benton Harbor	Ross Field	*2	*2	41,191	--	--
Detroit	City Airport	195,479	254,925	207,145	30	-18.7
Detroit	Metropolitan Wayne County	191,869	301,837	246,286	57	-18.4
Detroit	Willow Run	127,683	194,429	176,290	52	-9.3
Flint	Bishop Airport	80,855	197,409	136,343	144	-30.9
Grand Rapids	Kent County	96,734	152,439	161,004	58	5.6
Jackson	Reynolds Municipal	42,678	71,700	76,170	68	6.2
Kalamazoo	Municipal	55,626	138,477	142,403	149	2.8
Lansing	Capital City	119,867	173,859	141,954	45	-18.3
Muskegon	Muskegon County	61,205	98,417	84,138	61	-14.5
Pontiac	Oakland-Pontiac	115,127	237,582	238,436	106	0.3
Saginaw	Tri-City	*1	103,237	75,560	--	-26.8
Traverse City	Cherry Capital	*2	*2	*2	--	--
		<u>1,134,861</u>	<u>2,022,433</u>	<u>1,924,104</u>	<u>78</u>	<u>-4.8</u>

Source: Aviation Planning Section, Bureau of Transportation Planning, Control Tower Statistics.

*1 The Control Tower at Tri-City Airport was commissioned by the Federal Aviation Administration in 1966

*2 The Control Towers at Ann Arbor and Benton Harbor went into operation during 1973, and Traverse City's Control Tower began operation in 1974

STATE OF MICHIGAN TOTAL AIR TRAFFIC OPERATIONS 12 CONTROL TOWER AIRPORTS



SOURCE:

AIR TRAFFIC ACTIVITY STATISTICS
FEDERAL AVIATION
ADMINISTRATION

PREPARED BY:

AVIATION PLANNING, MODAL
PLANNING DIVISION, BUREAU
OF TRANSPORTATION PLANNING
MDSH&T.

TABLE III

ESTIMATED AIRCRAFT OPERATIONS

CITY	AIRPORT	MONTHS COUNTED	YEAR	ESTIMATED YEARLY OPERATIONS		
				ITINERANT	LOCAL	TOTAL
1. Adrian	Lenawee County	Sept - Oct	1972	13,400	25,400	38,700
2. Allegan	Padgham Field	Aug - Sept	1974	2,350	4,500	6,850
3. Alma	Gratiot Community	May - July	1973	4,800	9,000	13,800
4. Ann Arbor	Ann Arbor Municipal	Jan - June	1968	40,200	76,100	116,300
5. Bad Axe	Huron County Memorial	Aug - Oct	1972	4,900	9,250	14,150
6. Bay City	James Clements	July - Sept	1970	8,900	16,800	25,700
7. Bellaire	Antrim County	May - July	1974	6,200	800	7,000
8. Benton Harbor	Ross Field	April- June	1967	27,200	51,500	78,700
9. Big Rapids	Roben Hood	June - Aug	1974	3,350	6,400	9,750
10. Boyne City	Boyne City Municipal	May - July	1974	3,121	1,650	4,770
11. Brighton	Hyne Field	June - Sept	1974	6,450	12,200	18,650
12. Cadillac	Wexford Co. Authority	June - Oct	1973	3,510	6,640	10,150
13. Caro	Caro Municipal	Aug - Oct	1972	3,250	6,200	9,450
14. Charlevoix	Charlevoix	May - Aug	1974	11,450	6,050	17,500
15. Charlotte	Fitch H. Beach	August	1974	4,200	7,900	12,100
16. Cheboygan	Cheboygan Municipal	May - July	1974	3,400	6,450	9,850

ESTIMATED AIRCRAFT OPERATIONS

CITY	AIRPORT	MONTHS COUNTED	YEAR	ESTIMATED YEARLY OPERATIONS		
				ITINERANT	LOCAL	TOTAL
17. Clare	Clare Municipal	June - Oct	1973	4,150	2,200	6,350
18. Coldwater	Branch Co. Memorial	Mar - June	1970	9,000	13,800	22,800
19. Crystal Falls	Iron County	June - July	1972	2,150	1,150	3,300
20. Dowagiac	Cass Co. Memorial	May - July	1971	7,800	15,100	22,900
21. Drummond Island	Drummond Island	June - Sept	1972	2,100	1,100	3,200
22. East Tawas	Iosco County	June - Oct	1973	4,900	9,270	14,170
23. Escanaba	Escanaba Municipal	July - Sept	1973	9,500	9,500	19,000
24. Evart	Evart Municipal	June - Nov	1973	1,070	2,020	3,090
25. Frankfort	City-County	June - Sept	1973	4,750	0	4,750
26. Fraser	McKinley	April- June	1967	10,800	20,500	31,300
27. Fremont	Fremont Municipal	May - July	1973	4,450	8,400	12,850
28. Gaylord	Otsego County	Aug - Oct	1970	5,950	11,200	17,150
29. Gladwin	Gladwin Municipal	Aug - Sept	1972	3,500	1,850	5,350
30. Grand Haven	Grand Haven Memorial	Sept - Oct	1974	3,950	7,500	11,450
31. Grand Ledge	Abrams Municipal	July - Sept	1974	2,750	5,200	7,950
32. Greenville	Greenville	July - Oct	1974	6,150	11,600	17,750

ESTIMATED AIRCRAFT OPERATIONS

CITY	AIRPORT	MONTHS COUNTED	YEAR	ESTIMATED YEARLY OPERATIONS		
				ITINERANT	LOCAL	TOTAL
33. Grosse Ile	Grosse Ile Municipal	May - Oct	1973	18,250	34,500	52,750
34. Harbor Springs	Harbor Springs	June - Aug	1974	7,400	3,900	11,300
35. Harrison	Clare County	June - Aug	1974	1,800	3,350	5,150
36. Hart	Hart/Shelby	July - Oct	1974			3,540*
37. Hastings	Hastings Municipal	Nov - Oct	1969-70	26,000	8,600	34,600
38. Hillsdale	Hillsdale Municipal	June - Aug	1973	4,800	9,000	13,800
39. Holland	Holland Park Twp.	Sept - Oct	1974	6,650	12,550	19,200
40. Holland	Tulip City	Sept - Oct	1974	6,100	11,550	17,650
41. Houghton-Hancock	Houghton Co. Memorial	May - Oct	1969	5,300	10,000	15,300
42. Houghton Lake	Roscommon County	June - Oct	1973	8,200	4,350	12,550
43. Howell	Livingston Co.	July - Aug	1974	12,850	24,300	37,150
44. Ionia	Ionia County	May - July	1971	9,700	18,300	28,000
45. Iron Mountain	Ford	July - Sept	1973	14,060	14,060	28,120
46. Iron River	Stambaugh City	June - Sept	1972	4,100	2,200	6,300
47. Ironwood	Gogebic County	May - Sept	1969	5,600	10,600	16,200
48. Lakeview	Lakeview Municipal	Aug - Oct	1974	2,200	4,200	6,600

*Total is for four month period, not expanded for a year.

ESTIMATED AIRCRAFT OPERATIONS

CITY	AIRPORT	MONTHS COUNTED	YEAR	ESTIMATED YEARLY OPERATIONS		
				ITINERANT	LOCAL	TOTAL
49. Lambertville	Wagon Wheel	July - Sept	1974	9,250	17,500	26,750
50. Lapeer	Dupont-Lapeer	May - July	1971	6,500	12,250	18,750
51. Lowell	Lowell City	Aug - Nov	1973	1,920	3,630	5,550
52. Ludington	Mason County	Aug - Oct	1971	8,100	15,350	23,450
53. Mackinac Island	Mackinac Island	Jan - Dec	1973	12,114	0	12,114
54. Manistee	Manistee Co. Blacker	June - Oct	1973	5,000	5,000	10,000
55. Manistique	Schoolcraft Co.	July - Sept	1973	2,960	5,600	8,560
56. Marine City	Marine City	June - Aug	1974	1,550	2,900	4,450
57. Marquette	Marquette Co.	July - Sept	1973	16,600	16,600	33,200
58. Marshall	Brooks Field	September	1972	7,250	13,700	20,950
59. Mason	Jewett Field	July - Sept	1974	7,350	13,900	21,250
60. Menominee	Menominee County	June - Sept	1974	10,900	10,900	21,800
61. Midland	Jack Barstow	Aug - Oct	1972	12,750	24,100	36,850
62. Monroe	Custer	June - Oct	1973	12,000	22,700	34,700
63. Mt. Pleasant	Mt. Pleasant Municipal	Aug - Sept	1974	7,200	13,600	20,800
64. Munising	Hanley Field	May - Sept	1972	680	0	680

ESTIMATED AIRCRAFT OPERATIONS

CITY	AIRPORT	MONTHS COUNTED	YEAR	ESTIMATED YEARLY OPERATIONS		
				ITINERANT	LOCAL	TOTAL
65. Newberry	Luce County	May - Aug	1972	3,600	1,900	5,500
66. Niles	Jerry Tyler Memorial	April- June	1970	8,400	13,200	21,600
67. New Hudson	New Hudson	June - Sept	1974	6,750	12,750	19,500
68. Onaway	Onaway	June - Oct	1973	1,500	100	1,600
69. Ontonagon	Ontonagon County	June - Aug	1972	1,100	2,100	3,200
70. Owosso	Owosso City	June - Sept	1974	21,650	19,000	40,650
71. Pellston	Emmet County	May - July	1974	10,000	10,000	20,000
72. Plainwell	Otsego-Plainwell	Aug - Oct	1974	4,650	8,750	13,400
73. Plymouth	Mettetal	April- June	1971	35,600	67,300	102,900
74. Reed City	Miller Field	June - Aug	1974	2,400	200	2,600
75. Pontiac	Pontiac Oakland/Orion	June - Aug	1974	13,850	26,200	40,050
76. Port Huron	St. Clair County	Feb - Dec	1973	15,100	28,600	43,700
77. Rogers City	Presque Isle County	May - July	1974	2,500	400	2,900
78. Romeo	Romeo	June - Sept	1974	8,450	15,950	24,400
79. Saginaw	Saginaw Municipal	Aug - Oct	1972	2,700	5,150	7,850
80. St. Ignace	Mackinac County	June - Sept	1972	3,850	7,250	11,100

ESTIMATED AIRCRAFT OPERATIONS

CITY	AIRPORT	MONTHS COUNTED	YEAR	ESTIMATED YEARLY OPERATIONS		
				ITINERANT	LOCAL	TOTAL
81. Salem	Salem	June - Sept	1974	18,000	34,200	52,200
82. Sandusky	City Airport	Aug - Oct	1972	1,550	2,900	4,450
83. Sault Ste. Marie	Municipal	May - Sept	1972	10,550	10,550	21,100
84. Sebawaing	Sebawaing	Aug - Oct	1972	550	1,050	1,600
85. South Haven	So. Haven Municipal	Aug - Oct	1974	12,300	6,500	18,800
86. Sparta	Sparta	July - Oct	1974	5,400	10,200	15,600
87. Standish	Standish	July - Oct	1970	1,300	2,400	3,700
88. Sturgis	Kirsch Municipal	Aug - Oct	1973	6,350	12,100	18,450
89. Three Oaks	Oselka	May - Oct	1972	6,300	630	6,930
90. Three Rivers	Haines	April- June	1970	4,600	8,700	13,300
91. Traverse City	Cherry Capital	Aug - Oct	1971	28,000	34,600	62,600
92. Troy	Grand Prix	May - July	1971	33,650	63,650	97,300
93. Utica	Berz Macomb	June - Sept	1974	17,850	35,700	53,550
94. Wayland	Wayland	Sept - Oct	1972	1,600	3,050	4,650
95. West Branch	W. Branch Community	Aug - Oct	1971	2,450	4,650	7,100
96. Westland	National	April- June	1971	27,200	51,400	78,600

Source: Traffic Counter Program
 Bureaus of Aeronautics and Transportation Planning
 Michigan Department of State Highways and Transportation Planning

TABLE IV

TOTAL NUMBER OF AIRLINE PASSENGERS - COMPARATIVE PERIODS

CITY	AIRPORT	1964 ¹	1969	1974	% Increase 1964-1974	% Increase 1969-1974
Alpena	Phelps-Collins	3,606	11,918	18,450	411.6	54.8
Battle Creek	W.K. Kellogg Regional Airfield	33,756	70,852	--	--	--
Benton Harbor	Ross Field	18,010	43,212	57,407	218.7	32.8
Detroit ²		6,646,888	7,563,598	7,747,178	16.5	2.4
Escanaba	Delta County	10,556	23,935	30,514	189	27.4
Flint	Bishop	57,738	178,319	203,216	251.9	13.9
Grand Rapids	Kent County	240,924	444,732	559,235	132.1	25.7
Hancock/Houghton	Houghton County Memorial	11,862	35,521	37,749	218.2	6.2
Iron Mountain	Ford	14,312	22,875	32,221	125.1	40.8
Ironwood	Gogebic County	4,976	14,393	17,206	245.7	19.5
Jackson	Reynolds Municipal	9,770	11,414	17,157	75.6	50.3
Kalamazoo	Kalamazoo Municipal	56,212	124,734	201,905	259.1	61.8
Lansing	Capital City	112,248	263,590	326,563	190.9	23.8
Manistee	Manistee County- Blocker	5,496	8,252	6,669	21.3	-19.1
Marquette	Marquette County	21,530	43,939	59,967	178.5	36.4
Menominee	Menominee County	8,218	17,171	18,940	130.4	10.3
Muskegon	Muskegon County	61,456	127,722	146,490	138.03	14.6
Pellston	Emmet County	16,996	32,304	43,937	158.5	36.0
Saginaw	Tri-City	127,076	312,366	344,169	170.8	10.1
Sault Ste. Marie	City-County	13,040	20,459	26,898	106.2	31.4
Traverse City	Cherry Capital	31,818	69,901	104,831	229.4	49.9
TOTALS		7,510,174	9,441,207	10,000,702	33.1	5.9

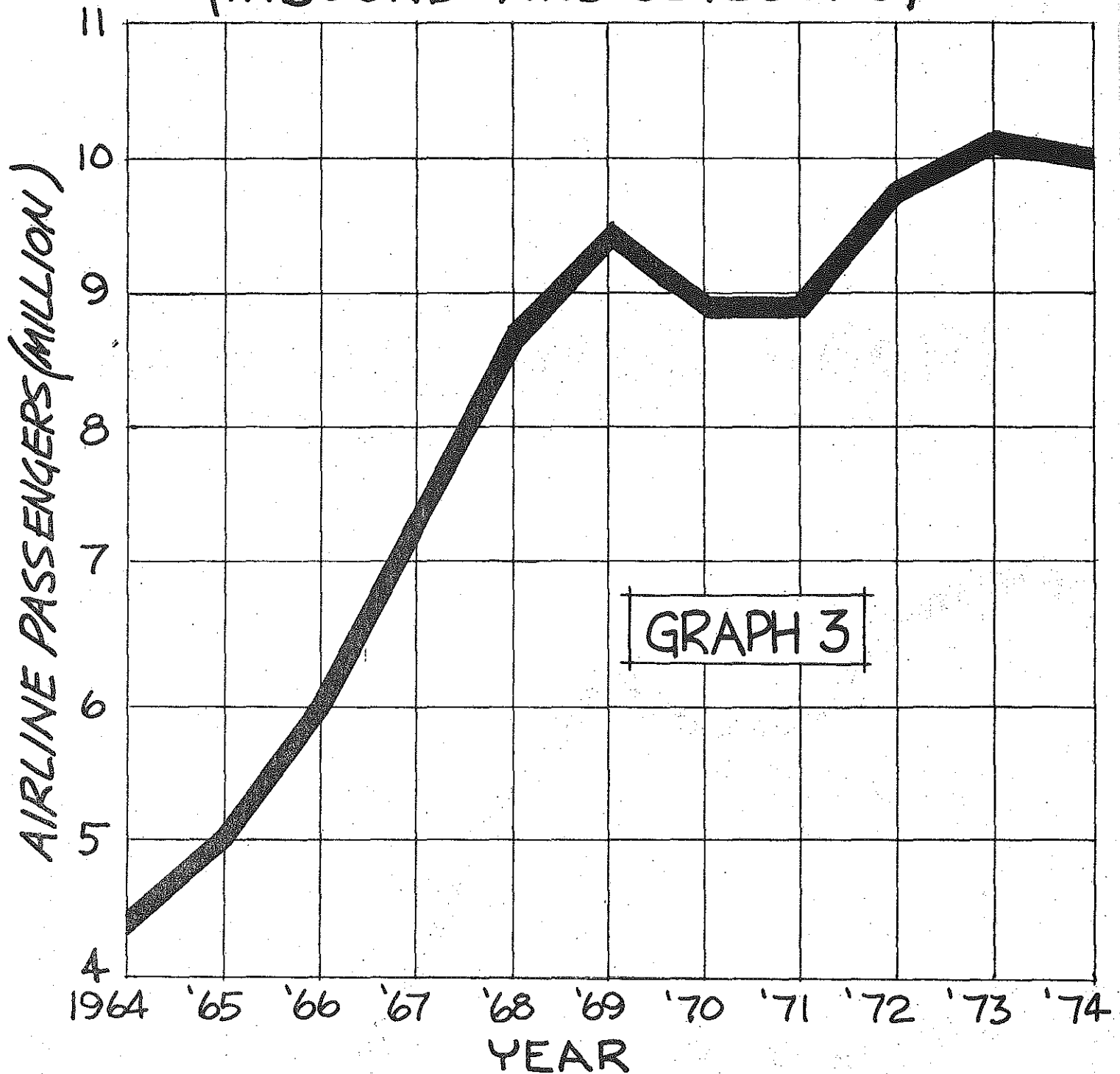
Source: Aviation Planning Section, Bureau of Transportation Planning, Aviation Statistics

¹The 1964 Passenger figure was derived by doubling the number of deplaned passengers as listed in the 1964 Civil Aeronautics Board, Airport Activity.

²The 1964 Detroit figure includes passengers from Detroit City, Ann Arbor, Detroit Metropolitan, and Detroit Willow Run Airports. The 1969 and 1974 passenger figures consists of both Detroit Metropolitan, and Detroit City Airport.

³The 1964 passenger figure includes data for Pontiac, Port Huron and Reed City, all three of which list airline service in 1965.

STATE OF MICHIGAN AIRLINE PASSENGERS (INBOUND AND OUTBOUND)



SOURCE :

AIRLINE RECORDS
MICHIGAN AERONAUTICS
COMMISSION

PREPARED BY:

AVIATION PLANNING, MODAL
PLANNING DIVISION, BUREAU
OF TRANSPORTATION PLANNING
MDSH & T.

TABLE V

State of Michigan
Air Carrier Airports

Total Pounds of Cargo-(Inbound and Outbound)

CITY	AIRPORT	1964*-1969-1974			%Change 1964-74	%Change 1969-74
		1964	1969	1974		
Alpena	Phelps-Collins	128,960	321,494	333,561	158.6	3.7
ATTLE CREEK	W.K. Kellogg Regional Airfield	263,360	--	--	--	--
ANTON HARBOR	Ross Field	700,000	1,061,265	971,904	38.8	-8.4
ADILLAC/REED CITY	Miller Field	72,840	--	--	--	--
ETROIT		275,030,160	316,881,443	396,679,018	44.2	25.1
SCANABA	Delta County	103,480	258,724	377,551	264.8	45.9
INT	Bishop	1,888,560	4,985,563	2,712,815	43.6	-45.5
GRAND RAPIDS	Kent County	5,537,080	10,336,901	8,354,705	50.8	-19.1
ANCOCK	Houghton County Memorial	36,800	565,388	715,601	1,844.5	26.5
IRON MOUNTAIN	Ford	80,400	700,665	501,260	523.4	-28.4
IRONWOOD	Gogebic County	8,520	189,926	152,407	1,688.8	-19.7
JACKSON	Reynolds Municipal	263,280	575,963	427,384	62.3	-25.8
ALAMAZOO	Kala. Municipal	1,510,560	3,824,380	1,829,616	21.2	-52.1
ANSING	Capital City	1,441,760	4,657,055	3,997,261	177.2	-14.1
ANISTEE	County-Blocker	42,160	225,394	275,167	552.6	22.0
ARQUETTE	Marquette County	53,400	393,162	567,158	962	44.2
ANOMINEE	Menominee County	128,440	485,443	395,792	208.1	-18.4
ASKEGON	Muskegon County	1,872,000	3,523,578	2,318,688	23.8	-34.2
ILSTON	Emmet County	277,200	308,520	271,837	-1.9	-11.8
NTIAC	Oakland-Pontiac	43,560	--	--	--	--
RT HURON	St. Clair County International	38,960	--	--	--	--
GINAW	Tri-City	2,204,320	4,004,514	2,890,431	31.3	-27.8

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TABLE V (Continued)

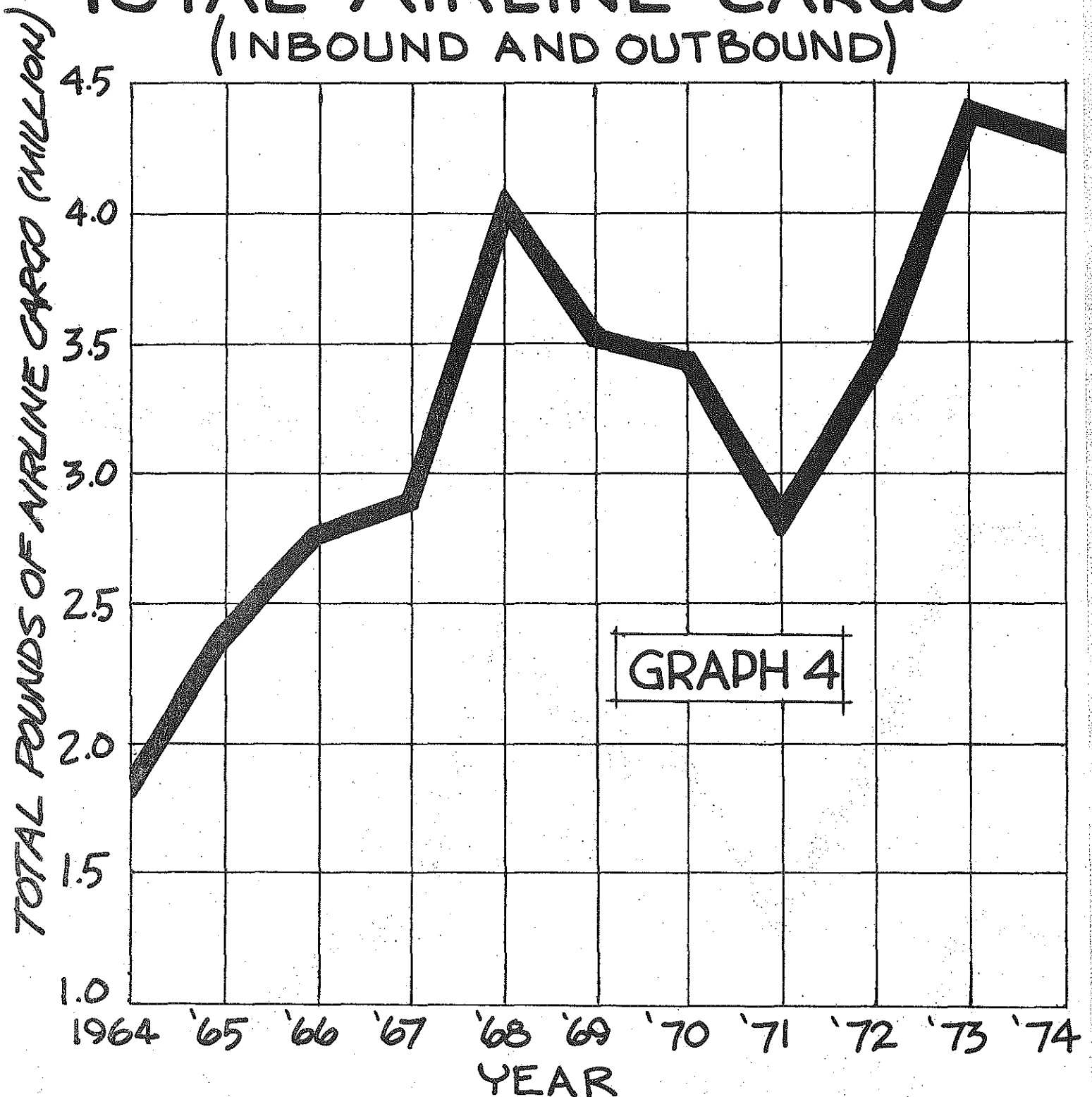
<u>CITY</u>	<u>AIRPORT</u>	<u>1964</u>	<u>1969</u>	<u>1974</u>	<u>%Change 1964-74</u>	<u>%Change 1969-74</u>
East St. Marie	City-County	35,280	239,174	153,787	335.9	-35.7
Traverse City	Cherry Capital	241,800	958,436	1,469,214	507.6	53.2
TOTALS		292,002,880	354,496,988	425,395,177	45.6	20.0

Source: Aviation Planning Section, Bureau of Transportation Planning,
Michigan Department of State Highways and Transportation,
Aviation Statistics.

*¹In 1964 only outbound cargo was shown; the figures shown represents the
outbound cargo figure doubled.

*²The 1964 Detroit figure includes passengers from Detroit City, Ann Arbor,
Detroit Metropolitan, and Detroit Willow Run Airports. The 1969 and 1974 pass-
enger figures consists of both Detroit Metropolitan and Detroit City Airport.

STATE OF MICHIGAN TOTAL AIRLINE CARGO (INBOUND AND OUTBOUND)



SOURCE:

AIR TRAFFIC ACTIVITY STATISTICS
FEDERAL AVIATION
ADMINISTRATION

PREPARED BY:

AVIATION PLANNING, MODAL
PLANNING DIVISION, BUREAU
OF TRANSPORTATION PLANNING
MDSH&T.

TABLE VI

ACTIVE AIRMEN

	UNITED STATES	MICHIGAN	MICHIGAN % OF UNITED STATES
1960	348,062	4,648	1.33
1965	479,770	8,379	1.74
1970	732,729	25,836	3.52
1974	733,728	24,562	3.34

Source: Michigan Aeronautics Commission, Airmen Registration Record,
1970, 1974.

Federal Aviation Administration, U.S. Civil Airmen Statistics,
1970, 1974.

TABLE VII
HOURS FLOWN BY PURPOSE - UNITED STATES
AS PERCENTS OF TOTAL

	<u>Business</u>	<u>Commercial</u>	<u>Instructional</u>	<u>Personal</u>	<u>Other</u>	<u>Total</u>
1960	44	18	14	24	--	100
1965	35	20	20	24	1	100
1970	28	18	26	26	2	100
1973	28	19	25	25	3	100

SOURCE: Federal Aviation Administration, Statistical Handbook of Aviation, Calendar Years 1970, 1973.

TABLE VIII

FEDERAL AID TO AIRPORTS, BY PROGRAM

1948-1970 Federal-Aid Airport Program (FAAP)

	<u>Total</u>	<u>Federal</u>	<u>Sponsor</u>	<u>No. of Airports</u>
United States	2,455,519,916	1,200,141,699	1,255,378,217	2,316
Michigan	76,746,191	35,664,460	41,081,731	79

1970-1975 Airport Development Aid Program (ADAP)

	<u>Total</u>	<u>Federal</u>	<u>Sponsor</u>	<u>No. of Airports</u>
United States	2,203,910,868	1,302,796,340	901,114,528	1,225
Michigan	98,785,163	52,072,394	46,712,769	14

SOURCE: Federal Aviation Administration, Washington, D.C. Office, 1975

TABLE IX

GENERAL AVIATION DELIVERIES

	<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>
Number Planes	7,588	6,778	6,697	7,569	9,336	11,852	15,768	13,577	13,698	12,591	7,40
Average Billing	\$19,926	\$18,339	\$20,427	\$20,267	\$21,294	\$26,848	\$28,215	\$26,486	\$31,070	\$50,735	\$49,18
Billing (millions)	\$ 151.2	\$ 124.3	\$ 136.8	\$ 153.4	\$ 198.0	\$ 318.2	\$ 444.9	\$ 359.6	\$ 425.6	\$ 638.8	\$ 364.
	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974*</u>	<u>TOTAL OR AVERAGE</u>		<u>% CHANGE</u>				
Number Planes	7,464	9,774	13,646	14,400**	158,140		--				
Average Billing	\$41,948	\$57,008	\$60,692	\$63,889	\$37,525		+ 29.9				
Billings (millions)	\$ 313.1	\$ 557.2	\$ 828.2	\$ 920.0	\$5,934.2		+152.7				

*Number of planes and billing for 1974 are estimates.

**In 1960, 966 of the aircraft built were twin engine as compared with 2,864 built in 1973, of which 206 were business jets. This increase in the number of twin engine aircraft is a good indicator of the increase in business usage, since most twin engine airplanes are owned and used solely for business purposes.

SOURCE: General Aviation Association Records and Statistics.

TABLE X

State of Michigan

Control Tower Operations
Six Months Ending 6-30-75 vs. Six Months Ending 6-30-74

<u>CITY</u>	<u>AIRPORT</u>	<u>1975</u>	<u>1974</u>	<u>%Change</u>
Ann Arbor	Municipal	63,674	57,247	11.2
Battle Creek Regional	W.K. Kellogg	28,106	34,391	-18.2
Benton Harbor	Ross Field	19,237	19,291	-0.2
Detroit	City	89,761	96,758	-7.2
Detroit	Metropolitan	114,591	116,656	-1.7
Detroit	Willow Run	82,366	83,382	-1.2
Flint	Bishop	74,351	57,772	28.7
Grand Rapids	Kent County	81,248	75,379	7.7
Jackson	Reynolds Municipal	40,305	35,946	12.1
Kalamazoo	Municipal	69,307	67,650	2.4
Lansing	Capital City	79,559	66,499	19.6
Muskegon	County	40,958	38,353	6.7
Pontiac	Oakland-Pontiac	114,300	110,352	3.5
Saginaw	Tri-City	<u>40,822</u>	<u>37,689</u>	<u>8.3</u>
State of Michigan		938,585	897,365	+4.5

Source: Aviation Planning Section, Bureau of Transportation
Planning, Control Tower Statistics.

*Traverse City's Control Tower was not in operation the first half of 1974.

TABLE XI.

ANALYSIS OF AIRLINE TICKET
PURCHASES IN MICHIGAN, 1974

<u>CITY</u>	<u>Number of Pass. miles in Sample</u>	<u>Yield per Passenger Miles.</u>	<u>Yield</u>	<u>Annual Yield (yieldx10)</u>	<u>1974 Enplaned Passengers</u>	<u>Annual Estimated Tickets 1974</u>	<u>*Annual Yield Per Ticket</u>
Alpena	1,150,272	.0723	83,165	831,650	9151	6,412	130
Battle Creek	1,582,932	.0723	114,446	1,144,460	A	A	A
Benton Harbor	4,182,964	.0723	302,428	3,024,280	29,916	21,481	141
Detroit Metropolitan	461,925,446	.0723	33,397,209	333,972,090	3,818,177	2,023,633	165
Escanaba	1,718,973	.0723	124,282	1,242,820	15,378	10,058	124
Grand Rapids	34,374,249	.0723	2,485,258	24,852,580	280,862	188,542	132
Flint	14,539,128	.0723	1,051,179	10,511,790	100,708	74,917	140
Hancock/Houghton	2,525,726	.0723	182,610	1,826,100	18,902	12,865	142
Ironwood	1,278,700	.0723	92,450	924,500	8,700	6,128	151
Jackson	986,794	.0723	71,345	713,450	8,644	6,065	118
Kalamazoo	12,431,505	.0723	898,798	8,987,980	101,167	68,905	130
Lansing	19,448,208	.0723	1,406,105	14,061,050	162,081	111,350	126
Manistee	332,880	.0723	24,067	240,670	3,385	2,296	105
Marquette	3,957,054	.0723	286,095	2,860,950	29,620	20,550	139
Menominee	1,139,694	.0723	82,400	824,000	9,143	6,332	130
Muskegon	905,664	.0723	65,480	654,800	73,334	4,400	149
Pellston	2,570,439	.0723	185,842	1,858,420	22,126	12,459	149

(Continued on next page)

TABLE XI (Continued)

<u>CITY</u>	<u>Number of Pass. miles in Sample</u>	<u>Yield per Passenger Miles</u>	<u>Yield</u>	<u>Annual Yield (yieldx10)</u>	<u>1974 Enplaned Passengers</u>	<u>Annual Estimated Ticket 1974</u>	<u>*Annual Yield Per Ticket</u>
Saginaw	23,817,999	.0723	1,722,041	17,220,410	172,608	121,499	142
Sault Ste. Marie	1,632,206	.0723	118,008	1,180,080	12,486	8,926	132
Traverse City	5,970,423	.0723	431,662	4,316,620	54,495	31,749	136
TOTALS	596,471,256		43,124,870	431,248,700	4,930,893	2,738,517	2,432

Source: These figures were derived from Air Carrier Financial Statistics, Civil Aeronautics Board, 1974.

A Battle Creek's certificated airline service was discontinued in 1971. They are served by a third-level (commuter carrier).

* These figures were derived from a ratio using 1968 data. **128
***125

** This is the average for the state, including Detroit which accounts for 80% of Michigan's airline business and because this is a weighted average, this boosts the average and distorts it.

*** This is the average of all airline airports in Michigan minus Detroit.

TABLE XII

ANALYSIS OF FUEL TAX REVENUE

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<u>AIRLINES</u>	<u>TOTAL GALLONS 1974-75</u>	<u>PRESENT TAX</u>	<u>PROPOSED TAX</u>	<u>DIFFERENCE (3)-(2)</u>	<u>*TOTAL GALLONS 1980(.05)</u>	<u>PROJECTED TAX 1980 PRESENT RATE</u>	<u>PROJECTED TAX 1980 PROPOSED RATE</u>	<u>DIFFERENCE (7-6)</u>
A	266,895	4,003	9,006	+ 5,003	280,239	5,204	9,407	+ 4,203
B	62,804	942	2,512	+ 1,570	65,944	979	2,638	+ 1,659
C	3,581,652	53,725	82,633	+ 28,908	3,760,734	56,411	86,215	+29,804
D	29,560	443	1,182	+ 739	31,038	465	1,242	+ 777
E	36,196,655	542,950	466,983	- 75,966	38,006,487	570,107	476,032	-94,075
F	1,245,922	18,689	35,918	+ 17,229	1,308,218	19,623	37,164	+17,541
G	555,982	8,339	17,679	+ 9,340	583,781	8,757	23,351	+14,594
H	25,952,557	389,288	405,525	+ 16,237	27,250,184	408,752	418,501	+ 9,749
I	7,503,827	112,557	161,076	+ 48,519	7,879,018	118,185	170,580	+52,395
J	10,404,885	156,073	217,073	+ 61,000	10,925,129	163,876	224,897	+61,021
K	16,125,705	241,885	302,885	+ 61,000	16,931,990	253,980	314,979	+60,999
L	1,162,831	17,442	34,256	+ 16,814	1,220,972	18,314	35,419	+17,105
M	40,431	607	1,617	+ 1,010	42,452	637	1,698	+ 1,061
N	225,663	3,385	7,769	+ 4,384	236,946	3,554	8,108	+ 4,554
O	5,021,728	75,326	111,434	+ 36,108	5,287,214	79,308	116,744	+37,436

(Continued on next page)

TABLE XII (Continued)

ANALYSIS OF FUEL TAX REVENUE

<u>AIRLINES</u>	<u>TOTAL GALLONS 1974-75</u>	<u>PRESENT TAX</u>	<u>PROPOSED TAX</u>	<u>DIFFERENCE (3)-(2)</u>	<u>*TOTAL GALLONS 1980(.05)</u>	<u>PROJECTED TAX 1980 PRESENT RATE</u>	<u>PROJECTED TAX 1980 PROPOSED RATE</u>	<u>DIFFERENCE (7-6)</u>
P	26,581,848	398,728	411,818	+ 13,090	27,910,940	418,664	425,109	+ 6,445
Q	41,366	620	1,654	+ 1,034	43,434	651	1,737	+ 1,086
R	3,458,028	51,739	80,160	+ 28,421	3,630,924	54,454	83,619	+29,165
TOTAL AIRLINES	138,458,339	2,076,741	2,347,180	+270,439	145,381,249	2,181,921	2,437,440	+255,519
GENERAL AVIATION	44,517,345	1,335,520	1,780,693	+445,173	46,743,212	1,869,728	2,337,160	+467,432
TOTAL	182,975,684	3,412,261	4,127,873	+715,612	192,124,461	4,051,649	4,774,600	+722,951

PROPOSED TAX SCHEDULE

.040 to	100,000	Gallons	4,000
.030 to	1,000,000	Gallons	27,000
.020 to	10,000,000	Gallons	180,000
.015 to	20,000,000	Gallons	135,000
.010 to	30,000,000	Gallons	90,000
.005 to over	30,000,000	Gallons	

*A growth factor of .05 was used to project 1980 gallons of fuel purchased. In view of the uncertain nature of the energy situation, this growth factor should be viewed as reasonable under the circumstances.

Source: The information on the amount of fuel purchased was compiled by the Michigan Aeronautics Commission.