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AN ANALYSIS OF CURRENT AND FUTURE DETERIORATION
ON MICHIGAN'S STATE, COUNTY, AND CITY ROADS

August 1988

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Prepared by

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Founded in 1971, The Road Information Program (TRIP) of Washington, D.C., is a non-profit organization that researches, evaluates and distributes economic and technical data on highway transportation issues. TRIP is sponsored by energy and insurance companies; motor vehicle manufacturers; equipment manufacturers, distributors and suppliers; businesses involved in highway engineering, construction and financing; labor unions; and organizations concerned with an efficient and safe highway transportation network.

Introduction

Michigan's 117,803-mile highway system is the seventh largest road system in the United States, carrying more than 75 billion vehicle miles of travel per year. That traffic continues to grow -- now increasing by about 3 percent per year -- and is expected to reach 115 billion vehicle miles a year by the end of the century.

While growing traffic volumes indicate an active, healthy economy, it is important to examine the extent of wear and tear these greater numbers of vehicles are causing Michigan's road system, much of which has been in place for at least 40 years.

This study assesses the extent of road and bridge deterioration, along with anticipated repair needs over the next 12 years, and recommends a program of major improvements to allow Michigan to catch up with existing needs and keep up with continuing needs through the year 2000.

Sources of information for this study include the Michigan Department of Transportation, the Michigan Department of Commerce, the Federal Highway Administration and other government and private agencies.

Driver and Vehicle Growth

The growth in the number of registered motor vehicles and licensed drivers in Michigan has been steady over the past decade. In 1976, the state registered 5.97 million vehicles and 6.05 million motorists. By 1986, the number of vehicle registrations had climbed 14.4 percent, to 6.83 million, and drivers' licenses had climbed 4.6 percent, to 6.33 million.

Growth in drivers and vehicles would have been greater except for the economic recession of the early 1980s, when many Michigan residents moved to other states in search of jobs. However, the downward trends have reversed and state planners anticipate that the numbers will continue to climb steadily into the next decade.

Growth of Travel on Michigan's Roads

The number of vehicle miles traveled -- or total traffic -- on Michigan's roads, streets and highways climbed 23.1 percent between 1980 and 1987, from 61.5 billion to 75.7 billion. Growing volumes of traffic from out of state, traveling both to and through Michigan, contributed greatly to this increase.

Studies of pavement life conducted by the Federal Highway Administration in 19 states showed that the average road pavement lasts about 16.2 years. During this time, new pavement deteriorates very gradually (depending on traffic and weather conditions) from good to fair condition, then falls more rapidly through fair into poor and very poor condition.

Currently, some 34,163 miles of state, county and municipal roads in Michigan are deficient and in need of major improvements. This backlog represents 29 percent of the state's 117,803 total road system.

In addition, another 52.2 percent of the system -- some 61,516 miles -- is expected to deteriorate into substandard condition over the next 12 years.

These 95,679 miles -- 81.2 percent of all roads in Michigan -- will need any of several kinds of improvements, including:

- resurfacing
- resurfacing and adding new lanes
- reconstructing
- reconstructing and adding new lanes
- intersection improvements

The average lifespan of a bridge is estimated at about 50 years, depending on traffic, weather and design. A total of 3,465 (32.6 percent) of Michigan's bridges were built at least 50 years ago. Currently, the Department of Transportation lists 2,026 bridges that are posted for restricted vehicle weights.

The Cost of Improvements

It would cost a total of \$14.4 billion over the next 12 years to bring Michigan's substandard roads and bridges up to good condition and to keep up with continuing pavement deterioration. This figure includes anticipated inflationary impact through the next decade. It does not include the cost of constructing any new roads and bridges or routine maintenance and administration.

TRIP recommends a 12-year road and bridge capital improvement program (running to the year 2000), averaging \$1.2 billion a year. A 12-year program is recommended because it would take about that long to schedule the work and generate adequate funding.

In the 12 months from June 1, 1987 through May 31, 1988, the Michigan Transportation Fund received a total of \$1.05 billion: \$648.4 million from motor-fuel taxes, \$31.2 million from diesel vehicle taxes and \$340.7 million from vehicle registration fees. The total \$1.05 billion represents an increase of 4.8 percent over the previous 12 months, due largely to increasing travel and motor-fuel purchases.

Michigan's diesel fuel tax revenues would be higher if the state did not have a 6-cents-per-gallon exemption for commercial motor carriers (with a special permit). The state Department of Transportation estimates that about 82 percent of all diesel fuel sold is discounted through this program, which generated a loss of more than \$13 million to the Michigan Transportation Fund in 1986.

Michigan's motor-fuel tax was increased from 11 to 13 cents a gallon on January 1, 1983, and another two cents, from 13 to the current 15 cents a gallon on January 1, 1984. The 2-cent increase each year was the maximum allowable increase based on the indexing of the motor-fuel tax adjusted for inflation. This adjustable tax relies on the Federal Highway Administration Maintenance Index as well as the total number of gallons of motor-fuel sold each year.

Federal Aid

Each time Michigan motorists fill up their gas tanks, they pay a federal motor-fuel tax of 9 cents per gallon, 1 cent of which is dedicated to mass transit purposes. Revenues from the remaining 8 cents go into the Federal Highway Trust Fund which is managed by the Federal Highway Administration in Washington, D.C.

In 1987, Michigan received \$365 million in federal aid for road and bridge improvements -- \$23 million less than in 1986 and \$84 million less than in 1985.

However, a large chunk of federal-aid funds contributed by Michigan does not return to the state coffers. Despite a Congressionally prescribed formula mandating that at least 85 percent of the revenues generated in Michigan be returned to Michigan, this is not happening.

Because the Highway Trust Fund is considered part of the unified national budget, it is subject to the same constraints (Gramm-Rudman-Hollings budget controls) as other federal departments. Therefore, funds continue to sit frozen in the Highway Trust Fund.

State	39.1 percent
83 Counties	39.1 percent
532 Cities & Villages	21.8 percent

In fiscal year 1987, these proportions amounted to the following distributions: state highways, \$326 million; county road commissions, \$326 million; and city and village streets, \$184 million.

It is important to note that these distributions cover operational and maintenance expenses as well as capital improvements. Michigan's County Road Association estimated that 45 to 50 percent of their revenues pay for activities other than road and bridge improvements, including snow removal, mowing, shoulder grading, pavement patching and striping.

Local governments also may raise road and bridge improvement funds through direct taxation, local general fund contributions, special assessments on property and bonding. In addition, legislation passed in December 1987 allows local governments the option of imposing local vehicle registration fees of up to \$25.00.

TRIP's driving cost estimates are based on a Congressional Budget Office analysis of data compiled by the Office of Highway Planning of the Federal Highway Administration and studies by Runzheimer International for the American Automobile Association on the costs of owning and operating a car.

The Economic Impact

Michigan's roads and bridges are the backbone of the state's economy. Adequate, well-maintained roads provide dependable and easy access for businesses -- to bring people to jobs, to transport raw materials to factories and finished goods to market (especially in just-in-time-delivery businesses) and to carry the multitude of service industries so important to Michigan's economic health.

And clearly, Michigan's economy is thriving. Researchers at the Michigan Department of Commerce report that, "Michigan's record-setting performance in construction activity in 1987 provides further evidence the state has made a robust and sustained recovery from the 1981-1982 recession."

According to the Michigan Travel Bureau, the Wolverine State is primarily a regional vacation area, and many of its visitors are from neighboring states -- within an easy day's drive. In fact, an estimated 90 percent of tourists' trips in Michigan are by automobile, compared with 80 percent nationally.

In 1987, tourists spent some \$8.3 billion on travel-related industries in the state, supporting some 316,000 jobs for Michigan citizens. The Travel Bureau reports that another estimated \$6.5 billion was spent as part of the "multiplier effect," as tourism dollars move through other parts of the economy.

But tourists will not continue to travel to vacation spots that are difficult, inconvenient or uncomfortable to reach. Traffic congestion and old, dilapidated roadways can disillusion even the most ardent visitor, and the lakes, forests and resorts of other Midwestern states will appear more attractive if access in those states is easier.

Conclusion

If Michigan is to provide its citizens with the quality surface transportation system on which they have come to rely, solutions must be found for the problems of funding road and bridge improvements in the coming years.

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\$14.4 BILLION NEEDED THROUGH TURN OF CENTURY
FOR MICHIGAN'S ROAD, BRIDGE SYSTEM

Washington, DC -- Michigan's roads and bridges will need \$1.2 billion worth of repairs and construction annually through the year 2000 to catch up with the current backlog and keep pace with continuing deterioration, according to a study released today by The Road Information Program (TRIP).

The current spending level of \$745 million annually would need to increase 61 percent to reach the level of spending TRIP recommends.

"The problem has not been ignored by our legislators and Governor. Several highway funding bills have been passed in the last five years which demonstrates the commitment Michigan has to maintain the best roads in the country", said Lawrence W. Martin, executive director of the Michigan Road Builders Association.

"This additional funding has allowed the state to make many needed repairs -- but there is still much more that needs to be done to keep our existing system from deteriorating further", Martin said.

\$14.4 BILLION NEEDED UNTIL YEAR 2000
The Road Information Program
Add 1-1-1

The TRIP study found over 81 percent of Michigan's road system either now requires repair or will deteriorate over the next 12 years. In addition, 23 percent of the state's 10,643 bridges will need to be repaired or improved during the same period.

Michigan drivers pay an average of \$76 more per driver each year in increased vehicle operating costs from driving on rough, uneven road surfaces than they would spend driving on roads in good condition, according to the TRIP study.

"A slight adjustment in user fees to repair the roads is more economical for the Michigan motorist than paying five times as much for auto repairs," Martin said. "For example, if the cap was eliminated from the state's gas-tax formula, the average motorist would pay only \$15 more a year, or 4 cents per day."

Travel on Michigan's road system increased by more than 23 percent between 1980 and 1987 and is expected to grow another 64 percent by the year 2000 if travel continues growing at the current rate.

"Increased tourism in Michigan has contributed to the growth in travel, as evidenced by the record number of travelers anticipated this Labor Day Weekend in Michigan," Martin added. "Good roads are vital for building the tourism industry as well as keeping and attracting more business and industry to our state."

\$14.4 BILLION NEEDED UNTIL YEAR 2000
The Road Information Program
Add 2-2-2

However, highway revenue for Michigan is not keeping pace with travel growth because of more fuel-efficient vehicles. The average Michigan motorist paid 6 percent less in fuel tax in 1987 than he did in 1981. The state motor-fuel tax is Michigan's major source of income to maintain and build its roads and bridges.

In addition, federal aid for highways is declining because funds are sitting frozen in the Federal Highway Trust Fund to offset the national budget deficit. Michigan received \$365 million in federal aid in 1987 for road and bridge improvements - a decline of 30 percent in two years.

A separate TRIP study released last year found that Michigan ranked last of six neighboring states in the amount "per capita" it spends for highway improvements on the state system -- \$4,176 per mile versus the regional average of \$6,056 per mile.

"The state faces a double-edged sword: the costs to repair or replace roads and bridges are climbing, but as repairs are delayed because of inadequate funds, deterioration occurs more quickly and costs escalate," TRIP concluded.

TRIP was commissioned by the Michigan Road Builders Association to compile the study, "An Analysis of Current and Future Deterioration on Michigan's State, County and City Roads." Sources include the Michigan Department of Transportation, Federal Highway Administration and other government and private agencies.

Based in Washington, D.C., TRIP was founded in 1971 as a nonprofit organization to research, evaluate and distribute economic and technical data on highway transportation issues.

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Opening Statement

Lawrence W. Martin
Executive Director
Michigan Road Builders Association

for release of the
TRIP Study
August 31, 1988

AS ALL MICHIGAN MOTORISTS CAN ATTEST, NUMEROUS NEEDED ROAD REPAIRS ARE BEING MADE ACROSS THE STATE. AS MOTORISTS TRAVEL IN THE UPCOMING LONG WEEKEND, THEY WILL SEE THEIR ROAD NETWORK BEING IMPROVED. IN FACT, THE MICHIGAN DEPARTMENT OF TRANSPORTATION HAS 92 CONSTRUCTION ZONES IN OPERATION THIS YEAR.

MANY OF THESE GAINS HAVE BEEN MADE BY THE COMMITMENT WE HAVE IN MICHIGAN TO MAINTAINING A GOOD ROAD NETWORK. IN 1982, THE STATE LEGISLATURE RAISED THE USER FEE GAS TAX TO PROVIDE NEEDED FUNDS. THEN IN THE MID-80'S, GOVERNOR BLANCHARD AND HIS ADMINISTRATION INSTIGATED A BONDING PROGRAM WHICH ACCELERATED NEEDED REPAIRS FOR COUNTIES AND CITIES BEFORE THESE REPAIRS BECAME REPLACEMENT PROJECTS. IN ADDITION, THE STATE LEGISLATURE PROVIDED ADDITIONAL REVENUES THROUGH THE 1987 TRANSPORTATION PACKAGE WHICH WILL PROVIDE \$90 MILLION FOR NEEDED ROAD IMPROVEMENTS.

EVEN THOUGH CONSIDERABLE PROGRESS HAS BEEN MADE THERE IS STILL MORE TO DO. THE MICHIGAN ROAD BUILDERS ASSOCIATION (MRBA) URGES THAT WE CONTINUE THE STRONG

COMMITMENT TO PRESERVE OUR EXISTING SURFACE TRANSPORTATION SYSTEM. THE MAJOR ARTERIES ARE IN PLACE BUT WE MUST MAINTAIN THEM.

THE ROAD INFORMATION PROGRAM (TRIP) HAS JUST COMPLETED A STUDY ON WHAT MICHIGAN WOULD NEED TO DO TO BRING OUR WHOLE SYSTEM UP TO STANDARD BY THE YEAR 2000.

MICHIGAN'S ROADS AND BRIDGES ARE REACHING SENIOR CITIZEN STATUS. MANY OF MICHIGAN'S ROADS WERE BUILT TO HAVE A LIFE OF 30 YEARS AND BRIDGES--50 YEARS. MOST OF OUR ROADS AND BRIDGES THROUGHOUT THE STATE HAVE EASILY OUTLIVED THIS TIME FRAME. IN ADDITION, AS TRIP NOTES, TRAVEL ON MICHIGAN'S HIGHWAYS, COUNTY ROADS AND MUNICIPAL STREETS HAS INCREASED 23% IN THE PAST SEVEN YEARS AND IS EXPECTED TO CONTINUE TO INCREASE.

THIS TRIP STUDY ACCURATELY EVALUATES THE ROAD AND BRIDGE SITUATION IN THE STATE AS WELL AS WHAT FUNDS ARE CURRENTLY BEING ALLOCATED TO THESE NEEDS. THE FIGURES DO NOT INCLUDE ANY EXPANSION OF THE SYSTEM OR THE RESULTS OF THE 1987 TRANSPORTATION PACKAGE.

THE BOTTOM LINE IS THAT TRIP IS RECOMMENDING A PROGRAM OF AN ADDITIONAL \$455 MILLION ANNUALLY FOR THE NEXT 12 YEARS. THIS IS A MANAGEABLE PROBLEM. LET ME HIGHLIGHT SOME OF THE POSSIBLE FUNDING SOURCES TO

ELIMINATE THIS SHORTFALL.

BY ELIMINATING THE DIESEL FUEL EXEMPTION IN MICHIGAN WE WOULD SEE AN ADDITION \$13 MILLION. THE STATE'S DIESEL FUEL DISCOUNT IS CURRENTLY 6 CENTS PER GALLON. THIS CHART PRODUCED BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION DEMONSTRATES THAT MICHIGAN HAS ONE OF THE LOWEST DIESEL FUEL TAX RATES IN THE NATION.

IF THE CURRENT STATE GAS TAX CAP WAS ELIMINATED, WHICH IS CURRENTLY AT 15¢ PER GALLON AND THE FORMULA WAS ALLOWED TO WORK AS ORIGINALLY PLANNED, MRBA ESTIMATES THAT THE STATE GAS TAX WOULD INCREASE ONLY AN ADDITIONAL 2¢ PER GALLON AND GENERATE \$90 MILLION. THIS, ACCORDING TO TRIP, WOULD COST THE AVERAGE MOTORIST ONLY \$15 A YEAR Or 4¢ A DAY.

ANOTHER AREA OF FUNDING IS TO RESTORE FEDERAL AID TO THE 1985 LEVEL. THIS WOULD PROVIDE AN ADDITIONAL \$100 MILLION TO MICHIGAN. YOU WILL NOTE IN THIS CHART HOW MUCH MICHIGAN HAS LOST IN THE PAST THREE YEARS. WITH THE HIGHWAY TRUST FUND BEING PART OF THE UNIFIED NATIONAL BUDGET, IT HAS BEEN SUBJECT TO THE GRAMM- RUDMAN- HOLLINGS BUDGET CONTROLS. AS A RESULT, THE HIGHWAY TRUST FUND BALANCE CONTINUES TO GROW. THIS YEAR IT REACHED \$10 BILLION. IF THESE FUNDS COULD BE ALLOCATED BACK TO THE STATES INSTEAD OF BEING HELD HOSTAGE, NEEDED REPAIRS

COULD BE DONE IN A TIMELY FASHION.

THROUGH THESE THREE METHODS ALONE, MICHIGAN WOULD ACHIEVE ABOUT HALF OF WHAT TRIP RECOMMENDS. ADDITIONAL REVENUES WOULD NEED TO BE RAISED FROM LOCAL UNITS OF GOVERNMENT, EITHER THROUGH INCREASED PROPERTY TAXES, REGISTRATION FEES, ROAD MILLAGES OR BONDING PROGRAMS. EACH UNIT OF GOVERNMENT NEEDS TO EVALUATE WHAT IT CAN DO TO GENERATE THESE FUNDS. AS THE STUDY NOTES, MORE NEEDS TO BE DONE AT ALL LEVELS OF GOVERNMENT.

MOTORISTS THROUGHOUT THE STATE, IN OUR OPINION, WOULD PREFER TO PAY A FEW MORE DOLLARS MORE A YEAR FOR ROAD IMPROVEMENTS INSTEAD OF PAYING MORE MONEY TO REPLACING SHOCKS, TIRES AND OTHER PARTS OF THEIR VEHICLES BECAUSE OF POOR ROADS.

AS WAS RECENTLY NOTED IN A NATIONAL REPORT BEYOND THE GRID LOCK: THE FUTURE OF MOBILITY AS THE PUBLIC SEES IT, (THE RESULTS OF THE RECENT FEDERAL HIGHWAY ADMINISTRATION'S '2020' HEARINGS), CONGESTION IN URBAN AREAS IS LIKELY TO INCREASE AND THE ROAD FACILITIES WILL NOT BE IN PLACE IN ORDER TO HANDLE THIS TRAFFIC.

TO MAINTAIN AND CONTINUE THE GROWTH THAT MICHIGAN HAS SEEN RECENTLY IN OUR TRAVEL INDUSTRY, IN ECONOMIC DEVELOPMENT, AND WITH THE CHANGE IN "JUST IN TIME"

INVENTORY FOR MANUFACTURING, MICHIGAN MUST CONTINUE THEIR COMMITMENT TO MAINTAIN THE "BEST ROADS" IN THE COUNTRY. THE PROGRAM IS MANAGEABLE AND WITH THE CONTINUED STRONG LEADERSHIP OF THE GOVERNOR, THE LEGISLATURE AND THE DEPARTMENT OF TRANSPORTATION, WE CAN DEVELOP AND FUND A PROGRAM THAT WILL PROVIDE FOR THE NEXT GENERATION THE SAME FREEDOM OF MOBILITY WE HAVE ENJOYED.