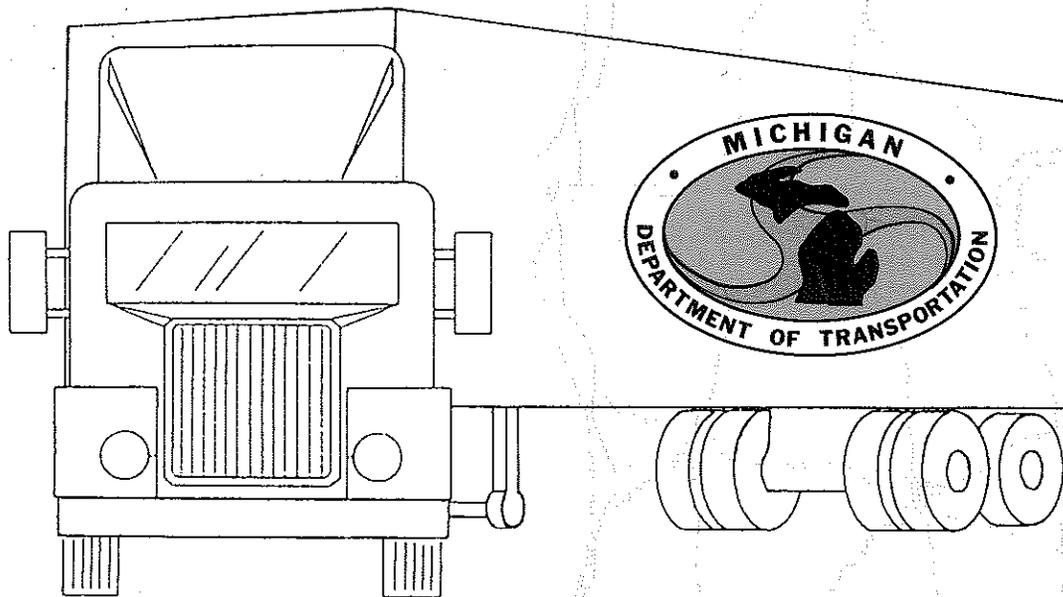


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1991

EXECUTIVE SUMMARY  
FOR THE  
**TRUCK WEIGHT ENFORCEMENT  
AND  
SAFETY INSPECTION  
STUDY**



**Prepared For:**

**The State of Michigan  
Department of Transportation**

**Prepared By:**

**Wilbur Smith Associates**



## EXECUTIVE SUMMARY

Wilbur Smith Associates (WSA) was selected by the Michigan Department of Transportation (MDOT) to study the current truck weight enforcement and safety inspection programs and to make recommendations for the improvement of the overall program efficiency. A contract was executed and a notice to proceed issued by MDOT on July 24, 1990. In accordance with Section II of the Request For Proposal, an adjusted Technical Work Plan was submitted following discussions with MDOT staff. The only significant change made involved expansion of the activity involved in the National Survey.

Shortly after execution of the contract WSA entered into a subconsultant agreement with Coleman and Associates, Lansing, Michigan, for the collection of scale operation data and to assemble the historical background of State and Federal laws and regulations governing weight enforcement.

A schedule was made a part of the approved contract which was based on starting the work shortly after receipt of a notice to proceed (7/24/90) and completing the study and submittal of the final report by mid-July, 1991. WSA was able to concentrate its staffing on the project during the months of December, 1990 and January, February and March, 1991. This increased effort enabled the Consultant to complete the Draft Final Report by April 1, 1991. The final report was submitted following receipt of MDOT comments. 75 copies of Volume I, 25 copies of Volume II and 100 copies of this Executive Summary were provided.

The Technical Work Plan provided for the research and compilation of vast amounts of data relative to the weight enforcement and safety programs of the State of Michigan. The Consultant was also required to obtain similar data from states which share portions of Michigan's boundary line including the Canadian Province of Ontario. In addition, following receipt of responses to a National Survey Questionnaire, detailed information was obtained from several other states which are considered leaders in the area of truck weight enforcement and safety inspection activities. Data was also collected and analyzed with regard to the issuance of permits for overweight/oversize vehicles, scale maintenance and scale recertification following repairs.

Michigan is unique among most states which responded to the National Survey Questionnaire concerning truck weight limits and the disposition of revenue generated by fines for weight and size violations. The Consultant therefore examined the practices of other states and compared them with those of the State of Michigan.

Fine revenue from overweight/oversize violations cannot be used by MDOT for financing the weight enforcement and safety inspection programs but is assigned to the Library System of the county in which the citations was issued. Several of the recommendations of this study will, if implemented, result in a dramatic increase in citations and fine revenue along with some increase in cost. The Consultant therefore examined alternative methods for funneling at least a portion of fine revenue to DOT to fund additional costs of enforcement as well as to defray a portion of the cost of repairing and/or rehabilitating highways and bridges.

The Consultant Team found that all states and provinces are concerned with truck weight and safety laws. The importance of highway transportation is well known, not only to transportation agencies, but to the public. Highways play a crucial role in the nation's economic health and their preservation is a growing concern throughout the country. Truck weight laws have been enacted to protect the huge public investment in highways and truck safety laws have been enacted to help reduce heavy vehicle accidents caused by mechanical failure and/or driver error.

Effective weight enforcement and safety inspection in Michigan will help to control the cost of pavement and bridge repair and improve highway safety for the public. The short and long range goals included in this report were developed after careful examination of data obtained from Michigan State Agencies, several other states and a number of reports developed for other states and the Federal Government.

The following subjects were examined in detail:

- Michigan's current truck law enforcement program
- Permanent weigh station locations
- Permanent weigh station and road patrol data
- Motor Carrier Division activities
- Programs of other states
- Alternative enforcement approaches

This data was assembled and analyzed by the Consultant prior to developing conclusions and recommendations as prescribed in the Technical Work Plan. The conclusions and recommendations were to address the following:

- Future utilization of existing weigh stations
- Possible upgrading of existing weigh stations
- Potential closure of existing weigh stations
- Possible construction of new weigh stations
- Operational levels for fixed stations and other truck law enforcement programs
- Agency and legislative actions that may be required

The Consultant found a high level of interest and cooperation by the involved Michigan Agencies. This was generally true of the other states contacted for information. Perhaps the biggest hurdle encountered was a lack of information concerning citation revenue, truck traffic data, trucks weighed, trucks inspected, amount of scale downtime and causes. It appears that with few exceptions there was a lack of sophisticated record keeping. While the information may have been available it was not in a form that was readily usable for analysis.

In addition to the data collected from Michigan, a National Survey and interviews with other states, the Consultant visited several scale facilities to gain first hand knowledge of their operation and the concerns of the attending officers.

This report contains both short and long range recommendations, all of which were developed following analysis of available data. They are designed to improve the overall truck law enforcement program and to expand the current data collection capabilities of the agencies involved with the Michigan program.

## OVERVIEW

Michigan's weight enforcement and truck safety plan, in the consultant's opinion, should follow the "port of entry" (POE) concept. Michigan's geography combined with the historical transportation gateways provides an opportunity to monitor a very large percentage of entering truck traffic by using a small number of fixed facilities.

Intense operation of "state-of-the-art" fixed weigh stations on the three inbound southern interstate routes as well as the Canadian gateway at Port Huron (I-69) will

result in monitoring most of the inbound vehicles. These facilities will have weigh-in-motion and safety inspection buildings and will be operated 24 hours, 7 days a week.

The three interior fixed weigh stations located on Interstates surrounding the Detroit Metropolitan area will remain as fixed scale house sites and be operated on a regular week day basis.

Weight enforcement strategy in the Detroit Metropolitan area is addressed as follows:

- Regularly operated weigh stations surrounding the metro area will monitor trucks entering and leaving the area on major highways.
- Weighing trucks on busy interstates is very dangerous. PITWS's should be strategically installed on surface streets and on the Interstate system as feasible.

Intermittent operation of the existing interior weigh stations will serve as an effective deterrent to intrastate trucking operations.

"Plug-in" scale operations should be installed on the highly traveled by-pass routes on or near Michigan's border. A plug-in scale operation is a low cost, highly mobile method of weight enforcement used in other states.

As the remaining interior fixed weigh stations require major capital expenditures it is recommended that plug-in's be used to replace the fixed scale house concept.

Michigan's PITWS program has merit and should be continued. The pavement notches used for Motor Carrier Division's portable scales reduces the time needed to weigh a large truck. These notches are very cost effective. PITWS locations on by-pass routes would be reviewed periodically, upgrading to "plug-in's" if projected fine revenues, based on historical data, would make the location economically feasible.

Road Patrol should be continued. Michigan's STET (Specialized Transportation Enforcement Teams) is effective in many types of safety and weight enforcement operations. In many areas in Michigan, (sparsely populated and Detroit Metro) road patrol is the most efficient method of weight and safety enforcement.

Short range recommendations 1, 2, 4 and 5 are based on an evaluation of hours of operation (planned v. actual), citations issued and the resulting fine revenue, the number of trucks using the highways on which scales are located but not checked, pavement damage due to overweight vehicles and fine revenue lost. If implemented they will also increase the number of truck safety inspections and reduce accidents resulting from mechanical failure and driver error.

Short range recommendation #3 would authorize the use of a portion of fine revenue to fund enforcement activities and the repair and rehabilitation of highways.

#### **SHORT RANGE RECOMMENDATION #1**

*Operate the truck scales located on I-75 NB, Erie; I-94 EB, New Buffalo; and I-69, Coldwater continuously. Construct a state-of-the-art facility on I-94 WB at Port Huron and operate it continuously. Replace existing mechanical scales with electronic scales at New Buffalo, and add WIM to New Buffalo and Coldwater facilities.*

#### **SHORT RANGE RECOMMENDATION #2**

*Operate the truck scales located on I-94, Grass Lake (EB & WB); I-96, Fowlerville (EB & WB); and I-75, Pontiac (NB & SB) continuously on weekdays, and continue operation as fixed facility locations. Replace the mechanical scales at the Pontiac and Fowlerville sites with electronic scales.*

#### **SHORT RANGE RECOMMENDATION #3**

*Request legislation authorizing a portion of fine revenue to be deposited in the State Trunkline Fund and be used to fund enforcement and highway repair.*

#### **SHORT RANGE RECOMMENDATION #4**

*De-emphasize the presently planned operation of the New Baltimore scale when the Port Huron scale is operable. Use the New Baltimore scale on a limited basis to minimize the bypass problem.*

#### **SHORT RANGE RECOMMENDATION #5**

*Operate the scales at Ionia, Bridgeport, Cambridge Junction and Powers on a limited flexible schedule of 40 hours per week.*

#### **SHORT RANGE RECOMMENDATION #6**

*Continue to operate the southbound I-75 at Erie as in the past.*

*Stop further construction of the westbound I-94 facility at New Buffalo pending implementation of higher priority recommendations contained in this study. This site should be used as a plug-in scale location for use as a high volume location and in STET operations until such time as the fixed facility is completed.*

#### **SHORT RANGE RECOMMENDATION #7**

*Continue the current enforcement practice at Sault Ste. Marie and Mackinac. Increase STET operations at these locations as manpower is available.*

#### **SHORT RANGE RECOMMENDATION #8**

*Enforcement of truck weight via Road Patrols using portable scales should be continued. Evaluate the potential for installing Plug-in scales in some existing and planned Permanent-Intermittent Truck Weigh Stations.*

#### **SHORT RANGE RECOMMENDATION #9**

*Obtain authorization for scale service companies to recertify scales following repairs, and establish a preventive scale maintenance program.*

---

#### **LONG RANGE RECOMMENDATION #1**

*Develop state-of-the-art ports-of-entry on I-75 NB, Erie; I-94 EB, New Buffalo; I-69 NB, Coldwater; and I-94 WB, Port Huron.*

## LONG RANGE RECOMMENDATION #2

*Include plug-in scales at Powers, New Baltimore, Cambridge Junction, Ionia, Bridgeport in long range plans for modernizing Michigan's truck weight enforcement. The long range plans should also consider the installation of plug-in scales in planned PITWS sites as deemed appropriate.*

## LONG RANGE RECOMMENDATION #3

*Determine locations in the Metropolitan Detroit area where turnouts (PITWS) can be constructed and portable or plug-in scales used to enforce weight limits.*

## LONG RANGE RECOMMENDATION #4

*Request legislation authorizing DOT to charge permit fees (overweight/oversize vehicles) which relate to the amount of weight and accompanying pavement damage.*

## LONG RANGE RECOMMENDATION #5

*Consider entering into joint-usage agreements with Indiana, Ohio and Ontario.*

## LONG RANGE RECOMMENDATION #6

*Determine the appropriateness of consolidating responsibilities for enforcement, scale construction and maintenance, safety inspections and issuance of oversize/overweight permits.*

## LONG RANGE RECOMMENDATION #7

*Establish a committee to develop an effective data collection system. The committee should include membership from DOT, MCD, One Stop Shopping and specialist in electronic data collection and transmittal.*

---

# COST ESTIMATES

## RECOMMENDATION

### Short Range #1

Initial Cost

\$2,162,000

Additional Staffing Cost/Year

\$756,000 per year

### Short Range #2

Initial Cost

\$36,000

Additional Staffing Cost/Year

\$356,000 per year

### Short Range #3 (Administrative/Indirect Cost)

### Short Range #4

Initial Cost

NA

Additional Staffing Cost Savings/Year

\$89,000 savings per year

### Short Range #5

Initial Cost

NA

Additional Staffing Cost Savings/Year

\$265,000 savings per year

### Short Range #6

No Change in Cost

### Short Range #7

No Change In Cost

### Short Range #8

No Additional Cost

### Short Range #9 \$5,200 per year

### Long Range #1

Initial Cost

\$3,000,000

Additional Staffing Cost/Year

\$178,000

Long Range #2

Initial Cost

\$100,000

Long Range #3

Initial Cost

\$1,800,000

Long Range #4 (Administrative/Indirect Cost)

Long Range #5 (Administrative/Indirect Cost)

Long Range #6 (Administrative/Indirect Cost)

Long Range #7 (Administrative/Indirect Cost)

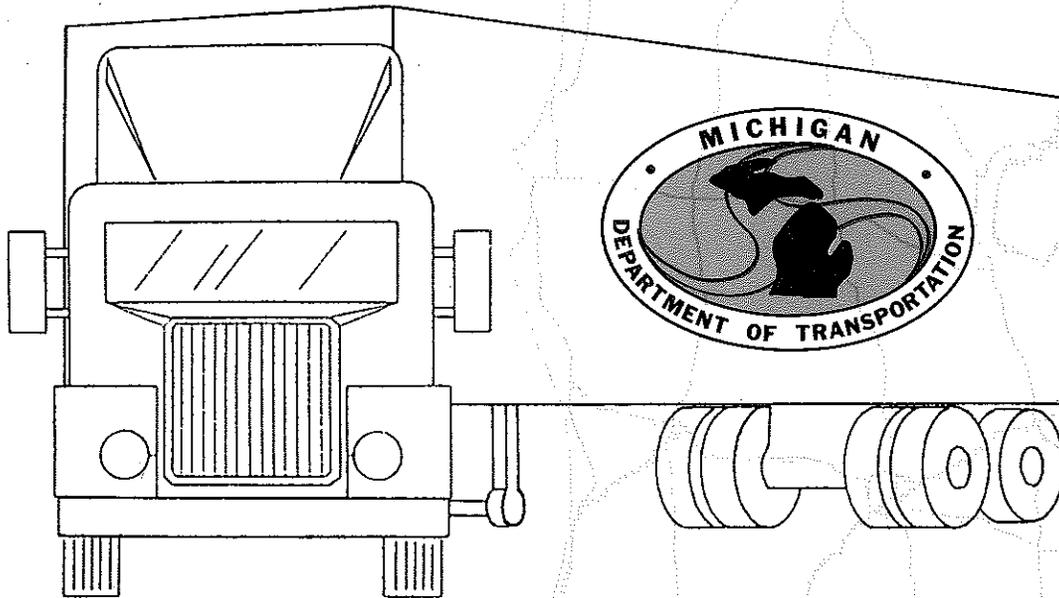
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Both short and long range recommendations are the result of a significant amount of data analysis, discussions with key staff and reviews of programs in other states. The objective of all recommendations is to maximize the efficiency and effectiveness of the weight enforcement and safety inspection programs. Effective programs will result in the preservation of the highway system in Michigan and safeguarding the huge public investment. If implemented, this expansion of effort will result in increased fine revenue which can be used to fund the increased cost of enforcement and also to help fund the repair and rehabilitation of the highway system.

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1991

# TRUCK WEIGHT ENFORCEMENT AND SAFETY INSPECTION STUDY

VOLUME I



**Prepared For:**

**The State of Michigan  
Department of Transportation**

**Prepared By:**

**Wilbur Smith Associates**



WILBUR  
SMITH  
ASSOCIATES  
ENGINEERS • PLANNERS

SUITE 209, 4445 WEST 77th STREET • EDINA, MN 55435 • (612) 831-3232

May 31, 1991

Mr. Robert E. Tuttle, Jr., Supervisor  
Michigan Department of Transportation  
Bureau of Transportation Planning  
Motor Carrier Unit  
State Transportation Building  
425 West Ottawa Street  
P. O. Box 30050  
Lansing, Michigan 48909

RE: Michigan Weight Enforcement and Safety Inspection Report  
Final Report

Dear Mr. Tuttle:

Wilbur Smith Associates is pleased to submit the Final Report for the referenced project. As agreed upon during the presentation of the Status Report, February 7, 1991, we are providing 75 copies of Final Report (Volume I), 20 copies of Volume II and 100 copies of the Executive Summary. All copies are being shipped to you via UPS.

Following receipt of your comments on our Revised Draft Report, I discussed them in detail with you as well as with our staff. Most of the suggested wordage changes have been included in this Final Report. In a few cases suggested changes were discussed and resolved to our mutual satisfaction.

We have included both short and long range recommendations. Both can be phased in based on the availability of funding and immediate/future needs. It should also be understood that all short range recommendations do not need to be implemented prior to addressing the long range recommendations. The short range recommendations are those which we feel can be readily put in place.

Wilbur Smith Associates has sincerely appreciated this opportunity to provide professional service to the Michigan Department of Transportation. We have especially appreciated the exceptional cooperation received from you and your staff, as well as from Lt. Billy Mohr and staff of the Motor Carrier Division. I have personally enjoyed working on this project and hope the resulting recommendations will materially assist the Department in its efforts to preserve the public investment in highways as well as to improve the State's truck safety record.

Mr. Robert E. Tuttle, Jr.  
Page 2

Please feel free to contact me if you have any questions or wish to discuss any aspect of the report. I would welcome an opportunity to assist you in implementation of the recommendations or in any way you deem appropriate.

Sincerely,

A handwritten signature in cursive script, appearing to read "W. J. Buglass".

W. J. Buglass, P.E.  
Project Manager

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## ACKNOWLEDGEMENT

This study and the resulting recommendations could not have been accomplished without the cooperation and inputs of the Michigan Department of Transportation and the Motor Carrier Division of the Michigan State Police. The Wilbur Smith Associates' Study Team extends a special "thank you" to Robert Tuttle and Lt. Billy Mohr for their significant contributions and thoughtful guidance.

Valuable information was also contributed by the Michigan Public Service Commission and the Michigan Departments of State and Agriculture.

The Study Team also extends its sincere appreciation to the selected staff members of various agencies of the States of Arizona, California, Indiana, Minnesota, Ohio, Oregon, Wisconsin and the Province of Ontario, Canada, who so willingly submitted to interviews and contributed valuable data.

The recommendations contained in this report are directly related to the contributions of data and insights of these agencies. The Wilbur Smith Associates' Study Team extends its sincere appreciation to all who participated.

# INTRODUCTION

## INTRODUCTION

The Michigan Department of Transportation engaged the consulting engineering firm of Wilbur Smith Associates and its subconsultant, Coleman and Associates, to perform a comprehensive review and assessment of Michigan's Weight Enforcement and Truck Safety Programs. The primary objective of this effort is to improve the overall efficiency of the State's weight enforcement and truck safety programs.

The enforcement of truck weights is extremely important because the level of funding required to preserve and upgrade the present systems of State and Federal Highways is directly related to the weights being transported over them. It is an accepted fact that highways are an extremely important element of the efforts of the States and Nation to provide high standards of social and economic health for its citizens.

A huge investment of public funds has been made in the Nation's highways and now the individual States and Federal Government have a very important responsibility to preserve that investment. Studies undertaken by State and Federal Governments, as well as by consultants and research organizations, have shown that truck weight is a significant factor with regard to pavement damage. It is therefore incumbent on the States to enforce truck weight laws and regulations. The Federal Government has supported truck weight enforcement through enactment of laws dating back to 1956 and most recently through enactment of the Surface Transportation Assistance Act (STAA) of 1982. This law went so far as to deny Interstate construction funds to states imposing limits higher than the Federal limits unless exceptions have been granted under the "grandfather clause". The 1982 Act also requires the States to certify to FHWA annually that they are enforcing their truck weight laws along with an updated plan for enforcement.

The STAA of 1982 also authorized the Motor Carrier Safety Assistance Program (MCSAP). This program was authorized to reduce the number of accidents and hazardous materials incidents involving commercial vehicles. The programs of the States are funded by the Federal Government following approval of MCSAP Grant Applications annually.

The State of Michigan has been in compliance with these requirements. This study is evidence of Michigan's continuing effort to improve the efficiency and effectiveness of its weight enforcement and truck safety programs.

As required in the Request For Proposal, a revised Technical Work Plan was prepared by Wilbur Smith Associates and submitted to MDOT following award of the contract. The Study Team then proceeded to collect and analyze data from involved Michigan agencies and from those states which share a portion of Michigan's boundary line. Comparisons of enforcement staffing, hours of operations, maintenance/repair, certification, truck safety inspection and permit fees for overweight loads were made.

A National Survey was conducted to facilitate the comparison of Michigan's programs with other states and to determine which states had the most comprehensive programs. This data was analyzed and portrayed graphically. Based on the survey data, a decision was made to have the consultant conduct interviews of involved agencies of the States of California and Oregon, because they indicated that they had aggressive programs.

A Ports-of-Entry Master Plan was obtained from Arizona and detailed operational data was obtained from Minnesota concerning a new state-of-the-art facility located on Westbound I-94 just west of the Minnesota - Wisconsin state line.

Field inspections were made of several Michigan fixed scale facilities. This allowed the Consultant to observe the operations and to obtain insights from the officers concerning problems being experienced. Field inspections were also conducted of several ports-of-entry facilities in California, Oregon and Minnesota.

Analyses were made of hours of operation, truck traffic volumes, trucks weighed, citations issued, safety inspections performed, cost of scale and inspection operations, and the issuance of permits for overweight loads.

Comparisons were made between Michigan and its neighboring states with regard to weight enforcement and safety inspection activities. Comparisons were also made with data obtained from California, Oregon, Minnesota and Arizona.

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Short range recommendation #3 would authorize the use of a portion of fine revenue to fund enforcement activities and the repair and rehabilitation of highways.

#### **SHORT RANGE RECOMMENDATION #1**

*Operate the truck scales located on I-75 NB, Erie; I-94 EB, New Buffalo; and I-69, Coldwater continuously. Construct a state-of-the-art facility on I-94 WB at Port Huron and operate it continuously. Replace existing mechanical scales with electronic scales at New Buffalo, and add WIM to New Buffalo and Coldwater facilities.*

#### **SHORT RANGE RECOMMENDATION #2**

*Operate the truck scales located on I-94, Grass Lake (EB & WB); I-96, Fowlerville (EB & WB); and I-75, Pontiac (NB & SB) continuously on weekdays, and continue operation as fixed facility locations. Replace the mechanical scales at the Pontiac and Fowlerville sites with electronic scales.*

#### **SHORT RANGE RECOMMENDATION #3**

*Request legislation authorizing a portion of fine revenue to be deposited in the State Trunkline Fund and be used to fund enforcement and highway repair.*

#### **SHORT RANGE RECOMMENDATION #4**

*De-emphasize the presently planned operation of the New Baltimore scale when the Port Huron scale is operable. Use the New Baltimore scale on a limited basis to minimize the bypass problem.*

#### **SHORT RANGE RECOMMENDATION #5**

*Operate the scales at Ionia, Bridgeport, Cambridge Junction and Powers on a limited flexible schedule of 40 hours per week.*

#### **SHORT RANGE RECOMMENDATION #6**

*Continue to operate the southbound I-75 at Erie as in the past.*

*Stop further construction of the westbound I-94 facility at New Buffalo pending implementation of higher priority recommendations contained in this study. This site should be used as a plug-in scale location for use as a high volume location and in STET operations until such time as the fixed facility is completed.*

#### **SHORT RANGE RECOMMENDATION #7**

*Continue the current enforcement practice at Sault Ste. Marie and Mackinac. Increase STET operations at these locations as manpower is available.*

#### **SHORT RANGE RECOMMENDATION #8**

*Enforcement of truck weight via Road Patrols using portable scales should be continued. Evaluate the potential for installing Plug-in scales in some existing and planned Permanent-Intermittent Truck Weigh Stations.*

#### **SHORT RANGE RECOMMENDATION #9**

*Obtain authorization for scale service companies to recertify scales following repairs, and establish a preventive scale maintenance program.*

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#### **LONG RANGE RECOMMENDATION #1**

*Develop state-of-the-art ports-of-entry on I-75 NB, Erie; I-94 EB, New Buffalo; I-69 NB, Coldwater; and I-94 WB, Port Huron.*

## LONG RANGE RECOMMENDATION #2

*Include plug-in scales at Powers, New Baltimore, Cambridge Junction, Ionia, Bridgeport in long range plans for modernizing Michigan's truck weight enforcement. The long range plans should also consider the installation of plug-in scales in planned PITWS sites as deemed appropriate.*

## LONG RANGE RECOMMENDATION #3

*Determine locations in the Metropolitan Detroit area where turnouts (PITWS) can be constructed and portable or plug-in scales used to enforce weight limits.*

## LONG RANGE RECOMMENDATION #4

*Request legislation authorizing DOT to charge permit fees (overweight/oversize vehicles) which relate to the amount of weight and accompanying pavement damage.*

## LONG RANGE RECOMMENDATION #5

*Consider entering into joint-usage agreements with Indiana, Ohio and Ontario.*

## LONG RANGE RECOMMENDATION #6

*Determine the appropriateness of consolidating responsibilities for enforcement, scale construction and maintenance, safety inspections and issuance of oversize/overweight permits.*

## LONG RANGE RECOMMENDATION #7

*Establish a committee to develop an effective data collection system. The committee should include membership from DOT, MCD, One Stop Shopping and specialist in electronic data collection and transmittal.*

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# COST ESTIMATES

## RECOMMENDATION

Short Range #1

Initial Cost  
\$2,162,000

Additional Staffing Cost/Year  
\$756,000 per year

Short Range #2

Initial Cost  
\$36,000

Additional Staffing Cost/Year  
\$356,000 per year

Short Range #3 (Administrative/Indirect Cost)

Short Range #4

Initial Cost  
NA

Additional Staffing Cost Savings/Year  
\$89,000 savings per year

Short Range #5

Initial Cost  
NA

Additional Staffing Cost Savings/Year  
\$265,000 savings per year

Short Range #6

No Change in Cost

Short Range #7

No Change In Cost

Short Range #8

No Additional Cost

Short Range #9 \$5,200 per year

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Long Range #1

Initial Cost  
\$3,000,000

Additional Staffing Cost/Year  
\$178,000

Long Range #2

Initial Cost

\$100,000

Long Range #3

Initial Cost

\$1,800,000

Long Range #4 (Administrative/Indirect Cost)

Long Range #5 (Administrative/Indirect Cost)

Long Range #6 (Administrative/Indirect Cost)

Long Range #7 (Administrative/Indirect Cost)

---

Both short and long range recommendations are the result of a significant amount of data analysis, discussions with key staff and reviews of programs in other states. The objective of all recommendations is to maximize the efficiency and effectiveness of the weight enforcement and safety inspection programs. Effective programs will result in the preservation of the highway system in Michigan and safeguarding the huge public investment. If implemented, this expansion of effort will result in increased fine revenue which can be used to fund the increased cost of enforcement and also to help fund the repair and rehabilitation of the highway system.

**REVIEW OF MICHIGAN'S WEIGHT  
ENFORCEMENT PROGRAM**

## **GENERAL**

The Michigan Department of Transportation (MDOT) engaged the firm of Wilbur Smith Associates (WSA) to perform a comprehensive study of Michigan's Weight Enforcement Program. The objective of this study is to improve the overall efficiency of truck weight enforcement and safety programs.

Upon receipt of a "notice to proceed" from the Michigan Department of Transportation, the Consultant collected a significant volume of data concerning the current weight enforcement program. This information included but was not limited to:

- 1) Michigan's submissions to FHWA for size and weight certification, size and weight plan and MCSAP grant agreement.
- 2) Age, type and location of fixed scales.
- 3) Number and type of portable scales.
- 4) Location of portable scale pavement notches.
- 5) Truck traffic volumes.
- 6) Trucks weighed and citations issued.
- 7) Fine schedules.
- 8) Safety inspection records.
- 9) Interviews with key personnel in Michigan's weight enforcement program.

In addition, several scale sites were visited to gain first hand knowledge of operations and associated problems.

Coleman and Associates, subconsultant, researched State and Federal legislation and obtained detailed information concerning truck traffic volumes and scale activities.

The information received has been reviewed and an understanding of Michigan's program developed.

## **FEDERAL TRUCK LAW BACKGROUND**

The Federal Government has been involved in the regulation of truck size and weight since 1956. Prior to 1956, the States set size and weight limitations as they saw fit.

Truck weight regulation can be traced back as far as 1913 for several states. This early legislation drew heavily from previous laws regulating the weight of horse drawn

vehicles. By 1933 all states had adopted laws regulating truck weight. These were most commonly axle limits, wheel limits or limits on weight per inch of tire width. Most policies were based on recommendations made by the American Association of State Highway Officials (AASHO) in 1932. These recommendations were for a single axle limit of 16,000 pounds and multiple axle limits based on the distance between axles. In 1946 AASHO recommended increasing the single axle limit to 18,000 pounds and to 32,000 pounds for a standard tandem axle. Most state highways were already designed for these axle loads. They also recommended a gross vehicle weight of 73,280 pounds for trucks with the extreme axles 57 feet apart to help prevent overstressing of bridges. Lower limits were recommended for vehicles with shorter axle spacing.

As the demand for more roads grew after World War II the Federal Government increased its efforts to fund highway construction. In 1955 Congress held extensive hearings on program financing, which included debate on truck size and weight regulations. A year later, in 1956, Congress passed the Federal-Aid Highway Act and applied the 1946 recommendations of AASHO. This act also allowed trucks with higher weight limits to operate on the Interstate if it was legal to do so prior to July 1, 1956. This was the first "grandfather clause". Congress also required that the Secretary of Commerce report to them regarding the "maximum desirable dimensions and weights of vehicles operated on the Federal-Aid System". This report, completed in 1964, recommended that weight limits for single axles be increased to 20,000 pounds and for tandem axles to 34,000 pounds. It also recommended a formula to protect bridges and that grandfather provisions be phased out.

In 1974 Congress adopted the increased axle limits and bridge formula as well as a gross weight limit of 80,000 pounds. Congress refused to eliminate the grandfather provisions of the 1956 act and added new provisions which allowed vehicles to operate even if in violation of the new bridge formula. Grandfather status has given states the flexibility to allow vehicles to operate on the Interstate without limiting them to the bridge formula.

The next major change came with the passage of the Surface Transportation Assistance Act (STAA) of 1978. This act allowed the U.S. Secretary of Transportation to withhold 10 percent of a state's highway construction funds for noncompliance with weight enforcement programs. Yearly certification of compliance to Congress by FHWA was required. This law also allowed the use of federal funds to construct truck weighing stations.

Also in 1978, Congress asked the U.S. Department of Transportation to conduct a major study of truck size and weight issues. This study was completed in 1981 and laid the groundwork for legislation passed in 1982.

Although allowed to increase axle loadings as a result of the 1974 legislation, six states in the Mississippi Valley Region along with Montana, had chosen to retain lower limits. This created a barrier for interstate truckers. In the STAA of 1982 all states were required to increase their weight limits for a single axle to 20,000 pounds and 34,000 pounds for a tandem axle. This act did not address the grandfather provisions allowed in previous legislation.

## **MICHIGAN'S WEIGHT ENFORCEMENT BACKGROUND**

The Michigan Highway Department had complete responsibility for the design, construction and maintenance of all truck scales prior to 1968. The operation of the scales was also the responsibility of the Highway Department's Weighmaster Section.

A detailed summary of Michigan's weight enforcement background including various legislative changes that have taken place since 1917 is included in Volume II of this study. Perhaps most important at this time is the fact that Michigan is an "axle state" with gross weight allowed up to 164,000 pounds on 11 axles. The current limitation of 11 axles and 164,000 pounds gross weight is a reduction from 13 axles and 174,000 pounds gross weight which was in effect prior to authorizing legislation enacted in 1966.

In 1968, the enforcement of truck size and weight was transferred to the Public Service Commission of the Michigan Department of Commerce with the enactment of Act 77. Somewhat later it was agreed that the Department of Highways and Transportation would provide for the routine maintenance of pavements, but not for special maintenance and/or repairs of the scales, scalehouses and associated facilities.

In 1974, the Department of Highways and Transportation was authorized to construct weigh stations on the Interstate System in order to comply with Federal requirements. This was the result of an Attorney General's opinion which also made it clear that the enforcement of truck size and weight would remain the responsibility of the Public Service Commission. At that time the Federal Highway Administration did not participate financially in the cost of constructing weigh stations on Interstate or non-Interstate Highways.

In October, 1982 the responsibility for truck law enforcement was transferred from the Public Service Commission, Department of Commerce, to the Department of State Police, Motor Carrier Division. The enforcement of size and weight regulations has remained with the Motor Carrier Division since 1982.

The Department of Transportation continues to have responsibility for construction of weigh stations and for pavement (ramps and parking areas) maintenance at the scale sites. The Department is also responsible for the issuance of overweight and oversize permits.

Peripheral responsibilities involving truck regulation include truck registration by the Department of State; issuance of fuel tax stickers by the Department of Treasury; and certification of truck scales by the Department of Agriculture.

## CURRENT MICHIGAN REGULATIONS

The State of Michigan has complied with federal regulations and certification policies. Michigan, however, is not required to comply with current federal weight restrictions for vehicles exceeding 80,000 pounds gross vehicle weight due to grandfathered regulations. This is clarified in Table 1.1.

A two tier system is in place in Michigan, one tier for truck gross weights under 80,000 pounds and the second tier for trucks with gross vehicle weight over 80,000 pounds. Once this has been determined, axle spacing is used to determine the maximum allowable weight for each axle.

TABLE OF MAXIMUM ALLOWABLE GROSS AXLE LOADINGS

Spacings Between Axles	Normal Loadings When Seasonal Load Limitations Are Not In Force (Speed Limit 55 MPH)		Seasonal Load Limitations (Speed Limit 35 MPH)	
	Vehicles Exceeding 80,000 lbs Gross Weight	Vehicle 80,000 lbs or Under Gross Weight	Rigid	Flexible
9 feet or over	18,000 lbs	20,000 lbs	13,500 lbs	11,700 lbs
More than 3 1/2 feet but less than 9 feet	13,000 lbs	13,000 lbs	9,750 lbs	8,450 lbs
When part of a tandem axle assembly	16,000 lbs	34,000 lbs/tandem	12,000 lbs	10,400 lbs
When less than 3 1/2 feet	9,000 lbs	9,000 lbs	6,750 lbs	5,850 lbs
Maximum load on any wheel shall not exceed (pounds per inch of tire width)	700 lbs	700 lbs	525 lbs	450 lbs

TABLE 1.1

Michigan has also established maximum truck dimensions which are summarized on Page 20 of the Michigan Trucking Manual (1991). The following maximum truck dimensions were taken from the Manual:

### MAXIMUM TRUCK LOADINGS & DIMENSIONS

Regulations pertaining to the operation of truck and trailers according to Act 300, P.A. 1949 as amended.\*

#### MAXIMUM OVERALL DIMENSIONS

Width	96 inches
Width (designated highways)	102 inches
Height	13 feet, 6 inches
Length of semi-trailer (including load)	53 feet
Length of a combination of truck and semi-trailer with or without load.	no limitation*
Length of any other vehicle with or without load (excluding impact absorbing bumpers)	40 feet
<b>Units permitted in train [Truck-tractor, semi-trailer and trailer or truck-tractor and 2 semi-trailers or truck and semi-trailer or trailer].</b>	
Length of combination of truck-tractor, semi-trailer and trailer or truck-tractor and 2 semi-trailers or truck and semi-trailer or trailer with or without load (see exceptions)	59 feet
<b>Semi-trailers longer than 50' shall have a wheelbase of 40.5' plus or minus 0.5', measured from the kingpin coupling to the center of the axles or to the center of the tandem axle assembly if equipped with 2 axles.</b>	
Semi-trailers longer than 50' are limited to 2 axles.	
Semi-trailer longer than 50' shall operate on designated highways only.	

\*See exceptions Page 21

Specific exceptions to the dimensions indicated above are allowed for trucks transporting certain products (unprocessed logs, pulpwood, wood bolts, agricultural products, concrete pipe and assembled motor vehicles or bodies, recreational vehicles or boats). These exceptions are set forth on pages 21 and 23 of the Michigan Trucking Manual.

## SCALES

Michigan presently has 23 operational fixed scales at 14 locations. Of these, 20 are located on Interstate highways and 3 on U.S. highways. Information such as truck volumes and staff hours for each of these locations has been collected and analyzed. Results are set forth in the chapters "Analysis of Permanent Weigh Station Locations" and "Analysis of Weigh Station Data".

In addition to the fixed scales, 79 sets (2 scales per set) of portable scales are used in the weight enforcement effort. Vehicles must be kept level while being weighed with portable scales. Wood blocking is used to level the trucks for weighing. Road Patrols currently carry enough material to level an eleven axle truck. Portable scales are also placed in pavement notches which have been constructed in some locations in lieu of blocking. Thirty five Permanent-Intermittent Truck Weigh Stations (PITWS) are currently in use throughout the state. Pavement notches have been proposed at 57 other locations.

Several fixed scales were visited to obtain first hand information on operations, maintenance and equipment. This information, along with data provided by the MCD, was analyzed and results are contained in the Chapters "Analysis of Permanent Weigh Station Locations" and "Analysis of Weigh Station Data".

## ENFORCEMENT

Truck laws and regulations are enforced by the Michigan Department of State Police, Motor Carrier Division (MCD) which has an authorized personnel strength of 200 positions. The actual strength of the Division at the end of fiscal year 1989 was 186 positions. Of these, 127 were dedicated to scale and patrol operations.

Personnel dedicated to scale and patrol operations are the front line of enforcement activities. They are responsible for checking vehicle weights, permits, registrations, vehicle acceptability and vehicle operators for compliance with current regulations. In order to adequately perform these tasks, Motor Carrier Division officers receive 12 weeks of general training and an additional 80 hours of training in hazardous materials at the academy.

Normally a fixed scale site is operated by a single officer. In addition to checking the weight and dimensions, an officer working at a fixed scale site will screen trucks for safety compliance. If an officer believes a more in-depth examination of the vehicle or operator is needed, he will direct the vehicle to move into the parking area for further inspection. While these activities are taking place other vehicles are passing through the site but are not being checked while the officer is making the safety inspection.

If, upon further inspection, a vehicle is found to have safety problems a Vehicle Inspection Report is filled out. A citation may be issued to either the owner/operator or the company that owns or leases the vehicle. If the problem is severe enough the officer may place the vehicle out-of-service until the problem is corrected.

When a vehicle is found in non-compliance for weight, a citation is issued to the owner/operator or the company that owns or leases the vehicle. In addition to the citation the load must be shifted or off loaded in order to bring the truck into compliance. All trucks must be in compliance with weight regulations prior to leaving the site.

## **FINES**

A review of overweight vehicle fines was conducted. The Michigan schedule of fines was compared with those analyzed in previous weight enforcement studies. Table 1.2 shows typical fines for various amounts of overweight in Michigan along with those of states previously analyzed.

Overweight fines in Michigan are neither as high as some states nor as low as others. Further comparisons will be developed in the Chapter "Review Of Other States' Weight Enforcement Programs".

COMPARISON OF FINES

	AMOUNT OVERWEIGHT ON SINGLE AXLE (lbs)											
	100	1,000	2,000	2,500	4,000	5,000	6,000	7,000	8,000	9,000	10,000	15,000
Michigan	\$0.00	\$0.00	\$60.00	\$150.00	\$360.00	\$600.00	\$900.00	\$1,050.00	\$1,200.00	\$1,350.00	\$1,500.00	\$3,000.00
Nebraska	\$25.00	\$25.00	\$75.00	\$150.00	\$325.00	\$500.00	\$750.00	\$950.00	\$1,150.00	\$1,550.00	\$2,000.00	\$2,500.00
South Dakota	\$0.00	\$50.00	\$100.00	\$125.00	\$400.00	\$750.00	\$1,500.00	\$1,750.00	\$2,000.00	\$2,250.00	\$2,500.00	\$3,750.00
Wyoming	\$35.00	\$35.00	\$35.00	\$35.00	\$35.00	\$60.00	\$60.00	\$110.00	\$110.00	\$160.00	\$160.00	\$310.00
Colorado	\$15.00	\$15.00	\$15.00	\$15.00	\$25.00	\$60.00	\$95.00	\$165.00	\$275.00	\$425.00	\$615.00	\$1,235.00
Kansas	\$25.00	\$25.00	\$60.00	\$125.00	\$200.00	\$250.00	\$420.00	\$490.00	\$800.00	\$900.00	\$1,000.00	\$1,500.00

Table 1.2

COMPARISON OF PERMIT COST

	SINGLE TRIP OVERWEIGHT PERMIT COST				
	Single Trip Permit Single Unit	Single Trip Permit Combination Unit	Ton Mile Tax Per Ton Mile	Additional Ton Mile Tax	Permit Duration
Michigan	\$5.00	\$5.00	None	None	5 Days
Nebraska*	All \$10.00	All \$10.00	None	None	10 Days
South Dakota	\$20.00	\$20.00	\$0.02/ton mile**	None	?
Wyoming	Not Specified		\$0.0015 mills/ton mile	None	?
Colorado* WT CO to Enter	\$15.00***	\$15.00***	.8 of mill on tare Wt	2 Mills on Cargo Wght.	72 Hours
Kansas	\$5.00	\$5.00	None	None	5 Days
Missouri	\$15.00/10,000lbs.****	\$15.00/10,000lbs.****	None	None	?
Iowa*	All \$10.00	All \$10.00	None	None	5 Days

\*No Permit Issued for a Divisible Load (Emergencies Excluded).

\*\*If certain weights on combinations of axles are exceeded.

\*\*\*\$15.00 + \$5.00 for Each Axle.

\*\*\*\*\$ Additional \$12.00 base fee.

Table 1.3

## PERMITS

When a motor carrier knows that the load will be greater than the maximum weight or size allowed by law a permit must be obtained. These are issued by the Michigan Department of Transportation, Permit Section. A fee of \$5.00 for a single trip and \$8.00 for an extended permit is charged. Permits are generally issued for only non-divisible loads.

Table 1.3 compares Michigan to those states previously analyzed by WSA. Michigan's cost for a single trip permit is as low or lower than any state previously studied. Comparisons will be made to neighboring states in Chapter Five "Review Of Other States' Weight Enforcement Programs".

These permits, while allowing a load to be hauled, will restrict the routes on which it may travel. Maps showing restrictions for either size or weight are available from the Permit Section. Any vehicle traveling with a permit must comply with the restrictions set forth in the permit. If the vehicle operator is stopped by a Motor Carrier Division officer he must show the permit and verify compliance. Non-compliance may result in a fine and possible off-loading or load shift.

## MOTOR CARRIER SAFETY ASSISTANCE PROGRAM (MCSAP)

The basic mission of the Motor Carrier Safety Assistance Program is:

*"To promote safer traveling for the general public upon the highways of this nation. This can be accomplished by reducing commercial vehicle traffic crash occurrence at a state level. This will consequently effect a national reduction."*

The Motor Carrier Division (MCD) of the Michigan State Police is responsible for the MCSAP Program. Safety inspections are performed by officers of the MCD along with weight enforcement. Each year the MCD applies for a grant from the U.S. Department of Transportation which assists in funding the MCSAP Program. Michigan's grant application indicates that the Motor Carrier Division will spend over two million dollars on inspections, audits and related MCSAP activities. Officers used 46,910 hours to perform 61,800 inspections in 1989. Statistical data on the success of this effort is not yet available. If the current trend continues, however, both the number of accidents and accident rate will drop. From the year

1986 to 1988 the number of accidents have dropped from 23,411 to 21,233. Over this same time period the accident rate per hundred million miles dropped from 1293.20 to 1085.29. Both indicate that Michigan is attempting to fulfill the basic mission of the Motor Carrier Safety Assistance Program.

## **PAVEMENT AND BRIDGE DAMAGES**

In recent years it has become apparent that the nation's highways and bridges are wearing out--many of them far earlier than anticipated. One of the causes of premature deterioration is increased traffic. Another serious contributor to early pavement wear-out is the overloaded truck. Heavier trucks may help solve the trucking industry's financial crisis, but they will transfer a crushing burden to local governments in terms of pavement conditions, rehabilitation cost and safety.

Cost Allocation studies by various states and the Federal Highway Administration have shown that the cost to build and maintain highways and bridges that carry large and heavy vehicles are significantly higher than those required to serve only smaller and lighter vehicle types. The damages to highways and bridges, and their life expectancy, are clearly related to the number and weight of loads being carried. More specifically, it is clear that trucks transporting loads in excess of the legal limits cause excessive damages resulting in the need to reconstruct or rehabilitate the highways and bridges more frequently than would otherwise be necessary. Therefore, an equitable assignment of highway and bridge costs to users calls for assessment of greater financial responsibilities to vehicles in larger size and weight categories.

The condition and performance of highway pavements depend on many factors, some of which are:

- o Thickness of the various pavement layers
- o Quality of construction materials and practices
- o Maintenance
- o Properties of the roadbed soil
- o Environmental condition (most importantly precipitation and temperature)

# FLEXIBLE PAVEMENTS

(str. number = 5, terminal ser. = 2.5)

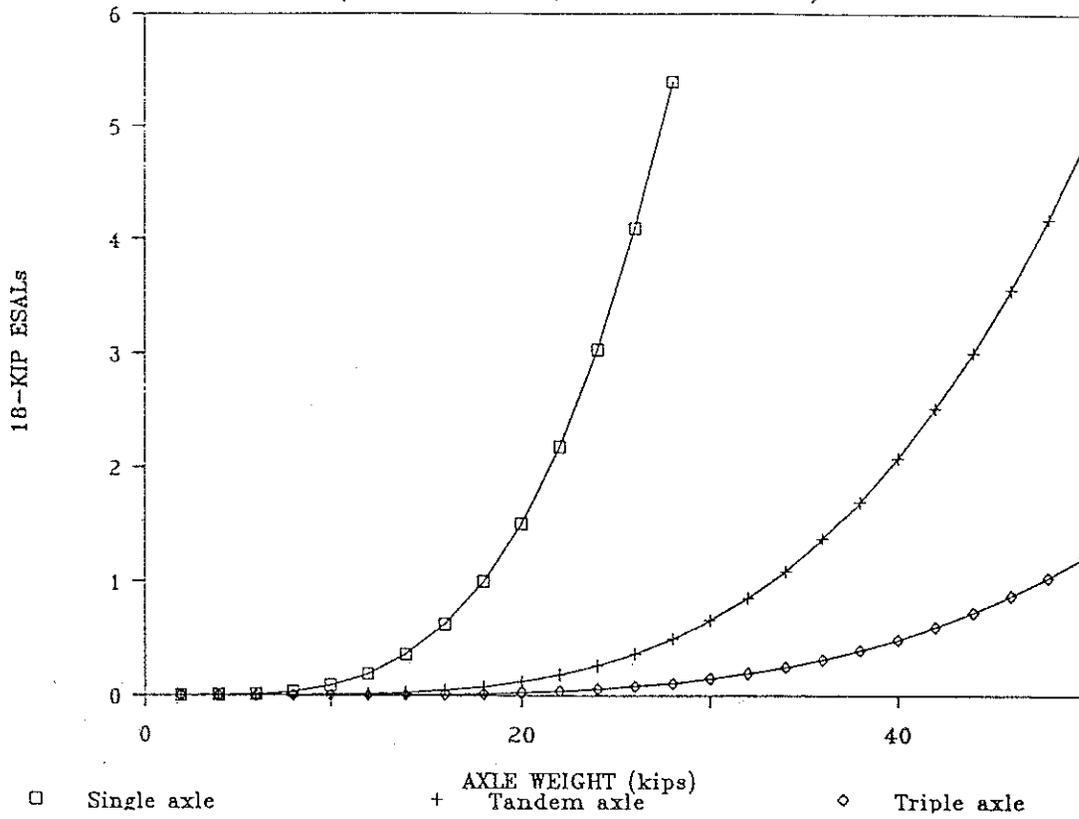


Figure 1.4

# RIGID PAVEMENTS

(slab = 10 in., terminal ser. = 2.5)

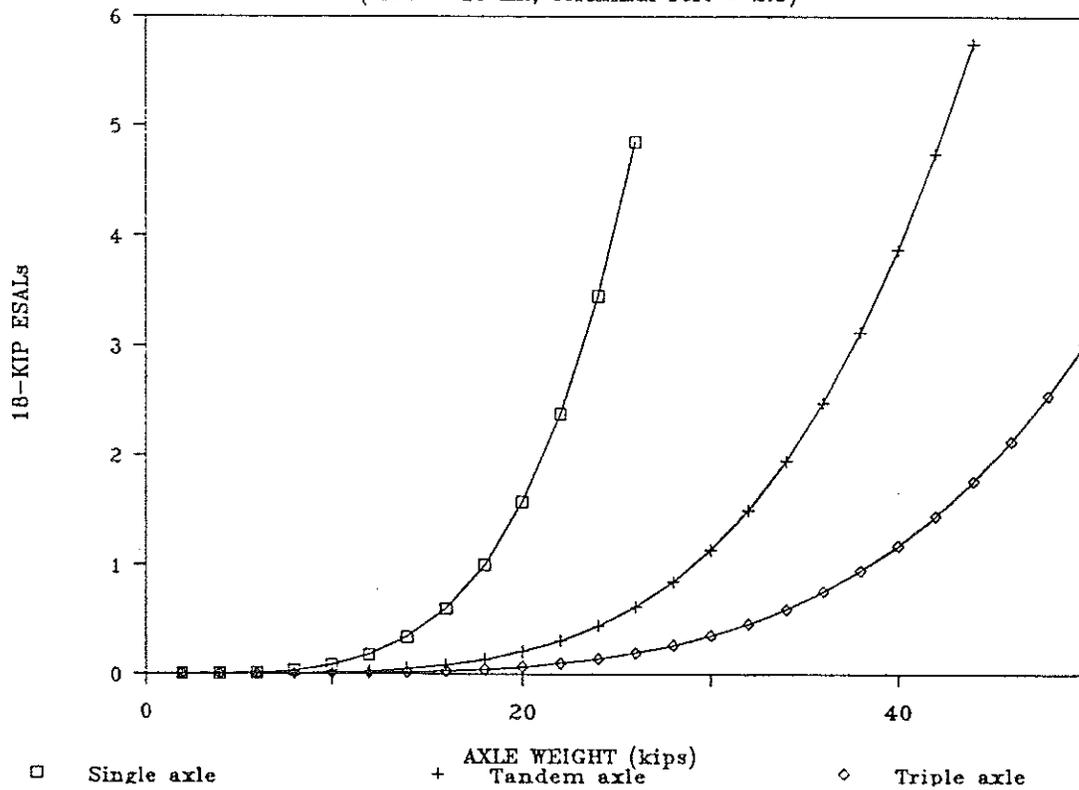


Figure 1.5

But the most serious damages to the condition and performance of highway pavements and bridges are related to the following factors:

- o The number and weights of axle loads to which the pavements are subjected.
- o Axle type (single, tandem or tridem)
- o Vehicles characteristics such as tire pressure, single versus dual tires, tire width, suspension system, and axle spacing.

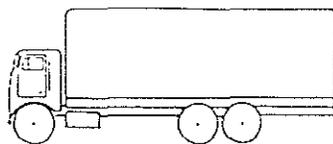
Pavement engineers use the concept of an equivalent single-axle load (ESAL) to measure the effects of axle loads on pavements. By convention, an 18,000-lb single axle is 1.00 ESAL. The ESAL values for other axles express their relative effect on pavement wear.

The American Association of State Highway Officials (AASHO) Road Test conducted in the 1950's provided sets of ESAL values for single and tandem axles on various types of pavements. In 1986 the Road Test results were extended by the American Association of State Highway and Transportation Officials (AASHTO) to provide load-equivalence factors for tridem axles. The load-equivalence factors vary sharply with weight, following roughly a fourth-power relationship. On both flexible and rigid pavements the load-equivalence factor for a 20,000-lb single axle is about 1.5 because  $(20/18)^4$  is approximately equal to 1.5. Thus, 100 passes across a pavement by a 20,000-lb axle would have the same effect on pavement life as 150 passes by an 18,000-lb axle.

AASHTO provides separate sets of ESAL values for flexible and rigid pavements. Figures 1.4 to 1.5 provide ESAL values corresponding to axle weight for single axles, tandem axles and tridem axles on flexible and rigid pavement. The principal difference between flexible and rigid pavement ESAL values is that multiple axles were found to have a greater effect on rigid pavements. For example, a 34,000-lb tandem axle is about 1.1 ESAL's on flexible pavements and about 2.0 ESAL's on rigid pavements. The figures also show that the values of ESAL's are much lower for multiple axles than for single axles.

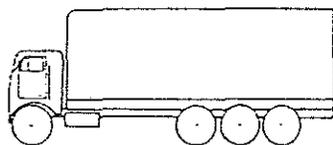
Because of the fourth-power relationship from the AASHTO Road Test, ESAL's increase sharply with vehicle weight. All other things being equal, the greater number of axles a vehicle has the less effect on pavements. For example, a nine-axle combination vehicle carrying 110,000 lbs has much less effect on pavements than a five-axle combination vehicle carrying 80,000 lbs. The effect of a given vehicle on pavements can be estimated by calculating the number of ESAL's for each axle and summing to get total ESAL's for the

THREE-AXLE SINGLE-UNIT TRUCK



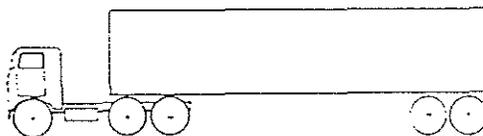
			<i>Total</i>
<i>Weight (lb 000s)</i>	16	32	48
<i>ESALs</i>			
<i>Flexible</i>	0.62	0.86	1.48
<i>Rigid</i>	0.60	1.50	2.10

FOUR-AXLE SINGLE-UNIT TRUCK



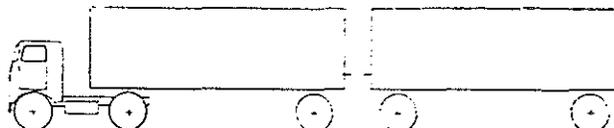
			<i>Total</i>
<i>Weight (lb 000s)</i>	16	40	56
<i>ESALs</i>			
<i>Flexible</i>	0.62	0.49	1.11
<i>Rigid</i>	0.60	1.18	1.78

FIVE-AXLE TRACTOR-SEMITRAILER (3-S2)



				<i>Total</i>
<i>Weight (lb 000s)</i>	12	34	34	80
<i>ESALs</i>				
<i>Flexible</i>	0.19	1.09	1.09	2.37
<i>RIGID</i>	0.17	1.95	1.95	4.07

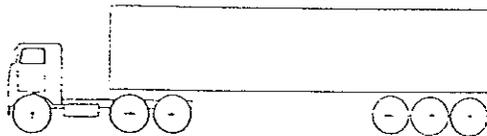
FIVE-AXLE DOUBLE (2-S1-2)



					<i>Total</i>	
<i>Weight (lb 000s)</i>	9	20	19	16	16	80
<i>ESALs</i>						
<i>Flexible</i>	0.06	1.51	1.24	0.62	0.62	4.05
<i>Rigid</i>	0.05	1.58	1.26	0.60	0.60	4.09

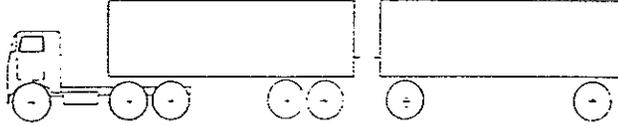
Exhibit 1.6

SIX-AXLE TRACTOR-SEMITRAILER (3-S3)



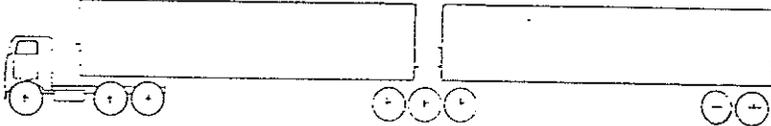
	12	34	42	Total
Weight (lb 000s)				88
ESALs				
Flexible	0.19	1.09	0.60	1.88
Rigid	0.17	1.95	1.45	3.57

SEVEN-AXLE DOUBLE (3-S2-2)



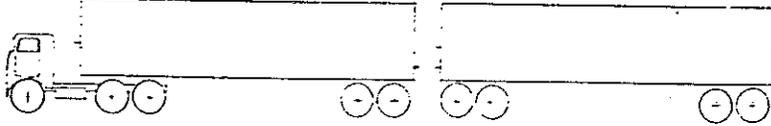
	9	31	30	16	15	Total
Weight (lb 000s)						101
ESALs						
Flexible	0.06	0.75	0.66	0.62	0.48	2.57
Rigid	0.05	1.31	1.14	0.60	0.46	3.56

EIGHT-AXLE B-TRAIN DOUBLE (3-S3-2)



	12	34	42	34	Total
Weight (lb 000s)					122
ESALs					
Flexible	0.19	1.09	0.60	1.09	2.97
Rigid	0.17	1.95	1.45	1.95	5.52

NINE-AXLE DOUBLE (3-S2-4)



	12	33	28	28	28	Total
Weight (lb 000s)						129
ESALs						
Flexible	0.19	0.97	0.50	0.50	0.50	2.66
Rigid	0.17	1.71	0.85	0.85	0.85	4.43

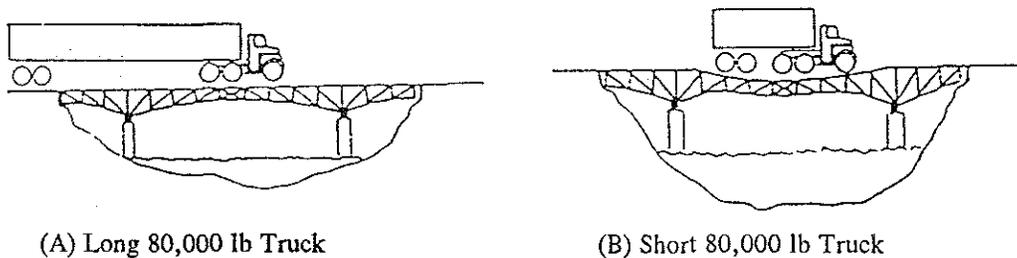
Exhibit 1.7

vehicle (See Exhibit 1.6 and 1.7). However, a comparison of vehicles in terms of ESAL's would not account for the fact that vehicles with higher weights require fewer trips to transport the same amount of freight, thereby offsetting part of the additional pavement wear caused by increased weight.

The Departments of Civil Engineering at California State University at Chico and University of California at Davis concluded that heavy-truck traffic has a significant impact on pavement maintenance cost.

An examination of 1,152 one-mile (1.6 km) segments of randomly selected California State Highways showed the average annual pavement maintenance cost per heavy truck to be \$7.60 per mile (1.6 km) per year while the corresponding cost per passenger car is about \$0.08. Adding one heavy truck per day increased the cost by \$3.73. The same increases in passenger car traffic would result in a cost increase of \$0.04.

For years enforcement officials have worked to check truck weights to keep the axle loads and gross vehicle weights within legal limits. With the passage of the Federal-Aid Amendments of 1974, the States also had to become concerned with the spacing of axles when enforcing weight laws on the Interstate System. The axles spacing is equally as important in design of the bridges as the axle weights. *(This is illustrated by what happens when a person tries to walk across ice that is hardly thick enough to support his/her weight; the person is likely to fall through. If that person stretched out prone on the same ice and crawled across, it is unlikely that he/she would break through. This is true because the load, or weight, is spread over a larger area in the latter situation.)* A similar comparison can be made between trucks crossing a bridge:



(A) Long 80,000 lb Truck

(B) Short 80,000 lb Truck

In view (A), the stress on bridge members as the long truck rolls across is much less than that caused by the short truck in view (B), even though the trucks have the same total weight and individual axle weights. One can see that an extremely long truck would have its load spread out like the person crawling across the ice. Whereas, the short truck is similar to a person standing up on ice with the total load placed in a limited area.

**TABLE B**  
**\*Permissible gross loads for vehicles in regular operation**  
**Based on weight formula  $W = 500 [LN/(N-1) + 12N + 36]$  modified**

Dist. in ft. between the extreme of any group of 2 or more consecutive axles	**Maximum load in pounds carried on any group of 2 or more consecutive axles							
	2 axles	3 axles	4 axles	5 axles	6 axles	7 axles	8 axles	9 axles
4	34,000							
5	34,000							
6	34,000							
7	34,000							
8 and less	34,000	34,000						
More than 8	38,000	42,000						
9	39,000	42,500						
10	40,000	43,500						
11		44,000						
12		45,000	50,000					
13		45,500	50,500					
14		46,500	51,500					
15		47,000	52,000					
16		48,000	52,500	58,000				
17		48,500	53,500	58,500				
18		49,500	54,000	59,000				
19		50,000	54,500	60,000				
20		51,000	55,500	60,500	66,000			
21		51,500	56,000	61,000	66,500			
22		52,500	56,500	61,500	67,000			
23		53,000	57,500	62,500	68,000			
24		54,000	58,000	63,000	68,500	74,000		
25		54,500	58,500	63,500	69,000	74,500		
26		55,500	59,500	64,000	69,500	75,000		
27		56,000	60,000	65,000	70,000	75,500		
28		57,000	60,500	65,500	71,000	76,500	82,000	
29		57,500	61,500	66,000	71,500	77,000	82,500	
30		58,500	62,000	66,500	72,000	77,500	83,000	
31		59,000	62,500	67,500	72,500	78,000	83,500	
32		60,000	63,500	68,000	73,000	78,500	84,500	90,000
33			64,000	68,500	74,000	79,000	85,000	90,500
34			64,500	69,000	74,500	80,000	85,500	91,000
35			65,500	70,000	75,000	80,500	86,000	91,500
36		Exception	66,000	70,500	75,500	81,000	86,500	92,000
37		see page	66,500	71,000	76,000	81,500	87,000	93,000
38		number	67,500	71,500	77,000	82,000	87,500	93,500
39			68,000	72,500	77,500	82,500	88,500	94,000
40			68,500	73,000	78,000	83,500	89,000	94,500
41			69,500	73,500	78,500	84,000	89,500	95,000
42			70,000	74,000	79,000	84,500	90,000	95,500
43			70,500	75,000	80,000	85,000	90,500	96,000
44			71,500	75,500	80,500	85,500	91,000	96,500
45			72,000	76,000	81,000	86,000	91,500	97,500
46			72,500	76,500	81,500	87,000	92,500	98,000
47			73,500	77,500	82,000	87,500	93,000	98,500
48			74,000	78,000	83,000	88,000	93,500	99,000
49			74,500	78,500	83,500	88,500	94,000	99,500
50			75,500	79,000	84,000	89,000	94,500	100,000
51			76,000	80,000	84,500	89,500	95,000	100,500
52			76,500	80,500	85,000	90,500	95,500	101,000
53			77,500	81,000	86,000	91,000	96,500	102,000
54			78,000	81,500	86,500	91,500	97,000	102,500
55			78,500	82,500	87,000	92,000	97,500	103,000
56		Interstate	79,500	83,000	87,500	92,500	98,000	103,500
57		Gross Weight	80,000	83,500	88,000	93,000	98,500	104,000
58		Limit		84,000	89,000	94,000	99,000	104,500
59				85,000	89,500	94,500	99,500	105,000
60				85,500	90,000	95,000	100,500	105,500

\* The permissible loads are computed to the nearest 500 pounds. The modification consists in limiting the maximum load on any single axle to 20,000 pounds.

\*\* The following loaded vehicles must not operate over H15-44 bridges: 3-S2 (5 axles) with wheelbase less than 38 feet; 2-S1-2 (5 axles) with wheelbase less than 45 feet; 3-3 (6 axles) with wheelbase less than 45 feet; and 7-, 8-, 9-axle vehicles regardless of wheelbase.

In 1974, when the higher axle and gross weight limits were adopted for the Interstate System (20,000 pounds--single axle, 34,000 pounds--tandem axle, 80,000-pounds-gross weight), the Bridge Formula was written into Section 127 of the United States Code, Title 23. The Bridge Formula assures that allowable weight of heavy trucks is correlated with spacing of axles to prevent overstressing of highway bridges (*preventing an effect similar to a person standing erect on thin ice*).

The Federal law states that any two or more consecutive axles may not exceed the weight as computed by the bridge formula even though the single axles, tandem axles, and gross weights are within legal requirements (See Table B).

A distinction is made at the 8-foot distance in Table B. The Federal tandem axle weight limit for 8' and less axle spacing is 34,000 pounds and the axle weight limit for any spacing greater than 8' must be in accordance with the bridge formula. There is one exception to the use of the Formula or Table B--two consecutive sets of tandem axles may carry a gross load of 34,000 pounds each providing the overall distance between the first and last axles of such consecutive sets of tandem axles is 36 feet or more. For example, a 5 axle truck tractor semi-trailer (shown below) may be used to haul a full 34,000 pounds on the tandem axles of the tractor (axles 2 and 3) and the tandem axles of the trailer (axles 4 and 5) provided there is a spacing of 36 feet or more between axles 2 and 5. A spacing of 36 feet or more for axles 2 and 5 is satisfactory for an actual gross weight of 68,000 pounds even though the formula or Table B computes maximum permissible gross weight to be 66,000 to 67,500 pounds for a spacing of 36 to 38 feet. This special exception is stated in the Federal law.



Of the 580,000 bridges in the United States, some 250,000 are listed as deficient in FHWA's National Bridge Inventory (NBI), including 140,000 that are structurally deficient. There are currently some 5,000 to 8,000 bridge replacements per year, so for the foreseeable future the inventory of bridges in the United States will contain many structures incapable of carrying today's heavy vehicles.

Approximately half of the bridges in the current inventory are more than 30 years old, which explains why so many are deficient. During recent decades, truck weights have increased, whereas funds for bridge inspection, maintenance, repair, and rehabilitation were often not available. Despite the inadequacy of funding levels, bridges have maintained high safety levels with few collapses due to overloads by heavy vehicles. This safety record has been achieved because bridge engineers have traditionally used conservative methods of proportioning the sizes of bridge components and there is often a high safety factor.

**ANALYSIS OF PERMANENT  
WEIGH STATION LOCATIONS**

## GENERAL

The State of Michigan is made up of two distinct areas often referred to as the upper and lower peninsulas. This configuration, combined with its location, make Michigan's weight enforcement needs unique. Intrastate trucking as well as trucks hauling into and from neighboring States and Canada each pose different weight enforcement problems. At present there are 23 permanent/fixed scales at 14 locations which are being operated on schedules that vary substantially from one location to another and even from month to month. These facilities were constructed over a long period of time and vary significantly in size, type of weighing facilities, maintenance costs, truck volumes etc. In essence, the weight enforcement program has developed as needs were recognized (including Federal requirements) but without benefit of a long range plan.

The location of the permanent/fixed truck scales are shown on the following map (Exhibit 2.1). A tabulation of these facilities along with a summary of operational activities are included in Table 2.2, Table 2.3 and are discussed in the subsequent sections.

## ERIE

The scales on I-75 near Erie are located to facilitate the enforcement of the size and weight of trucks coming in from and going towards Toledo, Ohio. Trucks coming into Eastern Michigan from points further south and east would most likely use this route. An estimated 3.8 million trucks use this route yearly which is the highest truck volume for any fixed scale facility.

These scales were built in 1986 to replace existing scales located not far from the present site. Weigh-in-Motion (WIM) equipment was installed at the time of construction. This site is expected to be upgraded with truck inspection facilities adjacent to the truck parking area.

A total of sixteen officers and two sergeants are assigned to the Erie Weigh Stations. They are assigned to the north and southbound scales as well as to road patrol duty. Attempts are made to keep each site open 24 hours per day, 5 days per week. In addition, the facility is scheduled for operation on the first shift on Saturdays and last shift on Sundays for a total of 136 hours each week.

## **NEW BUFFALO**

The New Buffalo Weigh Station is located on Interstate Route 94 eastbound to check trucks coming from Indiana. Approximately 1.7 million trucks travel I-94 eastbound at this location. This volume is second highest of any of the fixed scale sites and is due to trucks hauling from points north and west. This includes the cities of Milwaukee and Chicago as well as the industrial areas of northern Indiana.

The scale on eastbound I-94 was originally built in 1963 and was equipped with a mechanical scale. The mechanical scale and platform have since been rebuilt. The building was replaced after an inebriated truck driver crashed through the original building. A concrete barrier was also put in place to prevent a reoccurrence of this type of accident.

There are no scales to accommodate westbound I-94 truck traffic at New Buffalo. A new facility is planned at this location in 1992.

Seven officers and one sergeant are assigned to this facility. This site is operated approximately "half time". It is scheduled for operation 60 hours per week, 12 hours per day, 5 days per week. This allows the officers to also work on road patrols using portable scales.

## **COLDWATER**

The Coldwater Weigh Station is located on northbound I-69 and is effective in enforcing weight limits for trucks traveling from Indianapolis and points south. Approximately 667,400 trucks use this route each year.

The Coldwater facility was built in 1983 and is equipped with an electronic scale. No major improvements have been made since construction.

The staff of four officers rotate between operating the fixed scale and road patrol duties at the direction of the post sergeant. Attempts are made to staff the scale 40 of the 80 hours available within the schedule.

## **POWERS**

The Powers Weigh Station is located on U.S. 2 and is the only fixed scale located in the upper Peninsula to check trucks traveling to or from Wisconsin . An estimated 176,000 trucks pass the facility yearly. This is the second lowest volume of any fixed scale in Michigan.

This scale was originally constructed in 1959. Maintenance and occasional repair have kept the original mechanical scale in service.

One officer is assigned to this scale. This individual will vary shifts to cover either the first or second shift. He/She will also split duties between the fixed scale and road patrol. This individual works 40 hours per week with 20 hours devoted to operation of the fixed scale and the remaining hours used to operate portable scales.

## **CAMBRIDGE JUNCTION**

The Cambridge Junction Weigh Station is located at the intersection of U.S. 12 and M-50. This site has the lowest truck volume of any fixed scale currently in operation. Despite this, the location has its merits. Trucks attempting to bypass the Grass Lake scales on I-94 will often use U.S. 12 and travel M-50 to get from one route to the other. Officers with the Motor Carrier Division have indicated that most truck drivers don't know that the scale facility is there and the percentage of trucks in violation is therefore quite high.

The scale at this intersection was built in 1973. The mechanical scale was originally installed but removed and replaced with an electronic scale in 1982. Officers at this site indicated very few problems with the equipment presently being used.

The two officers assigned to this site rotate shifts and duties. The fixed scale is planned for operation 40 hours per week with officers performing road patrol duties the remainder of the week. Both officers report to a sergeant also assigned to the site.

## **GRASS LAKE**

The scale facilities located near Grass Lake on I-94 have the third highest volume of any locations in the state. I-94 is the primary route between Detroit and points west including northwest Indiana and the Chicago metropolitan area. Routes U.S. 23 and M-14 connect with I-94 to the east of this site making a location closer to the Detroit area less feasible.

Both east and westbound scales were constructed in 1962. The original mechanical scales have been replaced with electronic scales. WIM equipment was added to both sites in 1987. The scale houses were enlarged in 1990 increasing the work area for officers working these stations.

A sergeant oversees the activities of thirteen officers at these facilities. Two officers attend to weighing and inspection duties during both the first and second shifts at each scale. Only one officer attends each facility during the third shift. A road patrol unit based at each scale is normally operated during the first shift.

These sites are scheduled to be open 24 hours per day, 5 days per week, plus one shift on one weekend day each week. The schedule for the weekend shift will vary at the discretion of the post supervisor.

## **FOWLerville (BRIGHTON)**

There are two scale sites located on I-96. The first (Brighton) is located near Fowlerville between Detroit and Lansing. Almost 1.8 million trucks pass this site yearly giving it the fourth highest volume of any site. Despite this high volume, mechanical scales are still being used. No major improvements have been made since the original construction in 1962.

Both eastbound and westbound facilities are scheduled for operation 60 hours per week. The staff of eight officers split their time between operating the fixed scales and road patrol activities at the direction of the post sergeant.

## **IONIA (PORTLAND)**

The second site on I-96 is located in Ionia County near Portland between Lansing and Grand Rapids. Truck volume at this site is considerably less at under 1.3 million trucks annually. It is ranked eighth based on volume. No apparent modification has been made to the scales at this location since being built in 1961. The original mechanical scales, although rebuilt, are still being used.

The staffing of both east and westbound scales is similar to that of the New Buffalo facilities. Seven officers split their time between operating the fixed scales and performing road patrol activities. Activities are directed by a sergeant assigned to the post. Sixty hours of fixed scale operation are scheduled each week.

## **BRIDGEPORT**

The Bridgeport Weigh Stations are located on I-75. These scales rank fifth based on truck traffic volume. This site is located between Saginaw and Flint. Both cities have heavy industries which account for the high truck volumes.

Both Bridgeport scale facilities were built in 1961. The mechanical scales originally installed have been rebuilt and are still being used.

The post sergeant directs the eight officers assigned to this post to either operate the fixed scales or perform road patrol duties. Both eastbound and westbound facilities are scheduled to be operated 40 hours per week during the first or second shift. The scales are not operated during the third shift.

## **PONTIAC**

Truck traffic on I-75 near the Pontiac Weigh Stations is the sixth highest of any location. The industries of Detroit and Flint use these routes extensively to ship their goods.

Both weigh stations were built in 1962. A rebuilt mechanical scale is used at the southbound facility and an electronic scale was installed at the northbound facility in 1980.

The fixed scales are scheduled to be open 64 hours each week. The seven officers assigned to this site split their time between fixed scale operation and road patrol duties. A sergeant assigned to this post coordinates activities.

## **NEW BALTIMORE**

The New Baltimore Weigh Stations are located on I-94 north of Detroit and have the ninth highest truck volume of the sites studied. It is the major route between the Detroit area and the Canadian border crossing at Port Huron. According to MCD officers, a large number of trucks avoid the scales by using a readily accessible bypass route. Trucks can exit I-94 just to the north or south of the scales and use a state trunk highway to bypass the scales.

Both New Baltimore scales were built in 1963. The original mechanical scales were replaced in 1981 with electronic scales. Currently, eleven axle trucks cannot be weighed accurately at the eastbound scale due to problems with the approach pavement.

Both eastbound and westbound facilities are scheduled for operation 68 hours per week. During the weekdays the six officers assigned to this post split their time between fixed site operation and road patrol activities. The scale facilities are operated under a three shift plan allowing the scales to be open at any point during the day of the week. Additionally, the scales will be open the first shift on Saturday and the last shift on Sunday. Changes to the normal schedule or duties are directed by the post sergeant.

## **BRIDGE LOCATIONS**

Scales are well located near the bridges between Michigan and Canada at Sault Ste. Marie and Port Huron to check trucks coming in from Canada or hauling into Canada from Michigan. An estimated 72,000 trucks use the International Bridge at Sault Ste. Marie yearly. More than eight times that amount (605,000) use the Blue Water Bridge at Port Huron. It is important to protect these bridges. These scale facilities are not staffed on a regular basis. The scales are used only when MCD Officers stop a truck they believe to be overweight.

This same approach is used at the scales near the Mackinac Bridge. This bridge is the only roadway link between upper and lower Michigan. Because of this, it is important to check truck weight to avoid damage to the bridge. It is estimated that 235,000 trucks use this bridge yearly. The scale facilities at this location are used on an as needed basis. Only those trucks that officers believe to be overweight will be directed to the scales.

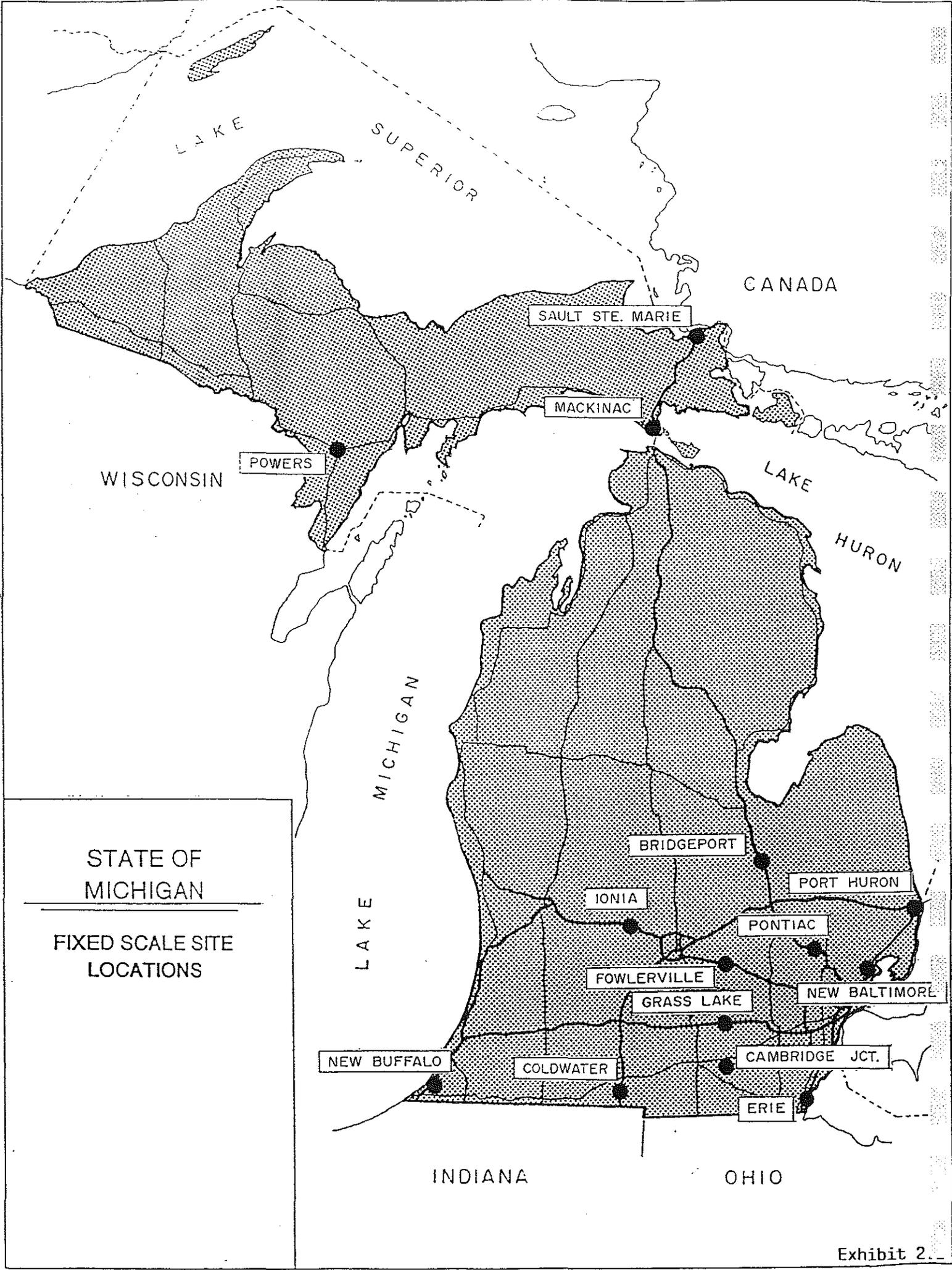
## **ROAD PATROL POSTS**

There are 32 Motor Carrier Division Road Patrol Posts located around the state. These posts do not have permanent scales and are in addition to the weigh station and bridge posts. Personnel assigned to these posts are responsible for enforcing truck laws in outlying areas. These areas will not have enough truck traffic to justify a fixed scale facility similar to those examined previously. Post locations are shown on Exhibit 2.4.

Occasionally personnel from road patrol posts will be temporarily assigned to the fixed scale sites. Data showing this activity is included in Table 3.2.

## **FIXED SCALE FACILITIES OF NEIGHBORING STATES**

When looking at the scale locations for the states bordering Michigan, it would appear that Michigan gets little help from its neighbors. Scales operated by Michigan's neighboring States are shown on Exhibit 2.5.



STATE OF MICHIGAN

FIXED SCALE SITE LOCATIONS

FIXED SITE SCALE ACTIVITY - 1989

SCALE: YEAR BUILT ROUTE/DIRECTION	ANNUAL TRUCK VOLUME	TRUCKS WEIGHED	PERCENT OF TRUCKS WEIGHED	SCALE OPERATION MANHOURS	VEHICLES WEIGHED PER MANHOUR
* ERIE: 1986					
I-75 / SW	1,901,940				
I-75 / NE	1,901,440				
SUBTOTAL	3,803,380	572,760	15.06%	2,049	279.53
** PONTIAC: 1962					
I-75 / SE	793,330				
I-75 / NW	676,530				
SUBTOTAL	1,469,860	82,078 *	5.58%	1,938	42.35
BRIDGEPORT: 1961					
I-75 / SE	729,450				
I-75 / NW	742,850				
SUBTOTAL	1,472,300	207,485	14.09%	856	242.39
NEW BALTIMORE: 1963					
I-94 / NE	511,630				
I-94 / SW	533,870				
SUBTOTAL	1,045,500	152,002	14.54%	1,529	99.41
GRASS LAKE: 1962					
I-94 / EAST	1,382,240				
I-94 / WEST	1,322,780				
SUBTOTAL	2,705,020	1,012,521	37.43%	3,053	331.65
POWERS: 1959					
US 2 / EAST	89,720				
US 2 / WEST	86,610				
SUBTOTAL	176,330	7,548	4.28%	341	22.13
IONIA: 1961					
I-96 / EAST	631,440				
I-96 / WEST	651,860				
SUBTOTAL	1,283,300	71,306	5.56%	2,289	31.15
COLDWATER: 1983					
I-69 / NORTH	667,420	113,725	17.04%	738	154.10
FOWLerville: 1962					
I-96 / EAST	912,860				
I-96 / WEST	886,330				
SUBTOTAL	1,799,190	281,057	15.62%	3,073	91.46
CAMBRIDGE JCT.: 1973					
US 12 / EAST	82,870				
US 12 / WEST	88,990				
SUBTOTAL	171,860	50,989	29.67%	1,015	50.24
NEW BUFFALO: 1963					
I-94 / NE	1,703,750	432,942	25.41%	1,648	262.71
TOTAL	16,297,910	2,984,413	18.31%	18,529	1607.12

Table 2.2

\* See Page 2-10 (emphasis on road patrol and portable weights).

\*\* These scales were only operated part-time during 1989 when I-75 was being widened to 3 lanes.

# SUMMARY OF WEIGH STATION DATA - 1989

WEIGH STATION NAME	NEW							CAMBRIDGE		NEW	
	ERIE	PONTIAC	BRIDGEPORT	BALTIMORE	GRASS LAKE	POWERS	IONIA	COLDWATER	POWLerville	JUNCTION	BUFFALO
YEAR BUILT	1986	1962	1961	1963	1962	1959	1961	1983	1962	1973	1963
<b>STAFF</b>											
OFFICER(S)	16	7	8	6	13	1	7	4	8	2	7
SERGEANT(S)	2	1	1	1	1	0	1	1	1	1	1
<b>FIXED SITE</b>											
PLAN HOURS/YEAR	14,144	6,656	4,160	7,072	13,312	1,040	6,240	2,080	6,240	2,080	3,120
OUT OF SERVICE HOURS	8,852	1,110	1,704	1,936	3,548	696	1,947	(354)	1,378	(744)	268
OPERATIONAL HOURS	5,292	5,546	2,456	5,136	9,764	344	4,293	2,434	4,862	2,824	2,852
SCALE OPERATION	2,049	1,938	856	1,529	3,053	341	2,289	738	3,073	1,015	1,648
MCSAP INSPECTION	3,243	3,600	1,600	3,607	6,711	3	2,004	1,696	1,789	1,809	1,204
% OF PLAN HOURS	37.42%	83.32%	59.04%	72.62%	73.35%	33.08%	68.80%	117.02%	77.92%	135.77%	91.41%
% OF AVAILABLE HOURS	30.21%	31.66%	14.02%	29.32%	55.73%	3.93%	24.50%	27.79%	27.75%	32.24%	32.56%
ANNUAL TRUCK VOLUME	3,803,380	1,469,860	1,472,300	1,045,500	2,705,020	176,330	1,283,300	667,420	1,799,190	171,860	1,703,750
TRUCKS WEIGHED	572,760	82,078	207,485	152,002	1,012,521	7,548	71,306	113,725	281,057	50,989	432,942
% OF TRUCKS WEIGHED	15.06%	5.58%	14.09%	14.54%	37.43%	4.28%	5.56%	17.04%	15.62%	29.67%	25.41%
TRUCKS INSPECTED	2377	3153	1325	2793	6637	3	1845	1717	1735	1763	1077
% OF TRUCKS INSPECTED	0.06%	0.21%	0.09%	0.27%	0.25%	0.00%	0.14%	0.26%	0.10%	1.03%	0.06%
<b>ROAD PATROL</b>											
OPERATIONAL HOURS	5,653	3,249	3,364	3,459	5,610	837	2,743	1,779	2,942	1,575	2,793
PORTABLE SCALE HOURS	706	249	160	79	206	24	36	193	112	51	181
MCSAP INSPECTION	3,545	1,822	2,589	2,665	3,730	457	1,458	874	921	617	958
CAR HOURS ON PATROL	1,402	1,178	615	715	1,674	356	1,249	712	1,909	907	1,654
TRUCKS WEIGHED	492	266	135	70	151	17	40	133	110	35	139
TRUCKS INSPECTED	2,599	1,741	1,514	807	1,275	450	1,265	795	904	607	778

TABLE 2.3

2-10

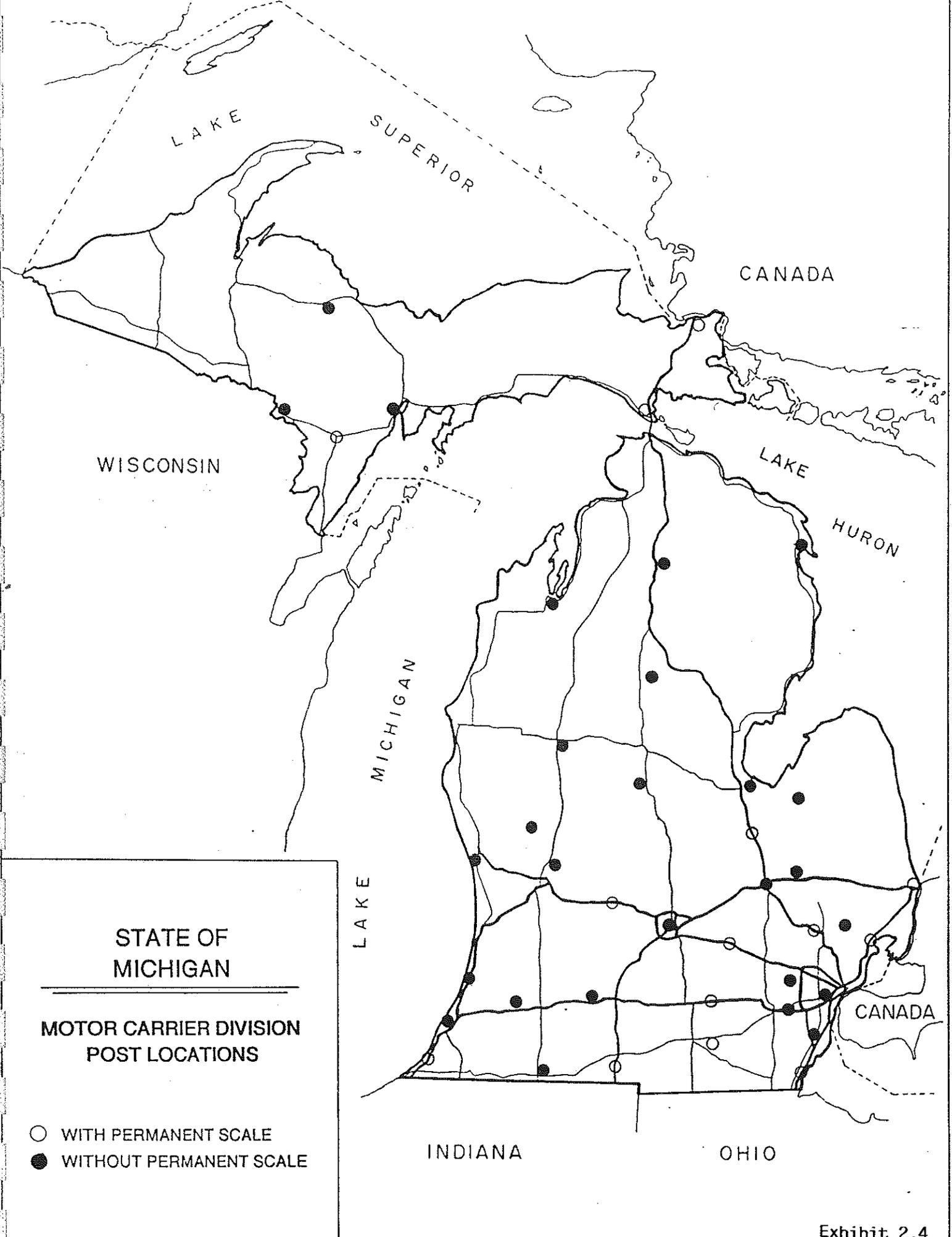
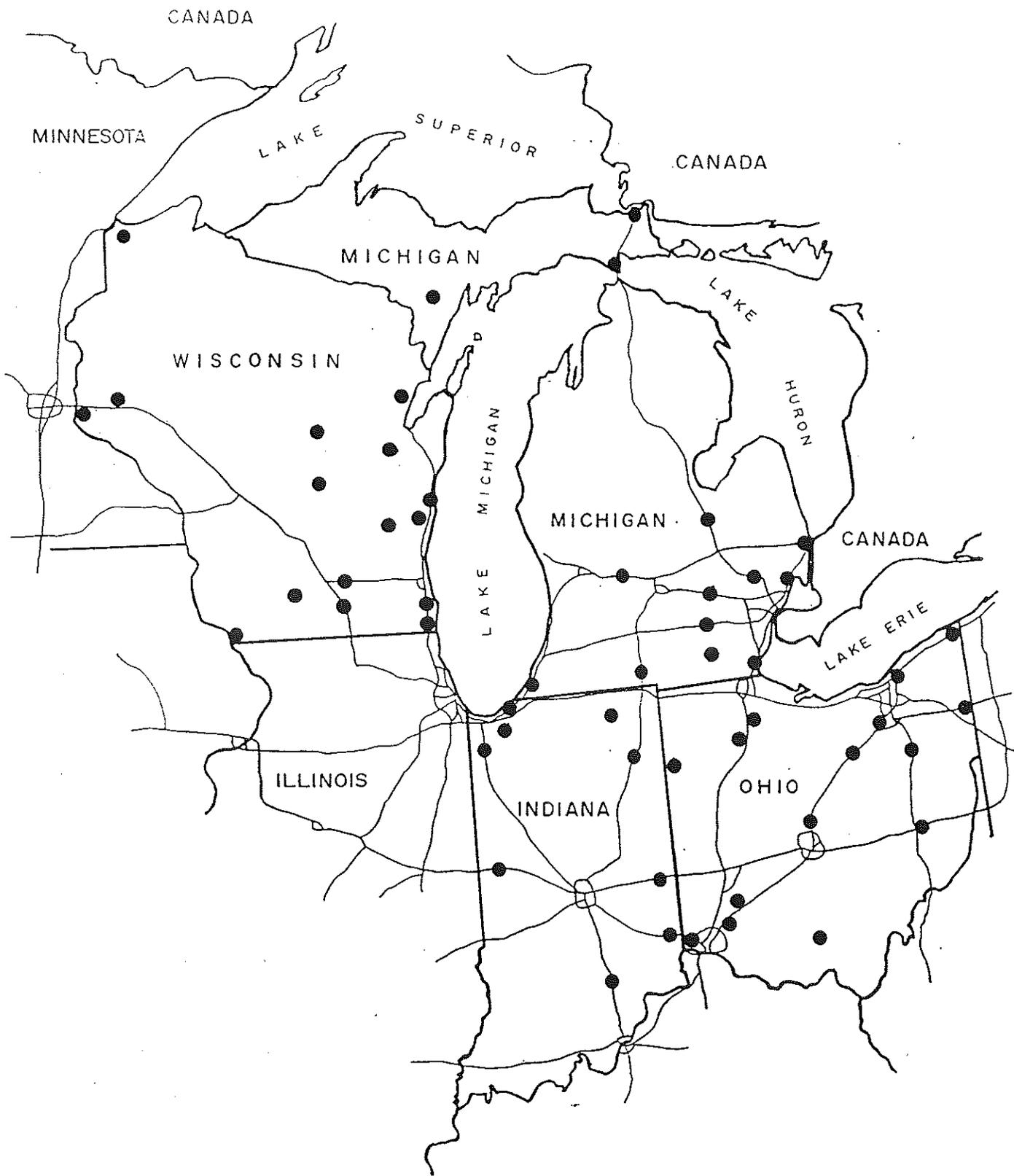


Exhibit 2.4



REGIONAL FIXED SCALE FACILITY MAP

# **ANALYSIS OF WEIGH STATION DATA**

## FIXED SCALE SITES

The analysis of fixed site data has been limited to those facilities which are operated on a regular basis. This approach eliminated the sites at Sault Ste. Marie, Mackinac and Port Huron from the fixed site analyses.

Data from the eleven remaining fixed sites has been summarized in Tables 3.1, 3.2 and 3.4. Table 3.1 compares planned hours of operation to actual hours of operation. The reasons for the variations between these numbers are indicated in the column "Reasons for Out of Service Hours".

Several points should be noted when reviewing Table 3.1. Hours of officers assigned to a location but scheduled to work on road patrol are not included in the planned hours. Hours shown in the column "Lack of Personnel" reflect the hours personnel were not at the site for various reasons. This includes, but is not limited to, annual leave, sick leave, court time and training programs. Such items as closure for weather are contained in the column "Other".

The Coldwater and Cambridge Junction scales are unique in that they were operated a greater number of hours than planned. These "extra hours" were the result of officers working less than planned hours on road patrol duty.

Table 3.2 "Fixed Scale Operation and MCSAP Inspection Data-1989" and Table 3.3 "Road Patrol Data-1989" further develop the picture of how MCD staff time is used. The Motor Carrier Division attempts to have the total hours of fixed scale operation equal the total Road Patrol hours for each site. The Erie and New Buffalo Weigh Stations are the only two which approach this criteria. While it appears that there is a balance between the two activities it should be noted that the actual hours of operation for the Erie site are only 37% of planned hours. Much like Erie, Bridgeport has one of the lowest ratio of hours of operation to planned hours (59%). The fixed scales are operated 42% of the "total hours" and road patrols account for 58%.

The weigh station at Powers has the lowest ratio of hours of operation to planned hours (33%). The hours of operation for fixed versus portable scales appear to be out of balance at Powers. Personnel assigned to this site operate on road patrols 71% of the time and at the fixed scale 29% of the time. This represents the largest imbalance among the 11 weigh stations analyzed. Excluding the scale at Powers, the average of the remaining weigh stations is 58% of total available hours for fixed scale operation, with the remainder (42%) used for road patrol activities.

Officers have indicated that safety (MCSAP) inspections are their top priority with weight enforcement a slightly lower priority. This emphasis is reflected in Tables 3.2 and 3.3. Sixty percent of fixed site hours were used in the MCSAP program by MCD officers and 58% of road patrol hours were used for these inspections.

Table 3.4 lists the annual truck volume at each site. This volume was calculated using 24 hour traffic counts provided by MDOT. Information on trucks weighed and scale operation manhours was provided by the Motor Carrier Division.

Results of analyses performed using this data indicate that a comparatively low percentage of trucks passing each site are actually weighed. The Grass Lake scales have the highest percentage of trucks weighed at 37.43%. This is still low when maximum possible operational hours and actual hours of operation are considered. The Grass Lake facilities were planned to be open 128 of the 168 hours available in a week, or 76% of total hours. It is estimated that only 7% of the total truck volume passes a site during this planned closure period. Actual scale operation takes place during approximately 73% of planned hours of operation or 55% of the hours available in a year. Using these figures, 68% of all trucks travelling past the site on I-94 do so while the weigh stations are open. Records indicate that a little over half of these trucks are actually being weighed.

The number of trucks passing over the scale during the period the scales are open exceeds the number of trucks being weighed. This is due to officers being involved with other activities (i.e. safety inspections or citation preparation) while trucks pass through the facility. The size of the discrepancy varies from site to site and can be estimated from the figures given in the tables.

## ROAD PATROL POSTS

Road patrols are used by the Motor Carrier Division to enforce truck laws on roads not served by fixed scales. Approximately 64% of the total hours reported by MCD officers were used for road patrol enforcement activities during 1989.

Road patrol units based at the fixed scale sites attempt to limit the bypassing of the fixed scales by trucks. These units are normally scheduled during daylight hours when the fixed scale is open. While on patrol, officers will attempt to locate trucks in violation of truck laws. Appropriate enforcement action is taken once a truck is located. Road patrol officers operating from the fixed scales logged over 12,300 hours locating violators and more than 21,600 hours enforcing truck weight laws and making safety inspections in 1989.

There are currently 32 Motor Carrier Division Posts not associated with the fixed scale sites. Officers operating from these sites logged over 48,700 hours in 1989. Car hours on patrol and MCSAP inspections were the largest contributors to the time recorded by these officers. Approximately 68% of these hours were used for MCSAP inspections and only 2% for weighing trucks.

A summary of total activity at these posts is contained in Table 3.3.

# FIXED SCALE OPERATION - 1989

(HOURS INDICATED ARE FOR SCALE OPERATION AND MCSAP INSPECTIONS)

FIXED SCALE	PLANNED HRS/WK	PLANNED HRS/YR	REASONS FOR OUT OF SERVICE HOURS			OUT OF SERVICE HOURS	ACTUAL HOURS OF OPERATION	PERCENT OF PLANNED HOURS	PERCENT OF AVAILABLE HOURS YEARLY
			LACK OF PERSONNEL	EQUIP. FAILURE/ MAINT./ REPAIR	OTHER				
ERIE - NB	136	7,072	3,098	1,328	0	4,426	2,646	37.42%	30.21%
ERIE - SB	136	7,072	3,098	1,328	0	4,426	2,646	37.42%	30.21%
PONTIAC - NB	64	3,328	511	44	0	555	2,773	83.32%	31.66%
PONTIAC - SB	64	3,328	511	44	0	555	2,773	83.32%	31.66%
BRIDGEPORT - NB	40	2,080	767	23	62	852	1,228	59.04%	14.02%
BRIDGEPORT - SB	40	2,080	767	23	62	852	1,228	59.04%	14.02%
NEW BALTIMORE - EB	68	3,536	910	58	0	968	2,568	72.62%	29.32%
NEW BALTIMORE - WB	68	3,536	910	58	0	968	2,568	72.62%	29.32%
GRASS LAKE - EB	128	6,656	1,153	266	355	1,774	4,882	73.35%	55.73%
GRASS LAKE - WB	128	6,656	1,153	266	355	1,774	4,882	73.35%	55.73%
POWERS	20	1,040	557	139	0	696	344	33.08%	3.93%
IONIA - EB	60	3,120	682	244	48	974	2,146	68.78%	24.50%
IONIA - WB	60	3,120	682	243	48	973	2,147	68.81%	24.51%
COLDWATER	40	2,080				(354)	2,434	117.02%	27.79%
FOWLerville - EB	60	3,120	654	28	7	689	2,431	77.92%	27.75%
FOWLerville - WB	60	3,120	654	28	7	689	2,431	77.92%	27.75%
CAMBRIDGE JUNCTION	40	2,080				(744)	2,824	135.77%	32.24%
NEW BUFFALO - EB	60	3,120	105	19	144	268	2,852	91.41%	32.56%
TOTAL	1,272	66,144	16,212	4,139	1,088	20,341	45,803	69.25%	29.05%

Table 3.1

3-4

FIXED SCALE OPERATION AND MCSAP INSPECTION DATA - 1989

SCALE NAME	TRUCKS WEIGHED	SCALE OPERATION HOURS	WEIGHED PER HOUR	MCSAP INSPECTION HOURS	TOTAL HOURS
Erie	572,760	2,049	279.5	3,243	5,292
Pontiac	82,078	1,938	42.4	3,608	5,546
Bridgeport (Birch Run)	207,485	856	242.4	1,600	2,456
New Baltimore	152,002	1,529	99.4	3,607	5,136
Grass Lake (Jackson)	1,012,521	3,053	331.6	6,711	9,764
Powers (Stephenson)	7,548	341	22.1	3	344
Ionia (Portland)	71,306	2,289	31.2	2,004	4,293
Coldwater	113,725	738	154.1	1,696	2,434
Fowlerville (Brighton)	281,057	3,073	91.5	1,789	4,862
Cambridge Jct. (Clinton)	50,989	1,015	50.2	1,809	2,824
New Buffalo	432,942	1,648	262.7	1,204	2,852
Sub-Total	2,984,413	18,529	161.1	27,274	45,803
Activity Reported From Other Posts	2,123	229	9.3	0	229
Divisional Total	2,986,536	18,758	159.2	27,274	46,032 *

Table 3.2

ROAD PATROL DATA - 1989

SCALE NAME	**CAR HOURS		PORTABLE WEIGH HOURS	WEIGHED PER HOUR	MCSAP INSPECTION HOURS	TOTAL HOURS
	ON PATROL	TRUCKS WEIGHED				
Erie	1,402	492	706	0.70	3,545	5,653
Pontiac	1,178	266	249	1.07	1,822	3,249
Bridgeport (Birch Run)	615	135	160	0.84	2,589	3,364
New Baltimore	715	70	79	0.89	2,665	3,459
Grass Lake (Jackson)	1,674	151	206	0.73	3,730	5,610
Powers (Stephenson)	356	17	24	0.71	457	837
Ionia (Portland)	1,249	40	36	1.11	1,458	2,743
Coldwater	712	133	193	0.69	874	1,779
Fowlerville (Brighton)	1,909	110	112	0.98	921	2,942
Cambridge Jct. (Clinton)	907	35	51	0.69	617	1,575
New Buffalo	1,654	139	181	0.77	958	2,793
Sub-Total	12,371	1,588	1,997	0.80	19,636	34,004
Activity at Other Posts	14,534	1,422	1,529	0.93	32,676	48,739
Divisional Total	26,905	3,010	3,526	0.85	52,312	82,743 *

Table 3.3

\* Total hours do not include court work, various facility housekeeping tasks and other operational support.

\*\* These are hours that officers were working speed etc., not actually weighing or inspecting vehicles

FIXED SITE SCALE ACTIVITIES - 1989

SCALE ROUTE/DIRECTION	ANNUAL TRUCK VOLUME	TRUCKS WEIGHED	PERCENT OF TRUCKS WEIGHED	SCALE OPERATION MANHOURS	VEHICLES WEIGHED PER MANHOUR
* ERIE					
I-75 / SW	1,901,940				
I-75 / NE	1,901,440				
SUBTOTAL	3,803,380	572,760	15.06%	2,049	279.53
** PONTIAC					
I-75 / SE	793,330				
I-75 / NW	676,530				
SUBTOTAL	1,469,860	82,078	5.58%	1,938	42.35
BRIDGEPORT					
I-75 / SE	729,450				
I-75 / NW	742,850				
SUBTOTAL	1,472,300	207,485	14.09%	856	242.39
NEW BALTIMORE					
I-94 / NE	511,630				
I-94 / SW	533,870				
SUBTOTAL	1,045,500	152,002	14.54%	1,529	99.41
GRASS LAKE					
I-94 / EAST	1,382,240				
I-94 / WEST	1,322,780				
SUBTOTAL	2,705,020	1,012,521	37.43%	3,053	331.65
POWERS					
US 2 / EAST	89,720				
US 2 / WEST	86,610				
SUBTOTAL	176,330	7,548	4.28%	341	22.13
IONIA					
I-96 / EAST	631,440				
I-96 / WEST	651,860				
SUBTOTAL	1,283,300	71,306	5.56%	2,289	31.15
COLDWATER					
I-69 / NORTH	667,420	113,725	17.04%	738	154.10
FOWLerville					
I-96 / EAST	912,860				
I-96 / WEST	886,330				
SUBTOTAL	1,799,190	281,057	15.62%	3,073	91.46
CAMBRIDGE JCT.					
US 12 / EAST	82,870				
US 12 / WEST	88,990				
SUBTOTAL	171,860	50,989	29.67%	1,015	50.24
NEW BUFFALO					
I-94 / NE	1,703,750	432,942	25.41%	1,648	262.71
TOTAL	16,297,910	2,984,413	18.31%	18,529	1607.12

Table 3.4

\* See Page 2-10 (emphasis on road patrol and portable weights).

\*\* These scales were only operated part-time during 1989 when I-75 was being widened to 3 lanes.

**ANALYSIS OF EXISTING MOTOR CARRIER  
DIVISION ENFORCEMENT ACTIVITIES**

## **GENERAL**

Day-to-day enforcement activities (weighing and MCSAP inspections) are carried out by the units shown on the right side of the chart of Exhibit 4.1 under the direction of a Motor Carrier Inspector VIII. The State of Michigan is divided into eight geographical areas or districts, for enforcement purposes. Within each district there are a number of post units. These will include either a fixed scale site or a base for road patrol activities. Posts are the base of operation for Motor Carrier Officers in their attempts to enforce Michigan's truck laws. Coordination and administrative needs of each post are provided by the District Headquarters Section which is subject to the Motor Carrier Inspector VIII.

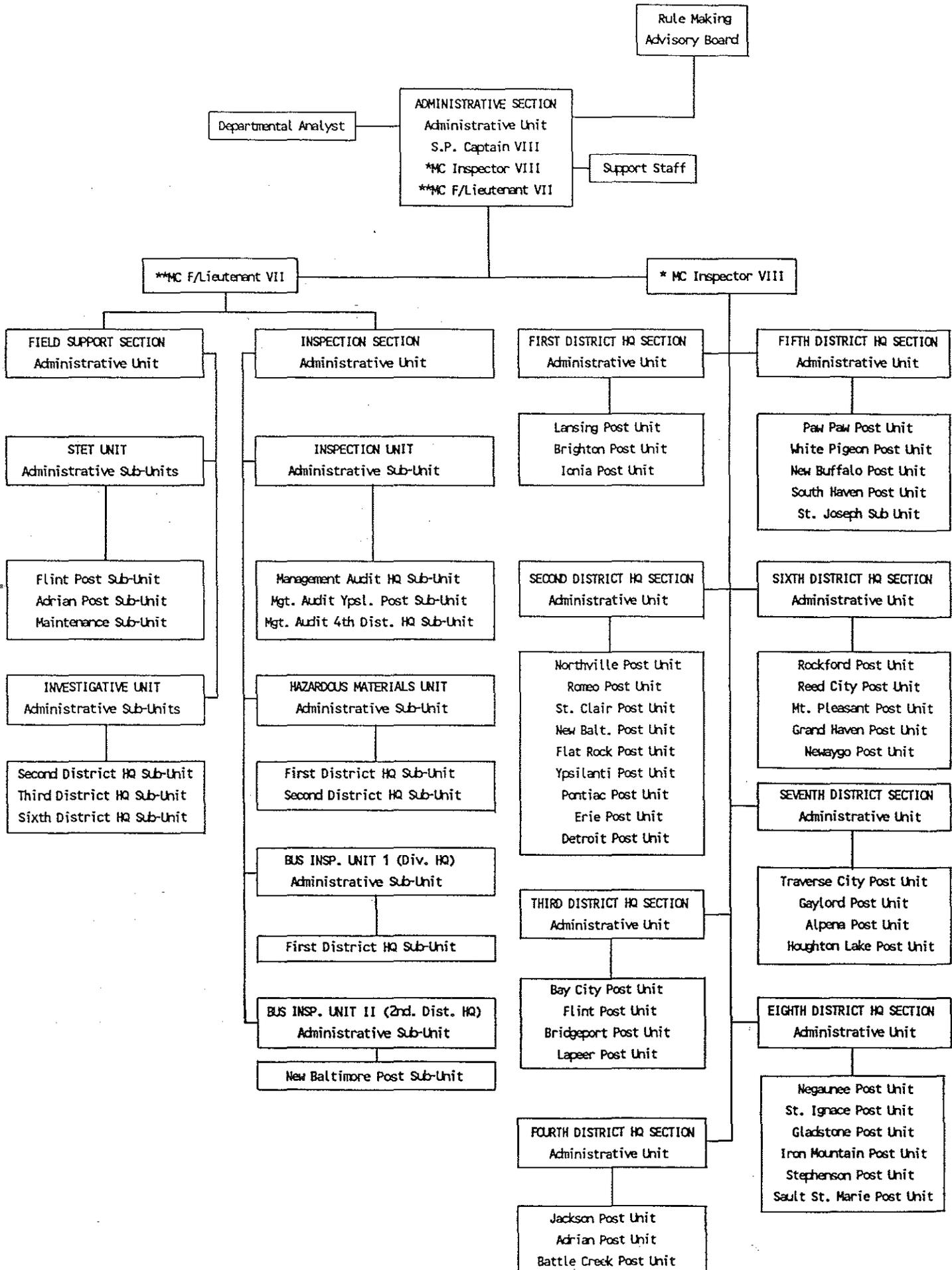
The left side of the chart includes field support services and specialty groups under the direction of a Motor Carrier F/Lieutenant VII. These units perform hazardous material inspections, bus inspections, management audits, accident investigations and Special Transportation Enforcement Team (STET) activities under the direction by one individual. The coordination of these activities with the day-to-day activities requires a significant effort.

## **WEIGHT ENFORCEMENT**

Table 4.2 indicates the number of vehicles weighed increased each year from 1985 to 1988 and dropped off in 1989. The number of citations increased each year from 1985 to 1987 but dropped off in 1988. Further review indicates a slight increase in the number of citations issued in 1989 even though fewer trucks were weighed. Tables 4.2 and 4.3 illustrate the change in emphasis of the MCD in order to improve the enforcement effort.

It appears that truckers who knew they were in violation were bypassing the fixed scales. Rather than waiting for the trucks to come to the scales, MCD officers took the scales to the trucks. Fixed scale site operation hours and trucks weighed both dropped from 1988 to 1989 and road weigh hours and trucks weighed increased over this same time period. The number of citations did increase despite the sharp drop in the number of trucks weighed.

Exhibit 4.1



# MOTOR CARRIER DIVISION ACTIVITY

	1985	1986	1987	1988	1989
Vehicles Weighed	2,226,147	2,402,100	2,857,289	3,304,113	2,989,546
Citations Issued	4,339	5,050	7,510	5,983	5,314

Table 4.2

	1988	1989
Fixed Scale Operation Hours	21,064	18,758
Trucks Weighed at Fixed Scales	3,304,113	2,989,546
Road Weigh Hours	3,039	3,526
Trucks Weighed with Portable Scales	2,608	3,010
Total Citations Issued	5,983	5,314
Weight Citations	4,536	4,593
Size Citations	1,447	721

Table 4.3

## MOTOR CARRIER SAFETY ASSISTANCE PROGRAM (MCSAP)

The goal of MCSAP, as stated in Chapter One, is to promote safer traveling for the general public by reducing commercial vehicle accidents. Analysis of available data indicates that efforts to accomplish this goal are working. The data presented in Table 4.4 indicates that a reduction in the number of truck accidents has occurred for each of the past three years for which data was available. In addition, the accident rate per one hundred million miles of truck travel has dropped. Although the data to make these analyses is not available for Fiscal Year 1989 it is anticipated that the trends will continue.

MCSAP DATA

	FY 1986	FY 1987	FY 1988
Inspections	48,181	61,050	55,819
Accidents	23,411	21,427	21,233
Accident Rate (per 100 million miles)	1,293.20	1,219.85	1,085.29

Table 4.4

## FUNDING

Each Department involved with truck registration or regulation contributes financially to the Motor Carrier Division. This contribution is made from the funds collected to register the vehicle, driver, company, etc. As these registrations are required by law, it is only natural that those departments issuing registrations would be interested in their enforcement. All Michigan State Police and Motor Carrier Division officers are empowered to enforce Michigan laws. Figure 4.5 shows the contributions to the Motor Carrier Division for Fiscal Year 1989-90.

Vehicle registration fees from the Department of State Vehicle Registration and fuel tax fees from the Department of Treasury are deposited with the Department of Transportation (DOT). The DOT forwards the agreed upon weight enforcement appropriation to the Motor Carrier Division. The Department of State collects a surcharge on commercial vehicle registrations, and the Department of Commerce (MPSC) collects revenue from the sale of "bingo stamps". A portion of these Truck Safety Commission funds are funneled to the MCD. Fees paid to the Department of Commerce for registration of trucking firms go to the Michigan Public Service Commission and a portion of this goes to the Motor Carrier Division. The remainder of the MCD funds come from Federal Government MCSAP Grants which are used to finance the cost of truck safety inspections.

# Funding Sources for Motor Carrier Division FY 1989-90

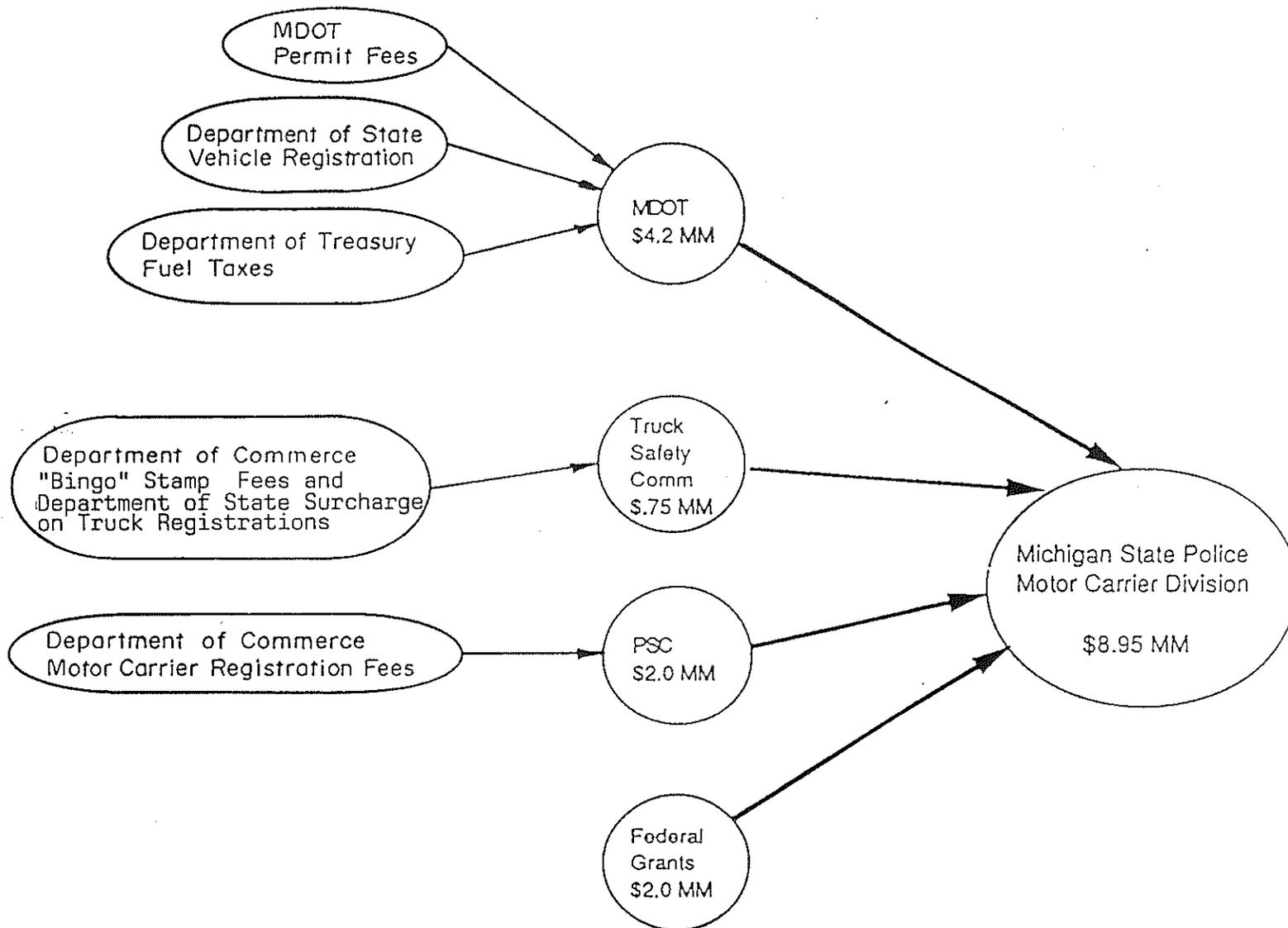


Figure 4.5

**REVIEW OF OTHER STATE'S  
WEIGHT ENFORCEMENT PROGRAMS**

## **BOUNDARY STATES**

### **GENERAL**

A careful review of the Truck Law Enforcement Programs of states bordering Michigan was undertaken. The information obtained from the States of Indiana, Ohio and Wisconsin, and the Canadian Province of Ontario was compared with the weight enforcement program in Michigan. The primary purpose of comparing Michigan's program with its neighboring states is to consider those changes or alternatives which would improve uniformity and coordination, as well as to maximize efficiency. Those items of main emphasis were weight restrictions, size restrictions, permit restrictions, safety programs, fines, schedules and oversize/overweight permit fees and procedures. Exhibits containing graphical comparisons of both boundary and non-boundary states data are located at the end of the non-boundary states section.

### **WEIGHT RESTRICTIONS**

Michigan is commonly referred to as an "axle state". Weight restrictions are established for each axle based on the distance between axles. The maximum number of axles and vehicle length allowed by law limits the gross weight of the vehicle to 164,000 pounds.

This is a different approach to truck weight enforcement than that which is used by Indiana, Ohio and Wisconsin. These three states place weight restrictions on gross vehicle weight with a maximum weight on each axle. Gross vehicle weight is limited to 80,000 pounds regardless of the number of axles. Maximum axle weights are 20,000 pounds for a single axle and 34,000 pounds for a tandem axle.

Weight restrictions in Ontario, Canada are much different. Ontario limits gross vehicle weight to 139,991 pounds (63,500 kg). Maximum axle weights are 22,046 pounds (10,000 kg) for a single axle and 42,108 pounds (19,100 kg) for a tandem axle. Weigh limits are shown in Exhibit 5.1.

### **SIZE RESTRICTIONS**

Michigan is in compliance with the Federal Mandate for truck width and length on the National Truck Network.

## **PERMITS**

All states and the Province of Ontario provide permits for the movement of overweight and/or oversize loads. Permits for these moves are issued for either a single trip or multiple trips. The fees and restrictions for these permits vary significantly from state to state.

### **PERMIT TYPES**

Michigan and its neighboring states and the Province of Ontario issue both single and multiple (annual) trip permits. Within these two categories there are numerous exemptions based on weight, size, vehicle type and product to be carried. These are commonly based on the needs of particular industries within each state. For example, both Michigan and Wisconsin have special exemptions for raw wood products. Michigan, Indiana, Ohio and Wisconsin make exceptions for farm equipment. Several states in the upper Midwest make exceptions for frozen roads as well as for spring breakup problems.

### **PERMIT FEES**

Michigan and its neighboring states charge very different rates for permits. Michigan has the lowest single and multiple trip permit fees (\$5.00 for single trip permits and \$8.00 for a multiple trip permit). All of the neighboring states charge a base fee of between \$10.00 to \$25.00. This charge may be a flat rate as in Ohio, graduated as in Wisconsin or based on mileage as in Indiana. The graph in Exhibit 5.2 shows the range of permit fees for various truck weights in Michigan, its neighboring states and in Ontario, Canada.

### **PERMIT RESTRICTIONS**

Each state has different size and weight restrictions for its permit program. Not only are the limits different for a particular permit type (overweight and/or oversize) but vary with the type of permit (single or multiple trip) issued. Because the restrictions are so different, extensive coordination is needed between the states to control these shipments.

## MAINTENANCE

This activity consists of several parts: day-to-day "housekeeping", minor activities such as snow plowing, grass cutting, scale repair, and major rehabilitation and reconstruction.

In Michigan officers assigned to the fixed scale sites perform the day-to-day maintenance. The Department of Transportation (DOT) provides snow plowing and mowing services as well as pavement maintenance. Any major rehabilitation and reconstruction of buildings, ramps, parking areas or scales is also the responsibility of the DOT following a request from MCD. If the request is approved, DOT will contract with a private firm to accomplish the work.

Individuals assigned to fixed scales in Indiana, Ohio and Wisconsin perform the day-to-day housekeeping at the sites. Activities such as plowing and mowing typically are carried out by the Departments of Transportation for these states.

Responsibility for major rehabilitation or reconstruction work for the states bordering Michigan depends on the specific item to be worked on. Scale repair or replacement is the duty of the Department of Transportation in Ohio. The Indiana DOT currently contracts with private firms for this work. In Wisconsin, scale and associated communication equipment repair is the State Patrol's responsibility. Ramps and parking areas in Indiana and Ohio is performed by the Department of Transportation or under private contract. Wisconsin's Division of Highways perform these activities. Major maintenance of scale and associated utilities are the responsibility of the Departments of Transportation in Indiana and Ohio while the Division of Business Management takes care of this for Wisconsin. While different divisions or department are involved in Wisconsin it should be understood that they are all part of the Wisconsin Department of Transportation.

## SCALE CERTIFICATION

Scale certification is handled in a similar manner by each of the states. All of the fixed scales in each state are certified annually or after a repair. Certification is also required for all portable and semi-portable scales. The Department of Agriculture is responsible for this activity in Michigan, Ohio and Wisconsin while in Indiana the Board of Health, Division of Retail and Consumer Affairs is responsible for certifications. Scales in Ontario, Canada are certified by private companies. No Provincial or Federal certification is required in Ontario.

The time needed to certify a scale in each state is dependent on the situation. If the certification is planned in advance, as little as four hours are needed to complete the certification. It may take as long as three weeks to get a scale certified after a repair. Most often the time required is dependent on the location and schedule of the certification crew.

## MOTOR CARRIER SAFETY ASSISTANCE PROGRAM (MCSAP)

The MCSAP activities of each state (Michigan, Indiana, Ohio and Wisconsin) are very similar. The number of inspections and budgets vary for each state but the cost per inspection is fairly close. Indiana shows the least cost per inspection at \$42.99 while Wisconsin has the highest at \$54.37. Michigan and Ohio are at \$51.58 and \$51.70 respectively.

Another way to compare the States is to calculate the number of inspections anticipated per employee. These figures range from a low of 917 per inspector per year in Wisconsin to a high of 1604 per inspector per year in Indiana. Each inspector is expected to complete 1326 inspections per year in Michigan and 1374 inspections per year in Ohio. The primary reason for the large disparity among these figures is the percentage of inspections anticipated at each level. The greater the number of Level 1 (the most comprehensive) inspections performed, the lower the total number that will be. Consequently, the more Level 2, 3, 4 or 5 inspections performed, the greater the total number will be.

The states have also identified problem areas and possible solutions. Education of MCSAP inspectors, availability of information to staff and improvement of documentation systems

are common internal program concerns of the states. External concerns include the monitoring and follow through with repeat offenders, driver compliance, driver inspection and post accident investigation. Often the solution for one problem will improve the situation with another. For example, if inspectors become more knowledgeable, better driver inspections and more informed spot accident inspections will be experienced.

The National Safety Code Standards in Canada are similar to those used in the MCSAP program. Although various requirements for vehicles and operators have been in place for many years, National regulations were not in place until 1989. Because these requirements are so new very little information is available on the effects of their implementation.

Graphic depiction of information contained in MCSAP grant applications for Federal Fiscal Year 1990 is shown in Exhibit 5.4 - 5.10.

## **FINES**

### **WEIGHT VIOLATIONS**

The fine schedules in Michigan, Indiana, Ohio and Wisconsin are based on the amount of overload. Although the fine schedules in these states are well defined, a judge's discretion is the final and deciding factor in the actual fine assessed. Michigan uses a graduated, flat rate per pound of overload for calculating the fine.

Indiana's fine system is less structured and less defined. Each overload range has a corresponding range of fines rather than a set multiplier as in Michigan.

Both Wisconsin and Ohio have established a base fine plus weight overload multiplier. Wisconsin uses a schedule of weight ranges, with corresponding fine rates together with a base fine which is independent of vehicle weight. Ohio uses a base fine plus an additional rate per hundred pounds of overload. Ohio also includes the possibility of a jail sentence for the driver of a vehicle carrying an overload of more than 5,000 pounds. The fine information for each state is shown in Exhibit 5.12.

Ontario has a schedule of fines which is similar to those of the states. A base fine of \$168 is used but additional fines can be assessed. A 30 day suspension can be imposed for more serious types of offenses.

## **SAFETY VIOLATIONS**

Fines can also be assessed for vehicle and/or driver safety violations. These fines, in Michigan and its neighboring states have an upper limit with the courts deciding the final amount of the fine. In addition a vehicle may be placed out-of-service until the problem is corrected. If the driver of a vehicle is found to be in violation of certain restrictions he may also be detained until the situation is rectified. This may be as minor as updating a log book which is not current or as serious as operating under the influence of drugs or alcohol.

## **NON-BOUNDARY STATES**

### **GENERAL**

In addition to reviewing the weight enforcement programs of states bordering Michigan, data was obtained from several other states having unique or comprehensive programs. The States of Arizona, California, Oregon and Minnesota were chosen for further review after discussions between representatives of the Michigan Department of Transportation and Wilbur Smith Associates.

During previous studies, Wilbur Smith Associates has learned that the State of New York also has a unique truck law enforcement program in which only portable or semi-portable scales have been used to enforce its truck laws. Wilbur Smith Associate's staff have again contacted the officials of New York State and obtained up-to-date information concerning their experience with this unique enforcement method. However, the State of New York was not analyzed for comparison with the State of Michigan.

All non-boundary states reviewed have weight restrictions similar to those of the states bordering Michigan (See Exhibit 5.1). Size restrictions are also similar to the boundary states examined.

Permits for loads in excess of the legal limit are issued by Arizona, California, Oregon and Minnesota. The approach to permit type and restrictions are similar to those of Michigan and its border states. Arizona and California charge a flat fee for permits. Minnesota and Oregon use a flat rate plus a fee for axle weight per mile of travel. These permit fee schedules are illustrated graphically in Exhibit 5.3.

Maintenance of scale facilities varies significantly among the states contacted. Repair of the scale mechanism is performed by DOT crews in Arizona, Oregon and Minnesota while California contracts with private scale companies.

Scale certification is performed by the Department of Agriculture in Arizona and Oregon while the Public Service Commission carries out this task in Minnesota. Scale service companies in California are authorized to certify a scale after repair. All repair companies must be registered and certified by the California Department of Agriculture.

The MCSAP Programs for non-boundary states are similar to those states examined earlier in this Chapter. Comparisons of these programs (information was not obtained for California) with the MCSAP Program in Michigan are illustrated in Exhibits 5.4 to 5.10.

The schedule of fines for the non-boundary states reviewed were compared with those of Michigan and its boundary states. Table 5.11 lists the schedule of fines for all of the states reviewed for this study. Graphic comparison of Michigan to Arizona, California, Oregon, and Minnesota are contained in Exhibit 5.13. It should be noted that a Judge's discretion is the determining factor concerning the fine assessed.

Exhibits containing graphical comparison of both boundary and non-boundary states are located at the end of this section.

The weight enforcement and safety inspection programs of most states are basically similar although is unique in some ways. A more detailed review of the programs of the States of Michigan, Oregon, California and Arizona along with a brief review of New York follows:

## **MINNESOTA**

Minnesota was chosen for further review because of its proximity to Michigan and the

similarity of problems. In addition, Minnesota has recently opened and is currently operating a state-of-the-art facility located on westbound I-94 at the Minnesota-Wisconsin border (Port-of-Entry).

The scale is open 24 hours per day, 365 days per year. The 790,000 trucks entering Minnesota from Wisconsin each year on I-94 must pass through this facility. Upon entering the facility vehicles are required to reduce their speed to 30 miles per hour prior to the first check point. They will proceed at this speed over a WIM scale and past an overheight detector. Information is electronically sent to a computer sorter which will determine whether or not further review of the vehicle weight or height is needed. Results of this determination are conveyed to the vehicle operator by means of overhead traffic lights. Vehicles not needing weight review are directed through an inspection lane. A second height detector is located at the entrance to this lane. Full time inspectors will select trucks proceeding through this lane for in-depth inspections. The inspectors operate from a small building adjacent to the bypass lane where they may write citations for height, safety or driver violations as necessary.

Trucks selected for further review during the initial sorting are directed to one of two sets of static scales located on either side of the scale house. Vehicle operators are given instructions by both intercom and a variable message board. The weight indicated will be displayed to the attending officer in the scale house and to the vehicle operator by means of the message board.

The vehicle will be directed to leave if no violation exists or to park if a citation, load shift or off loading is required. The attending officer may also direct the vehicle to the parking area for a safety inspection. All trucks that have been brought into compliance in the parking area must be rechecked on the static scales prior to leaving.

Officers at the inspection facility will check for appropriate tax stickers and registrations. They also review any special permits that may be needed for overweight/oversize loads. Permits are not issued at this site.

Most trucks pass through this facility quickly. For those not stopped for a safety inspection or weight review, the speed does not need to drop below 30 mph. Trucks are moving forward at all times prior to the need for action by an officer.

## OREGON

The State of Oregon is considered a leader in weight enforcement. Its program includes elaborate Port-of-Entry facilities, plug-in scales and a wide range of state-of-the-art computer facilities

Much of the current technology used in Oregon was developed in connection with the Woodburn Port-of-Entry Demonstration Project. This facility incorporated WIM scales and variable message boards similar to the St. Croix scales in Minnesota. In addition, an Automatic Vehicle Identifier and Supervisory System Computer were installed. This computer system displays all static weight data collected during the weighing process. All data collected at the sites is electronically transmitted to the Salem Weighmaster's Headquarters office for analysis. Computer applications are being developed that will analyze various types of truck operations in Oregon. Profiles of potentially illegal operations will be developed which will provide the ability to forecast when and where illegal operations may occur and allow for the scheduling of field personnel in the most effective and efficient manner.

Oregon has also started to use plug-in facilities. An officer with a computer equipped van can park at the site and plug into the scale with very little delay. He can pull up data on any vehicle from the data bank of the Public Utilities Commission. It is anticipated that almost all of the fixed scales (excluding ports-of-entry) will eventually be converted to plug-in scales. New sites will also be constructed in patterns that will allow officers to move from one site to another quickly to allow officers to effectively monitor trucks that may have been bypassing other scales. Officials in Oregon indicate that the plug-in units are reasonable in cost and effective in minimizing bypass problems.

The permit process in Oregon is also noteworthy. Regional permits can be purchased for oversize/overweight loads being hauled in Idaho, Oregon and Washington. These permits may be issued by the entry, origin or destination state. The State issuing the permit collects fees for all member states in which the vehicle is permitted to travel. The fee for an Oregon permit has recently changed from an eight dollar flat fee to one based on equivalent single axle loads (ESAL's). These base fees were developed from cost-allocation studies performed by Oregon.

## CALIFORNIA

The State of California operates one of the largest and most comprehensive weight enforcement programs in the country. It is based on a master plan which has been revised and updated several times in the recent past. The original plan and subsequent revisions have been based on previous experience, condition of existing facilities and traffic data. Of these, traffic data and projected truck volumes are the most important.

Implementation of the plan is the responsibility of the California Highway Patrol. The Department of Transportation (CALTRANS) provides the Patrol with a fund to be used for both major and minor maintenance work. The Patrol can authorize almost any type of maintenance work but requires CALTRAN'S authorization for unusual or extensive maintenance projects. CALTRANS also constructs and maintains the ramps into the facilities. Repairs to static/fixed scales are performed by private scale companies. Following repair or maintenance activity, the scales are recertified by the scale service companies which have certified weights and are authorized to place the repaired scale back in service.

The Highway Patrol, Motor Carrier Division, uses both fixed and portable scales for weight enforcement. There are currently 13 major facilities, 39 small platform scales and 600 portables available for use. The thirteen major facilities include WIM, platform scales and truck inspection buildings. The inspection buildings are completely enclosed in locations where weather can be a problem and open, although under a roof, where cold weather is not a problem. All of the inspection buildings have lights in the floor and on the sides of the building to facilitate inspection work. New facilities being installed also have heated floors which in turn keeps the floor area dry and makes it easier to inspect the underside of trucks. The thirteen major facilities are operated continually except for equipment failures or an occasional staffing problem.

At the present time, the Motor Carrier Division has a total staff of 719. 194 are uniformed officers assigned to various fixed facilities and 127 are assigned to Mobile Roads Enforcement teams. There are 151 non-uniformed inspectors. In addition to administrative and support staff, the Division includes 197 inspectors who make inspections at truck terminals.

Responsibility for permit issuance rests with CALTRANS. Each of the twelve district offices can issue most types of permits. Most permits issued are for single trip non-divisible loads and can be purchased in advance of a trip or just prior to entering the State. Arrangements are currently in place to allow the Districts to FAX permits to truck stops along the California border.

## ARIZONA

Officials with the Arizona Department of Transportation were contacted for information on their weight enforcements program after the National Survey results indicated they have an aggressive Ports-of-Entry program. "Arizona Ports-of-Entry Master Plan" is the basis for truck weight enforcement and related activities throughout the State and addresses facilities, operations, financing and training.

The following elements are contained in a brief summary of each port in the "Arizona Ports-of-Entry Master Plan":

1. Location
  - Current
  - Proposed
2. Year Built
3. Estimated Time-frame for New Port
4. Number of Personnel (Current and Needed)
5. Hours/Days of Operation
6. Impact on Community
  - Current Location
  - Proposed Location
7. Impact on Employees - Proposed Location
8. Revenue Generated
  - Current
  - 10 Year Projection
9. Motor Carrier Traffic
  - Current Average Daily Traffic
  - Annual Traffic
  - 10 Year Projected Average Daily Traffic
  - 10 Year Projected Annual Traffic

10. Safety Consideration
11. Legal Consideration
12. Productivity Enhancements
13. Port Circumvention Issues
14. Cost Benefit Analysis
15. Political Considerations
16. Other Agencies Affected

This information is used for both short and long range planning. In addition, operational data was also analyzed. Current weight laws, citation tracking, Motor Carrier Program Organization and the Management Information Reporting System are reviewed. Constraints and inconsistencies in the existing program are noted and possible changes to the program were recommended. Various aspects of financing and training are reviewed and recommendations developed.

The State of Arizona is enthusiastic about the potential for developing joint-usage facilities. Arizona and Utah have shared a facility located at St. George, Utah since 1983. As a result of the experience gained at this site, Arizona is proposing five additional joint-usage sites. Three of the sites would be along the California border and two along the New Mexico border. Significant efficiencies are being projected.

## **NEW YORK**

During previous studies Wilbur Smith Associates learned that the State of New York operates a unique truck law enforcement program. Since 1960, all truck weight enforcement has been performed using portable or semi-portable scales. Currently, truck laws, including MCSAP inspections, are performed by road/enforcement teams.

Officials with the State of New York contacted for this study indicated that they are pleased with the results of their truck law enforcement program. This program has recently undergone a review by New York's state comptroller. A report issued by this office raised question concerning guidelines for determining when weather conditions are unsafe for performing inspections. This report also suggested that the DOT set up permanent well lighted inspection sites. Officials directly involved with the enforcement program did not indicate that any change in the program in being made at this time as a result of the comptroller's study.

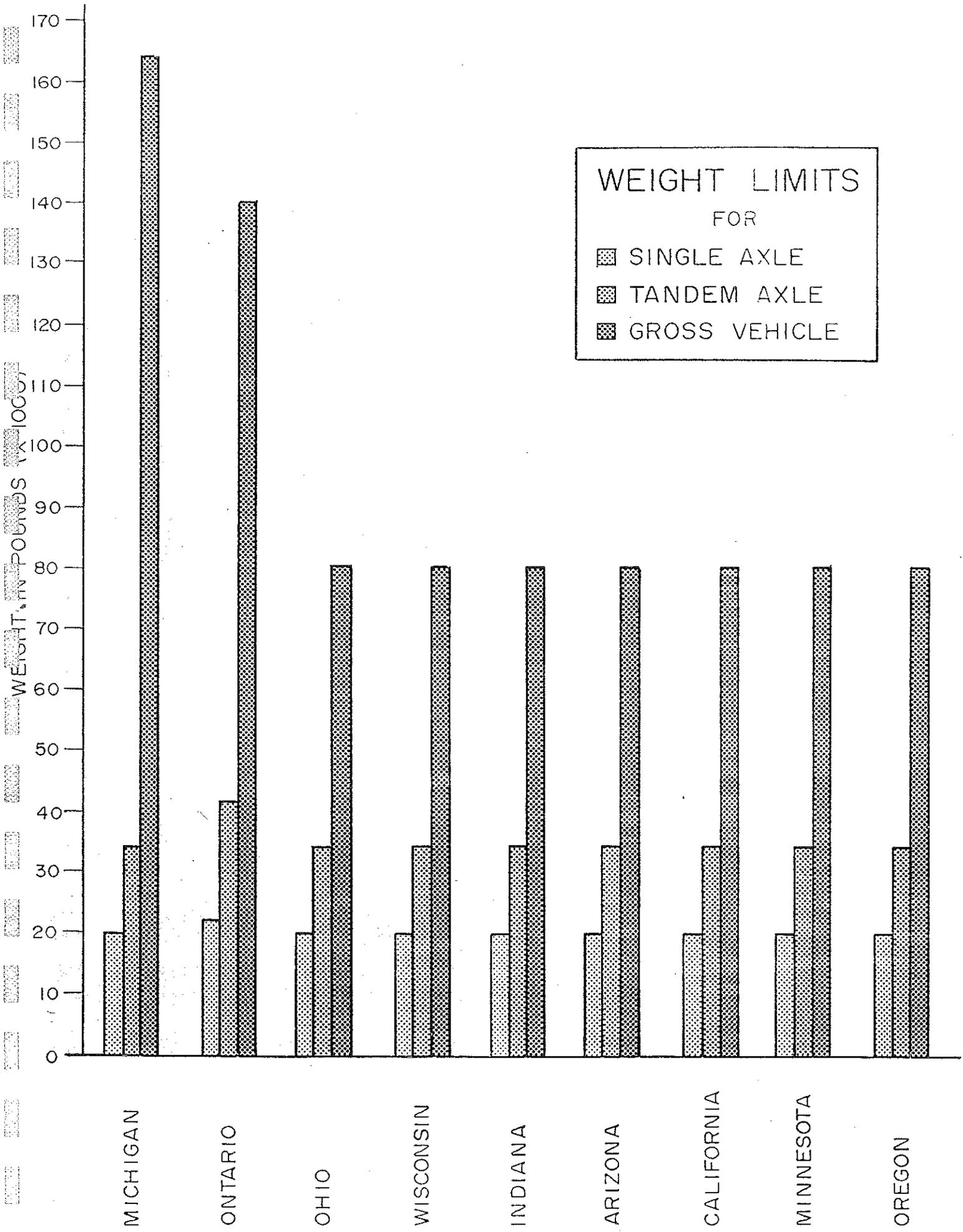


EXHIBIT 5.1

## PERMIT COST

Boundary states (single trip)

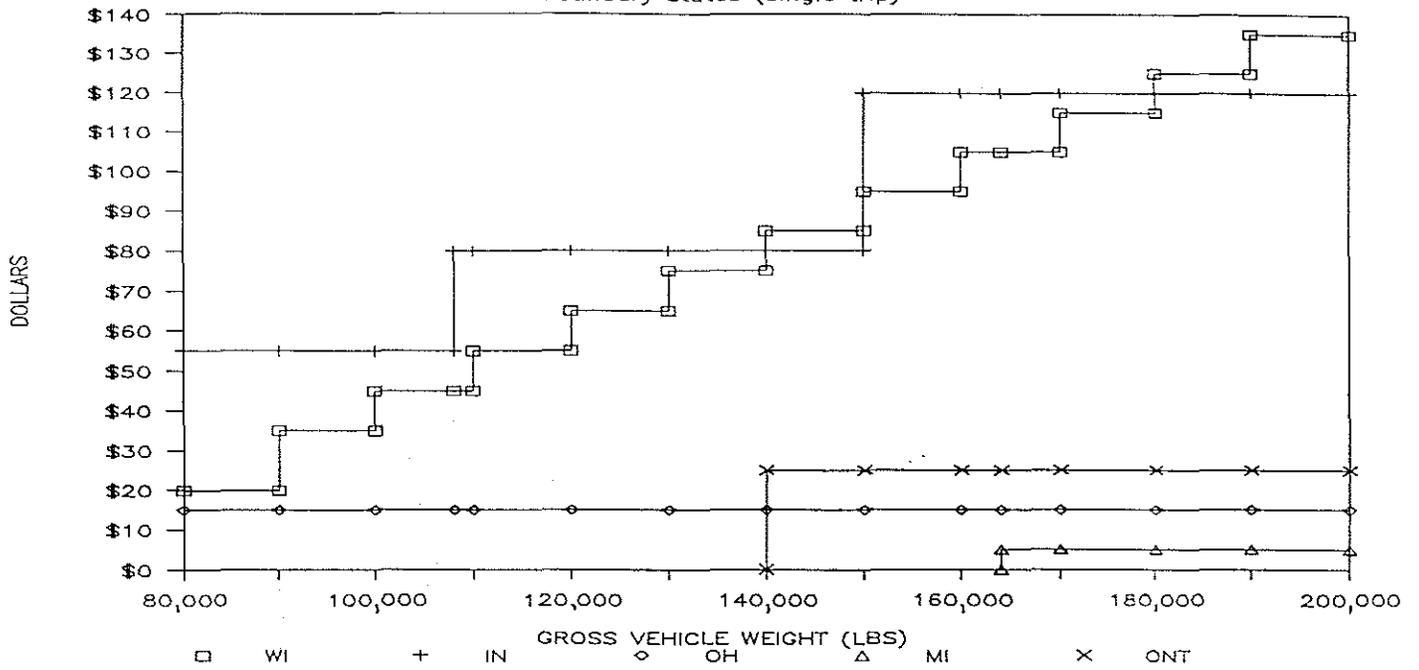


EXHIBIT 5.2

## PERMIT COST

Non-boundary states (single trip)

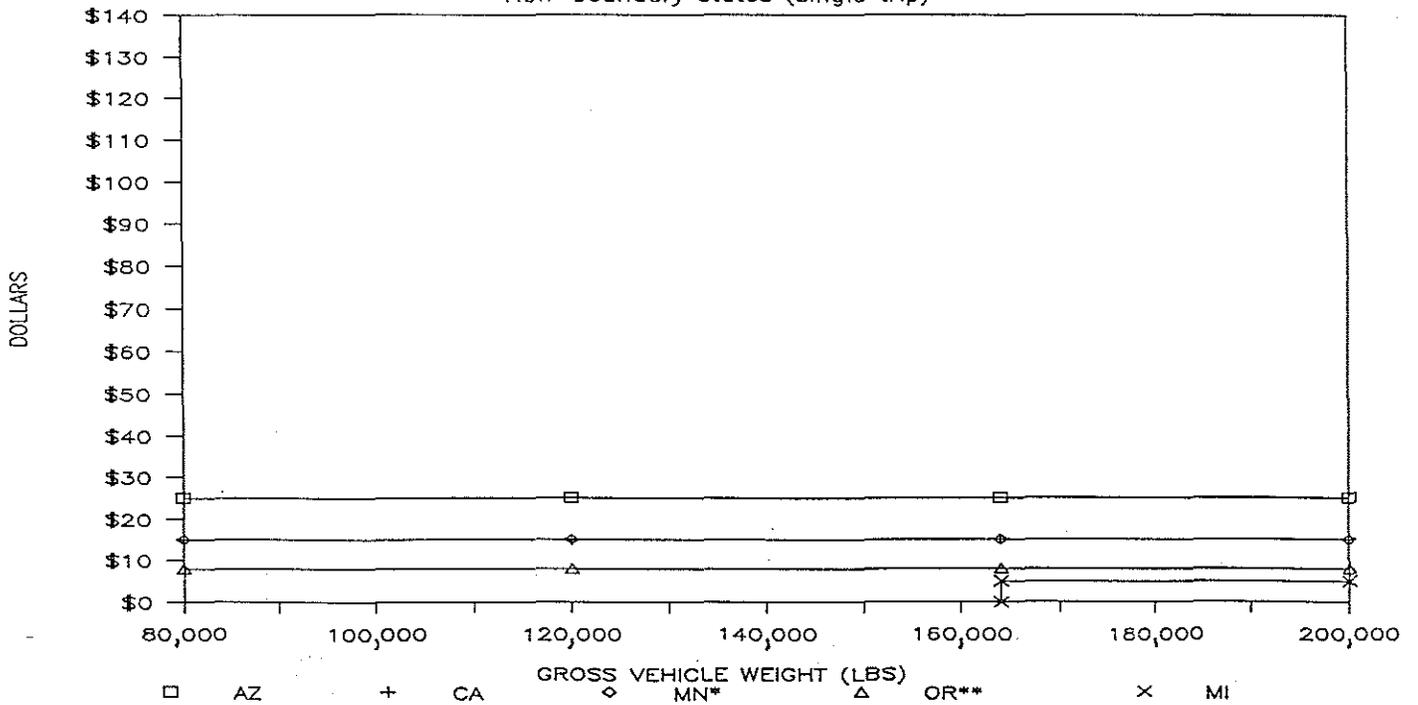
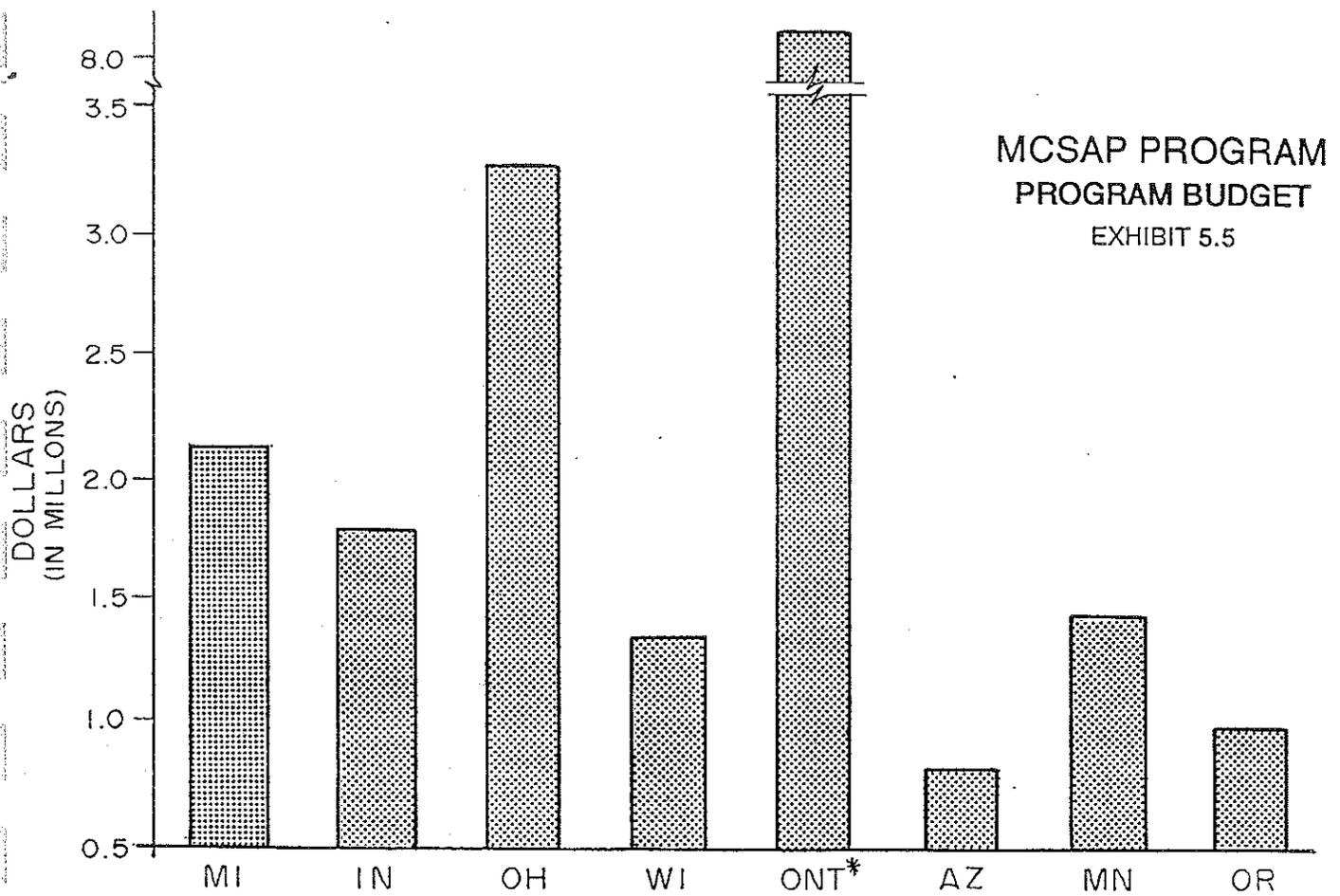
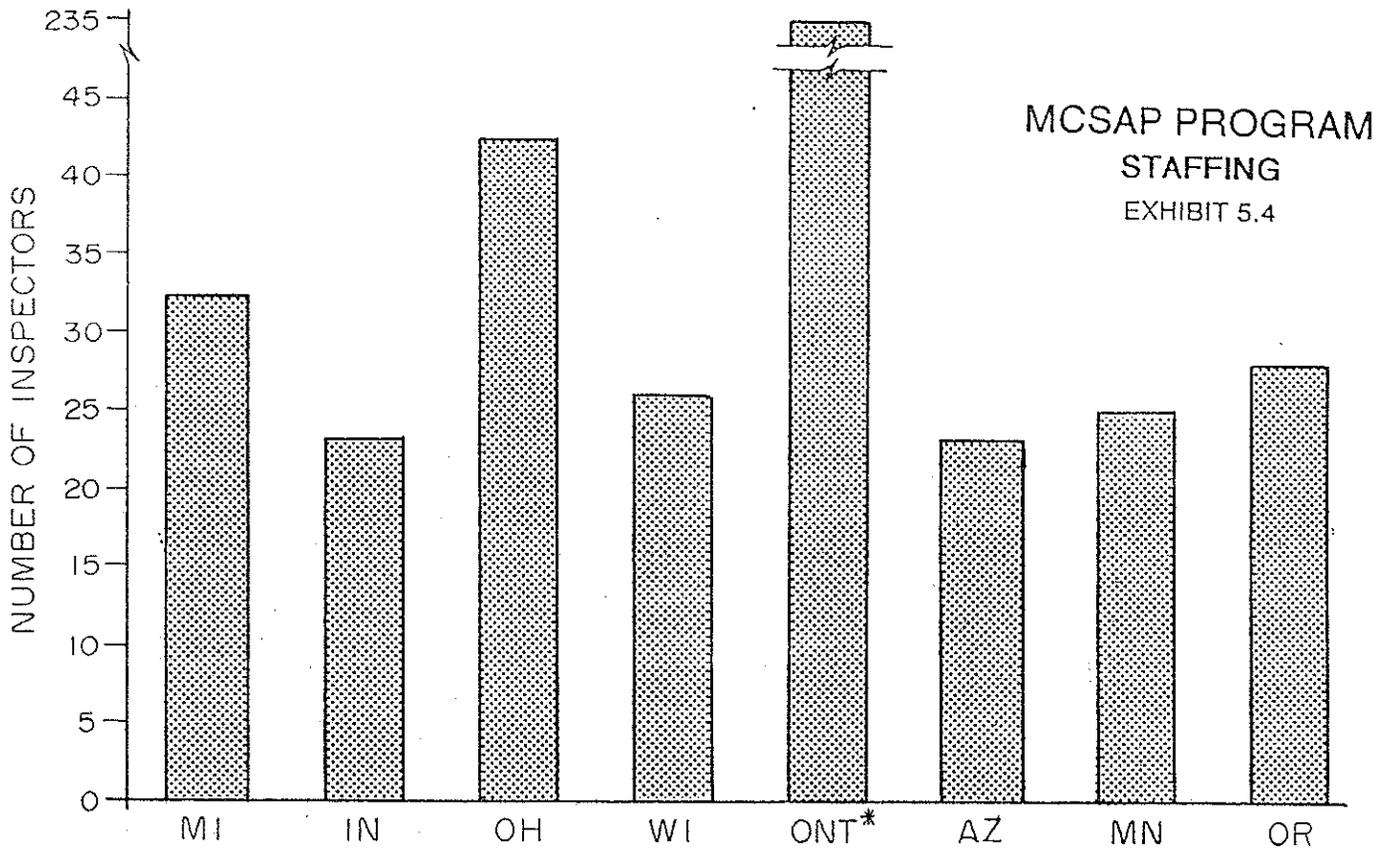
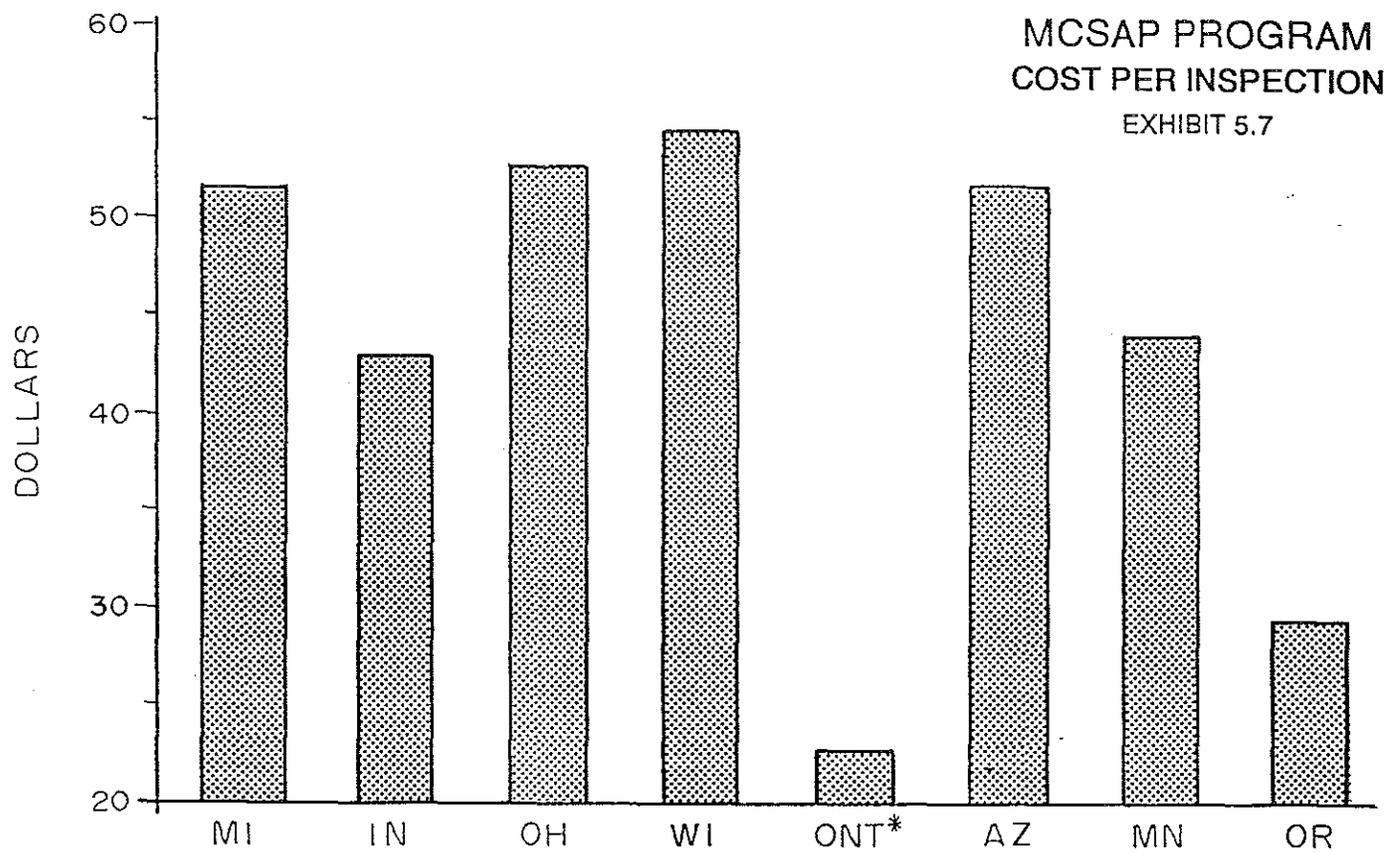
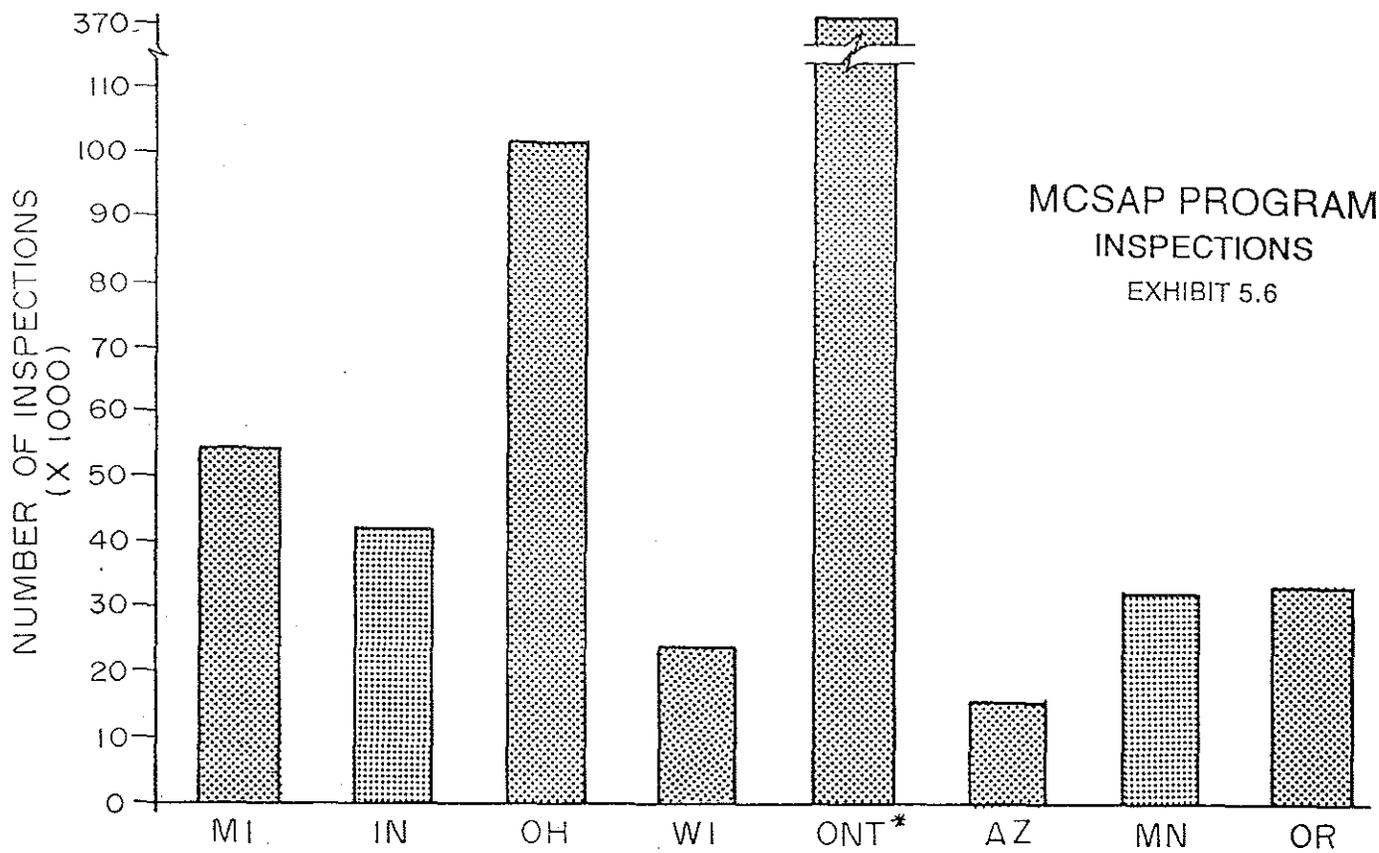


EXHIBIT 5.3

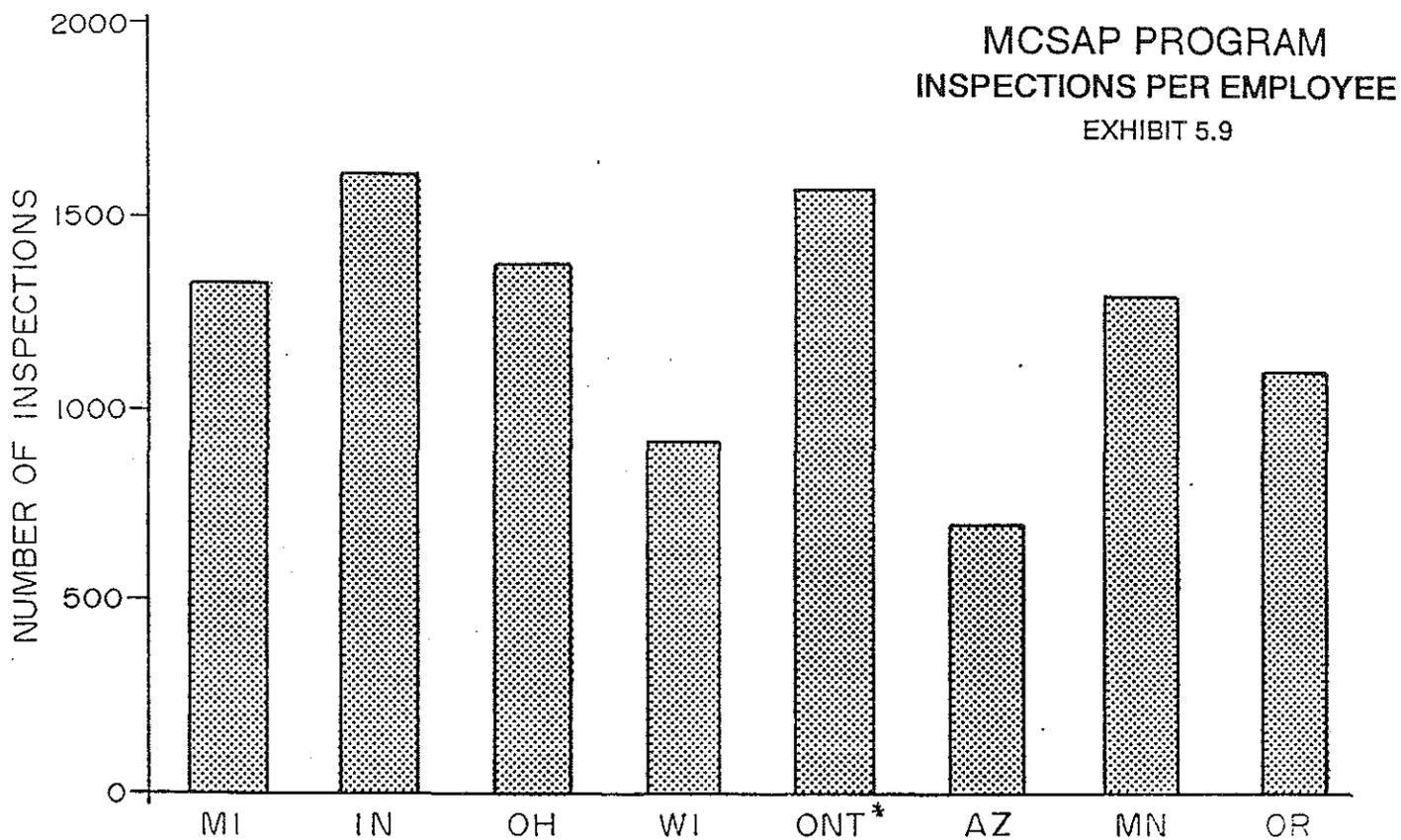
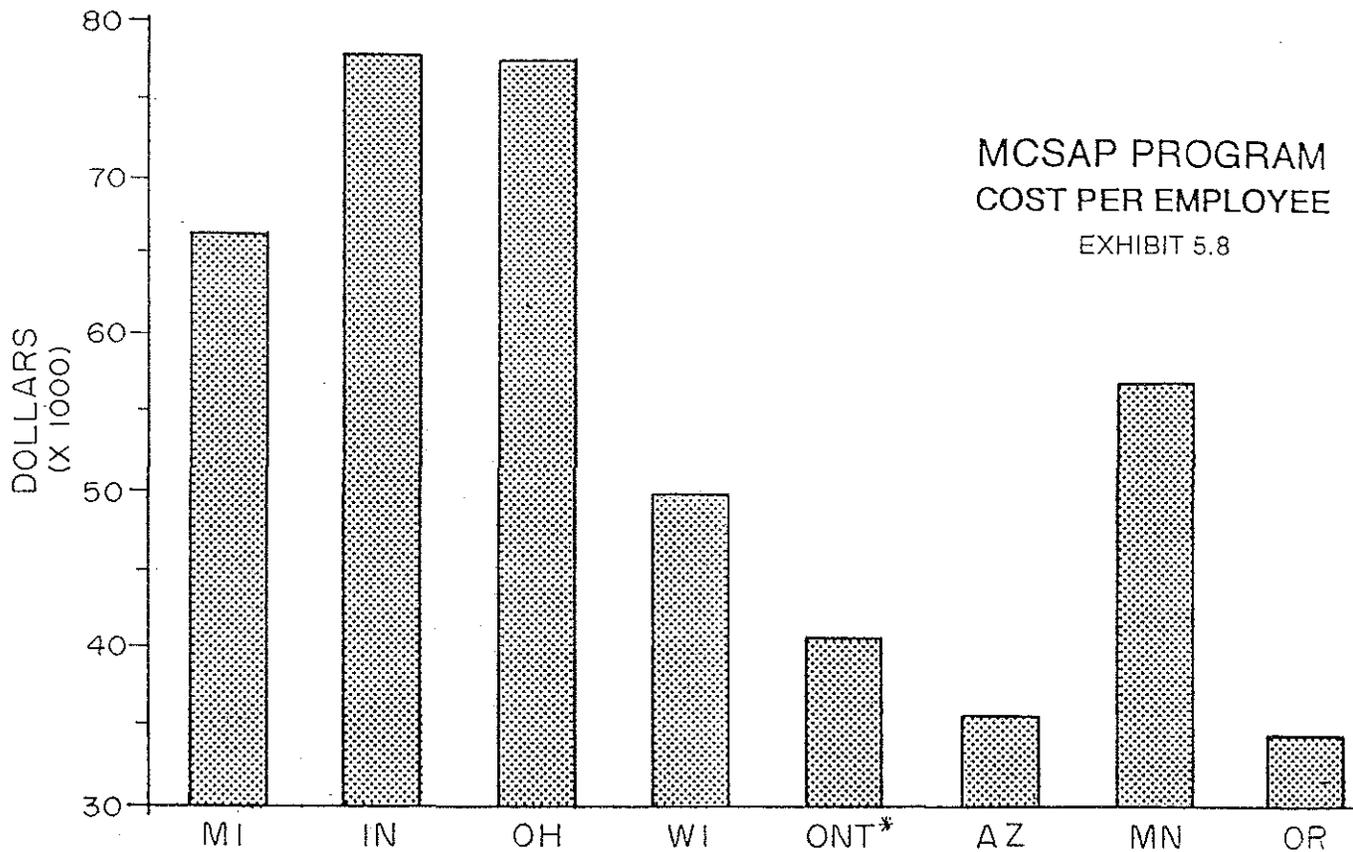
- \* Minnesota has a base fee of \$15 plus 4 cents to 20 cents per mile based on axle weight per mile of travel.
- \*\* Oregon has a base fee of \$8 plus road usage assessment fee which is based on axle weight per mile of travel.
- \*\*\* Wisconsin uses a fee of, \$20 for 80,001 to 90,000 pounds, \$35 for 90,001 to 100,000 pounds and \$35 plus \$10 for each 10,000 pounds over 100,000 pounds.
- \*\*\*\* Indiana uses a base fee of \$20 and an additional fee of, 35 cents per mile for 80,000 to 108,000 pounds, 60 cents per mile for 108,001 to 150,000 pounds and \$1 per mile for 150,001 pounds or more. A 100 mile trip is assumed for Indiana on the above graph.



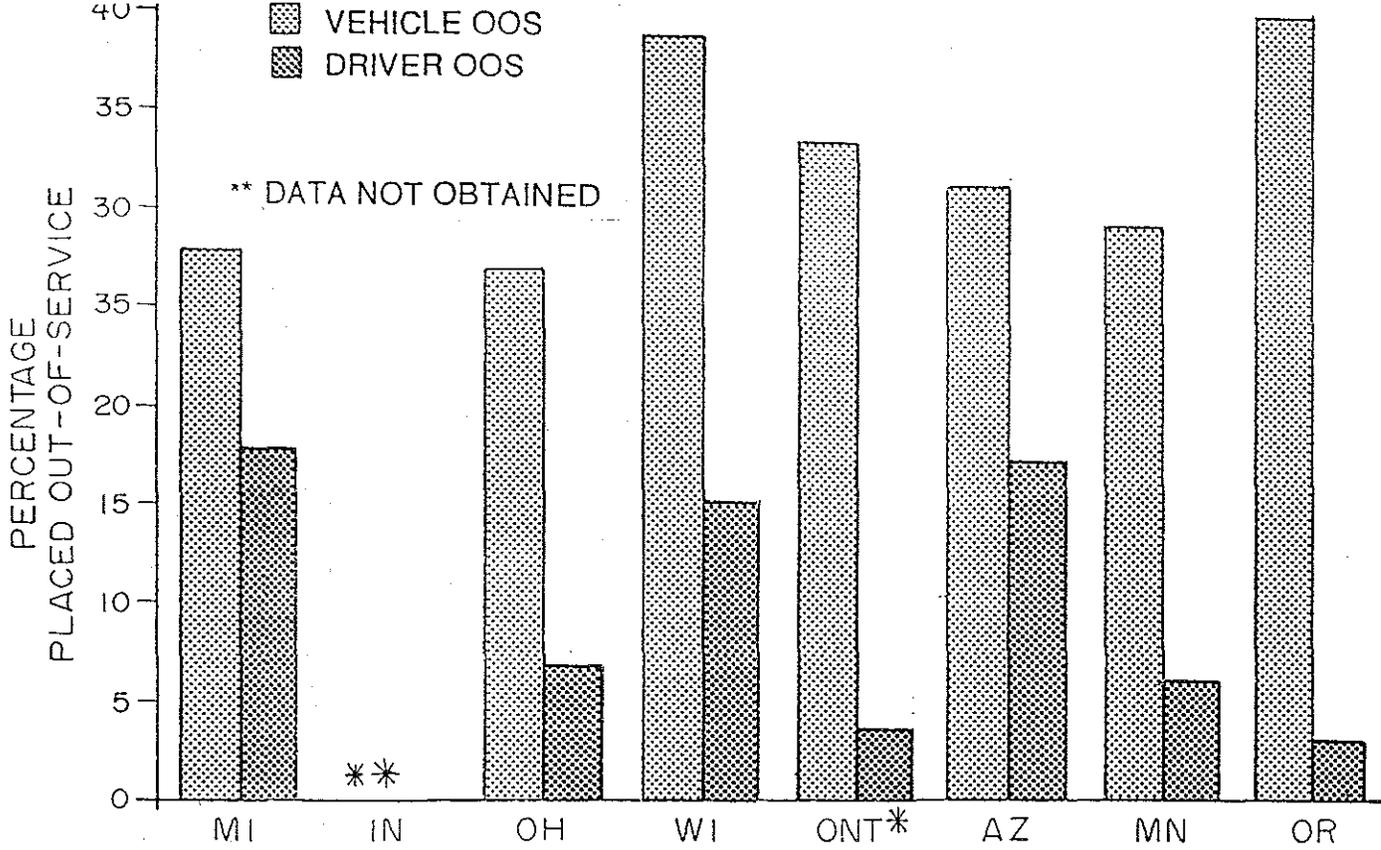
\* ONTARIO, CANADA DOES NOT PARTICIPATE IN THE MCSAP PROGRAM, BUT DOES OPERATE ITS OWN SAFETY INSPECTION PROGRAM.



\*ONTARIO, CANADA DOES NOT PARTICIPATE IN THE MCSAP PROGRAM, BUT DOES OPERATE ITS OWN SAFETY INSPECTION PROGRAM.



\* ONTARIO, CANADA DOES NOT PARTICIPATE IN THE MCSAP PROGRAM, BUT DOES OPERATE ITS OWN SAFETY INSPECTION PROGRAM.



MCSAP PROGRAM  
 OUT-OF-SERVICE (OOS) DATA  
 EXHIBIT 5.10

\* ONTARIO, CANADA DOES NOT PARTICIPATE IN THE MCSAP PROGRAM, BUT DOES OPERATE ITS OWN SAFETY INSPECTION PROGRAM.

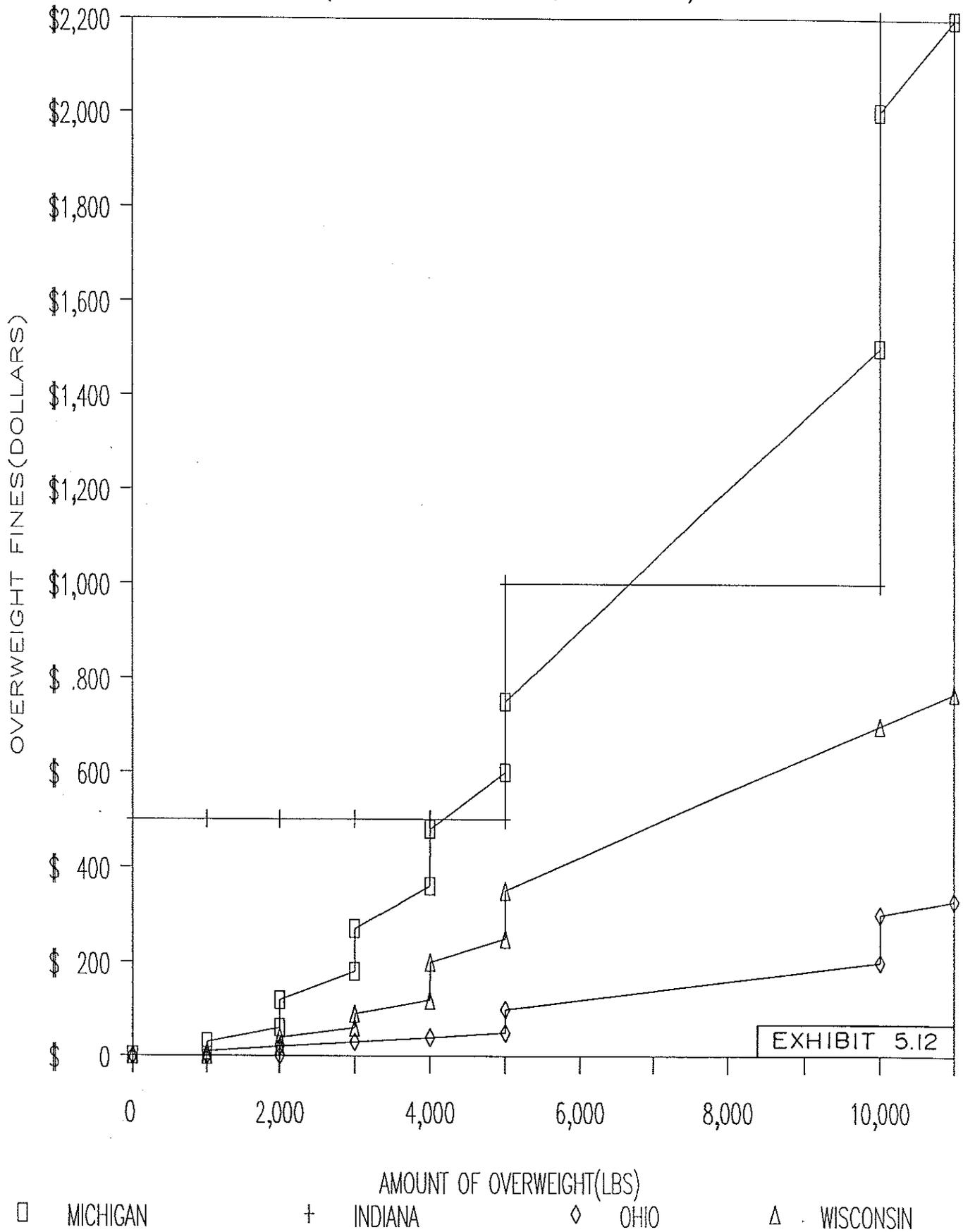
### SCHEDULE OF FINES

STATE	BASE FEE	1 TO 1000 POUNDS	1,001 TO 2,000 POUNDS	2,001 TO 3,000 POUNDS	3,001 TO 4,000 POUNDS	4,001 TO 5,000 POUNDS	5,001 TO 10,000 POUNDS	OVER 10,000 POUNDS
MICHIGAN	0	0	\$.03/LB	\$.06/LB	\$.09/LB	\$.12/LB	\$.15/LB	\$.20/LB
INDIANA	0	\$1-\$500	\$1-\$500	\$1-\$500	\$1-\$500	\$1-\$500	\$1-\$1,000	\$1-\$10,000
OHIO	\$25	0	0	\$1/100 LBS	\$1/100 LBS	\$1/100 LBS	\$2/100 LBS	\$3/100 LBS
WISCONSIN	\$50-\$200	0	\$.01/LB	\$.02/LB	\$.03/LB	\$.05/LB	\$.07/LB	\$.07/LB
ARIZONA	0	\$1	\$50-\$150	\$200-\$500	\$600-\$700	\$800-\$1000	\$1000	\$1000
CALIFORNIA	0	\$20	\$30-\$40	\$55-\$85	\$105-\$125	\$145-\$175	\$.04/LB-\$.15/LB	\$.20/LB
MINNESOTA	0	\$.01/LB	\$10+\$.05/LB	\$10+\$.05/LB	\$110+\$.10/LB	\$110+\$.10/LB	\$310+\$.15/LB	\$610+\$.20/LB
OREGON	0	\$2-\$15	\$.01/LB(\$15 MIN.)	\$.01/LB-\$.02/LB	\$.02/LB	\$.02/LB	\$.07/LB	\$.07/LB

Table 5.11

# MAXIMUM OVERWEIGHT FINES

(BASE FEES, COURT COSTS, ETC - NOT INCL.)



# MAXIMUM OVERWEIGHT FINES

(BASE FEES, COURT COSTS, ETC—NOT INCL.)

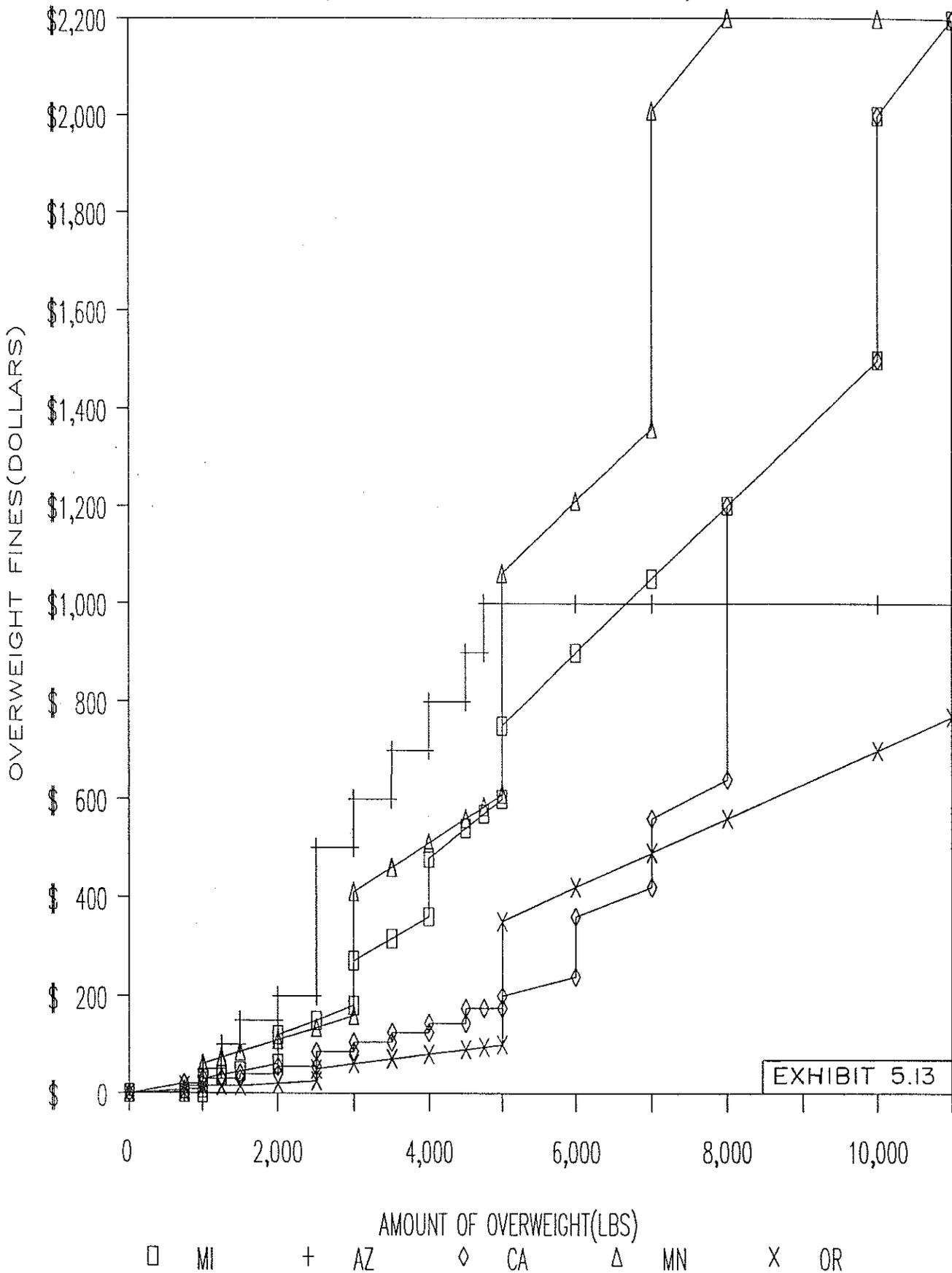


EXHIBIT 5.13

## NATIONAL SURVEY

The Technical Work Plan for this project provided for updating the National Survey which was conducted by Wilbur Smith Associates in 1988. A questionnaire was developed, reviewed by MDOT and distributed to the 50 states and 11 Canadian Provinces.

Response to the questionnaire was good. A total of 43 states and 9 provinces responded to the survey. The information obtained from the questionnaire (see Summary of Questionnaire Responses table at the end of this chapter) and previous studies was compared with data collected in Michigan. Several differences were found between Michigan and the responding states. Most notable of these were the low number of states using special pavement notches in connection with the operation of portable and semi-portable scales. Very few states or provinces use the notches while virtually all responding states use portable and/or semi-portable scales.

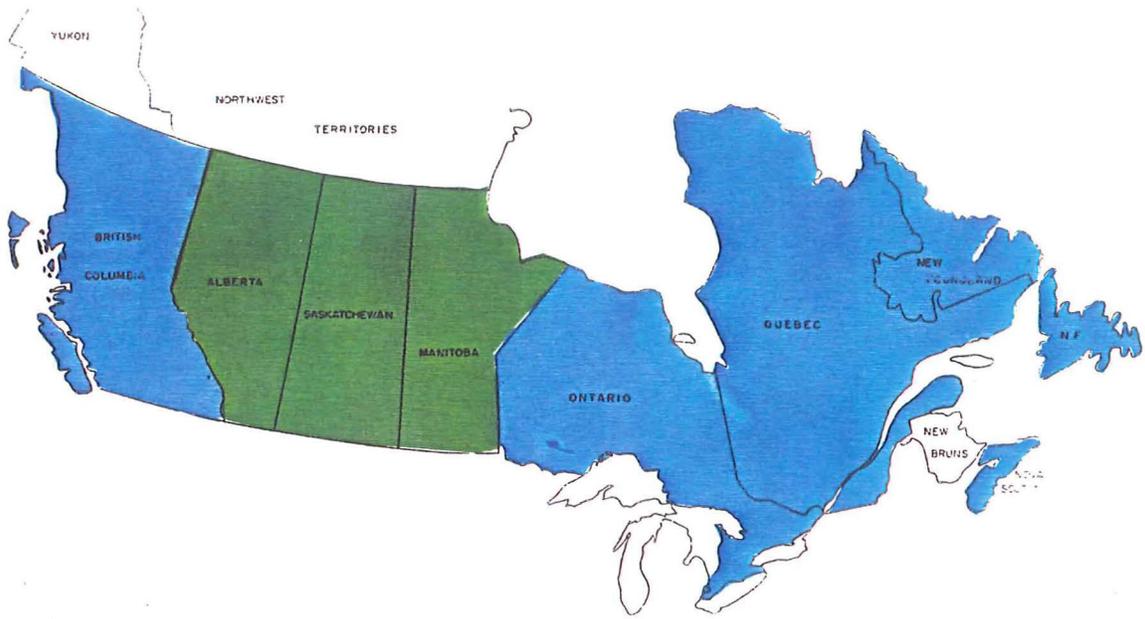
Special Transportation Enforcement Teams are used in the majority of states. Most feel this is an effective tool in truck weight enforcement.

Fine revenue collected goes into the general fund or transportation fund in most of the states responding. A few states indicated that fine revenue is deposited in other funds or handled in a different manner. Michigan's fine revenue goes to the library system of the county in which the citation was issued. Ohio and California are similar in that fine revenue stays with the county or city in which the citation was written.

The State of New York started a new program using fine revenue. Fines collected from overweight citations are still deposited in the general fund while revenue from safety citations goes to a newly created special fund. This fund will be used to expand their safety inspection program but will not be substituted for the states share of the MCSAP funding.

Graphic depiction of several responses make up Exhibits 5.14 to 5.21. A copy of the questionnaire and tabulation of the results is contained in Volume II.





- States or Provinces Using Plug-In Type Fixed Weigh Stations
- States or Provinces Not Using Plug-In Type Fixed Weigh Stations
- Information Not Obtained

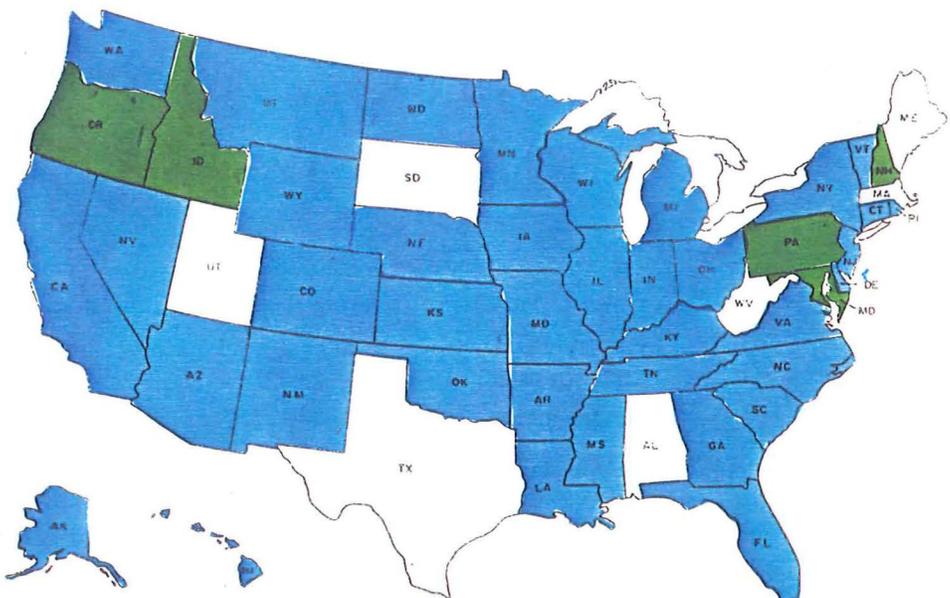
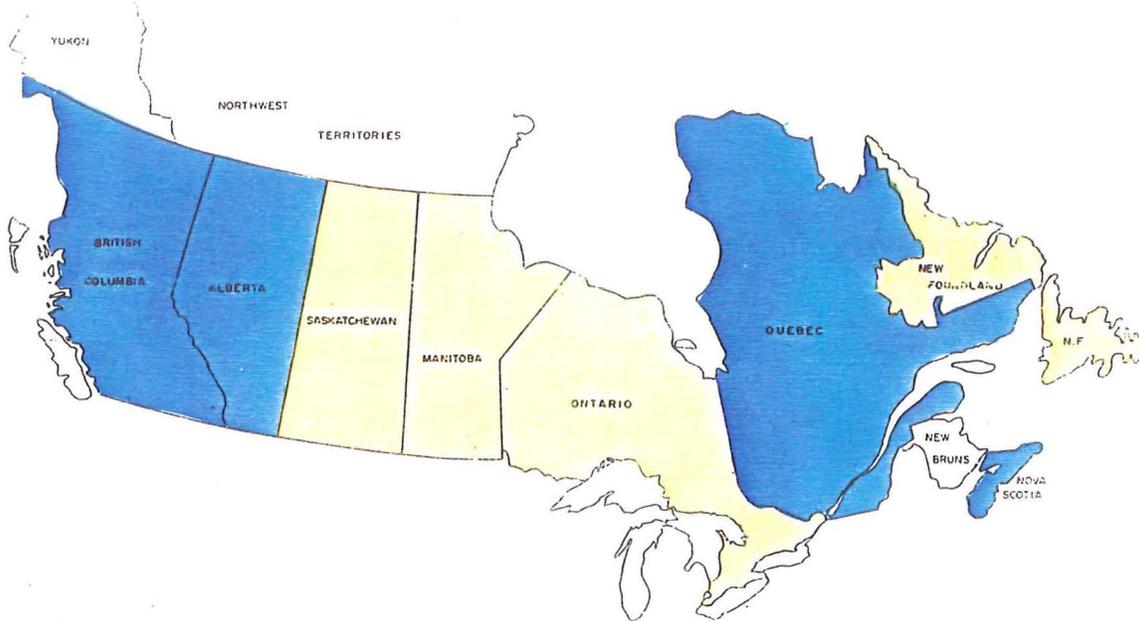


Exhibit 5.15





- States Or Provinces Using Special Transportation Enforcement Teams (STET)
- States Or Provinces Not Using Special Transportation Enforcement Teams (STET)
- Information Not Obtained

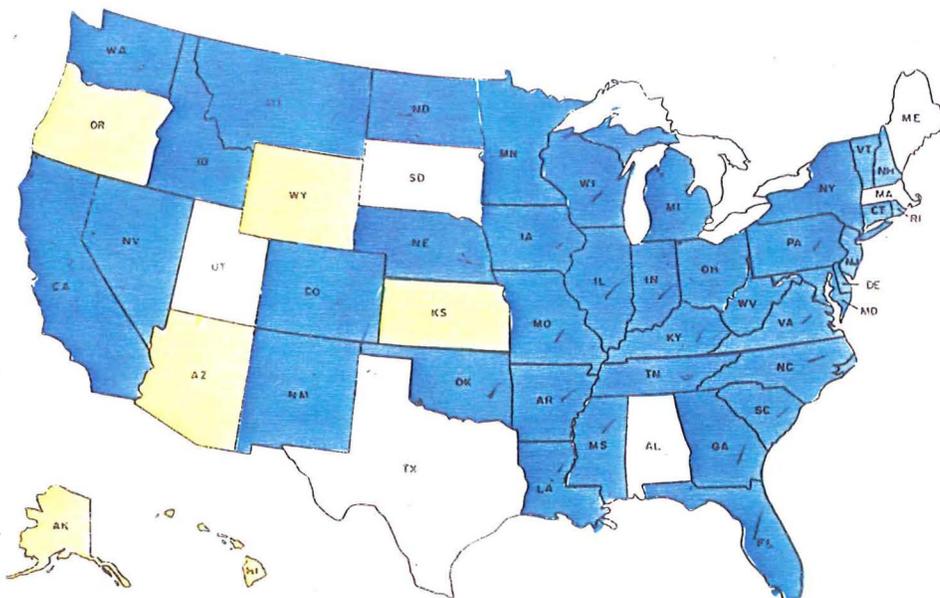
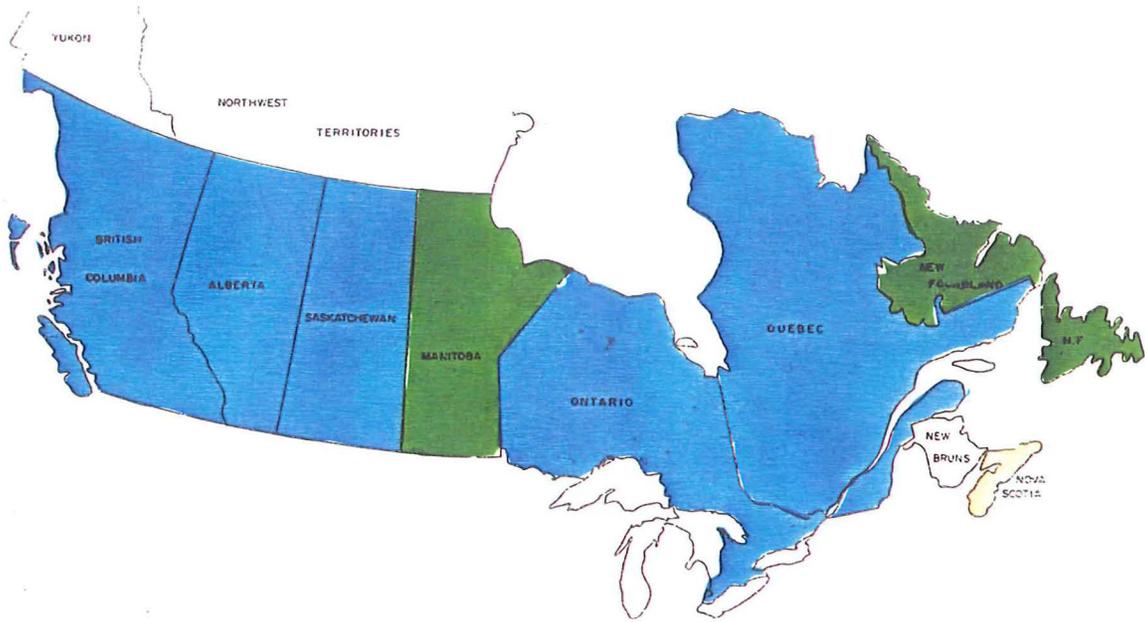


Exhibit 5.17







Weight Enforcement Program Financed By:

- General Fund
- Transportation Fund
- Fine Revenue
- Other
- Information Not Obtained

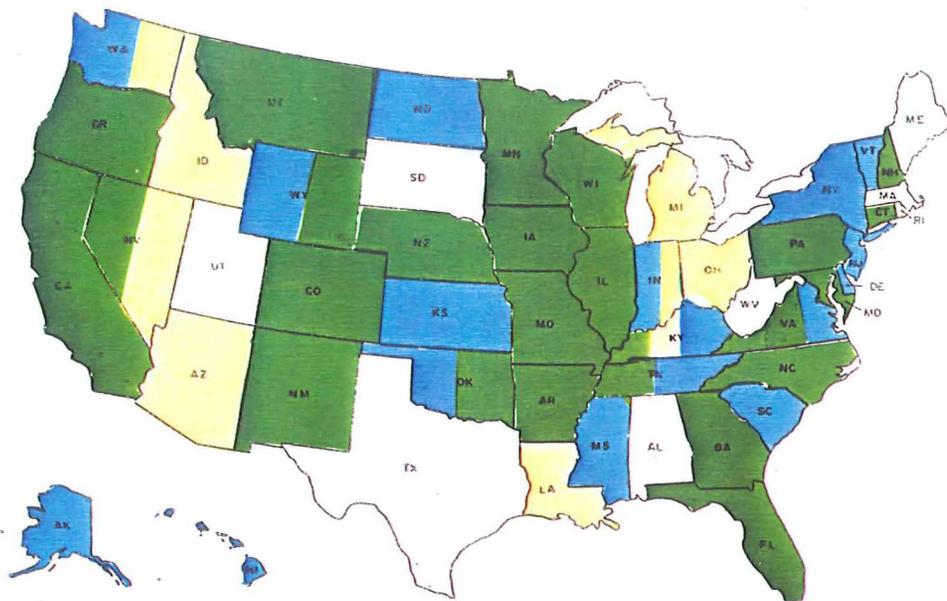


Exhibit 5.20





**ASSESSMENT OF ALTERNATIVE  
ENFORCEMENT APPROACHES**

## GENERAL

A number of different approaches, methods and tools can be used to enforce truck weight and safety laws. These can vary from highly mobile road patrol enforcement efforts to elaborate ports-of-entry. A review of several of these approaches and methods are described in the following sections.

### ROAD PATROL/ENFORCEMENT

This approach to truck weight enforcement is used by every state and province contacted for this study. It has been found to be an effective and vital tool in weight enforcement and MCSAP inspection efforts. In most states, it is used to support fixed scale operations by attempting to apprehend vehicles which are bypassing fixed scales. Truck drivers will warn each other of enforcement efforts on bypass routes via radio. The mobility of officers and the use of portable scales will minimize this problem. Drawbacks to this method are the amount of time needed to locate a truck and weigh it on portable scale, the inconvenience of performing inspections along the road, and traffic control/safety problems.

Cost associated with this method of enforcement include the patrol vehicle, scales and officers time. Presently Michigan leases its patrol vehicles for three years at a rate of \$0.36 per mile.

Michigan currently uses portable scales manufactured by Haenni. They are considered to be high quality scales and recent purchases reflect a cost of \$3,100 each. They are low profile analog readout scales capable of weighing dual tires on a single scale. Two are needed to weigh a single axle and an officer must walk around the truck in order to record both readings. A new low profile electronic readout scale, similar to the Haenni scales, is also being used in Michigan. Two scales are needed to weigh an axle but they can be coupled electronically so that both scale readouts are displayed on one side of the truck. By linking the scales in this manner an officer can record all of the information necessary from one side of the truck. The cost of electronic portable scales is between \$2,000 and \$3,000 (depending on manufacturer) each with an additional cost of \$200 for the equipment to link two of them together.

Road Patrol Units in Michigan are staffed by one officer per car. Several states contacted during this study indicated that they also use one officer per car and a number of other states stated that they use two officers per car. A cost of \$24.57 per hour is attached to road patrol officers in Michigan. This includes all fringe benefits and mileage for the patrol car. The cost for a MCD officer at a fixed scale location is \$21.29 per hour which includes all fringe benefits.

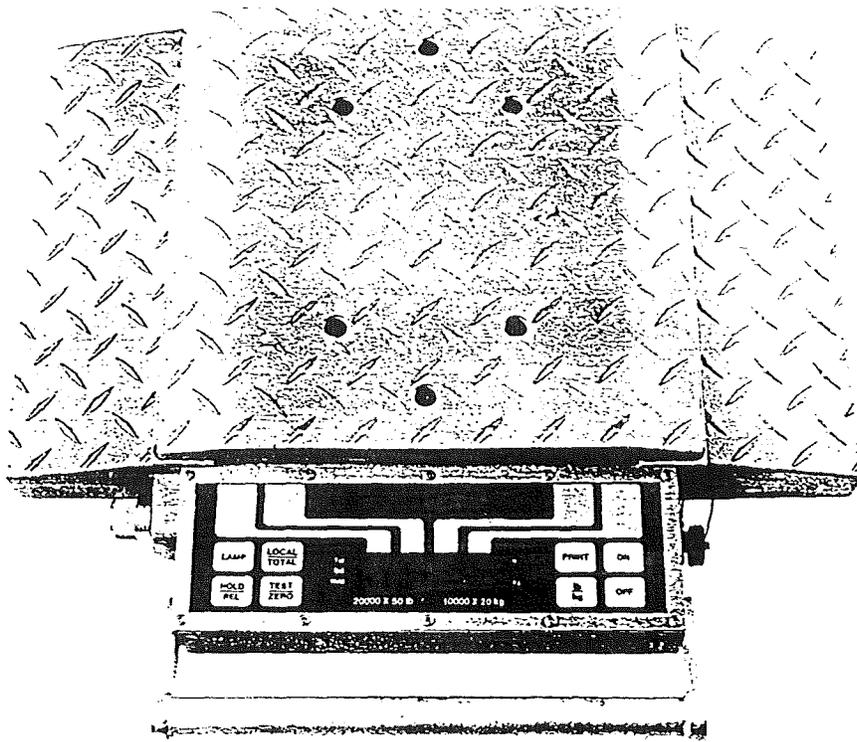
### **PERMANENT-INTERMITTENT TRUCK WEIGH STATIONS (PITWS)**

This tool is used to alleviate some of the problems associated with portable scales. A PITWS is a pavement notch created specifically to hold portable scales. The time needed for an officer to set up a portable scale is decreased by eliminating the need to set up blocking material adjacent to the scale. This allows officers to spend more time weighing trucks. While this is a benefit, it is offset by limiting an officer's mobility.

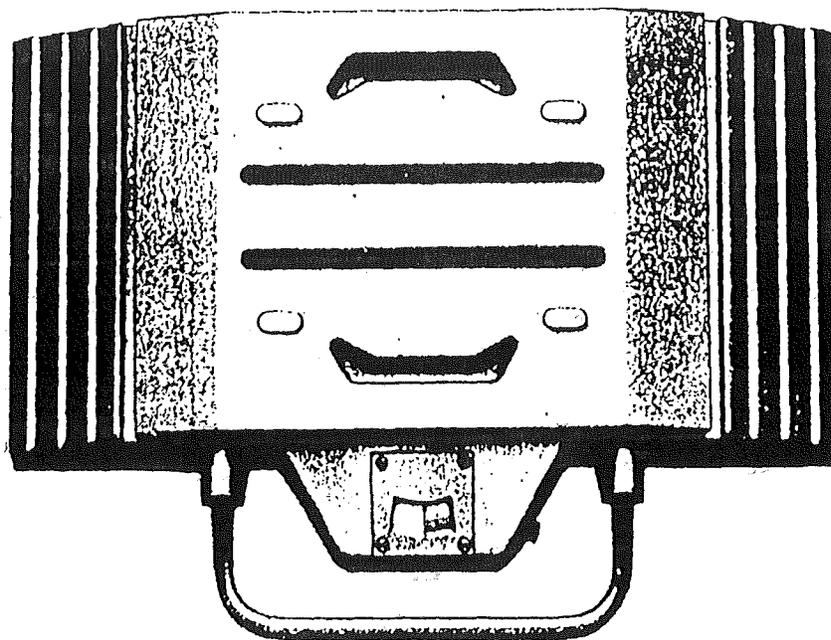
The cost of building a PITWS ranges from \$600 to \$7,600 depending on location and conditions. The average cost for this type of installation is \$3,200. There is essentially no maintenance cost associated with a PITWS although debris must be removed from the notch occasionally. Typical PITWS details are shown in Exhibit 6.1.

### **SPECIAL TRANSPORTATION ENFORCEMENT TEAMS (STET)**

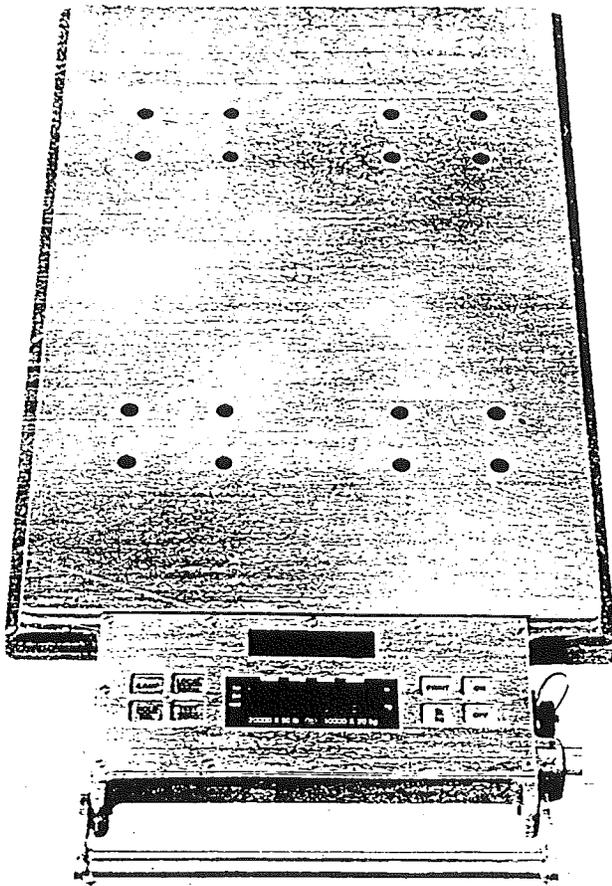
The use of Special Transportation Enforcement Teams was reported by 37 of 43 states and 4 of 9 provinces responding to the "Nation Survey". A STET is defined as "any special enforcement activity involving two or more officers for a duration of at least one complete work shift". These can be, by definition, small and simple or large and elaborate. This type of operation can be used for enforcement of any type of truck regulation not just size, weight or safety. Concentrating enforcement activities in a small area during a STET operation can accomplish several objectives. Truck laws can be enforced on all trucks within the zone covered by the operation, valuable information is gathered on trucking as all vehicles and operators are checked, statistical analysis of this data can be used to determine whether or not current goals are being met and the same information can be used as a planning tool to set goals and emphasize needs. Another result of STET operation is improved public relations. It is fairly common for



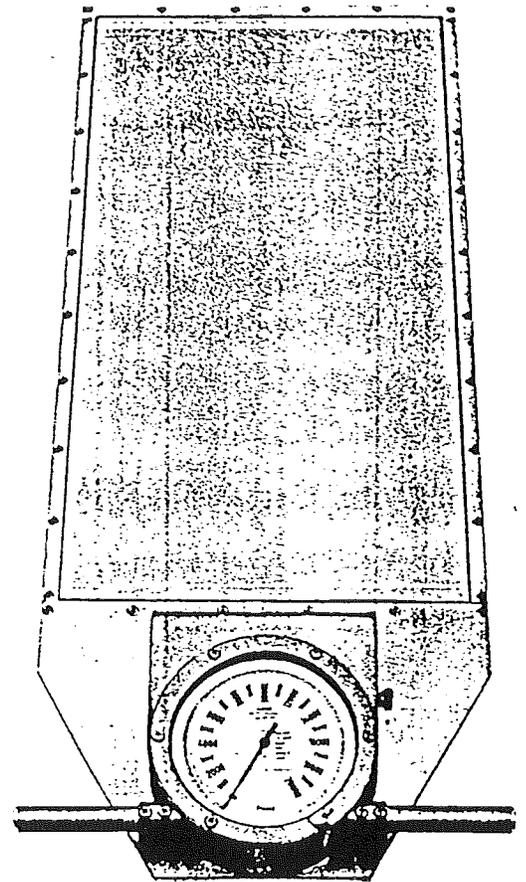
ELECTRONIC WHEEL WEIGHER



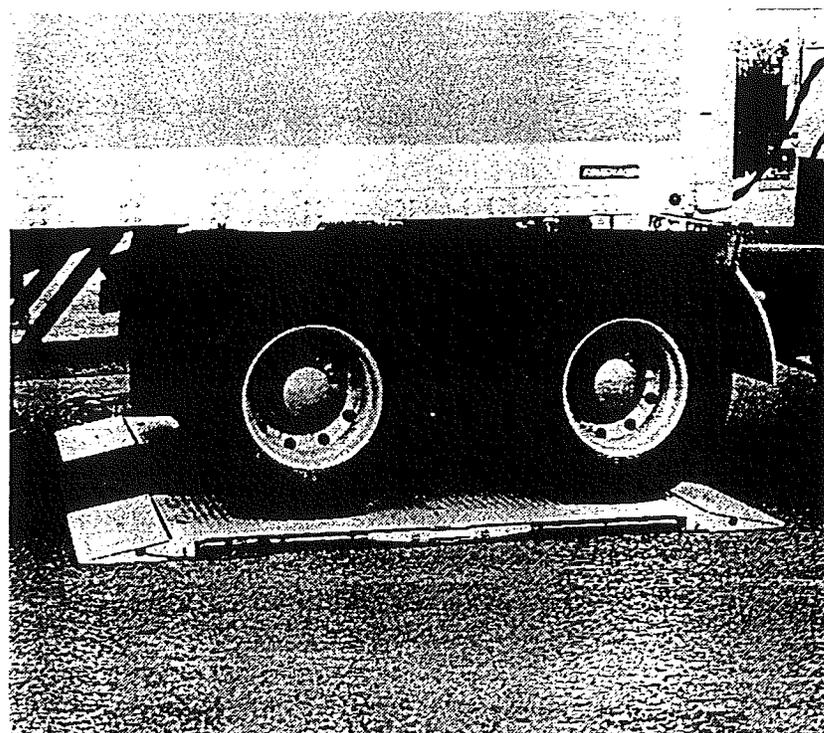
ANALOG WHEEL WEIGHER



ELECTRONIC DUAL TIRE WEIGHER



ANALOG DUAL TIRE WEIGHER



SEMI-PORTABLE SCALE

the media to cover this type of operation and to inform the public of importance of truck law enforcement. The major disadvantage of this type of operation is disruption of normal activities at other locations. A STET is most often comprised of officers from a number of locations. This is normally the way enough officers can be assembled to cover the routes and keep truck traffic from backing up causing safety problems.

## **PLUG-IN TYPE WEIGH STATIONS**

Plug-in type weigh stations are still a rare commodity. Only five states and three provinces responding to the National Survey indicated that they use this type of facility. A plug-in type weigh station consists of a turn out similar to PITWS (although slightly longer and wider), an axle scale, directional signals and overhead lights similar to a fixed scale site. All of the electronic equipment needed to operate this facility is contained in a van. An officer can drive to the site and plug-in to outlets for the scale, signals and lights, and commence weighing in a matter of minutes.

The plug-in scales have several apparent advantages over portable scales:

- Minimal time required to place in operation
- Faster weighing
- Night Enforcement
- Electronic Operation

A number of plug-in facilities are being used in the State of Oregon. To date they have chosen to convert either PITWS or fixed scale sites to this type of facility rather than start a new facility at a new location. However, future plans call for installing plug-in scales on most bypass routes. To convert a site to a plug-in station, the following costs should be considered:

- Convert scale pit or PITWS - \$4,000
- New full load cell axle scale (installed) - \$7,000
- Van - \$15,000
- Scale readout and printer - \$1,400
- Overhead lighting - \$5,000
- Directional signal - \$9,000
- Generator (if required) - \$1,000

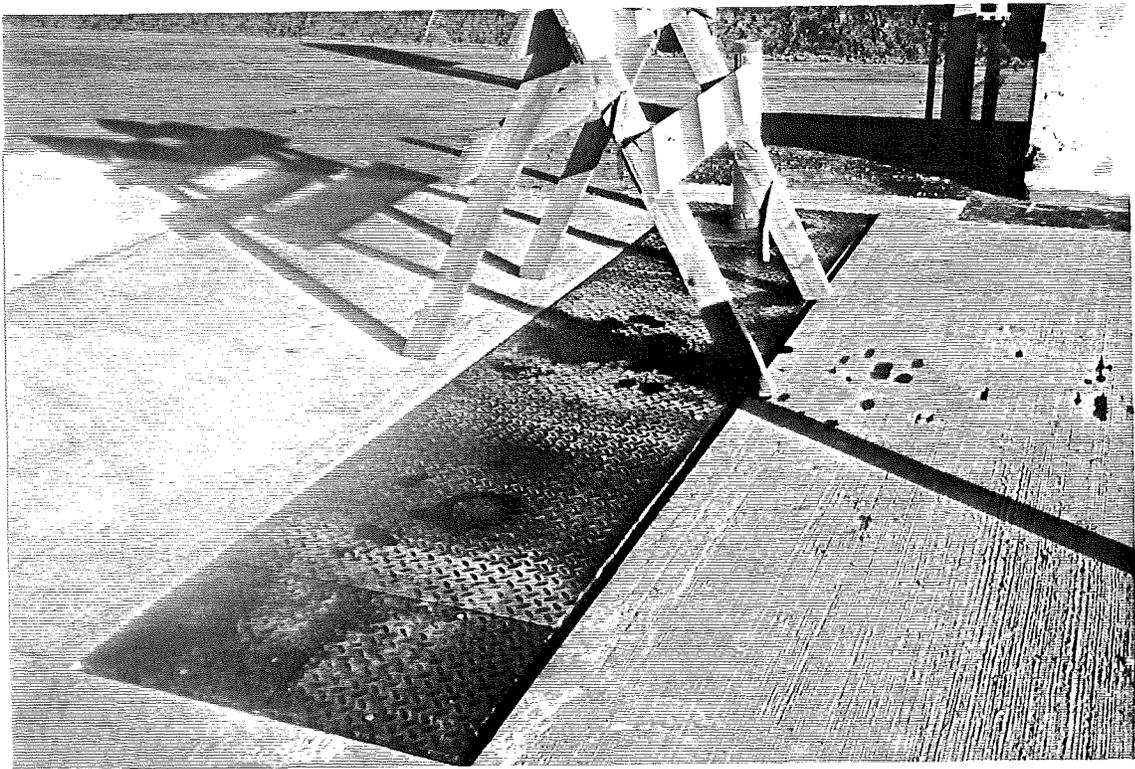
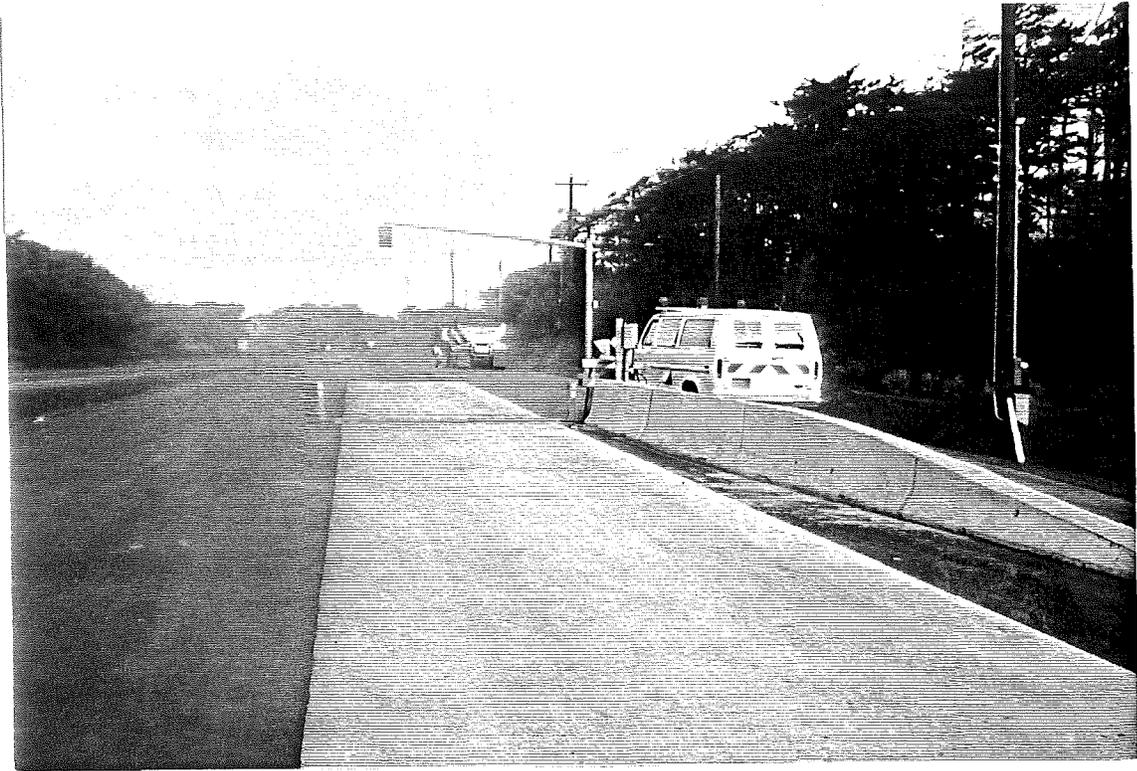
Officials in Oregon indicate that maintenance cost is minimal. Power is supplied to most sites from local electric companies. When power is not readily available a generator has been installed at the site and is operated only when needed. The cost can be reduced by using overhead and directional lighting equipment salvaged from other construction projects. Only one officer is needed to operate all of the equipment and make the site operational. Exhibit 6.2 shows a typical plug-in scale.

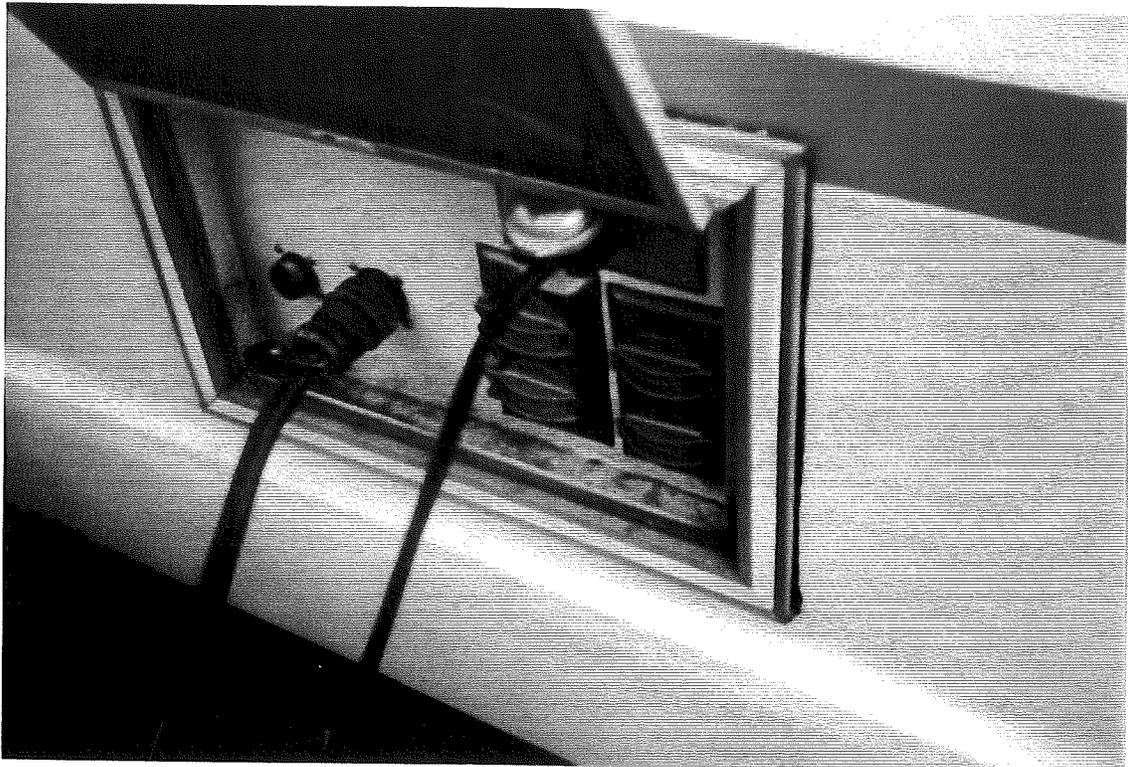
## **STATE-OF-THE-ART FACILITIES**

During the course of this study the consultant had an opportunity to obtain information concerning several modern state-of-the-art truck enforcement and safety inspection facilities. Among these are the sites at Coloma, Wisconsin; St. George, Utah; Truckee, California; St. Croix, Minnesota and Woodburn, Oregon. Exhibits 6.3 to 6.7 show the general configuration of each facility. All of these facilities include weigh-in-motion (WIM) equipment to screen trucks entering the facility. The Woodburn, Truckee and St. George facilities have separate buildings for vehicle inspection while St. Croix provides a small building for inspectors. All of these sites are set up for high volume truck traffic and provide facilities which allow trucks to be weighed and inspected in an efficient manner.

The sites presented here use a variety of equipment in addition to WIM. These devices range from video cameras to automatic vehicle identifiers. The major factor affecting the cost of a facility is the number and type of buildings at the site. For instance, the Coloma Weigh Station has one building, a scale house. The St. Croix Weigh Station has two buildings, a scale house and a small building/station for inspectors. The St. George, Truckee and Woodburn facilities take this a step further by incorporating an elaborate truck inspection building.

Several of these modern facilities include capacity to weigh trucks in two lanes simultaneously. Static scales have been installed on both sides of the scale house. This arrangement increases the capacity of the site and minimizes the problem of delays to trucks. There is some concern by scale operators relative to safety. With trucks moving on both sides of the scale house, anyone needing to enter the building must avoid the trucks passing over the scales.





The inspection station at the St. Croix Weigh station is a small brick building meant only as a place for inspectors to store equipment and write citations. Inspectors must still work outside to inspect a truck. This means that trucks do not get inspected during inclement weather. The truck inspection buildings at St. George, Truckee and Woodburn are much more elaborate. These buildings have inspection bays within the truck inspection building. Inspectors work in a controlled environment and can carry out inspections safely regardless of what the weather conditions happen to be. The incorporation of lights in the floors and inspection pits make for efficient inspections and provide a safer work area for inspectors. The cost of adding a building similar to the one used at Woodburn is approximately \$778,000. This includes the building as well as all grading, paving and signing.

The start up costs for the various state-of-the-art fixed scale sites mentioned above vary significantly. Wilbur Smith Associates was not able to obtain the cost of acquiring right of way for the different sites. Persons contacted for information on the facilities stated that right-of-way costs were too site specific to be readily comparable. The site located in the median at Coloma, Wisconsin was constructed for \$1.1 million in 1985. This is considerably less than the joint usage facility located near St. George, Utah which has a construction budget of \$6.0 million. This new port will replace an existing joint usage port-of-entry at the same location. Even when divided between Arizona and Utah, it is considerably more expensive than the Coloma, Wisconsin facility.

Exhibits 6.3 and 6.4 illustrate a rather different approach to truck law enforcement being used at two sites. Coloma has one scale house located in the median and uses weigh-in-motion to screen trucks for weight. The primary purpose of this arrangement is to screen and stop trucks for weight and size violations. There are no special arrangements for vehicle inspection and little room for vehicle parking. Annual truck volume at this site is approximately 440,000 trucks. Currently, three size and weight inspectors and one safety inspector are assigned to the site. Wisconsin attempts to keep the scale open 16 hours per day, 5 days per week.

The arrangements at St. George are much different. This site consists of two scales and inspection facilities, one for each direction of traffic. There are inspection buildings at each facility for inspectors use while performing safety inspections. A large parking facility is located adjacent to the inspection building which is used for trucks needing repair, off loading, temporary storage of leaky loads or additional vehicle inspections

by state personnel. The 1987 annual truck volume at this site was slightly over 402,000. The port is operated 24 hours per day, 7 days per week and is staffed by 11 full-time and two seasonal employees. An increase to 22 full-time employees is anticipated during the next ten years. Arizona's Ports-of-Entry Master Plan indicates there is no problem with trucks bypassing the site.

Another state-of-the-art port-of-entry is located at Truckee, California (Exhibit 6.5). This port-of-entry was built in 1985 at a cost of \$6,000,000 and is very similar to the facilities at St. George. A total staff of 23 are assigned to this port to perform all weighing and inspection duties. The staff is assigned in such a manner as to keep the facilities operational 24 hours per day, 365 days per year. Maintenance costs for the Truckee port were approximately \$12,000 in 1990. No special maintenance projects were performed during 1990 and maintenance costs are estimated to be approximately \$12,000 in 1991.

The St. Croix Weigh Station (Exhibit 6.6) uses a number of state-of-the-art devices to assist in the enforcement of truck weight laws. Screening of trucks for height and weight is done by mechanisms located on the entrance ramp. Computer facilities located at the site will trigger overhead directional signals directing the truck for further weighing at the scale house or to go through the bypass lane and past the inspection station described previously. Further weighing is performed by full load cell platform scales. The weight recorded by each scale is displayed to officers in the scale house on electronic readouts and by variable message boards to the truck driver. These message boards will also direct the driver to stop, leave the station or park his truck and come into the station. For a legally loaded truck that is not directed to pull over for an inspection, vehicle speed does not need to drop below 30 miles per hour. The cost to construct this facility was \$1,732,000 in 1985 and annual maintenance cost was \$30,000 in 1990. The annual maintenance cost was lower in previous years as little maintenance was needed. The station is currently staffed by 25 employees who attempt to keep the station open 24 hours per day 365 days per year. Several pictures of this station are located after Exhibit 6.6.

Similar to the St. George and Truckee facilities is the Woodburn Port-of-Entry operated by the State of Oregon (Exhibit 6.7). This site was started as a demonstration site for various truck weight enforcement devices and methods. This site has weigh-in-motion, automatic vehicle height detector, automatic directional signals, variable message

boards, automatic vehicle identifier and a computer system that collects data on all aspects of the truck as it passes through the scale facility. Much of the hardware used at this site is similar to that used at the other sites discussed above. The computer system used at this site is extremely sophisticated and is a very useful tool for enforcement personnel.

As a truck enters the Woodburn site the axle weight and spacing is obtained and recorded by the weigh-in-motion equipment. Using this data the computer will automatically perform the calculations necessary to verify compliance with the weight limit and bridge formula. A scanner will read an identification tag similar to a UPC label on the vehicle and check to see if there are any outstanding warrants. Vehicle height is automatically checked for compliance. Video cameras at this same location give staff their first look at the vehicle. If a truck has passed these checks and inspectors do not want to take a closer look at the truck, the computer will trigger the directional signals to direct the truck to the bypass. If an automatic check or inspector decides the truck needs further review, it will be directed to the lanes adjacent to the weighmaster's station. Any information obtained by inspectors on the truck or driver while performing the more in-depth weighing will be entered into the computer. At this point, the weighmaster will direct the truck to leave the facility, park his vehicle and come into the weigh station or proceed to the truck inspection facility. If the truck is inspected for safety violations, any violation information obtained is entered into the computer system. Information from any citation issued is also entered into the computer. All of the information, whether collected by the automatic devices or by staff, is forwarded electronically to the weighmaster headquarters where a database on vehicles, drivers and citations is kept. This information is then fed back to the automatic vehicle identifier to allow weighmaster personnel to determine if a driver or vehicle is being looked for by police. This tool is also used to develop profiles of possible offenders in order to plan STET operations and road patrol activities more efficiently. Several pictures of this facility are located after Exhibit 6.7.

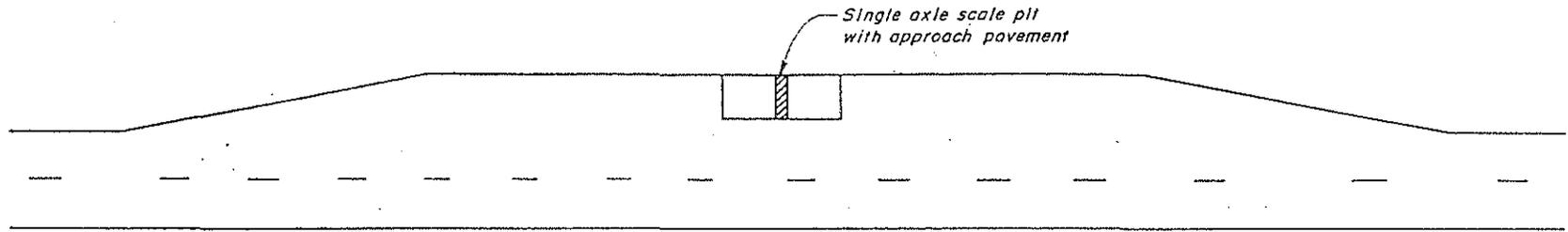
It should be noted that all of these facilities, with the exception of Coloma, have virtually no bypass problem. The St. George facilities have no bypass roads nearby while Truckee, St. Croix and Woodburn are located near natural geographic barriers which limits the number of routes crossing them. The lack of bypass routes for truckers helps make all of these facilities more effective.

## JOINT-USAGE FACILITIES

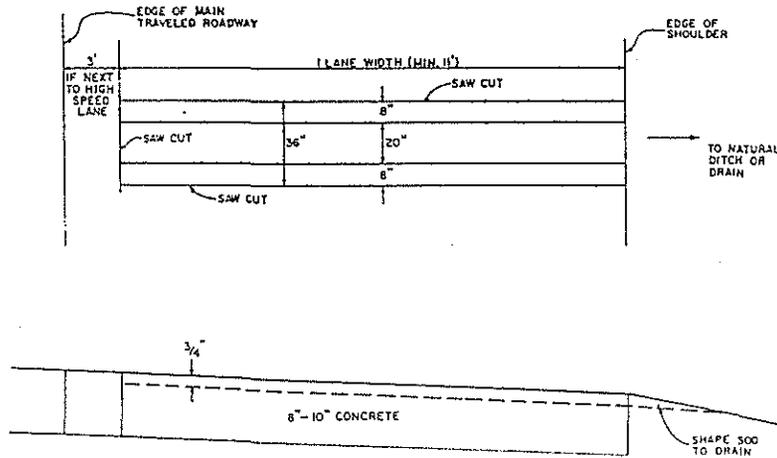
National Survey results indicated that 21 of 43 states and 6 of 9 Canadian provinces have considered the joint-usage agreements with their neighbors. The States of Arizona and California are both using this method to help reduce the costs, yet get effective enforcement of truck laws and regulations. Cost savings may be realized at the time of construction by splitting the cost of the facility between the two states. In some cases it is necessary for one state to own the facility and lease portion to the neighboring state. Operational cost is reduced by only having to use half the staff assigned to a regular facility.

This scenario of cost savings is realized when both states are planning to construct facilities to monitor traffic in both directions along the same route. If both states were to weigh incoming traffic only, the cost would be approximately the same as in a typical joint-usage facility.

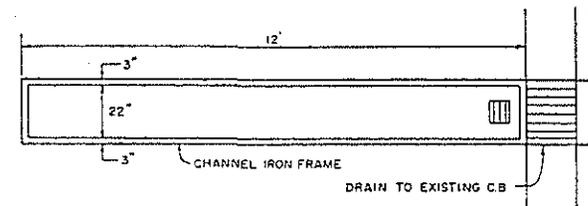
Another method of joint-usage which can have cost savings, although not seen in states contacted for this study, is a joint-usage median facility. This would reduce all construction by half and reduce operational cost considerably.



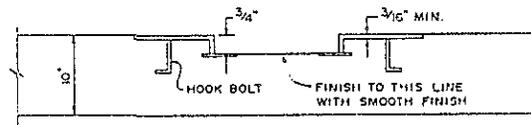
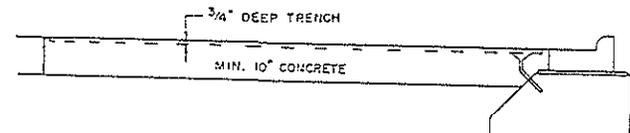
PLAN VIEW



RURAL SECTIONS



URBAN SECTIONS



SECTION THROUGH SCALE PIT

STATE OF MICHIGAN

P.I.T.W.S.  
PORTABLE INTERMITTENT TRUCK WEIGH STATION

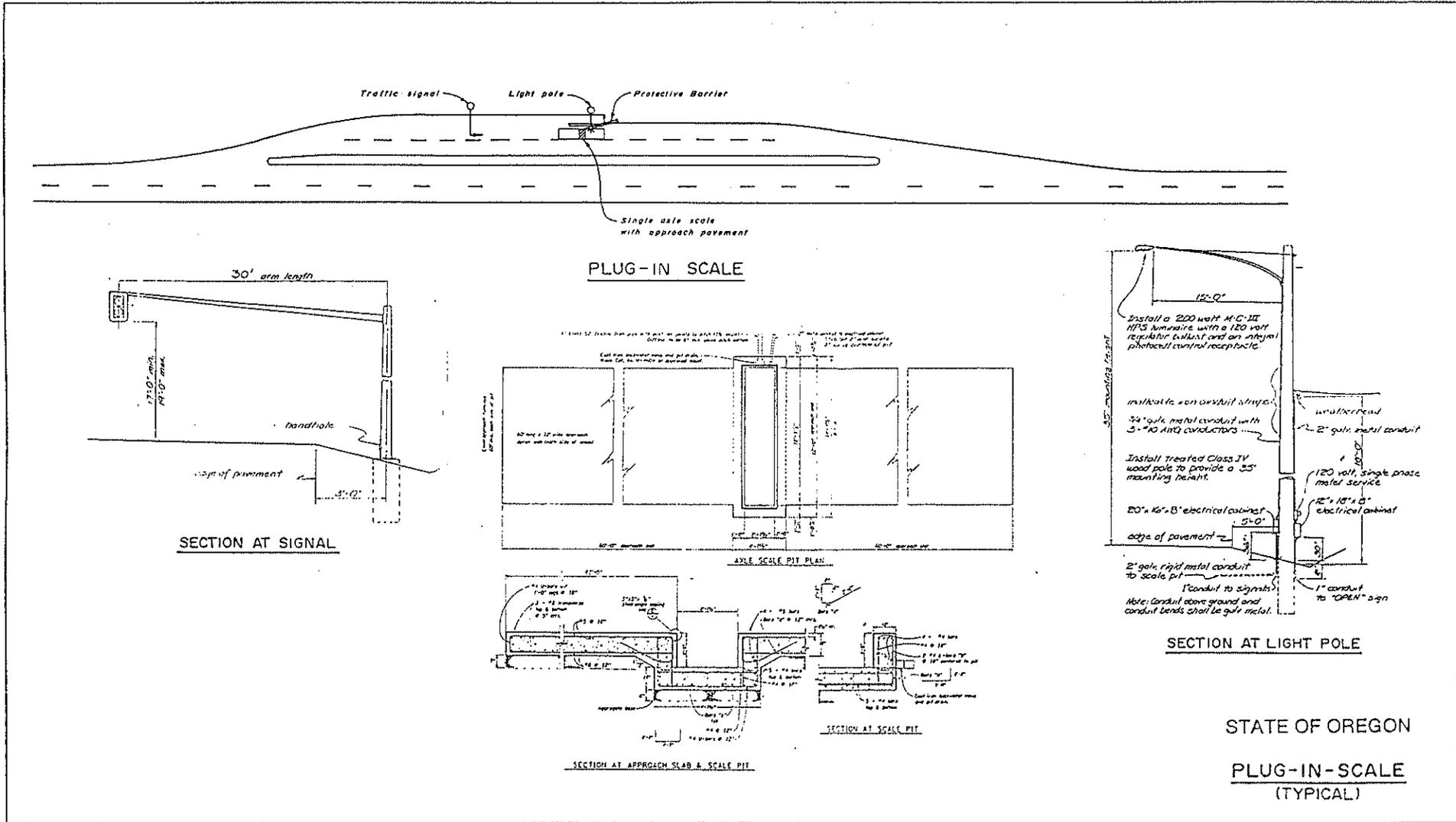
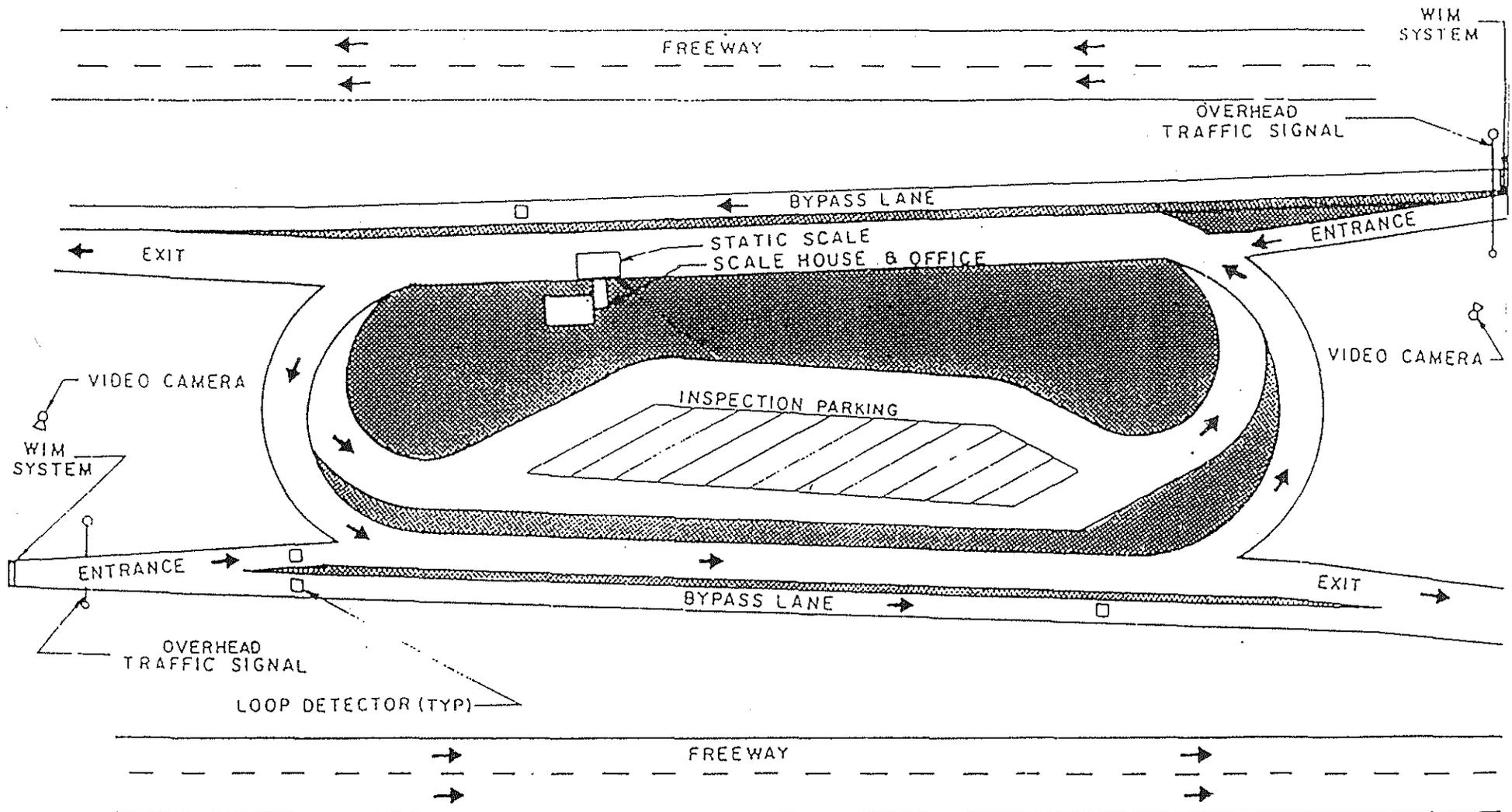


Exhibit 6.2

# COLOMA, WISCONSIN SCALE / INSPECTION FACILITY



6-11

Exhibit 6.3

ST. GEORGE, UTAH  
SCALE / INSPECTION FACILITY

6-12

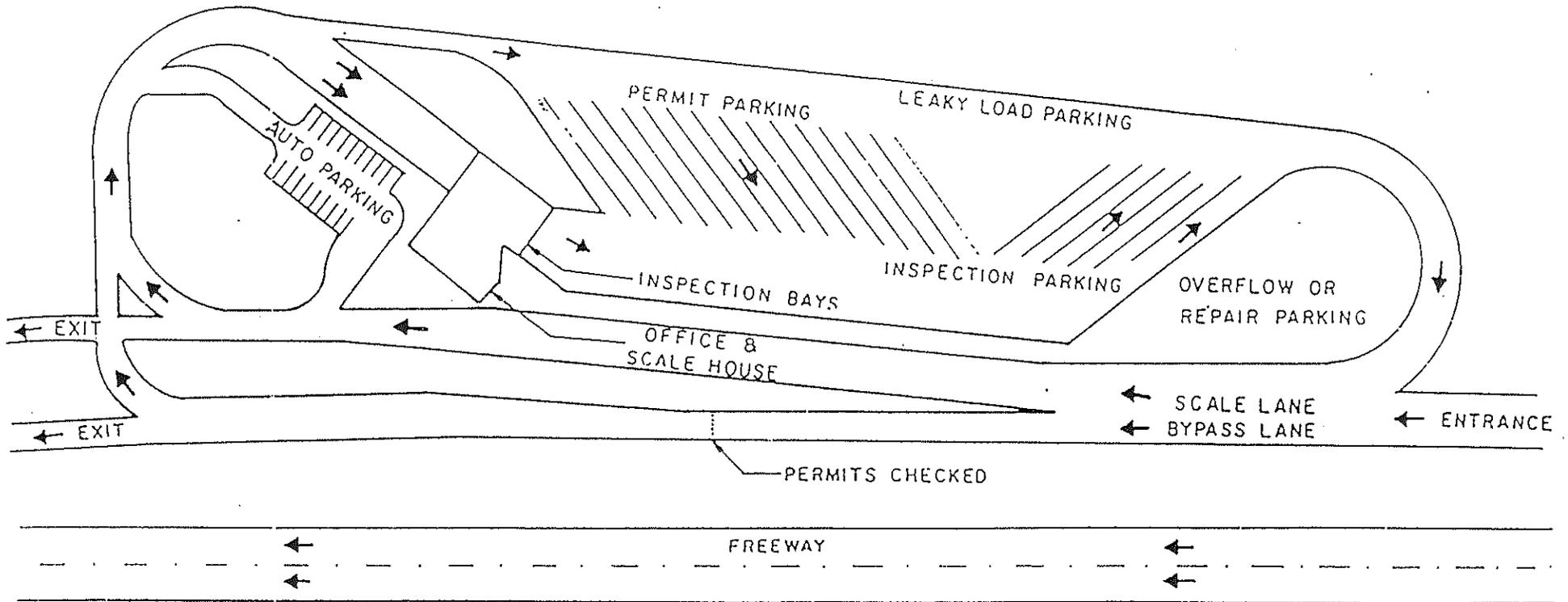


Exhibit 6.4

TRUCKEE, CALIFORNIA  
SCALE / INSPECTION FACILITY

6-13

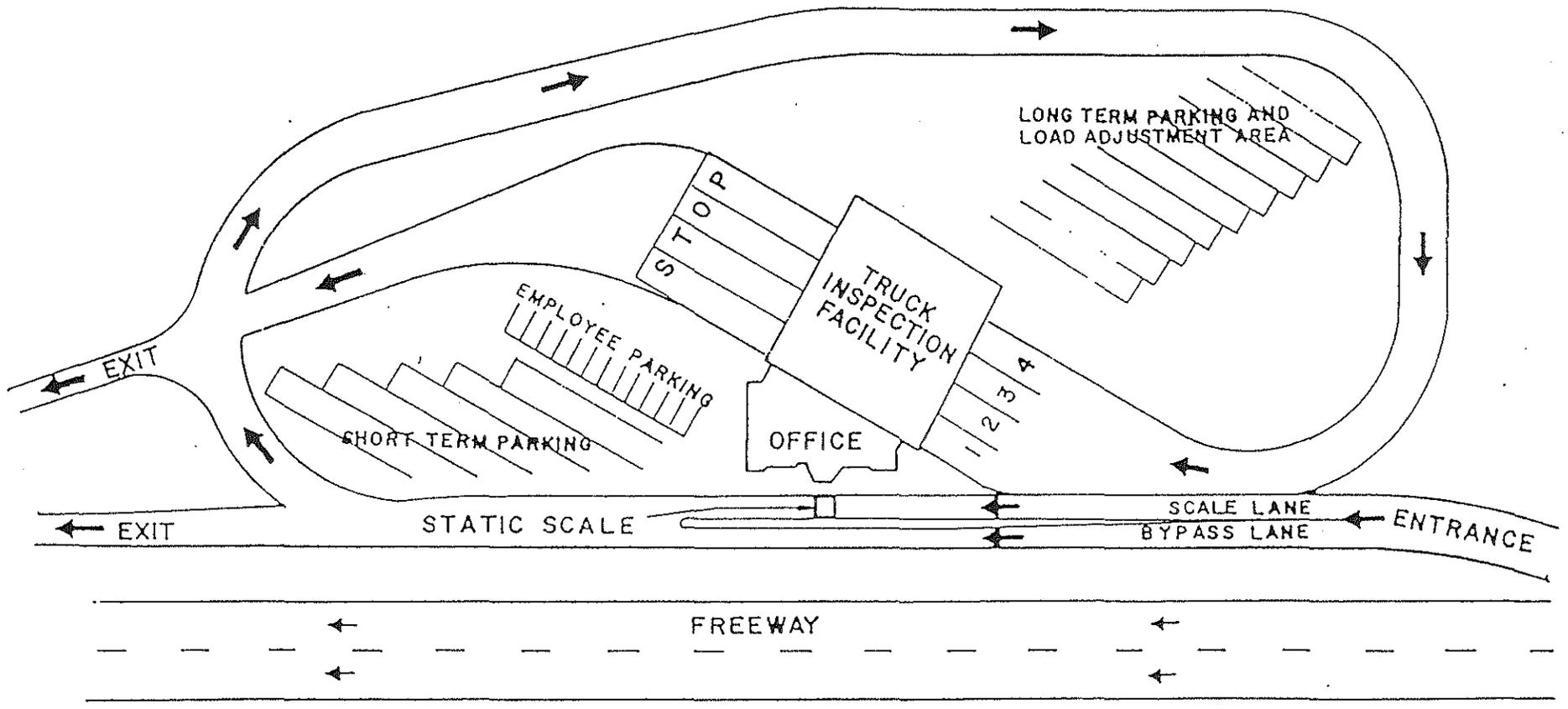


Exhibit 6.5

# ST. CROIX, MINNESOTA SCALE / INSPECTION FACILITY

6-14

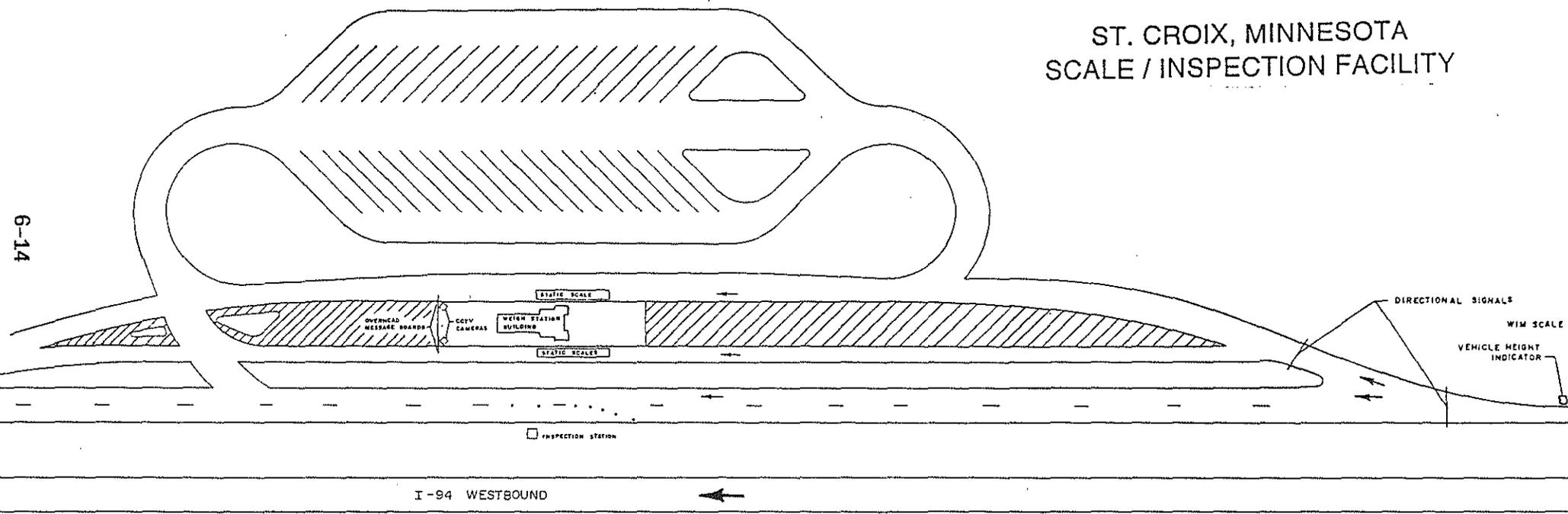
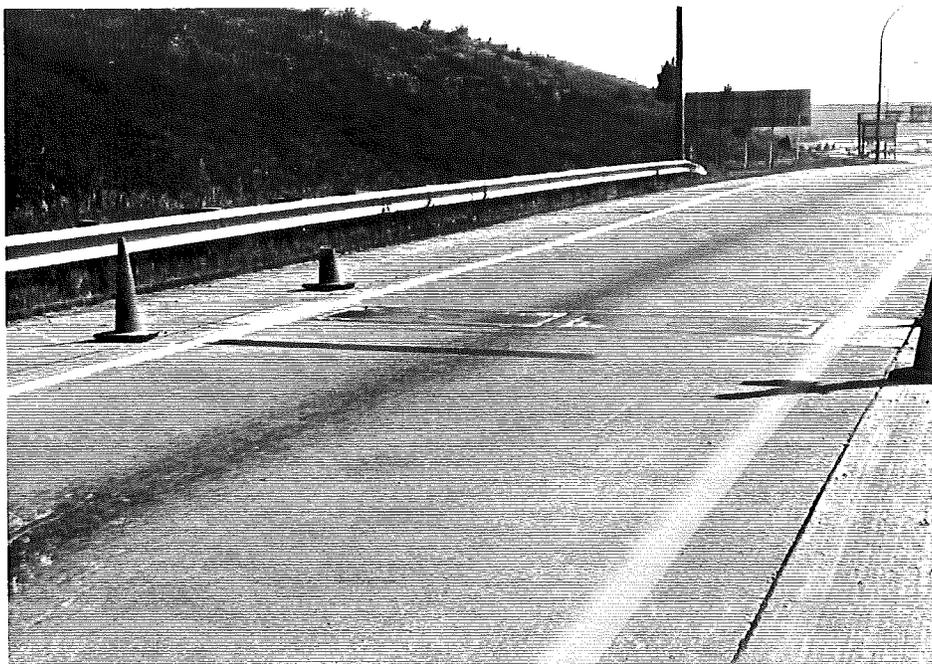


Exhibit 6.6



Weigh-in-Motion and Automatic Vehicle Height Indicator  
St. Croix, Minnesota Weigh Station



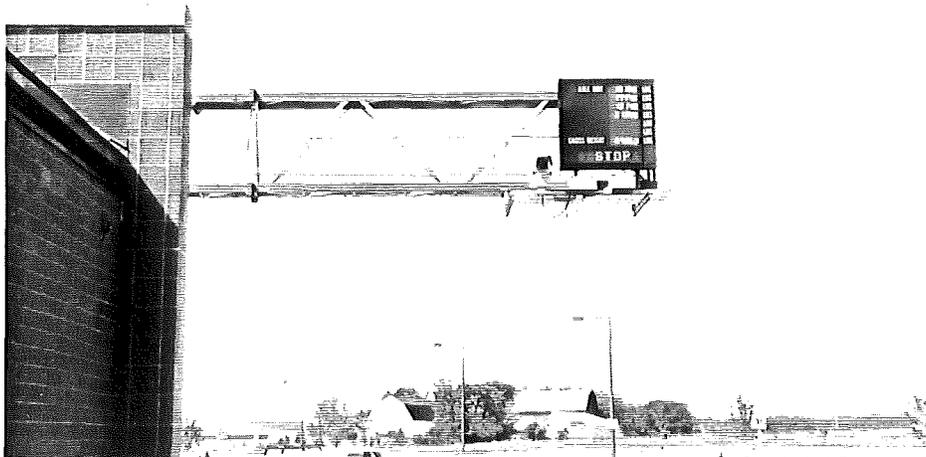
Weigh-in-Motion Scales and Axle Bar  
St. Croix, Minnesota Weigh Station



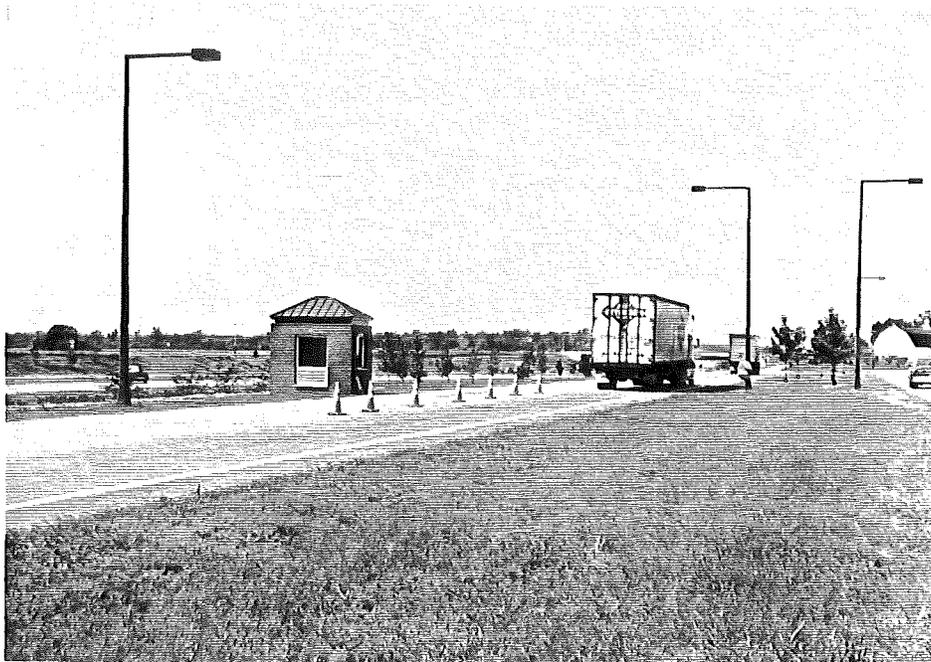
St. Croix Weigh Station Scale House  
St. Croix, Minnesota Weigh Station



Platform Scales  
St. Croix, Minnesota Weigh Station



Variable Message Board and Video Camera.  
St. Croix, Minnesota Weigh Station

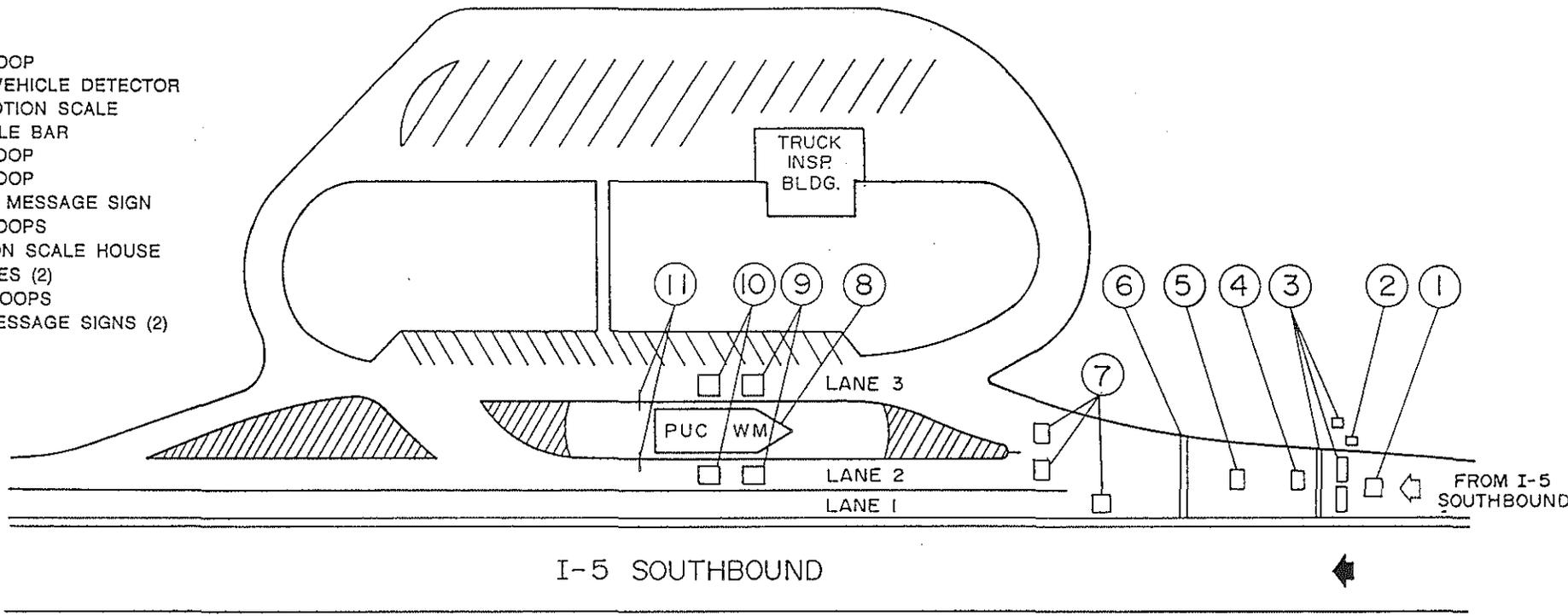


Inspection Station  
St. Croix, Minnesota Weigh Station

# WOODBURN, OREGON SOUTHBOUND PORT-OF-ENTRY

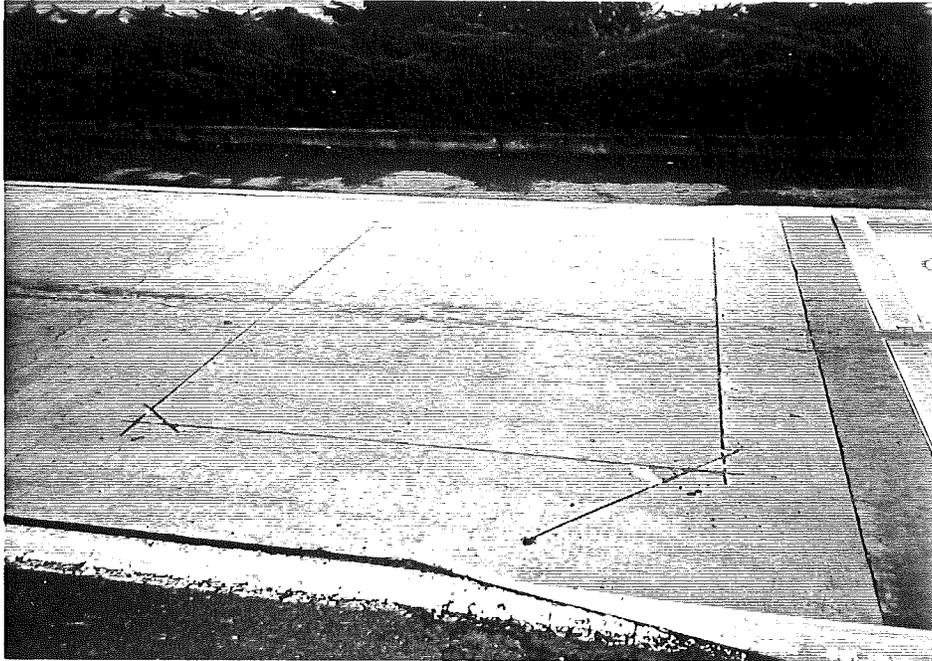
NOT TO SCALE

- 1. DETECTOR LOOP
- 2. AUTOMATIC VEHICLE DETECTOR
- 3. WEIGH-IN-MOTION SCALE  
CABINET, AXLE BAR
- 4. DETECTOR LOOP
- 5. DETECTOR LOOP
- 6. DIRECTIONAL MESSAGE SIGN
- 7. DETECTOR LOOPS
- 8. WEIGHSTATION SCALE HOUSE
- 9. STATIC SCALES (2)
- 10. DETECTOR LOOPS
- 11. VARIABLE MESSAGE SIGNS (2)

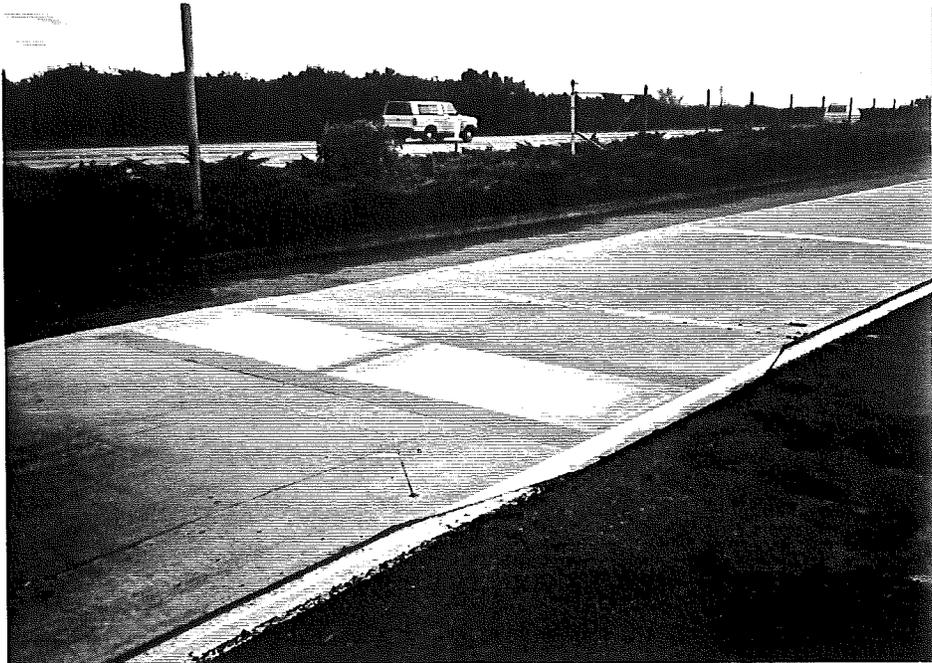


6-18

Exhibit 6.7



Detector Loop  
Woodburn, Oregon Port-of-Entry



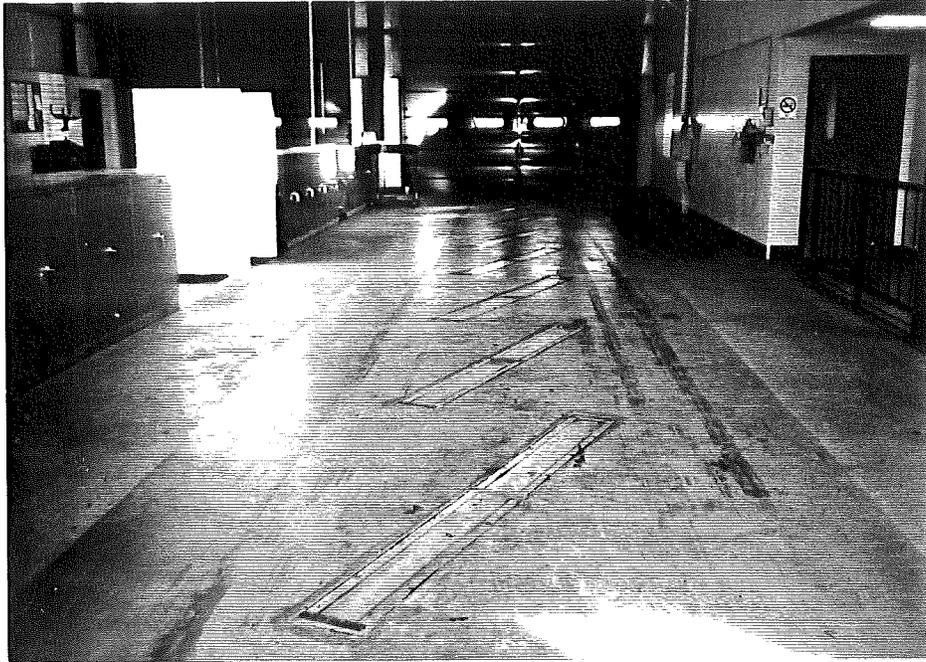
Weigh-in-Motion Scale and Axle Bar  
Woodburn, Oregon Port-of-Entry



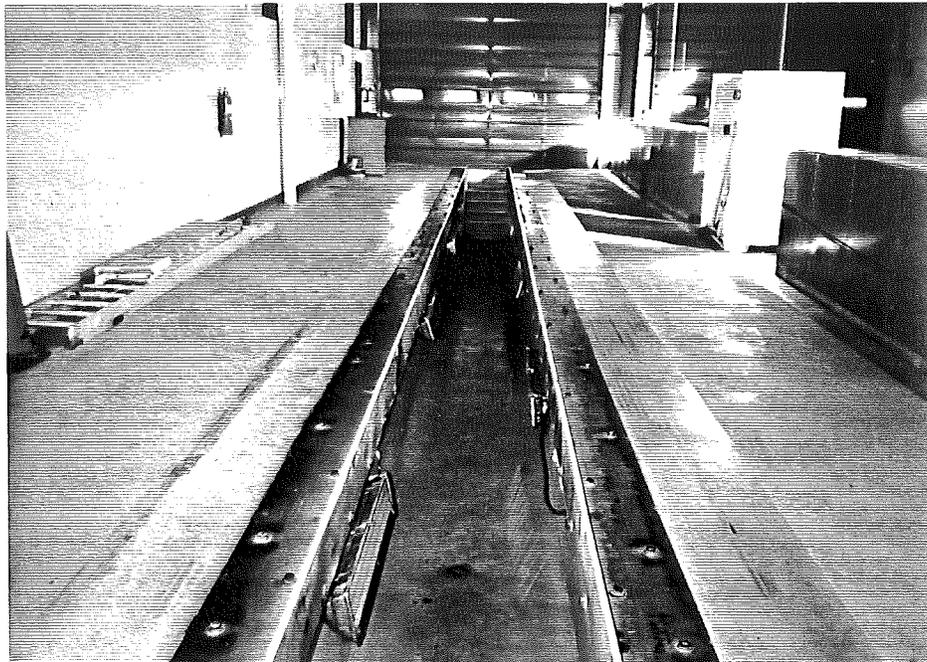
Weigh Station Scale House  
Woodburn, Oregon Port-of-Entry



Truck Inspection Building  
Woodburn, Oregon Port-of-Entry



Truck Inspection Bay with Lights in Floor.  
Woodburn, Oregon Port-of-Entry



Truck Inspection Bay with Inspection Pit  
Woodburn, Oregon Port-of-Entry

**COMPARISON OF ALTERNATIVE  
PROGRAMS / ACTIONS**

## GENERAL

In order to fully understand the impact that various alternative enforcement approaches might have in Michigan, comparisons must be made with the existing program. Comparisons can be made in several categories including costs, staffing and level of activities. Effectiveness of the alternatives can be approximated using current Michigan data and that derived from other states.

## ROAD PATROL/ENFORCEMENT

As stated previously in this report, every state responding to the national survey uses road patrols for enforcement. The major areas of difference are the equipment used and level of activities.

### EQUIPMENT

There are a number of different types of scales being used by road patrol crews in different states. These may be individual wheel weighers, dual wheel weighers, or semi portable scales. Each of these devices has advantages and disadvantages. Individual wheel weighers are small, relatively easy to move and can be used to see if an individual wheel is overloaded. The major disadvantages are that four of these scales are needed to weigh an axle with dual tires. Further they can be "kicked out" easily when a truck rolls forward. The dual tire weighing scales can be used to weigh a single or dual tire and are relatively small. Although slightly heavier than an individual wheel weigher, this type of scale can be handled by one person. Because these scales are slightly heavier than individual wheel weighers, it takes enforcement personnel slightly longer to move each scale. Semi-portable scales are much larger than the other two types of scales discussed above. They are typically heavy and require two people to move them. (It should be noted that new lighter versions of semi-portable scales are available which can be handled by one person.) They are not easily moved by a truck when it rolls forward and require much less attention from officers once in place. Semi portable scales are designed to weigh tandem axles. The major advantage to this type of scale is that once in place a truck can be weighed very quickly. The most notable disadvantage is that it usually requires two people to set them up and it takes longer. Quite often a special vehicle is needed to transport them.

## LEVEL OF ACTIVITY

All of the states contacted for this study agree that road patrol activities are necessary to keep truckers from violating truck weight laws. Each state carries out these activities at a level that they feel is necessary to maintain an acceptable level of enforcement and get maximum productivity for their enforcement program. It is felt that if truckers know that the bypass routes around the fixed scales are being patrolled, they will use the shortest route, usually through the fixed scale site. In general, the level of activities for the road patrol crews increases with the number of bypass routes around the fixed scale facilities. Currently Michigan attempts to keep a road patrol unit in operation on the fixed scale bypass routes whenever the fixed scale is operating.

Michigan's road patrol units are currently staffed by a single individual using dual tire weighers with analog readouts. This is similar to most other states because it gives the greatest versatility and efficiency to the road patrol effort. It is important for officers to be able to set up and breakdown quickly as truckers will notify each other via radio when officers set up a site to weigh trucks.

In order for the existing road patrol crews to be more efficient, they need to be able to set up and weigh faster. By using two dual wheel weighers there is no faster way to set up scales without using special pavement notches which will be covered later in this chapter. Faster weighing can be done, theoretically, with electronic portables or semi portables. While electronic portables can be connected and read from one side, they must be checked each time a truck rolls forward in order to avoid damage. Therefore, the time advantage gained from this type of scale is minimized.

While semi portables are faster, they require an additional officer for each road patrol unit and a trailer or van is required to transport them. The weighing operation is expedited with this type of scale because a tandem axle can be weighed without moving the truck. Semi-portable scales are more expensive than portables but are more efficient for weighing tandem axles. The cost of a semi-portable scale is approximately \$9,000 while a portable scale is about \$3,000.

Road patrol crews could weigh trucks faster with no new equipment if an additional officer was assigned to each vehicle. Each officer would then be responsible for one side of the truck. This would save time as the officer would not have to walk around the truck each time the truck rolls forward and both scales could be read at essentially the same time.

## **PERMANENT-INTERMITTENT TRUCK WEIGH STATIONS (PITWS)**

As mentioned under Road Patrol/Enforcement, there is a need to increase the speed with which a truck can be weighed using portable scales. By using a PITWS which is a pavement notch, there is no need to block up a truck while using portable scales. This decreases the time required to check a truck. National Survey results indicate that only few states, (none of Michigan's neighbors) use PITWS with their portable scales. It appears that most states do not block up trucks when weighing them on portable scales.

When PITWS is used, additional time could be saved by coupling a PITWS with electronic portable scales. By using two electronic portable scales linked together a PITWS officer would not need to check to see if the scale on the far side of the truck was sliding. The total axle weight would be read from one side of the truck. Using a PITWS does not affect staffing or hours of operation, but it does reduce the time that is needed for setting up for weighing since it is not necessary to install blocking.

## **SPECIAL TRANSPORTATION ENFORCEMENT TEAMS (STET)**

This form of truck law enforcement is used by virtually all of the states contacted. By concentrating enforcement activities in a small area, officers can often eliminate or disrupt illegal trucking activities. Organizations using this technique claim that one of the biggest advantages is letting truck drivers know they can be caught. Local agencies will also rely on this type of operations to help them control truck activities.

### **EQUIPMENT**

The equipment used in a STET operation is the same equipment used in normal road patrol activities. An operation of this type allows the officers to concentrate a large amount of equipment in a given area.

## **LEVEL OF ACTIVITY**

The number of STET operations can vary greatly from one state to another depending on the enforcement agency's approach to a particular problem and their staffing limitations. The use of this approach will also change as enforcement officials try to get the maximum enforcement effort from their program. For example, in 1988 the Motor Carrier Division of the Michigan State Patrol carried out 10 to 12 STET operations. This number has increased to 166 operations during 1990.

As stated in the assessment of this technique, normal operations at other locations are often disrupted in order to put enough staff in one area at one time. In order to make this method less disruptive to other enforcement activities, either more officers or a means of weighing trucks with fewer officers is needed. Portable scale operations are currently carried out by officers working alone. In order to increase the amount of portable weighing without disrupting normal activities, some form of staff increase is needed within the District that the STET operation is taking place.

## **PLUG-IN WEIGH STATIONS**

Michigan does not currently have any plug-in weigh stations but several aspects of Michigan's current program are similar to those used by other states which use plug-in scales.

## **EQUIPMENT**

The equipment in use at Port Huron is similar to plug-in equipment in several respects. It has a single axle scale, simple directional signal and overhead lighting. The readouts located in the MDOT garage at Port Huron are similar to those installed in a plug-in scale van.

## **LEVEL OF ACTIVITY**

The current approach to staffing road patrols in Michigan is similar to the approach used by states currently operating plug-in weigh stations. Plug-in facilities are staffed intermittently and used mainly on fixed scale bypass routes. This method allows for faster set-up and weighing than any other means used by enforcement officials with the exception of fixed scale sites

While being faster in both set-up and operation than portable or semi-portable scales, the start-up costs for this method is much higher. The cost of a plug-in scale (without a van) is approximately \$26,500 while a set of portable scales costs \$3,200. A plug-in is fixed in one location while the portables are highly mobile allowing officers the ability to pick and choose the trucks they weigh. Plug-in facilities can weigh a much greater number of trucks but lack mobility. These last two points are the main reason the states using plug-in facilities have chosen to locate them on the primary bypass routes near fixed scale locations where there are moderate truck volumes and use portable scales on outlying routes.

Operational cost of a plug-in scale is the same as operating a road patrol unit. Both require one officer with a vehicle carrying the necessary equipment. Plug-in scales, however, increase the potential for stopping overloaded trucks. By locating them on bypass routes near fixed scales and operating them intermittently while the fixed scale is open, many of the trucks operating illegally on the bypass can be stopped. This is mainly true because of the speed with which trucks can be weighed at this type of facility.

## **STATE-OF-THE-ART FACILITIES**

Michigan currently lacks the ability to weigh a high volume of trucks at most of its fixed scale sites. The state-of-the-art facilities reviewed for this study use several methods which could improve Michigan's weight enforcement and safety inspection efforts.

### **EQUIPMENT**

Several effective types of equipment are being used at the state-of-the-art facilities. The most common and most visible device at these facilities is weigh-in-motion (WIM) equipment. This equipment, most commonly used to sort trucks coming through a weigh station, is part of every state-of-the-art facility reviewed. Michigan currently is using this equipment at only two fixed scale sites even though truck volumes at several of its scales are greater than at scale sites of other states. The sorting of trucks by weight allows for more effective enforcement by requiring static weighing for only those trucks thought to be overweight. At high truck volume stations, WIM will expedite the movement of trucks through the stations and eliminate backups. This is an advantage to both enforcement personnel and truck drivers.

WIM scales/sorters can also record truck traffic volume and weight data at the site. This information is used by supervisory personnel to schedule officers when truck volumes are highest or the chances of apprehending weight violators is greatest.

Another common device at state-of-the-art facilities are video cameras. These are used in different ways in order to maximize their efficiency. For example, at Coloma they are located away from the scale house in order to give scale personnel an early look at a truck entering the facility. At the St. Croix weigh station they are mounted so that officers can watch a driver during the static weighing process. Besides increasing efficiency, video tape of vehicle and driver provide a record of trucks entering a facility. This can provide information to others if something should happen to an officer at a scale or be important evidence if a driver is arrested or a vehicle impounded.

Michigan currently uses height sensors at selected locations and plans to install them at all weigh stations. This very simple device can eliminate any question about whether or not a vehicle and its load are within the height restrictions of a particular state. This device is most commonly placed at the same location as WIM equipment.

Variable message boards are also used at several state-of-the-art facilities. These will be used to display axle weights to the truck driver while he is being weighed statically. Instructions given to the driver from scale personnel will also be displayed on this board. This makes communications between officers and drivers easier, faster and eliminates confusion on the drivers part as to what he/she is to do next. The State of Oregon allows the scale and message boards to remain operational even when the scale is "closed". Truckers who know of this policy can enter the facility and use the scale to check their weight. Officials in Oregon feel this is a good public relations move and helps keep animosity between truckers and officers down. Truckers cannot use these weights as a basis for selling their product.

The use of automatic vehicle identifiers is currently being experimented with in the State of Oregon. This device will identify a vehicle coming into a scale and allow it to pass through the scale more quickly as officers will not need to check it for plates and stickers. Oregon is the only state currently using this system.

Although not technically equipment, another common component of state-of-the-art facilities are inspection buildings. As stated in the chapter "Assessment of Alternative Enforcement Approaches", these can range from basic sheds to elaborate buildings with lighted floors and inspection pits. Michigan does not have any inspection buildings in use at this time although a basic structure is to be built at the Erie scale facility.

### **LEVEL OF ACTIVITY**

The staffing level and hours of operations for Michigan's heaviest volume weigh stations are much different than other states' state-of-the-art facilities. The only facility reviewed for comparison to Michigan that is not scheduled to be open 24 hours per day, 365 days per year is the Coloma, Wisconsin scale. Michigan does not attempt to keep any of their facilities open continually. The Erie Weigh Station comes the closest to this schedule, attempting to operate 136 of 168 hours available weekly.

The truck volumes operating on Michigan's roadways near scale facilities are extremely high compared to some other states for which information was available. For example, the Coloma scale (if open 24 hours) would weigh over 400,000 trucks a year. The St. George Port-of-Entry has annual traffic of 402,000 while the St. Croix scale handled approximately 790,000 vehicles last year. Several fixed scale facilities in Michigan would handle more than 1,000,000 trucks if operated continually.

The staffing level at various state-of-the-art facilities is based on the need to have enough workers to keep the site operational even when staff take leave, have court duty, attend training programs, etc. The organizational structure of a particular weight enforcement program may also affect staffing levels. Staffing levels at the facilities reviewed are as follows:

	<u>EMPLOYEES</u>	<u>ANNUAL TRUCK VOLUME/DIRECTION</u>
Coloma, WI	- 4 full-time (1 scale)	440,000 / North & South
St. George, UT	- 11 full-time (2 scales) 2 part-time	402,000 / North & South
Truckee, CA	- 23 full-time	N.A.
St. Croix, MN	- 25 full-time (1 scale)	790,000 / West
Woodburn, OR	- 16 full-time	N.A.

In comparison, Michigan's scales are staffed as follows:

	<u>EMPLOYEES</u>	<u>ANNUAL TRUCK VOLUME/DIRECTION</u>
Erie	- 18 full-time (2 scales)	3,803,380 / North & South
Grass Lake	- 14 full-time (2 scales)	2,705,020 / East & West
Bridgeport	- 9 full-time (2 scales)	1,472,300 / North & South
Fowlerville	- 9 full-time (2 scales)	1,799,190 / East & West
Pontiac	- 8 full-time (2 scales)	1,469,860 / North & South
Ionia	- 8 full-time (2 scales)	1,283,300 / East & West
New Buffalo	- 8 full-time (1 scale)	1,703,750 / East
New Baltimore	- 7 full-time (2 scales)	1,045,500 / North & South
Coldwater	- 5 full-time (1 scale)	667,420 / North
Cambridge Jct.	- 3 full-time (1 scale)	171,860 / East & West
Powers	- 1 full-time (1 scale)	176,300 / East & West

**CONCLUSIONS / RECOMMENDED ACTIONS**

## GENERAL

Truck weight enforcement and safety inspection in the State of Michigan were the primary thrust of this detailed study which was conducted by Wilbur Smith Associates and its subconsultant, Coleman and Associates. The issuance of permits for oversize/overweight vehicles was carefully analyzed along with the maintenance of weight enforcement facilities and certification of all types of scales being used to enforce truck weight.

The Consultant did not encounter any indication on non-compliance with state and federal requirements. However, more extensive weight enforcement and safety inspection would result in less pavement damage and a better safety record. The State's efforts to preserve the public investment of its highways would be enhanced.

## OVERVIEW

Michigan's weight enforcement and truck safety plan, in the consultant's opinion, should follow the "port of entry" (POE) concept. Michigan's geography combined with the historical transportation gateways provides an opportunity to monitor a very large percentage of entering truck traffic by using a small number of fixed facilities.

Intense operation of "state-of-the-art" fixed weigh stations on the three inbound southern interstate routes as well as the Canadian gateway at Port Huron (I-69) will result in monitoring most of the inbound vehicles. These facilities will have weigh-in-motion and safety inspection buildings and will be operated 24 hours, 7 days a week.

The three interior fixed weigh stations located on Interstates surrounding the Detroit Metropolitan area will remain as fixed scale house sites and be operated on a regular week day basis.

Weight enforcement strategy in the Detroit Metropolitan area is addressed as follows:

- Regularly operated weigh stations surrounding the metro area will monitor trucks entering and leaving the area on major highways.
- Weighing trucks on busy interstates is very dangerous. PITWS's should be strategically installed on surface streets and on the Interstate system as feasible.

Intermittent operation of the existing interior weigh stations will serve as an effective deterrent to intrastate trucking operations.

"Plug-in" scale operations should be installed on the highly traveled by-pass routes on or near Michigan's border. A plug-in scale operation is a low cost, highly mobile method of weight enforcement used in other states.

As the remaining interior fixed weigh stations require major capital expenditures it is recommended that plug-in's be used to replace the fixed scale house concept.

Michigan's PITWS program has merit and should be continued. The pavement notches used for Motor Carrier Division's portable scales reduces the time needed to weigh a large truck. These notches are very cost effective. PITWS locations on by-pass routes would be reviewed periodically, upgrading to "plug-in's" if projected fine revenues, based on historical data, would make the location economically feasible.

Road Patrol should be continued. Michigan's STET (Specialized Transportation Enforcement Teams) is effective in many types of safety and weight enforcement operations. In many areas in Michigan, (sparsely populated and Detroit Metro) road patrol is the most efficient method of weight and safety enforcement.

## **SHORT RANGE RECOMMENDATIONS**

### **SHORT RANGE RECOMMENDATION #1**

Interstate Highway truck traffic volumes in Michigan are significantly higher than on other state and federal highways. This is particularly noticeable in the Detroit area. With this in mind and recognizing that a number of other states have successfully addressed this type of enforcement problem, it is appropriate to emphasize Michigan's enforcement efforts in these areas. The recent annual truck traffic volumes listed below support this philosophy (see Chapter 2, Chart 2-9).

<u>Scale Location</u>	<u>Truck Volume in 1990</u>
I-75, Erie	3,803,000 N.B. & S.B.
I-94, New Buffalo	1,703,000 E.B.
I-69, Coldwater	667,000 N.B.
I-94, Port Huron	302,000 E.B.
I-94, Grass Lake	2,705,000 E.B. & W.B.
I-96, Fowlerville	1,800,000 E.B. & W.B.
I-75, Pontiac	1,470,000 N.B. & S.B.

Despite these high volumes, the scale facilities are being operated a comparatively small percentage of total available hours. It is estimated that over 60,000 citations with a fine revenue of approximately \$17,000,000 are being missed during periods when Michigan's scale are not being operated. (See Appendix A, Page A-14.) It is evident that it would be cost-effective to operate a number of the high volume site continuously. The facilities located at Erie (NB), New Buffalo (EB), Coldwater (NB) and Port Huron (WB) should, as funding becomes available, be upgraded to state-of-the-art enforcement and safety inspection sites (ports-of-entry). On a short range basis these sites should be upgraded to include weigh-in-motion and electronic scales, and they should be operated continuously.

Even more critical is the accelerated pavement damage which results from overweight trucks.

*The NCHRP Report #131 indicates that annual costs of damages to Federal-Aid Highways is between \$1 and \$2 billion using 1984 Federal-Aid Highway System mileage. Based on this projection (which matches quite well with other studies) the cost of damage due to overweight trucks in Michigan is approximately \$1,760 per mile per year. (This does not take into account any inflationary increases which have occurred since 1984).*

The annual cost of pavement damage due to overweight trucks on Michigan's Federal-Aid System alone (31,136 miles) is estimated to be over \$54,000,000 (not including inflationary increases). Other Michigan highways not on the Federal-Aid System are also being damaged by overweight trucks. (See Appendix A, Page 3.)

The Consultant recommends that the following truck scales be operated continuously (24 hours/day, 365 days/year):

- I-75 N.B. at Erie
- I-94 E.B. at New Buffalo
- I-69 N.B. at Coldwater
- I-94 W.B. at Port Huron

It is further recommended that a state-of-the-art facility, complete with WIM, be installed at Port Huron and that WIM be added to the New Buffalo and Coldwater sites. The existing mechanical scale at New Buffalo should be replaced with an electronic scale.

Estimated Cost To Implement Recommendation #1 (See Appendix A-6)

Initial Cost of Construction and Equipment	\$2,162,000
Additional Annual Staffing Cost*	\$ 756,000

\*Additional officers needed to staff these scales are as follows:

Two officers at each fixed scale site and one additional officer on road patrol during the first shift.

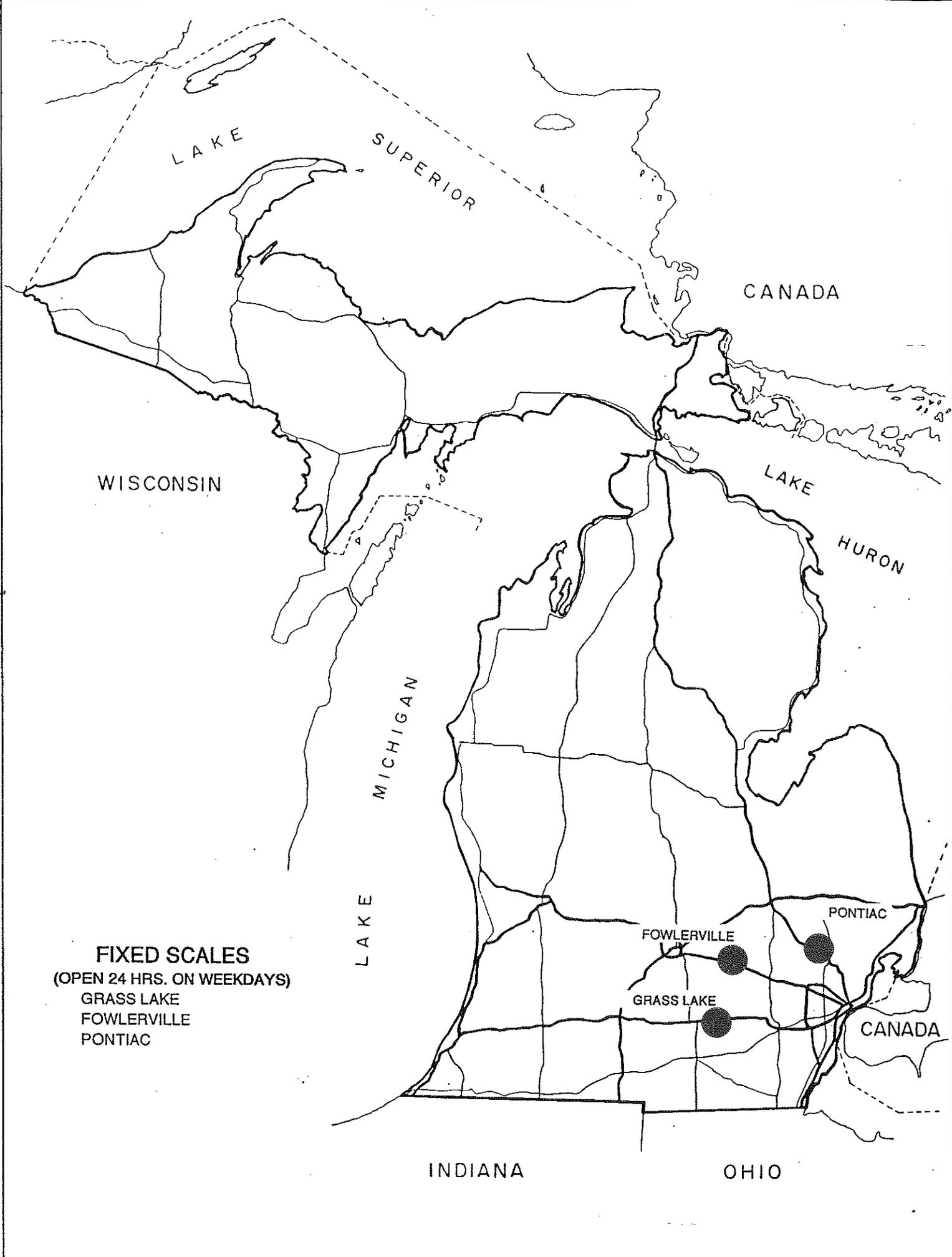
Two officers at each fixed scale during the third shift.

One officer at each fixed scale during the third shift.

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### SHORT RANGE RECOMMENDATION #2

Truck traffic emanating from the Detroit industrial area as well as from the industry laden areas of northern Indiana and Chicago results in very high volumes passing existing static scales at Grass Lake (I-94 EB & WB), Fowlerville (I-96 EB & WB) and Pontiac (I-75 NB & SB). These facilities are located on Interstate routes which accommodate very high volumes of truck traffic (See Map, Page 8-4A). However, the percentage of trucks being weighed at these three sites ranges from 5.6% at Pontiac to 37.4% at Grass Lake. Additional enforcement would not only reduce pavement damage but the increase in fine revenue would far exceed the cost of additional staffing (See Appendix A, Pages 6-13 and also See Chapter 2, Chart 2-10).



LAKE SUPERIOR

CANADA

WISCONSIN

LAKE HURON

LAKE MICHIGAN

**FIXED SCALES**  
(OPEN 24 HRS. ON WEEKDAYS)  
GRASS LAKE  
FOWLerville  
PONTIAC

FOWLerville

PONTIAC

GRASS LAKE

CANADA

INDIANA

OHIO

It is recommended that the following truck scales be operated 24 hours/per day, on weekdays and be continued as fixed facility locations:

- I-94, Grass Lake E.B. & W.B.
- I-96, Fowlerville E.B. & W.B.
- I-75, Pontiac N.B. & S.B.

It is further recommended that the southbound I-75 mechanical scale at Pontiac and the existing scales at Fowlerville be upgraded to electronic facilities.

**Estimated Cost To Implement Recommendation #2**

Initial Cost of Equipment	\$ 36,000
Additional Annual Staffing Cost	\$356,000

\*Additional officers needed to staff these scales:

Two officers at each fixed scale and one officer on road patrol during the first shift.

Two officers at each fixed scale during the second shift.

One officer at each fixed scale during the third shift.

---

**SHORT RANGE RECOMMENDATION #3**

Based on the anticipated increase in fine revenue resulting from implementation of the preceding recommendations, it is justified to funnel this additional revenue to the State Trunkline Fund (See Appendix A, Page A-1). The funds can then be used by DOT to pay additional cost of enforcement incurred by MCD as well as a portion of the cost of pavement and bridge repair and rehabilitation. A request for legislation could be based in establishing a percentage of fine revenue which would remain with the County Library Systems with the remainder being deposited in the State Trunkline Fund.

To be effective, legislation would also be needed requiring the clerk of the court in which the violation occurred, or the judge if the court has no clerk, to forward a certification of conviction to the Department on a form furnished by the Department.

The Consultant recommends that legislation be requested which will allow a percentage of fine revenue to be deposited in the State Trunkline Fund and used to pay the cost of enforcement previously recommended and for a portion of highway and bridge repair and rehabilitation costs.

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**SHORT RANGE RECOMMENDATION #4**

Following installation of a new scale at Port Huron the operation of the New Baltimore scale facility can be de-emphasized. Almost all truck traffic presently being checked at the New Baltimore site will be checked at the Port Huron scale. Because of the proximity of the New Baltimore scale to the Detroit industrial area and several Non-Interstate routes it would be advisable to operate this scale occasionally as a spot check similar to enforcement on bypass routes.

**Reduce the hours of operation of the New Baltimore scale following construction of a new scale facility at Port Huron. Operate the New Baltimore scale one shift per weekday (40 hours/week). The schedule of operation should vary from day-to-day and from week-to-week (See Appendix A, Pages A-6 through A-13).**

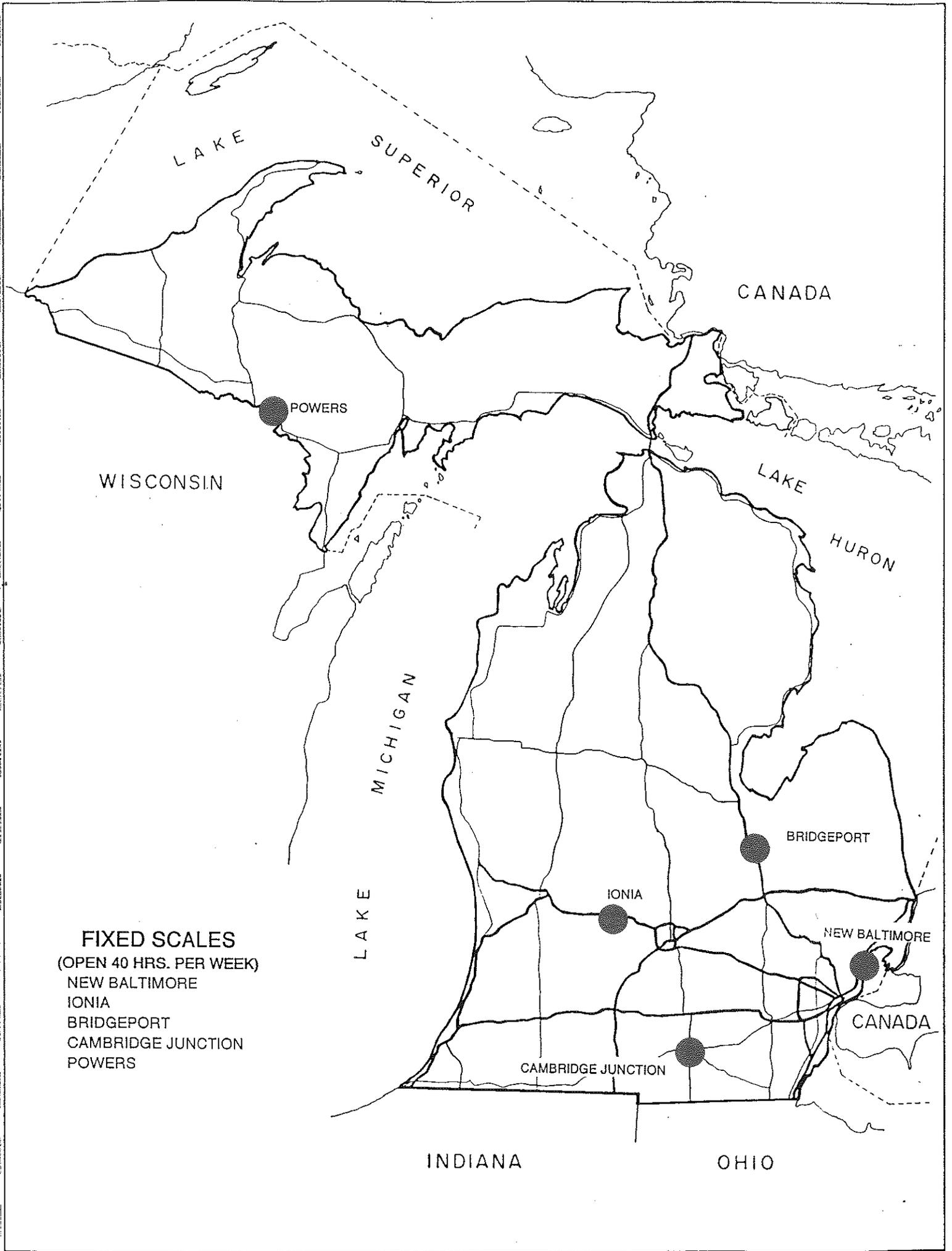
**Estimated Annual Cost Savings To Implement Recommendation #4**

2 Officers	\$89,000 <u>savings</u> per year
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**SHORT RANGE RECOMMENDATION #5**

The old mechanical scales at Ionia and Bridgeport are being operated a small percentage of the time at present, and the Powers scale, in the Upper Peninsula, is being operated for less than 5% of available hours. The electronic scale at Cambridge Junction is also operated on a very limited basis. These facilities can serve a purpose by continuing to operate them on a flexible schedule for the control of bypass traffic (See Map, Page 8-6A).



LAKE SUPERIOR

CANADA

POWERS

WISCONSIN

LAKE HURON

MICHIGAN

BRIDGEPORT

IONIA

NEW BALTIMORE

CANADA

LAKE

**FIXED SCALES**  
 (OPEN 40 HRS. PER WEEK)  
 NEW BALTIMORE  
 IONIA  
 BRIDGEPORT  
 CAMBRIDGE JUNCTION  
 POWERS

CAMBRIDGE JUNCTION

INDIANA

OHIO

It is recommend that the mechanical scales at Ionia, Bridgeport, Cambridge Junction and Powers continue to be maintained and operated but on a flexible schedule of 40 hours per week (See Appendix A, Pages A-8 through A-15).

Staffing Cost Savings/Year

\$265,000 savings per year

---

SHORT RANGE RECOMMENDATION #6

The primary thrust of the recommendations contained in this study is to improve the effectiveness and efficiency of Michigan's enforcement and safety inspection programs. Basic to all considerations is the importance of minimizing damage to highways due to overweight vehicles. With this in mind, the consultant concentrated the upgrading of facilities on major entry points rather than on the facilities handling existing traffic. The southbound I-75 scale at Erie is presently in good condition and is responsible for a significant amount of fine revenue, although it is recognized that violators have already damaged Michigan's pavements by the time they are checked and cited. The Erie southbound scale should continue to be operated as in the past because it will serve as a deterrent and will generate a significant amount of fine revenue.

A parallel situation exists on westbound I-94 at New Buffalo, where a new scale facility is presently being constructed. Since this is an exiting point rather than an entry point, it is appropriate to delay this project, in light of this study and resulting recommendations. However, it should be completed as it is a major funnel point for western Michigan traffic moving west.

**It is recommended that the southbound I-75 weigh station at Erie continue to be operated as in the past.**

**It is also recommended that the status of the project involving construction of a new facility on westbound I-94 (New Buffalo) be delayed until implementation of other higher priority recommendations of this study are completed. It is further recommended that a plug-in scale be installed at the proposed westbound I-94 scale house site for use as a high volume location and in STET operations until such time as the fixed facility is completed.**

### SHORT RANGE RECOMMENDATION #7

The static scales adjacent to the critically important bridges at Sault Ste. Marie and Mackinac are presently being used for spontaneous/spot checks to minimize the potential for causing structural damage. These scales are often used in connection with Special Transportation Enforcement Team (STET) programs. This has been proven effective (See Chapter 2, Page 2-6).

**Continue the enforcement of truck weight restrictions at Sault Ste. Marie and Mackinac on a spontaneous basis. STET programs should be used at these critical bridges to the extent that manpower is available.**

**No change in cost is anticipated.**

---

### SHORT RANGE RECOMMENDATION #8

The use of portable scales by Road Patrols has proven to be effective in controlling truck weights on bypass routes as well as miscellaneous routes located in the interior portion of the State. The existing Permanent-Intermittent Truck Weigh Stations (PITWS) have also proven to be effective, making the use of portable scales more efficient. Plug-in scales have also shown significant benefits in other states (See Chapter 6, Pages 6-1 and 6-2).

**Continue the enforcement of truck weight by Road Patrols using portable scales. Plug-in scales should be provided on by-pass or high volume routes in coordination with a continued PITWS program.**

**(Additional officers have been recommended previously for various scale sites, so it will not be necessary to add staff to implement this recommendation.)**

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## SHORT RANGE RECOMMENDATION #9

Motor Carrier Division Officers have advised the Consultant that, in most cases, scale repairs are accomplished promptly with very few out-of-service hours. Even so, the data indicated that scales are down due to maintenance and/or repairs about 6% of the planned hours of operation. A significant portion of the down-time is associated with delays while waiting for the scales to be recertified following repairs. The scale service companies which are engaged to repair the scales should also recertify them, reducing the amount of down-time (See Chapter 2, Chart 2-10 and Chapter 5, Page 5-2).

Emergency scale repair requirements would be reduced if a preventive maintenance program is implemented. Inspections should be scheduled semi-annually during which minor repairs would be accomplished, thus reducing the need for emergency repairs which require the scales to be taken out of service. Major repairs would be identified during the inspections and the work scheduled to interfere as little as possible with scale operation.

Obtain authorization for scale service companies to recertify scales immediately following repairs. The Consultant also recommends that a preventive maintenance program be implemented.

### Estimated Cost To Implement Recommendation #9

(Preventive maintenance could be accomplished by scale service companies or by DOT.)

Assume 400 manhours at \$12/hour	= \$4,800
Van/truck 200 hours (monthly rental rate)	= <u>400</u>
Estimated Total Annual Cost	\$5,200

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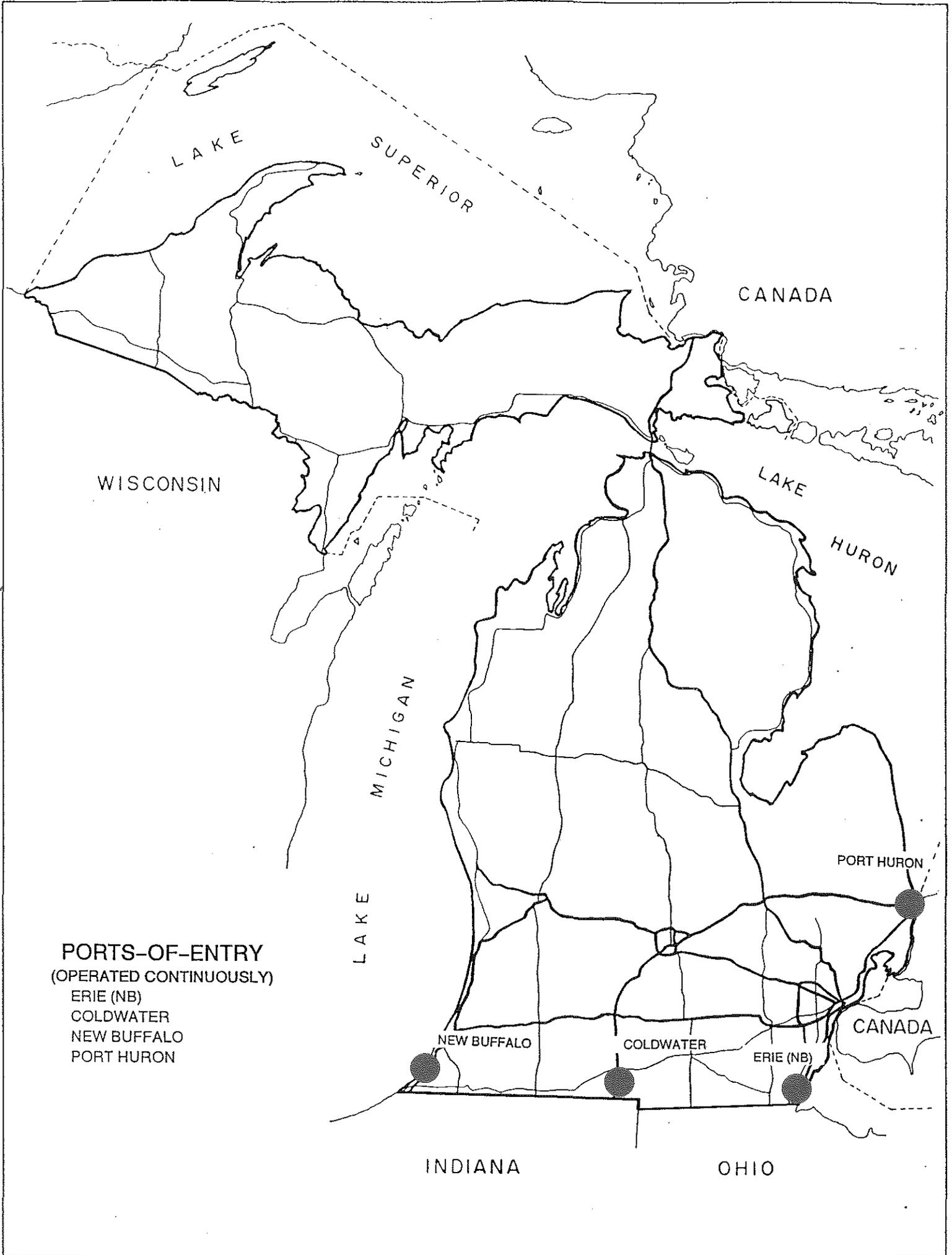
# LONG RANGE RECOMMENDATIONS

## LONG RANGE RECOMMENDATION #1

Interstate Highway truck traffic volumes in the State of Michigan are concentrated in the southern third of the state and in the area adjacent to the Detroit industrial centers. The industrial areas of Chicago and northern Indiana also contribute to this high volume of truck traffic. The State presently operates 23 fixed/static scales at 14 locations along with road patrols using portable scales. With the exception of the I-75 scale at Erie and the I-69 scale at Coldwater, the fixed weight enforcement facilities are quite old (averaging about 28 years) and are definitely not state-of-the-art (See Chapter 2, Pages 2-1 through 2-10).

The term port-of-entry is defined as *a place where persons and merchandise are allowed to pass, by water or land, into and out of a country---*. The State of Arizona Ports of Entry Master Plan indicates that the purpose of ports-of-entry is to ensure compliance with the State's Statutes and Regulations governing motor carrier compliance. Several other states contacted during the course of this study (California, Oregon, Utah, New Mexico and Georgia) use the term "ports-of-entry" to describe major entry points where trucks are not only checked for weight and size but where licensing is checked and permits issued. The term ports-of-entry, used in this study, refers to major entry points on heavy truck traffic arteries, where size, weight, safety, special permits and licensing are checked and where data can be collected and transmitted to a central depository. Ports-of-Entry have become well accepted in the states referred to. Improved public relations resulting from the dissemination of information and the expeditious handling of various permits and licenses are apparent.

The following recommendation involved only the four major Interstate Highway entry points at Erie, Coldwater, New Buffalo and Port Huron (See Map, Page 8-10A). Consideration was also given to the Detroit location, but since the Ambassador Bridge and the Detroit-Windsor Tunnel are private toll facilities it was decided best to defer a decision until more detailed studies can be completed relative to location of facilities and the impact on traffic.



LAKE SUPERIOR

CANADA

WISCONSIN

LAKE HURON

LAKE MICHIGAN

PORT HURON

**PORTS-OF-ENTRY**  
 (OPERATED CONTINUOUSLY)  
 ERIE (NB)  
 COLDWATER  
 NEW BUFFALO  
 PORT HURON

NEW BUFFALO

COLDWATER

ERIE (NB)

CANADA

INDIANA

OHIO

Modern ports-of-entry would include heated safety inspection buildings which will improve the quality and quantity of inspections. With the large volumes of truck traffic being handled at major entry points and the anticipated heavy volumes at the proposed Michigan ports-of-entry, it is essential to include weigh-in-motion scales (See Chapter 6, Pages 6-4). This effective sorting device will minimize truck backup and delays and can also be used for data collection.

although not a part of the recommendations of this study it is recognized that there are a number of Non-Interstate entry points. The Consultant has attempted to concentrate both short and long range recommendations on those activities and locations which will have the greatest impact on the effectiveness and efficiency of Michigan's enforcement and safety inspection programs. Other entry points should be evaluated in the future based on truck traffic volumes, data from Road Patrol activities and availability of funding.

**The Consultant recommends that long range plans of the State of Michigan provide for upgrading the following existing enforcement facilities to modern ports-of-entry with the intent of improving compliance with weight, safety and licensing requirements: (See Appendix A, Pages A-6 through A-10).**

- I-75 Northbound at Erie**
- I-94 Eastbound at New Buffalo**
- I-69 Northbound at Coldwater**
- I-94 Westbound at Port Huron**

**Estimated Cost To Implement Long Range Recommendation #1**

<b>Scale house and scales</b>	<b>\$ 250,000</b>
<b>Inspection Buildings</b>	<b>\$2,750,000</b>
<b>Staffing</b>	<b>\$ 178,000</b>

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## LONG RANGE RECOMMENDATION #2

The enforcement of truck weight limits on routes being used to bypass fixed/static scales is presently being effectively handled by MCD Road Patrols using portable scales. At present there are about 40 Permanent-Intermittent Truck Weigh Stations (PITWS) which facilitate the weighing of trucks on bypass routes. There are plans to construct many more in future years.

Eight states responded to Question #12 of the National Survey indicating that they are using plug-in scales or expect to in the near future. Plug-in sites are similar to the Michigan PITWS except that an axle scale is used rather than a portable. The operator can place the unit in operation in minutes by plugging into an electrical and computer/modem line.

As existing fixed scales at Powers, New Baltimore, Cambridge junction, Ionia and Bridgeport age and need extensive repair or upgrading, they should be converted to plug-in scales. The existing ramps, parking, etc. could be used making the change reasonable in cost.

Long range plans should also consider the use of plug-in scales in lieu of some of the planned PITWS sites, particularly in locations where there is heavy truck traffic at times or where static scales are being bypassed.

**The Consultant recommends the installation of plug-in scales when the existing static scales at Powers, New Baltimore, Cambridge Junction, Ionia and Bridgeport require extensive repair or replacement.**

**It is also recommended that additional study be conducted of the planned construction of PITWS sites to determine those most appropriate for plug-in scales.**

**Estimated Cost To Implement Long Range Recommendation #2 (See Appendix A, Page 11)**

**This estimate is for only the six existing sites**

Vehicles	\$90,000
Electronic Equipment	<u>\$10,000</u>
	\$100,000

The cost to install a plug-in scale at a new location is estimated to be in the range of \$30,000 to \$50,000.

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### LONG RANGE RECOMMENDATIONS #3

Interstate Highway I-75, I-94, I-96 and I-696 in the Detroit Metropolitan area are very heavily traveled with a comparatively high percentage of truck traffic. The proposed facility at Port Huron and the fixed scales at Grass Lake, Fowlerville and Pontiac will be able to check many trucks emanating from the metropolitan area or entering the area. However, many trucks traveling these critically important routes have origins and destinations within the Detroit Metropolitan area and are not checked. Officers of MCD have indicated that some trucks are directed to an adjacent street where portable scales are used to check for weight violations. This is time consuming and it is next to impossible to check a good percentage of trucks.

Permanent-Intermittent Truck Weigh Stations (PITWS) in this important area would facilitate the checking of trucks. Plug-in scales, although more expensive, would expedite the weighing and decrease delays and inconvenience (See Chapter 7, Pages 7-3 and 7-4).

The Consultant recognizes the problems of very heavy traffic and a restricted right-of-way. In order to accommodate PITWS and/or plug-in scales, as-built plans should be examined to determine where right-of-way is available for construction of turnouts to accommodate portable or plug-in scales.

**It is recommended that MDOT in cooperation with MCD determine locations where PITWS can be constructed to facilitate portable or plug-in scale use for enforcement of truck weight in Metropolitan Detroit.**

#### **Estimated Cost To Implement Long Range Recommendation #3**

**(Assume three locations, all with plug-in scale facilities.)**

Initial Cost, including right-of-way, plug-in scales, lighting and signing.

Cost per site	\$ 600,000
Total - 3 sites	\$1,800,000

The cost per site would vary depending on the site size (number of trucks allowed to queue) and the per acre cost of right-of-way.

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LONG RANGE RECOMMENDATION #4

The Michigan Department of Transportation issues permits for overweight/oversize vehicles. a permit fee of \$5.00 is charged for a single trip permit and \$8.00 for an extended or annual permit. With few exceptions, permits for overweight/oversize loads are only issued for non-divisible loads (See Chapter 5, Page 5-2).

Michigan issued almost 107,000 permits in 1990 at an average fee of \$5.58 per permit which resulted in revenue of \$596,000. By contrast, Indiana and Wisconsin permit fees average about \$40.00 which results in significantly more revenue.

During the course of the study, data was obtained from each of the states which share a portion of Michigan's boundary line, including the Canadian Province of Ontario. In addition, the permit fee schedules of several other states were compared with the Michigan fees. This analysis revealed that permit fees in Michigan are very low by comparison, and do not reflect the amount of overweight and accompanying pavement damage (See Exhibit 5.2 and 5.3).

A series of graduated flat fees related to the amount of overweight or a base fee with an additional fee per mile would relate to the resulting pavement damage more directly. A combination of these would be the best.

**It is recommended legislation be proposed authorizing DOT to charge permit fees which relate to the amount of weight and accompanying pavement damage.**

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## LONG RANGE RECOMMENDATION #5

The National Survey which was conducted during the course of this study revealed that several states have either initiated joint-usage agreements or are seriously considering the possibility (See Chapter 6, Page 6-8). At this time the States of Arizona and Utah are using one facility and are considering others. In addition, there is serious interest in joint-usage by the States of California and New Mexico. In the case of Arizona and Utah (St. George scale) the State of Utah owns the facility with Arizona operating it on a rental basis part-time. A sample joint-usage agreement is included in Volume II of this study.

Erie and New Buffalo sites appear to be good candidates for joint-usage. The Port Huron might also be a possibility although it would involve Canada rather than a state.

**The Consultant recommends that the Michigan Department of Transportation consider the advantages and disadvantages of joint-usage facilities with the Indiana and Ohio DOT's as well as the Province of Ontario, Canada.**

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## LONG RANGE RECOMMENDATION #6

In Michigan, the enforcement of truck size and weight laws and the inspection of trucks for safety violations is the responsibility of the Department of State Police, Motor Carrier Division. The issuance of permits for oversize/overweight vehicles and the construction of truck weighing and inspection facilities are the responsibilities of the Department of Transportation. DOT also maintains and plows the paved surfaces within these facilities. The certification of truck scales is the responsibility of the Department of Agriculture. In addition, the Departments of State and Treasury as well as the Public Service Commission, have truck regulations responsibilities.

During the course of this study and following a review of responses to the National Survey Questionnaire, the Consultant found that 12 of 43 states responding have consolidated responsibilities for enforcement, safety inspection, permit issuance, weigh station construction and maintenance in a single agency. One additional state reported that all responsibilities are consolidated with the exception of safety inspection. Only two states reported that truck scale certification responsibilities have been assigned to the agency responsible for all other activities (See Appendix A, Page A-2).

Advantages and disadvantages of consolidation of responsibilities are difficult to determine without benefit of a more detailed study. Those states in which responsibilities have been consolidated are pleased with their arrangements and feel they are functioning effectively. Operational efficiencies and administrative decision making are improved.

Even though the Consultant found a good level of cooperation and coordination among the several involved Michigan State Agencies, it is suggested that consolidation of truck law enforcement activities be considered.

**It is recommended that the Departments of State Police and Transportation jointly undertake a study to determine the appropriateness of consolidating responsibilities. If found to be appropriate, the study should include language for legislation which would authorize the change.**

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#### **LONG RANGE RECOMMENDATION #7**

Planning for the future weight enforcement must be based on accurate historical data. This data should include at a minimum, truck traffic volumes, trucks weighed and/or inspected, citations issued, hours of operation, down-time and causes, maintenance and repair costs. During this and previous studies the Consultant found good support for the use of weigh-in-motion scales and classifying detector loops to provide mainline truck traffic data which is useful for highway planning and design as well as for planning and budgeting for the enforcement and safety inspection programs. Electronic data collection at the scales, coupled with Michigan's One Stop Shop efforts and the capability to transmit the information to a central depository will not only facilitate the day-to-day operations but will be very helpful in planning future programs.

**The Consultant recommends that a committee be established to develop an effective data collection system. The committee should include representatives from DOT, MCD, One Stop Shopping, and specialists in electronic data collection and transmission.**

**ESTIMATES - TRUCK TRAFFIC, STAFFING,  
CITATIONS AND REVENUE**



MEMORANDUM

March 29, 1991  
Edina, Minnesota

TO: Files

FROM: W. J. Buglass

SUBJECT: Michigan Weight Enforcement And Safety Inspection Study  
Fine Revenue

The National Survey which was conducted in connection with this study revealed that fine revenue resulting from citations for overweight/oversize vehicles is deposited in the Transportation Fund of many states. It is used to finance highway and bridge construction as well as the cost of enforcement of truck laws.

In Wisconsin, a neighboring state of Michigan, fine revenue was formerly deposited with the county in which the citation was issued. The legislature approved a change in the law to require that 40% of fine revenue is credited to the State Trunkline Fund. The key section of Wisconsin Statutes follows:

*S.59.20, (8m), Forward 40% of state forfeitures, fines and penalties under Chapter 348 to the state treasurer for deposit in the transportation fund under S.25.40 (1) (im).*

WJB/mg



MEMORANDUM

Edina, Minnesota  
April 8, 1991

TO: Files

FROM: Tom Walsh TW

SUBJECT: Summary of National Survey Responses  
Question #19  
Consolidation of Responsibilities

Responses to the questionnaire were received from 43 states. The following is a summary of the responses received to Question #19 - *Indicate the agency responsible for the enforcement, safety inspection, permits, data collection, scale maintenance and certification:*

<u>Number of States</u>	<u>Activities</u>
1	All
11	All except certification
1	All except safety inspection and certification
<u>1</u>	All except safety inspections
14	

The remainder (29) of the states responding to Question #19 have not consolidated responsibilities to any significant extent.

Of the 15 states which have consolidated most activities, the State Police have responsibility in three states, while Departments of Transportation have responsibility in eight states. The responsibilities rest with the Department of Tax and Revenue in New Mexico, the Department of Port of Entry in Colorado and the Motor Vehicle Department in Vermont.

TW/mg



MEMORANDUM

Edina, Minnesota

March 13, 1991

TO: Bill Buglass  
FROM: Abe Kashani  
SUBJECT: Pavement and Bridge Damages

The annual costs of damages to the national federal-aid highways caused by overweight vehicles estimated to be of the order of \$1 billion to \$2 billion. These estimates are based on the National Cooperative Highway Research Program (131) by the Transportation Research Board (TRB) which has utilized the 1984 federal-aid highway system mileage for their estimates. Using the above figures, the annual costs of damages to Michigan Federal-aid highways are as follows:

Federal-aid highway systems mileage (1984) = 851,714  
Average costs of damages per mile of national federal-aid highways (1984) =  
 $(1,000,000,000 + 2,000,000,000)/(2 \times 851,714) = \$1,760$

Total mileage of Michigan Federal-Aid Highways is 31,136 which is taken from the latest Highway Statistics by the U.S. Department of Transportation (1989).

Annual average costs of damages to Michigan federal-aid highways =  
 $(1760) (31,136) = \$54,799,360$

The above estimate does not include the cost of inflation and we have to keep in mind that this estimate is based on the annual average costs of damages to only federal-aid highways. It should be noted however that the recently released TRB Special Report 227 indicates that pavement life is extended with higher than 80,000 pounds gross weight if reduced axle weights are involved, as in Michigan.



MEMORANDUM

Edina, Minnesota  
November 19, 1990

TO: Files  
FROM: Tom Walsh <sub>TW</sub>  
SUBJECT: ADT and Annual Truck Traffic for Michigan

After calculating the ADT for trucks in Michigan I attempted to convert this data into an annual figure. In order to get an appropriate multiplier I talked with Michael DeMott of MDOT. He indicated that they did not have enough information available to develop a number. After mentioning my problem to Bill, he suggested I call Arnie Hirvela in the Alliance, Ohio Office. Mr. Hirvela was called and understood my problem but did not have any information that would be useful. He did suggest, however, I contact someone with the Minnesota Program. I then called Lt. Pete Gibson with the Minnesota State Patrol. He could only give me yearly totals for truck counts but suggested I contact Officer Sletton at the St. Croix Scales for the information needed. Once Office Sletton was contacted he gave me the following information. During a normal 24 hour period on a weekday approximately 2700 trucks pass through the facility. 800 to 900 trucks pass through the site each weekend day.

The above indicated Minnesota (I-94) truck traffic relationships have been used to develop a projection factor for estimating annual truck traffic in Michigan at various scale sites.

Weekend Days	800 to 900 trucks/24 hours
Weekdays	2700 trucks/24 hours

Truck Traffic Per Week

$$\left(\frac{850 \times 2}{2700} + 5\right) \text{ADT} = 5.63 \times \text{ADT}$$

Truck Traffic Per Year

$$5.63 \times 52 \times \text{ADT} = 293 \times \text{ADT}$$



JOHN ENGLER, GOVERNOR  
DEPARTMENT OF STATE POLICE  
COL. MICHAEL D. ROBINSON, DIRECTOR

MOTOR CARRIER DIVISION

300 NORTH CLIPPERT  
LANSING, MICHIGAN 48913

PHONE: 517-336-6195

February 12, 1991

Mr. Tom Walsh  
Wilbur Smith Associates, Inc.  
4445 West 77th St., Suite 209  
Edina, Minnesota 55435

Dear Tom:

I am writing to provide you with information requested by Mr. Buglass; and I have enclosed the material for the 8th district you requested.

The cost per hour for a motor carrier officer including fringes working at a scale location is \$21.29 per hour. The cost per hour for a motor carrier officer including fringes and mileage for the patrol car is \$24.57 per hour.

Should you have any questions regarding the information provided, please contact me at 517/336-6195.

Sincerely,

A handwritten signature in cursive script that reads "Billy Mohr".

Lt. Billy Mohr  
Field Support Commander  
Motor Carrier Division

BGM

Enclosure





MEMORANDUM

March 28, 1991  
Edina, Minnesota

TO: Files

FROM: T. Walsh *TW*

SUBJECT: Staffing Costs To Implement Recommendations  
Michigan Weight Enforcement Study

Implementation of several of the recommendations contained in the "MICHIGAN TRUCK WEIGHT AND SAFETY INSPECTION STUDY" require additional officers/inspectors. Calculations are based on officers working 40 hours per week in 8 hour shifts. A total of 2088 work hours per year for each officer was used at a rate of \$21.29 per hour in order to calculate the additional annual cost anticipated per officer. This wage rate includes all fringe benefits for an officer as described in the letter from Lt. Mohr of the Motor Carrier Division to myself dated February 12, 1991.

**Short Range Recommendation #1**

Keep the scales at Erie (northbound), Coldwater, New Buffalo and Port Huron open 24 hours per day, 365 days per year. Staff each scale with two officers at the scale house during the first and second shift and one officer during the third shift. An additional officer assigned to the scale should handle road patrol duties.

**MANHOURS**

Two Officer Shifts:

$$2 \text{ officers} \times 7 \text{ days/week} \times 16 \text{ hours/day} = 224 \text{ hours/week}$$

One Officer Shifts:

$$1 \text{ officer} \times 7 \text{ days/week} \times 8 \text{ hours/day} = 56 \text{ hours/week}$$

Road Patrol Officer:

$$1 \text{ officer} \times 7 \text{ days/week} \times 8 \text{ hours/day} = 56 \text{ hours/week}$$

$$\text{TOTAL MANHOURS} = 336 \text{ hours/week}$$

**OFFICERS**

$$(336 \text{ hours/week}) / (40 \text{ hours/officer}) = 8.4 \text{ officers/week}$$

For calculation purposes use 9 officers per week instead of a partial or part-time officer.

**STAFFING NEEDS**

Location	Proposed Staff	Exist. Staff	Difference
Erie (northbound)	9	8	1
New Buffalo	9	7	2
Coldwater	9	4	5
Port Huron	9	0	9
<b>TOTALS</b>	<b>36</b>	<b>19</b>	<b>17</b>

**ANNUAL STAFFING COST**

17 officers x 2088 hours/year x \$21.29/hour = \$755,709.84

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**Short Range Recommendation #2**

Keep the scales at Grass Lake, Pontiac and Fowlerville open 24 hours per day, 5 days per week. Staff these scales similar to the scales in Short Range Recommendation #1.

**MANHOURS**

Two Officer Shifts:

2 officers x 5 days/week x 16 hours/day = 160 hours/week

One Officer Shifts:

1 officer x 5 days/week x 8 hours/day = 40 hours/week

Road Patrol Officer:

1 officer x 5 days/week x 8 hours/day = 40 hours/week

**TOTAL MANHOURS = 240 hours/week**

**OFFICERS**

(240 hours/week) / (1 officer/40 hours) = 6 officers/week

**STAFFING NEEDS**

Location	Proposed Staff	Exist. Staff	Difference
Grass Lake (EB)	6	7	(1)
Grass Lake (WB)	6	6	0
Pontiac (NB)	6	4	2
Pontiac (SB)	6	3	3
Fowlerville (EB)	6	4	2
Fowlerville (WB)	6	4	2
<b>TOTALS</b>	<b>36</b>	<b>28</b>	<b>8</b>

**ANNUAL STAFFING COST**

8 officers x 2088 hours/year x \$21.29/hour = \$355,628.16

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**Short Range Recommendation #4**

Operate the New Baltimore scales 40 hours per week. Staff each scale with one officer and have another on road patrol as support for each scale.

MANHOURS

One Officer Shifts:

1 officer x 5 days/week x 8 hours/day = 40 hours/week

Road Patrol Officer:

1 officer x 5 days/week x 8 hours/day = 40 hours/week

TOTAL MANHOURS = 80 hours/week

OFFICERS

(80 hours/week) / (1 officer/40 hours) = 2 officers/week

STAFFING NEEDS

Location	Proposed Staff	Exist. Staff	Difference
New Baltimore (EB)	2	3	(1)
New Baltimore (WB)	2	3	(1)
TOTALS	4	6	(2)

ANNUAL STAFFING COST SAVINGS

2 officers x 2088 hours/year x \$21.29/hour = \$88,907.04

Short Range Recommendation #5

Operate the Ionia, Bridgeport, Cambridge Junction and Powers scales 40 hours per week. Staff each scale with one officer and have another on road patrol as support for each scale.

MANHOURS

One Officer Shifts:

1 officer x 5 days/week x 8 hours/day = 40 hours/week

Road Patrol Officer:

1 officer x 5 days/week x 8 hours/day = 40 hours/week

TOTAL MANHOURS = 80 hours/week

OFFICERS

(80 hours/week) / (1 officer/40 hours) = 2 officers/week

STAFFING NEEDS

Location	Proposed Staff	Exist. Staff	Difference
Ionia (EB)	2	4	(2)
Ionia (WB)	2	3	(1)
Bridgeport (NB)	2	4	(2)
Bridgeport (SB)	2	4	(2)
Cambridge Junction	2	2	0
Powers	2	1	1
TOTALS	12	18	(6)

**ANNUAL STAFFING COST SAVINGS**

6 officers x 2088 hours/year x \$21.29/hour = \$266,721.12

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**Long Range Recommendation #1**

Build new or convert inspection buildings at Erie (northbound), Coldwater, New Buffalo and Port Huron. Increase staff at each site by one officer to increase utilization of these facilities.

**ADDITIONAL STAFF NEEDED**

4 officers, 1 at each site listed in the recommendation

**ANNUAL STAFFING COST**

4 officers x 2088 hours/year x \$21.29/hour = \$177,814.08

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## MEMORANDUM

March 29, 1991  
Edina, Minnesota

TO: Files

FROM: T. Walsh *TW*

SUBJECT: Equipment Costs for Various Facilities  
Michigan Weight Enforcement Study

During the preparation of Chapter 7 "Assessment of Alternative Enforcement Approaches" several states and manufacturers were contacted for information concerning the cost of various facilities. This was done in order to obtain accurate information for use during the assessment and recommendation phases of the study.

### INSPECTION BUILDINGS

As noted in Chapter 5 "Review of Other States" several states currently use inspection buildings. The size and type of structure was the primary factor in the total cost of the building. The cost for a state-of-the-art building similar to the one located at the Woodburn Port-of-Entry, Truckee, or St. George is approximately \$780,000. This figure includes the building (with lights in the floor and inspection pit), grading, paving and signing.

### SCALES

Prices on fixed scales, both static and WIM, were obtained from manufacturers and several states. Prices for single axle static and weigh-in-motion scales were obtained as these were deemed the most appropriate for use in Michigan.

Full load cell single axle scales are fairly inexpensive. Individuals contacted claim that this type of scale can be purchased and installed for under \$10,000. The State of Oregon has recently installed several of these in previously prepared scale pits for a cost of approximately \$7,000. This work has been done within the last year so the costs were considered current and were used to develop cost estimates for recommendations in this report.

Weigh-In-Motion scales vary extensively in type and price. Our review concentrated on single lane systems that could be used for sorting. Prices ranged from \$25,000 for slow speed sorting (truck speed of 3 mph.) to \$65,000 for high speed sorting (truck speed of 30 to 40 mph.). This cost does not include overhead directional signals. Due to the high truck volumes in Michigan the need to sort trucks quickly was given priority when developing the cost estimates for the recommendations. A figure of \$65,000 dollars for the WIM scale was used and \$10,000 for directional signals was added to complete the equipment needs for this item.

Portable scales also vary widely in type and price. Individual wheel weighers are the least expensive at a cost of \$1,000 to \$2,000 each. In order to weigh a dual tire assembly for one axle four scales would be needed making the cost \$4,000 to \$8,000. Dual tire weighers range in cost from \$2,000 to \$3,500 each. To weigh an axle similar to that described above two scales would be needed making the total cost outlay \$4,000 to \$7,000. The scales being used by the Motor Carrier Division in Michigan are currently priced at \$3,250 each or \$6,500 for a pair. Estimates for recommendations should use a price of \$7,000 in order to cover any price increase.

#### PLUG-IN SCALES

The State of Oregon has recently converted several existing fixed scales to plug-in weigh stations. According to individuals in their Maintenance and Operations Division the cost to convert an existing scale pit last year was approximately \$4,000. This was also their estimated cost to convert an existing PITWS notch to accept a full load cell axle scale. The estimated cost of the scale (including installation) was \$7,000. Oregon did not need to add overhead lighting or directional signals to the sites they have converted. It is estimated that these items would cost approximately \$10,000 installed. A van carrying the scale readouts and printer would also be necessary to make a plug-in unit complete. A cost of \$15,000 for the van and \$1,500 dollars for the scale readouts and printer were used as they were the most current costs given from individuals contacted. Cost for recommendations should be as follows for the items needed:

Convert scale pit	-	\$ 5,000
Scale	-	\$ 7,500
Directional & overhead lighting	-	\$10,000
Van	-	\$15,000
Scale readouts and printers	-	\$ 1,600



MEMORANDUM

April 2, 1991  
Edina, Minnesota

TO: Files  
FROM: Tom Walsh  
SUBJECT: Anticipated Fine Revenue Increase Resulting  
From Implementation of Recommendations  
#1, #2, #4 & #5

Increased fine revenue resulting from the implementation of Recommendations #1, #2, #4 & #5 has been calculated based on an estimated average amount per citation (\$290). These calculations are also based on an estimate of the number of citations that will be issued based on the current relationship between the number of trucks weighed versus the number cited.

According to Mr. Gordon Conadle of the Monroe County Library System approximately 90% of the \$916,000 collected from the District Court in Erie come from citations written by Motor Carrier Division of the State Police. This is approximately \$824,000 ( $\$916,000 \times .9$ ). During Fiscal Year 1989 the MCD wrote 2833 citations at the Erie scales. Using these numbers a revenue per citation figure of \$290.86 ( $\$824,000/2833$ ) was developed. This figure has been rounded to \$290 for use in calculations.

**Short Range Recommendation #1:**

Keep the scales at Erie (northbound), Coldwater, New Buffalo and Port Huron open 24 hours per day, 365 days per year.

Location	Anticipated Revenue Increase	Current Revenue
Erie (NB)	\$1,124,330	\$199,810
Coldwater	\$ 562,020	\$114,840
New Buffalo	\$ 744,010	\$266,220
Port Huron	\$ 394,400	0
Total	\$2,824,760	\$580,870

**Short Range Recommendation #2**

Keep the scales at Grass Lake, Pontiac and Fowlerville open 24 hours per day, on weekdays.

Location	Anticipated Revenue Increase	Current Revenue
Grass Lake	\$ 845,060	\$629,880
Fowlerville	\$2,823,150	\$605,520
Pontiac	\$6,344,620	\$427,170
Total	<u>\$10,012,830</u>	<u>\$1,662,570</u>

**Short Range Recommendation #4:**

Keep the New Baltimore scales open one shift per day, five days per week.

Location	Anticipated Revenue Increase	Current Revenue
New Baltimore	<u>\$428,620</u>	<u>\$413,250</u>
Total	<u>\$428,620</u>	<u>\$413,250</u>

**Short Range Recommendation #5:**

Operate the scales at Ionia, Bridgeport, Cambridge Junction and Powers one shift per day each day for each weekday.

Location	Anticipated Revenue Increase	Current Revenue
Ionia	\$2,538,950	\$588,120
Bridgeport	\$ 224,750	\$206,770
Cambridge Junction	\$ 1,160	\$263,900
Powers	<u>\$ 24,650</u>	<u>\$ 4,060</u>
Total	<u>\$2,789,510</u>	<u>\$1,062,850</u>

TW/mg

## **SITE VISITS**

MEMORANDUM

Edina, Minnesota  
August 13, 1990

TO: Files

FROM: T. Walsh *tw*

SUBJECT: Michigan Weight Enforcement Study  
Minnesota Scale Visits

On Friday, August 10, 1990 Abe Kashani and I visited three different scale sites in the Twin Cities area. The first was located on I-35 in Burnsville.

This site consists of a set of scales for both the north and southbound roadways. Both scales are similar in design and located across the highway from each other. According to Carrier Enforcement Officers at this site, they have been using these scales for approximately 15 years. Within the past two years new digital read-out equipment has been installed in each scale house.

The scales are four platform, full load cell type with a full pit. There is also an "Honor" lane for empty trucks. Trucks pass over a rumble strip in this lane. Officers will verify the truck as empty by the way the truck passes over this strip. If empty they will continue on.

Trucks being weighed stop on the scale, if in compliance they are directed to go on by a green light near the end of the scale. If a citation is to be issued they will be directed to the parking area by the officer. The citation is then issued.

We then visited a fixed scale on Minnesota Highway 3. This is a Single Platform Mechanical Scale approximately 35 years old. This site serves both north and southbound traffic on Highway 3. No further inspection of this scale was made. No one was present and we were not able to obtain a key to this scale.

The St. Croix facilities on I-94 were then visited. This site is on the westbound roadway and handles truck traffic entering the State on I-94 from Wisconsin. Many innovative and state-of-the-art techniques are used at this location.

Trucks entering this site pass over a set of WIM scales which determine axle weights. Detector loops at this location determine overall vehicle length and axle spacing. A set of video cameras mounted on poles are used for determining the overall vehicle height. This information is fed to a computer which in turn triggers overhead directional signals directing trucks to either the fixed scales or the inspection lane.

Trucks directed to the scale will pull forward to a set of four platform, full load cell scales (similar to I-35 scales). Weights are then read in the adjacent scale house. Communication between enforcement officers and drivers is by either loudspeaker or overhead message board in front of the driver. If a citation is to be issued, the weights will be posted on the board and the driver directed to the parking facility. If he is in compliance he will be directed to leave the station.

Trucks directed to the inspection lane will be given a cursory visual inspection as they enter the lane. The inspector will either wave the truck through or have them pull over for a more in depth inspection.

All of the scales sites are cleaned by the crews manning them. This includes sweeping the pits weekly. During the winter they are also responsible for cleaning snow, ice and salt off of the load cells. Major maintenance is performed by DOT crews.

TW/mg



MEMORANDUM

Edina, Minnesota  
September 7, 1990

TO: Files  
FROM: T. Walsh  
RE: Michigan Scale Visits

On September 5 and September 6, 1990 I visited several scale sites in Michigan. The following information was gathered during these visits.

**Erie Scales on I-75**

When I arrived at this site both the northbound and southbound scales were closed. Shortly thereafter Sgt. Sharron Van Campen arrived and proceeded to open the scales. She explained that normally the scales are open 24 hours per/day, five days a week. The only shutdowns are due to lack of staff. If there is a problem with the static scale they will set up portable scales in the inspection lane and continue weighing trucks. This will continue until the permanent scales are fixed.

These scale facilities were built in 1986. They (both north and southbound) use WIM scales to obtain axle weights on trucks entering the facilities. Loop detectors are also tied into the system in order to obtain axle spacings. A computer uses the information to detect possible violators. When a possible violator is detected they are directed to pull around the scale house to go over the static scales. While being weighed, a visual inspection of the vehicle is made. If in compliance the vehicle is directed back to the freeway. If not, they will be directed to the parking area while the citation is written.

MCSAP inspections are also performed at these sites. The inspection process begins after a truck crosses the WIM scales. Once across the scales a truck will proceed toward the scale house. A cursory visual inspection of the vehicle is made as the vehicle passes in front of the scale house. Plates and permit stickers are checked as is the general condition of the vehicle. If Carrier Enforcement Officers feel a more in-depth inspection is warranted they will direct the vehicle to the parking area for further inspection. A driver equipment compliance form is filled out and given to the driver. A citation may also be issued at this time. While officers are doing this other trucks will not be checked due to lack of manpower. Sgt. Van Campen informed me that a separate inspection facility with appropriate staff is planned at these scales.

These scales were open 1693 hours for the month of August, 1990. During this time 749 trucks were directed to the back of the facility for further review. Of these, 307 received complete vehicle inspections. A total of 523 citations were issued for either weight or equipment violations. In addition, it should be noted that officers issued 50 criminal complaints, 5 non-criminal complaints, 18 operating under the influence complaints and 10 other motor carrier violations.

As stated earlier the scales are open 24 hours a day. Normal staffing is one officer per shift. This breaks down to three eight hour shifts for staffing purposes. Officers assigned to this scale rotate shifts every two weeks. They will not be assigned to any other location unless a Special Transportation Enforcement Team (STET) operation is in progress. A STET operation typically involves 15 to 20 officers. They will "saturate" an area with road patrols in an effort to decrease the number of truck law violators in a given area. A STET will only be used if it is believed a problem exists. Staff will submit daily reports of their activities to their supervisor. This will then be used to monitor their efforts and eventually determines which funding source will be billed for their time. All staff perform day to day maintenance on the facility. MDOT forces handle all other maintenance (mowing, plowing, pavement maintenance).

Sgt. Van Campen was asked what she liked about the site. She stated that one of the major benefits was having the truck come close to the scale house. This allows the officer a close look at the vehicle and operator. This arrangement also allows officers to keep their eyes on the trucks as they move toward and then through the inspection and static scale area. Also the computer equipment allows the officers to get a large amount of information quickly. She didn't have anything negative to say about the site layout but said it will be better when the inspection facilities are added. Additional staff would also help with the total truck enforcement effort. Sgt. Van Campen then took me over to meet the local court Magistrate, Mr. Clyde Guthrie.

Mr. Guthrie is the Magistrate for the 1st District Court. According to Mr. Guthrie, the 1st and 5th Districts (both south corners of the state) have the highest intake of citation revenue. I asked him if we could get copies of revenue data for his district. He stated that he could not give out this information without his Judge's or Court Administrator's approval. This would be the same for each court. Mr. Guthrie suggested we contact each District court to try to obtain information. All of the addresses and contacts are available in the 1990 Michigan Bar Association Journal. He thought Motor Carrier Enforcement Officers did a very good job.

### **The Cambridge Junction Scales - US 12 and M50**

Upon arrival at this site, I introduced myself to Sgt. Dale Boudreau. The following information was obtained during a conversation with him. This facility was built in 1970. A nine foot mechanical platform scale was installed. In 1983 or 1984 this scale was removed and an electronic static scale was added. Like the Erie scale one person covers the site for a shift. This allows trucks to go unchecked if the officer is issuing a citation or performing an inspection. This site runs two shifts staying open from 7 a.m. to 11 p.m. Shifts rotate weekly. One road patrol car also operates in conjunction with this facility.

According to Sgt. Boudreau the current scales are both accurate and dependable. This site rarely has mechanical problems. When a scale problem does come up it is normally repaired in 2 to 3 weeks. If there is problem with the scales, truck inspections continue to be performed. The only reason the site shuts down is due to lack of staff.

Approximately 200 to 250 trucks pass through the site in each shift. An average of less than one truck per shift is cited for overweight. Approximately five to six trucks per shift are pulled over for further inspection. Of these, three or four are typically pulled out of service. Sgt. Boudreau made the point that most of the trucks they stop never realized scales were located at this intersection. A lot of these were on routes to get around other scales because they are knowingly violating weight or safety regulations. Sgt. Boudreau feels that the number of citations to the number of trucks weighed/inspected ratio is high at these scales.

Because this site is located on a four way intersection it presents a unique situation. Truck traffic from all four direction gets weighed and checked. The signing to inform drivers about the station is often unclear to the truck operators. Once a truck is on site the officers have problems checking permits and plates. This is because regulations require that the plates and stickers be put on the right side of the truck and the scale house is on the left. In order to improve enforcement Sgt. Boudreau felt they would need more road patrols. These would be used to "saturate" the bypass routes. I asked if his crews ever operated the scales during off-shift hours or on weekends. He stated that they do it occasionally but felt due to lower truck traffic volume it didn't do much good.

#### **Grass Lake Scales on I-94**

The Grass Lake scale site consists of two facilities, one for eastbound traffic and one for westbound traffic. At this time the eastbound facility is closed while improvements are made. Once I arrived at the site I met Officer T. J. Bissell.

Officer Bissell informed me that the facilities were originally built in the sixties. No real improvements had been made until two to three years ago when the WIM scales were added. More recently, the scale house was expanded and new electronics for the scale were installed. They are still in the process of "de-bugging" the system.

These scales will normally be open 24 hours per day (three shifts), five days a week. An occasional weekend will be scheduled. There will be one officer per shift. The first two shifts (7 a.m. to 11 p.m.) will have approximately 150 to 225 trucks per hour come through the site. The third shift sees about 100 trucks in a shift. Officer Bissell said of all trucks she sees in a day about five will be stopped. Of those five, one may be for a weight violation. All trucks stopped or directed to the parking lot will get a thorough inspection. While the officer is performing an inspection trucks are passing over the scales but no one is there to monitor vehicle weight or condition. The trucks are effectively bypassing the scales.

The officers initial look at a vehicle is from approximately 25 feet away. From this distance the officer cannot get a close look at either the vehicle or the operator. Only severe problems show up. Officer Bissell feels if trucks came closer to the scale house officers would be better able to select the trucks they pull over for inspections.

One road patrol car is assigned to this scale. The patrol car is normally assigned during the first shift. All of the officers work on a two week shift rotation. Unlike other sites, officers do not provide day to day maintenance. Inmates are brought in from a prison that is nearby to handle these tasks.

On September 6, 1990 I met Lt. Billy Mohr at his office in Lansing. He gave me a short tour of the office describing each of the staffs responsibilities. We then proceeded to the New Baltimore scales.

#### **New Baltimore Scales on I-94**

This scale site consists of a facility for both eastbound and westbound traffic. The only difference between them is an office located in the eastbound structure. Officer Mohr and I stopped at the westbound facility. Besides Lt. Mohr I spoke with Officer S. A. Fischer.

These scales are open 24 hours a day (3 shifts) 5 days a week. The facilities will be opened sporadically on the weekends. Shifts rotate every two weeks with officers working alone in the house or road patrol car.

The layout of the site is similar to Grass Lake. Unlike Grass Lake this facility has no WIM sorter upon entry to the scales and the trucks come much closer to the house. The facility has not been updated. It presently has a 10 foot by 14 foot platform scale. According to Officer Fischer it is out of calibration approximately once a month. The repair time varies greatly. It still functions well enough for officers to know whether or not to take another weighing of the truck. If they want another weighing they will set up portable scales in the parking area. It was noted that on the eastbound scale the approach grades are so bad an eleven axle truck can't be weighed accurately. As with the other locations, if a truck is pulled off for further investigation, trucks will continue to pass over the scales with no one checking them. This condition can last from 15 minutes to one hour. All of the truck counting equipment at this site was inoperative. Officer estimates of truck volume are used for daily reports.

Very few violators are cited for weight violations at this location. A very easy and short bypass exists. Anyone who knows that they are in violation will use this route. Many others will use this bypass thereby not taking a chance. The officers do, however, perform safety inspections on five to six trucks per shift and often cite companies for vehicle safety violations.

It was felt that more road patrols of the bypass routes would make the site more effective. Another improvement staff thought would help is a mechanics pit adjacent to the truck parking lane. They felt this would make the inspection of the underside of the vehicle quicker and safer. Officer Fischer indicated a need for lights set close to the pavement in the truck inspection area. This would help officers decrease the time spent performing vehicle inspections at night. There is talk of adding this item in the near future. He also felt increased staffing, especially for road patrols, would be the biggest improvement to the enforcement effort.

#### **Blue Water Bridge Scale I-94**

This scale is unique both because of location and setup. The Blue Water Bridge is a major connector between the United States and Canada. There are no weighing facilities on the Canadian side of the border thereby putting more pressure on Michigan to control weights on the bridge. This bridge had weight restrictions placed on it several years ago and there became a need to control truck weights on the bridge. The problem was that there was no room to build a full scale facility due to the location. Instead, a single platform scale was built into the road adjacent to the Port Authority Building.

This scale is staffed on an as needed basis. If a custom official checking vehicles feels a truck is overloaded he may contact the Carrier Enforcement Unit offices located in the Port Authority Building. An officer will then escort the vehicle down a ramp, around the corner and onto the scale. A full weighing and inspection will then occur. Lt. Mohr also stated that tips will come in from other agencies on when to expect violators. These trucks will then be checked. If a truck needs to be impounded it can be taken around one more corner and impounded if necessary.

A new Port Authority complex is to be constructed during the next three years. A new carrier enforcement facility, including scales and inspection facilities, will be part of this complex.

It should be noted that all vehicles must be legal to leave all Michigan scales. If a truck is misloaded a load shift will be necessary or if overloaded, the trucks weight must be brought into compliance.

Printers have been removed from all Michigan scales. The Department of Agriculture required that time allowed for the scale to average or effectively hold a constant reading prior to printing. This severely hampered weighing efforts.

The impression I got was that everyone believed in what they were doing. All felt increased staffing was the way to improve enforcement. It seemed that most felt an additional person in the scale house to continue checking trucks while one officer attends to vehicle inspection and citation writing would help. Road patrols, however, was where most thought real impact could be made.

Lt. Mohr feels the MCD and DOT need to better inform the public of what the Motor Carrier Division is trying to achieve and why.

## **CORRESPONDENCE**

WILBUR  
SMITH  
ASSOCIATES  
ENGINEERS • PLANNERS

SUITE 209, 4445 WEST 77th STREET • EDINA, MN 55435 • (612) 831-3232

September 27, 1990

Lt. Bill Mohr  
Motor Carrier Division  
Michigan State Police  
300 North Clippert  
Lansing, Michigan 48913

Dear Lt. Mohr:

As we discussed via telephone, I am providing you with a draft of a letter which I have prepared for the signature of Colonel Davis. Basically, the letter provides a little background of the study and requests information concerning the number of citations presented, actions taken, and the resulting fines assessed.

I have enclosed a listing of all of the courts that should receive the letter. We have also requested that the information be returned to Col. Davis directly primarily because I feel the response will be better if the communications are between the courts and the Colonel.

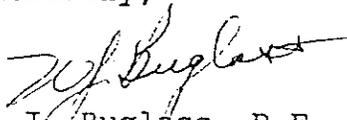
You may wish to suggest to Colonel Davis that self addressed envelopes be included to minimize any problems associated with the return of the requested information.

I would suggest that each letter being sent to a court have an original signature of Colonel Davis and that it be sent out on Michigan State Police letterhead. As you know, the requested information is very important to the study. I feel, and I believe you and Bob Tuttle agree, that we will receive the best response to our request if it is made by Colonel Davis.

Please feel free to contact me if you have any questions or require additional information.

Thanks much.

Sincerely,



W. J. Buglass, P.E.  
Vice President

WJB/mg

ALBANY, NY • ALBUQUERQUE, NM • ANAHEIM, CA • ARIZONA, AZ • BALTIMORE, MD • BOSTON, MA • CHICAGO, IL • CHARLOTTE, NC • COLUMBIA, SC • COLUMBUS, OH • FALLS CHURCH, VA • HONG KONG • HOUSTON, TX • KNOXVILLE, TN  
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PROVIDENCE, RI • RALEIGH, NC • RICHMOND, VA • ROSELLE, IL • SAN FRANCISCO, CA • SINGAPORE • TORONTO, CANADA • WASHINGTON, DC • WOODBRIDGE, NJ

EMPLOYEE-OWNED COMPANY

September 27, 1990

RE: Michigan Weight Enforcement Study  
Michigan Department of Transportation

Dear

The Michigan Department of Transportation in cooperation with the Motor Carrier Division of the Michigan State Police is currently making a detailed study of the State's Weight Enforcement Program. Weight enforcement on Michigan's highway systems is extremely important and is directly related to the ultimate cost of building and reconstructing highways. In addition to our analysis of the Weight Enforcement Program in Michigan, data is being collected concerning the issuance of overweight/oversize permits, certification of scales, and truck safety inspections (MCSAP). Data is also being collected from several states bordering the State of Michigan as well as from a few states that have developed comprehensive weight enforcement plans.

The Michigan Department of Transportation has engaged Wilbur Smith Associates, a transportation consulting engineering firm with excellent credentials in all aspects of transportation engineering. The Firm has completed a number of similar studies in recent years and has accumulated a considerable amount of data in the area of weight enforcement.

A considerable amount of data has already been collected concerning the operation of scales in Michigan, including the number of trucks weighed, hours of operation, and the number of citations issued. In order to make an effective analysis of the cost of operations versus fine revenue and pavement damage, it is important that we obtain information from each of the courts concerning the disposition of citations. It would therefore be very much appreciated if you could provide me with the following information:

- . Number of citations presented
  - Truck weight
  - Truck size
  - Truck safety

- . Number of convictions/dismissals
  - Truck weight
  - Truck size
  - Truck safety
  
- . Fine assessed
  - Truck weight
  - Truck size
  - Truck safety

Please assemble the requested information for either fiscal or calendar years. Naturally; we will appreciate any information which you can provide, but it would be most helpful if you could provide at least two years of experience. In addition, if your court has established a guide or schedule of fines, I would very much appreciate receiving a copy.

Since the study is progressing rather rapidly, I would appreciate your response to my request as expeditiously as possible and certainly not later than the end of October, 1990. If you have any questions concerning my request, please feel free to contact Lt. Bill Mohr who is in charge of our Weight Enforcement Program. His telephone number is 517-373-4910.

Your cooperation will be greatly appreciated.

Sincerely,

Colonel Ritchie Davis  
Michigan State Police



JAMES J. BLANCHARD, GOVERNOR  
DEPARTMENT OF STATE POLICE  
COL. R. T. DAVIS, DIRECTOR

MOTOR CARRIER DIVISION

300 NORTH CLIPPERT  
LANSING, MICHIGAN 48913PHONE: ~~517/336-6195~~

517/336-6195

October 8, 1990

Dear Court Administrator:

Re: Michigan Weight Enforcement Study

The Michigan Department of Transportation in cooperation with the Motor Carrier Division of the Michigan State Police, is currently making a detailed study of the State's Weight Enforcement Program.

Weight enforcement on Michigan's highway system is extremely important and is directly related to the ultimate cost of building and reconstructing highways. In addition to our analysis of the Weight Enforcement Program in Michigan, data is being collected concerning the issuance of overweight/oversize permits, certification of scales, and truck safety inspections. Data is also being collected from several states bordering the State of Michigan as well as from a few states that have developed comprehensive weight enforcement plans.

The Michigan Department of Transportation has engaged Wilbur Smith Associates, a transportation consulting engineering firm with excellent credentials in all aspects of transportation engineering. Wilbur Associates has completed a number of similar studies in recent years and has accumulated a considerable amount of data in the area of weight enforcement.

A great amount of data has already been collected concerning the operation of scales in Michigan, including the number of trucks weighed, hours of operation, and the number of citations issued. In order to make an effective analysis of the cost of operations versus fine revenue and pavement damage, it is important that we obtain information from each of the courts concerning the disposition of citations. It would, therefore, be very much appreciated if you could provide us with the total number of citations presented, total number of convictions and dismissals, and the total fines assessed for citations issued for truck weight, truck size, and truck safety.

Please assemble the requested information for either fiscal or calendar years. Naturally, we would appreciate any information which you could provide, but it would be most helpful if you could provide at least two of your most recent years of experience. In addition, if your court has established a guide or schedule of fines, I would very much appreciate receiving a copy.



Court Administrators  
Page Two  
October 8, 1990

Since the study is progressing rather rapidly, I would appreciate your response to my request as expeditiously as possible, and certainly not later than October 31, 1990. For your convenience, I have provided you with a form in which to record the information requested. Should you have any questions, please feel free to contact Lieutenant Billy Mohr of this office who is in charge of our Weight Enforcement Program. He may be reached by telephoning, 517/336-6195.

Thank you in advance for your cooperation.

Sincerely,



Anthony L. Philipps, Capt.  
Commanding Officer  
Motor Carrier Division

ALP/ds

Attachment

1990 MICHIGAN WEIGHT ENFORCEMENT STUDY

	TIME PERIOD COVERED			
	First Year		Second Year	
	From:	To:	From:	To:
(Enter Dates)				
TOTAL CITATIONS PRESENTED FOR:	FIRST YEAR TOTALS		SECOND YEAR TOTALS	
Truck Weight				
Truck Size				
Truck Safety				
TOTAL CONVICTIONS FOR:				
Truck Weight				
Truck Size				
Truck Safety				
TOTAL DISMISSALS FOR:				
Truck Weight				
Truck Size				
Truck Safety				
FINES ASSESSED FOR:				
Truck Weight				
Truck Size				
Truck Safety				

C-6

Name of Court: \_\_\_\_\_ Contact Person: \_\_\_\_\_

Address: \_\_\_\_\_ Telephone No.: (\_\_\_\_) \_\_\_\_\_

RETURN TO: MSP/Motor Carrier Division  
 Attn: Insp. Daniel Folstad  
 300 N. Clippert St.  
 Lansing, MI 48912

PLEASE RETURN COMPLETED FORM BY OCTOBER 31, 1990.



JOHN ENGLER, GOVERNOR  
DEPARTMENT OF STATE POLICE  
COL. MICHAEL D. ROBINSON, DIRECTOR

MOTOR CARRIER DIVISION

300 NORTH CLIPPERT  
LANSING, MICHIGAN 48913

PHONE: 517-336-6195

March 1, 1991

Mr. Tom Walsh  
Wilbur Smith Associates, Inc.  
4445 West 77th St., Suite 209  
Edina, Minnesota 55435

Dear Tom:

I am writing in response to your request for a definition of STET. (Specialized Transportation Enforcement Team).

Since 1988, STET activities of the Motor Carrier Division have increased from 10 to 12 operations under the direction of headquarters personnel, to 166 operations directed by headquarters and district personnel.

The concept of STET involves the selection of officers from around the state to operate on a flexible basis for the performance of enforcement functions. The current primary team consists of three permanent positions supplemented by field officers to staff an operation directed by headquarters.

District STET operations are any special enforcement activity involving two or more officers for a duration of at least one work shift. The definition of STET has evolved to be any special enforcement activity involving two or more officers for a duration of at least one complete work shift. Large operations are planned by headquarters and smaller operations are planned by district supervisors.

Should you have any questions regarding the information provided, please contact me at 517/336-6195.

Sincerely,

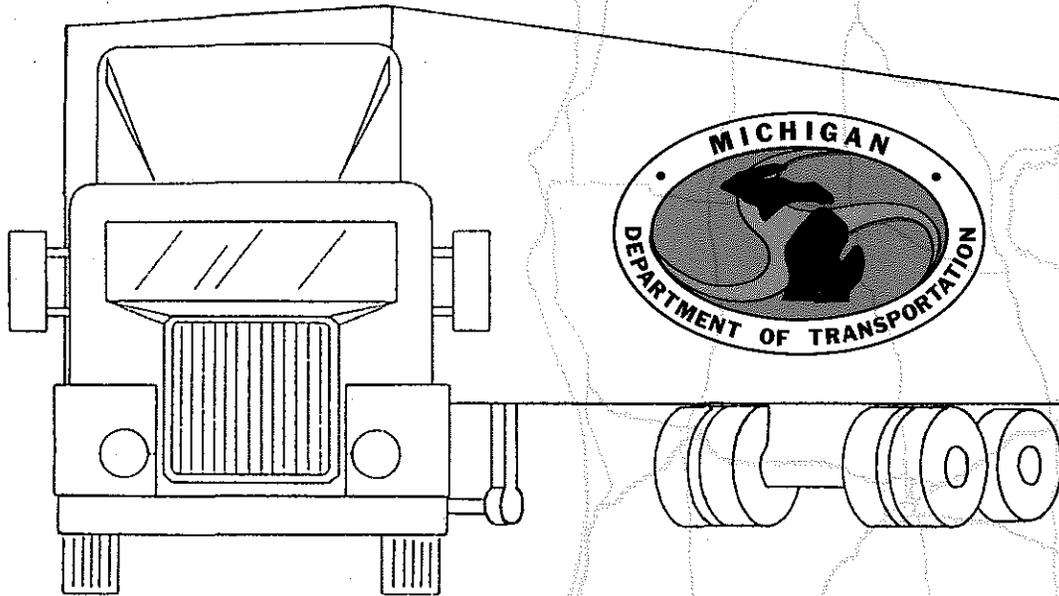
Lt. Billy Mohr  
Field Support Commander  
Motor Carrier Division

BGM



# TRUCK WEIGHT ENFORCEMENT AND SAFETY INSPECTION STUDY

VOLUME II



**Prepared For:**

**The State of Michigan  
Department of Transportation**

**Prepared By:**

**Wilbur Smith Associates**



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CONSTRUCTION & TECHNOLOGY  
DIVISION



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1991  
v.2

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Prepared by Coleman and Associates,  
Subconsultant to Wilbur Smith Associates

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Indiana

Ohio

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Ontario

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California

Oregon

Arizona

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**NATIONAL SURVEY**



Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO \_\_\_\_\_

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES \_\_\_\_\_ NO \_\_\_\_\_

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	_____	_____
Portable	_____	_____
Semi-Portable	_____	_____

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	_____
State Highways	_____
County Highways	_____
City Highways	_____

- 5) Do you enforce weight laws within metropolitan areas?

YES \_\_\_\_\_ NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES \_\_\_\_\_ NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO \_\_\_\_\_

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	_____	NO	_____
Interstate Highways	YES	_____	NO	_____
Truck Volumes	YES	_____	NO	_____
Types of Freight	YES	_____	NO	_____
Future Development	YES	_____	NO	_____
Other		_____		_____

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES \_\_\_\_\_ NO \_\_\_\_\_

10) Do you use "weigh-in-motion" equipment?

YES \_\_\_\_\_ NO \_\_\_\_\_

11) If you use "weigh-in-motion" equipment, where is it used?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES \_\_\_\_\_ NO \_\_\_\_\_

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES \_\_\_\_\_ NO \_\_\_\_\_

14) How many total staff are involved in trucking regulation? \_\_\_\_\_  
How many staff are dedicated to:

WEIGHT ENFORCEMENT \_\_\_\_\_ SAFETY INSPECTION \_\_\_\_\_

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES \_\_\_\_\_ NO \_\_\_\_\_

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_\_ NO \_\_\_\_

17) Have you developed a plan for the maintenance of scale equipment?

YES \_\_\_\_ NO \_\_\_\_

18) Is scale maintenance performed by a:

state agency \_\_\_\_

private company \_\_\_\_

19) Please indicate the agency responsible for:

Enforcement \_\_\_\_\_  
Safety Inspection \_\_\_\_\_  
Permits \_\_\_\_\_  
Data Collection \_\_\_\_\_  
Scale Maintenance \_\_\_\_\_  
Certification \_\_\_\_\_

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES \_\_\_\_ NO \_\_\_\_

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_\_ NO \_\_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES \_\_\_\_ NO \_\_\_\_

23) Do you attempt to realize revenue greater than costs?

YES \_\_\_\_ NO \_\_\_\_

24) Where do fine revenues go?

General Fund \_\_\_\_\_  
Transportation Fund \_\_\_\_\_  
Other \_\_\_\_\_

25) How is your weight enforcement program financed?

General Fund \_\_\_\_\_  
Transportation Fund \_\_\_\_\_  
Fine Revenue \_\_\_\_\_  
Other \_\_\_\_\_

26) How is your safety inspection program financed?

General Fund \_\_\_\_\_  
Transportation Fund \_\_\_\_\_  
Fine Revenue \_\_\_\_\_  
Other \_\_\_\_\_

PLEASE USE THE FOLLOWING LINES FOR ANY ADDITIONAL COMMENTS.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Prepared By \_\_\_\_\_

Name

Title

Agency \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Telephone \_\_\_\_\_

Copies of any reports or studies recently prepared by your State would be greatly appreciated.



DETAILED RESPONSES TO THE QUESTIONNAIRE

1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES

Arkansas	Colorado	Florida
Hawaii	Indiana	Louisiana
Maryland	Michigan	Mississippi
Montana	Nebraska	New Hampshire
North Carolina	Ohio	Oklahoma
South Carolina	Tennessee	Virginia

CANADIAN PROVINCES

Alberta	British Columbia	Newfoundland
Northwest Territories	Nova Scotia	Quebec
Ontario	Manitoba	

2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES

Alaska	Arkansas	Colorado
Georgia	Hawaii	Idaho
Kentucky	Maryland	Michigan
Minnesota	Mississippi	Nebraska
New Hampshire	New Jersey	New Mexico
North Carolina	Ohio	Oklahoma
Oregon	Rhode Island	South Carolina
Tennessee	Virginia	Washington

CANADIAN PROVINCES

British Columbia	Newfoundland	NW Territories
Quebec	Saskatchewan	Manitoba

5) Do you enforce weight laws within metropolitan areas?

YES

Alaska	Arizona	Arkansas
California	Colorado	Connecticut
Delaware	Florida	Georgia
Hawaii	Idaho	Indiana
Iowa	Kansas	Kentucky
Louisiana	Maryland	Michigan
Minnesota	Mississippi	Montana
Nebraska	Nevada	New Hampshire
New Jersey	New Mexico	New York
North Carolina	North Dakota	Ohio
Oklahoma	Oregon	Pennsylvania
Rhode Island	South Carolina	Tennessee
Vermont	Virginia	Wisconsin
Wyoming		

CANADIAN PROVINCES

British Columbia	Newfoundland	NW Territories
Quebec	Ontario	Nova Scotia

6) Do you have a siting plan for fixed scales?

YES

Arizona	Arkansas	California
Connecticut	Florida	Georgia
Hawaii	Idaho	Illinois
Indiana	Iowa	Kentucky
Maryland	Mississippi	Missouri
Montana	Nevada	New Hampshire
New Jersey	New Mexico	North Carolina
Pennsylvania	South Carolina	Tennessee
Virginia	Washington	Wisconsin
Wyoming		

CANADIAN PROVINCES

Alberta	British Columbia	Newfoundland
Quebec	Saskatchewan	Ontario
Manitoba		

7) Have you removed any fixed facilities from service?

YES

Arkansas	Connecticut	Florida
Idaho	Illinois	Iowa
Kentucky	Michigan	Mississippi
Missouri	Montana	New Hampshire
New Jersey	New Mexico	New York
North Carolina	Ohio	Oregon
South Carolina	Vermont	Virginia
Wisconsin		

CANADIAN PROVINCES

British Columbia	Quebec	Manitoba
------------------	--------	----------

8) Are the fixed site locations determined by considering any of the following:

YES - Boundaries

Arizona	Arkansas	California
Connecticut	Georgia	Idaho
Illinois	Indiana	Iowa
Kansas	Kentucky	Louisiana
Michigan	Minnesota	Mississippi
Missouri	Montana	Nebraska
New Hampshire	New Jersey	New Mexico
North Carolina	North Dakota	Ohio
Oklahoma	Oregon	Pennsylvania
South Carolina	Tennessee	Virginia
Washington	Wisconsin	Wyoming

CANADIAN PROVINCES

Alberta  
Nova Scotia  
Ontario

British Columbia  
Quebec  
Manitoba

NW Territories  
Saskatchewan

YES - Interstate Highways

Arizona  
Colorado  
Florida  
Idaho  
Iowa  
Louisiana  
Minnesota  
Montana  
New Jersey  
North Dakota  
Pennsylvania  
Wisconsin

Arkansas  
Connecticut  
Georgia  
Illinois  
Kansas  
Maryland  
Mississippi  
Nebraska  
New Mexico  
Ohio  
Tennessee  
Wyoming

California  
Delaware  
Hawaii  
Indiana  
Kentucky  
Michigan  
Missouri  
New Hampshire  
North Carolina  
Oklahoma  
Washington

CANADIAN PROVINCES

Alberta  
Saskatchewan  
Nova Scotia

British Columbia  
Ontario

Quebec  
Manitoba

YES - Truck Volumes

Alaska  
California  
Delaware  
Hawaii  
Indiana  
Kentucky  
Michigan  
Montana  
New Jersey  
North Dakota  
Pennsylvania  
Virginia  
Wyoming

Arizona  
Colorado  
Florida  
Idaho  
Iowa  
Louisiana  
Minnesota  
Nebraska  
New Mexico  
Oklahoma  
South Carolina  
Washington

Arkansas  
Connecticut  
Georgia  
Illinois  
Kansas  
Maryland  
Missouri  
New Hampshire  
North Carolina  
Oregon  
Tennessee  
Wisconsin

CANADIAN PROVINCES

Alberta  
Quebec  
Manitoba

British Columbia  
Saskatchewan  
Nova Scotia

Newfoundland  
Ontario

YES - Types of Freight

Alaska  
Idaho  
Michigan  
New Hampshire  
Wisconsin

California  
Illinois  
Minnesota  
South Carolina  
Wyoming

Hawaii  
Indiana  
Nebraska  
Washington

CANADIAN PROVINCES

Alberta

British Columbia

Ontario

YES - Future Development

Alaska  
California  
Florida  
Indiana  
Kentucky  
Montana  
New Jersey  
South Carolina  
Wisconsin

Arizona  
Colorado  
Hawaii  
Iowa  
Maryland  
New Hampshire  
New Mexico  
Tennessee  
Wyoming

Arkansas  
Delaware  
Idaho  
Kansas  
Michigan  
North Dakota  
Oregon  
Washington

CANADIAN PROVINCES

Alberta  
Manitoba

British Columbia  
Newfoundland

Ontario  
Saskatchewan

YES - Other

Indiana

Oregon

Wisconsin

CANADIAN PROVINCES

British Columbia

Quebec

Saskatchewan

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES

Arizona  
Colorado  
Idaho  
Mississippi  
Nebraska  
New Mexico  
Vermont  
Wyoming

Arkansas  
Connecticut  
Iowa  
Missouri  
Nevada  
North Dakota  
Washington

California  
Delaware  
Michigan  
Montana  
New Jersey  
Oregon  
Wisconsin

CANADIAN PROVINCES

Alberta  
Saskatchewan

British Columbia  
Ontario

Quebec  
Manitoba

10) Do you use "weigh-in-motion" equipment?

YES

Alaska  
California  
Delaware  
Illinois  
Maryland  
Mississippi  
North Carolina  
Oregon  
South Carolina  
Wisconsin  
Wyoming

Arizona  
Colorado  
Georgia  
Indiana  
Michigan  
Nevada  
North Dakota  
Pennsylvania  
Virginia

Arkansas  
Connecticut  
Hawaii  
Kentucky  
Minnesota  
New Mexico  
Ohio  
Rhode Island  
Washington

CANADIAN PROVINCES

Alberta Newfoundland Quebec  
Saskatchewan Ontario Manitoba

12) Do you use plug-in-type fixed weigh stations?

YES

Idaho Maryland New Hampshire  
Oregon Pennsylvania

CANADIAN PROVINCES

Alberta Saskatchewan Manitoba

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES

Florida Hawaii Idaho  
Maryland Michigan Minnesota  
Oregon Washington

CANADIAN PROVINCES

Alberta Newfoundland Saskatchewan  
Manitoba

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES

Arkansas California Colorado  
Connecticut Delaware Florida  
Georgia Idaho Illinois  
Indiana Iowa Kentucky  
Louisiana Maryland Michigan  
Minnesota Mississippi Missouri  
Montana Nebraska Nevada  
New Hampshire New Jersey New Mexico  
New York North Carolina North Dakota  
Ohio Oklahoma Pennsylvania  
Rhode Island South Carolina Tennessee  
Vermont Virginia Washington  
Wisconsin

CANADIAN PROVINCES

Alberta British Columbia Nova Scotia  
Quebec

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES

Alaska Arkansas Colorado  
Delaware Florida Hawaii

Illinois  
Kentucky  
Mississippi  
New Hampshire  
North Carolina  
Oklahoma  
Tennessee  
Washington

Indiana  
Maryland  
Missouri  
New Jersey  
North Dakota  
Oregon  
Vermont  
Wisconsin

Iowa  
Michigan  
Montana  
New Mexico  
Ohio  
Pennsylvania  
Virginia  
Wyoming

CANADIAN PROVINCES

NW Territories  
Saskatchewan  
British Columbia

Manitoba  
Ontario

Quebec  
Nova Scotia

17) Have you developed a plan for the maintenance of scale equipment?

YES

Alaska  
Colorado  
Georgia  
Indiana  
Louisiana  
Missouri  
Nevada  
New Mexico  
Oregon  
South Carolina  
Virginia  
Wyoming

Arizona  
Delaware  
Idaho  
Kansas  
Maryland  
Montana  
New Hampshire  
North Carolina  
Pennsylvania  
Tennessee  
Washington

Arkansas  
Florida  
Illinois  
Kentucky  
Mississippi  
Nebraska  
New Jersey  
Oklahoma  
Rhode Island  
Vermont  
Wisconsin

CANADIAN PROVINCES

Alberta  
Quebec

British Columbia  
Nova Scotia

Newfoundland

18) States where scale maintenance is performed by a state agency.

Arizona  
Florida  
Indiana  
Louisiana  
Mississippi  
Nebraska  
North Carolina  
Oregon  
Vermont  
Wisconsin

Arkansas  
Georgia  
Iowa  
Maryland  
Missouri  
Nevada  
Ohio  
Pennsylvania  
Virginia  
Wyoming

Connecticut  
Illinois  
Kansas  
Minnesota  
Montana  
New Hampshire  
Oklahoma  
Tennessee  
Washington

CANADIAN PROVINCES

Alberta

Newfoundland

Quebec

States where scale maintenance is performed by private company.

Alaska	Arizona	California
Colorado	Delaware	Hawaii
Idaho	Illinois	Indiana
Kansas	Kentucky	Maryland
Michigan	Minnesota	Montana
Nevada	New Jersey	New Mexico
New York	North Carolina	North Dakota
Oklahoma	Pennsylvania	Rhode Island
South Carolina	Virginia	Wisconsin
Wyoming		

CANADIAN PROVINCES

Alberta	British Columbia	NW Territories
Quebec	Saskatchewan	Ontario
Manitoba	Nova Scotia	

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES

Arizona	Arkansas	California
Connecticut	Delaware	Florida
Georgia	Hawaii	Idaho
Illinois	Indiana	Iowa
Kentucky	Maryland	Michigan
Mississippi	Montana	Nebraska
New Hampshire	New Jersey	New Mexico
New York	North Carolina	North Dakota
Ohio	Oklahoma	Oregon
Pennsylvania	Rhode Island	South Carolina
Tennessee	Vermont	Virginia
Washington	Wisconsin	Wyoming

CANADIAN PROVINCES

Alberta	British Columbia	NW Territories
Quebec	Saskatchewan	Manitoba
Nova Scotia		

21) If no, are you considering the development of a truck weight enforcement program?

YES

Alaska		
--------	--	--

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES

Alaska	Arizona	Arkansas
Colorado	Connecticut	Delaware
Florida	Georgia	Hawaii

Idaho  
Iowa  
Maryland  
Mississippi  
Nebraska  
New Mexico  
North Dakota  
Pennsylvania  
Tennessee  
Washington

Illinois  
Kansas  
Michigan  
Missouri  
New Hampshire  
New York  
Oklahoma  
Rhode Island  
Vermont  
Wisconsin

Indiana  
Kentucky  
Minnesota  
Montana  
New Jersey  
North Carolina  
Oregon  
South Carolina  
Virginia

CANADIAN PROVINCES

Alberta  
Saskatchewan

British Columbia  
Ontario

Quebec  
Manitoba

23) Do you attempt to realize revenue greater than costs?

YES

Arizona  
Illinois  
Michigan  
New Hampshire  
Oklahoma

Colorado  
Indiana  
Mississippi  
New Mexico  
Tennessee

Georgia  
Maryland  
Nebraska  
North Dakota  
Virginia

CANADIAN PROVINCES

British Columbia

Ontario

24) States where the fine revenue goes to the general fund.

Alaska  
Hawaii  
Kentucky  
Minnesota  
Nevada  
New York  
Tennessee

Connecticut  
Iowa  
Louisiana  
Mississippi  
New Jersey  
Oregon  
Virginia

Delaware  
Kansas  
Maryland  
Montana  
New Mexico  
Rhode Island  
Wisconsin

CANADIAN PROVINCES

Alberta  
NW Territories  
Ontario

British Columbia  
Quebec  
Manitoba

Newfoundland  
Saskatchewan

States where the fine revenue goes to the transportation fund.

Colorado  
Idaho  
Montana  
North Dakota  
Washington

Florida  
Illinois  
New Hampshire  
Pennsylvania

Georgia  
Iowa  
North Carolina  
Vermont

States where the fine revenue goes to other funds.

Arizona	Arkansas	California
Idaho	Indiana	Michigan
Missouri	Montana	Nebraska
Nevada	New York	Ohio
Oklahoma	Oregon	South Carolina
Wisconsin	Wyoming	

CANADIAN PROVINCES

Nova Scotia	Quebec
-------------	--------

25) State where weight enforcement is financed by a general fund.

Alaska	Delaware	Hawaii
Indiana	Kansas	Kentucky
Mississippi	New Jersey	New York
North Dakota	Oklahoma	South Carolina
Tennessee	Vermont	Virginia
Washington	Wyoming	

CANADIAN PROVINCES

Alberta	British Columbia	Quebec
Saskatchewan	Ontario	

States where weight enforcement is financed by a transportation fund.

Arkansas	California	Colorado
Connecticut	Florida	Georgia
Illinois	Iowa	Kentucky
Maryland	Michigan	Minnesota
Missouri	Montana	Nebraska
Nevada	New Hampshire	New Mexico
North Carolina	Oklahoma	Oregon
Pennsylvania	Tennessee	Virginia
Wisconsin	Wyoming	

CANADIAN PROVINCES

Newfoundland	NW Territories	Manitoba
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States where weight enforcement is financed by other funds.

Arizona	Idaho	Indiana
Kentucky	Louisiana	Nevada
Ohio	Rhode Island	Washington

CANADIAN PROVINCES

Nova Scotia

26) States where safety inspection program is financed by a general fund.

Alaska	Arizona	Delaware
Georgia	Hawaii	Idaho
Illinois	Indiana	Kansas
Kentucky	Mississippi	New York
North Dakota	Oklahoma	South Carolina
Vermont	Virginia	Washington

CANADIAN PROVINCES

Alberta	British Columbia	Quebec
Saskatchewan	Ontario	

States where safety inspection program is financed by a transportation fund.

Arkansas	California	Colorado
Connecticut	Florida	Illinois
Iowa	Kentucky	Maryland
Minnesota	Missouri	Montana
Nebraska	Nevada	New Hampshire
North Carolina	Oklahoma	Oregon
Pennsylvania	Wisconsin	

CANADIAN PROVINCES

Newfoundland	NW Territories	Manitoba
--------------	----------------	----------

States where safety inspection is financed by other funds.

Alaska	Arizona	Arkansas
Colorado	Connecticut	Indiana
Kentucky	Michigan	Missouri
Montana	Nevada	New Jersey
New Mexico	New York	North Carolina
North Dakota	Ohio	Pennsylvania
Rhode Island	Vermont	Virginia
Washington	Wisconsin	Wyoming

CANADIAN PROVINCES

Nova Scotia

9-13-40



Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO XX

2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO \_\_\_\_\_

3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>11</u>	<u>Axle Load, Platform</u>
Portable	<u>        </u>	<u>Wheel Load Weighers</u>
Semi-Portable	<u>0</u>	<u>                                </u>

4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

	<u>Jurisdiction</u>	<u>Miles</u>
	Interstate Highways	<u>1,089</u>
	State Highways	<u>4,230</u>
	County Highways	<u>None</u>
	City Highways	<u>220</u>

5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

6) Do you have a siting plan for fixed scales?

YES \_\_\_\_\_ NO X

7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO X



16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO      To a limited extent

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency     

private company X

19) Please indicate the agency responsible for:

Enforcement Division of Measurement Standards, Department of Commerce & Economic  
Safety Inspection Division of State Troopers, Dept. of Public Safety Developme  
Permits Division of Measurements Stds, Department of Commerce & Economic Developmen  
Data Collection Department of Transportation and Public Facilities  
Scale Maintenance Division of Measurement Standards, Dept. of Commerce & Economic  
Certification Division of Measurement Standards, DCED Developmen

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES      NO X

21) If no, are you considering the development of a truck weight enforcement program?

YES X NO     

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO     

23) Do you attempt to realize revenue greater than costs?

YES      NO X

24) Where do fine revenues go?

General Fund X  
Transportation Fund       
Other





received  
9-10-90

Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO X (SEE COMMENTS)

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES \_\_\_\_\_ NO X

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>18</u>	<u>AXLE LOAD &amp; MULTI PLATFORM</u>
Portable	_____	_____
Semi-Portable	_____	_____

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>1170</u>
State Highways	<u>5230</u>
County Highways	_____
City Highways	_____

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO X



16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_\_\_ NO X (SEE COMMENTS)

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO \_\_\_\_\_

18) Is scale maintenance performed by a:

state agency X  
private company X (BOTH)

19) Please indicate the agency responsible for:

Enforcement ADOT/MVD & AZ DEPT. OF PUBLIC SAFETY  
Safety Inspection AZ DEPT. OF PUBLIC SAFETY  
Permits ADOT/MVD  
Data Collection ADOT (VARIOUS SECTIONS)  
Scale Maintenance ADOT/EQUIPMENT SERVICES  
Certification AZ DEPT. OF WEIGHTS & MEASURES

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO \_\_\_\_\_

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_\_\_ NO \_\_\_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO \_\_\_\_\_

23) Do you attempt to realize revenue greater than costs?

YES X NO \_\_\_\_\_

24) Where do fine revenues go?

General Fund \_\_\_\_\_  
Transportation Fund \_\_\_\_\_  
Other X

HIGHWAY USERS REVENUE  
FUND & LOCAL JUDICIAL  
JURISDICTIONS

25) How is your weight enforcement program financed?

General Fund \_\_\_\_\_  
Transportation Fund \_\_\_\_\_  
Fine Revenue \_\_\_\_\_  
Other  X

26) How is your safety inspection program financed?

HIGHWAY USER REVENUE  
FUND & FEDERAL HIGHWAY  
ADMIN.

General Fund  X  SEE 1)  
Transportation Fund \_\_\_\_\_  
Fine Revenue \_\_\_\_\_  
Other  X  SEE 1)

1) ASSIGNED TO AZ. DEPT. OF PUBLIC SAFETY

PLEASE USE THE FOLLOWING LINES FOR ANY ADDITIONAL COMMENTS.

RE: 1 - FIXED SITES (18) PORTS OF ENTRY ARE OPERATED BY ADOT/MVD.

MOBILE WEIGHT ENFORCEMENT PROGRAM (PORTABLE & SEMI-PORTABLE SCALES)  
IS ADMINISTERED BY AZ. DEPT. OF PUBLIC SAFETY.

RE: 11 - AS PART OF THE "CRESCENT PROJECT", WIM EQUIPMENT IS TO BE INSTALLED  
AT THREE OF OUT PORTS OF ENTRY, AT THE BORDERS OF NEW MEXICO, CALIFORNIA  
AND UTAH.

RE: 12 - ALTHOUGH OUR AGENCY DOES NOT PRESENTLY USE PLUG-IN-TYPE FIXED  
WEIGH STATIONS, THIS CONCEPT HAS BEEN ENVISIONED FOR FUTURE INTRASTATE  
ROADSIDE WEIGH STATIONS APPLICATION. THE AZ. DEPT. OF PUBLIC SAFETY IS  
RESPONSIBLE FOR INTRASTATE WEIGHT ENFORCEMENT AND IS ACTIVELY PURSUING  
THIS CONCEPT.

RE: 15 - AZ. DEPT. OF PUBLIC SAFETY, GENERALLY IS RESPONSIBLE FOR BYPASS  
INTERDICTION OPERATIONS.

RE: 16 - THIS FALLS UNDER THE PURVIEW OF AZ. DEPT. OF PUBLIC SAFETY.

Prepared By

George V. Rays  
PROGRAM MANAGER  
Name Title

Agency

ARIZONA MOTOR VEHICLE DIVISION (ADOT)

Address

1801 W. JEFFERSON

PHOENIX, AZ 85007

Telephone

(602) 255-8340

Copies of any reports or studies recently prepared by your State would be greatly appreciated.



8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	<u>X</u>	NO	_____
Interstate Highways	YES	<u>X</u>	NO	_____
Truck Volumes	YES	<u>X</u>	NO	_____
Types of Freight	YES	_____	NO	<u>X</u>
Future Development	YES	<u>X</u>	NO	_____
Other	_____			

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES X NO \_\_\_\_\_

10) Do you use "weigh-in-motion" equipment?

YES X NO \_\_\_\_\_

11) If you use "weigh-in-motion" equipment, where is it used?

I-40 - West Memphis Area

I-30 - Hope Area

12) Do you use plug-in-type fixed weigh stations?

YES \_\_\_\_\_ NO X

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES \_\_\_\_\_ NO X

14) How many total staff are involved in trucking regulation? 302

How many staff are dedicated to:

WEIGHT ENFORCEMENT \_\_\_\_\_ SAFETY INSPECTION \_\_\_\_\_

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES X NO \_\_\_\_\_

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency X

private company     

19) Please indicate the agency responsible for:

Enforcement Arkansas Highway Police-Division of Ark. Highway & Transportation Dept.

Safety Inspection Same

Permits Same

Data Collection Same

Scale Maintenance Same

Certification Arkansas Highway & Transportation Department

Materials Division

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO     

21) If no, are you considering the development of a truck weight enforcement program?

YES      NO     

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO     

23) Do you attempt to realize revenue greater than costs?

YES      NO X

24) Where do fine revenues go?

General Fund       
Transportation Fund       
Other X





8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
Interstate Highways	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
Truck Volumes	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
Types of Freight	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
Future Development	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
Other	_____			

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

COLORADO DEPARTMENT of HIGHWAYS  
UTILIZES WEIGH-IN-MOTION EQUIPMENT THROUGHOUT THE STATE  
FOR VEHICLE SAMPLING PURPOSES.

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 155  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 144 SAFETY INSPECTION 11 PLUS 32 PART-TIME

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency     

private company X

19) Please indicate the agency responsible for:

Enforcement PORT of ENTRY, STATE PATROL  
Safety Inspection PORT of ENTRY, COLO STATE PATROL  
Permits PORT of ENTRY, STATE PATROL, DEPARTMENT of HIGHWAYS  
Data Collection PORT of ENTRY, DEPARTMENT of HIGHWAYS  
Scale Maintenance PORT of ENTRY  
Certification WEIGHTS AND MEASURES, DEPARTMENT of AGRICULTURE

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES      NO X

21) If no, are you considering the development of a truck weight enforcement program? DEVELOPED EARLIER

YES      NO     

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO     

23) Do you attempt to realize revenue greater than costs?

YES X NO     

24) Where do fine revenues go?

General Fund       
Transportation Fund X  
Other





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES  NO

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES  NO

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>3</u>	<u>PLATFORM (CAPABLE OF WEIGHING AXLES)</u>
Portable	<u>40</u>	<u>CORNER WEIGHTS (WEIGH)</u>
Semi-Portable	<u>1</u>	<u>ELECTRIC DYWIDAG (TRUCK MOUNTED)</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

	<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>YES</u>	<u>          </u>
State Highways	<u>YES</u>	<u>          </u>
County Highways	<u>YES</u>	<u>          </u>
City Highways	<u>YES</u>	<u>          </u>

- 5) Do you enforce weight laws within metropolitan areas?

YES  NO

- 6) Do you have a siting plan for fixed scales?

YES  NO

- 7) Have you removed any fixed facilities from service?

YES  NO

8) Are the fixed site locations determined by considering any of the following:

Boundaries YES  NO

Interstate Highways YES  NO

Truck Volumes YES  NO

Types of Freight YES  NO

Future Development YES  NO

Other LOCAL ACCEPTANCE

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO  JURISDICTIONAL LAW

10) Do you use "weigh-in-motion" equipment?

YES  NO  NOT FOR ENFORCEMENT RESEARCH @ THIS TIME

11) If you use "weigh-in-motion" equipment, where is it used?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? \_\_\_\_\_  
How many staff are dedicated to:

WEIGHT ENFORCEMENT \_\_\_\_\_ SAFETY INSPECTION 45

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_ NO X

17) Have you developed a plan for the maintenance of scale equipment?

YES \_\_\_ NO X

18) Is scale maintenance performed by a:

state agency X WHICH PRACTICAL

private company \_\_\_

19) Please indicate the agency responsible for:

Enforcement CT STATE POLICE  
Safety Inspection CT DEPT OF MOTOR VEHICLES  
Permits CT DEPT OF TRANSPORTATION  
Data Collection FC  
Scale Maintenance DEPT OF TRANSPORTATION  
Certification DEPT OF TRANSPORTATION

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO \_\_\_

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_ NO \_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO \_\_\_

23) Do you attempt to realize revenue greater than costs? THROUGH FINES ONLY

YES \_\_\_ NO X

24) Where do fine revenues go?

General Fund X  
Transportation Fund \_\_\_  
Other \_\_\_





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO  X

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES \_\_\_\_\_ NO  X

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u> 1 </u>	<u> Triple Section Toledo </u>
Portable	<u> 2 </u>	<u> Haeni's &amp; Lodec </u>
Semi-Portable	<u> 0 </u>	<u> </u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u> 41 </u>
State Highways	<u> 3,810 </u>
County Highways	<u> 0 </u>
City Highways	<u> 0 </u>

- 5) Do you enforce weight laws within metropolitan areas?

YES  X  NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES \_\_\_\_\_ NO  X

- 7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO  X

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	_____	NO	<u>X</u>
Interstate Highways	YES	<u>X</u>	NO	_____
Truck Volumes	YES	<u>X</u>	NO	_____
Types of Freight	YES	_____	NO	<u>X</u>
Future Development	YES	<u>X</u>	NO	_____
Other		_____		

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES X NO \_\_\_\_\_

10) Do you use "weigh-in-motion" equipment?

YES X NO \_\_\_\_\_

11) If you use "weigh-in-motion" equipment, where is it used?

At the fixed site

---

---

12) Do you use plug-in-type fixed weigh stations?

YES \_\_\_\_\_ NO X

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES \_\_\_\_\_ NO X

14) How many total staff are involved in trucking regulation? \_\_\_\_\_  
How many staff are dedicated to:

WEIGHT ENFORCEMENT \_\_\_\_\_ SAFETY INSPECTION \_\_\_\_\_

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES X NO \_\_\_\_\_

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO       

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO       

18) Is scale maintenance performed by a:

state agency       

private company X

19) Please indicate the agency responsible for:

Enforcement	<u>Any Police Department</u>
Safety Inspection	<u>Any Police Department</u>
Permits	<u>DE Department of Transportation</u>
Data Collection	<u>DE Department of Transportation</u>
Scale Maintenance	<u>DE Department of Public Safety</u>
Certification	<u>DE Department of Agriculture</u>

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO       

21) If no, are you considering the development of a truck weight enforcement program?

YES n/a NO       

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO       

23) Do you attempt to realize revenue greater than costs?

YES        NO X

24) Where do fine revenues go?

General Fund	<u>X</u>
Transportation Fund	<u>      </u>
Other	<u>      </u>



Received  
10-10-90

Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO     

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES      NO X

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>21</u>	<u>Full mechanical; Levertronics; Full electronics</u>
Portable	<u>260</u>	<u>Haenni</u>
Semi-Portable	<u>6</u>	<u>LoDec; Lake Goodwin</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>1,394</u>
State Highways	<u>10,406</u>
County Highways	<u>67,574</u>
City Highways	<u>28,587</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO     

- 6) Do you have a siting plan for fixed scales?

YES X NO     

- 7) Have you removed any fixed facilities from service?

YES X NO

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
Interstate Highways	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
Truck Volumes	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
Types of Freight	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
Future Development	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
Other	_____			

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

Current plans call for construction sites on the Interstate System for WIM.

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 265  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 163 SAFETY INSPECTION 86

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency X

private company     

19) Please indicate the agency responsible for:

Enforcement Florida Department of Transportation (FDOT)  
Office of Motor Carrier Compliance (OMCC)/Weight & Vehicle Registration Enforcement Section  
Safety Inspection FDOT OMCC Safety & Hazardous Materials Enforcement Section  
Permits FDOT Maintenance/Permits Office  
Data Collection FDOT OMCC  
Scale Maintenance FDOT OMCC  
Certification Florida Department of Agriculture/Bureau of Weights & Measures

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO     

21) If no, are you considering the development of a truck weight enforcement program?

YES      NO     

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO     

23) Do you attempt to realize revenue greater than costs?

YES      NO X

24) Where do fine revenues go?

General Fund       
Transportation Fund X  
Other





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO X

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO \_\_\_\_\_

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>18</u>	<u>See Attachment</u>
Portable	<u>550</u>	<u>Various</u>
Semi-Portable	<u>18</u>	<u>Lodac</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>1244.00</u>
State Highways	<u>16606.62</u>
County Highways	<u>27620.36</u>
City Highways	<u>12166.28</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO X



16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_\_\_ NO X

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO \_\_\_\_\_

18) Is scale maintenance performed by a:

state agency X

private company \_\_\_\_\_

19) Please indicate the agency responsible for:

Enforcement Dept of Transportation (P&E)  
Safety Inspection GA Public Service Commission  
Permits Dept of Transportation (P&E)  
Data Collection Dept of Transportation (Planning Data Svcs)  
Scale Maintenance Dept of Transportation (P&E)  
Certification Dept of Transportation (P&E)

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO \_\_\_\_\_

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_\_\_ NO \_\_\_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO \_\_\_\_\_

23) Do you attempt to realize revenue greater than costs?

YES X NO \_\_\_\_\_

24) Where do fine revenues go?

General Fund \_\_\_\_\_  
Transportation Fund X  
Other \_\_\_\_\_





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO \_\_\_\_\_

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO \_\_\_\_\_

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>1</u>	<u>Axle platform "Toledo"</u>
Portable	<u>0</u>	_____
Semi-Portable	<u>8</u>	<u>Axle platform "Eldec"</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>26</u>
State Highways	_____
County Highways	_____
City Highways	_____

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO X

8) Are the fixed site locations determined by considering any of the following:

Boundaries YES \_\_\_\_\_ NO X

Interstate Highways YES X NO \_\_\_\_\_

Truck Volumes YES X NO \_\_\_\_\_

Types of Freight YES X NO \_\_\_\_\_

Future Development YES X NO \_\_\_\_\_

Other \_\_\_\_\_

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES \_\_\_\_\_ NO X

10) Do you use "weigh-in-motion" equipment?

YES X NO \_\_\_\_\_

11) If you use "weigh-in-motion" equipment, where is it used?

At fixed scale site.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES \_\_\_\_\_ NO X

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES X NO \_\_\_\_\_

14) How many total staff are involved in trucking regulation? 26  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 13 SAFETY INSPECTION 13

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES \_\_\_\_\_ NO X

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO       

17) Have you developed a plan for the maintenance of scale equipment?

YES        NO X

18) Is scale maintenance performed by a:

state agency       

private company X

19) Please indicate the agency responsible for:

Enforcement Dept. of Transportation, Motor Vehicle Safety Office

Safety Inspection Dept. of Transportation, Motor Vehicle Safety Office

Permits Dept. of Transportation, Highways District Offices

Data Collection Dept. of Transportation, Highway Planning

Scale Maintenance Private company

Certification Dept. of Agriculture, Measurement Standards Branch

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO       

21) If no, are you considering the development of a truck weight enforcement program?

YES        NO       

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO       

23) Do you attempt to realize revenue greater than costs?

YES        NO X

24) Where do fine revenues go?

General Fund X

Transportation Fund       

Other





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES  NO \_\_\_\_\_

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>17</u>	<u>mostly 12' x 12' Weightronix</u>
Portable	<u>11</u>	<u>Haenni - Hydraulic wheel weigher</u>
Semi-Portable	<u>4</u>	<u>World wide Weighing / Kodac</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>611</u>
State Highways	<u>4206</u>
County Highways	<u>2667</u>
City Highways	<u>741</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES  NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES  NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES  NO \_\_\_\_\_

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Interstate Highways	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Truck Volumes	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Types of Freight	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Future Development	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Other	_____	

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

WIM equip is used at SHRP sites but  
not for enforcement

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 88

How many staff are dedicated to:  
same people  
WEIGHT ENFORCEMENT 73 SAFETY INSPECTION 73 (Not MCSAP)

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_ NO \_\_\_

17) Have you developed a plan for the maintenance of scale equipment?

YES  NO \_\_\_

18) Is scale maintenance performed by a:

state agency \_\_\_

private company

19) Please indicate the agency responsible for:

Enforcement Idaho Transportation Dept (ITD)  
Safety Inspection Idaho Dept of Law Enforcement (DLE)  
Permits ITD  
Data Collection ITD  
Scale Maintenance ITD  
Certification Idaho Dept of Agriculture

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES  NO \_\_\_

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_ NO \_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  NO \_\_\_

23) Do you attempt to realize revenue greater than costs?

YES \_\_\_ NO

24) Where do fine revenues go?

General Fund  
Transportation Fund   
Other

25) How is your weight enforcement program financed?

General Fund	_____
Transportation Fund	_____
Fine Revenue	_____
Other	_____ /

26) How is your safety inspection program financed?

General Fund	_____ /
Transportation Fund	_____
Fine Revenue	_____
Other	_____

PLEASE USE THE FOLLOWING LINES FOR ANY ADDITIONAL COMMENTS.

No authority for moving violations or to make  
 traffic stops for any reason.

Prepared By

Mark Young - Port of Entry Manager

Name	Title
------	-------

Agency

Idaho Transp Dept

Address

Po Box 7129

Boise, ID 83707-1129

Telephone

208 334 - 8688

Copies of any reports or studies recently prepared by your State would be greatly appreciated.



Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO

2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES \_\_\_\_\_ NO

3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	32	20-4 platform - 12-Single Platform
Portable	None	
Semi-Portable	12	Lodec model 3082

4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

Jurisdiction	Miles
Interstate Highways	1638
State Highways	13867
County Highways	
City Highways	

*Center line*

5) Do you enforce weight laws within metropolitan areas?

YES \_\_\_\_\_ NO

6) Do you have a siting plan for fixed scales?

YES  NO \_\_\_\_\_

7) Have you removed any fixed facilities from service?

YES  NO \_\_\_\_\_

8) Are the fixed site locations determined by considering any of the following:

Boundaries YES  NO   
Interstate Highways YES  NO   
Truck Volumes YES  NO   
Types of Freight YES  NO   
Future Development YES  NO   
Other \_\_\_\_\_

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

① Sorting at fixed & platform scales  
② HSWIM on Mainline for data collection  
③ Portable HSWIM for data collection

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 203  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 120 SAFETY INSPECTION 42

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES  NO

17) Have you developed a plan for the maintenance of scale equipment?

YES  NO

18) Is scale maintenance performed by a:

state agency

private company

19) Please indicate the agency responsible for:

Enforcement State Police

Safety Inspection " "

Permits Dept of Transp.

Data Collection " "

Scale Maintenance " "

Certification Dept. of Agriculture

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES  NO

21) If no, are you considering the development of a truck weight enforcement program?

YES  NO

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  NO

23) Do you attempt to realize revenue greater than costs?

YES  NO

24) Where do fine revenues go?

General Fund   
Transportation Fund   
Other





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO     

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES      NO X

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>    </u>	<u>VARIOUS MAKES / PLATFORM SCALES</u>
Portable	<u>    </u>	<u>LOW PROFILE + MD-400 LOAD MOUNTS</u>
Semi-Portable	<u>    </u>	<u>N/A</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>1120</u>
State Highways	<u>10,156</u>
County Highways	<u>UNK</u>
City Highways	<u>UNK</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO     

- 6) Do you have a siting plan for fixed scales?

YES X NO     

- 7) Have you removed any fixed facilities from service?

YES      NO X

8) Are the fixed site locations determined by considering any of the following:

Boundaries YES X NO       
Interstate Highways YES X NO       
Truck Volumes YES X NO       
Types of Freight YES X NO       
Future Development YES X NO       
Other PORT OF ENTRY LOCATIONS

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES      NO X

10) Do you use "weigh-in-motion" equipment?

YES X NO     

11) If you use "weigh-in-motion" equipment, where is it used?

I-94 NORTHERN PORTION OF STATE

12) Do you use plug-in-type fixed weigh stations?

YES      NO X

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES      NO X

14) How many total staff are involved in trucking regulation? Approx 202  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 202 SAFETY INSPECTION 202

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES X NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES  NO

17) Have you developed a plan for the maintenance of scale equipment?

YES  NO

18) Is scale maintenance performed by a:

state agency

private company

19) Please indicate the agency responsible for:

Enforcement INDIANA STATE POLICE  
Safety Inspection INDIANA STATE POLICE  
Permits INDIANA STATE POLICE  
Data Collection INDIANA STATE POLICE / IND. DEPT. OF HIGHWAYS  
Scale Maintenance INDIANA STATE POLICE / IND. DEPT. OF TRANSPORTATION  
Certification INDIANA STATE BOARD OF HEALTH

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES  NO

21) If no, are you considering the development of a truck weight enforcement program?

YES  NO

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  NO

23) Do you attempt to realize revenue greater than costs?

YES  NO

24) Where do fine revenues go?

General Fund   
Transportation Fund   
Other





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO X

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES \_\_\_\_\_ NO X

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>32</u>	<u>15 full load cell shallow pits, 17 ElectroLever full pits</u>
Portable	<u>272</u>	<u>Haenni WL100 and WL101</u>
*Semi-Portable	<u>1</u>	<u>Senstek</u>

\*Limited success

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>781.96</u>
State Highways	<u>9,350.36</u>
County Highways	<u>89,493.89</u>
City Highways	<u>12,775.61</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES X NO \_\_\_\_\_

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	<u>X</u>	NO	_____
Interstate Highways	YES	<u>X</u>	NO	_____
Truck Volumes	YES	<u>X</u>	NO	_____
Types of Freight	YES	_____	NO	<u>X</u>
Future Development	YES	<u>X</u>	NO	_____
Other				_____

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES X NO \_\_\_\_\_

10) Do you use "weigh-in-motion" equipment?

YES \_\_\_\_\_ NO X

11) Future scale facilities will include "weigh-in-motion".  
If you use "weigh-in-motion" equipment, where is it used?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES \_\_\_\_\_ NO X

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES \_\_\_\_\_ NO X

14) How many total staff are involved in trucking regulation? 88  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 88 SAFETY INSPECTION 88

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES X NO \_\_\_\_\_

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES   X   NO       

17) Have you developed a plan for the maintenance of scale equipment?

YES        NO   X  

Our plan, at present, only covers a two-year period.

18) Is scale maintenance performed by a:

state agency   X   Motor Vehicle Enforcement

private company       

19) Please indicate the agency responsible for:

Enforcement   Department of Transportation, Motor Vehicle Enforcement    
Safety Inspection   Department of Transportation, Motor Vehicle Enforcement    
Permits   Department of Transportation, Motor Carrier Services    
Data Collection   Department of Transportation, Planning and Research    
Scale Maintenance   Department of Transportation, Motor Vehicle Enforcement    
Certification   Department of Agriculture  

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES   X   NO       

21) If no, are you considering the development of a truck weight enforcement program?

YES        NO       

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES   X   NO       

23) Do you attempt to realize revenue greater than costs?

YES        NO   X  

24) Where do fine revenues go?

General Fund       X        
Transportation Fund       X        
Other       

The first 2.5 million dollars goes to the Road Use Tax Fund for repair of county and city bridges. All other fines go to the General Fund.





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO X

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES \_\_\_\_\_ NO X

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>8</u>	<u>Electric</u>
Portable	<u>91</u>	<u>Hydraulic</u>
Semi-Portable	<u>5</u>	<u>Electric</u>
<u>Temp (Fixed)</u>	<u>4</u>	<u>Electric</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	_____
State Highways	_____
County Highways	<u>Unknown</u>
City Highways	<u>Unknown</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES \_\_\_\_\_ NO X

- 7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO X



16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_ NO \_\_\_ *N.A.*

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO \_\_\_

18) Is scale maintenance performed by a:

state agency X

private company X

19) Please indicate the agency responsible for:

Enforcement	<u>Kansas Highway Patrol (KHP)</u>
Safety Inspection	<u>" " "</u>
Permits	<u>Kansas Highway Patrol (Enforcement), KDOT, Dept. of Revenue (ISSUE)</u>
Data Collection	<u>KDOT</u>
Scale Maintenance	<u>KHP &amp; Private Agencies</u>
Certification	<u>KDOT</u>

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES \_\_\_ NO X (*Have had such a program over five years*)

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_ NO \_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO \_\_\_

23) Do you attempt to realize revenue greater than costs?

YES \_\_\_ NO X

24) Where do fine revenues go?

General Fund	<u>X</u>
Transportation Fund	___
Other	___





received  
9-10-70

Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO

2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES  NO \_\_\_\_\_

3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>18</u>	<u>(6 weight in motion) (12 static weight)</u>
Portable	<u>476</u>	<u>GEC MD 400</u>
Semi-Portable	<u>0</u>	<u>_____</u>

4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

Jurisdiction	Miles
Interstate Highways	<u>13,828</u>
State Highways	<u>27,409</u>
County Highways	<u>36,268 By Request Only</u>
City Highways	<u>5,415 Not Enforced</u>

5) Do you enforce weight laws within metropolitan areas?

YES  NO \_\_\_\_\_

6) Do you have a siting plan for fixed scales?

YES  NO \_\_\_\_\_

7) Have you removed any fixed facilities from service?

YES  NO \_\_\_\_\_

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Interstate Highways	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Truck Volumes	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Types of Freight	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Future Development	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Other	_____	

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

AT 6 PERMANENT FIXED WEIGH FACILITIES

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 218  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 150 SAFETY INSPECTION 218

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES  NO

17) Have you developed a plan for the maintenance of scale equipment?

YES  NO

18) Is scale maintenance performed by a:

state agency

private company

19) Please indicate the agency responsible for:

Enforcement DIVISION OF MOTOR VEHICLE ENFORCEMENT  
Safety Inspection DIVISION OF MOTOR VEHICLE ENFORCEMENT  
Permits DIVISION OF MOTOR VEHICLES  
Data Collection HIGHWAYS (KY)  
Scale Maintenance DIVISION OF ROAD PROPERTY & TRUCK MANNING SCALES (Toledo)  
Certification DIVISION OF WEIGHTS & MEASURES Fixed LOCATIONS  
OUR DIVISION CERTIFIES PORTABLE SCALES

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES  NO

21) If no, are you considering the development of a truck weight enforcement program?

YES  NO

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  NO

23) Do you attempt to realize revenue greater than costs?

YES  NO

24) Where do fine revenues go?

General Fund   
Transportation Fund   
Other





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO     

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES      NO X

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type	
Fixed	<u>4</u>	<u>FAIRBANKS TRIPLE PLATFORM HWY SCALES</u>	<u>90-3000</u>
	<u>4</u>	<u>FAIRBANK</u>	<u>90. 7300</u>
Portable	<u>    </u>	<u>MD 500</u>	<u>    </u>
Semi-Portable	<u>    </u>	<u>ELDEC</u>	<u>    </u>

*7 SINGLE FAIRBANKS SCALES*

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

	<u>Jurisdiction</u>	<u>Miles</u>
X	Interstate Highways	<u>840</u>
UNITE	States Highways	<u>2,137</u>
STATE	County Highways	<u>13,645</u>
PARISH	City Highways	<u>    </u>

*INCL. CITIES*

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO     

- 6) Do you have a siting plan for fixed scales?

YES      NO X

- 7) Have you removed any fixed facilities from service?

YES      NO X

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Interstate Highways	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Truck Volumes	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Types of Freight	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Future Development	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Other	<input type="checkbox"/>	

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

N/A

---

---

---

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? \_\_\_\_\_  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 198 SAFETY INSPECTION None

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_\_\_ NO X \_\_\_\_\_

17) Have you developed a plan for the maintenance of scale equipment?

YES X \_\_\_\_\_ NO \_\_\_\_\_

18) Is scale maintenance performed by a:

Contract-Fixed - State Agency-portables state agency \_\_\_\_\_  
private company \_\_\_\_\_

19) Please indicate the agency responsible for:

Enforcement LA DOTD Weights and Standards  
Safety Inspection LA DPS Office of State Police  
Permits LA DOTD Truck Permits Office  
Data Collection LA DOTD Traffic and Planning  
Scale Maintenance Contracted fixed Fairbanks Morse - Mobiles DOTD Lab  
Certification LA DA Weights and Measures

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES \_\_\_\_\_ NO X \_\_\_\_\_

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_\_\_ NO X \_\_\_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

N/A YES \_\_\_\_\_ NO \_\_\_\_\_

23) Do you attempt to realize revenue greater than costs?

YES \_\_\_\_\_ NO X \_\_\_\_\_

24) Where do fine revenues go?

General Fund X  
Transportation Fund \_\_\_\_\_  
Other \_\_\_\_\_





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES  NO

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES  NO

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>6</u>	<u>10X24-10X10-10X32 STAEETER AMET</u>
Portable	<u>226</u>	<u>HAENI LOW PROFILE</u>
Semi-Portable	<u>3</u>	<u>3 PLATFORM LODEC</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>376</u>
State Highways	<u>5200</u>
County Highways	<u>13577</u>
City Highways	<u>4102</u>

ALL

- 5) Do you enforce weight laws within metropolitan areas?

YES  NO

- 6) Do you have a siting plan for fixed scales?

YES  NO

- 7) Have you removed any fixed facilities from service?

YES  NO

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
Interstate Highways	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
Truck Volumes	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
Types of Freight	YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
Future Development	YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
Other	_____			

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

INTERSTATE 70 SCALE HOUSES AND INTERSTATE 83 SCALE HOUSE.

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 121  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 62 SAFETY INSPECTION 59

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES  NO

17) Have you developed a plan for the maintenance of scale equipment?

YES  NO

18) Is scale maintenance performed by a:

state agency  SELF MAINTENANCE  
private company  Semi + Fixed Scale,

*portable's*

19) Please indicate the agency responsible for:

Enforcement MD State Police  
Safety Inspection MD State Police  
Permits MD Dept of Transportation  
Data Collection MD State Police and M.D.O.T.  
Scale Maintenance MD State Police  
Certification MD State Police

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES  NO

21) If no, are you considering the development of a truck weight enforcement program?

YES  NO

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  NO

23) Do you attempt to realize revenue greater than costs?

YES  NO

24) Where do fine revenues go?

General Fund   
Transportation Fund   
Other





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO \_\_\_\_\_

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO \_\_\_\_\_

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>40</u>	<u>Streeter Richardson/Fairbanks Morriss</u>
Portable	<u>132</u>	<u>MD-500</u>
Semi-Portable	<u>1</u>	<u>L-Deck</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>684</u>
State Highways	<u>10,062</u>
County Highways	_____
City Highways	_____

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES X NO \_\_\_\_\_

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	<u>X</u>	NO	_____
Interstate Highways	YES	<u>X</u>	NO	_____
Truck Volumes	YES	_____	NO	_____
Types of Freight	YES	_____	NO	_____
Future Development	YES	_____	NO	_____
Other	_____			

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES X NO \_\_\_\_\_

10) Do you use "weigh-in-motion" equipment?

YES X NO \_\_\_\_\_

11) If you use "weigh-in-motion" equipment, where is it used?

Interstate Highways  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES \_\_\_\_\_ NO X

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES \_\_\_\_\_ NO X

14) How many total staff are involved in trucking regulation? 205  
How many staff are dedicated to:

WEIGHT ENFORCEMENT All SAFETY INSPECTION \_\_\_\_\_

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES X NO \_\_\_\_\_

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES  X  NO    

17) Have you developed a plan for the maintenance of scale equipment?

YES  X  NO    

18) Is scale maintenance performed by a:

state agency  X

private company    

19) Please indicate the agency responsible for:

Enforcement  Mississippi State Tax Commission   
Safety Inspection  Public Service Commission   
Permits  Mississippi State Tax Commission   
Data Collection  Mississippi State Highway Department   
Scale Maintenance  Mississippi State Tax Commission   
Certification  Mississippi State Highway Department

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES  X  NO    

21) If no, are you considering the development of a truck weight enforcement program?

YES      NO    

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  X  NO    

23) Do you attempt to realize revenue greater than costs?

YES  X  NO    

24) Where do fine revenues go?

General Fund  X   
Transportation Fund       
Other





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES  NO

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES  NO

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>37</u>	_____
Portable	<u>17</u>	_____
Semi-Portable	<u>0</u>	_____

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>1,141.8</u>
State Highways	<u>31,110.4</u>
County Highways	_____
City Highways	_____

- 5) Do you enforce weight laws within metropolitan areas?

YES  NO

- 6) Do you have a siting plan for fixed scales?

YES  NO

- 7) Have you removed any fixed facilities from service?

YES  NO

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Interstate Highways	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Truck Volumes	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Types of Freight	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Future Development	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Other	_____	

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 188  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 188 SAFETY INSPECTION 188

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency X

private company     

19) Please indicate the agency responsible for:

Enforcement Highway Patrol  
Safety Inspection Highway Patrol  
Permits Highway Department  
Data Collection       
Scale Maintenance Highway Patrol  
Certification Highway Patrol and Department of Agriculture

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES      NO X

21) If no, are you considering the development of a truck weight enforcement program?

YES      NO X

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO     

23) Do you attempt to realize revenue greater than costs?

YES      NO X

24) Where do fine revenues go?

General Fund       
Transportation Fund       
Other School fund





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- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO     

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES      NO X

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>32</u>	<u>12X16 Levertronic 10X10 Levertronic</u>
Portable	<u>22</u>	<u>Load-0-Meter Haenni</u>
Semi-Portable	<u>3</u>	<u>Lodec--All Electronic</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>1191</u>
State Highways	<u>5452</u>
County Highways	<u>4756</u>
City Highways	<u>3611/2440</u>
Rural Local	<u>63,690</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO     

- 6) Do you have a siting plan for fixed scales?

YES X NO     

- 7) Have you removed any fixed facilities from service?

YES X NO



16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES   x   NO       

17) Have you developed a plan for the maintenance of scale equipment?

YES   x   NO       

18) Is scale maintenance performed by a:

state agency   x  

private company   x  

19) Please indicate the agency responsible for:

Enforcement Department of Highways-Gross Vehicle Weight Compliance Bureau  
Safety Inspection Highway Patrol and G.V.W. Compliance Bureau  
Permits Gross Vehicle Weight Division  
Data Collection Highways-Planning and Statistic Bureau  
Scale Maintenance Highway-Gross Vehicle Weight Compliance Bureau  
Certification Weights and Measure-Department of Commerce

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES   x   NO       

21) If no, are you considering the development of a truck weight enforcement program?

YES        NO       

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES   x   NO       

23) Do you attempt to realize revenue greater than costs?

YES        NO   x  

24) Where do fine revenues go?

General Fund       x        
Transportation Fund   x    
Other       x





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO  X

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES \_\_\_\_\_ NO  X

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u> 2 </u>	<u> Platform </u>
Portable	<u> 10 </u>	<u> MD-400 </u>
Semi-Portable	<u> 4 </u>	<u> ELDEC MD-700 </u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u> 545 </u>
State Highways	<u> 4,880 </u>
County Highways	
City Highways Combined	<u> 13,341 </u>

- 5) Do you enforce weight laws within metropolitan areas?

YES  X  NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES  X  NO \_\_\_\_\_ (Secured Dept. Facilities)

- 7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO  X

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	_____	NO	<u>X</u>
Interstate Highways	YES	_____	NO	<u>X</u>
Truck Volumes	YES	_____	NO	<u>X</u>
Types of Freight	YES	_____	NO	<u>X</u>
Future Development	YES	_____	NO	<u>X</u>

Other Offices. Future sites will be developed along the Interstate. Existing fixed sites are located at Department

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES X NO \_\_\_\_\_

10) Do you use "weigh-in-motion" equipment?

YES X NO \_\_\_\_\_

11) If you use "weigh-in-motion" equipment, where is it used?

The Nevada Department of Transportation utilizes portable WIM statewide for data collection in support of the FHWA Truck Weight Study. Periodically, enforcement activities are scheduled in conjunction with NDOT's programs.

12) Do you use plug-in-type fixed weigh stations?

YES \_\_\_\_\_ NO X

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES \_\_\_\_\_ NO X

14) How many total staff are involved in trucking regulation? 57  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 6 man years SAFETY INSPECTION All Others

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES X NO \_\_\_\_\_

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_\_\_ NO X

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO \_\_\_\_\_

18) Is scale maintenance performed by a:

state agency X

private company X

19) Please indicate the agency responsible for:

Enforcement Commercial Enforcement Sect., Nevada Highway Patrol  
Safety Inspection Same  
Permits Nevada Department of Transportation (NDOT)  
Data Collection (NDOT)  
Scale Maintenance Nevada Highway Patrol and NDOT  
Certification Same

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES \_\_\_\_\_ NO X

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_\_\_ NO X

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES \_\_\_\_\_ NO X

23) Do you attempt to realize revenue greater than costs?

YES \_\_\_\_\_ NO X

24) Where do fine revenues go?

General Fund (Counties) X  
Transportation Fund \_\_\_\_\_  
Other (School Fund) X





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1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO     

2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO     

3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>1</u>	<u>Toledo</u>
Portable	<u>75</u>	<u>HAENNA AND MD 400</u>
Semi-Portable	<u>3 sets</u>	<u>LODEC</u>

4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>                    </u>
State Highways	<u>                    </u>
County Highways	<u>                    </u>
City Highways	<u>                    </u>

5) Do you enforce weight laws within metropolitan areas?

YES X NO     

6) Do you have a siting plan for fixed scales?

YES X NO     

7) Have you removed any fixed facilities from service?

YES X NO

8) Are the fixed site locations determined by considering any of the following:

Boundaries YES  NO   
Interstate Highways YES  NO   
Truck Volumes YES  NO   
Types of Freight YES  NO   
Future Development YES  NO   
Other \_\_\_\_\_

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO  , however, Dept. of Transport  
uses them for their service

11) If you use "weigh-in-motion" equipment, where is it used?

N/A

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 51  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 41 SAFETY INSPECTION 41

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency X

private company     

19) Please indicate the agency responsible for:

Enforcement DIVISION OF ENFORCEMENT  
Safety Inspection DIVISION OF ENFORCEMENT + DIVISION OF MOTOR VEHICLES  
Permits DEPARTMENT OF TRANSPORTATION  
Data Collection DIVISION OF ENFORCEMENT  
Scale Maintenance DIVISION OF ENFORCEMENT + DEPT OF AGRICULTURE  
Certification DEPARTMENT OF AGRICULTURE

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO     

21) If no, are you considering the development of a truck weight enforcement program?

N/A YES      NO     

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO     

23) Do you attempt to realize revenue greater than costs?

YES X NO     

24) Where do fine revenues go?

General Fund       
(HIGHWAY) Transportation Fund X  
Other





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1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_ NO X

2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO \_\_\_

3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>6</u>	<u>Toledo</u>
Portable	<u>100</u>	<u>PAT</u>
Semi-Portable	<u>NONE</u>	

4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>UNKNOWN</u>
State Highways	<u>..</u>
County Highways	<u>..</u>
City Highways	<u>..</u>

5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_

6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_

7) Have you removed any fixed facilities from service?

YES X NO \_\_\_

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Interstate Highways	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Truck Volumes	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Types of Freight	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Future Development	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Other	<input type="checkbox"/>	

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 80  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 80 SAFETY INSPECTION 80

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES  NO

17) Have you developed a plan for the maintenance of scale equipment?

YES  NO

18) Is scale maintenance performed by a:

state agency

private company

19) Please indicate the agency responsible for:

Enforcement. STATE POLICE  
Safety Inspection STATE POLICE  
Permits DOT  
Data Collection DET / STATE POLICE  
Scale Maintenance STATE POLICE  
Certification WEIGH / MEASURE

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES  NO

21) If no, are you considering the development of a truck weight enforcement program?

YES  NO

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  NO

23) Do you attempt to realize revenue greater than costs?

YES  NO

24) Where do fine revenues go?

General Fund X  
Transportation Fund         
Other





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES  NO

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES  NO

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	21	Single Segment Platform
Portable	2	Elec
Semi-Portable	30	Intercomp / PAT Digital

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	1000
State Highways	10680
County Highways	53300
City Highways	4486

SR  
SEC  
P.1

- 5) Do you enforce weight laws within metropolitan areas?

YES  NO

- 6) Do you have a siting plan for fixed scales?

YES  NO

- 7) Have you removed any fixed facilities from service?

YES  NO

8) Are the fixed site locations determined by considering any of the following:

Boundaries YES  <sup>Somewhat</sup> NO

Interstate Highways YES  NO

Truck Volumes YES  NO

Types of Freight YES  NO

Future Development YES  NO

Other funneling of routes

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO  AZ  
CO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

Portable - off road weigh pads  
also, w/m being planned for PDE rebuild/renovation

12) Do you use plug-in-type fixed weigh stations? ?

not familiar with this YES  NO  0

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 183  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 163 SAFETY INSPECTION 75

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO   
to a limited extent

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES  NO

17) Have you developed a plan for the maintenance of scale equipment?

YES  NO   
↳ contract

18) Is scale maintenance performed by a:

state agency \_\_\_\_\_  
private company

19) Please indicate the agency responsible for:

Enforcement MOTOR TRANSPORTATION DIVISION  
Safety Inspection \_\_\_\_\_  
Permits \_\_\_\_\_  
Data Collection \_\_\_\_\_  
Scale Maintenance CONTRACTOR  
Certification NM DEP'T AGRICULTURE

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES  NO

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_\_\_ NO \_\_\_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  NO \_\_\_\_\_ as per FHWA regulations

23) Do you attempt to realize revenue greater than costs?

YES  NO \_\_\_\_\_

24) Where do fine revenues go?

General Fund   
Transportation Fund \_\_\_\_\_  
Other \_\_\_\_\_





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO \_\_\_\_\_ Fixed - set by State Statute

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO \_\_\_\_\_

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>13</u>	<u>Multi-sectioned Platform, load cell with electronics</u>
Portable	<u>60</u>	<u>Pat - low profile electronic scale</u>
Semi-Portable	<u>410</u>	<u>Electro Dynamic, Model MD 500</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>953</u>
State Highways	<u>13,376</u>
County Highways	_____
City Highways	<u>5,461</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES X NO \_\_\_\_\_



16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency X Portable

private company X Stationary

19) Please indicate the agency responsible for:

Enforcement North Carolina DMV Enforcement Section

Safety Inspection North Carolina DMV Enforcement Section

Permits North Carolina DOT - Permit Section

Data Collection North Carolina DOT - Planning & Research

Scale Maintenance North Carolina DMV and private scale companies

Certification North Carolina Dept. of Agriculture, Weight & Measurement Div.

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO     

21) If no, are you considering the development of a truck weight enforcement program?

YES      NO     

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO     

23) Do you attempt to realize revenue greater than costs?

YES      NO X

24) Where do fine revenues go?

General Fund

Transportation Fund X State Highway Fund

Other

25) How is your weight enforcement program financed?

General Fund \_\_\_\_\_  
Transportation Fund  X  Highway Fund \_\_\_\_\_  
Fine Revenue \_\_\_\_\_  
Other \_\_\_\_\_

26) How is your safety inspection program financed?

General Fund \_\_\_\_\_  
Transportation Fund  X  Highway Fund \_\_\_\_\_  
Fine Revenue \_\_\_\_\_  
Other  X  Federal Grant \_\_\_\_\_

PLEASE USE THE FOLLOWING LINES FOR ANY ADDITIONAL COMMENTS.

The State of North Carolina has had an aggressive weight enforcement program since

the early 1950's. Our program is dedicated to the protection of our highways and  
also for providing safe operation of commercial vehicles. The North Carolina Legis-  
lature sets, by statute, the maximum number of fixed scale locations. These loca-  
tions are mainly located on the interstate routes near the borders of the state.  
Internal weigh stations are also in place. The DMV Enforcement Section also uses  
patrol cars with portable weigh crews to monitor the bypass routes as well as the  
municipalities and county roads.

Prepared By D. W. Adams, Administrative Assistant  
Name Title  
Agency N. C. DMV Enforcement  
Address 1100 New Bern Avenue  
Raleigh, N. C. 27697  
Telephone (919) 733-7872

Copies of any reports or studies recently prepared by your State would be greatly appreciated.



Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO X

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES \_\_\_\_\_ NO X

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>14</u>	<u>12 electronic - 2 mechanical</u>
Portable	<u>162</u>	<u>G E D's, 300's &amp; 400's</u>
Semi-Portable	<u>0</u>	<u></u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>571</u>
State Highways	<u>6759</u>
County Highways	<u>9429</u>
City Highways	<u>3604</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES \_\_\_\_\_ NO X

- 7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO X



16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES  X  NO      

17) Have you developed a plan for the maintenance of scale equipment?

YES       NO  X

18) Is scale maintenance performed by a:

state agency      

private company  X

19) Please indicate the agency responsible for:

Enforcement  North Dakota Highway Patrol   
Safety Inspection  North Dakota Highway Patrol   
Permits  North Dakota Highway Patrol   
Data Collection  ND Highway Patrol and ND Department of Transportation   
Scale Maintenance  North Dakota Highway Patrol   
Certification  Public Service Commission

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES  X  NO      

21) If no, are you considering the development of a truck weight enforcement program?

YES       NO      

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  X  NO      

23) Do you attempt to realize revenue greater than costs?

YES  X  NO      

24) Where do fine revenues go? Extraordinary road use fees are remitted to the State Treasurer to be credited to the highway fund to be used for highway maintenance.

General Fund        
Transportation Fund  X   
Other





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- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO     

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO     

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>13</u>	<u>Platform</u>
Portable	<u>180</u>	<u>Wheel Weighers</u>
Semi-Portable	<u>1</u>	<u>Axle Weighers</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

	<u>Jurisdiction</u>	<u>Miles</u>
All public ways within the confines of the State of Oklahoma.	Interstate Highways	<u>                    </u>
	State Highways	<u>                    </u>
	County Highways	<u>                    </u>
	City Highways	<u>                    </u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO     

- 6) Do you have a siting plan for fixed scales?

YES      NO X

- 7) Have you removed any fixed facilities from service?

YES      NO X



16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency X

private company X

19) Please indicate the agency responsible for:

Enforcement	<u>Okla Highway Patrol, Okla Tax Commission, Okla Corporation Commission</u>
Safety Inspection	<u>Oklahoma Highway Patrol</u>
Permits	<u>Department of Public Safety</u>
Data Collection	<u>Dept of Public Safety, Okla Tax Comm, Okla Corporation Comm</u>
Scale Maintenance	<u>Oklahoma Tax Commission</u>
Certification	<u>Oklahoma Highway Patrol</u>

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO     

21) If no, are you considering the development of a truck weight enforcement program?

YES N/A NO N/A

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO     

23) Do you attempt to realize revenue greater than costs?

State Agency, Non-profit program YES      NO     

24) Where do fine revenues go?

General Fund       
Transportation Fund       
Other (Court Fund)





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_ NO X

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO \_\_\_

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>64</u>	<u>Platform - Varied sizes/Types</u>
Portable	<u>60</u>	<u>PAT- / MD-500</u>
Semi-Portable	<u>5</u>	<u>Lo-Deck / FL-Deck</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>708</u>
State Highways	<u>6887</u>
County Highways	<u>7798</u>
City Highways	<u>—</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_

- 6) Do you have a siting plan for fixed scales?

YES \_\_\_ NO X

- 7) Have you removed any fixed facilities from service?

YES X NO \_\_\_

8) Are the fixed site locations determined by considering any of the following:

Boundaries YES X NO       
Interstate Highways YES      NO X  
Truck Volumes YES X NO       
Types of Freight YES      NO X  
Future Development YES X NO       
Other By-PASS RTES,

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES X NO     

10) Do you use "weigh-in-motion" equipment?

YES X NO     

11) If you use "weigh-in-motion" equipment, where is it used?

INTERSTATE PRIMARY + Secondary Routes (10 Locations) -  
Permanent installations - Also A Bridge WIM System is  
used on all Highways at Locations with Bridges -

12) Do you use plug-in-type fixed weigh stations?

YES X NO     

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES X NO     

14) How many total staff are involved in trucking regulation? 123  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 98 SAFETY INSPECTION 15

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES      NO X

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES  NO

17) Have you developed a plan for the maintenance of scale equipment?

YES  NO

18) Is scale maintenance performed by a:

state agency

private company

19) Please indicate the agency responsible for:

Enforcement (Size/wgt) Highway Div. - Permit/Weighmaster Section  
Safety Inspection Public Utility Commission - Safety Section  
Permits Highway Div. - Permit/Weighmaster Section  
Data Collection Highway Div. - Permit/W.M. Sect.  
Scale Maintenance Highway Div. - Permit/Weighmaster Section  
Certification Department of Agriculture / Weights + Measures Sect.

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES  NO

21) If no, are you considering the development of a truck weight enforcement program?

YES  NO

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  NO

23) Do you attempt to realize revenue greater than costs?

YES  NO

24) Where do fine revenues go?

General Fund       X        
Transportation Fund         
Other       X



Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO X

2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES \_\_\_\_\_ NO X

3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>12</u>	<u>Platform, 20 perm. WIM</u>
Portable	<u>26 sets of 12aa</u>	<u>Haenni</u>
Semi-Portable	<u>5</u>	<u>Pat port WIM</u>

4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>38K</u>
State Highways	<u>7K</u>
County Highways	_____
City Highways	_____

5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_\_\_

7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO X



16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency X

private company X

19) Please indicate the agency responsible for:

Enforcement	<u>PA DOT, PSP</u>
Safety Inspection	<u>" " and PUC</u>
Permits	<u>" "</u>
Data Collection	<u>"</u>
Scale Maintenance	<u>"</u>
Certification	<u>Dept of Const Services</u>

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO     

21) If no, are you considering the development of a truck weight enforcement program?

YES      NO     

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO     

23) Do you attempt to realize revenue greater than costs?

YES      NO X

24) Where do fine revenues go?

General Fund	<u>    </u>
Transportation Fund	<u>X</u>
Other	<u>    </u>





8) Are the fixed site locations determined by considering any of the following:

N/A

Boundaries	YES	_____	NO	_____
Interstate Highways	YES	_____	NO	_____
Truck Volumes	YES	_____	NO	_____
Types of Freight	YES	_____	NO	_____
Future Development	YES	_____	NO	_____
Other		_____		_____

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES \_\_\_\_\_ NO X

10) Do you use "weigh-in-motion" equipment?

YES X NO \_\_\_\_\_

11) If you use "weigh-in-motion" equipment, where is it used?

Used in compliance with the FHWA traffic monitoring guide.

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12) Do you use plug-in-type fixed weigh stations? N/A

YES \_\_\_\_\_ NO \_\_\_\_\_

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES \_\_\_\_\_ NO X

14) How many total staff are involved in trucking regulation? 9

How many staff are dedicated to: The nine member full-time State Police Commercial Vehicle Enforcement Unit is dedicated to both weight and safety enforcement

WEIGHT ENFORCEMENT \_\_\_\_\_ SAFETY INSPECTION \_\_\_\_\_

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES X NO \_\_\_\_\_

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_\_\_ NO X

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO \_\_\_\_\_

18) Is scale maintenance performed by a:

state agency \_\_\_\_\_

private company X

19) Please indicate the agency responsible for:

Enforcement State Police Commerical Vehicle Enforcement Unit (SPCVEU)

Safety Inspection The SPCVEU and local police departments

Permits Rhode Island Department of Transportation (RIDOT)

Data Collection SPCVEU and RIDOT

Scale Maintenance SPCVEU

Certification RIDOT

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO \_\_\_\_\_

21) If no, are you considering the development of a truck weight enforcement program? N/A

YES \_\_\_\_\_ NO \_\_\_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO \_\_\_\_\_

23) Do you attempt to realize revenue greater than costs?

YES \_\_\_\_\_ NO X

24) Where do fine revenues go?

General Fund X  
Transportation Fund \_\_\_\_\_  
Other \_\_\_\_\_



Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO \_\_\_\_\_

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO \_\_\_\_\_

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>11</u>	<u>Fairbanks - UMC2000 Matmx II</u>
Portable	<u>296</u>	<u>Haenni</u>
Semi-Portable	<u>0</u>	_____

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

	<u>Jurisdiction</u>	<u>Miles</u>
Jurisdiction of all highways in the state. We have the fifth largest highway system in the U. S.	Interstate Highways	_____
	State Highways	_____
	County Highways	_____
	City Highways	_____

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES X NO \_\_\_\_\_

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	<u>X</u>	NO	_____
Interstate Highways	YES	<u>X</u>	NO	_____
Truck Volumes	YES	<u>X</u>	NO	_____
Types of Freight	YES	<u>X</u>	NO	_____
Future Development	YES	<u>X</u>	NO	_____
Other				_____

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES \_\_\_\_\_ NO X

10) Do you use "weigh-in-motion" equipment?

Two under construction at present time. Two more in planning stages.

YES X NO \_\_\_\_\_

11) If you use "weigh-in-motion" equipment, where is it used?

Interstate Highways

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES \_\_\_\_\_ NO X

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES \_\_\_\_\_ NO X

14) How many total staff are involved in trucking regulation? 44 Uniform personnel  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 44 SAFETY INSPECTION 0

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES X NO \_\_\_\_\_

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_\_\_ NO X

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO \_\_\_\_\_

18) Is scale maintenance performed by a:

state agency \_\_\_\_\_

private company X

19) Please indicate the agency responsible for:

Enforcement S. C. Highway Patrol Size & Weight Enforcement  
Safety Inspection S. C. Highway Patrol and Public Service Commission  
Permits S. C. Dept. of Highways - Permit Section  
Data Collection S. C. Dept. of Highways-Engineer Division  
Scale Maintenance Private Contractors  
Certification S. C. Dept. of Agriculture

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO \_\_\_\_\_

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_\_\_ NO \_\_\_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO \_\_\_\_\_

23) Do you attempt to realize revenue greater than costs?

YES \_\_\_\_\_ NO X

24) Where do fine revenues go?

General Fund \_\_\_\_\_  
Transportation Fund \_\_\_\_\_  
Other X

Fines for criminal violation of state stature go to the county or municipality where the violation occurred.

Civil assesment is deposited into the S. C. Department of Highways General Fund.





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- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES   x   NO       

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES   x   NO       

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>  8  </u>	<u>Fixed-3 platform axle scales</u>
Portable	<u>231</u>	<u>GED MD Axle Load</u>
Semi-Portable	<u>  3  </u>	<u>Trailer carried semi portable</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>Statewide</u>
State Highways	<u>Statewide</u>
County Highways	<u>All County Highways</u>
City Highways	<u>All City Highways</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES   x   NO       

- 6) Do you have a siting plan for fixed scales?

YES   x   NO       

- 7) Have you removed any fixed facilities from service?

YES        NO   x



16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency X

private company     

19) Please indicate the agency responsible for:

Enforcement Motor Vehicle Enforcement, Department of Safety  
Safety Inspection Tennessee Public Service Commission  
Permits Overdimensional - Department of Transportation  
Data Collection All Agencies  
Scale Maintenance Department of Safety  
Certification Department of Agriculture

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO     

21) If no, are you considering the development of a truck weight enforcement program?

YES      NO     

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO     

23) Do you attempt to realize revenue greater than costs?

YES X NO     

24) Where do fine revenues go?

General Fund X  
Transportation Fund       
Other





8) Are the fixed site locations determined by considering any of the following: Unknown - they were installed by the Dept. of Highway many years ago and we don't know what criteria was used. At least the 5 criteria you Boundaries listed would be used YES  NO  for future fixed sites.

Interstate Highways YES  NO

Truck Volumes YES  NO

Types of Freight YES  NO

Future Development YES  NO

Other \_\_\_\_\_

9) Have you considered sharing weight/enforcement facilities with adjoining states? We have had preliminary discussions with Massachusetts.

YES  NO

10) Do you use "weigh-in-motion" equipment? Not for weight enforcement but the AOT uses WIM for various needs.

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 14  
How many staff are dedicated to: (1) Supervisor; (1) Admin. Secretary

WEIGHT ENFORCEMENT 8 SAFETY INSPECTION 4

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency X

private company     

19) Please indicate the agency responsible for:

Enforcement Department of Motor Vehicles and Department of Public Safety

Safety Inspection " " " " " "

Permits DMV

Data Collection DMV

Scale Maintenance Each for their own agencies; portables - AOT for platforms.

Certification Each for their own - done by the Agriculture Dept. (Weights & Measures)

20) Within the last five years have you developed a comprehensive truck weight enforcement program? This is an ongoing process and a part of the program for the past 18 years.

YES X NO     

21) If no, are you considering the development of a truck weight enforcement program?

YES      NO     

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO     

23) Do you attempt to realize revenue greater than costs?

YES      NO X

24) Where do fine revenues go?

General Fund       
Transportation Fund X  
Other





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES  NO

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES  NO

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>14</u>	<u>STATIC / 3 PLATFORM CONFIGURATION</u>
Portable	<u>11</u>	<u>STATIC / 4 IN SEQUENCE OF AXLE</u>
Semi-Portable	<u>    </u>	<u>    </u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>1043</u>
State Highways	<u>53524</u>
County Highways	<u>1416</u>
City Highways / <u>upon request</u>	<u>9227</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES  NO

- 6) Do you have a siting plan for fixed scales?

YES  NO

- 7) Have you removed any fixed facilities from service?

YES  NO

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Interstate Highways	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Truck Volumes	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Types of Freight	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Future Development	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Other	_____	

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO  *activities yes!*

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

I-95 Dumfries Weigh Station  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 262  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 227 SAFETY INSPECTION 35

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES  NO

17) Have you developed a plan for the maintenance of scale equipment?

YES  NO

18) Is scale maintenance performed by a:

state agency

private company

} Both use service contracts and construction contracts on some work

19) Please indicate the agency responsible for:

Enforcement Dept of State Police

Safety Inspection Dept of State Police

Permits Dept. of TRANSPORTATION

Data Collection Dept of TRANSPORTATION

Scale Maintenance Dept. of TRANSPORTATION

Certification Dept of TRANSPORTATION

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

54 YEARS YES  NO   
began in 1936

21) If no, are you considering the development of a truck weight enforcement program?

YES  NO  N/A see 20 above

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  NO

23) Do you attempt to realize revenue greater than costs?

YES  NO

24) Where do fine revenues go?

General Fund

Transportation Fund

Other



Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO X

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO \_\_\_\_\_

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>58</u>	<u>AXLE LOAD - MAJORLY Electronic</u>
Portable	<u>144</u>	<u>GSC MD-400 Wheel Load</u>
Semi-Portable	<u>8</u>	<u>7 FT PLATFORM - Electronic</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>1000</u>
State Highways	<u>7000</u>
County Highways	<u>0</u>
City Highways	<u>0</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES \_\_\_\_\_ NO UPON Request of Local Jurisdiction

- 6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO X Not in PAST 6 yrs



16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES  NO

17) Have you developed a plan for the maintenance of scale equipment?

YES  NO

18) Is scale maintenance performed by a:

state agency

private company

19) Please indicate the agency responsible for:

Enforcement WA. ST. PATROL  
Safety Inspection "  
Permits Dept of TRANSPORTATION / Dept of license - / WA. ST.  
Data Collection DEPT TRANSPORTATION  
Scale Maintenance WA. ST. PATROL  
Certification " "

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES  NO

21) If no, are you considering the development of a truck weight enforcement program?

YES  NO

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  NO

23) Do you attempt to realize revenue greater than costs?

YES  NO

24) Where do fine revenues go?

General Fund  
Transportation Fund  Road Dept.  
Other





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO X

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES \_\_\_\_\_ NO X

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>21</u>	<u>12' x 24' Electronic or Levertronic. Three with Triple Platforms, Three with WIM Sorting Scales</u>
Portable	<u>76</u>	<u>PAT SAW/DC Low Profile Electronic Wheel Weighers</u>
Semi-Portable	<u>2</u>	<u>LODEC Semi Portable Ramp</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

	Jurisdiction	Miles
	Interstate Highways	<u>640</u>
	State Highways	<u>11,882</u>
	County Highways	<u>19,540</u>
	Village and City Highways	<u>14,944</u>
	Town Roads	<u>61,176</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES X NO \_\_\_\_\_

8) Are the fixed site locations determined by considering any of the following:

Boundaries YES X NO     

Interstate Highways YES X NO     

Truck Volumes YES X NO     

Types of Freight YES X NO     

Future Development YES X NO     

Other Potential for Bypassing

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES X NO     

10) Do you use "weigh-in-motion" equipment?

YES X NO     

11) If you use "weigh-in-motion" equipment, where is it used?

Is used by the Department for truck weight study data collection. WIM devices are also installed at the Rusk, Coloma, and Abrams weigh stations for screening for potential overloads.

12) Do you use plug-in-type fixed weigh stations?

YES      NO X

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES      NO X

14) How many total staff are involved in trucking regulation?       
How many staff are dedicated to:

WEIGHT ENFORCEMENT 55 SAFETY INSPECTION 26

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES X NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO     

Weight Enforcement

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency X

private company X

19) Please indicate the agency responsible for:

Enforcement WIS/DOT, Division of State Patrol

Safety Inspection WIS/DOT, Division of State Patrol

Permits WIS/DOT, Division of Highways and Division of Motor Vehicles

Data Collection WIS/DOT, Division of Planning and Budget

Scale Maintenance WIS/DOT, Division of State Patrol

Certification WIS/DOT, Division of State Patrol and WIS Dept. of AG

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO     

21) If no, are you considering the development of a truck weight enforcement program?

YES      NO     

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO     

23) Do you attempt to realize revenue greater than costs?

YES      NO X

24) Where do fine revenues go?

Department of Transportation (DOT)

General Fund

Transportation Fund

Other

(State School Fund

County of Venue)

40% of penalties for  
     size/weight vio-  
X lations.

25) How is your weight enforcement program financed?

General Fund	_____
Transportation Fund	_____ X _____
Fine Revenue	_____
Other	_____

26) How is your safety inspection program financed?

General Fund	_____
Transportation Fund	_____ X _____
Fine Revenue	_____
Other	_____ X _____

PLEASE USE THE FOLLOWING LINES FOR ANY ADDITIONAL COMMENTS.

Question #1. The optimum mix of permanent versus portable and semi portable scales has not been determined. There is no defined formula for determining the best ratio of permanent scales to portable scales. The balance of types of scales employed for enforcement is based on variables such as traffic volume and the types of enforcement to be conducted at the site. The mix of scale types is specific to a geographical area and cannot be applied uniformly on a statewide or national basis.

Question #2. The oversize/overweight permit procedures employed by the Division of Motor Vehicles are not included in the annual size and weight enforcement plan created by the Division of State Patrol. The number of permits issued is included in the annual certification to Federal Highway Administration for size and weight enforcement activities.

Prepared By	<u>Stephen Gasper</u>	<u>Inspector Supervisor</u>
	<u>Name</u>	<u>Title</u>
Agency	<u>WIS/DOT, Division of State Patrol</u>	
Address	<u>4802 Sheboygan Avenue</u>	
	<u>P.O. Box 7912</u>	
	<u>Madison, WI 53507-7912</u>	
Telephone	<u>608-266-0264</u>	

Copies of any reports or studies recently prepared by your State would be greatly appreciated.



received  
9/21/90

Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO X

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES \_\_\_\_\_ NO Y

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>32</u>	SINGLE PLATFORM Type 3 DECK "FAIRBANKS" / "CARDINAL" / "MURPHY" / "HANE" SINGLE PLATFORM
Portable	<u>80</u>	4 UNITS TO A SET - 20 SETS WHEEL LOAD SCALES "INTERCOMP"
Semi-Portable	<u>2</u>	"LODEC" (ONLY 1 SET IN USE)

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

Jurisdiction	Miles
Interstate Highways	<u>899</u>
State Highways	<u>5578</u>
County Highways	<u>0</u>
City Highways	<u>0</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_ IF STATE HIGHWAYS

- 6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO X



16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

SAFETY INSPECTIONS ARE ONLY CONDUCTED BY PATROL MOTOR VEHICLE PERSONNEL (17) YES X NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO     

18) Is scale maintenance performed by a:

state agency X BETHEL'S ONLY

private company X - FIXED + SEMI FOR PL

19) Please indicate the agency responsible for:

Enforcement. WYOMING HIGHWAY PATROL  
Safety Inspection WYOMING HIGHWAY PATROL - MOTOR VEHICLE DIVISION  
Permits DEPARTMENT OF REVENUE + TAXATION  
Data Collection REVENUE AND TAXATION AND HIGHWAY PATROL  
Scale Maintenance WYOMING HIGHWAY DEPARTMENT  
Certification WYOMING DEPARTMENT OF AGRICULTURE

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO     

21) If no, are you considering the development of a truck weight enforcement program?

YES      NO      N/A

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

OUR WEIGHT ENFORCEMENT PLAN IS SEPARATE FROM OUR TRUCK INSPECTION PROGRAM, YES      NO X

23) Do you attempt to realize revenue greater than costs?

YES      NO X

24) Where do fine revenues go?

General Fund       
Transportation Fund       
Other X

COUNTY SCHOOL DISTRICTS





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES  NO

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES  NO

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>20</u>	<u>electronic deck scales</u>
Portable	<u>260</u>	<u>160 hydraulic 100 electronic</u>
Semi-Portable	<u>8</u>	<u>electronic trailer scales</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	
State Highways	<u>8700</u>
County Highways	<u>14900</u>
City Highways	<u>0</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES  NO

- 6) Do you have a siting plan for fixed scales?

YES  NO

- 7) Have you removed any fixed facilities from service?

YES  NO

8) Are the fixed site locations determined by considering any of the following:

Boundaries YES  NO   
Interstate Highways YES  NO   
Truck Volumes YES  NO   
Types of Freight YES  NO   
Future Development YES  NO   
Other \_\_\_\_\_

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

Vehicle sorter and data collection

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

use Turnouts YES  NO

14) How many total staff are involved in trucking regulation? 182  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 169 SAFETY INSPECTION 13

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_ NO X

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO \_\_\_

18) Is scale maintenance performed by a:

state agency X  
private company X <sup>and</sup>

19) Please indicate the agency responsible for:

Enforcement \_\_\_\_\_  
Safety Inspection \_\_\_\_\_  
Permits \_\_\_\_\_  
Data Collection \_\_\_\_\_  
Scale Maintenance \_\_\_\_\_  
Certification \_\_\_\_\_  
} Alberta Transportation & Utilities  
} Motor Transport Services Division  
} all

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO \_\_\_

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_ NO \_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO \_\_\_

23) Do you attempt to realize revenue greater than costs?

YES \_\_\_ NO X

24) Where do fine revenues go?

General Fund X  
Transportation Fund \_\_\_\_\_  
Other \_\_\_\_\_





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO     

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO     

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>37</u>	<u>Electronics Load Cell</u>
Portable	<u>21</u>	<u>Portable Patrol Emergency Vehicle</u>
Semi-Portable	<u>    </u>	<u>    </u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Provincial	<u>    </u>
<del>Interstate</del> Highways	<u>17365</u>
State Highways	<u>    </u>
County Highways	<u>    </u>
City Highways	<u>    </u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO      If on main or arterial highways

- 6) Do you have a siting plan for fixed scales?

YES X NO     

- 7) Have you removed any fixed facilities from service?

YES x NO

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	<u>X</u>	NO	_____
Interstate Highways	YES	<u>X</u>	NO	_____
Truck Volumes	YES	<u>X</u>	NO	_____
Types of Freight	YES	<u>X</u>	NO	_____
Future Development	YES	<u>X</u>	NO	_____
Other				_____

9) Have you considered sharing weight/enforcement facilities with adjoining ~~states~~ province?

YES X NO \_\_\_\_\_

10) Do you use "weigh-in-motion" equipment?

YES \_\_\_\_\_ NO X

11) If you use "weigh-in-motion" equipment, where is it used?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES \_\_\_\_\_ NO X

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES \_\_\_\_\_ NO X

14) How many total staff are involved in trucking regulation? 180  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 145 SAFETY INSPECTION 35

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES X NO \_\_\_\_\_

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO \_\_\_\_\_

17) Have you developed a plan for the maintenance of scale equipment?

YES X NO \_\_\_\_\_

18) Is scale maintenance performed by a:

state agency \_\_\_\_\_

private company X

19) Please indicate the agency responsible for:

Enforcement Commercial Transport Division  
Safety Inspection Inspection and Carrier Safety Division  
Permits Commercial Transport Division  
Data Collection Commercial Transport Management System  
Scale Maintenance Commercial Transport Division  
Certification Weights & Measures, Ottawa

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO \_\_\_\_\_

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_\_\_ NO \_\_\_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO \_\_\_\_\_

23) Do you attempt to realize revenue greater than costs?

YES X NO \_\_\_\_\_

24) Where do fine revenues go?

General Fund X  
Transportation Fund \_\_\_\_\_  
Other \_\_\_\_\_





8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Interstate Highways	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Truck Volumes	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Types of Freight	YES <input type="checkbox"/>	NO <input type="checkbox"/>
Future Development	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Other	_____	

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

PTH.75 south of Winnipeg  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 57  
How many staff are dedicated to:

WEIGHT ENFORCEMENT \_\_\_\_\_ SAFETY INSPECTION \_\_\_\_\_

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES  NO

17) Have you developed a plan for the maintenance of scale equipment?

YES  NO

18) Is scale maintenance performed by a:

state agency

private company

19) Please indicate the agency responsible for:

Enforcement	<u>Hump + Intrap / Transport Compliance</u>
Safety Inspection	<u>" " "</u>
Permits	<u>" " Central Permit Office</u>
Data Collection	<u>" " Planning &amp; Design</u>
Scale Maintenance	<u>private</u>
Certification	<u>Weights + Measures (Canada)</u>

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES  NO

21) If no, are you considering the development of a truck weight enforcement program?

YES  NO

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES  NO

23) Do you attempt to realize revenue greater than costs?

YES  NO

24) Where do fine revenues go?

General Fund   
Transportation Fund   
Other





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES  NO

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES  NO

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>6</u>	<u>2 quad deck electronic + 4 Single deck Mechanic</u>
Portable	<u>44</u>	<u>GED MD-400 + 500</u>
Semi-Portable	<u>3</u>	<u>Sonstek.</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

Jurisdiction	Miles
<u>All Provincial Highways</u>	_____
Interstate Highways	_____
State Highways	_____
County Highways	_____
City Highways	_____

- 5) Do you enforce weight laws within metropolitan areas?

YES  NO

- 6) Do you have a siting plan for fixed scales?

YES  NO

- 7) Have you removed any fixed facilities from service?

YES  NO

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	___	NO	___
Interstate Highways	YES	___	NO	___
Truck Volumes	YES	<input checked="" type="checkbox"/>	NO	___
Types of Freight	YES	___	NO	___
Future Development	YES	<input checked="" type="checkbox"/>	NO	___
Other	_____			

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES \_\_\_ NO

10) Do you use "weigh-in-motion" equipment?

YES  NO \_\_\_

11) If you use "weigh-in-motion" equipment, where is it used?

TCH.  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES \_\_\_ NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO \_\_\_

14) How many total staff are involved in trucking regulation? 44  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 31 SAFETY INSPECTION 10

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES \_\_\_ NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_\_\_ NO

17) Have you developed a plan for the maintenance of scale equipment?

YES  NO \_\_\_\_\_

18) Is scale maintenance performed by a:

Prov.   
state agency \_\_\_\_\_

private company \_\_\_\_\_

19) Please indicate the agency responsible for:

Enforcement Motor Vehicle Registration Division  
Safety Inspection " " " "  
Permits " " " "  
Data Collection Policy + Planning Division  
Scale Maintenance M R D  
Certification Fed. Agency

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES \_\_\_\_\_ NO  already in place

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_\_\_ NO \_\_\_\_\_

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES \_\_\_\_\_ NO \_\_\_\_\_

23) Do you attempt to realize revenue greater than costs?

YES \_\_\_\_\_ NO

24) Where do fine revenues go?

General Fund  \_\_\_\_\_  
Transportation Fund \_\_\_\_\_  
Other \_\_\_\_\_

25) How is your weight enforcement program financed?

General Fund	_____
Transportation Fund	✓ _____
Fine Revenue	_____
Other	_____

26) How is your safety inspection program financed?

General Fund	_____
Transportation Fund	✓ _____
Fine Revenue	_____
Other	_____

PLEASE USE THE FOLLOWING LINES FOR ANY ADDITIONAL COMMENTS.

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WORKS  
SERVICES  
TRANSPORTATION

**ROBERT J. (BOB) FRAIZE**  
Co-ordinator  
Transportation Regulation Enforcement

DEPT. WORKS, SERVICES & TRANSPORTATION  
Government of Newfoundland and Labrador  
P.O. Box 8710  
St. John's, Newfoundland A1B 4J5  
Tel: (709) 576-6069  
Fax: (709) 576-6955 Mobile: 1-551-2025




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Prepared By Robert J. Fraize

Name	<u>Robert J. Fraize</u>
Title	<u>Regulation Enforcement Co-ordinator</u>
Agency	<u>Dept.</u>
Address	_____
	_____
	_____
Telephone	_____

Copies of any reports or studies recently prepared by your State would be greatly appreciated.

Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES  NO

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES  NO

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>5</u>	<u>QUAD-DECK (3 PIT ; 2 LOW PROFILE)</u>
Portable	<u>66</u>	<u>MD400 &amp; MD500'S - ELECTRO DYNAMIC.</u>
Semi-Portable	<u>    </u>	<u>    </u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

	Jurisdiction	Miles Km.
<u>ARTERIAL</u>	<u>Interstate Highways</u>	<u>2724</u>
<u>COLLECTOR</u>	<u>State Highways</u>	<u>4038</u>
<u>LOCAL</u>	<u>County Highways</u>	<u>10328</u>
	<u>City Highways</u>	<u>    </u>

- 5) Do you enforce weight laws within metropolitan areas?

YES  NO  IF REQUESTED.

- 6) Do you have a siting plan for fixed scales?

YES  NO

- 7) Have you removed any fixed facilities from service?

YES  NO

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Interstate Highways	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Truck Volumes	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
Types of Freight	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Future Development	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
Other	<input checked="" type="checkbox"/>	

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO  *COMING AS A RESULT OF C-SHRP.*

11) If you use "weigh-in-motion" equipment, where is it used?

WILL BE ON ALTERNATE HIGHWAYS.

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 80  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 60 SAFETY INSPECTION 20

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO



25) How is your weight enforcement program financed?

General Fund \_\_\_\_\_  
Transportation Fund \_\_\_\_\_  
Fine Revenue \_\_\_\_\_  
Other  \_\_\_\_\_

26) How is your safety inspection program financed?

General Fund \_\_\_\_\_  
Transportation Fund \_\_\_\_\_  
Fine Revenue \_\_\_\_\_  
Other  \_\_\_\_\_

PLEASE USE THE FOLLOWING LINES FOR ANY ADDITIONAL COMMENTS.

~~\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_~~

Prepared By

A. T. TUCKER DIRECTOR

Name

Title

Agency

MOTOR VEHICLE INSPECTION.

Address

PO Box 156

HARRISBURG, N.S.

835 2M4.

Telephone

902-424-4122.

Copies of any reports or studies recently prepared by your State would be greatly appreciated.



Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO \_\_\_\_\_

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO \_\_\_\_\_

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>3</u>	<u>Short Single Deck</u>
Portable	<u>4</u>	<u>Lodex (4 sets of 4)</u>
Semi-Portable	_____	_____

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
<u>Interstate Highways</u>	<u>2200 Km</u>
<u>State Highways</u>	_____
<u>County Highways</u>	_____
<u>City Highways</u>	_____

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES \_\_\_\_\_ NO X

- 7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO X

8) Are the fixed site locations determined by considering any of the following:

Boundaries YES  NO

Interstate Highways YES  NO

Truck Volumes YES  NO

Types of Freight YES  NO

Future Development YES  NO

Other \_\_\_\_\_

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  NO

10) Do you use "weigh-in-motion" equipment?

YES  NO

11) If you use "weigh-in-motion" equipment, where is it used?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12) Do you use plug-in-type fixed weigh stations?

YES  NO

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  NO

14) How many total staff are involved in trucking regulation? 15  
How many staff are dedicated to:

WEIGHT ENFORCEMENT 13 SAFETY INSPECTION 13

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES  NO

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES X NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES      NO X

18) Is scale maintenance performed by a:

state agency     

private company X

19) Please indicate the agency responsible for:

Enforcement	<u>Motor Vehicles Division, Dept of Transportation</u>
Safety Inspection	<u>✓</u>
Permits	<u>✓</u>
Data Collection	<u>✓</u>
Scale Maintenance	<u>✓</u>
Certification	<u>✓</u>

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES X NO     

21) If no, are you considering the development of a truck weight enforcement program?

YES      NO     

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES      NO X

23) Do you attempt to realize revenue greater than costs?

YES      NO     

24) Where do fine revenues go?

General Fund	<u>X</u>
Transportation Fund	<u>    </u>
Other	<u>    </u>





Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES  X  NO    

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES      NO  X

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>42</u>	<u>Single or Multi Platform Scales</u>
Portable	<u>246</u>	<u>Single Heads</u>
Semi-Portable	<u>5</u>	<u>Masstron (7 - Section pitless)</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>n/a</u>
State Highways	<u>21,598</u>
County Highways	<u>97,318</u>
City Highways	<u>37,474</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES  X  NO    

- 6) Do you have a siting plan for fixed scales?

YES  X  NO    

- 7) Have you removed any fixed facilities from service?

YES      NO  X

8) Are the fixed site locations determined by considering any of the following:

Boundaries	YES	<u>X</u>	NO	_____
Interstate Highways	YES	<u>X</u>	NO	_____
Truck Volumes	YES	<u>X</u>	NO	_____
Types of Freight	YES	<u>X</u>	NO	_____
Future Development	YES	<u>X</u>	NO	_____
Other				_____

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES X NO \_\_\_\_\_

10) Do you use "weigh-in-motion" equipment?

YES X NO \_\_\_\_\_

11) If you use "weigh-in-motion" equipment, where is it used?

On Expressways and other multi-lane King's highways.

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12) Do you use plug-in-type fixed weigh stations?

YES \_\_\_\_\_ NO X

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES \_\_\_\_\_ NO X

14) How many total staff are involved in trucking regulation? 313

How many staff are dedicated to:

ALL STAFF cover both functions - We don't have specialists

WEIGHT ENFORCEMENT \_\_\_\_\_ SAFETY INSPECTION \_\_\_\_\_

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES \_\_\_\_\_ NO X

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES \_\_\_\_\_ NO X

17) Have you developed a plan for the maintenance of scale equipment?

YES \_\_\_\_\_ NO X

18) Is scale maintenance performed by a:

state agency \_\_\_\_\_

private company X

19) Please indicate the agency responsible for:

Enforcement Ministry of Transportation  
Safety Inspection Ministry of Transportation  
Permits Ministry of Transportation  
Data Collection Ministry of Transportation  
Scale Maintenance Ministry of Transportation  
Certification Ministry of Transportation

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

(Been in place since 1978)

YES \_\_\_\_\_ NO X

21) If no, are you considering the development of a truck weight enforcement program?

YES \_\_\_\_\_ NO X

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES X NO \_\_\_\_\_

23) Do you attempt to realize revenue greater than costs?

YES X NO \_\_\_\_\_

24) Where do fine revenues go?

General Fund X  
Transportation Fund \_\_\_\_\_  
Other \_\_\_\_\_

25) How is your weight enforcement program financed?

General Fund	<u>  X  </u>
Transportation Fund	<u>      </u>
Fine Revenue	<u>      </u>
Other	<u>      </u>

26) How is your safety inspection program financed?

General Fund	<u>  X  </u>
Transportation Fund	<u>      </u>
Fine Revenue	<u>      </u>
Other	<u>      </u>

PLEASE USE THE FOLLOWING LINES FOR ANY ADDITIONAL COMMENTS.

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We have provided

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A copy of the guidelines to determine where and what type of

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inspection facility should be built.

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Prepared By	<u>E.P. Merkley</u>	<u>Director</u>
	<b>Name</b>	<b>Title</b>
Agency	<u>Ministry of Transportation</u>	
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	<u>1201 Wilson Avenue</u>	
	<u>Room 1-108, East Bldg</u>	
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	<u>Tel: (416) 235-4795</u>	

Copies of any reports or studies recently prepared by your State would be greatly appreciated.



Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES X NO \_\_\_\_\_

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES X NO \_\_\_\_\_

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>27</u>	<u>Multiplatform (11) single platforme (16)</u>
Portable	<u>148</u>	<u>Wheel-load scales</u>
Semi-Portable	_____	_____

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

<u>Jurisdiction</u>	<u>Miles</u>
Interstate Highways	<u>37 000</u>
State Highways	_____
County Highways	_____
City Highways	<u>37 000</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES X NO \_\_\_\_\_

- 6) Do you have a siting plan for fixed scales?

YES X NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES X NO \_\_\_\_\_

8) Are the fixed site locations determined by considering any of the following:

Boundaries YES X NO       
Interstate Highways YES X NO       
Truck Volumes YES X NO       
Types of Freight YES      NO X  
Future Development YES X NO       
Other Proximity of urban areas

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES X NO     

10) Do you use "weigh-in-motion" equipment?

YES X NO     

11) If you use "weigh-in-motion" equipment, where is it used?

Two of them are used as preselection devices; one is located at St-Romuald near Québec City on highway 20, the other is also on highway 20 but is located at Les Cèdres, near Montréal

12) Do you use plug-in-type fixed weigh stations?

YES      NO X

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES      NO X

14) How many total staff are involved in trucking regulation? 50  
How many staff are dedicated to:

WEIGHT ENFORCEMENT      SAFETY INSPECTION      Total : 250

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES X NO     

occasionally







Wilbur Smith Associates has been engaged by the Michigan Department of Transportation to conduct a statewide study of truck weight enforcement. We are attempting to gather data that may have been prepared in the last five years, and are particularly interested in states that have developed a plan for weight enforcement. Your responses to the following questionnaire will be very much appreciated.

- 1) Have you determined the optimum number and mix of fixed scales versus portable and semi-portable scales?

YES \_\_\_\_\_ NO  X

- 2) Do you consider the oversize/overweight permit procedure, and associated fees, when developing your weight enforcement program?

YES  X  NO \_\_\_\_\_

- 3) Please indicate the number and type of fixed, portable and semi-portable scales which you use.

	No.	Type
Fixed	<u>20</u>	<u>Various types at 13 sites (some sites have 2 platfor</u> <u>GEC Model Md400 &amp; MD 500</u>
	<u>116</u>	
Portable	<u>24</u>	<u>Electronic load cell type</u>
Semi-Portable	<u>3</u>	<u>Eldec trailer, 2 - Senstek trailers</u>

- 4) Indicate the jurisdiction and mileage involved in your weight enforcement program.

	<u>Jurisdiction</u>	<u>Miles</u>
	Interstate Highways	<u>N/A</u>
<del>PROVINCIAL</del>	<del>State</del> Highways	<u>13255</u>
<del>MUNICIPAL</del>	<del>County</del> Highways	<u>38270</u>
	City Highways	<u>0</u>

- 5) Do you enforce weight laws within metropolitan areas?

YES \_\_\_\_\_ NO  X

- 6) Do you have a siting plan for fixed scales?

YES  X  NO \_\_\_\_\_

- 7) Have you removed any fixed facilities from service?

YES \_\_\_\_\_ NO  X

8) Are the fixed site locations determined by considering any of the following:

Boundaries YES  X  NO      

Interstate Highways YES  X  NO      

Truck Volumes YES  X  NO      

Types of Freight YES       NO  X

Future Development YES  X  NO      

Other Bypass routes, population, industry concentration

9) Have you considered sharing weight/enforcement facilities with adjoining states?

YES  X  NO      

10) Do you use "weigh-in-motion" equipment?

YES  X  NO      

11) If you use "weigh-in-motion" equipment, where is it used?

Currently, at a scale site as a research project. To lay charges, the vehicle must be weighed while stopped.

12) Do you use plug-in-type fixed weigh stations?

YES  X  NO       Research only this year-

13) Do you use special pavement notches to facilitate the use of semi-portable scales?

YES  X  NO      

14) How many total staff are involved in trucking regulation?  60   
How many staff are dedicated to:

WEIGHT ENFORCEMENT  ALL  SAFETY INSPECTION  ALL

15) Do you use special enforcement teams to control the bypassing of fixed facilities?

YES       NO  X

16) Do the officers who enforce moving violations also participate in weight enforcement and safety inspection?

YES x NO     

17) Have you developed a plan for the maintenance of scale equipment?

YES      NO x Demand responsive

18) Is scale maintenance performed by a:

state agency     

private company x

19) Please indicate the agency responsible for:

Enforcement Transport Compliance Branch, Dept. of Highways & Trans.

Safety Inspection Transport Compliance Branch

Permits Motor Carrier Regulation Br. & or Maintenance Br. D.H.T.

Data Collection Design & Traffic Safety Br. D.H.T.

Scale Maintenance Transport Compliance Branch

Certification Transport Compliance Br./Federal Gov't Dept. of Weights & Measures.

20) Within the last five years have you developed a comprehensive truck weight enforcement program?

YES x NO      It's been ongoing for for several years, changing or being modif:

21) If no, are you considering the development of a truck weight enforcement program?

YES      NO      N/A

22) Does your plan consider the manpower, facilities/equipment, and location requirements to perform a truck inspection program?

YES x NO     

23) Do you attempt to realize revenue greater than costs?

YES      NO x

24) Where do fine revenues go?

Statistics show <sup>fine</sup> each officer generates about \$34,000 in revenue and prevents \$130,000 in highway damage. This far exceeds the cost.

General Fund     x  
Transportation Fund       
Other     

*Annually*

25) How is your weight enforcement program financed?

General Fund	<u>  x  </u>
Transportation Fund	<u>      </u>
Fine Revenue	<u>      </u>
Other	<u>      </u>

26) How is your safety inspection program financed?

General Fund	<u>  x  </u>
Transportation Fund	<u>      </u>
Fine Revenue	<u>      </u>
Other	<u>      </u>

PLEASE USE THE FOLLOWING LINES FOR ANY ADDITIONAL COMMENTS.

The Transport Compliance Branch employs 42 uniformed officers for road and scale work. All uniformed staff are trained in law enforcement, and hold certificates as Dangerous Goods Inspectors and are certified CVSA Inspectors. They are Peace Officers and are appointed Traffic Officers under the appropriate legislation. We utilize Median Weigh Scales, one-direction-side-of-the road weigh scales, and two-direction-side-of-the road scales. All new facilities are constructed so that they can be converted to median scale sites. CVSA inspections are conducted at scale sites and on the road, as the need arises. We also utilize "Loadometer" sites. These are simply pull-offs where our officers can set up a trailer scale or portable wheel weighers. These sites are usually some distance from a scale site where officers can weigh trucks in relative safety. I am enclosing a site plan of our newest site, as well as our latest study on weigh scale location.

Prepared By	<u>Chief B.B. Weafer, Director</u>
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	<u>7th Floor - 1855 Victoria Avenue</u>
	<u>Regina, Sask. S4P 3V5</u>
Telephone	<u>(306) 787-4034</u>

Copies of any reports or studies recently prepared by your State would be greatly appreciated.

**HISTORY OF MICHIGAN TRUCK  
WEIGHT LAWS AND ENFORCEMENT**

# **HISTORY OF MICHIGAN TRUCK WEIGHT LAWS AND ENFORCEMENT**

**Prepared by Coleman and Associates**

The following pages provide a chronological review of the legislative history of Michigan's truck weight laws and enforcement. Coleman and Associates, subconsultant to Wilbur Smith Associates, researched this subject extensively and developed a comprehensive report. The pages which follow contain the result of this effort.

## History of Michigan Truck Weight Laws and Enforcement

The history of Michigan Truck Weight Laws and Enforcement precedes World War I. By 1913 four states, Maine (1913), Massachusetts (1913), Pennsylvania (1913), and Washington (1913) had adopted formal legislation limiting the weight trucks could carry. The basis for this legislation drew heavily on earlier municipal laws regulating the weight of horsedrawn vehicles. Michigan passed their first truck weight law in 1917 under Public Act No. 132 of Public Acts of 1917. Whether this same municipal precedence existed for Michigan's law is unknown. The law covered such items as:

Maximum Weight	Maximum Wheel Loads
Type of Brakes	Tire Gauge (Vehicle Width and Height)
Type of Tires	Liability for Road Damage from Chains
Rear Axle Carrying Capacity	Visible Vehicle Capacity Weight, Height, etc. Limitations
Front Axle Carrying Capacity	Inclusion of Busses under this Act
Exclusion of Farm Implements	Maximum Vehicle Speed
Limiting of Maximum Loads in Spring Season	Misdemeanor Fines
Legal Jurisdiction	Special Permits and Period of Effect
Enforcement Jurisdiction and Powers	Roads of Act Applicability

One item not covered in this 1917 law is the overall length of vehicles. However, this was soon corrected in the next major piece of legislation affecting truck weight laws and their enforcement in the state. This legislation known formally as Public Acts 1923-No. 321, repealed in entirety Public Act of 1917-No. 132 and instituted additional regulations to control many of the specific items of the 1917 legislation. Revisions and additional items in this legislation not covered in the 1917 legislation is as follows:

### Revisions

- o Gross vehicle weight including load decreased from 15 tons. to 14 tons. This maximum weight was not to be exceeded regardless of axle spacing.
- o Axle load increased from 12,800 lbs. to 18,000 lbs for axle spacing greater than or equal to ten feet. Axle spacing less than 10 feet had a maximum load of 13,000 lbs.

- o The time frame of permits for heavy and unusual loads was decreased from 30 days to 10 days. Issuance of such permits were changed from officials with local jurisdiction to the State Highway Commissioner. Additional detail for the permit was also required.
- o Spring thaw or soft road conditions were modified to include new construction and shifted authority to the State Highway Commissioner to limit the maximum weights to 1/2 the gross axle load or to 1/2 the carrying capacity as determined by the tire regulations.
- o Rate of Speed was modified to eliminate different speeds for single and double axle vehicles based on tire size to gross vehicle weight. Greater than 18,000 lbs. was 15 mph, between 8,000 and 17,999 lbs. 20 mph, between 5,000 and 7,999 lbs. 25 mph, and less than 5,000 lbs. 30 mph.
- o Penalties and fines were modified to eliminate Justices of the Peace as a court of jurisdiction. Included associations as well as corporations, persons, and firms. If found guilty of a misdemeanor, the Secretary of State would revoke a license for 1 year and for each offense shall be subject to a fine of not more than \$100.00 and court costs. 1917 law had established a minimum fine of \$5.00 not to exceed \$50.00. County jail time and fines could both be levied at the discretion of the court. Jail time could not exceed thirty days.
- o Enforcement duties were shifted from the Sheriff and his ability to deputize all county, district, and township highway commissioners and others where necessary, to the Sheriff and peace officers of each county. An additional duty in the 1923 Act gave enforcement personnel the ability to have the excess load removed from the vehicle.
- o Public dissemination of the 1923 Act to affected persons or parties was mandated through a copy of the 1923 Act accompanying each truck license plate issuance.

#### Additions in the 1923 Act

- o Maximum length was specified as 40 feet if a single unit truck and 40 feet with trailer if within 300 feet of another vehicle 40 feet in length. Sixty feet is the overall maximum length for motor propelled vehicles and trailers or semi-trailers.
- o Maximum tire load under normal conditions was specified as 700 lbs./sq. in.

o Trailer towing required a maximum deflection of the trailer of six inches from the path of the towing vehicles wheels. Additional chains were required at the coupling device and the extreme outer edges of the vehicles. One hour after sunset and one hour after sunrise on all trailers or semi-trailers was mandated a green light on the left side of each unit. A red light shall be fixed to the rear of the last trailer hauled between said hours.

Summarizing, it is apparent that Michigan's first two truck weight laws established many of the basics of existing truck weight laws and enforcement concepts. The role of the State Highway Commissioner and the power of this office became visible in the 1923 law. The concept of Special Permits for heavy and unwieldy loads continued from the 1917 law. Continuation of truck heights, width, and evolution of overall gross vehicle and load weights continued through the 1923 law.

### Evolution of Enforcement Programs, Special Permits, and Permanent Weighing Stations

#### Enforcement Evolution

In the Thirteenth Biennial Report (1929-1930) prepared by the Michigan State Highway Department it had become apparent that the enforcement system put in place by the 1917 law and later modified by the 1923 law was not working to curtail excessive loading as evidenced in the condition of roads in the spring of 1929. For some years prior to this date as reported in the Thirteenth Biennial Report, the State Highway Department utilized portable scales during the months of March, April, and May when roads were in a soft condition and when special truck loading restrictions were in effect under present law (1923). The condition of roads in the Spring of 1929 prompted the Department to implement eight special two-man truck weighing crews in July of that year. These "crews" consisted of an employee of the State Highway Department who is furnished with a light truck and portable scales and by a uniformed State Police officer. It is not stated in the Biennial report if these crews operated year-round but is believed to have been the case. They were primarily dispatched in the southern lower part of the Lower Peninsula where the greater part of trucking was done. Thus, 1929 (July) appears to be the date for the formation of a special truck weighing crew or task force with accompaniment of separate police powers to enforce and if necessary arrest violators. The formation of this "crew" recognizes and symbolizes key changes in truck weight enforcement:

1.) It has become more of a full-time operation from both a seasonal perspective as well as manpower. This replaces total reliance on County Sheriffs and deputized commissioners or later in the 1923 legislation County Sheriffs and local peace officers.

2.) The total responsibility for determining violation and enforcement was not the sole domain of police powers--but evolved to require the manpower and expertise of State Highway Department personnel. First as a precautionary or deterrence measure deployed only in the spring, but later as full-time on-going team members charged with enforcing truck weight laws.

### Special Permit Regulation Revisions

Also reported in the Thirteenth Biennial Report (1929-1930) were necessary changes to the Special Permit procedures (as stated in the 1923 law) used to allow the movement of heavy equipment such as steam shovels on special trailers. The problem as reported dealt with the frequency of such movements as well as the distance of such movements. This resulted in the formulation of more rigid guidelines in connection with these permits. The State Highway Commissioner after a conference with representatives of practically all of the County Road Commissions in the southern half of the Lower Peninsula issued a bulletin on August 28, 1929 consisting of the following regulations to be sent to all movers of oversized loads:

- o Permits for movements of oversized loads on State trunk line highways will be refused and railroad shipment of this equipment required in all cases where railroad shipment is practical and would minimize the distance traveled by heavy trailers on highways.
- o An interval of twenty-four hours must elapse between the time of issuing permit and time of making the movement, in order that the field organization of the State Highway Department may be advised of the contemplated movement.
- o The speed of all oversized vehicles shall not exceed eight miles per hour.
- o Movements of oversize or overweight, vehicles on State trunk line highways, must be confined to daylight hours.

o No permit will be issued for any equipment where the average gross weight exceeds 700 lbs. per inch width of tire, and in no case for a gross total weight of trailer and load exceeding forty tons.

The County Road Commissions also substantially agreed that the same regulations will govern permits issued by them for movements over their county roads.

The significance of these revised Special Permit regulations is:

- 1.) The maximum allowable weight for a movement became not more than forty tons or 80,000 lbs.
- 2.) Although an inclusion of 24 hour notice to the field staff was required it did not change the 10 day period in which to make the move itself.
- 3.) The significance of the requiring daylight hours for the move and the travel speed cannot be gauged, but the obvious implication is a limitation on the overall distance and timeframe in which the movement of heavy vehicles could take place.

### Permanent Weighing Stations

The need to weigh oversized loads as well as more accurate weighing of ordinary truck loads, the Michigan State Highway Department proceeded to construct the first permanent weigh station in Michigan at Cambridge Junction in 1929. This action also embarked the State Highway Department on a program to construct a number of permanent weighing stations at strategic points on the State Trunk line system. Four other installations were started in the 1929-30 timeframe as reported in the Thirteenth Biennial Report at the following locations:

--U.S. 24 (Telegraph Road) south of Monroe in Monroe County.

--Intersection of U.S. 12 and the new location of M-60 north of New Buffalo in Berrien County.

--Intersection of U.S. 10 with Clio Road north of Flint in Genesee County.

--Intersection of U.S. 16 and M-43 south of Ionia in Ionia County.

The weigh station scales are reported to be a special platform design with the following features:

- o Two separate platforms for for registering individual loads
- o Each platform is connected with a separate scale beam and has a capacity of thirty tons.
- o The platforms are large enough to weigh groups of wheels encountered on special highway trailers used in moving special equipment.
- o A type recording device attached to the scale beam will print the exact weight of each wheel on tickets for purpose of record.

The scales are to be kept in adjustment by the State Department of Weights and Measures. Although these permanent weigh stations are expected to facilitate the control of truck loading, the use of portable scales will be continued at other points on the State trunk line system.

The Fourteenth Biennial Report (1931-1932) reported the continuing efforts of the Department to prevent destruction of roads and bridges due to excessive truck loading. The report made during the middle and later years of the depression noted the general weak economic condition and the impact on trucking being a reduction in truck traffic. However, noted is the competition among remaining firms and their propensity by operators to overload was found greater than in previous years.

The decrease in truck volume affected the number of full time weighing crews from eight to five. The five remaining crews were assigned to the five permanent truck weigh stations. The Department personnel which formed one half of the portable crews which have become members of the fixed crews now have the title "Weighmaster" conferred upon their position. The second half of the crew is a uniformed state police officer, which as reported in the Biennium Report "is a great aid in stopping trucks, especially at night, and these officers also do some checking of violations of the motor vehicle law and improper or illegal equipment." The work routine consisted of spending a portion of their time at the scale house and the balance with portable scales on an irregular schedule throughout the southern part of the State.

As reported in the Thirteenth Biennial Report part of the justification for permanent weigh stations was the weighing of heavy equipment. The role of the weighing crews as reported in the Fourteenth Biennial Report evolved to checking

the weights of loads requiring special permits for movement before such permits are issued. During the spring months of March, April, and May the number of weighmasters is increased to insure a minimum of damage to the roads. The tickets used for recording the weight of each axle are also used as evidence of overload in court.

### 1941 Legislation

Public Act 215 of Public Acts of 1941 amended section 4760 of the Compiled Laws of 1929 dealing with restrictions as to weight, spacings between axles, and authority of weighmaster to stop any conveyances on a highway.

#### Definitions

The act defined what was meant by "spacings between axles" and "maximum axle load." The former being the distance from axle center to axle center and the latter being the gross weight over the axle which includes vehicle and load.

#### Non-seasonal Maximum Axle Load

The following table summarizes the non-seasonal maximum axle load based upon distance between axles:

<u>Distance</u>	<u>Weight (Load)</u>	
	<u>Solid Rubber Tires</u>	<u>Pneumatic or Balloon</u>
≥ 9 ft.	16,000 lbs.	18,000 lbs.
≥ 3 1/2 ft. < 9 ft.	11,600 lbs.	13,00 lbs.
< 3 1/2/ ft.	Not to exceed maximum weight specified for a single axle when spaced 9 ft. or more apart.	

Maximum wheel load for any wheel shall in no case exceed 700 lbs. per inch of width of tire. The nominal size of tires shall be the rated size as published by the manufacturer.

Seasonal road restrictions for the months of March, April, and May were modified as follows:

The maximum allowable loads on concrete pavements or pavements with a concrete base are to be reduced by 25 per centum from the maximum loads specified in this current legislation. Maximum wheel load on concrete or concrete base shall not exceed 525 pounds per inch of tire width.

The maximum allowable loads on all other types of roads are to be reduced by 35 per centum from the maximum axle loads specified in this current legislation. Maximum wheel load on all other roads shall not exceed 450 pounds per inch of tire width.

### Weighmaster Authority

Prior to the implementation of this law "weighmasters" did not singularly possess the authority to stop vehicles without the intervention of the state police. The "police powers" necessary to stop vehicles was until this time invested in the State Police which had been a part of the special two-man weigh crews since 1929. This act changed the role of the weighmasters giving them the "police powers" necessary to stop vehicles for suspected load violations. If violations were found weighmasters had the authority to have the excess load removed and make a formal complaint to the courts. This is a shift in key responsibility for enforcement of truck weight laws which were originally bestowed upon each county sheriff then the State Police and now the Michigan State Highway Department "weighmasters". Also noteworthy is the fact that in this legislation is the first time the term "weighmaster" is used to describe the position of State Highway Department personnel who perform the weight enforcement functions.

### 1949 Legislation

#### Background

Public Act No. 300 of Public Acts 1949 codified into a single piece of legislation the Michigan Vehicle Code and Related Laws Concerning Ownership and Use of Vehicles on the Streets and Highways. Sections 257.716 through 257.732 are most pertinent to truck weight laws and enforcement. This legislation is the foundation of current truck weight laws and enforcement.

Public Act. No. 300 was enacted after American Association of State Highway Officials (AASHO's) 1946 policy recommendation of a maximum weight limit of 73, 280 lb for vehicles with the extremes of axles at least 57 ft. apart. This policy made gross weights for trucks dependent on axle spacing with 73, 280 lb as the overall maximum.

After World War II the rising prosperity in the nation and the boom in suburban housing created the demand for more roads. In 1954 President Eisenhower recommended a new federal effort to fund highway construction. In 1955 Congress held extensive hearings on means to finance the new program. The hearings focused on how to finance the new program as well as debate on size and weight regulations for trucks. A year later in 1956, the Federal-Aid Highway Legislation applied the AASHO 1946 policy favored by the House to the Interstates. The 1956 act also allowed operation on the Interstates trucks with higher limits that were legal in some states before July 1, 1956, this was the first "grandfather clause." Michigan's 1949 truck weight legislation allowing higher weight limits remained legal.

#### Wheel and Axle Loads: Springtime Restrictions

The maximum axle loadings allowable under Michigan law which were permissible under the grandfather clause based on Public Acts 1949-No. 300 were essentially the same as those weight restrictions established in the 1941 legislation.

The following table summarizes the non-seasonal maximum axle load based upon distance between axles:

<u>Distance</u>	<u>Weight (Load) Pneumatic or Balloon Tires</u>
≥ 9 ft.	18,000 lbs.
≥ 3 1/2 ft. < 9 ft.	13,00 lbs.
< 3 1/2 ft.	Not to exceed maximum weight specified for a single axle when spaced 9 ft. or more apart.

This legislation defined the above load limits as the "normal loading maximum." As such, subparts to this section regarding maximum weights were added to define

the maximum loading under tandem axle assemblies. The state highway commissioner and local authorities with respect to highways under their jurisdiction had the authority where roads and bridges were sufficient, to allow maximum tandem axle assembly loading up to 16,000 lb for any axle of such assembly. Thus a tandem axle could weigh 32,000 lb. The second subpart to this legislation limits motor propelled vehicles to only one tandem axle of this weight and specified all other tandem axles at 13,000 lb. Thus a maximum load for a two tandem and two single axle vehicle observing the maximum distance restrictions could legally reach 94,000 lb. This is achieved as follows:

<u>Axle Number</u>	<u>Distance Between Axles</u>	<u>Maximum Legal Weight</u>
1-Single	$\geq 9$ ft.	18,000 lb.
2-Tandem	$\geq 3.5$ ft.	32,000 lb.
3-Single	$\geq 9$ ft.	18,000 lb.
4-Tandem	$\geq 9$ ft.	26,000 lb.
Total :		94,000 lb.

This "example" load under this law did not require a special permit, ostensibly meeting the axle distance and load requirements of the law. Two factors which could have affected the maximum weight but which are not included in this legislation are:

- (1.) Maximum number of axles allowed on a vehicle with trailer(s), and
- (2.) No overall maximum weight was specified.

Presumably, the overall maximum length requirement of 50 ft. restricted the number of axles and therefore weight attainable. The 50 ft. length is a reduction from 60 ft. in the 1923 ( No. 321) legislation.

The height of vehicles had remained at 12 ft. 6 in. since the 1917 legislation. In this legislation, vehicles designed to transport motor vehicles were provided a different height requirement of 13 ft. 6 in.

Therefore the example weight here could climb higher until it would prove to be illegal under the axle load and distance requirements as well as length/height requirements. Presumably again, because of the size or overall weight which could not be legally carried, special permit procedures were required of owners.

In the last major subsection concerning wheel and axle loads, it is stated the state highway commission as well as county commissioners with respect to highways under their jurisdiction could suspend the restrictions stated in this legislation when and where in their discretion conditions of the highway so warrant or impose the restricted loading requirements at any other time the conditions of the highway may require.

Maximum wheel load for any wheel remained the same as in earlier legislation, not to exceed 700 lbs. per inch of width of tire. The normal size of tires shall be the rated size as published by the manufacturer.

Seasonal road restrictions for the months of March, April, and May were modified as follows:

The maximum allowable loads on concrete pavements or pavements with a concrete base are to be reduced by 25% from the maximum loads specified in this current legislation. Maximum wheel load on concrete or concrete base shall not exceed 525 pounds per inch of tire width.

The maximum allowable loads on all other types of roads are to be reduced by 35% from the maximum axle loads specified in this current legislation. Maximum wheel load on all other roads shall not exceed 450 pounds per inch of tire width.

### Enforcement

Modifications were made in this legislation regarding police powers of weighmasters who are described in this legislation as being "duly authorized agents" of the state highway department. The authority of weighmasters to stop suspected overloaded vehicles continues. In addition, when performing duties as described in the legislation, the authorized agent of the state highway department "shall have all the powers conferred upon peace officers by general laws of this state." This change gave weighmasters police powers while not actually being a formal member of a peace officers institution such as state police or county sheriff. However, the caveat as stated in the legislation is "performing duties under this chapter" [Size, Weight, and Load] of the Michigan Motor Vehicle Code. The additional significance of this change is the state highway department has a "police" arm to monitor and control unlawful loading as part of its overall responsibility to build and maintain highways for the public good.

The fines and penalties for convicted drivers and/or owners in this legislation was modified from the 1923 legislation to read as follows:

<u>Offense</u>	<u>Fine</u>	<u>Penalty</u>
First	Unstated	Misdemeanor
Second	$\geq \$25.00, \leq \$100.00$ and 1 cent/lb. over legal weight	or $\leq 90$ days in County Jail
Third	$\geq \$50.00, \leq \$100.00$ and 2 cent/lb. over legal weight	and/or $\leq 90$ days in County Jail. Judge may recommend to Secretary of State suspension of driver license or suspension of motor vehicle registration of owner not to exceed 90 days.

Significant Legislative Changes in Weight Regulations  
1917-1949

	<u>1917</u>	<u>1923</u>	<u>1949</u>
Overall Weight	15 tons	14 tons	No Maximum Identified
Overall Length	No maximum Identified	40 ft.-Single Unit 60 ft.-Truck and (2) Trailers	35 ft.-Single Unit 50 ft.-Truck and (1) Trailer
Maximum Axle Load	12,800 lb.	18,000 lb.	18,000 lb.
Tandem Axle Load	Not Applicable	28,000 lb.	32,000 lb.
Maximum Wheel Load	No Maximum Identified	700 lb./inch of tire width	700 lb./inch of tire width
Overall Height	12 ft. 6 inch	12 ft. 6 inch	Regular Vehicles 12 ft. 6 inch Auto Transporters 13 ft. 6 inch
Overall Width	96 inch	96 inch	Normal 96 inch Forest Prod. 96 inch Farm Tractor 104 inch
Maximum Speed	20 mph	≥18,000 lb., 15 mph ≥8,000 lb., 20 mph ≥5,000 lb., 25 mph ≤5,000 lb., 30 mph	Contained in other sections of the Motor Vehicle Code.

Significant Legislative Changes in Weight Regulation Enforcement  
1917-1949

	1917	1923	1929-30	1931-32	1941	1949
Police Powers	Sheriff of each county and deputies designated as all county, district, and township hwy. commissioners. Power to arrest on sight or upon a warrant violator of the act.	Sheriff of each county and any peace officer of the county shall have the power to arrest on sight or upon a warrant any violator of the act. Sheriff or peace officer have authority to stop any conveyance on public highways to determine if such vehicle is overloaded. If so found he shall have a right at that time and place to cause the excess load to be removed.	"Employee" of the state highway department is teamed with a state police officer to form a special two-man weighing crew. Eight crews are formed. Outfitted with a light truck and portable scales. Crews canvas the southern lower peninsula.	"Weighmaster" is title given to "employee" of the state highway department with weighing responsibilities. Uniformed state police officer assists weighmaster by witnessing scale readings, checking violations of motor vehicle law, and stopping trucks at night.	"Weighmaster" given authority to stop any conveyance on the highway. Also can mandate removal of excess load and make complaint to local court of jurisdiction.	Any police officer or duly authorized agent of the Michigan highway department with sufficient reason is authorized to require the driver to stop and submit to a weighing of vehicle by either portable or stationary scales. Agent or police officer can cause excess load to be removed. When such duly authorized agent of the highway department is performing his duties under this law and chapter he shall have all the powers conferred upon peace officers by general laws of this state.

# Significant Legislative Changes in Weight Regulation Enforcement 1917-1949

1917

1923

1929-30

1931-32

Weighing Mechanism	Portable Scales	Portable Scales	Portable Scales. First permanent scale houses constructed and opened at Cambridge Junction (U.S. 112 and M-50) in Lenawee County.	Portable Scales. Opening of four more permanent scale houses at Erie, New Buffalo, Ionia, and Clio. Sites chosen based on strategic locations with the most truck traffic.
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Significant Legislative Changes in Weight Regulation Enforcement  
1917-1949

	<u>1917</u>	<u>1923</u>	<u>1929-30</u>	<u>1931-32</u>	<u>1949</u>	<u>1949(cont'd.)</u>
Fines & Penalties	<p>Guilty of misdemeanor. Justice of the Peace or other court for each offense may levy fine of not less than \$5.00 nor more than \$50.00 and/or imprisonment in the county jail not to exceed thirty days.</p>	<p>Guilty of misdemeanor. Secretary of State shall revoke driver's license for one year and each such person, firm, association or corporation shall be subject for each offense to a fine of not more than \$100.00 and cost of prosecution.</p>			<p>Any driver and/or owner convicted of a violation of this section shall be guilty of a misdemeanor. Second offense fines will not be less than \$25.00 nor more than \$100.00, or by imprisonment in the county jail not exceeding 90 days. Second offense shall also pay a fine of 1 cent per pound for any weight over the permissible. Third offense is a fine not less than \$50.00 nor more than \$100.00, and/or by imprisonment not to exceed 90 days.</p>	<p>Third and subsequent offenses shall also pay a fine of not less than 2 cents per pound for weight over permissible. Upon third conviction magistrate may recommend to Sec'y. of State suspension of driver's license or owner motor vehicle registration not to exceed 90 days.</p>

Significant Legislative Changes in Weight Regulation Enforcement  
1917-1949

	<u>1917</u>	<u>1923</u>	<u>1929-30</u>	<u>1931-32</u>	<u>1941</u>	<u>1949</u>
Program Administration	Enforcement activities performed by County Sheriffs and local commissioners deputized as peace officers.	Enforcement activities performed by County Sheriffs and peace officers.	Eight two-man weighing crews formed combining highway department personnel and uniformed state police officer. Weighing activities performed by Highway department personnel. Enforcement activities performed by State police officers.	Two-man weighing crews reduced to five and assigned to first five permanent weigh stations. Highway department personnel referred to as "weighmasters." Uniformed state police officers assist weighmasters and check for other motor vehicle code violations.	Weighmasters given authority to stop vehicles, cause excess load to be removed, and may make a formal complaint to the proper authorities.	Police officers or weighmasters may stop vehicles if suspected of being overloaded. Weighmasters given authority to act as peace officers when performing their duties as assigned in the motor vehicle code chapter pertinent to vehicle weight enforcement.
Maintenance of Facilities			State Highway Department	State Highway Department	State Highway Department	State Highway Department

Significant Legislative Changes in Weight Regulations  
1951-1956

	1951	1953	1955	1956
Overall Weight	15 tons	14 tons	No Maximum Identified	No Maximum Identified
Overall Length	35 ft.-Single Unit 50 ft.-Truck and (1) Trailer. Buses exempted to 40 ft.	40 ft.-Single Unit 60 ft.-Truck and (2) Trailers	35 ft.-Single Unit Truck and (1) Trailer extended to 55 ft. Farm tractor may haul 2 trailers not to exceed 55 ft. Initiation date of 1960 maximum length reverts to 50 ft.	35 ft.-Single Unit 55ft--Truck and (1)Trailer. Vehicles designed and used ex- clusively to transport assembled motor vehi- cles, bodies, and vans used in moving house- hold goods allowed to reach 40 ft.
Maximum Axle Load	12,800 lb.	18,000 lb.	18,000 lb.	18,000 lb.
Tandem Axle Load	Not Applicable	28,000 lb.	32,000 lb.	32,000 lb.
Maximum Wheel Load	No Maximum Identified	700 lb./Inch of tire width	700 lb./Inch of tire width	700 lb./Inch of tire width
Overall Height	12 ft. 6 inch	12 ft. 6 inch	Regular Vehicles 12 ft. 6 inch. Auto Transporters 13 ft. 6 inch. Farmers hauling hay and vehicles carrying out-board motor and row boats allowed 13 ft. 6 in.	Regular Vehicles 12 ft. 6 inch Auto Transporters 13 ft. 6 inch
Overall Width	96 inch	Normal 96 inch Concrete Pipe added to new Forest Prod. width of 104 inches. Farm Tractor and machinery extended to 186 inches from 108 in.	No change from 1953 law.	No change from 1953 law.

Significant Legislative Changes in Weight Regulations  
1951-1956

	<u>1951</u>	<u>1953</u>	<u>1955</u>	<u>1956</u>
Maximum Speed	20 mph	$\geq 18,000$ lb., 15 mph $\geq 8,000$ lb., 20 mph $\geq 5,000$ lb., 25 mph $\leq 5,000$ lb., 30 mph	Contained in other sections of the Motor Vehicle Code.	Contained in other sections of the Motor Vehicle Code.

Permits

New requirement for farm machinery near highway center line.

Significant Legislative Changes in Truck Weight Enforcement  
1949-1951

1949

1951

1955

Fines & Penalties	<p>Officers or duly authorized agents upon determining an overweight vehicle may require the excess load to be unloaded to permissible weight. Excess load cared for at the risk of the owner or operator. Any driver and/or owner convicted of a violation of these weight restrictions shall be guilty of a misdemeanor. Second offense fines will not be less than \$25.00 nor more than \$100.00, or by imprisonment in the county jail not exceeding 90 days. Second offense shall also pay a fine of 1 cent per pound for any weight over the permissible. Third offense is a fine not less than \$50.00 nor more than \$100.00, and/or by imprisonment not to exceed 90 days. Third and subsequent offenses shall also pay a fine of not less than 2 cents per pound for weight over permissible. Upon third conviction magistrate may recommend to Sec'y. of State suspension of driver's license or owner motor vehicle registration not to exceed 90 days.</p>	<p>If fines and damages not paid immediately or bond posted double the amount of fines and damages, the judge or magistrate is authorized to impound the vehicle. If fine not paid in 90 days the vehicle would be seized and sold.</p> <p>Added knowingly evading weighing at scales when overloaded shall be deemed guilty and fined not to exceed \$100.00 and damages equal to: 2 cent/lb. for excess over 1000 lb. when excess is <math>\leq 2000</math> lb. 4 ct./lb. for each pound of excess when excess <math>\geq 2000</math> lb. and <math>\leq 3000</math> lb. 6 ct./lb. for each pound of excess <math>\geq 3000</math> and <math>\leq 4000</math> lb. 8 ct./lb. for each pound of excess <math>\geq 4000</math> lb. and <math>\leq 5000</math> lb. 10 ct./lb. for each pound of excess <math>\geq 4000</math> lb. and <math>\leq 5000</math> lb.</p> <p>All damages assessed under provisions of this section shall be credited to the highway fund unit of government maintaining the highway upon which the offense occurred.</p>	<p>Revisions to allow magistrate and judges flexibility in assessing whether fines and damages will be paid to avoid impoundment. Vehicles impounded subject to a lien and any prior liens of similar nature, if not paid within 90 days after seizure, shall certify unpaid judgement to the prosecuting attorney of the county in which the violation occurred who shall proceed to enforce the lien by foreclosure sale.</p> <p>Any driver knowingly refusing to stop at or by-pass any scales or weighing station or fail to stop when requested or ordered to do so by a police officer, duly authorized agent of the state highway department or county road commission shall be deemed guilty of a misdemeanor and upon conviction assessed a fine not to exceed \$100.00 or be imprisoned in the county jail not to exceed 90 days, or both.</p> <p>It shall be unlawful for any agent or authorized representative of the Michigan highway department or a county road commission to stop any truck or vehicle on any road or highway in the state unless such agents are driving a duly marked vehicle, clearly showing and denoting the branch of government they represent.</p>

Significant Legislative Changes in Weight Regulations  
1965-1969

1965

1966

1969

Overall Weight	No change from 1955 dropping of stated maximum.	No change from 1955 dropping of stated maximum.	Gross vehicle weight determined by weighing individual axles or groups of axles and the total weight on all the axles shall be the gross vehicle weight.
Overall Length	No Change from 1956 law.	40 ft. maximum for trailer or semi-trailer. 55 ft. maximum for truck-tractor and trailer or semi-trailer combination. 65 ft. maximum for truck-tractor, semi-trailer and trailer combination allowed. The combination exceeding 55 ft. for truck-tractor, semi-trailer and trailer combinations are excluding vehicles designed and used exclusively to transport motor vehicles or bodies, are allowed only on designated highways and routes approved by state and local authorities under their jurisdiction. Combinations of truck-tractors and trailer or semi-trailer or both, designed and used exclusively to transport assembled motor vehicles or bodies cannot exceed a total length of 60 ft. The load on such vehicles may extend an additional 3 ft. beyond the front or rear.	Modification to 1966 law allowing combination truck-tractor and trailer or semi-trailer, or both designed and used exclusively to transport assembled <u>boats</u> which do not exceed a total length of 60 ft. The load may extend an additional 3 ft. beyond the front or rear.
Maximum Axle Load	No Change from 1956 law.	No Change from 1956 law.	No Change from 1956 law.

Significant Legislative Changes in Weight Regulations  
1965-1969

	<u>1965</u>	<u>1966</u>	<u>1969</u>
Tandem Axle Load	(1) Tandem Axle Per Vehicle not to exceed 16,000 lb. per axle. Second tandem axle assemble not to exceed 13,000 lb. per axle. If total vehicle weight less than 73,280 lb., 2 tandem axle assemblies not to exceed 16,000 lb. for any such axle is permitted.	32,000 lb.	32,000 lb.
Maximum Wheel Load	700 lb./Inch of tire width	700 lb./Inch of tire width	700 lb./Inch of tire width
Maximum Number of Axles		In no case shall a combination of vehicles have in excess of 11 axles. Vehicles in excess as of March 1, 1966 shall be permitted (3) years from the effective date of this act.	Tandem axle assemble defined as (2) axles spaced more than 3 ft. 6 in. apart and less than 9 ft. apart, 1 in front of the other with a connecting mechanism to distribute the weight equally between the (2) axles.
Overall Height	No Change from 1956 law.	All vehicles allowed 13 ft. 6 inch	13 ft. 6 in.
Overall Width	No change from 1953 law.	No change from 1953 law.	No change from 1953 law.
Maximum Speed	Contained in other sections of the Motor Vehicle Code.	Contained in other sections of the Motor Vehicle Code.	Contained in other sections of the Motor Vehicle Code.
Permits	No Change	No Change	No Change

Significant Legislative Changes in Truck Weight Enforcement  
1967-1969

1967

1968

<p>Fines &amp; Penalties</p>	<p>Revisions to allow magistrate and judges flexibility in determining whether fines and damages will be paid and allow the driver to proceed after the load has been made legal. If magistrate or judge is not satisfied that owner or lessees after a notice (and a right to be heard on the merits is given) will pay the probable fine and costs, shall impound said vehicle after fines and costs have been imposed. Vehicles impounded subject to a lien and any prior liens of similar nature, if not paid within 90 days after seizure, shall certify unpaid judgement to the prosecuting attorney of the county in which the violation occurred who shall proceed to enforce the lien by foreclosure sale.</p>	<p>Modification to law allowing the court discretionary power as to the amount of fine within the current schedule if the motor vehicle, motor vehicle semi-trailer or trailer did not exceed the total weight which would be lawful for each such unit by a proper distribution of the load upon the various axles supporting each such unit.</p>
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1960

<p>Weighing Mechanism</p>	<p>Michigan's first weigh-in-motion research project undertaken at Grass Lake weigh station.</p>
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1968

<p>Program Administration</p>
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<p>The powers, duties and functions of the Department of State Highways administered by the weighmaster section relating to the administration and enforcement of the size, weight, and load of vehicles are transferred to the Public Service Commission of the Department of Commerce.</p>
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1969

<p>Maintenance of Facilities</p>
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<p>A letter of understanding between Department of State Highways and Department of Commerce concerning Weigh Station maintenance is mutually agreed upon.</p>
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Significant Legislative Changes in Weight Regulations  
1970-1979

	<u>1970</u>	<u>1973</u>	<u>1973 cont'd.</u>	<u>1974</u>	<u>1976</u>	<u>1978</u>
Overall Length	All vehicle lengths increased to 40 ft. Truck-tractor and trailer remain at 55 ft. maximum. Truck-tractor and semi-trailer and trailer remain at 65 ft. maximum.	Modifies the additional distance that a load may overhang the rear (4 ft.) of a truck-tractor and semi-trailer or trailer designed exclusively to transport assembled motor vehicles, or bodies or boats which do not exceed a total length of 60 ft. The same modification was made for combination of truck-tractor, semi-trailer and trailer used for the same purposes, total overall length of 65 ft. Restricted to designated routes by the state highway commission and local authorities.	Added requirements to allow the motive transport of wholly or partially assembled vehicles not exceeding a maximum length of 65 ft., powered by one of the assembled vehicles. The triple saddle mount tow mechanism requires brakes acting on all wheels which are in contact with the pavement. Those combinations exceeding 55 ft. in length may operate only on approved and designated highways. The total gross weight of any 65 foot combination of vehicles shall not exceed a ratio of 400 pounds per engine net horsepower delivered to its clutch.	Impact-absorbing bumpers shall not be considered as part of the vehicle for purposes of determining overall length.	Added recreational vehicles to list of specialized carriers allowed to operate within the 60 or 65 ft. length limitation including additional front (3ft.) and rear (4ft.) overhang.  Extended the length of vehicles to 59 ft. from 55 ft. which are required to use only designated roadways under state and local authorities jurisdiction. 65 ft. maximum still in effect.	Extends the length of truck-tractor and trailers or semi-trailers to 60 ft. thereby eliminating the restrictions on use of certain roadways and increasing flexibility for fleet owners who were previously required to use cab-over tractors instead of conventional cab-tractors to pull standard 45 ft trailers and not exceed 55 ft. limit.

1978

<p>Maximum Axle Load</p>	<p>Added a section to allow state and local officials to designate a highway or a section thereof which do not exceed:</p> <p>(1) 20,000 lb./axle</p> <p>(2) A tandem axle weight of 34,000 lb including all enforcement tolerances.</p> <p>(3) an overall gross weight on a group of 2 or more consecutive axles equaling:  <math>W=500((LN/N-1)+ 12N+36))</math>                      and the gross vehicle weight does not exceed 80,000 lb.</p> <p>Changes bring Michigan into conformance with new limitations in the Federal Aid Highway Amendment of 1974.</p>
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1978

<p>Overall Height</p>	<p>Vehicles used for transporting hazardous materials and flammable materials are restricted to a height of 11 ft. 8.5 inches. Including safety equipment on these vehicles the height must not exceed the maximum for all vehicles of 13 ft. 6 in.</p> <p>Vehicles manufactured after July 1978 may not be used to transport flammable liquids and if the height exceeds 11 ft. 8.5 in.</p>
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Significant Legislative Changes in Weight Regulations  
1970-1979

	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1978</u>	<u>1979</u>
Overall Width	Established the total outside width of buses not to exceed 102 inches. Bringing Michigan into compliance with federal law.	Modified the confinement of truck cargo specific to the logging industry, exempting this industry from the loading and binding regulations that apply to other vehicles.	The bill would increase from 104 to 108 inches, the width permitted for the load of a vehicle hauling concrete pipe, unprocessed logs, pulpwood or wood bolts. The width permitted for a vehicle hauling agricultural products would be increased from 96 to 108 inches.	The delegation to authorities with control and responsibility for highways in their jurisdiction the ability to allow vehicles and vehicle combinations up to 102 inches in width, including load, which would otherwise be prohibited. The ability to authorize permits to achieve this does not restrict the issuance of a special permit.	Director of state highway department, county road commission or local authorities may issue permits for vehicle or vehicle combination no more than 102 inches in width including load for roads under their jurisdiction.

Special Permits

1978

Amendment to the Michigan vehicle code allowing permits for transport of farm machinery previously disallowed on interstate highways.

Significant Legislative Changes in Weight Regulation Enforcement  
1970-1979

1978

1979

<p><b>Fines &amp; Penalties</b></p>	<p>The bill as it's primary focus decriminalized minor traffic offenses. It also states which offenses are changed from misdemeanors to civil infractions and describes the procedures for processing civil infractions. A sample of specific violations associated with heavy vehicles affected by this bill are : careless driving, speed violations, speed-load violations, coasting on a down-grade, defective equipment, and selected size, weight, or load violations.</p>	<p><b>Weighing Mechanism</b></p>	<p><b>Construction of first portable intermittent weighing stations (PITWS).</b></p>
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Significant Legislative Changes in Weight Regulations  
1980-89

1980

1982

1984

1985

1986

1987

1988

Overall Weight	Vehicles operated on designated highways would be statutorily restricted to a maximum weight of 80,000 lb.
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Overall Length	Added the combination of truck-tractor and (2) semi-trailers, including load, shall not exceed an overall length of 60 ft. and semi-trailer must be 45 ft. or less.
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<p>Lengthened the semi-trailer length to not exceed 53 ft. Combinations of truck-tractors, trailers, and semi-trailer or (2) semi-trailers may operate with no length limitation if the length of each semi-trailer or trailer including load does not exceed 28.5 ft. Revisions brought Michigan into compliance with 1982 Surface Transportation Assistance Act.</p>
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<p>Modified the length of combinations of truck-tractors, semi-trailer, or trailer designed and used exclusively to haul assembled motor vehicles, bodies, boats or recreational vehicles to 65 ft. The load on the combination of vehicles extending beyond the front (3 ft.) or rear (4 ft.) remained the same.</p>
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<p>Mandates that those truck tractor and semi-trailer combinations with a semi-trailer length longer than 50 ft. and whose frame or body extends more than 36 inches beyond the rear of its rear axle and is more than 42 inches above the roadway shall not be operated in Michigan without an underride guard on the extreme rear of the frame or body.</p>
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<p>Exempted auto transporters and their specialized carriers from the maximum length restrictions using retractable load extensions in calculating the overall maximum length. The load extensions could not extend beyond the allowable overhang for the front and rear of the transport vehicles.</p>
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1980-89

1980

1982

1985

1986

1987

1988

<p>Maximum Axle Load</p>	<p>Specified maximum axle load of 9,000 lb when axles are less than 3.5 ft. apart. The gross axle weight on a given axle would be determined by weighing an individual axle or by weighing a group of axles and dividing the total weight of the group by the number of axles involved.</p>	<p>Overall Height</p>	<p>Vehicles transporting flammable liquids when outfitted with safety equipment required by state law may exceed the height of 11 ft. 8.5 in. but shall not cause the vehicle height to exceed 13 ft. 6 in.</p>	<p>Width restriction concerning farm equipment are eliminated allowing anyone to operate or move farm equipment for normal operations on state roads regardless of width without having to obtain a permit. Center line restrictions and safety precautions concerning lights and time of day substantially remain.</p>		
<p>Tandem Axle Load</p>	<p>A 17,000 lb. maximum per axle is stipulated rather than the 34,000 lb. maximum per assembly.</p>	<p>Overall Width</p>	<p>Allows the vehicles owner to be charged for violations which are related to width offenses.</p>			

Significant Legislative Changes in Weight Regulation Enforcement  
1980-1989

	<u>1984</u>	<u>1989</u>		<u>1988</u>	<u>1988</u>	
<b>Police Powers</b>	<p>The definition of police officer is amended to include authorized agents of county road commissions for the purpose of enforcing the code's limitations on height, weight, and load of vehicles. Agents required to wear a shoulder patch identifying the branch of government represented.</p>	<p>In the definition of police officer include authorization for weighmasters to enforce provisions concerning the operation of unregistered commercial vehicles and load limits for vehicles crossing bridges and viaducts.</p> <p>Persons violating the gross vehicle weight limits of public bridges, causeways, or viaducts would be responsible for a civil infraction and assessed a civil fine based on a vehicles excess load weight.</p>		<b>Fines &amp; Penalties</b>	<p>Institution of new per-pound civil fines for vehicles that exceed axle weight maximums: 3 cent/lb. for excess over 1000 lb. when excess is <math>\leq</math> 2000 lb. 6 ct./lb. for each pound of excess when excess <math>\geq</math> 2000 lb. and <math>\leq</math> 3000 lb. 9 ct./lb. for each pound of excess <math>\geq</math> 3000 and <math>\leq</math> 4000 lb. 12 ct./lb. for each pound of excess <math>\geq</math> 4000 lb. and <math>\leq</math> 5000 lb. 15 ct./lb. for each pound of excess <math>\geq</math> 5000 lb. and <math>\leq</math> 10000 lb. and 20 ct./lb. for each pound of excess over 10,000 lb.</p>	<p>Suspension of a license or vehicle group designation upon a conviction, bond forfeiture, or civil infraction determination for a serious traffic violation. Examples are: reckless driving, carelees driving, excessive speeding, as defined in Federal regulations, and traffic violation in which a person died.</p> <p>Maximum fine for civil infractions set at \$250.00 involving a commercial vehicle.</p>

Significant Legislative Changes in Weight Regulation Enforcement  
1980-1989

	<u>1980</u>	<u>1982</u>	<u>1983</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1990</u>	
Program Administration	Authority given to the Department of Transportation to establish rules regulating oversized or overweight vehicles and to allow the department to restrict their movement in order to ensure public safety or prevent damage to a road, structure, or installation. This resolves any question of the departments authority to promulgate rules to enforce its permit restrictions.	Under Executive Order from then Gov. William G. Milliken, all the powers, duties, functions, and responsibilities of the highway enforcement functions relating to the motor carrier vehicles moving in commerce upon the public highways of Michigan are transferred from the Public Service Commission to the Department of State Police.	Allows municipalities to be able to enforce their truck route ordinances without having to post hundreds of additional signs. Allows local authorities to designate streets where trucks are allowed rather than marking streets where trucks are prohibited.					
Weighing Mechanism			State Police change from 4 inch to .75 inch portable scales.	First shallow slip trenches constructed.  First Weigh-In-Motion scales opened at Erie weigh station.	Twenty-four .75 inch PITWS constructed throughout the state.	Second Weigh In-Motion scales opened at Grass Lake weigh station.	Twenty-five PITWS constructed. Grand total in Michigan stands at fifty-six.	

**INTERVIEW NOTES**

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

August 17, 1990

Lt. Billy Mohr

Motor Carrier Division

Department of State Police

Interview Conducted By: W. J. Buglass

The writer met with Lt. Billy Mohr, Motor Carrier Division of the Department of State Patrol to obtain as much information as possible concerning the Weight Enforcement Program currently being used in Michigan.

Lt. Mohr indicated that Michigan has no fixed schedule for scale operation and there are no plans at this time to operate any of the fixed facilities on a 24 hours/day, 365 days per year basis. District Offices prepare operation schedules each month and the scales are operated accordingly unless other problems develop (scale failures, staffing problems, certification delays).

The Motor Carrier Division is quite pleased with portable scale operation which is intended to minimize the bypassing of fixed facilities. DOT has recently installed some pavement notches (the notches accommodate portable scales and eliminate the need to block the remaining axles). The notches speed up the weighing procedure and Lt. Mohr feels that more accurate weights are obtained. Each officer is able to transport the required portable scales and all necessary blocking in his patrol car and is therefore able to weigh trucks without additional help. Lt. Mohr therefore recommends that additional pavement cutout/notches be installed in the future.

Michigan currently allows trucks with 11 axles to haul 164,00 lbs. According to Lt. Mohr all penalties are based on axle weights and not gross weights.

The writer indicated that it is extremely important that we obtain information concerning truck volumes in the vicinity of the scales, the number of trucks weighed (per day, per month, per year), the percent of trucks in violation, number of hours each scale is operated and reasons for non-operation. In response, Lt. Mohr indicated that he would provide the most recent certification which was sent to FHWA indicating the type of enforcement program being carried on in Michigan and the results. He will also attempt to provide the most recent federal critique of the Michigan operation.

The Motor Carrier Division is also responsible for MCSAP (Motor Carrier Safety Assistance Program). He estimates that approximately 85% of all inspections are Level 1 (the most comprehensive inspection). Most of the inspections are made at the fixed scales with only a few inspections being spontaneously handled on the road. All officers receive a minimum of four hours training with the Motor Carrier Division Officers receiving 12 weeks of training at the Academy. The Motor Carrier Division Officers also receive 80 hours of training on hazardous materials. This training has been conducted by the USDOT Traffic Safety Institute.

At the conclusion of the meeting, Lt. Mohr provided several sets of activity comparison reports for the Motor Carrier Division. These reports include information concerning weight and size violations for one month. Lt. Mohr also provided a roster of personnel for the Headquarters Division as well as for each of the District Headquarters Offices.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW  
August 16, 1990  
Mr. Ron Balaz  
Weights and Measures Division  
Michigan Department of Agriculture

Interview Conducted By: W. J. Buglass

Mr. Balaz is in charge of all scale certifications in the State of Michigan. The Division of Weights and Measures is part of the Department of Agriculture. He indicates that the Department of Transportation has some certified weights (certified by the Department of Agriculture) which can be used in connection with construction contract operations but not for the sale of commodities to the public.

The Division of Weights and Measures maintains certification equipment and staff in six areas throughout the state. Four of the six areas involve two staff of Weights and Measures and are equipped with a truck and the necessary weights. The other two more remote areas are handled by one member of the Weights and Measures staff and a truck with the necessary weights.

All costs for certification work are financed out of the general fund.

Mr. Balaz provided the writer with a map on which the various certification areas of the state are indicated together with the staff which is assigned.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

August 17, 1990

Ms. Regina Smith, Supervisor  
International Registration Plan (IRP)  
Michigan Department of State

Interview Conducted By: W. J. Buglass

The writer met with Ms. Regina Smith to determine whether or not the Registration Program which she supervises would have any material impact on the Weight Enforcement Study being undertaken for the Michigan Department of Transportation.

The following general comments were made by Ms. Smith during the course of our conversation.

IRP is based on fees and reciprocity miles that trucks are driven. Ms. Smith is well aware of the fact that trucking companies shop around for the best "deal" on IRP and very often register in states other than where their home base happens to be. She referred to this practice as "base state shopping". However, Michigan apparently does not mind that the truckers do this because they feel that miles are miles and there is no point in fighting it.

At this point there are only 5 or 6 states which are not participating in IRP. Ms. Smith expects that all provinces of Canada will soon belong to IRP.

Ms. Smith feels that Federal Legislation will eventually force all states to participate in IRP and she expects this to happen within the next year or so.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW  
August 16, 1990  
Mr. Jim Dorin  
Permit Section  
Michigan Department of Transportation

Interview Conducted By: W. J. Buglass

The writer met with Mr. Jim Dorin who is in charge of the Permit Section for the Michigan Department of Transportation. In general, all permits are issued by the Permits Section although, in some cases, permits can be issued by FAX through commercial services which are geared to work with trucking companies. The Department of Transportation receives the fees from the various commercial services which are involved.

At this time, the permit fee for a single trip permit is \$5.00 and the fee for an annual permit is \$8.00. These permits are issued for what is considered to be a non-divisible load only. The major exception to this is during the winter when roads are frozen, and raw forest products are allowed to exceed the weight limits without a permit.

The Permits Section has a state map on which all posted or restricted structures are indicated. This information is used to route trucks carrying excessive loads or having excessive height or width.

At the present time Michigan statutes allow 164,000 lbs on an 11 axle vehicle. This has been in effect since 1967. Prior to 1967 the state allowed 174,000 lbs on 13 axles. Dorin indicates that legislation has been introduced to reduce the number of axles and the corresponding weight but it appears that support will be lacking.

The following materials were provided:

Map showing restricted bridges

Michigan Vehicle Code - Re: weight and load limitations for trucks

MDOT - overloads permissible on bridges

Summary - Maximum truck loadings and dimensions

Procedures for obtaining permits for overweight forest products

Permits for mobile homes

Summary - Permits issued for 1988 & 1989

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

August 17, 1990

Mr. Tom Lonergan

Michigan Public Service Commission

Interview Conducted By: W. J. Buglass

Mr. Lonergan, Michigan Public Service Commission, is responsible for the economic regulation of trucking companies operating in the state. At one time the Public Service Commission was responsible for operating the scales and enforcing weight laws. However, at this point, the Public Service Commission is much more concerned with the "safe operation" of trucks.

Fees from truck registration are used to administer the activities of the Public Service Commission and also support the Motor Carrier Division of the State Patrol with the regard to weight enforcement. Any fee revenue remaining after these responsibilities are accommodated are returned to the transportation fund.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

September 21, 1990  
Major John H. Hill  
Motor Carrier Division  
Indiana State Police

Interview conducted by: W. J. Buglass

The writer met with Major Hill who is in charge of the Indiana State Police Motor Carrier Division with responsibility for weight enforcement and safety inspections. The basic objective of this meeting was to obtain as much information as possible concerning the procedures and program of the State of Indiana for comparison with the Michigan Weight Enforcement Program.

Major Hill indicated that his Division is in the process of modernizing all fixed scale facilities. Ultimately all of the fixed facilities will include Weigh-In-Motion (WIM) and buildings for safety inspections. At present, Indiana has a pair of sites under construction on I-94 west of the Michigan line. Major Hill expects that within four or five years all scales will have been modernized.

The enforcement of truck size and weight limits involves several agencies (the State Police, Indiana Department of Transportation and the Indiana State Board of Health). The State Police actually enforce the size and weight laws and the Department of Transportation has responsibility for the purchase and maintenance of the equipment. The Board of Health is responsible for certification of both permanent and portable scales. The Motor Carrier Division of the State Patrol currently operates 16 fixed scale facilities. There are several types of fixed facilities in operation including load cells, mechanical and weigh tronix. The I-94 scales (which are currently being replaced) were the only scales in Indiana that were designed with weigh-in-motion as well as a fixed/static scale involving load cells. The weigh-in-motion facility at I-94 as originally constructed was never a successful operation. It seemed that the weigh-in-motion did not function properly and the Motor Carrier Division apparently was not able to get it fixed. In addition to the Interstate and primary scales, the Motor Carrier Division operates two older facilities both of which are mechanical having 10' by 12' platforms.

In addition to the fixed scales, the Motor Carrier Division uses a number of portable scales. They have 200 MD400 portable scales, 72 Henni low profile scales and 6 PAT low profile scales. Major Hill indicated that in most cases when the fixed facilities are in operation, two or three portable scale crews will be assigned to each fixed scale facility in order to minimize the potential for trucks to bypass the fixed facility. Each patrol car is able to haul 6 portable scales along with whatever timber blocking is necessary to create a level surface for weighing.

At the present time, the Motor Carrier Division does not own any semi-portable scales. Major Hill indicated that at one time they did use some semi-portables but the officers and inspectors apparently did not like them. They felt they were too difficult to use and too slow.

Historically, the Department of Transportation has been responsible for the purchase and repair of scale facilities. At one time the DOT had a specialist for repairing portables but since his retirement, the work is now contracted to a service company. Following completion of portable scale repair by the service company, the service company takes them to the Board of Health (Weights and Measures) for certification prior to using them for enforcement.

The DOT also handles the repair of the fixed facilities by contracting with scale service companies. Upon completion of the repairs the Board of Health must be contacted for certification. Major Hill indicated that at times fixed facilities could be out of service for as long as one to two months from the time the scale service company is notified that a repair is needed. Many times the service company cannot respond promptly and following the repair the Board of Health Certification Unit may not be available.

At the present time the fixed scales are operated 12 hours per day, five days per week. The portable scales are operated for an 8 hour shift which is varied to accommodate traffic patterns. The portable crews are often used in conjunction with the fixed facilities to discourage trucks from using the bypass routes. Major Hill indicates that the scales would be kept open 24 hours per day 7 day a week if adequate staffing were available.

At present, the Indiana Motor Carrier Division does not participate in any joint usage arrangement. However, Major Hill indicated that he feels this would definitely be a possibility if arrangements can be made and authority granted.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

September 21, 1990

Ms. Sharon Rhoades, Administrator  
Weights and Measures Program  
Indiana State Board of Health

Interview conducted by: W. J. Buglass

The writer conducted an interview of Ms. Rhoades who is responsible for the certification of truck scales for the State of Indiana. Ms. Rhoades provided the following information:

The Weights and Measures Program is within the Division of Retail Consumer Affairs and has responsibility for all certification whether state truck scales or commercial scales.

This Division handles the certification of all portable/wheel weighers used by the State Patrol. The checking of the portable scales involves the use of an "O" ring which was purchased specifically for this purpose.

The portables are certified at least once per year. There is no specific time of the year when they are all done. The portables are brought into the Division for certification by each District Office. Ms. Rhoades indicated that it takes about thirty minutes per scale for certification of portables.

When portables need to be repaired Ms. Rhoades thinks that the Patrol will send the portables back to the manufacturer after which they must be recertified.

The fixed/platform scales are also certified once each year. These certifications are performed as the certification trucks are available.

Repair of the fixed scales is apparently handled by various scale service companies. Following completion of the repair work, the Weights and Measures Unit must recertify the scale. Ms. Rhoades is of the understanding that no citations are issued following completion of repairs until certifications are accomplished. The re-certification can involve delays of up to three days depending upon where the certification trucks happen to be working.

The Weights and Measures Unit operates three trucks, each equipped with hydraulic lifts and the necessary certification weights. The driver of the truck is also the technician responsible for accomplishing the certification.

In special cases, the Weights and Measures Unit can provide a technician to work with a scale service company in order to accomplish re-certification following repairs.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

September 21, 1990

Mr. Matthew Thomas

Assistant Permits Manager

Division of Engineering Services

Indiana Department of Transportation

Interview conducted by: W. J. Buglass

This interview was originally scheduled with Mr. Robert D. Cales, Permit Manager. However, Mr. Cales became ill and had to see a doctor. In his absence, the writer reviewed the oversize/overweight permit procedure presently being used by the Indiana Department of Transportation with his assistant, Mr. Thomas.

An applicant for an oversize/overweight permit must contact the Indiana DOT permits office and provide basic information needed to properly complete the permit form. The applicant may provide the necessary information by telephone and obtain whatever is needed to complete the form and mail it to the Department. The applicant may also conduct business in person at the Permit Department, completing the form and actually obtaining the permit while at the office. Routine-type permits may be handled by District or Sub-District offices. Most permits are handled directly by the Indianapolis Permits Office of the DOT. However, permits may be issued by telephone, mail and over the counter.

A listing of the various types of permits available and the associated fees are contained in the Oversize/overweight Vehicular Permit Handbook of the Indiana Department of Highways. A copy of the handbook was provided to the writer. In general, oversize permits involve a flat fee while overweight permits involve a base fee plus a mileage charge. In addition, permits are issued for the movement of mobile homes, large movements and certain special types of situations. These are all described in detail in the handbook referred to previously.

The permits office maintains a map on which all posted or otherwise restricted bridges are indicated. The trucking company has access to the map and also to other information concerning restrictions on various highways. It is the responsibility of the trucking company to determine the appropriate route which will be used for the permit load. The permits office will check the route recommended by the trucking company and will determine whether or not it is acceptable.

The writer requested information concerning the number of various types of permits which are issued annually. Mr. Thomas did not have this information readily available but will check with Bob Cales and will provide it in the near future.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

September 5, 1990  
Major Warren Davies  
Ohio State Highway Patrol

Interview conducted by: W. J. Buglass

This interview with Major Warren Davies was scheduled in order to obtain as much information as possible about the weight enforcement activities of the Ohio State Highway Patrol. The Patrol is currently responsible for all truck weight enforcement activities but not for the truck safety inspections. Safety inspections are the responsibility of the Ohio Public Utilities Commission under the direction of Mr. Tom Yaeger.

Major Davies informed the writer that the Ohio State Highway Patrol currently operates 19 fixed/platform scales, two of which utilize Weigh-In-Motion (WIM). The remaining 17 are single platform scales. In addition, the Patrol uses 11 teams consisting of one officer and two civilian inspectors to enforce truck weight using portable scales. Each of the teams operate with one car and one van which is able to carry 16 to 18 portable weighing units. Davies was not sure of the manufacturer of these units but thinks that most of them are from the PAT Company. With the exception of the two WIM units, the remainder are apparently old mechanical type units.

Repairs of the fixed or static units is accomplished through a service contract which the State Highway Patrol has with a scale service company. The scale service company has authority to re-certify the scales upon completion of the repair work. The weights used by the scale service company to re-certify the scales must have been previously certified by the Division of Weights and Measures of the Department of Agriculture.

Portable scales are not normally repaired by scale service companies but are usually sent back to the manufacturer. When they are repaired certification is accomplished by the Division of Weights and Measures.

The writer inquired as to any records which might be available concerning the amount of down-time which might be accrued as a result of failures or the need for repairs. Major Davies indicated that he did not have such a record and thought that only the persons operating the various scales would have any record of delays or down time.

Generally, the fixed units are operated 16 hours per day five days per week. In response to the writer's question as to why the units are not operated 24 hours per day and 365 days per year, Major Davies responded that the Patrol does not have sufficient staff.

Apparently the civilian weight inspectors are not deputized and therefore not able to issue citations. Therefore when they weigh trucks using the portable units, if it is necessary to issue a citation, they must call the District Post (District Patrol Headquarters). Further, these inspectors cannot chase and stop a truck if the truck driver does not stop at the portable weighing site.

Major Davies provided the writer with the Patrol's fiscal year 1991 plan for the enforcement of size and weight restrictions. The plan contains maps showing the location of facilities, various listings of enforcement activities, appendices containing statutory authorities and responsibilities, and a variety of other information concerning the State Highway Patrols weight enforcement activities. The "plan" also contains a listing of the fines which have been established by Ohio Statute. Davies indicated that 45% of fine revenue is returned to the State's general fund, 45% is returned to the county in which the citation is issued and 10% goes back to the appropriate local unit of government.

Davies indicated that the Ohio Public Utilities Commission has the basic responsibility for MCSAP and all Federal funds distributed for these inspections are received by that unit of government. Theoretically, the PUC makes all the inspections. Approximately 50% of the inspections are level one (the most comprehensive). These inspections are made at a variety of locations including the fixed scales, rest areas and other convenient turnout locations. The PUC inspectors do not carry weapons but are authorized to write citations.

Davies indicated that the Ohio State Highway Patrol Officers do make cursory truck safety inspections even though they do not receive any of the MCSAP funds.

The writer inquired concerning the possibility of joint usage facilities between Ohio and its neighboring States. Davies indicated that he was not aware of any discussions along this line. He did indicate that since Indiana had scales on the east and westbound roadways of I-70, the Ohio State Patrol decided to close their eastbound facility on Highway 70.

The Patrol recognizes that trucks do bypass the fixed facilities whenever they are open and in operation. To minimize this problem the teams using the portables are often assigned to the bypass routes.

The officers responsible for weight enforcement in Ohio receive a significant amount of training both external and within the Department. Davies was not conversant with the specific training requirements.

In addition to providing the writer with the Patrol's plan for the enforcement of size and weight restrictions for fiscal year 1991, he also provided several sheets of computer reports which contain information concerning use of portable scales throughout the State. In addition, he assured the writer that he would send similar information concerning the fixed facilities.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

September 5, 1990

Mr. James C. Truex, Inspection Manager  
Division of Weights and Measures  
Ohio Department of Agriculture

Interview Conducted By: W. J. Buglass

The writer conducted an interview with Mr. James C. Truex, Division of Weights and Measures, Ohio Department of Agriculture, on September 5, 1990. The purpose of the interview was to obtain as much information as possible concerning the certification of the various types of scales being used by the Ohio State Highway Patrol in connection with truck weight enforcement. Mr. Truex indicated that all fixed/platform scales are tested and certified once each year. This is generally done in January. Subsequent certifications which are required as a result of repairs, are performed by the scale service companies. These scale service companies, which are under contract to the State Highway Patrol, have weights which have been previously certified by the Division of Weights and Measures. These weights are certified once every two years.

All portable scales are certified by the Division of Weights and Measures. A special testing apparatus has been obtained in order to accurately test and certify the portable/wheel weighers. The Division of Weights and Measures also certifies portable scales following repairs which have been made.

Mr. Truex indicated that the Division of Weights and Measures operates four units consisting of a truck and technician. The trucks haul the necessary testing weights and are equipped with hydraulic lifting devices. Two of the trucks haul 40,000 lbs. of weights and the other two trucks haul 30,000 lbs. of weights. Although the scale service companies usually re-certify the scales following the repairs, in certain emergencies Weights and Measures will re-certify scales. In an emergency, a unit can be made available for re-certification in about two days. In most cases however, the Division requires about two weeks notice to accommodate a request for re-certification.

At the conclusion of the meeting, Mr. Truex provided the writer with a memorandum from the Director of the Ohio Department of Agriculture which describes the authority and responsibilities of the Division of Weights and Measures. This memorandum is directed specifically toward the enforcement of highway laws. In addition, Mr. Truex provided several other pieces of correspondence and instructional materials for our use.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

September 5, 1990

Mr. Jeffrey E. Gelety, Administrator  
Bureau of Permits and Communications  
and

Mr. Thomas J. Foody  
Assistant to the Deputy Director for Operations  
Ohio Department of Transportation

Interview Conducted By: W. J. Buglass

The writer was originally scheduled to meet with Mr. Frank Santoro who is the Administrator of the Bureau of Architectural Services for the Ohio Department of Transportation. However, Mr. Santoro was called away from his office and could not participate in the meeting. Therefore, Mr. Thomas Foody participated in the meeting in behalf of Mr. Santoro. In addition, Mr. Jeffrey Gelety, who is in charge of the issuance of overweight and oversize permits, also participated in the meeting.

Mr. Foody indicated that DOT is not involved in the operation of the Weight Enforcement Program although they are involved in the design/construction of new facilities or in the rehabilitation or replacement of existing facilities.

In general, the Department of Transportation owns the facilities and maintains the ramps and other area pavements. The Department also provides winter maintenance, (snowplowing, etc.) and does the mowing along the main line adjacent to the scales. However, the State Patrol is responsible for the mowing in the general area of the scale building and for the routine maintenance of the building.

The writer inquired concerning the potential for joint-usage facilities between Ohio and its neighboring States. Mr. Foody indicated that there have been discussions concerning joint-usage possibilities but to date, nothing has materialized.

Foody indicated that the weight limits (by statute) are the same for all highways in the State of Ohio. These limits comply with the Federal requirements with no exceptions being grandfathered in. At this point he indicated that the 11 axle trucks (164,000 lbs. gross) being operated in Michigan are often a problem in Ohio. The problem is particularly acute in the Toledo area because of certain types of products that are loaded in the Toledo port. Special permits are required for these exceptionally heavy trucks to transport loads from the port to the Michigan State line.

Mr. Jeff Gelety indicated that his office is responsible for the issuance of all permits for oversize and overweight loads in Ohio. The Department generally issues only single-trip permits when loads are not divisible. All of these single-trip permits are of the origin-destination type. One exception to this would be construction equipment. Special permits are issued to accommodate these wider loads and generally, the Department allows these large pieces of equipment to be hauled without removing various parts. The Department does issue what they refer to as a "continuing permit" on an annual basis for certain types of loads that are repeated throughout the year and generally involve the same routes and destinations.

At the close of the meeting, Mr. Gelety agreed to send the writer information concerning the statutory/administrative rule authority for the issuance of permits together with listings of permit fees for the various sizes of overweight and oversize loads. He will also provide information concerning the number of permits issued in previous years.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

August 15, 1990

Col. Jerome J. Blied and Major George P. Wenzel  
Division of State Patrol  
Wisconsin Department of Transportation

Interview Conducted by: W. J. Buglass

The writer met with Col. Jerry Blied and Major George Wenzel of the Wisconsin State Patrol on Wednesday, August 15, 1990 to obtain information concerning the operation and maintenance of truck weight enforcement and safety inspections in Wisconsin. This information will be used to make comparisons with the program in Michigan and to assist in the development of a comprehensive plan for the Michigan Department of Transportation.

The State Patrol is currently responsible for the operation and repair of the truck scales, including fixed, portable and semi-portable facilities. The State Patrol handles the repair of the scale mechanism and associated communications equipment while the Division of Business Management is responsible for maintaining the scale building and utilities. The Division of Highways takes care of snow plowing, mowing and surface maintenance. However, it should be understood that the State Patrol, Division of Highways and Division of Business Management are all within the Wisconsin Department of Transportation.

When repairs are necessary as a result of a load cell failure or other problems, the State Patrol normally calls a vendor who in turn may involve the manufacturer of the scale. Upon completion of the repair, the scale must be re-certified. The Department of Agriculture normally handles certification on an annual or semi-annual basis. In order to put the scales back into service as quickly as possible, arrangements have been made to deputize scale company technicians so they can re-certify the scales when the repair work has been completed. The State Patrol has considered adding a technician specialized in scale repair, but to date they have not taken action.

Scale certification accomplished by the Department of Agriculture is paid for by the Department of Transportation and is estimated to cost approximately \$25,000 per year.

Major Wenzel will provide the Department's current siting plan and a copy of the annual program certification which is submitted to FHWA.

The Motor Carrier Safety Assistance Program (MCSAP) is also administered by the Division of State Patrol. A core group of 26 full-time employees are trained to make the safety inspections, most of which are accomplished at fixed scale sites. The State Patrol feels that these inspections should not be accomplished at rest areas or other turnouts because of the limited availability of parking. In addition to the core group, all motor vehicle inspectors (112) have been trained to make the inspections and to spend four to eight hours per week in this activity.

Two types of portable scales are used (PATS and Haneys). The semi-portable (Loadecs, manufactured by General Dynamics) are used in an effort to minimize the truck bypass problem. The Division of State Patrol uses a mini-van in connection with the semi-portable scale activity. The officers feel that it is very important to use the semi-portable scales at locations where a level stretch of pavement is available.

Major Wenzel also very briefly discussed the problem which has been in existence for a number of years involving the very heavy, multi-axle vehicles which are allowed in Michigan and wish to cross into Wisconsin from the upper peninsula. At this time the problem is handled through a special permit issued by Wisconsin DOT. However, there is apparently some action in the legislature at this time which could resolve the problem to some extent.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

August 15, 1990

Mr. Paul Bernander, Supervisor  
Permit Unit

Motor Carrier Services Section  
Wisconsin Department of Public Service

Interview Conducted By: W. J. Buglass

Mr. Bernander supervises the issuance of permits for overweight and oversize loads on all state highways (Interstate, U.S. and State Trunk Highways). The Permits Unit is part of the Motor Carrier Services Section which is administered by the Division of State Patrol. The Permits Unit consists of eight permit representatives, one lead worker and the supervisor Mr. Bernander.

In general, single trip permits are issued for non-divisible loads only. The Permits Unit will check the requested routes and, in some cases, will determine the most acceptable route in terms of restricted bridges and/or posted highways. The Permits Unit maintains a map of all posted bridges which enables them to accurately route heavy loads.

The Permits Unit also issues annual permits which primarily accommodate mobile homes.

Mr. Bernander provided permit fee schedules for both multiple and single trip permits. He indicated that all permit fees go into the transportation fund. The cost of operating the Permits Unit is financed with transportation funds.

Special permits are issued for raw forest products and special exemptions are available for these products during the period when roads are frozen (mid-December to mid-February).

Mr. Bernander indicated that he would send various reports and statutes to WSA which would discuss the history of the permit system in Wisconsin, provide information concerning fee charges and information concerning the Department's cost of operating the Permits Unit.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

January 7 & 8, 1991

Mr. David Allen

Highway Carrier Administrator  
Operational Policy and Standards Office  
Ontario Ministry of Transportation

Interview conducted by: W. J. Buglass

The Province of Ontario, Canada shares a portion of its boundary with the State of Michigan and therefore, its truck weight enforcement policies and program is of interest to the State of Michigan in connection with the Weight Enforcement Study presently underway. The Scope of Services for this project included a requirement that interviews of staff of the Province of Ontario be conducted and data obtained in order to make comparisons of the State of Michigan with adjacent states as well as the Province of Ontario.

The writer met with Mr. David Allen, Highway Carrier Administrator for the Ministry of Transportation. Mr. Allen has responsibility for administering the policies and standards which govern weight enforcement and truck permit activities.

The Ontario Ministry of Transportation is headed by a Minister who is an elected member of Parliament and he is assisted by a Deputy Minister who is a civil servant (not elected). The Ministry is divided into several major divisions one of which is referred to as Safety and Regulation and is headed by an Assistant Deputy Minister. The Division of Safety and Regulation is responsible for several specific areas including Compliance, Transportation Regulation and Operations, and Finance. The Office of Compliance is responsible for Carrier Operation Policy and Standards and is under the supervision of Rudi Wycliffe. The Office of Carrier Operation Policy and Standards is directly responsible for the development of policies for truck weight enforcement and is also responsible for the weight enforcement including the operation of scales and the issuance of permits.

The Province of Ontario currently has 47 fixed truck scales having a variety of platform sizes and ramp configurations. Of the 47 fixed scales, 10 are quite new having what the Canadians refer to as a "race track" configuration along with weigh-in-motion (WIM). Mr. Allen indicated that they refer to these facilities as "race track" because they have a large circular roadway behind the scale house and platforms where trucks can pull off and park or come around for a second weighing and possibly a safety inspection. The one problem pointed out by Mr. Allen in connection with the WIM scales at the "race track" facilities is that empty trucks are allowed to proceed on the left or outside lane while the remainder must travel over the WIM and then be sorted. This means that any truck traveling down the

lane marked for empty trucks is never weighed. The WIM does not weigh trucks in the "empty lane".

The Canadians certainly recognize the problem of trucks bypassing scales and they have assigned a number of "cruisers" (patrol cars) to check the obvious bypass routes and direct trucks to scales. They have no limit on the distance that a truck can be detoured in order to get to a fixed facility.

Overweight trucks are cited and a minimum fine of \$168 is assessed. They may also impose a 30 day suspension for some of the more serious types of offenses.

The Province of Ontario uses several types of portable scales and in most cases they perform the weighing with portables on "Pullouts". A Pullout is an area along the side of a highway where a ramp has been constructed and a space preserved for the use of portable scales. Mr. Allen indicated that some of their portables are electronic so a cable can be connected to a computer in a vehicle in order to obtain electronic read-outs and provide for ticketing. They have tried pavement notches but do not feel that they are practical.

The major facilities which are equipped with WIM are in operation year-round, 24 hours per day with the exception of some emergency situations. Provincial law establishes the procedure and fine amounts. When a trucker is issued a citation, he has 3 options:

1. Do nothing (after 15 days the court will render a decision and assign a fine or penalty).
2. Plead guilty and request a reduction (Allen tells me that reductions are not granted very often).
3. Sign the ticket and send in the amount required.

In Ontario the fine revenue goes to the Consolidated Revenue Fund (this is much like a general fund in the states).

The Province of Ontario currently has about 350 staff including administrative as well as enforcement personnel. The more modern facilities which are complete with WIM and the "race tracks" are operated 24 hours per day and normally have 4 staff per shift.

The issuance of oversize and overweight permits is handled by the Office of Licensing and Control. The legal height in Ontario is 13'-6" and the legal length is 41' for a single vehicle and 75'-6" for a combination vehicle. The fee for a single trip permit (good for 10 days) is \$25.00 regardless of the amount of overweight. The Province also issues an annual permit for certain types of loads with a flat fee of \$150.00 which can allow up to 140,000-lbs. In addition, they have several special types of permits to accommodate specific periods of time and unique loads.

The scales operated by the Province of Ontario are not required to be certified by other Provincial Agencies or by the Federal Government. The scale companies which make repairs are authorized to certify the scales and put them back in service. Thus far, they have had no difficulty in having the courts uphold the citation actions. Actually, Mr. Allen tells me that the defendants must prove that the scale is inaccurate in order to relieve themselves of responsibility for the fine. Since the scale companies are authorized to certify the scales, very little delay has been experienced as a result of repairs and placing the scales back in service.

Minor amounts of maintenance (scale pits, roadways, mowing, etc.) are performed by the Ministry but almost all major types of repairs are handled by scale companies under contract to the Provincial Government. The scale companies stock most types of load cells and electronic equipment and are thus able to handle repairs expeditiously. The weigh-in-motion scales are repaired by IRD (International Road Dynamics).

Mr. David Allen indicated that the Province of Ontario has considered the possibility of joint usage of scale facilities but they have not actually entered into any agreements either with other Provinces or with the State of Michigan.

"Down time" is not considered a significant problem but when failures occur, the enforcement officers increase their use of portable scales.

Mr. Allen provided the following Province of Ontario publications for use in developing the Michigan Weight Study:

- Vehicle dimensions and weight limits
- Guide to security of loads
- National Safety Code for trucks and buses
- Scale location map

In addition, he assured the writer that he would attempt to provide information concerning total truck traffic vs. trucks weighed vs. trucks cited vs. fine revenue. He also indicated that he would attempt to provide information concerning numbers of permits issued of the various types as well as the fees collected.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

August 1, 1990

Mr. Gordon Boldt

Director, Office of Transportation Data Analysis  
Minnesota Department of Transportation

Interview conducted by: W. J. Buglass, P.E.

The writer met with Mr. Gordon Boldt, Director, Office of Transportation Data Analysis of the Minnesota Department of Transportation on Wednesday, August 1, 1990. The purpose of the meeting was to obtain information concerning staff of the Department of Transportation and other state agencies who are involved in Truck Weight Enforcement in Minnesota. The following is a listing of key staff and their agencies who may be able to provide data for use in the Michigan Weight Enforcement Study:

<u>Activity</u>	<u>Name/Location/Telephone</u>
Overweight and Oversize Permits	Darrell Schierman Department of Transportation South St. Paul Truck Center 612-296-0843
Scale Operations Citations/Downtime etc.	Lt. Pete Gibson State Patrol South St. Paul Truck Center 612-296-5946
Scale Certification	Mr. Blazek Public Service Department Weights and Measures Division 2277 Hwy 36 Roseville, MN 55423 612-341-7200
Mix of Facilities Portable/Semi-Portable/Fixed	Lt. Pete Gibson State Patrol South St. Paul Truck Center 612-296-5946
Maintenance of Scale Facilities Buildings, Mowings, Snow Removal etc.	Responsibility of each MnDOT District Office

Activity

Name/Location/Telephone

Maintenance of Scale Mechanisms

Sam Gargaro  
Department of Transportation  
455 Rice Street  
St. Paul, MN  
612-296-7402

Motor Carrier Safety Assistance Program

Lt. Pete Gibson  
State Patrol  
South St. Paul  
Truck Center  
612-296-5946

Construction and Funding of Scale Facilities

Betsy Parker  
Department of Transportation  
South St. Paul  
Truck Center  
612-296-0331

Gordon Boldt  
Department of Transportation  
Transportation Building  
St. Paul, MN  
612-296-7968

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW  
August 7, 1990  
Lt. Peter J. Gibson  
Commercial Vehicle Section  
Minnesota State Patrol

Interview conducted by: W. J. Buglass, P.E.

The writer met with Lt. Pete Gibson, Commercial Vehicle Section, Minnesota State Patrol on Tuesday, August 7, 1990. The purpose of the interview was to obtain information concerning the operation of the Commercial Vehicle Section with regard to the enforcement of Truck Weight Laws. The following is a summary of the information obtained:

The Minnesota Department of Transportation owns all fixed facilities. The Department decides where, when and how elaborate the facilities should be and pays all construction costs. In the absence of a location sketch, Lt. Gibson noted the various locations of fixed facilities on an official state road map. The staff of the Motor Carrier Section are responsible for the operation of the fixed facilities as well as all portable scales. They also maintain the inside of the scale houses.

The Commercial Vehicle Section consists of 138 employees headed by Captain Gene Halverson with Lt. Pete Gibson assisting. Of the 138 employees, 32 are troopers and 98 are Commercial Vehicle Inspectors. In addition there is one analytical specialist and several office clericals.

The Department of Public Safety, Division of State Patrol, is responsible for paying the salaries of the Commercial Vehicle Section's staff. The Department of Transportation is responsible for funding the construction and maintenance of fixed weight enforcement facilities. The DOT also finances the purchase of portable scales.

At the present time, there are six permanent fixed scales located as follows:

I-94 eastbound	Mn - Wisc. Line	24 hrs/day	365 days/year
I-35 southbound	Just south of 35W & 35E jct.	24 hrs/day	Monday - Friday
I-35 northbound	Just south of 35W & 35E jct.	24 hrs/day	Monday - Friday

I-90 eastbound East of Worthington 24 hrs/day Monday - Friday  
M33 Jct. M33 & US 2 16 hrs/day Monday - Friday  
US 2 Jct. US 2 & US 59 16 hrs/day Monday - Friday

There are also unmanned fixed scale facilities which are operated sporadically as the troopers feel there is a need. These facilities are located as follows:

US 10 Near Moorhead  
US 10 Just east of Elk River  
M3 15 miles south of the Twin Cities  
US 61 Just north of Winona

The State Patrol currently owns 174 portable scales. They are using both MD 400s' and PAT scales. They currently are not using semi-portable scales because they feel they are not sufficiently accurate. They have 12 teams of troopers and inspectors who operate the portable scales. The scales are transported in "Suburbans" or patrol cars. The crew is usually made up of a trooper and one or two CVIs' (Commercial Vehicle Inspectors).

A few special pavement notches have been constructed to facilitate the use of portable scales by the troopers.

Minnesota does not currently have a comprehensive long range master plan or program for weight enforcement. However, the Commercial Vehicle Section does prepare an annual report indicating where they will operate portable scales. This is supplemented on a schedule prepared monthly. They normally plan to operate portable scales for approximately two hours per site depending upon truck activity.

All citation revenue is returned to the general fund in Minnesota.

The State of Minnesota now has what they refer to as a "relevant evidence law". Ten troopers are assigned to implement the requirements of this law which allows the troopers to check bills of lading at various plants and hauling companies to determine whether the trucks have been overloaded even though they have not been checked by state troopers in the field. The only exemptions to this law are farmers and log haulers. Lt. Gibson expects that approximately one million dollars in citation revenue will result from the implementation of this law.

Lt. Gibson provided a copy of the 1989 Certification of Size and Weight Laws which was submitted to the Federal Highway Administration by the Department of Public Safety.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

August 8, 1990

Lt. Peter J. Gibson  
Commercial Vehicle Section  
Minnesota State Patrol

Interview conducted by: W. J. Buglass, P.E.

The writer met with Lt. Pete Gibson, Commercial Vehicle Section, Minnesota State Patrol on Wednesday, August 8, 1990. The purpose of the interview was to obtain information concerning the work of the Commercial Vehicle Section with regard to the Motor Carrier Safety Assistance Program (MCSAP). The following is a summary of the information obtained:

At the present time, 10 staff are completely dedicated to the MCSAP effort. They have all received rather extensive training and are now qualified to present training to new members of the Commercial Vehicle Section and they also present training in other States. These 10 Inspectors usually make spontaneous inspections rather than at permanent weigh stations. However, the other troopers and inspectors of the Commercial Vehicle Section also make safety inspections both spontaneously on various routes and at the truck weigh stations.

The Federal Highway Administration established a criteria for the number of inspections which should be made. For Federal Fiscal Year 1990 the State of Minnesota should make approximately 26,000 inspections. Of these, the Carrier Enforcement Section will probably make 22,000 and the Department of Transportation will make 4,000. Approximately 25% of all safety inspections are performed in off peak hours (beyond normal working hours).

The Federal Highway Administration reimburses the Office of Public Safety for 80% of salary costs and the Department is responsible for the remainder.

The records of these inspections are entered into a computer program called SAFETYNET. According to Lt. Gibson, all states are tied into this computer network. The information is uploaded to the Federal Highway Administration offices in Washington. 37.5% of all citation revenue is returned to the counties in which the inspections are made with the remainder going to the Minnesota General Fund.

The Department of Public Safety has apparently considered the possibility of constructing buildings in which to make safety inspections. The Federal Highway Administration has informed the Department that 75/25 money may be available for this purpose. At the present time, no commitments have been made nor are plans developed for inspection buildings. However, a new facility is being considered at Moorhead and consideration is being given to a safety inspection building. All staff who conduct safety inspections must receive 80 hours of basic training and an additional 40 hours of training in accordance with the North American Standard Training Program. In addition, the Transportation Safety Institute presents a 40 hour course on the inspection of trucks hauling hazardous materials. This course must be taken by safety inspectors prior to making this type of inspection.

Information concerning the number and types of inspections made by the Commercial Vehicle Section has been consolidated with information received from the Minnesota DOT Inspectors.

A copy of the Uniform Fine Schedule was provided to the writer.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

August 7, 1990

Darrell L. Schierman, Director  
Office of Road and Vehicle Information and Services  
Minnesota Department of Transportation

Interview conducted by: W. J. Buglass, P.E.

The writer met with Mr. Darrell Schierman, who is the Director of the Office of Road and Vehicle Information and Services, and has responsibility for the issuance of oversize and overweight permits for various types of haulers. The purpose of the meeting was to obtain information concerning the authority and procedures for issuing oversize and overweight permits, as well as information concerning permit fees. The following is a summary of the information obtained:

Minnesota Statutes authorize the Department of Transportation to issue permits for operation of vehicles which exceed the legal dimensions and weights. The authority is only valid for non-divisible loads being hauled on highways which are under the Department's jurisdiction.

All permit activity is handled by the Office of Road and Vehicle Information Services under the supervision of Mr. Schierman. However, truckers may obtain permits by calling Schierman's office from various truck stops and/or from the St. Croix weigh station along I-94 just west of the Wisconsin-Minnesota boundary line. In order to obtain permits via telephone, the haulers must have bonded accounts with the DOT.

Schierman estimates that 1500 annual-type permits are issued which are responsible for about 60,000 moves. He also estimates that approximately 42,000 single-trip permits are issued. Total revenue from the permit issuance program is estimated at \$1,300,000 per year.

Although the Department has a schedule of flat rates for issuance of permits, they also use a recently approved "damage factor" which assigns additional costs to the permittee based on the amount of overload and the number of miles to be traveled. This approach was approved after considering a permit fee schedule which would attempt to reflect pavement damage by overloaded trucks.

Minnesota Statutes currently allow several types of exemptions to the standard weight limits. Annually a 10% winter overweight permit is available for loads being hauled over the Interstate System. The 10% overweight exemption applies to all highways but permits are not required except for loads being hauled on the Interstate. A 10% overweight permit can also be issued for the movement of sugarbeets and potatoes from the field of harvest to the point of first unloading. These permits are available during the period from October 1st to November 30th. In addition, the statutes allow special types of permits in emergency situations.

Mr. Schierman's office maintains a large map on which all restricted bridges are located. His office does not attempt to provide routings for haulers but will carefully examine the route being requested by haulers transporting oversize and/or overweight loads. Upon completion of their review of the suggested routes they will make suggestions concerning alternate routes.

The writer was provided with information concerning the Minnesota Statutory Authority for issuing oversize and overweight permits along with the general guidelines. A schedule of permit fees was also provided.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

August 8, 1990

Mr. Roger Kochevar

Office of Electronic Communications  
Minnesota Department of Transportation

Interview conducted by: W. J. Buglass, P.E.

The writer met with Mr. Roger Kochevar, Office of Electronic Communications, Minnesota Department of Transportation on Wednesday, August 8, 1990. The purpose of the interview was to obtain information concerning the maintenance and repair of various types of scales currently being used in the enforcement of Truck Weight Laws. The following is a summary of the information obtained:

All buildings associated with weight enforcement are the responsibility of the Minnesota Department of Transportation for original construction, outside maintenance of the buildings, maintenance of pavements, mowing and snow plowing.

The scale mechanism (load cells/weigh bars) are repaired or replaced by Electronics Technicians employed by The Electronic Communications Office. In addition, the weigh-in-motion (WIM) scales are also repaired and maintained by the Electronics Technicians. All maintenance and repairs to scale platforms are performed by the DOT bridge crews. Mr. Kochevar indicated that they generally do not attempt to repair weigh bars/load cells, but replace them with new ones. They attempt to maintain a stock of the items which are most apt to need replacement. For example, his office would normally arrange for a stock of weigh bars/load cells and various types of computer and other electrical cables.

The Electronic Communications Office is responsible for maintenance and engineering with regard to electronic facilities and employs about 60 staff. Radio shops are located throughout the State primarily at District Office locations. However, there is only one electronics shop and that is located in St. Paul.

Following replacement of a weigh bar or load cell, the scale must remain out of service until it is recertified by the Weights and Measures Division of the Public Service Department. The recertification can usually be accomplished in two weeks following the repair. During this period, weighing continues on one or more of the other platforms. In some cases, the troopers will direct trucks to some other scale location.

Minnesota has had very good experience with their WIM units which were purchased from the International Road Dynamics Company (IRD) which is located in Saskatoon, Canada. Mr. Kochevar suggested that I contact Professor Bergen of the University of Saskatchewan in Canada concerning weigh-in-motion scales.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

August 8, 1990

Ms. Betsy Parker, Director  
Office of Motor Carrier Safety and Compliance  
Minnesota Department of Transportation

Interview conducted by: W. J. Buglass, P.E.

The writer met with Ms. Betsy Parker, Director of the Office of Motor Carrier Enforcement and Compliance on Wednesday, August 8, 1990. The purpose of the interview was to obtain information concerning the State's involvement in Motor Carrier Safety Assistance Program (MCSAP). The following is a summary of the information obtained:

Ms. Parker indicated that the Office of Motor Carrier Safety and Compliance is responsible for enforcement of all Federal Motor Carrier Safety Regulations including those involving hazardous materials. This office also has responsibility for licensing the haulers of hazardous materials and regulates the "for hire" haulers.

The inspection staff consists of four inspectors specifically trained to make hazardous material inspections, 21 Motor Carrier Vehicle Inspectors and one supervisor. In addition, there are six clericals.

All inspectors must be certified and this can only happen after they receive 40 hours of North American Standards training and additional hazardous materials training (40 hours) sponsored by the Transportation Safety Institute (TSI). Some of the inspectors receive additional training in cargo tank truck inspections.

None of the staff of the Office of Motor Carrier Safety and Compliance are armed. However, Ms. Parker indicated that they do not have difficulty stopping trucks for random inspections. Signs are put out and truckers generally comply with directions to stop for inspections.

The writer was provided with quarterly reports which provide information concerning the number of inspections (both hazardous materials and others), the number of trucks taken out-of-service, the number of drivers taken out-of-service, the number of violations and the number of buses or special vehicles inspected. A "fine" schedule was also provided. The maximum fine is \$700 but apparently is only assessed for violations of the hazardous materials requirements.

Ms. Parker also provided the writer with samples of various safety inspection reports and citations. She also provided a set of instructional material used to train inspectors in achieving a satisfactory Federal DOT Inspection Rating.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

August 13, 1990

Mr. Michael F. Blacik, Director  
Weights and Measures Division  
Minnesota Department of Public Service

Interview Conducted By: Thomas Walsh

The writer met with Mr. Michael Blacik, Director of the Weights and Measures Division of the Minnesota Department of Public Service. The purpose of the meeting was to obtain information concerning the certification of truck scales in Minnesota. The following is a summary of the information obtained.

All state owned scales are certified annually. There is no set date or time for this. It was stated, however, that portable scales will normally be certified just prior to placing seasonal weight restrictions on local roads. Fixed scales will also be certified after any repair work is done.

It was indicated that most repair work and recertification to fixed scales is scheduled well in advance. Once on site it will take about one half of a day to complete the recertification process.

Portable scales are normally brought into the Weights and Measures facility for recertification. These will normally be recertified and returned to the owner in approximately one week.

No weigh-in-motion scales are calibrated or certified by the Weights and Measures Division.

The Weights and Measures Division has a total of 12 employees. There is the Director, three supervisors, three clerks and five technicians. Approximately 3000 scales are certified each year by these individuals.

Each technician is assigned a truck which contains 40,000 lbs of calibrated test weights and two, 2000 lb. dollies for moving the weights. These weights will be moved around on a fixed scale platform during the certification process. If a load cell needs adjustment or calibration the technician will direct an individual from the Radio and Electronics Division of MnDOT to make the adjustment. According the Mr. Blacik there is very good cooperation between Weights and Measures personnel and DOT forces.

Portable scales are also calibrated and certified by using test weights. These weights are stacked in an inverted pyramid shape. This is done in order to get the weight centered over the portable scale wheel pad. At times this situation can become unsafe if the weights begin to tip. Although at times unsafe, this method is still used as it is felt to be the most accurate. Methods using hydraulic devices have been avoided. This is because each hydraulic cylinder will need to be recertified for accuracy each year. This would increase the cost of recertifying portable scales. This makes the use of calibrated weights the most consistent and cost effective means of portable scale calibration and certification.

There is little cost involved in recertifying a scale. The equipment, labor and overhead costs are all charged to a recertification client. This is true for both public and private sector work. The Public Service Department is required by law to recover 100% of the cost of certification.

Mr. Blacik was asked if he would ever consider turning over the certification of state owned scale to either the DOT or Carrier Enforcement Group. He indicated that discussions concerning this had taken place in the past. Neither of these groups wanted to take over certification of the scales. This was due to the "credibility factor" should a case go to court. By having the three separate groups there is a perceived legitimacy to each ones actions.

The only problem anticipated is budget cuts. As budgets get tighter, staff may decrease while the work load increases. This apparently has begun as two positions have been removed in the division in the past year.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

November 30, 1990

Mr. Stephen Johnston  
Permits and Weighmasters

Oregon Department of Transportation  
State Highway Division

Interview conducted by: W. J. Buglass

This was the first of a series of interviews of key staff of the Oregon Department of Transportation (ODOT). The writer met with Mr. Stephen Johnston, Manager of the Permits and Weighmasters Section of the Highway Division. Mr. Johnston has responsibility for administering the weight enforcement and truck permit activities.

ODOT presently operates five Ports-of-Entry, and 57 additional fixed/static facilities. Johnston indicated that he plans to eventually replace the 57 fixed/static scales with plug-in facilities. They are reasonable in cost and are effective in minimizing the bypass problem. In some cases they plan to use the areas presently occupied by the static scales and in other cases they plan to construct new turnouts in patterns so an officer can go from one to another in a short period of time.

An officer uses a van equipped with computer equipment. He parks his van at the site and plugs into the scale. He can pull up data on any vehicle from the data bank of the Public Utilities Commission (PUC).

Each officer of the Weighmasters unit is authorized to issue citations and can also stop trucks for inspection, to take them to a static scale, or to check weight with portable scales.

ODOT presently uses 66 portable scales (wheel weighers), primarily to minimize the bypass problem.

Semi-portable scales have been used but the officers do not like them. They require too much effort to put them in place and start weighing vehicles. Some pavement notches have been constructed but there are no plans to construct more of them or to use more semi-portable scales.

Mr. Johnston provided the following:

Certification to FHWA

Map - District boundaries and scale locations

Bail schedules

Disposition of fine revenue

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

November 30, 1990

Mr. Mike Bolliger

Permits Unit

Oregon Department of Transportation

Division of Highways

Interview conducted by: W. J. Buglass

The writer arranged a meeting with Mr. Mike Bolliger, Permits Supervisor, to obtain current information concerning the issuance of oversize and overweight permits.

Bolliger indicated that his unit charges a flat fee of \$8 per permit which is supposed to cover administrative costs. Government vehicles are exempt. The fees will be changed in 1991 based on recently enacted legislation. The new fees will be based on ESAL's (Equivalent Single Axle Loads).

ODOT also issues special use permits (Road Use Assessment) for loads varying from 96,000# to 105,000# (up to 12' wide and 65' long).

Revenue from permit fees is split like fine revenue.

Mr. Bolliger provided the following:

Map-restricted highways

Statute & Rules

Data - Number of various types of permits issued.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

November 30, 1990

Mr. Jim Clifford

Department of Agriculture

Division of Weights and Measures

Interview conducted by: W. J. Buglass

The writer scheduled a meeting with Mr. Clifford to obtain current information concerning the certification of truck scales. The Division of Weights and Measures routinely certifies all truck scales (including portables) at least annually.

Mr. Clifford confirmed the fact that the ODOT can re-certify scales following repairs if they use weights certified by the Division of Weights and Measures.

The Division of Weights and Measures has trucks and technicians (6 units) located throughout the state.

ODOT pays for the certification of truck scales as follows:

Fixed/Static - \$150 minimum - Cost can be higher, based on miles and hours.

Portables - \$25 per hour (can check 4 scales per hour).

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW  
November 30, 1990  
Mr. Paul Henry  
Oregon Public Utility Commission

Interview conducted by: W. J. Buglass

The writer and Mario Montesano (weighmasters) met with Mr. Paul Henry, Public Utility Commission (PUC), to obtain information concerning the Federal Motor Carrier Safety Assistance Program (MCSAP).

Mr. Henry is the key contact with the MCSAP program and is responsible for preparing and submitting the Oregon Enforcement Plan. Mr. Henry provided the writer a copy of the Plan.

Truck safety inspections are conducted by trained inspectors in the Weighmasters unit as well as in the PUC. They must all complete the required training which usually includes a two week intensive course following about six months of on-the-job training. In addition, each inspector receives an additional two weeks of training concerning the transportation of hazardous materials.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

November 30, 1990  
Mr. Mario Montesano  
Administrative Coordinator  
Weighmasters Unit  
Oregon Department of Transportation, Highway Division

Interview conducted by: W. J. Buglass

Mr. Mario Montesano is the key assistant to Manager Stephen Johnston. He arranged a very complete tour of the Woodburn Port-of-Entry and provided a considerable number of reports, facility plans etc.

The ODOT has two scale maintenance technicians who make all repairs of the static and portable scales. They respond to calls from Ports-of-Entry and other fixed/static facilities and make arrangements for repairs. A telephone followup to the original call for a repair provides the technicians with sufficient information to determine the parts and tools needed. The ODOT repair unit stocks replacement parts (load cells, cables, etc.) which expedites the repair and allows the scale to be placed in service promptly.

The repair unit is also equipped with certified weights. Following completion of a repair the technicians can place the scale back in service by checking the unit's accuracy using the certified weights. In addition to their responsibility to make repairs, the Scale Technicians routinely inspect and program repairs and maintenance work annually. This preventive maintenance program has been effective in minimizing "down time" due to unexpected failures.

Mr. Montesano provided the writer with a tour of the Woodburn Port-of-Entry, including the truck inspection building. During the tour the following were provided by the supervisor of the Woodburn Port-of-Entry:

- "Rolling Through Oregon", a pamphlet which summarizes trucking regulations.
- Plan sheets of the Woodburn Port-of-Entry and inspection facilities.
- Computer printouts of the operational data (number of trucks through the scales, number weighed, cited, legalized etc.).
- Plan sheets of the Plug-In facilities.

Mr. Montesano also conducted a tour of several other fixed scales in the area. Although not in operation, it was interesting to note that truckers can use the scale to determine the weight of their truck. ODOT makes the digital read-out visible to the truckers when the scale is not in operation.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW  
October 1, 1990  
Captain Larry Rollins  
California Highway Patrol

Interview conducted by: W. J. Buglass, P.E.

The scope of services for this project provides that data be collected from those States which are adjacent to Michigan in order to make procedural and program comparisons. In addition, the scope of services requires the consultant to obtain data concerning procedures and programs of several other states which appear to have comprehensive weight enforcement programs. One of the States selected is California. Therefore, an interview was scheduled with Captain Rollins, California Highway Patrol, who is in charge of the Commercial and Technical Services section where weight enforcement and safety inspections are handled. Wilbur Smith Associates obtained data from the California Highway Patrol in 1988 during a study conducted for the Nebraska Department of Roads. At that time, the California Highway Patrol had developed a "draft" Master Plan following the review of a great amount of traffic data, the experience of the Highway Patrol and the condition of existing facilities. The "draft" Master Plan is based primarily on projected truck volumes.

Captain Rollins indicated that the "draft" Master Plan has been revised on several occasions and has not yet received formal approval. He suggested that John Van Berkel be contacted relative to changes which have been made.

Captain Rollins indicated that the Department of Transportation (CALTRANS) has the basic responsibility for engineering, construction of facilities and major maintenance work. The DOT provides the Motor Carrier Division with approximately \$800,000 annually for various types of maintenance of the Weight Enforcement and Inspection Facilities. Basically, Captain Rollins can authorize almost any type of maintenance work but requires authorization from the Department of Transportation for very heavy or extensive maintenance projects. CALTRANS also constructs and maintains the ramps into the facilities.

Repairs to the static/fixed scales is performed by scale service companies under agreements with the Motor Carrier Division. In California, scales may be placed back in service following repairs when certified by the Weights and Measures Units of various counties. Since authorities for such certifications are placed with counties, the delays are minimal because there is always a Weights and Measures Unit close by. Captain Rollins feels that delays following repairs are usually not more than one day.

Portable scales are repaired by technicians employed by the Motor Carrier Division. Following repairs, they must be taken to the Department of Food and Agriculture, Weights and Measures Division for certification.

The Motor Carrier Division operates 13 major facilities. These facilities have weigh-in-motion (WIM) for sorting, stationary/platform scales and a truck inspection building. The truck inspection buildings are completely enclosed in locations such as Truckee, where weather can be a problem, and open type buildings for inspection in the southern part of the state. In addition, California operates 39 small platform scales throughout the State. The major facilities are operated continually except for equipment failures or an occasional staffing problem. The small platform facilities are operated on an as-needed basis.

The Motor Carrier Division has approximately 600 portable scales at this time. The portables are generally operated by 127 Mobile Roads Enforcement (MRE) personnel. Most of the portables are PATS although the Motor Carrier Division does still own about 200 MD400 portable scales.

All fine revenue reverts to the cities and counties in which the violations occur.

At the present time, the Motor Carrier Division has a total staff of 719 of which 194 are uniformed officers assigned to various facilities, 127 make up the Mobile Roads Enforcement teams and 151 are non-uniformed inspectors. In addition, the Motor Carrier Division staff includes 197 inspectors who check truck terminals, and a number of clericals.

According to Captain Rollins, during 1989, 17,454,380 trucks were weighed. This total includes those which are only sorted and not weighed on the fixed platform scales. Of this group 404,999 were inspected for safety. 134,943 trucks were placed out of service and tickets issued. 75,725 received tickets for weight violations. (Rollins provided a state-wide commercial activities report for 1989 which contains information concerning trucks weighed, citations issued, inspections completed, etc.) Almost all MCSAP inspections are made at the fixed facilities. These facilities have special lights in the floor and on the sides of the building to facilitate inspection work and are either completely or partially enclosed. Captain Rollins estimates that 90% of all inspections are the level one type (the most comprehensive). The new inspection facilities being installed also include heated floors which in turn keeps the floor area dry and makes it easier for the inspectors to crawl under trucks.

Captain Rollins feels that the problem of trucks bypassing weight and inspection facilities is not as great in California as in some states because of the mountain passes and the limitation on the number of routes available for trucks. Wherever there is a bypass problem, the MRE's are assigned to enforce weight limits using portable scales.

The California Highway Patrol is very much interested in the possibility of joint usage facilities. A number of possibilities exist, one of which would involve Arizona. Apparently the California Highway Patrol is reviewing the experience of the States of Utah, Idaho and Nevada concerning joint usage possibilities.

The writer requested a copy of the most recent enforcement plan which was submitted to the FHWA. Captain Rollins indicated that he could not provide a copy of the plan because his department is having some difficulty with the Federal Highway Administration concerning certain aspects of the plan. Captain Rollins also declined to provide a copy of the grant proposal for MCSAP. Here again, the California Highway Patrol is having some difficulty with FHWA concerning changes being insisted upon by the Federal Government.

All uniformed officers as well as the inspectors receive rather standardized training, including 80 hours of general training and 40 hours in hazardous cargo.

Captain Rollins indicated that he probably would be able to make available copies of plans or at least the plan and elevation sheets for some of the new facilities.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW  
October 1, 1990  
Mr. Robert Shepard  
Office of Transportation Permits  
California Department of Transportation

Interview conducted by: W. J. Buglass, P.E.

The writer conducted an interview with Mr. Bob Shepard who is directly involved and responsible for the issuance of overweight and oversize permits in the State of California.

During 1989, approximately 160,000 permits were issued of which 76,684 were single trip permits for overweight vehicles and 4,762 permits were annual permits for overweight vehicles. The remainder of the permits issued were for oversize and other special type trips.

There are some exceptions, but in general, permits for oversize and overweight vehicles are only issued for "sole function loads" (non-divisible).

There are 12 District Offices of the California Department of Transportation and each one has authority to issue most types of permits. Each of these offices has bridge books and wall maps on which various types of restrictions are indicated to assist them in issuing permits for special loads.

Arrangements are currently in place to allow the Department to FAX permits to various truck stops along the boundary line of California to expedite the issuance of permits to truckers.

Mr. Shepard provided the following:

Transportation Permits Manual  
District Maps  
1989 Average Daily Traffic Counts  
Permit Production by District Office (1979 - 1989)

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

October 2, 1990

Mr. Gary Castro

Measurement Standards Specialist  
California Department of Food and Agriculture  
Division of Measurement Standards

Interview conducted by: W. J. Buglass, P.E.

The writer interviewed Mr. Gary Castro, Measurement Standards Specialist. Mr. Castro is employed by the Department of Food and Agriculture, Division of Measurement Standards. This Division is responsible for all scale certification in the State of California.

The State Division of Measurement Standards certifies weights owned by each county and the counties in turn certify the fixed/platform scales operated by the California Highway Patrol (CHP). The county weights are certified routinely by the Division of Measurement Standards every two years, although in some cases the interval is increased. The county weights must comply within a tolerance of one in 2,000. The Division of Measurement Standards may not charge the counties for the certification of their weights since the law requires that the service be provided free of charge.

The scale service companies which are hired by the Patrol to make repairs usually have weights which have been previously certified. If so, they can place scales back in service following repairs. Mr. Castro informed the writer that the scale service companies must have registered repairmen on their staff.

The portable scales are all certified by the State (Division of Measurement Standards). This is done routinely on an annual basis. The California Highway Patrol brings the portables into the Division for certification. In addition, scales are also brought into the Division for recertification following repairs by the CHP technicians. The CHP reimburses the Division for their actual costs. This cost is very reasonable since four scales can be checked and certified per hour and the hourly rate at this time is \$48.00. The counties are also reimbursed by CHP following recertification of repaired scales.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

INTERVIEW

December 7, 1990

Mr. Peter G. Burns, Deputy Administrator  
Revenue/Motor Carrier Services  
Arizona Department of Transportation

Mr. James C. Gentner, Program Administrator  
Revenue/Motor Carrier/Enforcement  
Arizona Department of Transportation

Mr. Carroll F. Cooley, Motor Carrier Administrator  
Arizona Department of Public Safety

Interview conducted by: W. J. Buglass

This meeting was scheduled to coincide with the Annual AASHTO Meeting. The Scope of Services for the project did not include interviews of Arizona Department of Transportation (ADOT) staff. However, since ADOT has an aggressive Ports-of-Entry Program it was decided to meet with ADOT staff during the Annual AASHTO Meeting and obtain as much information as possible without increasing the direct expense for the project. We reviewed various portions of the Ports-of-Entry Master Plan which was prepared and distributed in January, 1989. The Plan contains a location map indicating where all of the ports are located. Existing as well as planned ports are indicated on the map. In addition, we reviewed the layouts of several of the ports which have been recently constructed and are modern in every respect. The Department generally favors the construction of inspection bays with pits to facilitate the work of the inspectors. Whether or not the inspection bays are just covered or completely enclosed is apparently a function of the location of the facility. In the northern part of the state the inspection bays are completely enclosed and heat is available. Most of the others are just covered but not completely enclosed.

The Arizona DOT, Motor Vehicle Division, is enthused over the possibility of expanding the concept of joint-usage with neighboring states. They already have a working agreement with the State of Utah and are looking forward to the execution of agreements with other neighboring states. They feel that it is not only efficient to do so but creates good relationships and enhances uniformity of operations with regard to weight and size enforcement.

Mr. Gentner provided a copy of the Arizona DOT 1990 Certification of Enforcement which was submitted to the Federal Highway Administration. He also provided a copy of the Inter-governmental Agreement which they entered into with the State of Utah.

Mr. Cooley agreed to send the writer a copy of the Motor Carrier Safety Assistance Program (MCSAP) application which details truck inspection activity in Arizona and the need for federal funding.

In addition to the data included in the Ports-of-Entry Master Plan the following information was provided during the course of the meeting:

Motor Carrier Inspectors/Officers are armed and have authority to stop trucks.

Fine Revenue goes to DOT fund except the first \$10 which goes to the Department of Justice.

Truck inspections are conducted at all fixed scales as well as by mobile units. 50% of inspections are Level 1.

About 12% are waved past the inspection if the trucks carry a CVSA sticker.

Overweight and oversize permits involve only a flat fee of \$15.00.

Arizona uses semi-portable and wheel weighers in addition to fixed scales.

Scales are certified quarterly by either Scale Service Companies or the Division of Weights and Measures.

The DOT employs a Scale Technician who makes repairs.

At the conclusion of the meeting, the writer was encouraged to contact them for any information or input which we feel would be helpful to our Michigan DOT Study.

WEIGHT ENFORCEMENT STUDY  
MICHIGAN DEPARTMENT OF TRANSPORTATION

TELEPHONE INTERVIEW  
March 1, 1991  
Sergeant Paul Semanek  
Traffic Division  
New York State Patrol

INTERVIEW CONDUCTED BY : T. F. Walsh

This telephone interview was conducted to obtain information concerning the current status of New York's weight enforcement program. During previous studies it was learned that there are no fixed scales used for law enforcement in the State of New York. Notes from interviews conducted for previous studies follow this sheet so that a more complete overview of New York's Truck Law Enforcement Program is developed.

There has been relatively little change in the type or number of scales used. There are approximately 70 employees assigned to operate 9 semi-portable and 60 portable scales. The state owns more scales than these but only uses this many. The remaining scales are kept as backups.

New York has enforced truck weight laws using only portable or semi-portable scales since 1960. Sgt. Semanek indicated that there is no plan to change this policy. It is felt that they can adequately control truck weight using this method. Reporting of enforcement efforts to FHWA and preparation of the MCSAP grant application are handled by the New York Department of Transportation.

STATEWIDE TRUCK SCALE MAINTENANCE PLAN  
ILLINOIS DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE

Interview

T. Sgt. Steve Sleurs  
N.Y. State Troopers  
Scales Detail

Interviewed conducted by W.J. Buglass

A meeting was held with Sgt. Steve Sleurs, N.Y. State Troopers, Scales Detail, on July 31, 1986, to obtain information concerning the operation, maintenance and repair of truck scales.

The New York State Troopers Scales Detail has complete responsibility for enforcing the truck weight laws. The DOT is involved only to a minor extent in that some special funds are used to make unusually large purchases of equipment. The DOT also certifies to FHWA that the weight laws are being enforced.

New York State now uses only portable and semiportable scales. Sgt. Sleurs indicated that prior to 1960 the State did operate fixed/permanent truck scales. They were discontinued because they were not considered effective, as truckers could easily avoid them.

At the present time the "Troopers" are enforcing truck weight laws on the following systems:

Interstate Highways	1,488 miles
State Highways	14,884 miles
County Highways	20,572 miles
Town Highways	54,948 miles
Village Highways	5,935 miles

The larger cities handle their own truck weight enforcement.

Sleurs emphasized that the biggest effort is associated with the heavier traffic volume highways and with areas where heavy loads are anticipated including concrete and aggregate producers, seasonal crop haulers, and others.

Sgt. Sleurs estimates that the Scales Detail consists of about 70 employees and that they operate 9 semiportable scales (Lodecs) and 60 portable scales. However, the Scale Detail also has additional equipment (portables and one Lodec) to use as backups.

The portable scales are purchased for approximately \$1600 each for the 400 series and \$2,700 each for the 500 series.

The Lodec Scales (semiPortable Scales) are purchased for approximately \$21,00 and the trailers for about \$3,400.

General Electric Dynamics (GED) demonstrated a new semiportable scale on I-90 east of Albany on August 1, 1986. The Scales Detail, supervised by Sgt. Sleurs, compared this Lodec unit with the GED units.

The semiportables involve load cells, which are the principal repair problem. The connecting cables also have to be repaired or replaced often. The portables are mechanical and require repairs infrequently. The internal spring mechanism is the most common problem.

The Scales Detail has an agreement with the Syracuse Scale Company to make repairs on a time (\$25/hr) and parts basis. In emergencies the maximum charge is \$65 per portable and \$150 per Lodec, including labor and parts.

Sgt. Sleurs indicated that total repair cost for 1985 was:

- \$6000 - SemiPortables
- (\$12,718 for 1983 & 1984)
- \$25,000 - Portables
- (\$48,716 for 1983 & 1984)

Replacement load cells are currently being purchased for \$750 and must be obtained from the State of Washington.

Certification is the responsibility of the Department of Agriculture, (DOA) Division of Weights and Measures. All scales are certified routinely twice each year. Additional certifications are made following some types of repairs. The cost of certification is borne by the Department of Agriculture.

Certification of all truck scales is accomplished at the State Fairgrounds near Syracuse. The Troopers deliver the scales to the DOA at Syracuse. This is efficient because repairs are also made by a scale service company in Syracuse.

STATEWIDE TRUCK SCALE MAINTENANCE PLAN  
ILLINOIS DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE

Interview

Matt Ryan  
New York State Department of Transportation  
Division of Technical Services

Interviewed by W.J. Buglass

A meeting was scheduled with Matt Ryan, New York State Department of Transportation, (DOT) Division of Technical Services on July 31, 1986. The purpose of the meeting was to obtain information concerning the involvement of DOT in the operation and maintenance of the truck scales.

Ryan indicated that DOT has little active involvement. Funding for special or large purchases of equipment is sometimes arranged by the DOT. The DOT also certifies to FHWA that New York State is enforcing the truck weight laws.

Mr. Ryan is aware of the previous use of fixed scales by the DOT and State Police, but believes their use was discontinued many years ago, probably in the mid 1950s. He is satisfied with the success the change to portable scales has had in reducing the number of trucks bypassing the scales. He feels that, with portables, the ratio of citations/trucks weighed is much higher.

STATEWIDE TRUCK SCALE MAINTENANCE PLAN  
ILLINOIS DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE

Interview

Mrs. Delores Davis  
New York State Department of Agriculture  
Division of Weights and Measures

Interview by W.J. Buglass

A meeting was held with Mrs. Delores Davis, New York State Department of Agriculture, Division of Weights and Measures on August 1, 1986. The purpose of the meeting was to obtain information concerning certification of the truck scales.

Mrs. Davis indicated that the Division of Weights and Measures certifies all truck scales used by the State Police twice a year. She also indicated that additional certifications are made following various types of repairs.

The certifications are performed at the State Fairgrounds at Syracuse, which is close to the scale repair company. Mrs. Davis feels the certification process is efficient, especially the convenient location of the repair company.

Mrs. Davis could not provide a specific budget record but indicated that the certification of the truck scales is performed on a "cost" basis. Wages, per diem and mileage make up the cost involved. She estimates the annual cost of truck scale certification to be approximately \$20,000.

STATEWIDE TRUCK SCALE MAINTENANCE PLAN  
ILLINOIS DEPARTMENT OF TRANSPORTATION  
BUREAU OF MAINTENANCE

Telephone Interview

T. Sgt. Steve Sleurs  
New York State Police  
Scales Detail

Interview conducted by Paul Woods

A telephone interview was conducted on Wednesday October 22, 1986, with T. Sgt. Steve Sleurs to obtain information concerning the handling of overweight citations by the New York court system.

T. Sgt. Sluers stated that the State Police record the number of citations that result in conviction as well as the number of citations which are dismissed. These figures are summarized quarterly and therefore will not be available for another 2 weeks. Records are not kept of those citations that are reduced, but Sgt. Sleurs stated that this number was probably minimal.

The New York State Police are satisfied with the enforcing of overweight citations by the courts.

**JOINT-USAGE AGREEMENTS**

## GENERAL POLICIES GUIDE TO A JOINT PORT OPERATION

August 3, 1987

In developing and implementing a joint port operation, consideration must be given to each jurisdiction's laws, regulations and policies. The comparing of operations should identify the areas to be analyzed by each jurisdiction before participating in a joint port operation. There are many functions to be pursued in this type of inter-governmental agreement. The following is a general guide identifying areas to be considered when comparing jurisdictions.

### I. WHAT IS A JOINT PORT OF ENTRY?

#### A. Three basic alternatives for operation:

1. Both states operating inbound and outbound at each location, operating parallel to one another.
2. Each state operating on one side only and only enforcing requirements of their inbound port.
3. Each state operating from their inbound port and also screening for the other state's outbound requirements.

The first alternative would combine the existing ports into one port facility. Both states would operate inbound and outbound and screen for their own procedures. This alternative would eliminate the motor carrier industry from stopping at two ports in a relatively short distance. Operating costs should be reduced since both jurisdictions should share in the expense of maintaining the facility.

The second alternative for a joint port operation would be for each state to operate only one side of the port facility. Each state would operate only their inbound port. This is probably the least favorable for each jurisdiction because neither state would be checking for outbound compliance of the motor carrier industry.

The third alternative would require each state to operate their own inbound facility and also provide screening for the other state's outbound requirements. The degree to which this third alternative is feasible is directly related to the similarity in both states' motor carrier requirements and both states' screening philosophy. Reviewing each jurisdiction's requirements will distill; 1) the feasibility of alternative three, 2) identify where differences of practices and requirements will cause difficult querying patterns, peak patterns, parking facility requirements, and 3) for purposes of joint enforcement.

## II. WHY A JOINT PORT OF ENTRY?

### A. Motor Carrier Industry:

Productivity for the motor carrier industry would be increased. The implementation of a joint port of entry would allow a vehicle to stop at one port facility and be screened for compliance for two jurisdictions. A joint port of entry would eliminate the motor carrier industry from stopping at two separate ports in two different jurisdictions.

### B. Construction Costs:

Facility construction costs could be shared and/or lease agreements arranged to control costs. Rather than building separate facilities in each jurisdiction, jurisdictions could combine operations to develop and design better functional ports of entry in which to serve the motor carrier industry and to enforce compliance of state laws, regulations and policies.

### C. Reduced Operating Costs:

By developing a joint port operation, the operating cost would be reduced. The jurisdictions involved would be managing two port buildings, one inbound port and one outbound port, rather than two inbound ports and two outbound ports. A joint port of entry should be a shared responsibility. Whether it be sharing initial costs, or operating under a contract or lease agreement, both jurisdictions should benefit from a combined port operation. Costs such as utilities, repairs, maintenance, janitorial and support equipment are areas in which operating cost could be reduced.

### D. Staffing:

A joint port operation could create the potential for reduced staffing depending on the location and type of operation implemented. If the alternative chosen were to allow the inbound port of one jurisdiction to enforce the other jurisdiction's outbound requirement, then it might be possible to reduce staffing. But, if the added duties of enforcing both inbound and outbound regulations causes longer waiting for the motor carrier industry, then reduced staffing could not occur. There should be the potential for increased motor carrier coverage with using existing staff, because both inbound and outbound ports would be operated on a 24-hour basis.

### III. COMPARISON OF LAWS AND COMPLIANCE REQUIREMENTS

#### A. Comparison of size and weight laws

1. Gross weight and axle weight limitations:
  - a. Gross Weight - the weight of the vehicle combination without load, plus the weight of any load thereon.
  - b. Single Axle Weight - the total weight transmitted by all wheels whose centers may be included between two parallel transverse vertical planes 40 inches apart, extending across the full width of the vehicle.
  - c. Tandem Axle Weight - the total weight transmitted to the road by two or more consecutive axles whose centers may be included between parallel vertical planes spaced more than 40 inches and not more than 96 inches apart, extending across the full width of the vehicle.

The preceding definitions of gross weight and axle weight are as defined by AASHTO. The weight limits may vary from state to state depending on local laws and limits in effect before the federal limits were established in 1982. In considering a joint port operation, it is important that weight and size requirements are similar or the same.

Determine legal weight limits set by each jurisdiction.

2. Width (legal) - determine legal width limits set by each jurisdiction.
3. Height (legal) - determine legal height limits set by each jurisdiction.
4. Length (legal) - determine legal length limits set by each jurisdiction.

#### B. Comparison of overdimensional permitting practices

In permitting overdimensional loads or vehicles, the following need to be considered in comparing laws of other jurisdictions.

1. Routing of overdimensional loads.

2. Time limitations for movement.
  - a. Permits issued for single or multi-trip purposes.
  - b. Permits issued for continuous travel are restricted to sunrise to sunset travel.
  - c. Permits issued for restricted movement on weekends or holidays.
3. Escort requirements
  - a. Loads which require an escort.
  - b. Requirements of an escort vehicle.

C. Comparison of Overdimensional Loads

1. Divisible and non-divisible overloading permitting.

First, establish what each jurisdiction recognizes as a divisible and non-divisible load. Divisible load meaning a load that is capable of being reduced or loaded on a vehicle in order to meet legal dimension without requiring an overdimensional permit.

A non-divisible load is a load that cannot be reduced or loaded onto a vehicle without the load being overdimensional in some way; therefore, requiring an overdimensional permit.

Some jurisdictions allow divisible loads to be permitted so long as only one dimension such as width, height, or weight is exceeded. Dimensional limits are also set for these divisible loads for permitting purposes.

2. Overwidth Permits

Determine overdimensional width limits and requirements set by each jurisdiction.

3. Overheight Permits

Determine overdimensional height limits and requirements set by each jurisdiction.

4. Overlength Permits

Determine overdimensional length limits and requirements set by each jurisdiction.

5. Issuance of overdimensional permits at either, or all, of the following ways. The port of entry, division office, or other locations should be considered and reviewed in developing a joint port operation.

a. Requirements for movement of an overdimensional load:

- 1) Dimensions of load
- 2) Route
- 3) Insurance requirements

b. Time required to issue an overdimensional permit:

- 1) Difference between handwritten issuance and teletype, or computer issuance.

6. Longer Combination of Vehicles

The testing and operation of longer combination vehicles has resulted in three generally recognized longer combination vehicle types:

1. Turnpike Doubles - a tractor pulling two standard length tandem axle semi-trailers.
2. Rocky Mountain Doubles - a tractor pulling a standard length semi-trailer, plus a shorter trailer.
3. Triples - a tractor pulling three shorter semi-trailers.

Other combination vehicles have also been developed in the West to meet distinctive transportation and equipment needs, including truck and full trailer, truck and two full trailers, "B" combinations and autotransporter combinations.

Experience with longer combination vehicles has led some states to adopt special permit rules and regulations for the operation of longer combination vehicles. These rules and regulations governing equipment, driver qualifications, performance and approved routes, have assured that longer combination vehicles are safe and compatible with the highway and other highway users.

In adopting a joint port of entry, these longer combination vehicles should be considered in developing guidelines for the port's operation. If one jurisdiction allows the operation of these longer vehicles, and the other jurisdiction does not, a problem could exist and would need to be resolved before beginning joint port operations.

E. Comparison of Registration and Highway Use Tax Requirements

1. Registration

- a. Types of registration required to operate within each jurisdiction.
- b. Requirements for application.
- c. Vehicles exempt from registration requirements.

Types of registration to be considered are base plate registration, prorated, International Registration Plan (IRP), multi or single trip permits, and other forms of registration determined by each jurisdiction.

2. Motor Fuel Taxes

- a. Motor fuel distributors
- b. Motor fuel use requirements
- c. Motor fuel trip permits
- d. Vehicles exempt from motor fuel taxes
- e. Application and bond requirements

3. Third Structure Taxes

- a. Third structure tax requirements
- b. Trip permit requirements
- c. Vehicles exempt from third structure tax
- d. Application and bond requirements

Third structure taxes are levied against motor carriers over a certain weight. The tax rate is based on weight and the distance traveled.

These three areas, registration, fuel tax and third structure tax generate a considerable portion of revenue for each jurisdiction. Therefore, it is important for each jurisdiction to understand the other's requirements and types of registration and tax credentials required. By controlling and enforcing these areas, a joint port operation will be successful for the jurisdiction involved.

#### F. Collection of Other States Permits

Guidelines should be developed for collection of fees and issuing permits in operating a joint port of entry for purposes of joint enforcement.

1. Identify permits to be issued and corresponding fees to be collected.
2. Information recorded on each permit.
3. How fees are maintained and exchanged between ports.
4. The use of accountable forms and the distribution of the forms before and after the permit is issued.
5. Develop policies for errors in permits issued and/or fees collected.

#### G. Delinquent Operator

1. Retention of the power unit as a lien for delinquent taxes or fees
2. Proof of insurance
3. Proof of ownership

It should be established by both jurisdictions what proof of ownership for a vehicle will be required and that the retention of the power unit will serve as a lien for delinquent taxes or fees.

- H. Comparison of Economic Regulatory Requirements
  - 1. Operating authority requirements
  - 2. NARUC stamp requirements
- I. Comparison of Safety Requirements
  - 1. Driver's log requirements
  - 2. Vehicle safety requirements
- J. Comparison of Hazardous Materials Requirements
  - 1. Pre-movement notification requirements
  - 2. Routing limitations
  - 3. Time limitations
  - 4. Escort requirements
  - 5. Hazardous material licensing requirements
  - 6. Export and import requirements for motor fuels, both taxable and non-taxable
- K. Comparison of Agricultural Inspection Requirements
  - 1. Manifest requirements
  - 2. Regulated commodities

### III. FACILITY PLANNING AND OPERATION

#### a. Location of Joint Port of Entry

Many variations can be presented in considering a joint port operation from building new facilities to the use of existing facilities. The following gives some alternatives for consideration.

- 1. Two facilities at one common location operated separately.

2. One facility with both agencies operating from the same facility.
3. One facility with only one agency administering for both agencies.
4. One facility, one agency each on inbound only, concerned with only inbound staff requirements.

B. Hours of Operation

1. 24-hour port of entry
  - a. Both inbound and outbound
  - b. Inbound only

To obtain the optimum benefit of the joint ports of entry, it is recommended that the hours of operation be maintained on a 24-hour basis.

C. Staff Required for Operations

1. Existing personnel at ports of entry
2. Number of employees per shift required
3. Changes in staff upon implementation of joint port of entry

Depending upon the facilities adopted for a joint port of entry, staffing could be subject to change.

D. Vehicle Size and Weight Screening Systems

1. Type of weighing apparatus
2. Mechanisms for detecting overdimensional vehicles.

Each jurisdiction should identify the type of equipment that is presently being used at the port of entry. Considerations should also be presented for changing equipment and planning for new technology.

E. Traffic Flow and Traffic Control Procedures

1. Signing
2. Signaling

3. Lighting
4. Parking
5. Safety zones for oversize or overweight vehicles and for vehicles with hazardous cargo
6. Access road to allow truck to turn back and not enter state.

For a joint port of entry operation to function successfully, traffic flows and traffic procedures must be maintained. It is important that signing, signaling, lighting, parking, safety zones and access roads be considered when developing a joint port of entry. Drivers should know whether to go, what is required and whom to see. Parking should be more than adequate to accommodate large volumes of traffic, including overdimensional vehicles and vehicles with hazardous cargos.

F. Lease Agreements Between Agencies and Between States

For a joint port of operation to function, jurisdictions must share in all normal operational expenses and in major renovations or major repairs. If major renovations are to benefit only one jurisdiction, then before an agreement to a joint port operation is reached, a method or solution for sharing these expenses should be agreed upon by each jurisdiction.

Depending on the alternative for the location of the joint port of entry, lease agreements might need to be established, legal contracts drafted and signed by those in authority.

Implementation of any joint port operation would require resolution of several legal and operational issues. Legislation to enter into an intergovernmental agreement for a joint port of entry needs to be adopted. Also, the establishment of a statutory foundation for the exercise of State police powers outside of the state's boundary. Correlating to this is the exercise of police powers by a peace officer of one state for the laws of another state.

G. Handling Normal Operational Expenses

1. Utilities
2. Janitorial
3. Minor repair and maintenance
4. Need for contract between states

#### H. Major Renovation or Major Repair Expense

1. Need for contract between states

#### I. Utilities and Support Equipment

1. Power (electrical)
2. Computer terminal lines
3. Radio communications
4. Water
5. Waste disposal

The availability of power, water and a communication system are vital to the operation of a joint port of entry. Each jurisdiction should identify both successful operations and problems in their current systems. Back-up systems might also be developed.

#### J. Procedures for Resolving Operational Problems

Depending on the location and function of a joint port operation, procedures should be developed for solving operational problems and to identify if both, or only one, jurisdiction has control of the port operation.

### IV. COMPARISON OF COMPLIANCE SCREENING PRACTICES

#### A. Operating Credentials:

Registrations and tax credentials can be reviewed and recorded differently. Therefore, guidelines should be set. Some operations require drivers to park and bring their registration and tax credentials into the port building while others screen the driver's registration and tax credentials while being weighed outside the port building. The design of the port facility and the requirements of each jurisdiction will identify compliance screening practices.

#### B. Vehicle Weighing:

Types of scales used for weighing vehicles differ from state to state although some are similar. Scales can be single axle type where each axle or tandem axle is weighed separately.

There are scales which weigh the whole vehicle at one time and are also capable of distinguishing the weight of each axle or tandem axle by pressing a button on a control panel. Weight-in-motion scales allow a vehicle to travel over the scale while moving at a certain rate of speed. The type of scale to be used in a joint port of entry should be selected carefully and with both jurisdiction's input to the selection.

C. Safety Inspections:

D. Other Screening and Inspection Practices:

Current operations of each jurisdiction, both the positive and negative aspects of each, should be identified and discussed. Some states require their port personnel to perform safety inspections, check log books and issue citations for non-compliance. Some states have other agencies which perform these duties. These practices will effect the amount of time a motor carrier will remain at the port of entry. Therefore, they should be addressed before implementation of a joint port of entry.

#### V. EMPLOYEE CONSIDERATION

A. State Residency Requirements

1. Drivers license requirements
2. Vehicle registraton requirements
3. Income tax requirements
4. Other tax issues

Residency requirements might be an issue if a resident of one jurisdiction works for another jurisdiction. Therefore, residency requirements should be identified.

B. Comparability and compatibility of Employee Classification and Compensation.

1. Degree of peace officer status
2. Weapons
3. Pay difference
4. Knowledge of each agency's laws

For a joint port of entry to function efficiently, each jurisdiction should have some knowledge of each other's operation. This would be especially true if one jurisdiction is operating their inbound port and also enforcing the other jurisdiction's outbound port. Rules and policies that affect employees should be addressed prior to implementing a joint port of entry.

C. Knowledge of Both Jurisdictions Requirements

The practicality of expecting each state's port employee to know both systems could impact the employee's pay classification. The employees would require additional training to function effectively. The increased knowledge and responsibilities performed by the employees need to be addressed in staffing the joint port of entry. Employees may feel resentment towards their Department of the other jurisdiction with the additional responsibilities if not compensated for the increased duties. A negative attitude by employees could jeopardize the joint port operation.

In conclusion, the involvement and interactions of both jurisdictions and their respective agencies must be maintained for the formation and success of the joint port operation. Hopefully, in comparing operation items of concern will be addressed and agreed upon which will establish a joint port of entry that benefits both the motor carrier industry and the jurisdictions involved.

INTERGOVERNMENTAL AGREEMENT

THIS AGREEMENT is made and entered into on the Tenth day of February, 1989 by and between the STATE OF ARIZONA, acting by and through the ARIZONA DEPARTMENT OF TRANSPORTATION, hereinafter called ARIZONA, and the STATE OF UTAH, acting by and through the UTAH DEPARTMENT OF TRANSPORTATION, hereinafter called UDOT.

WHEREAS, UDOT and ARIZONA each have the responsibility to provide inspection and checking ports of entry (hereinafter port of entry) for vehicles entering or exiting each State; and

WHEREAS, both UDOT and ARIZONA desire to build facilities which will provide the port of entry located in Utah near the Arizona-Utah border along Interstate 15 with the capacity to have the functions performed there with state of the art equipment; and

WHEREAS, the taxpayers of the States of Utah and Arizona would benefit by having a single port of entry site that is utilized by UDOT and ARIZONA, thereby minimizing capital outlay for each State; and

WHEREAS, ARIZONA is authorized by Arizona Revised Statutes § 28-202, as amended, to enter into this Agreement; and

WHEREAS, UDOT is empowered by Title 11, Chapter 13 and 27-12-19 of the Utah Code Annotated, as amended, to enter into this Agreement.

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth, it is mutually agreed that:

AGREEMENT

I. PURPOSE:

The purpose of this Agreement is to provide for joint ownership and use of a port of entry facility on Interstate Highway 15 between Utah State Highway Milepost 0.280 to Milepost 1.341, engineering station 1146± 00 to 1202± 00, both eastbound and westbound, southwest of St. George, Utah. The use of the facility by the parties shall include but not be limited to the weighing and inspection of trucks for compliance with the laws of the State of Utah and the State of Arizona, collecting fees, issuing permits and any other activities appropriately undertaken at a port of entry facility.

II. ARIZONA AND UDOT SHALL JOINTLY:

A. Select a location for a jointly owned and operated port of entry station adjacent to the present Interstate Highway 15 right-of-way, southwest of St. George, Utah.

B. Establish design criteria and requirements for a port of entry station which shall be suitable to administer and enforce Utah laws and Arizona laws relating to weighing of trucks, collecting fees and issuing permits, conducting safety inspections and any other activities appropriate for a port of entry facility.

C. Approve the selection of an architect, architectural fees and final design of the architectural plans.

D. Approve the terms and award of the construction contract for the facility.

E. Approve all change orders to the architectural contract and to the construction contract.

III. UDOT SHALL:

A. Acquire land upon which the port of entry facility is to be constructed.

B. Hire the architect, administer the architectural contract and make all payment to the architect.

C. Administer the bidding of the construction contract, supervise the carrying out of the terms of the construction contract and make all payments to the contractor.

D. Provide a designated coordinator to provide administration of the architectural contract and supervision of the architect.

E. Provide a Project Engineer to provide supervision over the construction of the port of entry and administration of the construction contract.

F. Prepare, execute, deliver and record documents which establish joint fee ownership with UDOT and ARIZONA as tenants in common each holding an undivided one-half interest in the fee title to the property on which the port of entry is located.

IV. ARIZONA SHALL:

A. Reimburse UDOT for one half of the value of the property upon which the port of entry facility is to be

located. The value shall be agreed upon based either on an appraiser agreed upon by UDOT and ARIZONA, who is a member of the American Institute of Real Estate Appraisers (M.A.I.), or the actual purchase price if the land acquired is acquired by UDOT by purchase or eminent domain within two years of the date of the agreement.

B. Designate a representative to provide consultation with the UDOT representative on port of entry design-related matters.

C. Designate a representative to provide consultation with the UDOT Project Engineer on port of entry construction-related matters.

D. Subject to the limitations set forth in paragraph IV F, reimburse UDOT for one-half (1/2) of all costs related to the design contract and any approved change orders including but not limited to architectural fees for the port of entry.

E. Subject to the limitations set forth in paragraph IV F, reimburse UDOT one-half (1/2) of the amount of all the construction costs, including the costs resulting from any and all change orders relating to the construction of the port of entry and its appurtenances.

F. The total design and construction costs set forth in paragraph IV, D and E, shall not exceed SIX MILLION DOLLARS (\$6,000,000.00). The share of ARIZONA and UTAH in such costs shall not exceed THREE MILLION DOLLARS (\$3,000,000.00) each.

G. Payment by ARIZONA to UDOT for its share of costs as specified herein shall be made within 30 days of the date appearing on statements submitted by UDOT.

V. LIABILITY FOR LOSS:

UDOT and ARIZONA shall share equally the cost of any loss to the facility due to fire, casualty, act of God or any other reason other than losses resulting from the negligence or intentional act or acts of an employee or employees or an agent or agents of the parties hereto, in which event Paragraph VI of this Agreement shall apply.

VI. LIABILITY FOR LOSS:

UDOT and ARIZONA shall each be liable for damages to property or injuries or death to persons, to the extent allowed by applicable law, resulting from the negligence or intentional act or acts of their own employees or agents in constructing, operating, or maintaining the port of entry.

VII. DURATION:

This Agreement shall be in full force until terminated by agreement of all the parties hereto. Any termination agreement shall include a provision for the disposal or sale of the facilities under applicable federal regulations.

VIII. TERMINATION:

This Agreement may be terminated by either UDOT or ARIZONA prior to the award of the construction contract, provided that the party terminating the Agreement shall be

responsible for all architectural fees and other costs expended or incurred to that date. Any other termination shall be by mutual agreement.

IX. FISCAL LIMITATION:

Subject to the budgetary limitations set forth in Arizona Revised Statutes 28-1823 through 28-1826 inclusive, it is expressly understood and agreed that no work shall be done, nor any obligation incurred under this contract during the fiscal year 1988-1989 and during the succeeding fiscal years in excess of the funds appropriated for payment of the items set out in this Agreement. ARIZONA agrees to budget for the obligations undertaken by this Agreement and to seek appropriations therefor. In the event that no funds are appropriated for payment of the items set out in this Agreement for any succeeding fiscal years, then this contract shall be null and void, except as to those portions for which funds have or will have been appropriated and budgeted therefor, and no right of action or damage shall accrue to the benefit of the parties hereto as to that portion of the contract that may so become null and void.

X. STATUTORY REQUIREMENTS:

All parties are hereby put on notice that this Agreement is subject to cancellation by the Governor of Arizona, pursuant to Arizona Revised Statute § 38-511, the provisions of which are herein incorporated by reference.

This Agreement is also subject to the mandatory requirements of Arizona Revised Statutes 12-1518(B).

XI. INTERGOVERNMENTAL AGREEMENT REQUIREMENTS:

Attachments A and B are authenticated copies of the Resolutions of the Arizona Department of Transportation and Utah Department of Transportation, authorizing said parties to enter into this Agreement.

Attachments C and D are the written determinations of the attorneys for said parties that this Intergovernmental Agreement is in proper form and within the powers and authority granted to said parties under the laws of their respective States.

This Intergovernmental Agreement shall be filed with the Arizona Secretary of State and shall become effective on the date provided herein, but in no event prior to the date it is filed with the Secretary of State.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first herein written.

ARIZONA DEPARTMENT OF  
TRANSPORTATION

By:

Title: *Richard P. Pines*  
DIVISION DIRECTOR

Date: 02/07/89

UTAH DEPARTMENT OF  
TRANSPORTATION

By:

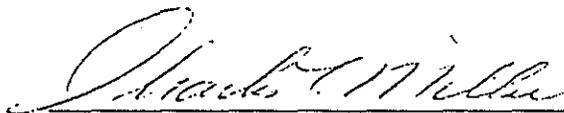
Title: *Norman Hamilton*  
Director, Off. of Motor Carrier

Date: February 10, 1989

ATTACHMENT A

RESOLUTION

BE IT RESOLVED on this date, February 2, 1989, I, CHARLES L. MILLER, the below undersigned Director, Department of Transportation, have determined that it is to be to the advantage of the State of Arizona that the Department of Transportation, acting by and through the Motor Vehicle Division, and the State of Utah, acting by and through the Utah Department of Transportation, enter into the Intergovernmental Agreement for the purpose of constructing and jointly owning a port of entry station which shall be used for the enforcement of transportation laws and regulations normally enforced at a port of entry station. Located on Interstate Highway 15, located at Utah State Highway Department Milepost 0.280 to Milepost 1.341, engineering station 1146+ 00 to 1202+ 00, both eastbound and westbound.



CHARLES L. MILLER, Director  
Arizona Department of Transportation

State of Arizona  
County of Maricopa

Sworn and acknowledged before me this 2nd day of February 1989

  
Notary Public

My commission expires 9-25-89

ATTACHMENT "B"

RESOLUTION

BE IT RESOLVED on this date, February 7, 1989, I, EUGENE H. FINDLAY, the below undersigned, Director, have determined that it is to the advantage of the State of Utah, acting by and through the Utah Department of Transportation and the State of Arizona acting by and through the Arizona Department of Transportation, to enter into an Intergovernmental Agreement for the purpose of providing for the construction of a port of entry facility to be jointly owned and operated by the State of Utah and the State of Arizona located on Interstate Highway 15, south of the City of St. George, Utah.



EUGENE A. FINDLAY Director  
Utah Department of  
Transportation

Subscribed and sworn to before me this  
7th day of February 1989.



Notary Public

Residing at: Salt Lake City, Utah  
My Commission Expires: 9-10-91



Attorney General

1275 WEST WASHINGTON

Phoenix, Arizona 85007

Robert R. Corbin

INTERGOVERNMENTAL AGREEMENT

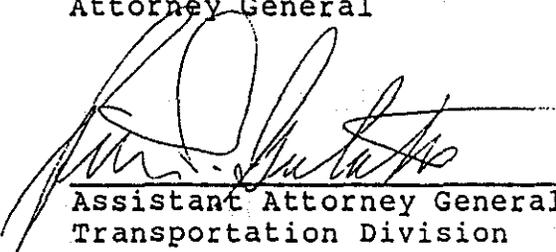
DETERMINATION

A.G. Contract No. KR89-0207, is an agreement between public agencies has been reviewed pursuant to A.R.S. § 11-952, as amended, by the undersigned Assistant Attorney General who has determined that it is in the proper form and is within the powers and authority granted to the State of Arizona.

No opinion is expressed as to the authority of the remaining parties, other than the State or its agencies, to enter into said agreement.

DATED this 2nd day of February, 1989.

ROBERT K. CORBIN  
Attorney General

  
Assistant Attorney General  
Transportation Division

ATTACHMENT C

ATTACHMENT "D"

The undersigned hereby determines that the foregoing Intergovernmental Agreement is proper in form and is within the authority of the Utah Department of Transportation under the laws of the State of Utah.

  
DONALD S. COLEMAN  
Assistant Attorney General