WOODBURN, OREGON
SOUTHBOUND PORT-OF-ENTRY

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)

TO I-5
SOUTHBOUND

I-5 SOUTHBOUND

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

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

<table>
<thead>
<tr>
<th>EMPLOYEES</th>
<th>ANNUAL TRUCK VOLUME/DIRECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erie - 18 full-time (2 scales)</td>
<td>3,803,380 / North &amp; South</td>
</tr>
<tr>
<td>Grass Lake - 14 full-time (2 scales)</td>
<td>2,705,020 / East &amp; West</td>
</tr>
<tr>
<td>Bridgeport - 9 full-time (2 scales)</td>
<td>1,472,300 / North &amp; South</td>
</tr>
<tr>
<td>Fowlerville - 9 full-time (2 scales)</td>
<td>1,799,190 / East &amp; West</td>
</tr>
<tr>
<td>Pontiac - 8 full-time (2 scales)</td>
<td>1,469,860 / North &amp; South</td>
</tr>
<tr>
<td>Ionia - 8 full-time (2 scales)</td>
<td>1,283,300 / East &amp; West</td>
</tr>
<tr>
<td>New Buffalo - 8 full-time (1 scale)</td>
<td>1,703,750 / East</td>
</tr>
<tr>
<td>New Baltimore - 7 full-time (2 scales)</td>
<td>1,045,500 / North &amp; South</td>
</tr>
<tr>
<td>Coldwater - 5 full-time (1 scale)</td>
<td>667,420 / North</td>
</tr>
<tr>
<td>Cambridge Jct. - 3 full-time (1 scale)</td>
<td>171,860 / East &amp; West</td>
</tr>
<tr>
<td>Powers - 1 full-time (1 scale)</td>
<td>176,300 / East &amp; West</td>
</tr>
</tbody>
</table>
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).
<table>
<thead>
<tr>
<th>Scale Location</th>
<th>Truck Volume in 1990</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-75, Erie</td>
<td>3,803,000 N.B. &amp; S.B.</td>
</tr>
<tr>
<td>I-94, New Buffalo</td>
<td>1,703,000 E.B.</td>
</tr>
<tr>
<td>I-69, Coldwater</td>
<td>667,000 N.B.</td>
</tr>
<tr>
<td>I-94, Port Huron</td>
<td>302,000 E.B.</td>
</tr>
<tr>
<td>I-94, Grass Lake</td>
<td>2,705,000 E.B. &amp; W.B.</td>
</tr>
<tr>
<td>I-96, Fowlerville</td>
<td>1,800,000 E.B. &amp; W.B.</td>
</tr>
<tr>
<td>I-75, Pontiac</td>
<td>1,470,000 N.B. &amp; S.B.</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Cost of Construction and Equipment</td>
<td>$2,162,000</td>
</tr>
<tr>
<td>Additional Annual Staffing Cost*</td>
<td>$ 756,000</td>
</tr>
</tbody>
</table>

*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.

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

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 is 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 savings per year

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).
WISCONSIN

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

CANADA

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 in anticipated.

SHORT RANGE RECOMMENDATION #8

The use of portable sales 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.)
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 reduce 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) = $400
Estimated Total Annual Cost $5,200

8-9
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.
PORTS-OF-ENTRY
(OPERATED CONTINUOUSLY)
ERIE (NB)
COLDWATER
NEW BUFFALO
PORT HURON
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

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale house and scales</td>
<td>$ 250,000</td>
</tr>
<tr>
<td>Inspection Buildings</td>
<td>$2,750,000</td>
</tr>
<tr>
<td>Staffing</td>
<td>$ 178,000</td>
</tr>
</tbody>
</table>

8-11
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

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles</td>
<td>$90,000</td>
</tr>
<tr>
<td>Electronic Equipment</td>
<td>$10,000</td>
</tr>
<tr>
<td></td>
<td>$100,000</td>
</tr>
</tbody>
</table>
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.

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.

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.
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.

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.

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:

<table>
<thead>
<tr>
<th>Number of States</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>All</td>
</tr>
<tr>
<td>11</td>
<td>All except certification</td>
</tr>
<tr>
<td>1</td>
<td>All except safety inspection and certification</td>
</tr>
<tr>
<td>1</td>
<td>All except safety inspections</td>
</tr>
<tr>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>

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) =

\( \frac{1,000,000,000 + 2,000,000,000}{2 \times 851,714} = \$1,760 \)

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 =

\( (1,760) (31,136) = \$54,799,360 \)

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

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.

<table>
<thead>
<tr>
<th></th>
<th>Weekend Days</th>
<th>Weekdays</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>800 to 900 trucks/24 hours</td>
<td>2700 trucks/24 hours</td>
</tr>
</tbody>
</table>

Truck Traffic Per Week

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

Truck Traffic Per Year

\[
5.63 \times 52 \times \text{ADT} = 293 \times \text{ADT}
\]
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,

Lt. Billy Mohr
Field Support Commander
Motor Carrier Division

BGM

Enclosure
MEMORANDUM

March 28, 1991
Edina, Minnesota

TO: Files
FROM: T. Walsh
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 officers x 7 days/week x 16 hours/day = 224 hours/week

One Officer Shifts:
1 officer x 7 days/week x 8 hours/day = 56 hours/week

Road Patrol Officer:
1 officer x 7 days/week x 8 hours/day = 56 hours/week

TOTAL MANHOURS = 336 hours/week

OFFICERS
(336 hours/week) / (40 hours/office) = 8.4 officers/week
For calculation purposes use 9 officers per week instead of a partial or part-time officer.
### STAFFING NEEDS

<table>
<thead>
<tr>
<th>Location</th>
<th>Proposed Staff</th>
<th>Exist. Staff</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erie (northbound)</td>
<td>9</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>New Buffalo</td>
<td>9</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Coldwater</td>
<td>9</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Port Huron</td>
<td>9</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>36</strong></td>
<td><strong>19</strong></td>
<td><strong>17</strong></td>
</tr>
</tbody>
</table>

### ANNUAL STAFFING COST

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

---

**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

<table>
<thead>
<tr>
<th>Location</th>
<th>Proposed Staff</th>
<th>Exist. Staff</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass Lake (EB)</td>
<td>6</td>
<td>7</td>
<td>(1)</td>
</tr>
<tr>
<td>Grass Lake (WB)</td>
<td>6</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Pontiac (NB)</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Pontiac (SB)</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Fowlerville (EB)</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Fowlerville (WB)</td>
<td>6</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>36</strong></td>
<td><strong>28</strong></td>
<td><strong>8</strong></td>
</tr>
</tbody>
</table>

### ANNUAL STAFFING COST

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

---

**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

<table>
<thead>
<tr>
<th>Location</th>
<th>Proposed Staff</th>
<th>Exist. Staff</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Baltimore (EB)</td>
<td>2</td>
<td>3</td>
<td>(1)</td>
</tr>
<tr>
<td>New Baltimore (WB)</td>
<td>2</td>
<td>3</td>
<td>(1)</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>4</strong></td>
<td><strong>6</strong></td>
<td><strong>(2)</strong></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Location</th>
<th>Proposed Staff</th>
<th>Exist. Staff</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ionia (EB)</td>
<td>2</td>
<td>4</td>
<td>(2)</td>
</tr>
<tr>
<td>Ionia (WB)</td>
<td>2</td>
<td>3</td>
<td>(1)</td>
</tr>
<tr>
<td>Bridgeport (NB)</td>
<td>2</td>
<td>4</td>
<td>(2)</td>
</tr>
<tr>
<td>Bridgeport (SB)</td>
<td>2</td>
<td>4</td>
<td>(2)</td>
</tr>
<tr>
<td>Cambridge Junction</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Powers</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>12</strong></td>
<td><strong>18</strong></td>
<td><strong>(6)</strong></td>
</tr>
</tbody>
</table>
ANNUAL STAFFING COST SAVINGS
6 officers x 2088 hours/year x $21.29/hour = $266,721.12

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
MEMORANDUM

March 29, 1991
Edina, Minnesota

TO: Files
FROM: T. Walsh

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:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Convert scale pit</td>
<td>$5,000</td>
</tr>
<tr>
<td>Scale</td>
<td>$7,500</td>
</tr>
<tr>
<td>Directional &amp; overhead lighting</td>
<td>$10,000</td>
</tr>
<tr>
<td>Van</td>
<td>$15,000</td>
</tr>
<tr>
<td>Scale readouts and printers</td>
<td>$1,600</td>
</tr>
</tbody>
</table>
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 Conade 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 x .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.

<table>
<thead>
<tr>
<th>Location</th>
<th>Anticipated Revenue Increase</th>
<th>Current Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erie (NB)</td>
<td>$1,124,330</td>
<td>$199,810</td>
</tr>
<tr>
<td>Coldwater</td>
<td>$ 562,020</td>
<td>$114,840</td>
</tr>
<tr>
<td>New Buffalo</td>
<td>$ 744,010</td>
<td>$256,220</td>
</tr>
<tr>
<td>Port Huron</td>
<td>$ 394,400</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>$2,824,760</td>
<td>$580,870</td>
</tr>
</tbody>
</table>
Short Range Recommendation #2

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

<table>
<thead>
<tr>
<th>Location</th>
<th>Anticipated Revenue Increase</th>
<th>Current Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grass Lake</td>
<td>$845,060</td>
<td>$629,880</td>
</tr>
<tr>
<td>Fowlerville</td>
<td>$2,823,150</td>
<td>$605,520</td>
</tr>
<tr>
<td>Pontiac</td>
<td>$6,344,620</td>
<td>$427,170</td>
</tr>
<tr>
<td>Total</td>
<td>$10,012,830</td>
<td>$1,662,370</td>
</tr>
</tbody>
</table>

Short Range Recommendation #4:
Keep the New Baltimore scales open one shift per day, five days per week.

<table>
<thead>
<tr>
<th>Location</th>
<th>Anticipated Revenue Increase</th>
<th>Current Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Baltimore</td>
<td>$428,620</td>
<td>$413,250</td>
</tr>
<tr>
<td>Total</td>
<td>$428,620</td>
<td>$413,250</td>
</tr>
</tbody>
</table>

Short Range Recommendation #5:
Operate the scales at Ionia, Bridgeport, Cambridge Junction and Powers one shift per day each day for each weekday.

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

Edina, Minnesota
August 13, 1990

TO: Files
FROM: T. Walsh

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
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 directions 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 staff's 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 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.
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
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
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
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.
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. Philips, Capt.
Commanding Officer
Motor Carrier Division

ALP/ds
Attachment
<table>
<thead>
<tr>
<th></th>
<th>First Year</th>
<th>Second Year</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TIME PERIOD COVERED</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Enter Dates)</td>
<td>From:</td>
<td>To:</td>
</tr>
<tr>
<td><strong>TOTAL CITATIONS PRESENTED FOR:</strong></td>
<td>FIRST YEAR TOTALS</td>
<td>SECOND YEAR TOTALS</td>
</tr>
<tr>
<td>Truck Weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck Safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL CONVICTIONS FOR:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck Weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck Safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL DISMISSELS FOR:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck Weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck Safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>FINES ASSESSED FOR:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck Weight</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck Size</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Truck Safety</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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.**
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