



STATE OF MICHIGAN  
DEPARTMENT OF TRANSPORTATION  
LANSING

JENNIFER M. GRANHOLM  
GOVERNOR

KIRK T. STEUDLE  
DIRECTOR

March 31, 2009

The Honorable Bill Hardiman, Chair  
Senate Appropriations Subcommittee  
on Transportation  
Michigan State Senate  
P.O. Box 30036  
Lansing, Michigan 48909

The Honorable Lee Gonzales, Chair  
House Appropriations Subcommittee  
on Transportation  
Michigan House of Representatives  
P.O. Box 30014  
Lansing, Michigan 48909

Dear Senator Hardiman and Representative Gonzales:

In accordance with Section 264 of Public Act 275 of 2008, enclosed is the Michigan Department of Transportation's report on the progress made toward increased efficiencies in department programs.

If you have any questions, please contact me or Myron Frierson, Bureau Director, Finance and Administration, at (517) 373-2117.

Sincerely,

Kirk T. Steudle  
Director

Enclosure

cc: Senate & House Appropriations  
Subcommittees on Transportation  
B. Emerson, State Budget Director  
D. Hollon, Senate Fiscal Agency  
B. Hamilton, House Fiscal Agency

## 1. SAFETY INNOVATIONS

The safety program is a major component in the Michigan Department of Transportation's (MDOT's) emphasis of addressing locations with safety concerns as part of the transportation program. More importantly, the safety program is a means by which MDOT can support the goals of Michigan's Strategic Highway Safety Plan (SHSP). The purpose of the SHSP is to identify the key safety needs in the state and guide investment decisions to achieve significant reductions in highway fatalities and serious injuries on all public roadways. Michigan's SHSP was adopted in December 2004 by the Governor's Traffic Safety Advisory Commission and endorsed by the Governor in 2006. The goal of Michigan's 2006 SHSP was to reduce fatalities on all Michigan roadways to 1.0 fatality per 100 million vehicle miles traveled by 2008. The 2007 statewide rate was 1.04 per 100 million vehicle miles traveled while the nationwide average was 1.37. On the state trunkline system, the 2007 rate was 0.88 per 100 million vehicle miles traveled and 1.19 on Michigan's local road system. These rates equal to 453 and 631 fatalities, respectively, on trunkline and non-trunkline. In 2008, the SHSP was updated to reflect current needs and revise the goals from a rate to a more meaningful goal of an incremental reduction of the frequency of fatalities and serious injuries. The revised goals address both fatalities and serious injuries. The 2008 SHSP goals are to reduce traffic fatalities and serious injuries from 1,084 and 7,485 in 2007 to 850 and 5,900 in 2012. Additional steps were taken to improve safety for the traveling public, which includes changing the signs to clearview font, creating rumblestrips in centerlines and shoulders, and installing cable guardrail to eliminate cross over accidents.

## 2. PASSENGER TRANSPORTATION MASTER AGREEMENTS

A master agreement was developed and implemented, which aligned the requirements for 12 programs into one multi-year, multi-program agreement. Efficiencies included enabling funding for our programs to be allocated through two or three page project authorizations rather than individual, full contract documents. This reform made it easier for our customers to review and enter into contracts with MDOT. Costs to the state were reduced through shortened approval and processing time, reduced errors, less paper, postage, and storage.

## 3. WINTER MAINTENANCE

MDOT is purchasing higher capacity winter maintenance trucks, which is creating a reduction in the number of truck miles traveled. The higher capacity trucks can carry more salt. Replacing winter maintenance trucks with higher capacity trucks result in reduced miles driven and decreased fuel costs. This initiative is ongoing as older model trucks are replaced.

MDOT is purchasing side-mount and mid-mount wing snow plows to increase plowing capacity and reduce truck miles traveled. Wing plows increase the truck plowing capacity and reduce the number of passes required to clear the pavement and shoulder. This efficiency also provides a reduction in the number of winter maintenance truck miles traveled to clear the roadways.

Ground speed oriented salt distribution system was also implemented to increase efficiencies. This system provides increased control of salt/material during winter operations lowering amount of material disbursed.

Another program efficiency is MDOT's use of trucks that can be used as both a dump truck and a spreader. This provides MDOT with the ability to use winter maintenance trucks for summer operations without requiring removal of a material spreader while at the same time increasing the usable capacity of infrastructure equipment.

MDOT procures, installs, and utilizes spreader mounted pre-wet systems on winter maintenance trucks, and also procures and utilizes anti-ice chemical storage systems. Pre-wet salt is more effective for melting snow and ice, which reduces the amount of snowplowing needed and the need to reapply salt. Anti-ice chemicals are used on the roadway to prevent icing.

#### 4. AIRPORT IMPROVEMENT PROGRAM

In Fiscal Year (FY) 2008, the Aeronautics staff processed sponsor agreements in advance up to, but excluding State Administrative Board approvals and agreement execution, pending full legislative funding authorization via passage of the FY 2008 capital outlay legislation. This "advance processing" occurred for 66 projects having a total grant value exceeding \$99 million. These administrative actions were taken to minimize delay before grants could be executed, and work begun, for those Michigan airports in line to receive federal and state airport improvement program funds. In many cases, this processing enabled airports to initiate projects during the 2008 construction season.

#### 5. TRAIN CONTROL SYSTEM

MDOT and Amtrak are increasing the use of new technology such as the incremental train control system and raisable barriers at crossings that will facilitate increased train speeds and provide more efficient service.

#### 6. TRAFFIC CONTROL EFFICIENCIES

MDOT is transitioning to light emitting diode (LED) low energy usage lighting for vehicles and portable traffic control lighting. This initiative is ongoing as older equipment such as flashing arrow boards and changeable message boards are replaced. LED vehicle mounted warning lights are installed as new vehicles are put in service.

#### 7. PUBLIC TRANSPORTATION MANAGEMENT SYSTEM

The public transportation management system is a web-based system to gather and manage financial and non-financial data from transit agencies that receive state and federal funds from MDOT. The Federal Transit Administration compliments MDOT on this system every time they conduct a state program review. The system generates reports on state

assistance levels, ridership, vehicle statistics and more that are posted on MDOT's web site for public use.

#### 8. ORGANIZATIONAL EFFICIENCIES

MDOT's operational focus is to maximize the efficiency of the existing system. Within the last year, MDOT made some organizational changes that are expected to create efficiencies. Maintenance Division and Traffic & Safety Division were combined into one, the Operations Division. Existing challenges require new solutions and the Operations Division will develop new tools to mitigate congestion, improve traffic flow, and utilize new intelligent transportation system technologies.

#### 9. RAILROAD INSPECTOR CONSOLIDATION

MDOT consolidated the Railroad Safety Inspector and the Railroad Project Inspector classification and eliminated the need for MDOT to fill two vacant positions resulting from recent retirements. To a certain degree the positions require similar knowledge and experience; therefore, with appropriate cross-training these positions became interchangeable. The current cross-funded inspector position results in a more efficient and effective utilization of the Freight Services and Safety Division.

#### 10. FLEET AND FUEL EFFICIENCIES

A winter maintenance truck (WMT) pilot was conducted in FY 2005 and 2006 to determine the potential savings with idle reduction. Engine idle limit controls were set to five minutes, which demonstrated a savings of 145 gallons of fuel per truck per year. Currently, all 2004 and newer International Model 7600 WMT's are equipped with engine electronic controls that allow the idle time to be limited. All WMT's currently being built now have the idle control set to five minutes. This transition will continue as older WMT's are replaced. MDOT Guidance Document 10179 was issued on February 15, 2009 to limit engine idling for all vehicles and equipment. This guidance document covers all automotive and equipment engine driven fleet units and eliminates unnecessary engine idling, which will reduce fuel costs as well as reduce harmful exhaust emissions.

#### 11. PERFORMANCE EXCELLENCE DIVISION

The Performance Excellence Division (PED) assists MDOT in identifying and implementing business process improvements. Process improvement projects are identified in various ways. The trigger for improvement efforts stem from new regulations, executive reviews, or external client/customer complaints. PED professionals utilize project management concepts and employ an adopted methodology to assist MDOT program areas implement process improvement activities. PED professionals manage improvement efforts by executing many project management concepts. They include developing a work break-down structure for the project, managing and making provisions for resources (people, equipment, facilities, and materials), developing schedules, analyzing and reviewing risks, developing communication plans, and developing project closure (implementation) plans.

PED professionals facilitate project teams through various activities to help others analyze and redesign their processes. There are several activities involved in this process, some of which are: conduct customer/client focus groups, develop high level process map, develop an “as-is” process map, develop a cost-time profile, identify problems and key issues, develop root cause analysis, facilitate redesign ideas and evaluation, develop a new process design, develop a to-be cost-time profile, develop recommendations, barriers, strategies, and finally develop the high level implementation plan, as well as the detailed implementation plan.

Examples of recent process improvement efforts coordinated by PED professionals are:

#### Design Deliver Enhancement

MDOT addressed the design plan development process. This project focused on what enhancements could be developed using the available technology to produce deliverables to construction that would improve efficiency, as well as reduce extras and overruns, while providing the right information to MDOT’s construction partners. The improvement team identified improvements to save both time and money. These gains included enhancements in the electronic information provided to contractors on earthwork projects, reduction of re-work, elimination of unwanted/unnecessary deliverable information, and reduction in the addenda to contractor claims, to mention a few.

#### Motorist Traffic Information

A safe and efficient multi-modal transportation system is a critical component of Michigan’s economy and quality of life. MDOT was experiencing difficulty in providing accurate, timely and complete lane closure, maintenance, and construction traffic information. MDOT’s improvement efforts implemented a consistent manner in which motorist traffic data is collected, entered, and posted for the benefit of the end users. The impact of the new process allowed MDOT to experience a reduction of rework, elimination of non-value added steps, and a reduction of process cycle time.

Successful organizations are those that proactively harness process opportunities. Engaging in process improvement gives an organization the potential of being able to optimize operational efficiencies and remove activities that add no value. Two of MDOT’s successes, as noted previously, can be found in the Design Division and the Office of Communications. These improvement efforts helped MDOT, and its customers, realize a reduction of process time, improved customer relations, accountability, and reduction of variances in work activities. An established improvement process allows MDOT the opportunity to answer challenges and build the capabilities needed to reach the next-level of performance.