



West Michigan
Transportation Operations Center



Fiscal Year 2013
ANNUAL REPORT
Oct. 1, 2012—Sept. 30, 2013



West Michigan Transportation Operations Center

FISCAL YEAR 2013 ANNUAL REPORT

The West Michigan Transportation Operations Center (WMTOC) covers eight counties in west Michigan, which include the cities of Grand Haven, Grand Rapids, Holland, Muskegon and Big Rapids.

The TOC staff focused this year on researching and gathering information from a greater number of sources, while pursuing new connections and solidifying existing connections with partners for traveler information.

These efforts improve the services and information that we can provide to the media, the general public, and our transportation and incident response partners about incidents, weather-related effects on the roadways and planned events.

WMTOC continues to partner with the Statewide Transportation Operations Center (STOC) in Lansing, which provides after-hours service for the WMTOC coverage area. This allows us to provide one phone number to call for TOC service 24/7 and improves service for monitoring nighttime and weekend construction projects and traffic crashes.

MDOT's Mi Drive team continues to make improvements to the website as well as the mobile version. If you haven't been to the site lately, check it out at:

www.michigan.gov/drive.

Safety * Mobility * Economy

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This annual report provides information regarding the services provided by the WMTOC and a snapshot of some of our data from 2013. If you are interested in other information or more detailed performance reports, please contact me.



Contents

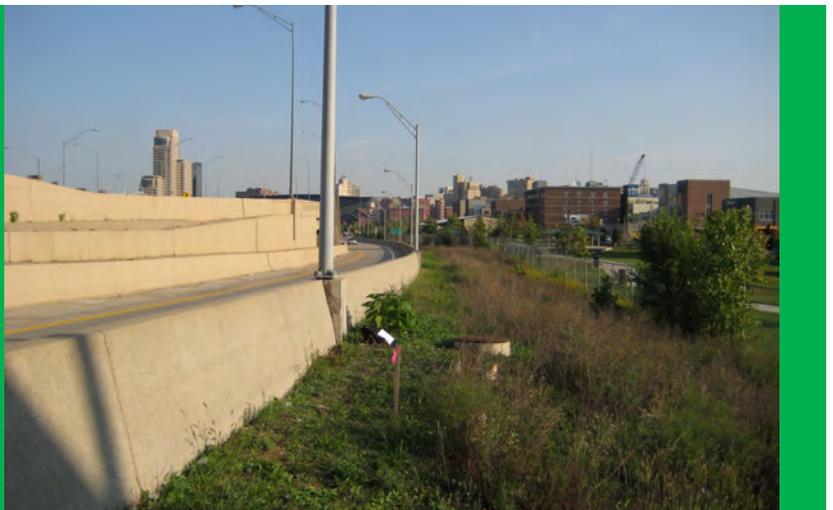
Traveler Information

Incident Management

Planned Event Management

ITS System Management

ITS Deployment



Traveler Information

ESSENTIAL TRAVELER INFORMATION FOR WEST MICHIGAN MOTORISTS

Key 2013 Accomplishments

- Switched to GovDelivery system for high-impact incident notification
- Incident notification e-mail subscribers increased by 180 percent
- Included travel distance with travel-time messages on DMS

Mi Drive

The Mi Drive website (www.michigan.gov/drive) provides motorists with an interactive map with traffic camera views, average vehicle speeds, construction activity and the location of major incidents.

TOC operators throughout Michigan post high-impact incident information to the Mi Drive website, allowing motorists to plan their routes before they head out to area roadways.

In addition to the Mi Drive website, WMTOC operators use the GovDelivery system for notifying stakeholders of incidents on area roadways.

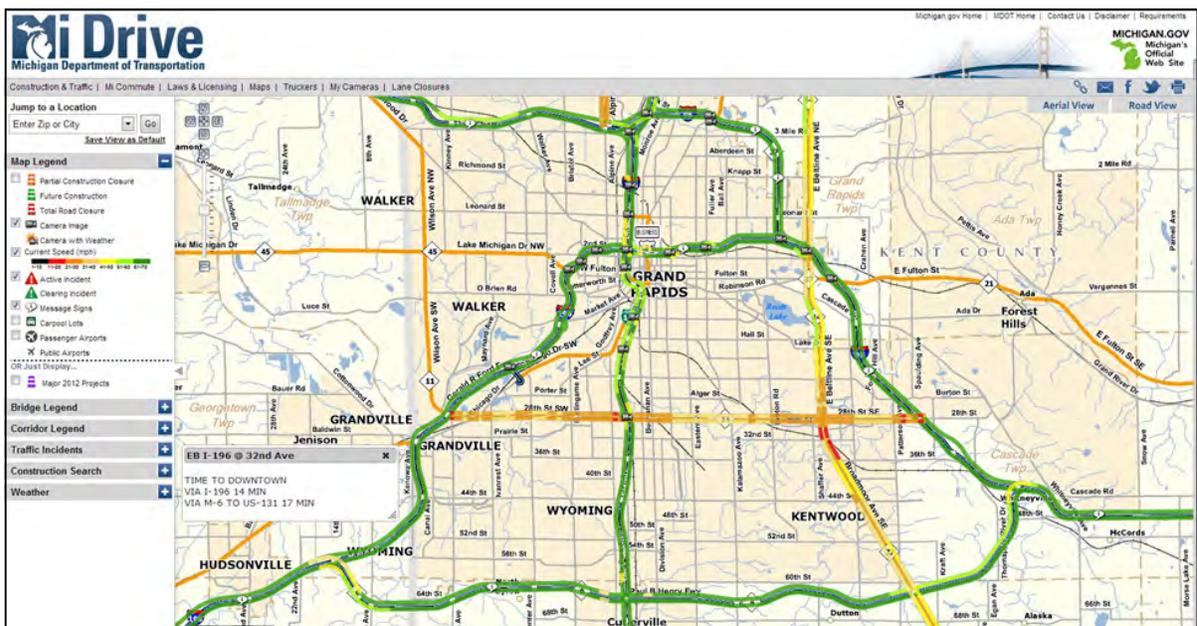
The GovDelivery system allows users to create and manage an account with e-mail subscriptions for multiple State of Michigan departments for emergencies, updates, and information. The number of GovDelivery subscribers grew substantially during FY 2013. To sign up for GovDelivery, visit www.1.usa.gov/qZzuHo.

A mobile version of the Mi Drive website is available, improving accessibility to the site for those viewing on mobile devices. Travelers with smartphones can now click on the “Stuck in Traffic?” link to report traffic delays or incidents to MDOT.

Traffic Cameras

WMTOC operators monitor 57 traffic cameras throughout the Grand Rapids and Grand Haven areas, which provide visual coverage of approximately 42 miles of area freeways and 16 miles of state trunklines.

The cameras are used to detect and provide operational support for incidents that may adversely affect travel on area freeways and state trunklines. Having camera coverage of the area roadways allows WMTOC operators to quickly inform first responders and motorists, decreasing incident clearance times, congestion and the likelihood of secondary crashes.



TRAVELER INFORMATION

Social Media

WMTOC operators assist the Michigan Department of Transportation (MDOT) Grand Region communications representative in providing up-to-date traveler information to the general public through social media, such as Facebook, YouTube and Twitter.

Among other state DOTs, the MDOT Facebook page (www.facebook.com/MichiganDOT) ranks #17 with 7,706 followers; the MDOT YouTube account (www.youtube.com/MichiganDOT) ranks #6 with 810,000 video views; and the statewide MDOT Twitter account (www.twitter.com/MichiganDOT) ranks #9 with 20,200 followers.

DMS

DMS are the most visible Intelligent Transportation Systems (ITS) devices to motorists. WMTOC operators utilize 27 DMS in Allegan, Kent, Muskegon and Ottawa counties to inform motorists of special events, crashes, construction, congestion and weather-related impacts, in addition to the travel-time information



that is typically displayed.

Travel Times

The WMTOC displays travel-time information on DMS on I-196, I-96 and M-6, most within the Grand Rapids metro area. The majority of the DMS display travel-time information for commuters traveling into Grand Rapids, though several DMS have been constructed in the last three years that provide travel information for motorists leaving Grand Rapids for surrounding locales.

The travel times are based on real-time traffic data and are automatically updated by the software every five minutes in

order to give the most current travel information to motorists.

National Weather Service (NWS)

The NWS and WMTOC have partnered in order to provide the best possible weather and road condition information to motorists, both before and during their commutes. WMTOC operators regularly participate in NWS Webinars prior to significant weather events to ensure the most appropriate control room response to a potential storm event. Recent terminology changes by the NWS regarding warnings, watches and advisories have prompted the WMTOC to adjust DMS weather messages and message templates to align with the revised terminology.



Incident Management

PROVIDING VITAL INFORMATION AND COORDINATION FOR INCIDENT RESPONSE

Key 2013 Accomplishments

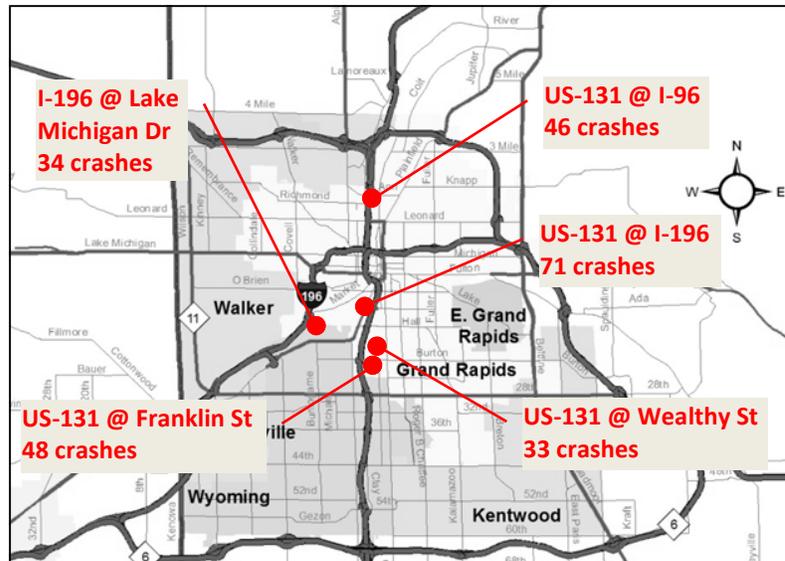
- Increased peak-period staffing to support MDOT incident management goals
- Helped reduce average roadway clearance time by approximately 1.5 percent from FY 2012
- Supported over 1,475 unplanned events

WMTOC Incident Response

In order to manage incidents and reduce congestion, WMTOC operators monitor 58 miles of Grand Rapids and Grand Haven-area freeway and state trunkline 14 hours a day on weekdays and eight hours a day on weekends. The STOC provides after-hours coverage.

A second operator is available during the weekday morning and afternoon peak periods to support the primary operator with incident management and traffic camera monitoring. The role of the secondary operator was expanded in 2013 to include several tasks related to data collection, tracking and reporting to support MDOT incident management goals.

MDOT also employs five portable message signs throughout the WMTOC coverage area specifically for incident management.



Incident clearance requires partners from several different agencies in west Michigan and recent outreach efforts have introduced the WMTOC to new stakeholders throughout the region. The WMTOC and its partners exchanged more than 8,800 telephone calls and e-mails in FY 2013, a 34 percent increase from FY 2012.

Most Active Hot Spots

Roadway areas with the highest frequency of crashes are commonly called “hot spots.” Hot spot locations (shown on the map above) receive added attention from TOC operators and data is used in studies of these areas.

Long-term construction lane closures on US-131 played a part in increased peak-period congestion during 2013, and the number of US-131 hot spots increased as well. Generally, the incidents that occurred in the work zone were minor and could move behind the construction barrels, though “gawker delay” often exacerbated the already heavy congestion in both directions.



INCIDENT MANAGEMENT

Grand River Flooding

More than 11 inches of rain fell on the Grand Rapids area in April. Steady rain early in the month filled rivers, and two days of heavy rainfall mid-month caused many to overflow. The Grand River reached a record level of nearly 22 feet on April 21, approximately 17 feet above the average level for April.

Flooding required two freeway interchanges and a state trunkline intersection in Grand Rapids to be closed for several days. Portions of many local roads and intersection were also flooded. WMTOC operators coordinated with local agencies to implement temporary traffic signal timings and assisted in other emergency response measures.

The rising water levels also affected the ITS system, flooding several field cabinets on I-196 in western Kent County.

Traffic Incident Management (TIM)

The amount of communication with first responders increased in FY 2013, due in part to the addition of a scanner in the WMTOC control room and increased stakeholder outreach.

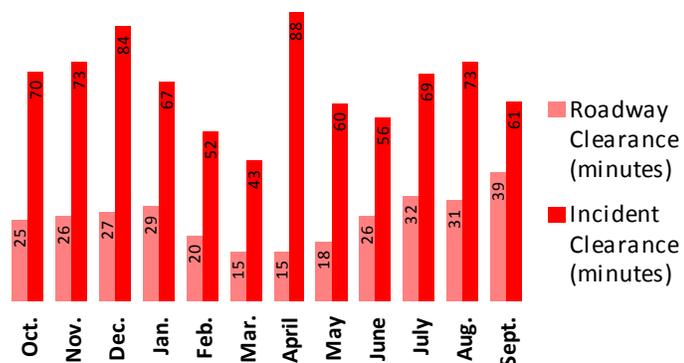
In FY 2013, WMTOC operators supported more than 200 incidents in each of two different months, the highest number of monthly incidents in the last six years of data.



Planned and Unplanned Events

| Event Type | Description | Number of Events |
|-------------------------------|--|------------------|
| Crash | Vehicle Collision | 896 |
| Disabled | Disabled vehicle | 419 |
| Congestion | WMTOC alerted motorists via DMS | 335 |
| Road Maintenance/Construction | Work zone, emergency or scheduled maintenance, mobile lane closure, etc. | 262 |
| Weather | WMTOC alerted motorists via DMS | 134 |
| Abandoned | Abandoned vehicle | 111 |
| Debris | Car bumper, tire retread, etc. in the roadway | 33 |
| Special Event | Concert, cultural event, etc. | 11 |
| Vehicle Fire | Vehicle fire that required fire personnel | 8 |
| Other | Police or medical incident | 8 |
| AMBER Alert | WMTOC alerted motorists via DMS | 0 |

Average Incident/Roadway Clearance Times



Planned Event Management

INFORMING MOTORISTS OF WORK ZONE ACTIVITIES AND SPECIAL EVENTS

Key 2013 Accomplishments

- Provided DMS messaging plans for major construction projects on US-131 and I-196
- Coordinated with event organizers to support approximately 11 special events through traffic monitoring and DMS messages

Northbound US-131 Auxiliary Lane

An auxiliary weave-merge lane was constructed on northbound US-131 between the Leonard Street and Ann Street interchanges. The temporary lane closures from the construction had a far-reaching effect on northbound US-131. Congestion leading into the work zone regularly affected motorists as far south as Burton Street and M-11 (28th Street) due to the temporary reduction in capacity on US-131.

Operators posted real-time congestion messages on northbound DMS leading into the work zone, updating the location of the back-of-queue, providing motorists with relevant and timely travel information related to the congestion queuing.

Crashes in the work zone were generally minor, and often the vehicles involved could be moved behind the construction barrels. Camera coverage throughout the area allowed WMTOC operators to quickly inform first responders of incidents. Operators were able to inform motorists of the crashes or congestion using the four DMS on northbound US-131 and on M-6 and I-196, as necessary.



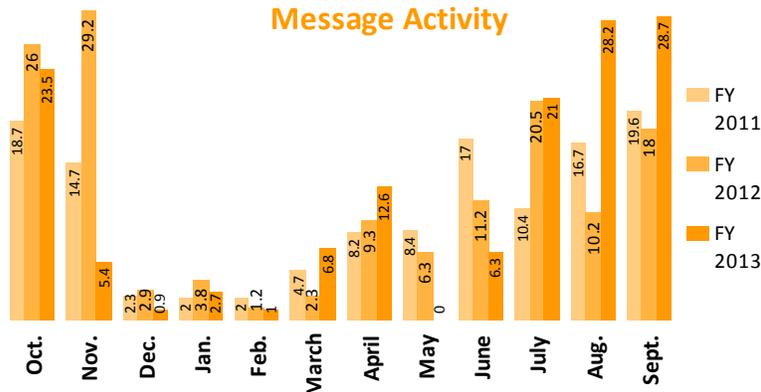
The addition of the auxiliary lane to northbound US-131 required the removal, relocation and replacement of the Leonard Street DMS.

Southbound US-131

Near the end of the 2013 construction season, a short-term project utilized a left-lane

closure on southbound US-131 near Ann Street. The closure resulted in congestion that extended beyond the West River interchange during the morning peak period. Operators were able to use several cameras and DMS to monitor traffic and inform motorists of changing travel conditions.

Average Weekly Construction DMS Message Activity



PLANNED EVENT MANAGEMENT

I-196 Bridges over Market Avenue

Two bridges carry I-196 over Market Avenue and the Grand River on the west side of the Grand Rapids metro area, one for each direction of the freeway. During the 2013 construction season, each of the bridge decks were repaired and the bridge railings were replaced using part-width construction. The condition of the eastbound I-196 bridge required more extensive work than the westbound bridge, which resulted in longer lane closures and additional delays for motorists due to congestion.

The bridges are not in the WMTOC camera coverage area but the congestion, particularly in the eastbound direction, was generally visible on camera. WMTOC operators used DMS on eastbound and westbound I-196, as well as northbound and southbound US-131, when necessary, to inform motorists of the construction-related congestion. Motorists were able to use the information to

adjust their travel route if necessary to avoid the congestion.

Special Events

The WMTOC operators monitored traffic and coordinating with law enforcement personnel and event organizers to provide up-to-date special event information to motorists through DMS messages for the events noted in the table shown on this page.

FY 2013 Special Event Support

5/3 Ballpark Brew-Ha-Ha

NCAA Men's Hockey Championship Tournament

5/3 Riverbank Run

Great Lakes Burn Camp Motorcycle Parade

July 4th Fireworks Celebration

Coast Guard Festival

28th Street Metro Cruise

Rock the Rapids

Celebration of the Grand Fireworks Display

Black Friday Shopping



ITS System Maintenance

SUSTAINING A RELIABLE ITS NETWORK

Key 2013 Accomplishments

- Ensured calibration of approximately 16 percent of the microwave vehicle detector systems (MVDS) in Kent County
- Provided a 75 percent average availability for more than 200 ITS devices in the WMTOC network

MVDS Calibration Program and Availability

The MVDS calibration program continued during FY 2013 and approximately 16 percent of the existing detectors were re-calibrated and tested for accuracy. Within the past two years, more than 85 percent of the detectors have been calibrated.

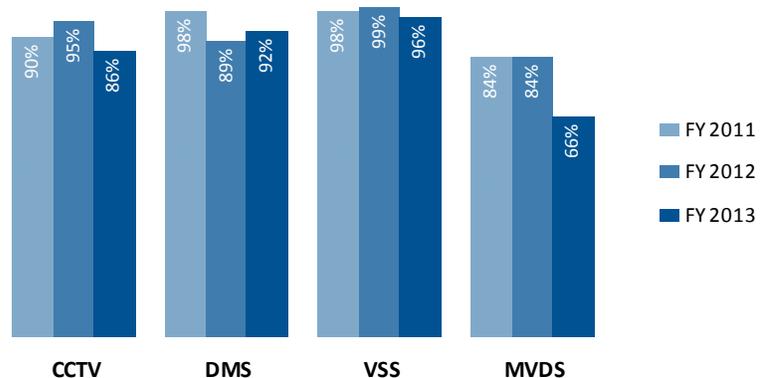
Several detectors were not available to TOC operators for several months due to damage from Grand River flooding. The detector locations are anticipated to be repaired during FY 2014.

Network Improvements

Several ITS network improvements were implemented during FY 2013. Improvements included optimized Layer 3 routing, installation of an additional Layer 3 switch for data transfer redundancy and activation of an automatic error disable recovery feature to reduce maintenance time. The improvements will provide increased network efficiency and reduce network downtime and maintenance requirements.



ITS Device Availability



ITS Deployment

ADVANCING THE EXISTING ITS NETWORK

Key 2013 Accomplishments

- Replaced seven DMS on US-131, allowing for increased message visibility and reduced maintenance requirements
- Integrated all DMS into the new statewide Advance Traffic Management System (ATMS) software

DMS Replacement

Seven DMS along US-131 were replaced and three along I-196 were repaired during 2013. These DMS represented a large portion of the original ITS system in Grand Rapids. The new DMS incorporate improved technology, which will reduce maintenance costs and downtime and improve message visibility and matrix readability.

ATMS Software

All of the WMTOC DMS were integrated into MDOT's new ATMS software as part of the on-going effort to place all MDOT ITS devices into an HTML-based statewide software. The integrated DMS are able to provide travel-time information to motorists on portions of the roadway

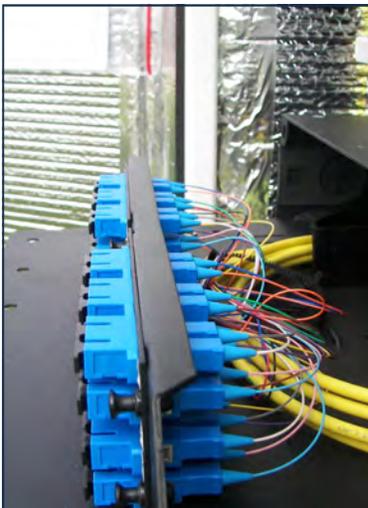


network that previously did not have the information available. MDOT's goal is to have all ITS devices available to any TOC in the state, allowing for redundancy in case of an emergency.

Future Deployment

No new ITS devices were added in 2013, but rather the main focus throughout the year was on optimizing and upgrading the communication network.

Several new ITS devices are planned for construction during FY 2014 on I-96 and M-37 .



Number of WMTOC ITS Field Devices

