



West Michigan Transportation Operations Center



MDOT'S MISSION:
*Providing the highest quality
integrated transportation services
for economic benefit and
improved quality of life.*

2014

September

MONTHLY
PERFORMANCE
MEASURES



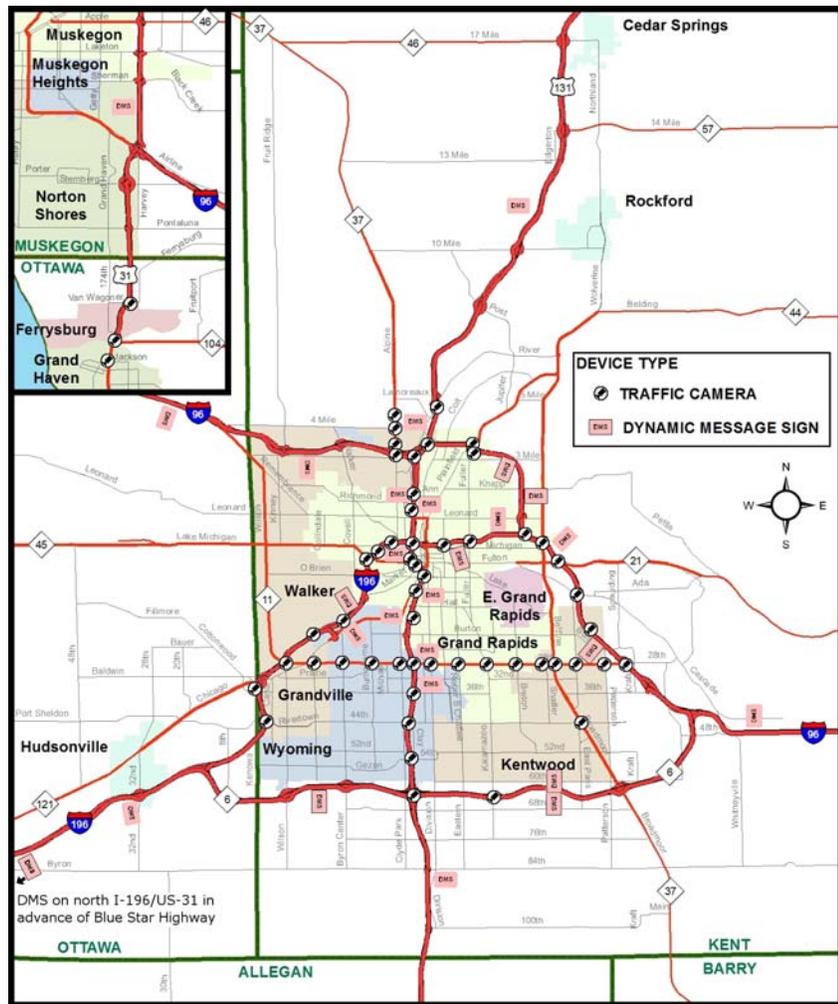
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The 2014 ITS World Congress was held in Detroit this month. More than 10,000 international participants gathered at Cobo Center to share the latest Intelligent Transportation Systems (ITS) design, applications and operations. As an event sponsor, MDOT showcased their three transportation operations centers, WMTOC (Grand Rapids), STOC (Lansing) and SEMTOC (Detroit), demonstrating to attendees the ways in which Michigan is using ITS to improve safety and travel times on the transportation system for both planned and unplanned events.

Locally, the US-131/I-196 interchange has been the crash hot spot for the past four months. Serving nearly 200,000 vehicles daily, this interchange has the highest daily traffic volume in the Grand Rapids area. High traffic volumes, along with several interchange ramps, increase the potential for crashes. During summer 2014, construction along US-131 near I-196 required several lane and ramp closures and WMTOC operators documented a higher-than-average number of crashes. On Sept. 30, a tractor-trailer overturned, blocking the ramp from eastbound I-196 to northbound US-131 for more than four hours. WMTOC operators were able to inform motorists and media about the incident through DMS messages and email notifications, providing an opportunity for motorists to take an alternate route around the incident.

Device Locations



Transportation Operations Centers (TOC)



The WMTOC focuses on MDOT's goals of incident management, crash reduction, customer information, and congestion reduction. The TOC provides motorists and businesses with real-time traffic information, and partners with emergency response agencies to provide improved response services to traffic crashes, saving lives, time, and money.

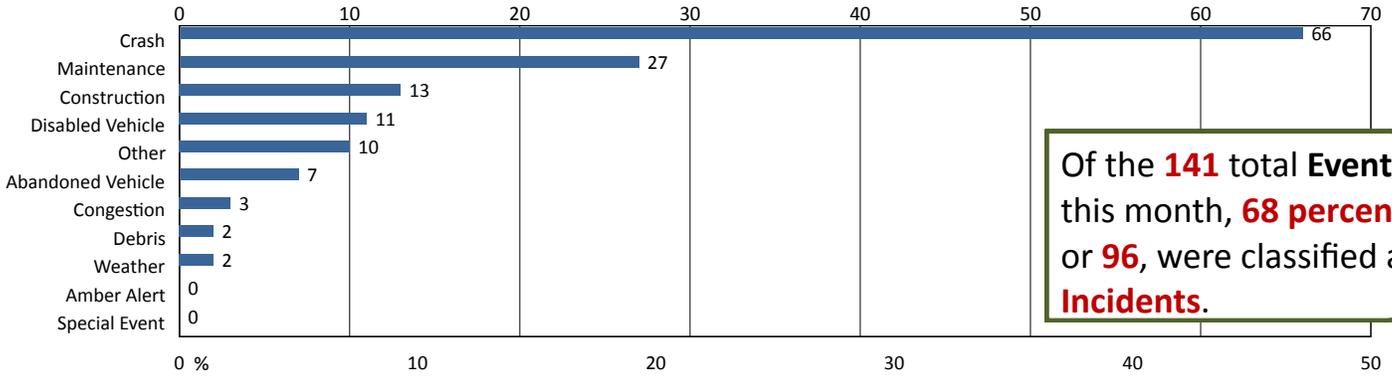
The WMTOC has camera/device coverage on approximately 45 freeway miles and 18 non-freeway trunkline miles in the greater Grand Rapids area and Grand Haven.

Event: An occurrence within the TOC coverage area that results in TOC involvement or tracking. Several different types of events recur, including: Crash, Disabled Vehicle, Abandoned Vehicle, Debris, Congestion, Construction, Maintenance, AMBER Alert, Weather, and Special Event types. Any other occurrence with TOC involvement is classified as "Other."

Incident: An unplanned event that directly affects a state trunkline. These are primarily crashes, disabled and abandoned vehicles, and debris in the roadway but occasionally include police situations and fires.

Communication: Any phone call, e-mail, etc., that comes into or goes out of the control room.

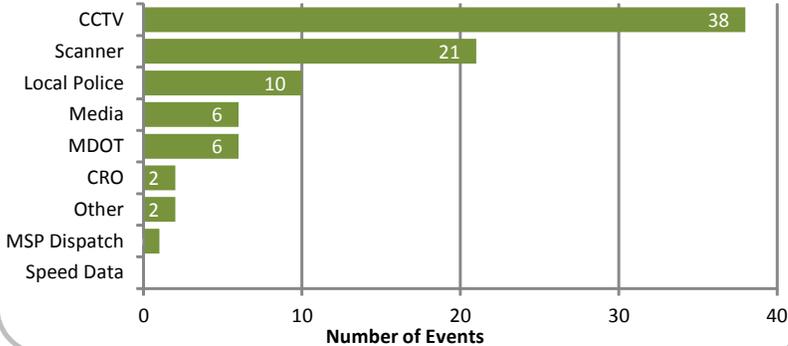
Events by Type



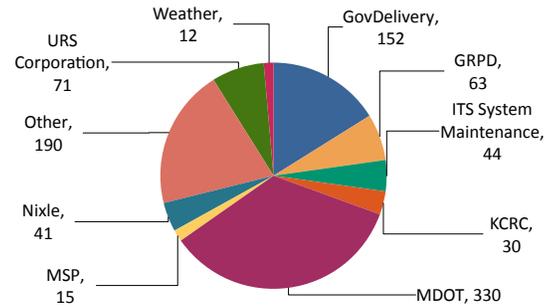
Of the **141** total Events this month, **68 percent**, or **96**, were classified as **Incidents**.

Control room operators (CRO) rely on various sources to detect **Incidents** that occur along the freeways. Noting the source not only ensures that the **Incident** was detected by a reliable source, but also provides insight as to which sources are utilized most frequently. "Other" includes any source that is infrequent, such as responders on scene or third party notifications.

Incidents by Detection Source



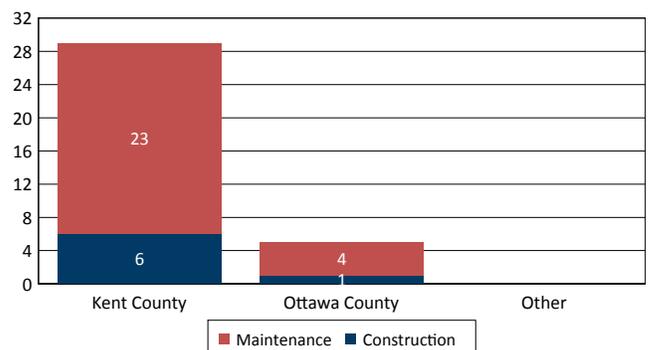
Communication by Agency



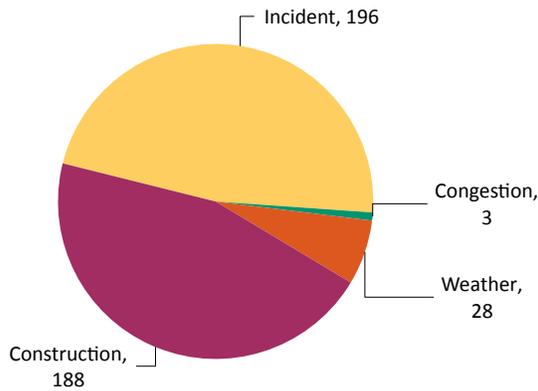
CROs managed **948 Communications** this month. This included **395 (42 percent)** Calls and **553 (58 percent)** E-mails. The highest source of **Communication, 35 percent**, was between the control room and **MDOT**. "Other" includes Media, Contractors and Service Providers, as well as the City of Grand Rapids.

Since CROs are responsible for monitoring and managing traffic operations along the freeways, it is critical to know where work zone activities are taking place and the impact that they may have on freeway operations. Frequent communication with MDOT staff and contractors allows CROs to stay up-to-date on the locations and impacts of construction and maintenance projects. Work zone activities which are messaged for or are within the camera/device coverage area of the WMTOC are logged. "Other" includes Oceana, Newaygo, Mecosta, Muskegon, Montcalm, and Ionia counties.

Work Zone Activities



DMS and VSS Messages by Type



There were **415** unique messages displayed throughout the ITS network this month on Dynamic Message Signs (DMS). A "unique message" may be an **Incident**, Special Event, Congestion, Weather, Construction, AMBER Alert, or other unique message.

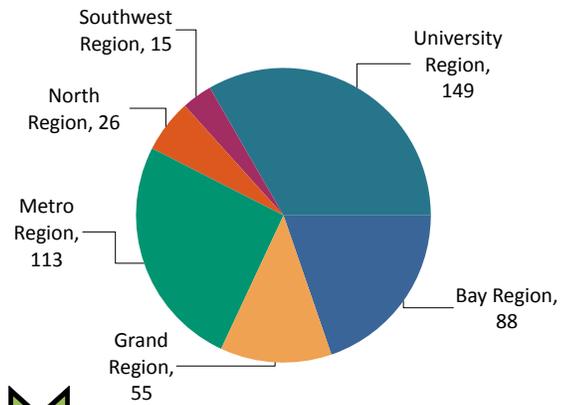
Travel time messages are routinely displayed when unique messages are not active. Travel times are updated every three minutes.

Field Device Availability

Device Type	Number of Devices	Percent of Time Available
CCTV Cameras	40	85%
Dynamic Message Signs (DMS)	27	100%
Microwave Vehicle Detectors	43	86%

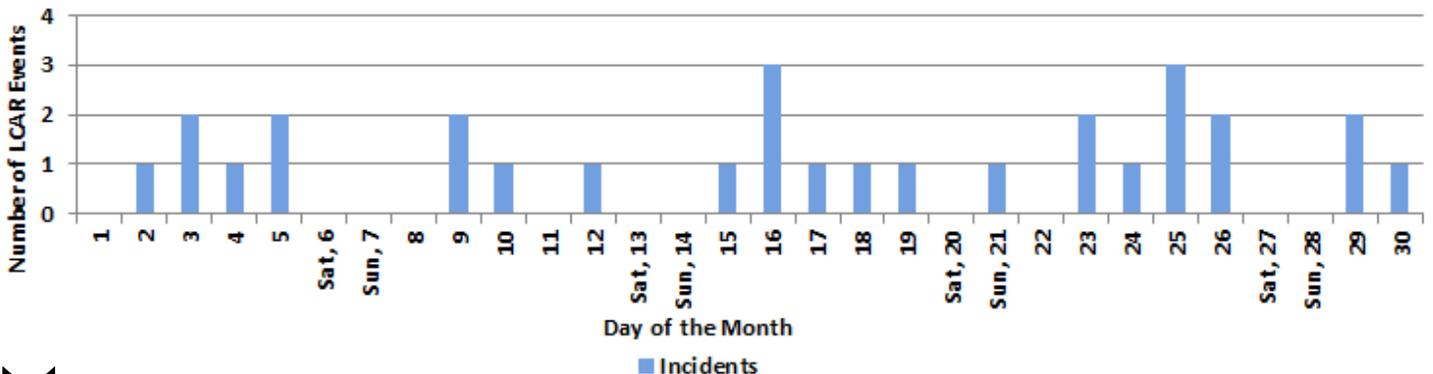
CROs track the availability of all system devices so that timely maintenance can occur. The reliability of the devices in turn ensures that CROs have tools available to accurately provide traffic conditions to the motoring public.

Stuck in Traffic Notifications



Travelers with smartphones or Web-enabled mobile devices can go to the Mi Drive website (www.michigan.gov/drive) and click on the "Stuck in Traffic?" link to report traffic delays or incidents. The graph above shows how many were reported per MDOT region.

WMTOC LCAR Posts



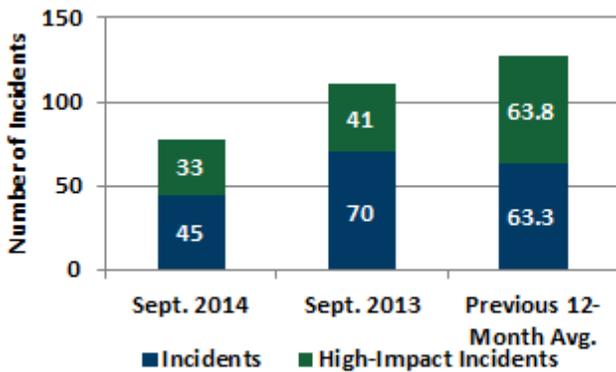
CROs are able to post **Incident** information to the Mi Drive website using the Lane Closure and Restrictions (LCAR) tool. Each post that was sent to the website this month is shown in the chart above.

Incidents in Coverage Area by Roadway

Freeway	Miles	Sept. 2014			Sept. 2013			Previous 12-Month Avg.		
		Total Incidents	Incidents Per Mile	Average Duration (min)	Total Incidents	Incidents Per Mile	Average Duration (min)	Total Incidents	Incidents Per Mile	Average Duration (min)
I-96	10.6	9	0.8	128	14	1.3	18	18.8	1.8	57
I-196	12.1	18	1.5	59	31	2.6	49	28.8	2.4	65
US-131	15.2	36	2.4	40	61	4.0	66	55.3	3.6	48
US-31	1.7	2	1.2	23	2	1.2	19	1.9	1.1	92
M-6	4.0	1	0.2	31	2	0.5	85	2.2	0.5	79
M-11	11.5	2	0.2	116	1	0.1	0	1.0	0.1	68
Total	55.1	68	1.2	58 min	111	2.0	54 min	108.1	2.0	56 min

US-131 experienced the most total **Incidents** this month; additionally, US-131 had the greatest incident-per-mile rate for the month. The longest average incident duration during the current month occurred along **I-96**. Abandoned vehicles are excluded from this table.

Total Incidents



There were a total of **96 Incidents** this month, **53 percent** of which were high-impact incidents. A high-impact incident is one that results in a total freeway closure, a ramp closure or a lane closure.

The majority of the high-impact **Incidents** this month, **49 percent**, occurred along **US-131**. For most high-impact incidents, CROs are required to provide e-mail notification to a pre-defined distribution list of individuals and organizations. The notification includes the location of the incident, the degree of closure, the reason for the closure, the source that verified the incident and any other pertinent information related to traffic operations.

High-Impact Incidents

	Sept. 2014	Sept. 2013	Previous 12-Month Avg.
Freeway Closure	8	2	5.4
Lane Closure	40	50	52.8
Ramp Closure	3	5	4.8
Total	51	57	63.00

Top Duration Incidents

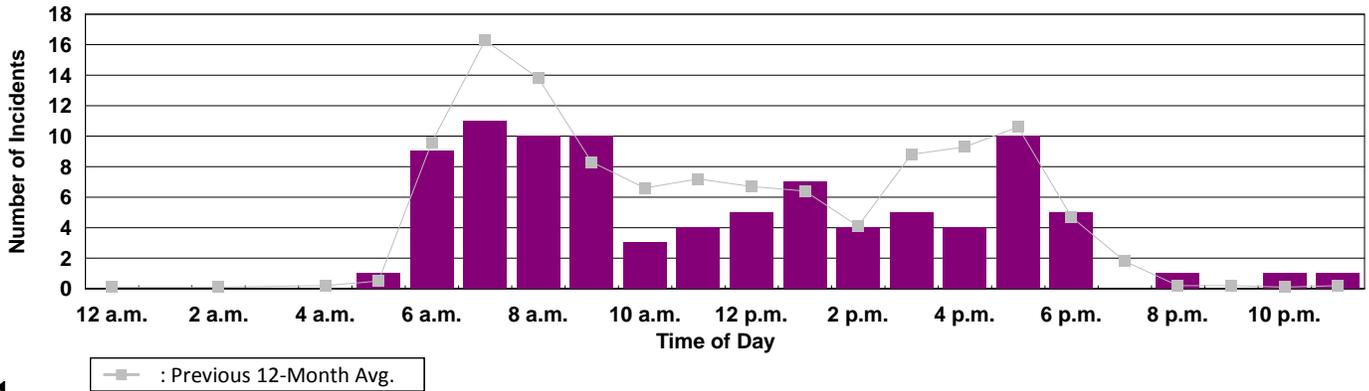
Location	Date	Duration	Details
EB I-96 @ M-11 (Ironwood Dr)	9/5/2014	6 hrs. 9 min.	Multi-vehicle crash
EB I-96 @ Sternberg Rd	9/7/2014	5 hrs. 42 min.	Single-vehicle crash
WB I-96 @ Cascade Rd	9/14/2014	5 hrs. 17 min.	Multi-vehicle crash
EB I-196 freeway ramp to NB US-131	9/30/2014	4 hrs. 31 min.	Tractor-trailer crash
EB I-96 @ M-37/M-44 (E Beltline Ave)	9/14/2014	3 hrs. 42 min.	Multi-vehicle crash

The longest-duration **Incident** this month occurred on **I-96** and lasted **6 hours 9 minutes**, compared to the average incident duration of **58 minutes** for September incidents and **56 minutes** for incidents in the past year.

Incidents in Work Zones

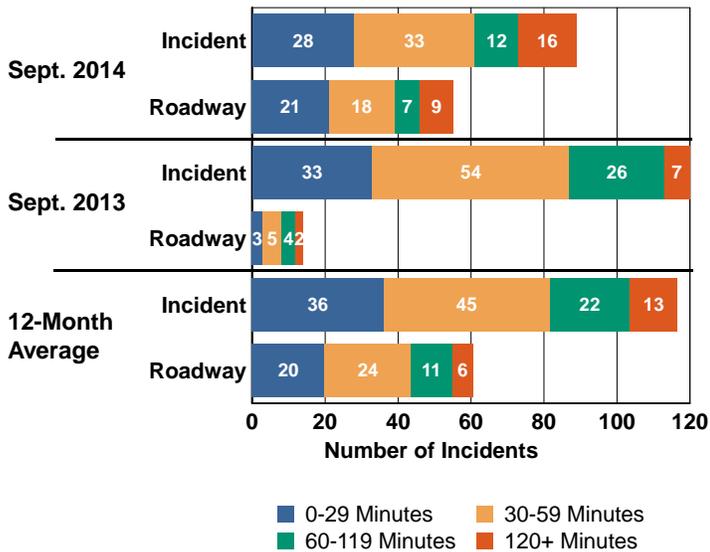
During the month of September, two incidents were identified by operators as being within work zones. One crash occurred on southbound M-37 in the work zone near 4 Mile Road, while the other crash occurred on westbound I-96 in the work zone at M-50.

Total of Unplanned Incidents per Weekday Hour



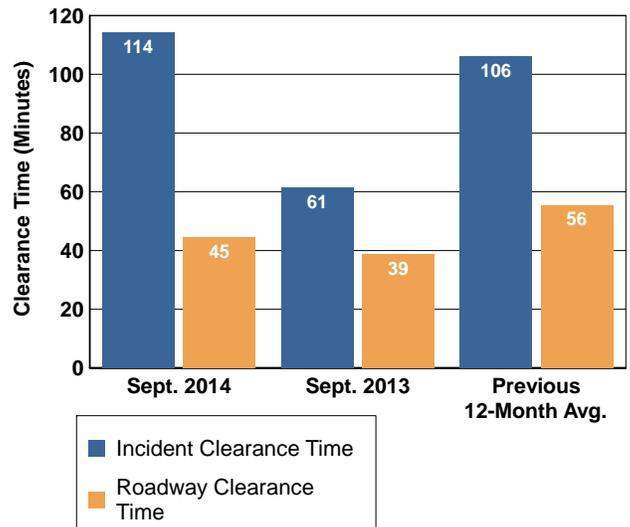
The largest hourly number of Incidents this month occurred during the hour starting at **7 a.m.**, historically the largest hourly number of incidents occur during the hour starting at 7 a.m.

Incident Clearance Details



First responders and MDOT share a goal of clearing **Incidents** from the roadway and reducing incident clearance times to limit the risk to the incident site and responders, and safely restore normal traffic flow. Effective response and clearance improves safety for motorists as well as first responders.

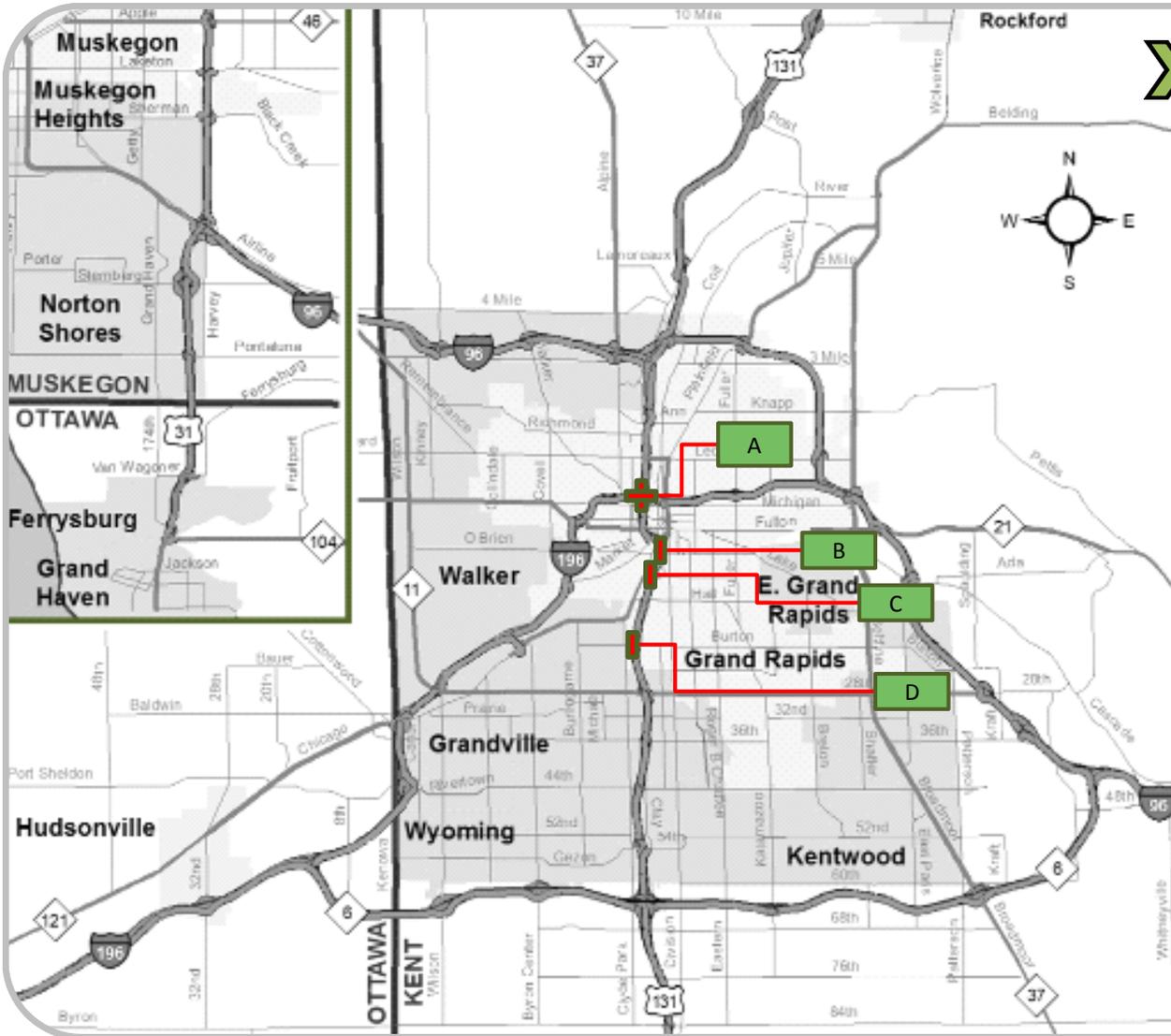
Incident/Roadway Average Clearance Times



"Incident clearance time" is defined as the time between the awareness of an **Incident** and the time when all vehicles are removed from the scene. "Roadway clearance time" is defined as the time between the awareness of an incident and confirmation that all lanes are open to traffic. MDOT's goal is to minimize delays caused by incidents as well as the occurrences of secondary incidents.

Secondary Crashes

Out of the **66** total crashes this month, **four (6 percent)** were **Secondary Crashes**.



The top Crash locations for the month are identified on the map. Each month the locations may change. Details for each location depicted on the map can be found in the "Hot Spot Activity" table below.

The hot spots depicted on the map are described in this table. The number of hot spot **crash** locations may vary each month depending on incident activity. The minimum threshold used for categorizing a location as a "top" hot spot is **four Crashes**. This threshold is set based on historical data for the WMTOC coverage area.

Crash Hot Spot Activity

Hot Spot	Freeway and Cross Street	Count	% of Total Crashes	Appearances in Previous 12 Months
A	I-196 at US-131	8	12%	6
B	US-131 at Wealthy St	4	6%	8
C	US-131 at Business I-196 (Franklin St)	4	6%	2
D	US-131 at Burton St	4	6%	1