



September
2016



Monthly
Performance
Measures

WEST MICHIGAN TRANSPORTATION OPERATIONS CENTER

www.Michigan.gov/WMTOC

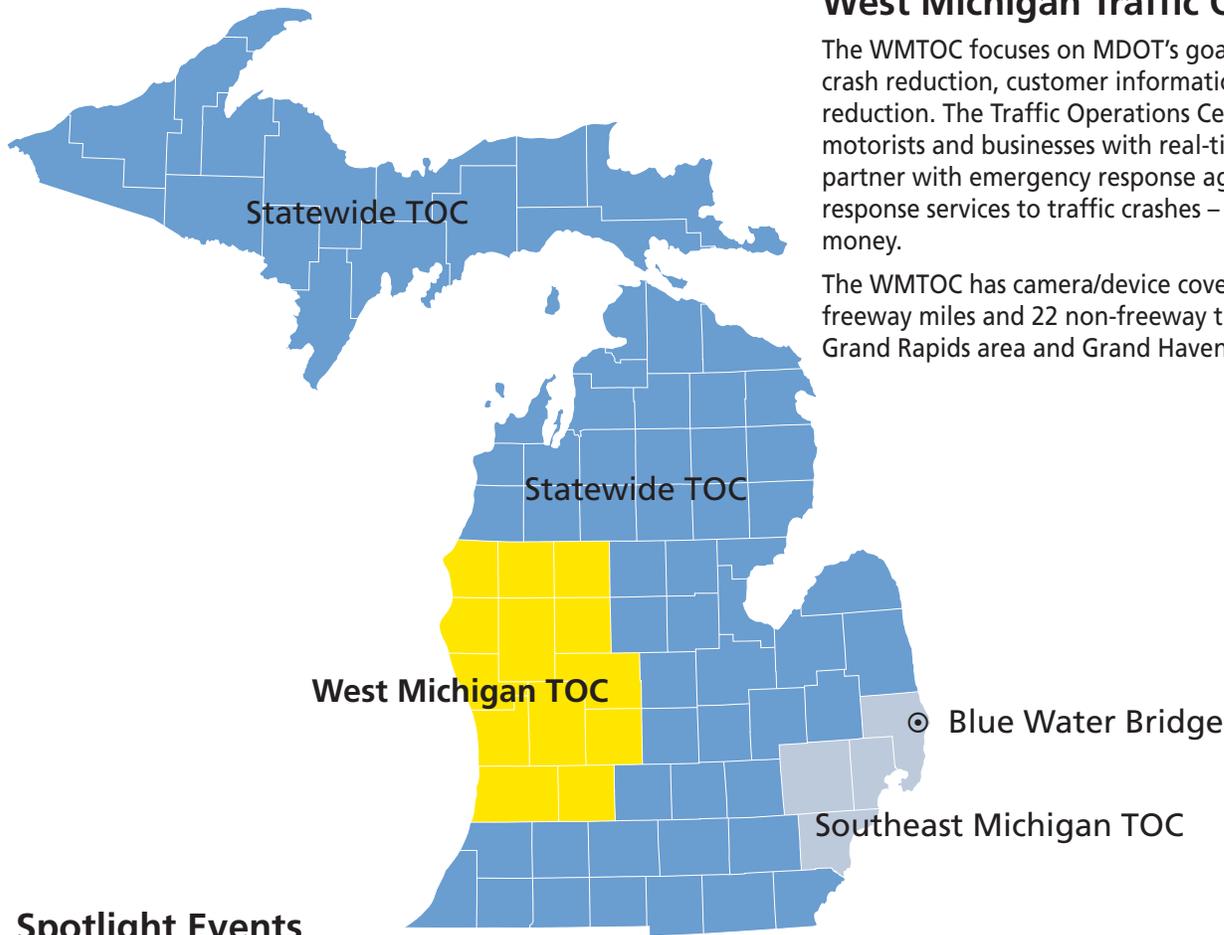


MDOT'S MISSION

Providing the highest quality integrated transportation services for economic benefit and improved quality of life.

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West Michigan Traffic Operations Center

The WMTOC focuses on MDOT’s goals of incident management, crash reduction, customer information, and congestion reduction. The Traffic Operations Centers (TOC) provide motorists and businesses with real-time traffic information, and partner 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 53 freeway miles and 22 non-freeway trunkline miles in the greater Grand Rapids area and Grand Haven.

Spotlight Events

Incident Management

On Saturday, Sept. 10, the WMTOC assisted with a jackknifed tractor-trailer crash on eastbound I-196 after M-45 (Lake Michigan Drive). The tractor-trailer was blocking both lanes between the median barrier wall and the right shoulder guardrail. Traffic was unable to pass the scene and backed up to Market Avenue. One of the tractor-trailer’s diesel fuel tanks ruptured during the crash and diesel fuel started to leak onto the already rain-wet pavement. The spill resulted in the crash becoming a hazardous material situation. An environmental clean-up crew was called in to clean up the diesel fuel, which added time to the impact of this event. First responders aided motorists stuck behind the scene by facilitating routing of the traffic on to the eastbound M-45 (Lake Michigan Drive) entrance to eastbound I-196. This crash closed the freeway for over three-and-a-half hours. The WMTOC displayed messages for the closure on DMS, placed the incident on the Mi Drive statewide website, facilitated communication between first responders, and sent out e-mail and Twitter notifications to motorists and stakeholders.

Construction

On Friday, Sept. 23, work was completed on the construction of a new weave merge lane on southbound US-131 from Ann Street to Leonard Street, and the continuous lane closure for work that began in April was removed. Multiple bridges in this section of the freeway were widened to accommodate an extra lane of traffic. This additional lane will help relieve congestion on southbound US-131. The West Michigan Transportation Operations Center (WMTOC) maintained messages on dynamic message signs (DMS) informing motorists of the closure and any traffic changes for nights and weekends throughout the project.

Special Event

From Sept. 21 to Oct. 9, downtown Grand Rapids hosted the eighth annual ArtPrize®. ArtPrize is recognized as the most-attended public art event on the planet with about 400,000 people attending each year. It is an art competition where artists compete for public votes and juried awards. This year there were 1,453 entries displayed at 171 different venues. MDOT strives to limit construction lane closures during the 19 days of ArtPrize to allow visitors to easily access the venues throughout downtown. The WMTOC monitors for congestion on freeways and trunklines and provides messages, as needed, for traffic impacts.

Anyone interested in subscribing to e-mail notifications can sign up at <http://bit.ly/14ucwY2>. Incident information is also available on the Mi Drive website at www.michigan.gov/drive. The MDOT Grand Region can be followed on their Twitter account at www.twitter.com/MDOT_West.

Events by Type

Events by type are shown in Figure 1.

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 that has 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.

Of the **159** total **Events** this month, **42 percent**, or **68**, were classified as **Incidents**.

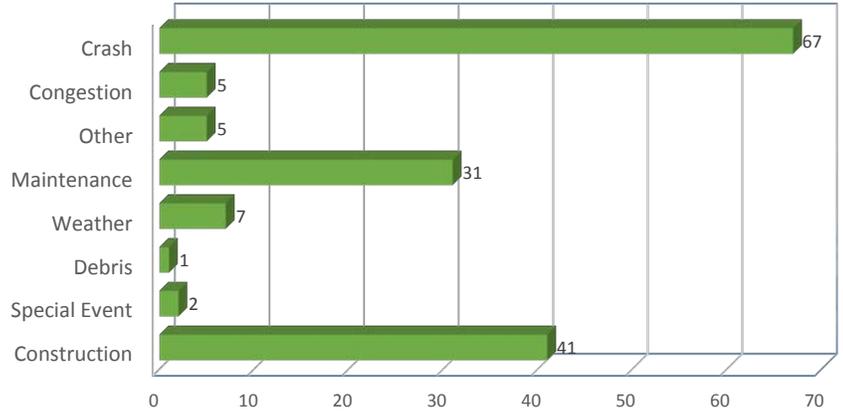


Figure 1

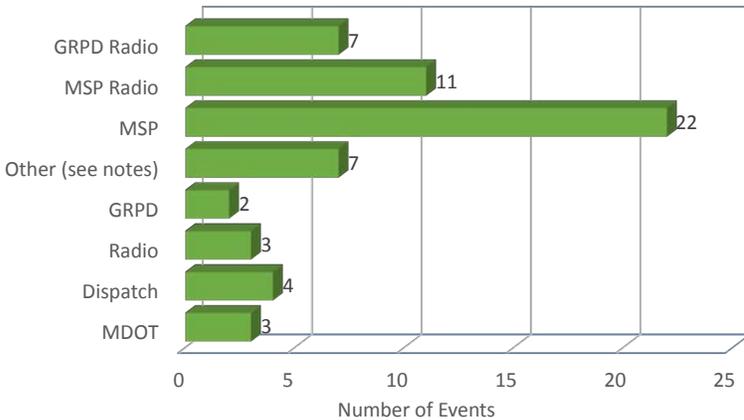


Figure 2

Incidents by Detection Source

Control room operators (CROs) 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.

Figure 2 provides information on how incidents were detected.

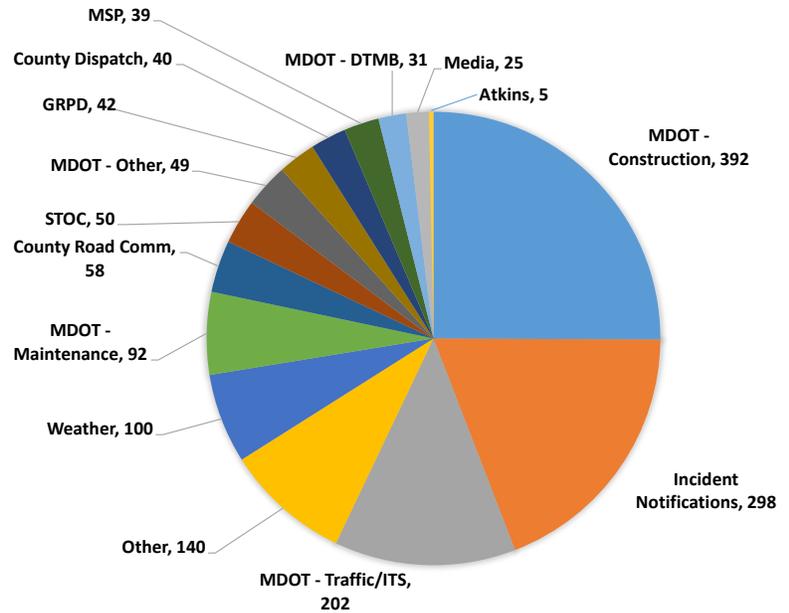


Figure 3

Communication

WMTOC tracks all outgoing and incoming communications to the control room. This includes phone calls, e-mails, and notifications.

CROs managed **1,563 Communications** this month, as shown in Figure 3. This included **324 (21 percent)** Phone Calls and **1,189 (76 percent)** E-mails. The highest source of **Communication, 19 percent**, was between the control room and **Incident Notifications**. "Other" includes Contractors, Nixle, and Service Providers.

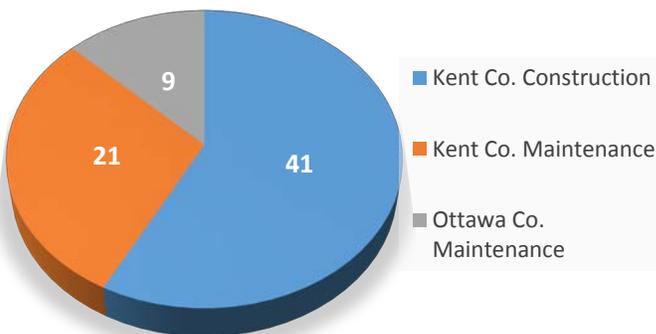


Figure 4

Work Zone Activities

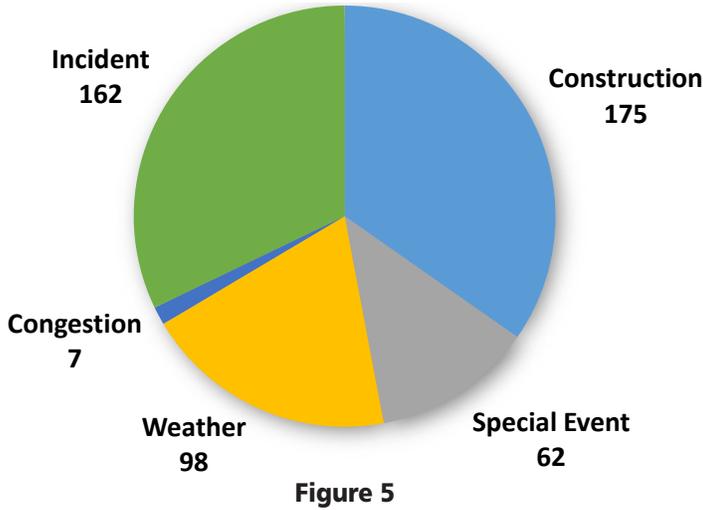
Work zone activities in Kent and Ottawa counties are shown for this month in Figure 4.

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 ensures that the CROs are kept 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.

DMS Messages by Type

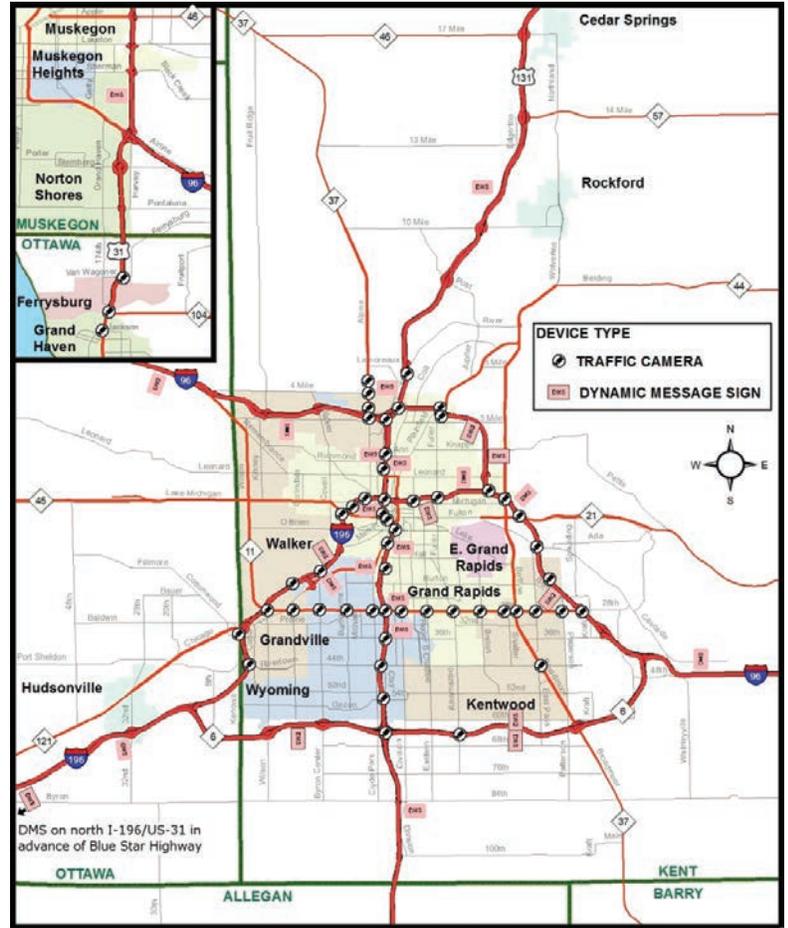
There were **504** unique messages displayed throughout the ITS network this month on Dynamic Message Signs (DMS), as shown in Figure 5.

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.

Device Locations



Field Device Availability

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. Table 1 shows field device availability for this month.

Device Type	Number of Devices	Percent of Time Available
Camera	67	91%
DMS	27	96%
MVDS	128	69%

Table 1

WMTOC Mi Drive Posts

CROs are able to post **Incident** information to the Mi Drive website using the ATMS software. Each post sent to the website this month is shown in Figure 6.

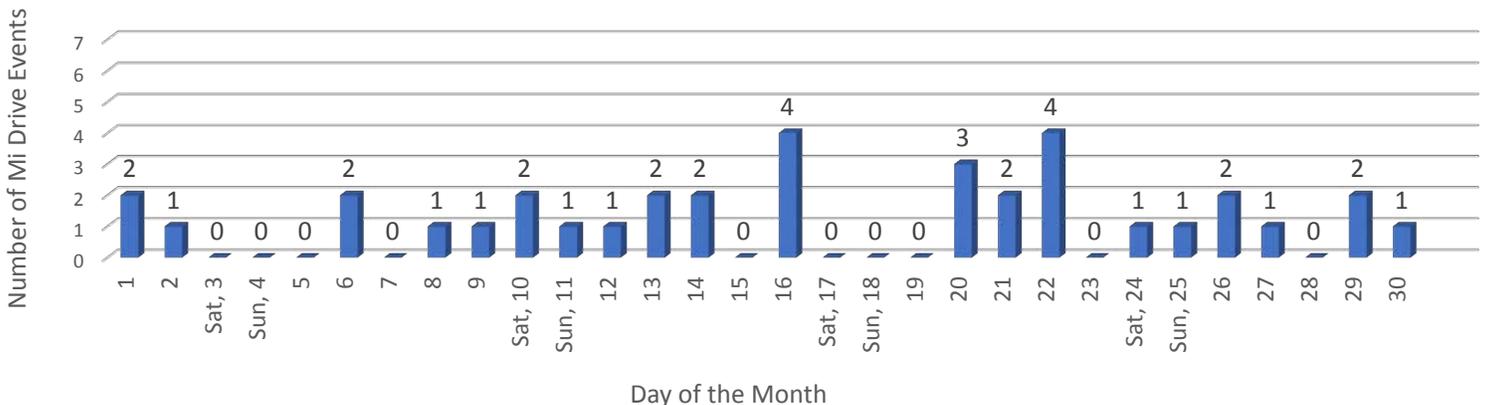


Figure 6

Incidents on Key Routes

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 **M-6**. See Table 2.

Route	Miles	September 2016			September 2015			Previous 12-month Avg.		
		Total Incidents	Incidents Per Mile	Average Duration	Total Incidents	Incidents Per Mile	Average Duration	Total Incidents	Incidents Per Mile	Average Duration
I-96, US-31 to M-50	34.4	5	0.1	48	15	0.4	56	13	0.4	57
I-196, Bluestar Hwy to I-96	26	11	0.4	51	19	0.7	29	21	0.8	47
US-131, 84th St to Rockford Rest Area	24.5	39	1.6	52	55	2.2	47	46	1.9	46
US-31, I-96 to M-120	42	2	0	65	2	0	21	1	0	72
M-6, I-196 - I-96	19	3	0.2	101	3	0.2	41	3	0.1	68
M-11, I-196 to I-96	11.5	0	0	0	3	0.3	70	1	0.1	102
M-37/M-44, M-6 to West River Dr	15.5	1	0.1	38	1	0.1	38	2	0.1	164

Table 2

Total Incidents

There were **72** Incidents this month, **90 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.

Incident information is shown in Figure 7.

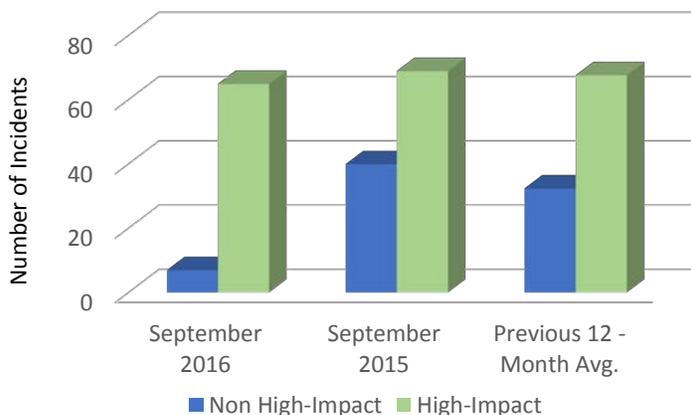


Figure 7

Top Duration Incidents

The longest-duration incident this month occurred on **eastbound and westbound M-57 at Hillcrest Street** and lasted **5 hours, 15 minutes**, compared to the average incident duration of **60 minutes** for August incidents. See Table 4.

Location	Date	Duration	Details
EB & WB M-57 at Hillcrest St	9/30/16	5 hr 15 min	Multi-vehicle crash
WB I-196 at Byron Rd	9/26/16	3 hr 35 min	Multi-vehicle crash
EB I-196 at M-45 (Lake Michigan Dr)	9/10/16	3 hr 25 min	Semi vehicle crash
SB US-131 at ramp to EB M-6	9/26/16	2 hr 49 min	Multi-vehicle crash
SB US-131 at West River Dr	9/12/16	2 hr 39 min	Multi-vehicle crash

Table 4

Incidents in Work Zones

No incidents were identified by operators as being within a work zone during this month.

High-Impact Incidents

The majority of the high-impact Incidents this month, **57 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, and any other pertinent information related to traffic operations. See Table 3.

Closure Type	Sept 2016	Sept 2015	Previous 12 - Month Avg
Freeway Closure	7	6	7.0
Lane Closure	50	60	55.7
Ramp Closure	8	4	5.0
Total	65	70	67.7

Table 3

Total of Unplanned Incidents per Weekday Hour

The largest hourly number of **Incidents** this month occurred during the hours of **3 p.m. and 4 p.m.** Historically, 7 a.m. has had the largest hourly number of incidents in the Grand Region. Figure 8 shows **Unplanned Incidents** for weekdays for this month.

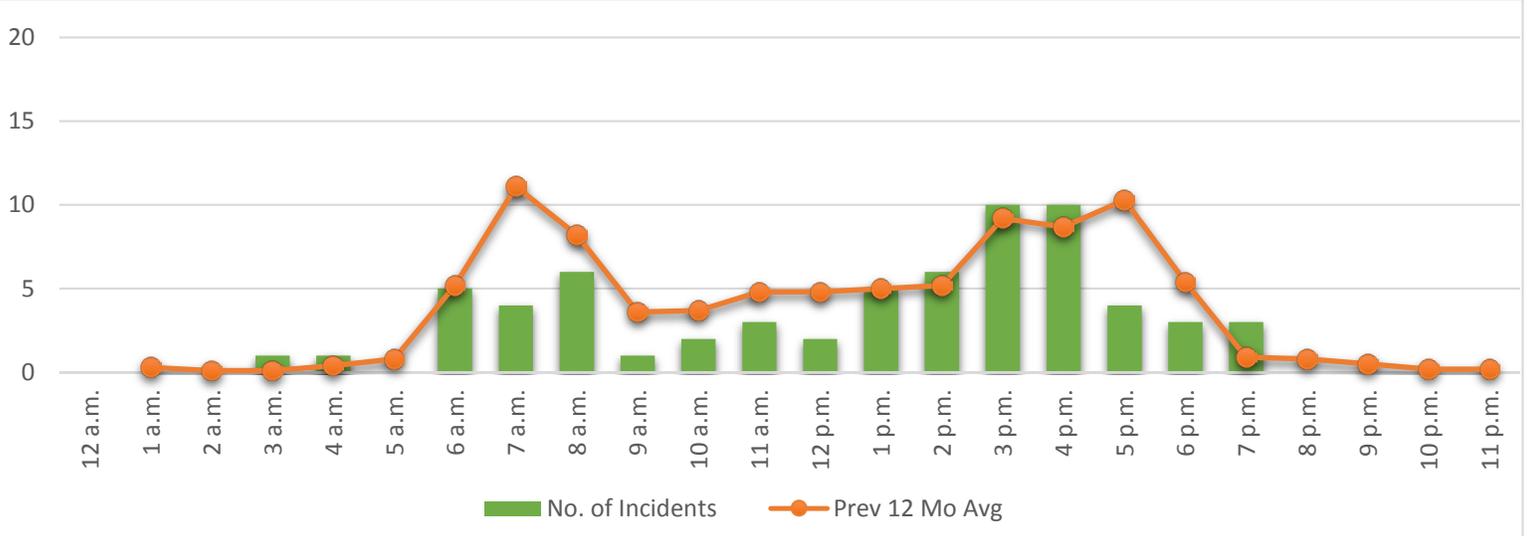


Figure 8

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 travelers and responders. Effective response and clearance improves safety for motorists as well as first responders. Figure 9 illustrates roadway clearance times and incident clearance times.

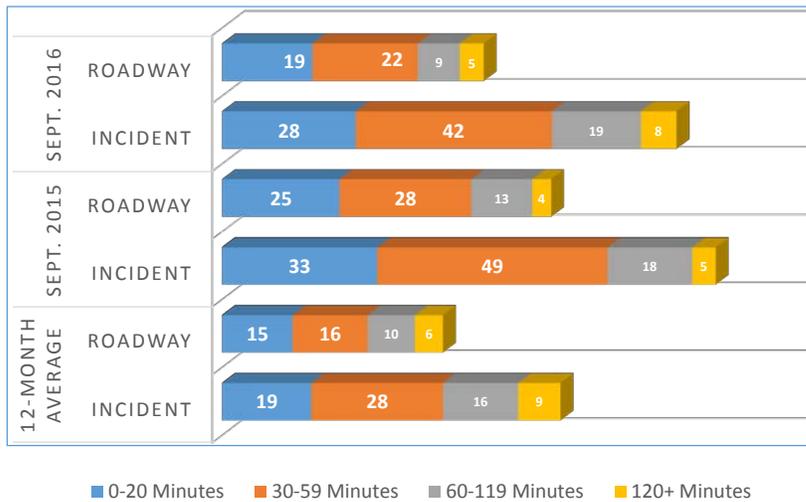


Figure 9

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. See Figure 10.

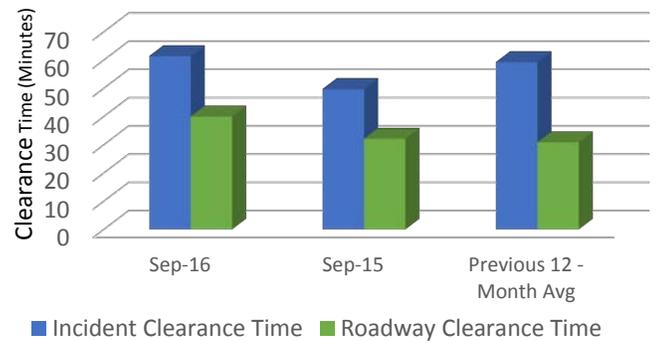


Figure 10

Secondary Crashes

Out of the **67** total crashes this month, **1 percent** were **Secondary Crashes**.

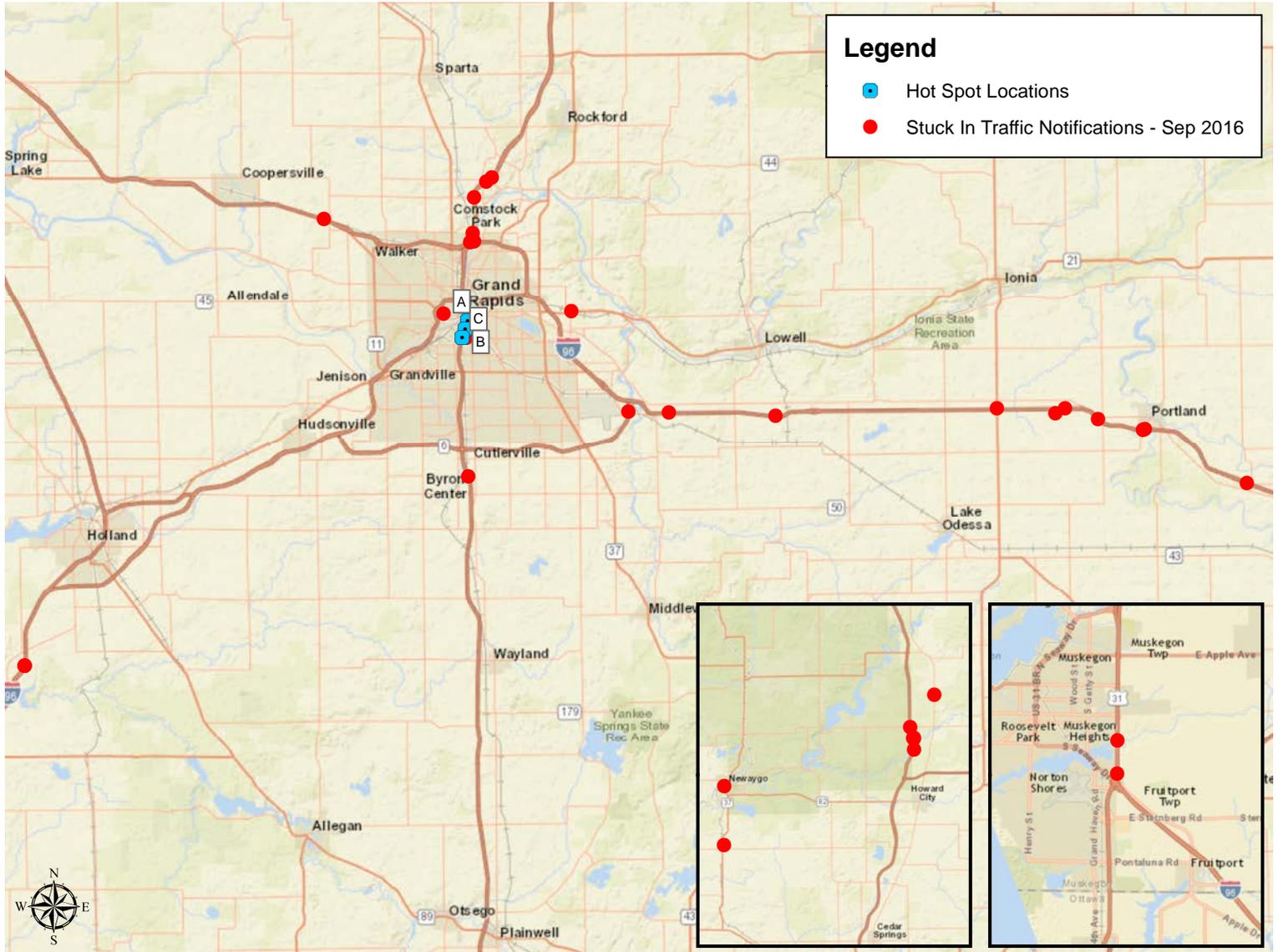
Stuck in Traffic Notifications

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 map below shows how many were reported per key roadway.

Crash Hot Spot Activity

The hot spots depicted on the map below are described in Table 5. 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.

The top **Crash** locations for the month are identified on the map below. Each month the locations may change.



Legend

- Hot Spot Locations
- Stuck In Traffic Notifications - Sep 2016

Hot Spot	Freeway and Cross Street	Count	% of Total Crashes	Appearance in Previous 12 Months
A	US-131 @ Wealthy St	5	7%	4
B	US-131 @ Franklin St (I-196 BS)	5	7%	8
C	US-131 @ Hall St	4	6%	6

Table 5