



August
2016



Monthly
Performance
Measures

WEST MICHIGAN TRANSPORTATION OPERATIONS CENTER

www.Michigan.gov/WMTOC

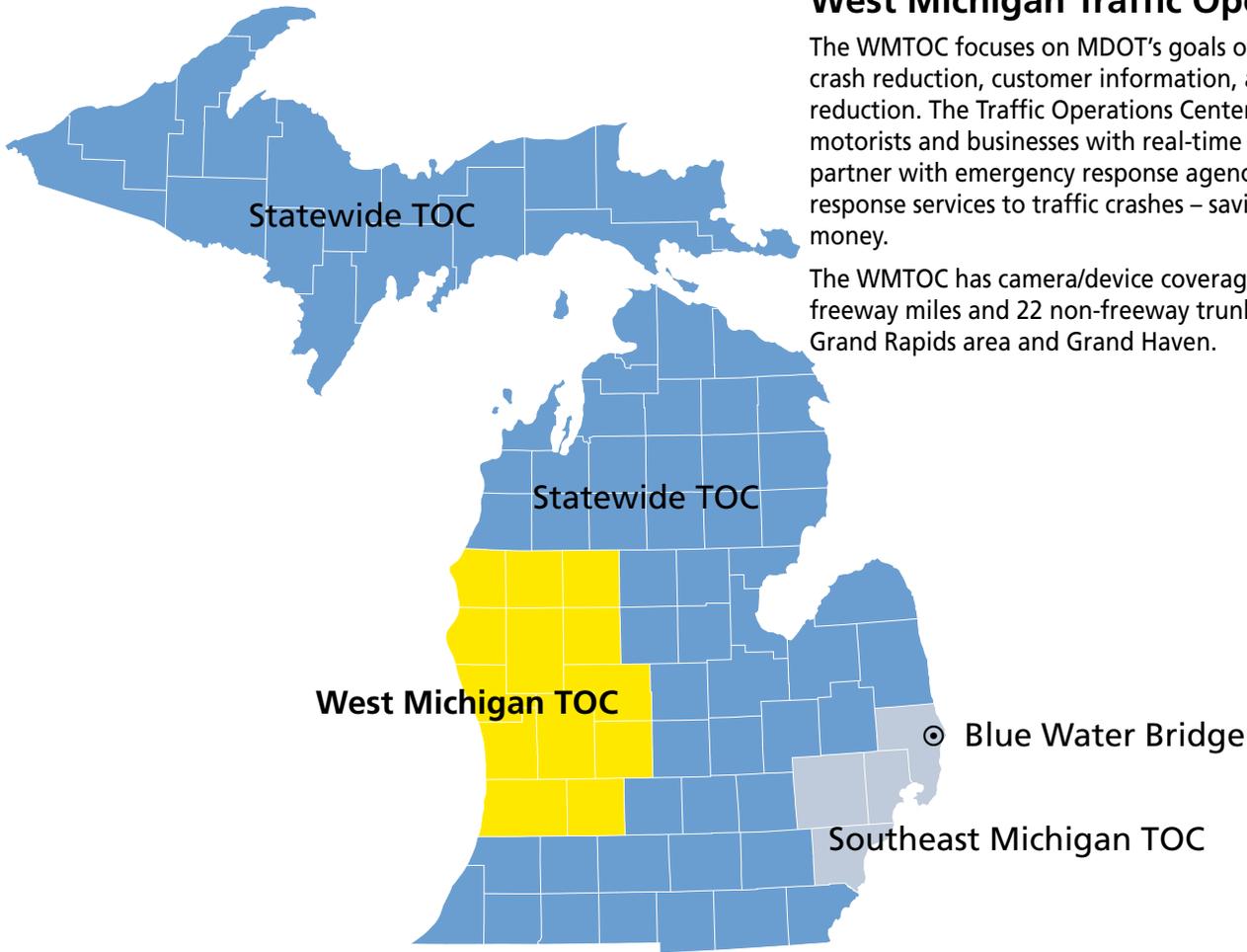


MDOT'S MISSION

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

Suzette Peplinski, P.E.
WMTOC Manager
1420 Front Avenue NW
Grand Rapids, MI 49504
PeplinskiS@michigan.gov

Control Room Contact:
Phone - 616-451-8329



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

Grand Region New Intelligent Transportation Systems Devices

In August, the West Michigan Transportation Operations Center (WMTOC) added three new dynamic message signs (DMS). The locations are northbound M-37 (Broadmoor Avenue) at 44th Street, northbound M-37 (East Beltline Avenue) at Cascade Road, and southbound M-44 (East Beltline Avenue) at Leonard Street. These new DMS are slightly smaller than typical DMS on Grand Region freeways. The DMS will allow control room operators (CRO) to display messages for incidents, construction, congestions, and special events on this high-volume corridor as well as adjacent freeways, such as I-96 and I-196.

Special Event

On Friday, Aug. 26, and Saturday, Aug. 27, the Wyoming Kentwood Area Chamber of Commerce hosted the 12th Annual 28th Street Metro Cruise. The 15,000-plus vehicle show included hot rods, low riders, muscle cars, performance cars, classics, antiques, and motorcycles. The WMTOC used DMS near 28th Street to message for slow traffic on M-11 (28th Street) during the event.

Incident Management

A tractor-trailer caught on fire on westbound I-196 at 44th Street on Monday, Aug. 1. Emergency responders closed the westbound freeway while they worked to put out the fire and clean up the pavement. After 38 minutes, the left lane was opened to traffic. CRO displayed messages for the closure on DMS, placed the vehicle fire on the Mi Drive statewide website, and sent out e-mail and Twitter notifications to motorists and stakeholders. The WMTOC seeks to provide information about incidents to enable motorists and stakeholders to make informed decisions about their routes.

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 **173** total **Events** this month, **59 percent**, or **103**, were classified as **Incidents**.

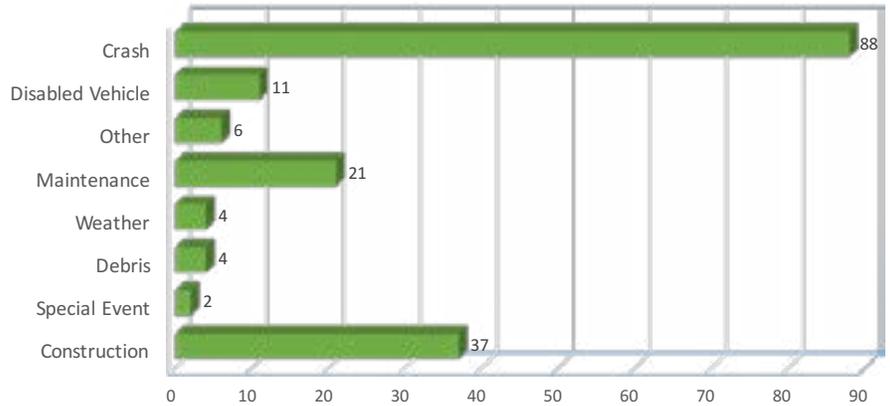


Figure 1

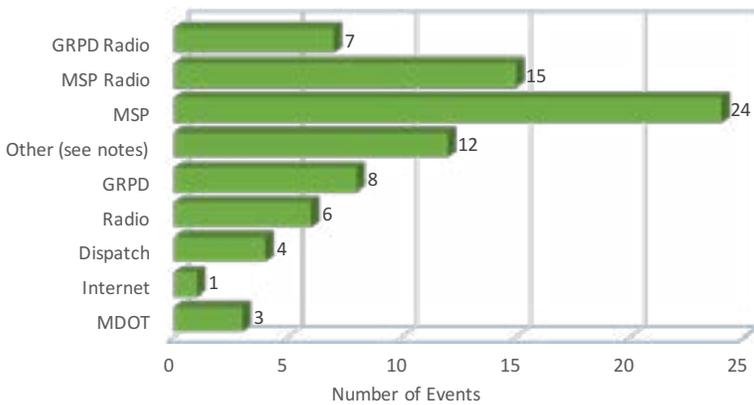


Figure 2

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.

Communication

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

CROs managed **1,622 Communications** this month, as shown in Figure 3. This included **357 (21 percent)** Phone Calls and **1,234 (75 percent)** E-mails. The highest source of **Communication**, **23 percent**, was between the control room and **Incident Notifications**. "Other" includes Contractors, Nixle, and Service Providers.

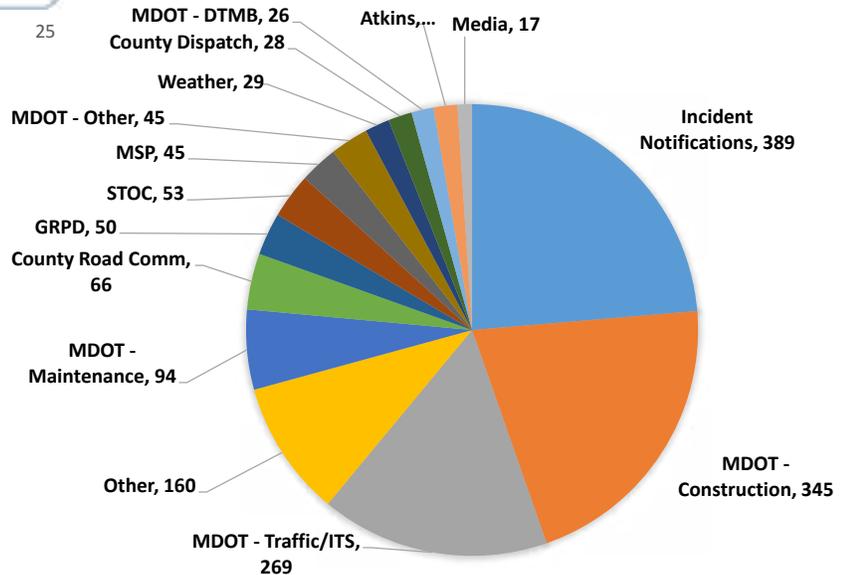


Figure 3

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.

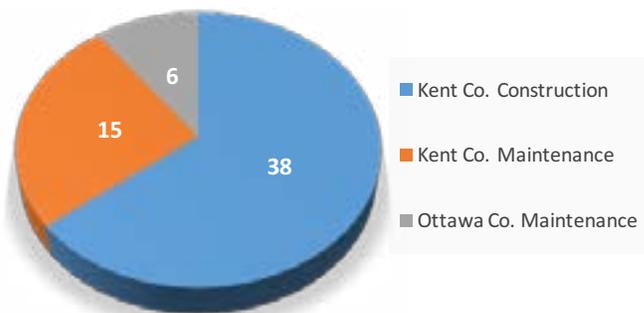


Figure 4

DMS Messages by Type

There were **498** 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.

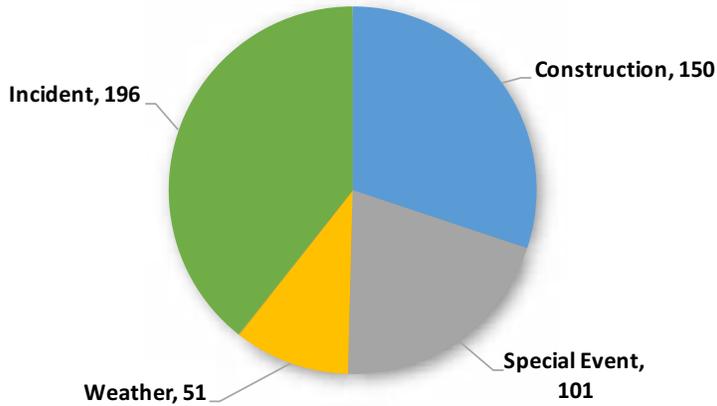
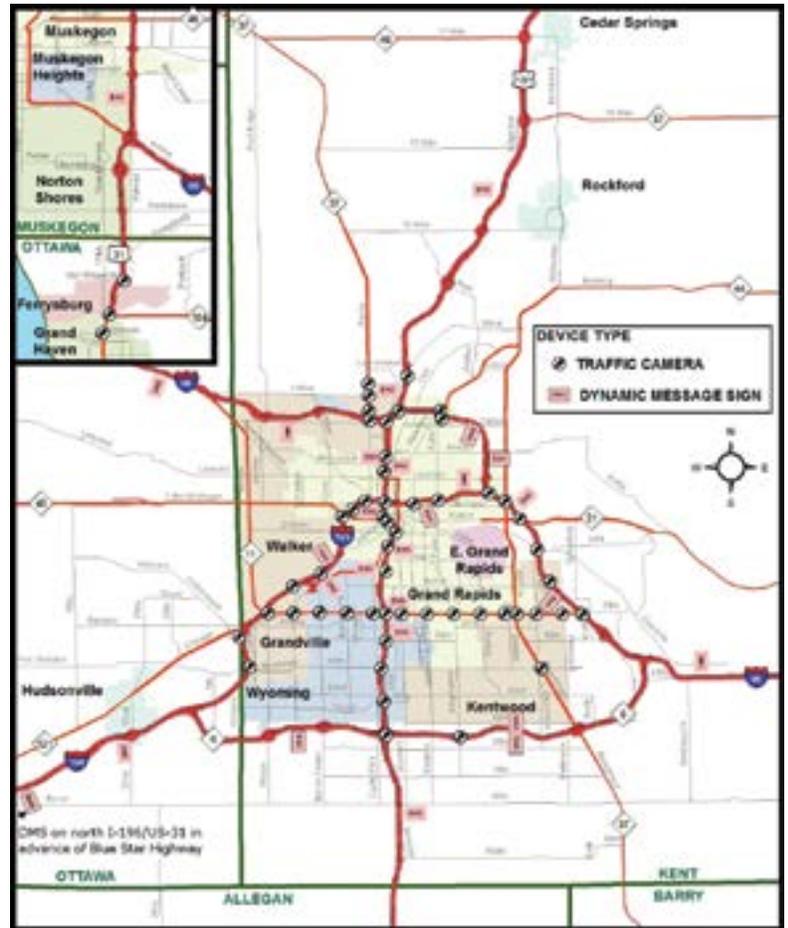


Figure 5

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.

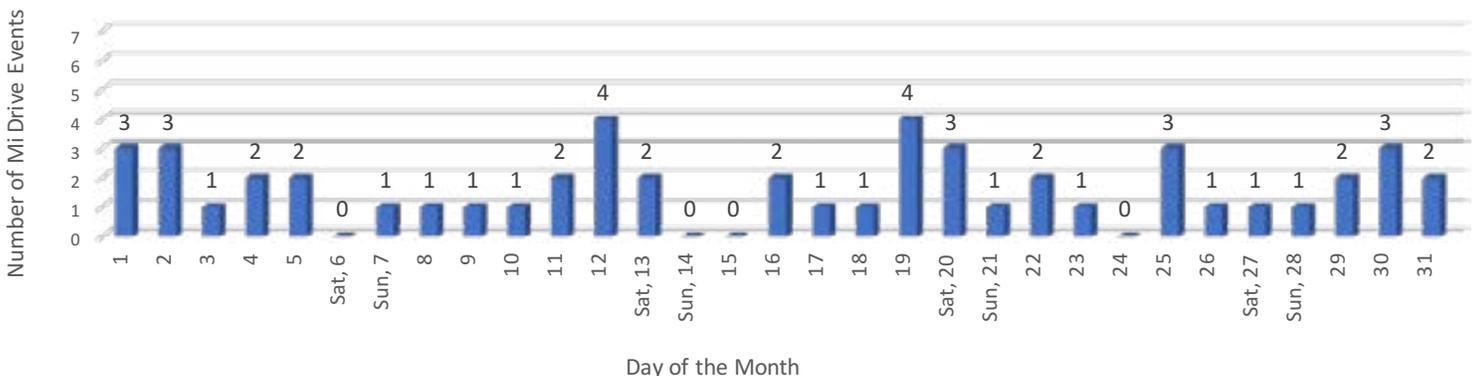


Figure 6

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 | August 2016 | | | August 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 | 15 | 0.4 | 64 | 15 | 0.4 | 49 | 13 | 0.4 | 56 |
| I-196, Bluestar Hwy to I-96 | 26 | 18 | 0.7 | 62 | 19 | 0.7 | 82 | 21 | 0.8 | 49 |
| US-131, 84th St to Rockford Rest Area | 24.5 | 53 | 2.2 | 42 | 51 | 2.1 | 39 | 46 | 1.9 | 45 |
| US-31, I-96 to M-120 | 42 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 74 |
| M-6, I-196 - I-96 | 19 | 3 | 0.2 | 66 | 3 | 0.2 | 43 | 3 | 0.1 | 67 |
| M-11, I-196 to I-96 | 11.5 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0.1 | 102 |
| M-37/M-44, M-6 to West River Dr | 15.5 | 1 | 0.1 | 0 | 0 | 0 | 0 | 1 | 0.1 | 167 |

Table 2

Total Incidents

There were **88** Incidents this month, **76 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.

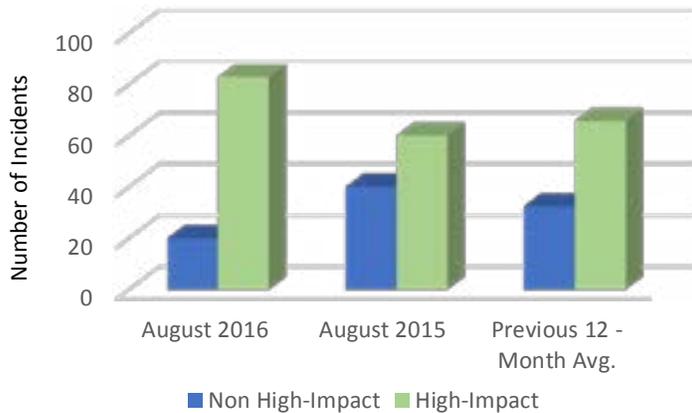


Figure 7

Top Duration Incidents

The longest-duration incident this month occurred on **southbound US-131 at I-196** and lasted **4 hours, 12 minutes**, compared to the average incident duration of **54 minutes** for August incidents. See Table 4.

| Location | Date | Duration | Details |
|---------------------------|---------|-------------|----------------------|
| SB US-131 at I-196 | 8/17/16 | 4 hr 12 min | Multi-vehicle crash |
| SB US-131 at 142nd Avenue | 8/5/16 | 3 hr 25 min | Single-vehicle crash |
| NB US-131 at 44th Street | 8/13/16 | 3 hr 22 min | Multi-vehicle crash |
| WB I-196 at 44th Street | 8/1/16 | 3 hr 07 min | Single-vehicle crash |
| M-66 at Barnum Road | 8/19/16 | 2 hr 47 min | Single-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, **53 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 | Aug 2016 | Aug 2015 | Previous 12 - Month Avg |
|-----------------|-----------|-----------|-------------------------|
| Freeway Closure | 9 | 5 | 6.7 |
| Lane Closure | 71 | 50 | 53.9 |
| Ramp Closure | 3 | 5 | 5.2 |
| Total | 83 | 60 | 65.8 |

Table 3

Total of Unplanned Incidents per Weekday Hour

The largest hourly number of **Incidents** this month occurred during the hour starting at **3 p.m.** Historically, 7 a.m. has had the largest hourly number of incidents in the Grand Region. Figure 8 shows **Unplanned Incidents** per weekday 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.

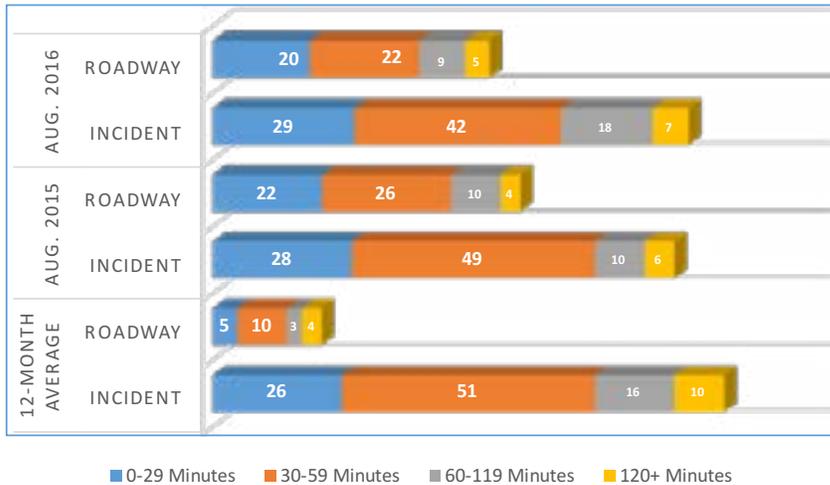


Figure 9

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 **88** total crashes this month, **3 percent** were **Secondary Crashes**.

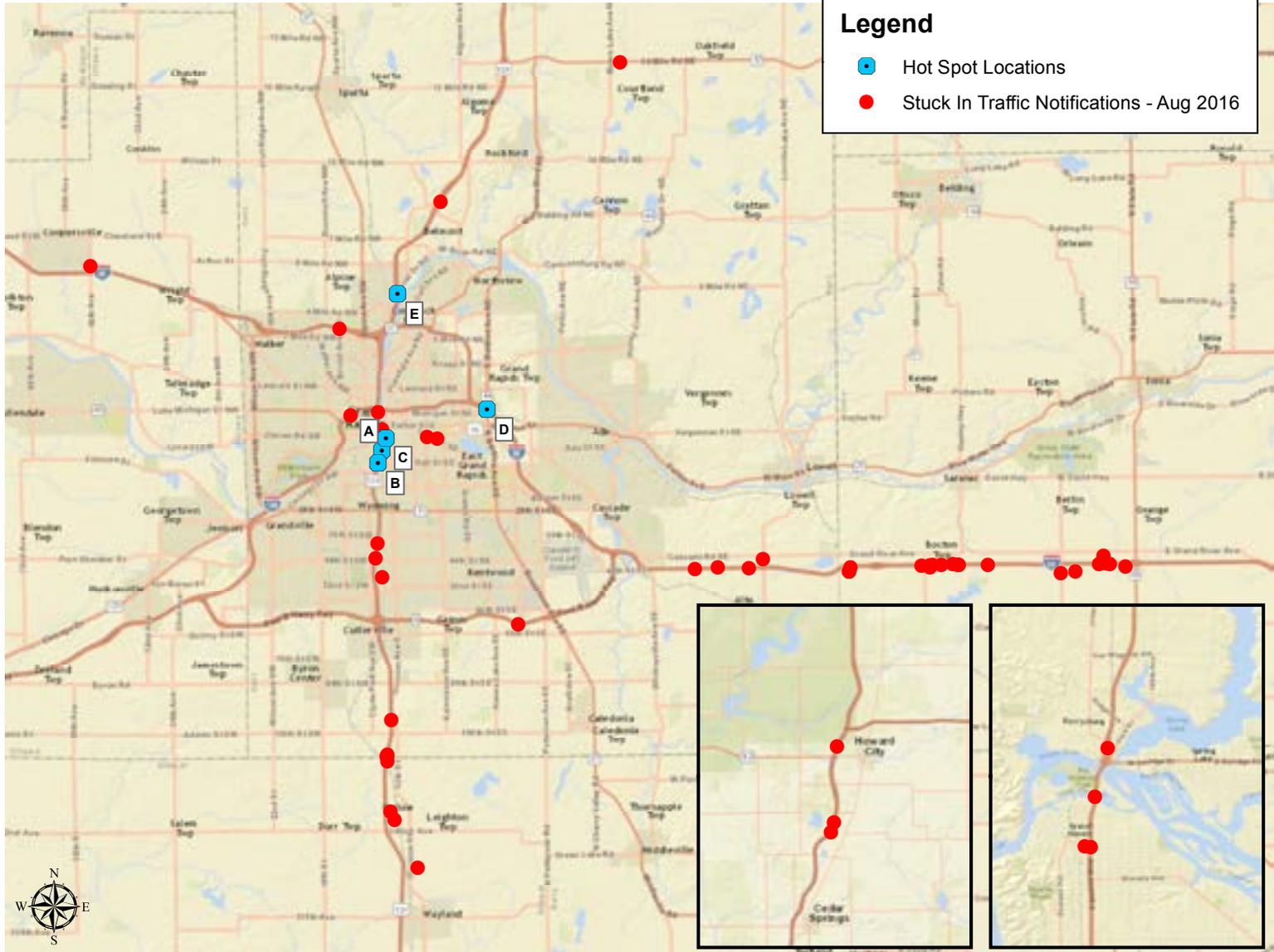
Stuck in Traffic Notifications

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.



| Hot Spot | Freeway and Cross Street | Count | % of Total Crashes | Appearance in Previous 12 Months |
|----------|--------------------------------------|-------|--------------------|----------------------------------|
| A | US-131 @ I-196 BS (Franklin St) | 7 | 8% | 8 |
| B | US-131 @ Hall St | 6 | 7% | 4 |
| C | US-131 @ Wealthy St | 5 | 6% | 3 |
| D | I-96 @ M-37/M-44 (East Beltline Ave) | 4 | 5% | 0 |
| E | US-131 @ West River Dr | 4 | 5% | 2 |

Table 5