



Statewide Transportation Operations Center

December
2013

**MONTHLY
PERFORMANCE
MEASURES**



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

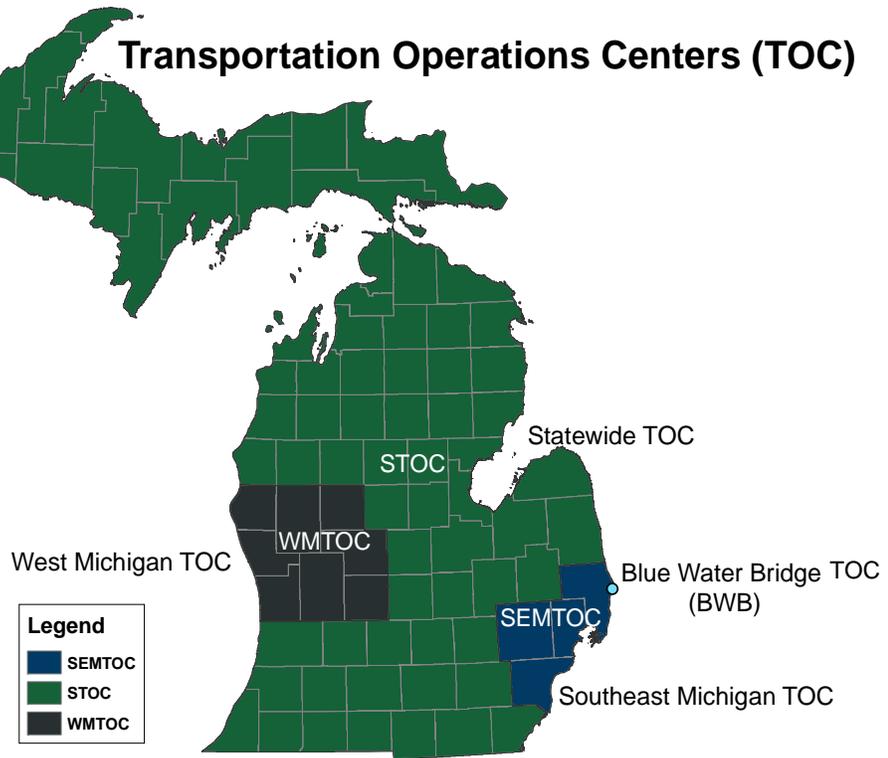
P.O. Box 30050
425 W. Ottawa St.
Lansing, MI 48909

Report Compiled By **URS**

Transportation Operations Centers (TOC)

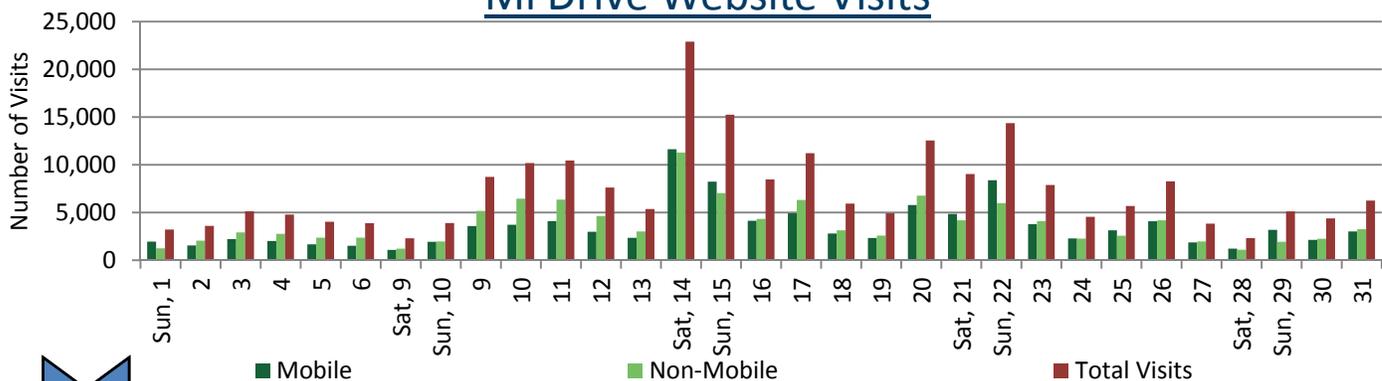
The Statewide Transportation Operations Center (STOC) is responsible for traffic operations along more than 1,200 miles of freeway in the state of Michigan. The STOC has Intelligent Transportation Systems (ITS) equipment throughout the 5 Michigan Department of Transportation (MDOT) regions including: Bay, University, Southwest, Superior, and North.

The West Michigan TOC (WMTOC) is responsible for traffic operations along 45 miles of freeway, while also covering 18 non-freeway trunk line miles in the greater Grand Rapids area and Grand Haven area.



The Southeast Michigan TOC (SEMTOC) is a hub of ITS technology applications at MDOT. SEMTOC is a world-class traffic management center where staff oversees a traffic-monitoring system composed of 200 freeway miles. The Blue Water Bridge TOC (BWB TOC) connects I-94 and I-69 with Ontario Highway 402, and is one of the fastest links between the United States and Canada.

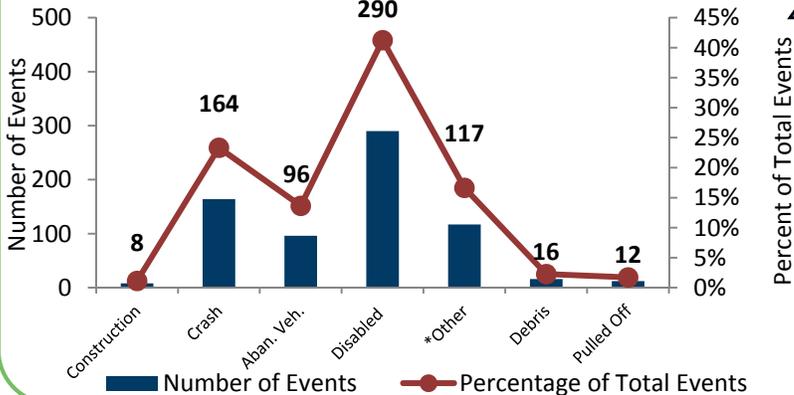
Mi Drive Website Visits



A "visit" is counted each time a user accesses the www.michigan.gov/drive website, regardless of the number of pages viewed within the site. "Mobile" visits are those where the site is accessed using a mobile device, while "Non-Mobile" visits are those where the website is accessed from a computer.

- Event:** A task in which the control room operator (CRO) is involved. Multiple categories of events exist (e.g., Incident, Construction, Weather or Special Event).
- Call:** Any phone call that comes into or goes out of the control room. Multiple calls may be associated with one event.
- Incident:** An event that impacts the shoulder, lane(s) or a ramp of a state of Michigan trunkline (e.g., crash, vehicle fire, debris or police situation).
- Communication:** Any phone call or e-mail that comes into or goes out of the control room.

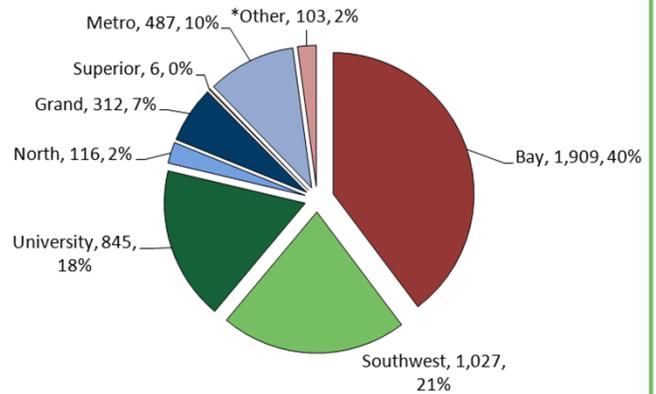
Events by Type



Control room **Events** consist of: Construction, Crash, Abandon Vehicle, Disabled Vehicle, Debris, Pulled Off (using cell phone, checking a map, medical emergency, or sleeping) and Other. CROs logged **703 Events** along the freeways, including Freeway Courtesy Patrol (FCP) assists. The top **Event** categories are shown in the chart. *Other includes police situations, congestion, damaged, maintenance, other, weather, AMBER alerts, fire, and special events.

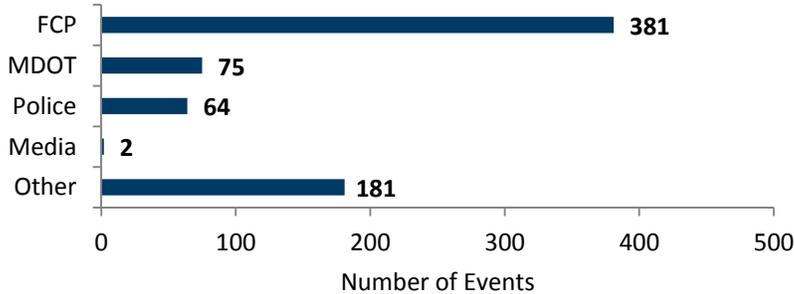
CROs rely on various sources to detect **Events** that occur along the freeways. When an **Event** is detected, CROs are required to note which detection source was used. This not only ensures that the **Event** was detected by a reliable source, but also provides insight as to which sources are utilized most frequently.

Communications by Region



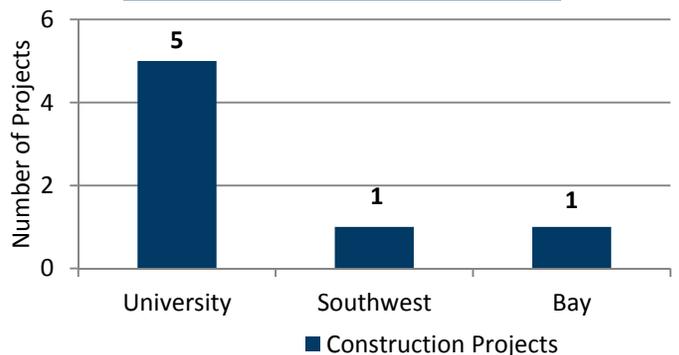
CROs managed **4,805** notifications this month. The largest percentage of all **Calls**, **40 percent (1,909)**, was between the control room and the **Bay Region**. *Other includes Bay Region pager, citizens, Nixle, Bay Alerts, Mi Drive website, and other state agencies.

Unplanned Events by Detection Source

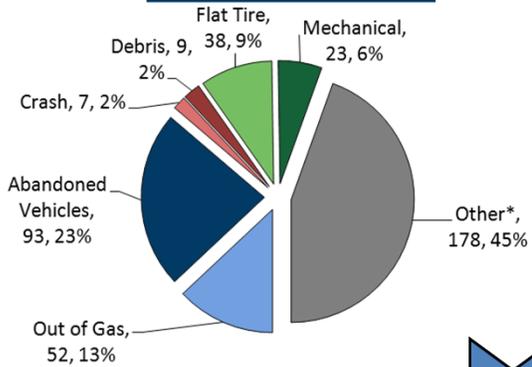


Because CROs are responsible for monitoring and managing traffic operations along the freeways, it is critical to know where construction activities are taking place and the impact that they may have on freeway operations. All STOC staff maintains frequent communication with MDOT staff to ensure that CROs are kept up-to-date on the locations and impacts of construction projects, general work crews, and permit work.

Construction Activities

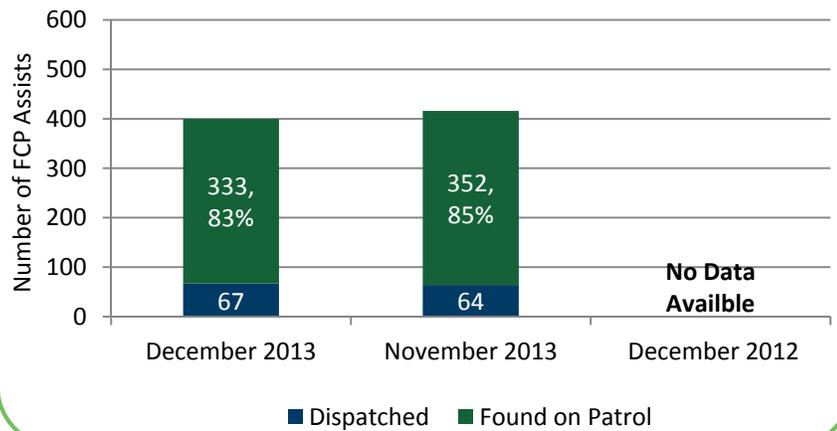


Assists by Type



FCP drivers are required to patrol their routes when not actively handling an assist. While on patrol, the driver may find an **Event** of which the control room is not yet aware. The driver will contact the control room via the 800 MHz radio system and the **Event** will be logged as "Found on Patrol." Likewise, if the CRO detects an **Event** that may require FCP involvement, CROs will dispatch the driver to the **Event** location and log it as "Dispatched."

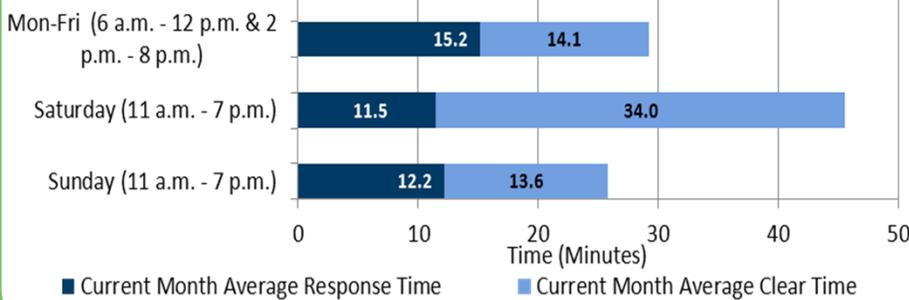
FCP Assists Dispatched vs. Found on Patrol



FCP is a federally funded service provided to the public that assists stranded motorists, provides traffic control for **Incidents** and improves mobility along the freeways by keeping travel lanes clear of debris and disabled vehicles. This month, FCP had a total of **400** assists. The majority of the assists were classified as **Other (178)** this month.

*Other includes cellular assists, declined service, FCP tow, non-FCP tow, gave directions, stand by, status check, gone on arrival (GOA) and transport.

Average Assist Times



The response and clear times for all FCP assists are logged by CROs. STOC has two FCP drivers working on two routes: one driver working in the Brighton area of I-96 and US-23, and the other driver working in the Ann Arbor area of I-94, US-23, and M-14.

FCP patrols more than 70 miles of freeway in the Ann Arbor and Brighton areas. FCP provided the most assistance along **US-23** this month (**150 assists**) and **I-94** experienced the highest assists per mile (**6.9 assists per mile**). The average response and average clear times for each freeway can be compared to the "Average Assist Times" graph which provides system-wide statistics by shift.

FCP Assists by Freeway

Freeway	Miles Patrolled	Total Assists	Assist Density (assists per mile)	Avg. Response Time (minutes)	Avg. Clear Time (minutes)
US-23	26.5	150	5.7	11.6	13.8
I-94	18.0	125	6.9	12.8	15.7
I-96	11.0	38	3.5	18.5	10.6
M-14	15.5	87	5.6	14.4	22.8
Totals/Averages	71.0	400	5.4	14.3	15.7

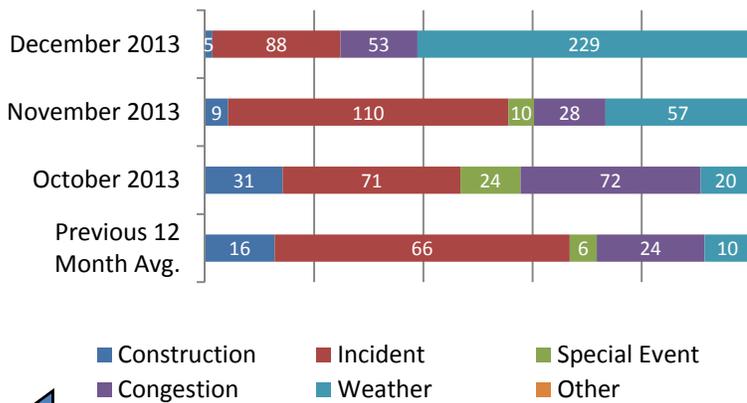
Most Utilized DMS for Unique Messages

Location	# Unique Messages	% of Total Unique Messages
WB I-94 @ Grove Road	21	23%
WB M-14 @ Joy Road	20	22%
NB US-23 @ Lee Road	19	20%
EB I-96 @ Grand River MM 146	17	18%
SB US-23 @ 6 Mile Road	16	17%

There were **93** unique messages that were displayed on STOC's most-utilized DMS. A "unique message" may be an incident, AMBER alert, construction or special event message.

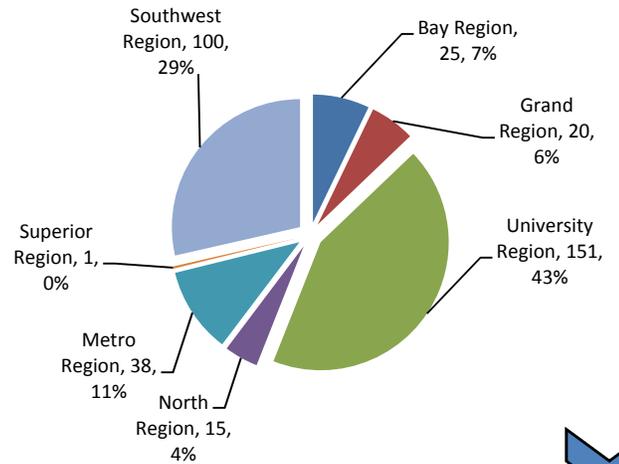
Travel time messages are routinely displayed when unique messages are not active. Travel times are "**updated**" every three minutes.

DMS Messages by Type



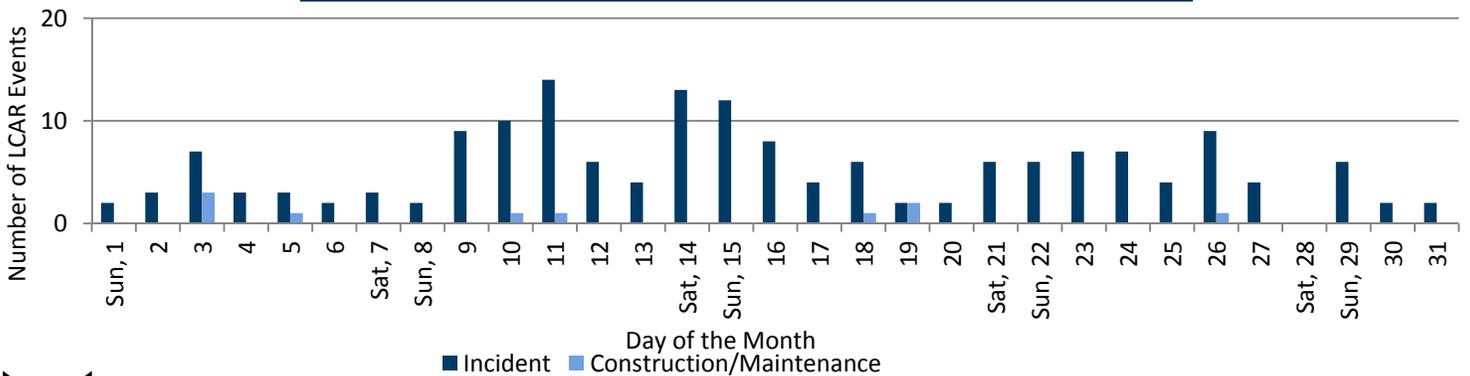
This graph shows unique DMS messages by type. Once a CRO receives notification from stakeholders regarding a specific event, the CRO utilizes DMS to send a message specific to the event type.

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 (**350**).

STOC LCAR Posts Sent to the Mi Drive Website



CROs are able to post **Events, Construction, and Maintenance** 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. Dates without data did not experience any **Construction, Maintenance, or Events**.

Incidents by Freeway

Freeway	Miles	December 2013			November 2013			December 2012		
		Total Incidents	Incidents per Mile	Average Duration	Total Incidents	Incidents per Mile	Average Duration	Total Incidents	Incidents per Mile	Average Duration
I-475	17	0	0.00	0.0	1	0.00	180.0	0	0.00	0
I-496	12	0	0.00	0	0	0.00	0.0	2	0.17	57.5
I-675	7	1	0.14	60	2	0.29	69.5	0	0.00	0
I-69	178	7	0.04	130.0	4	0.02	152	0	0.00	0.0
I-75 *	288	11	0.04	51.0	9	0.03	93.8	8	0.03	72.0
I-94 *	187	182	0.97	34.7	164	0.88	25.8	32	0.17	114.4
I-96 *	76	59	0.78	17.5	70	0.92	27.9	7	0.09	121.0
M-14 *	23	98	4.26	23.4	113	4.91	16.9	2	0.09	129.9
US-127	165	8	0.05	90.6	8	0.05	99.6	9	0.05	116.8
US-131 *	91	15	0.16	112.2	7	0.08	78.7	7	0.08	63.0
US-23	93	173	1.86	24.5	185	1.99	20.7	11	0.12	48.1
US-31 *	85	1	0.01	164	0	0.00	0.0	2	0.02	37.5
Total/Averages	1,222	555	8	59.0	563	9	63.7	80	0.82	63.3

I-94 experienced the highest total **Incidents** this month. Also, **M-14** had the greatest **Incident** per mile rate for the month. The longest average **Incident** duration during the current month occurred along **US-31**. This data is acquired from the LCAR tool completed by CROs. These are all the **Incidents** CROs were made aware of during the month of December. Not all trunklines are included in the table above, only those with significant traffic volumes that sustain routine **Incidents**. *The above figures are discounted and do not include those incidents on stretches of freeway managed by WMTOC, SEMTOC or the BWBTOC.

Total Incidents



There were a total of **703** total **Incidents** this month, **21 percent** of which were high-impact incidents. A high-impact **Incident** is one that results in a total freeway/roadway closure of one or both directions, a freeway-to-freeway ramp closure or an **Incident** leaving only one lane open.

Each time a high-impact **Incident** occurs, 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**, degree of closure, reason for the closure, the source that verified the **Incident**, and any other pertinent information related to traffic operations.

High-Impact Incident Notification

	December 2013	November 2013	December 2012
Freeway/Roadway Closures All Lanes Closed in One Direction	40	32	16
Lane Closures Only One Lane Open	97	60	42
Ramp Closures Freeway-to-Freeway	14	18	5
Total	151	110	63

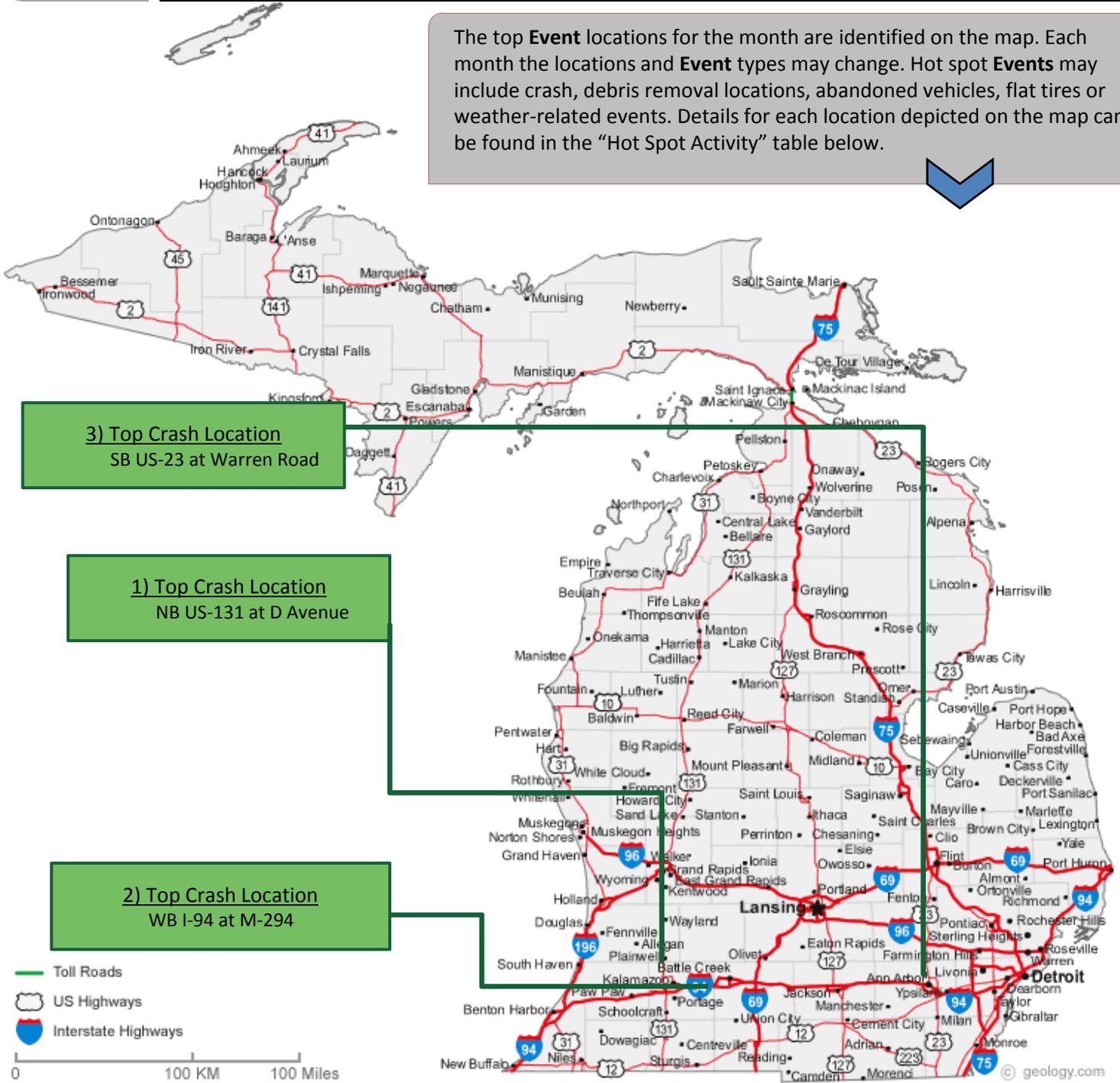
Top Duration Incidents

Location	Date / Duration	Details
NB M-100 @ M-43 (Saginaw Highway)	December 23 / 533 min.	Low Hanging Powerlines
SB US-131 after 110 th Avenue	December 11 / 401 min.	Crash
SB I-196 after County Road 378	December 24 / 268 min.	Crash
WB I-69 Between M-71 & Grand River Road	December 27 / 250 min.	Crash
WB I-69 at M-15 (State Road)	December 14 / 232 min.	Crash

The top duration **Incident** this month occurred along **M-100** and lasted **533** minutes, compared to the average duration of **59** minutes.

Freeway Event Hot Spots

The top **Event** locations for the month are identified on the map. Each month the locations and **Event** types may change. Hot spot **Events** may include crash, debris removal locations, abandoned vehicles, flat tires or weather-related events. 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 **Event** locations may vary each month depending on the threshold used for categorizing the location as a “top” hot spot. The threshold is chosen after analyzing the data and identifying the logical gap where the “top” and “normal” activity levels fall.

Event Hot Spot Activity

Location Number	Type	Location	Number of Events	Percentage of Event Total
1	Crash	NB US-131 at D Avenue	3	1%
2	Crash	WB I-94 at M-294	3	1%
3	Crash	SB US-23 at Warren Road	3	1%