



# Statewide Transportation Operations Center

April  
**2015**

MONTHLY  
PERFORMANCE  
MEASURES

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



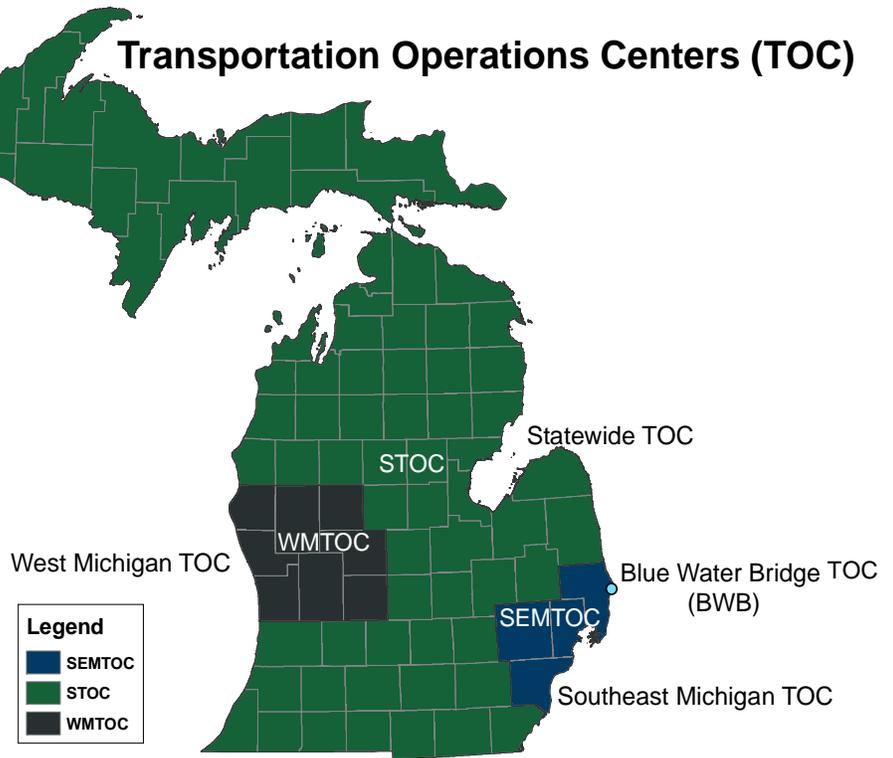
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Report Compiled By **URS**

## Transportation Operations Centers (TOC)

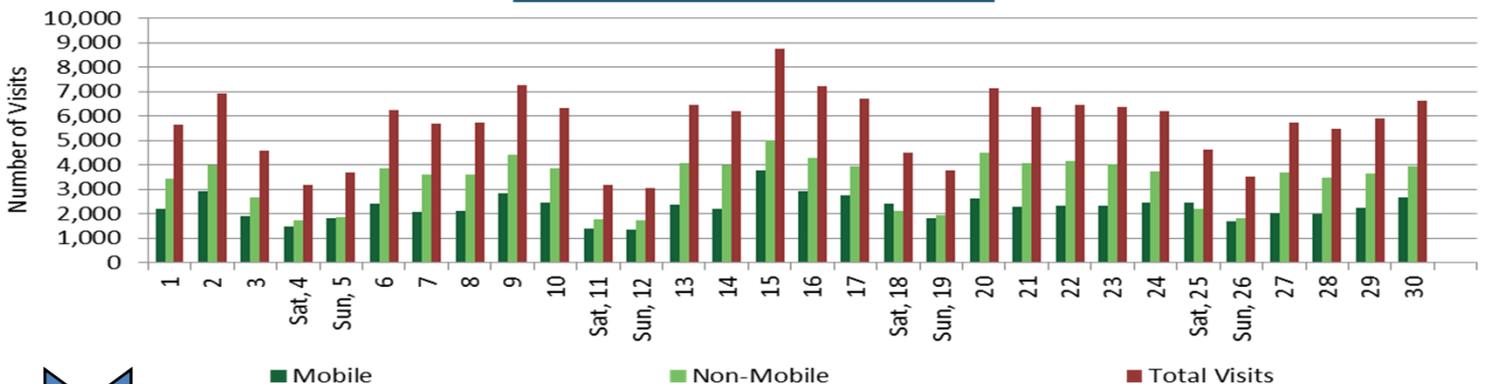
The Statewide Transportation Operations Center (STOC) is responsible for traffic operations along more than 1,200 miles of freeway in the state of Michigan. The STOC has Intelligent Transportation Systems (ITS) equipment throughout the five (5) Michigan Department of Transportation (MDOT) regions including: 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 trunkline 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 operations center where staff oversees a traffic-monitoring system composed of more than 400 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.

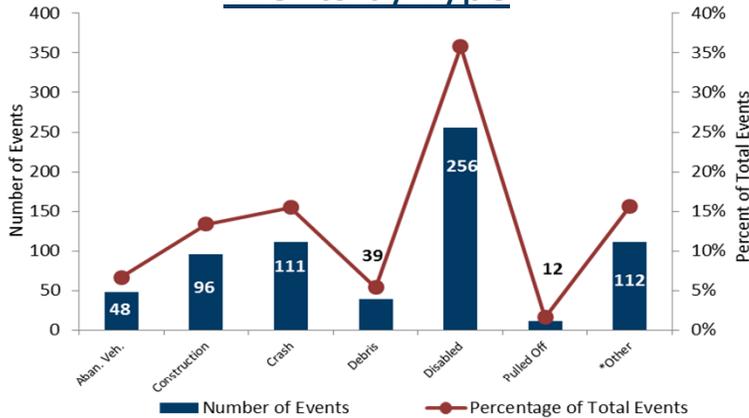
## Mi Drive Website Visits



A "visit" is counted each time a user accesses the [www.michigan.gov/drive](http://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.

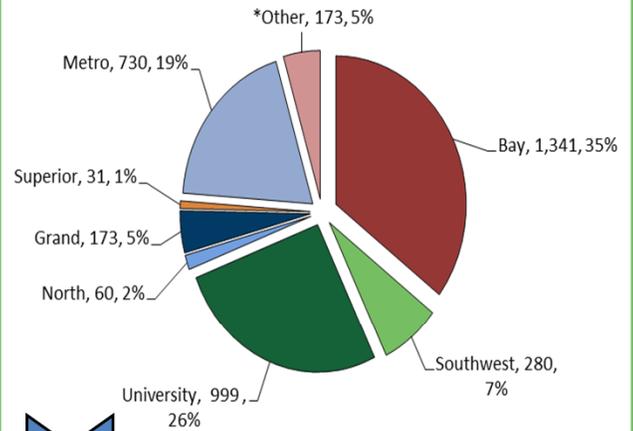
- Event:** A task in which the control room operator (CRO) is involved. Multiple categories of events exist (e.g., incident, construction, weather or special event).
- Call:** Any phone call that comes into or goes out of the control room. Multiple calls may be associated with one event.
- Incident:** 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



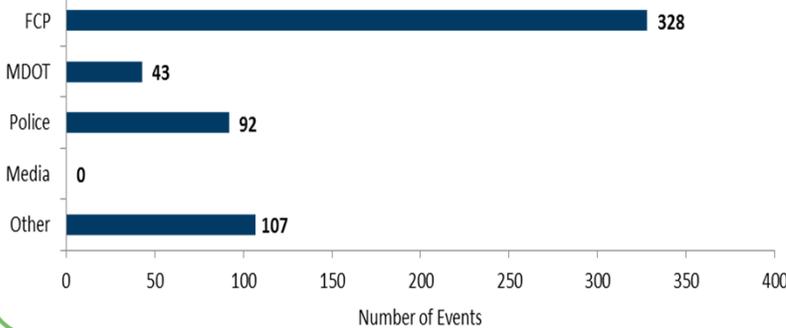
Control room **Events** consist of: Abandoned Vehicle, Construction, Crash, Debris, Disabled Vehicle, Pulled Off (using cell phone, checking a map, medical emergency or sleeping) and Other. CROs logged **674 Events** along the freeways, including Freeway Courtesy Patrol (FCP) assists. The top **Event** categories are shown in the chart. \*Other includes police situations, congestion, damaged, maintenance, other, weather, AMBER alerts, fire and special events.

## Communications by Region



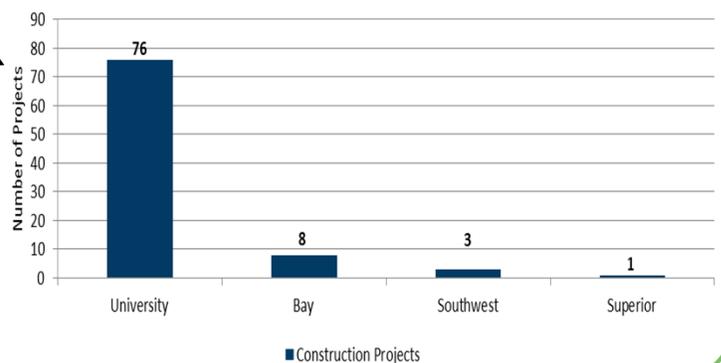
CROs managed **3,787** notifications this month. The largest percentage of all **Communications**, **35 percent (1,341)**, was between the control room and the **Bay Region**. \*Other includes Bay Region pager, citizens, Nixle, Bay Alerts, Mi Drive website and other state agencies.

## Unplanned Events by Detection Source

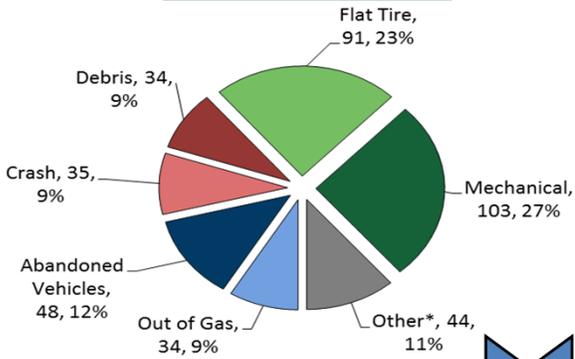


Because CROs are responsible for monitoring and managing traffic operations along the freeways, it is critical to know where construction activities are taking place and the impact that they may have on freeway operations. All STOC staff maintains frequent communication with MDOT staff to ensure that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

## Construction Activities

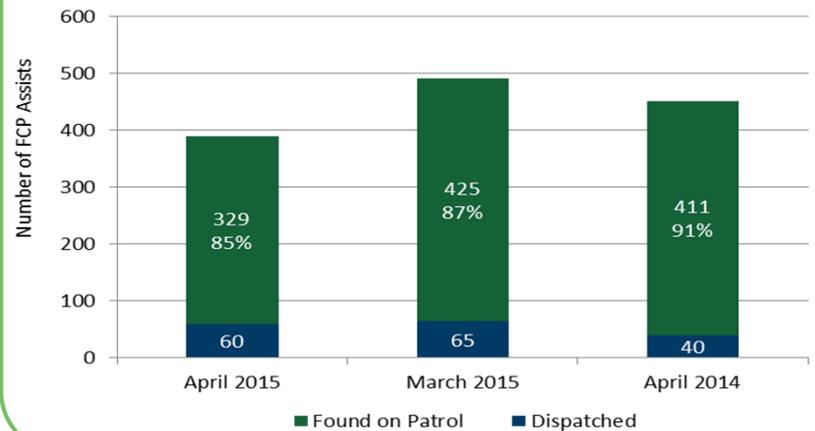


## Assists by Type



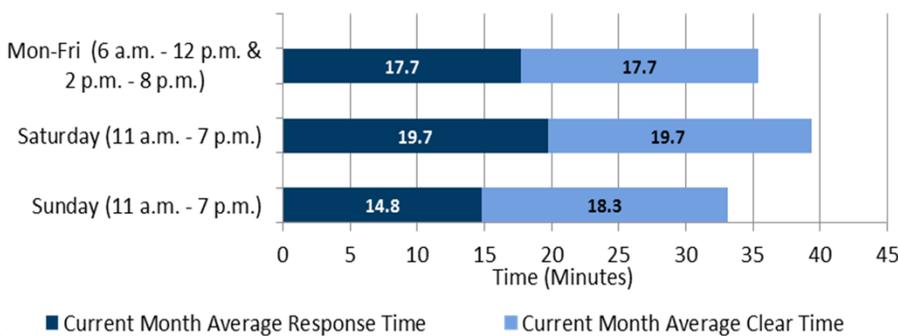
FCP drivers are required to patrol their routes when not actively handling an assist. While on patrol, the driver may find an **Event** of which the control room is not yet aware. The driver will contact the control room via the 800 MHz radio system and the **Event** will be logged as "Found on Patrol." 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 **389** assists. The majority of the assists were classified as **Mechanical (103)** 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 (**163 assists**) and **US-23** experienced the highest assists per mile (**6.2 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	163	6.2	16.5	19.8
I-94	18.0	98	5.4	19.8	14.9
I-96	11.0	46	4.2	14.8	18.4
M-14	15.5	82	5.3	14.0	18.0
Totals/Averages	71.0	389	5.5	17.6	18.0

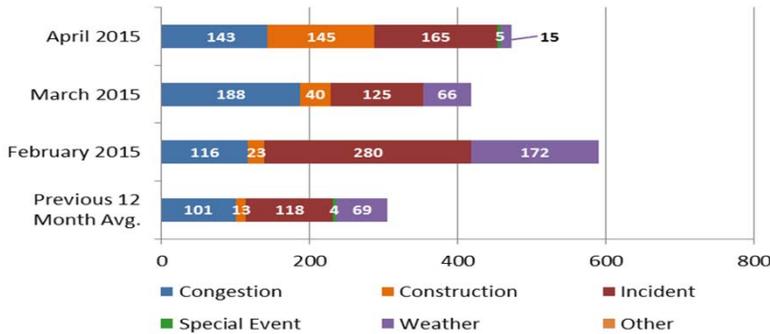
## Most Utilized DMS for Unique Messages

Location	# Unique Messages	% of Total Unique Messages
EB I-94 @ Parker Road	43	9%
WB M-14 @ Joy Road	36	8%
WBI-96 @ Kensington Road	32	7%
EB I-94 @ Liberty Road	30	6%
NB US-23 @ Bemis Road	28	6%

There were **473** total unique messages that were displayed throughout STOC's ITS network. A "unique message" may be an incident, AMBER alert, construction or special event message.

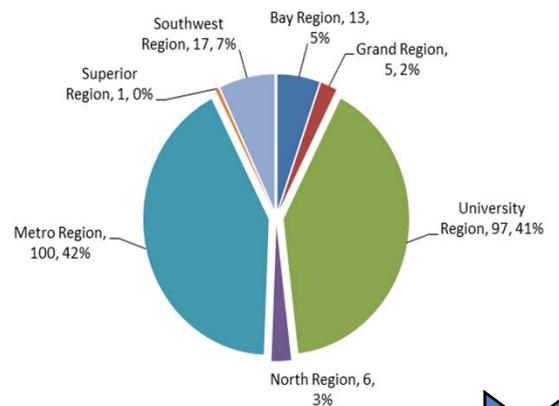
Travel time messages are routinely displayed when unique messages are not active. Travel times are "**updated**" every three minutes.

## DMS Messages by Type



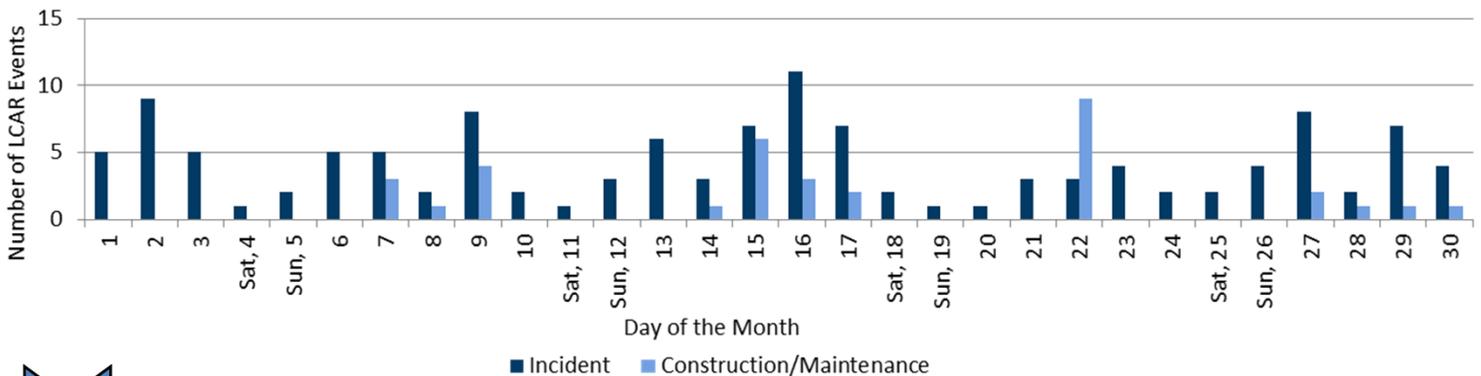
This graph shows unique DMS messages by type. Once a CRO receives notification from stakeholders regarding a specific event, the CRO utilizes DMS to send a message specific to the event type.

## Stuck in Traffic Notifications



Travelers with smartphones or Web-enabled mobile devices can go to the Mi Drive website ([www.michigan.gov/drive](http://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 (**239**) per MDOT region.

## 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	April 2015			March 2015			April 2014		
		Total Incidents	Incidents per Mile	Average Duration	Total Incidents	Incidents per Mile	Average Duration	Total Incidents	Incidents per Mile	Average Duration
I-475	17	1	0.06	109.0	3	0.18	89.3	4	0.24	393.8
I-496	12	0	0.00	0.0	2	0.17	46.5	4	0.33	52.3
I-675	7	0	0.00	0.0	1	0.14	38.0	1	0.14	247.0
I-69	178	3	0.02	<b>122.7</b>	1	0.01	41.0	6	0.03	209.7
I-75 *	288	13	0.05	70.7	6	0.02	122.0	11	0.04	<b>889.9</b>
I-94 *	187	118	0.63	28.2	137	0.73	25.6	<b>184</b>	0.98	16.5
I-96 *	76	50	0.66	45.0	77	1.01	29.7	56	0.74	18.2
M-14 *	23	82	<b>3.57</b>	18.4	121	<b>5.26</b>	21.8	94	<b>4.09</b>	12.6
US-127	165	11	0.07	50.8	6	0.04	29.3	4	0.02	55.3
US-131 *	91	3	0.03	76.0	4	0.04	50.3	5	0.05	266.6
US-23	93	<b>169</b>	1.82	27.3	<b>178</b>	1.91	17.6	140	1.51	24.1
US-31 *	85	0	0.00	0.0	4	0.05	<b>222.8</b>	0	0.00	0.0
<b>Total/Averages</b>	<b>1,222</b>	<b>450</b>	<b>0.37</b>	<b>30.9</b>	<b>540</b>	<b>0.44</b>	<b>27.7</b>	<b>509</b>	<b>0.42</b>	<b>45.7</b>

**US-23** 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 **I-69**. 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 April. Note that this data does include Freeway Courtesy Patrol (FCP) assists. 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 BWBTOC.

## Total Incidents



There were a total of **499** total **Incidents** this month, **13 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

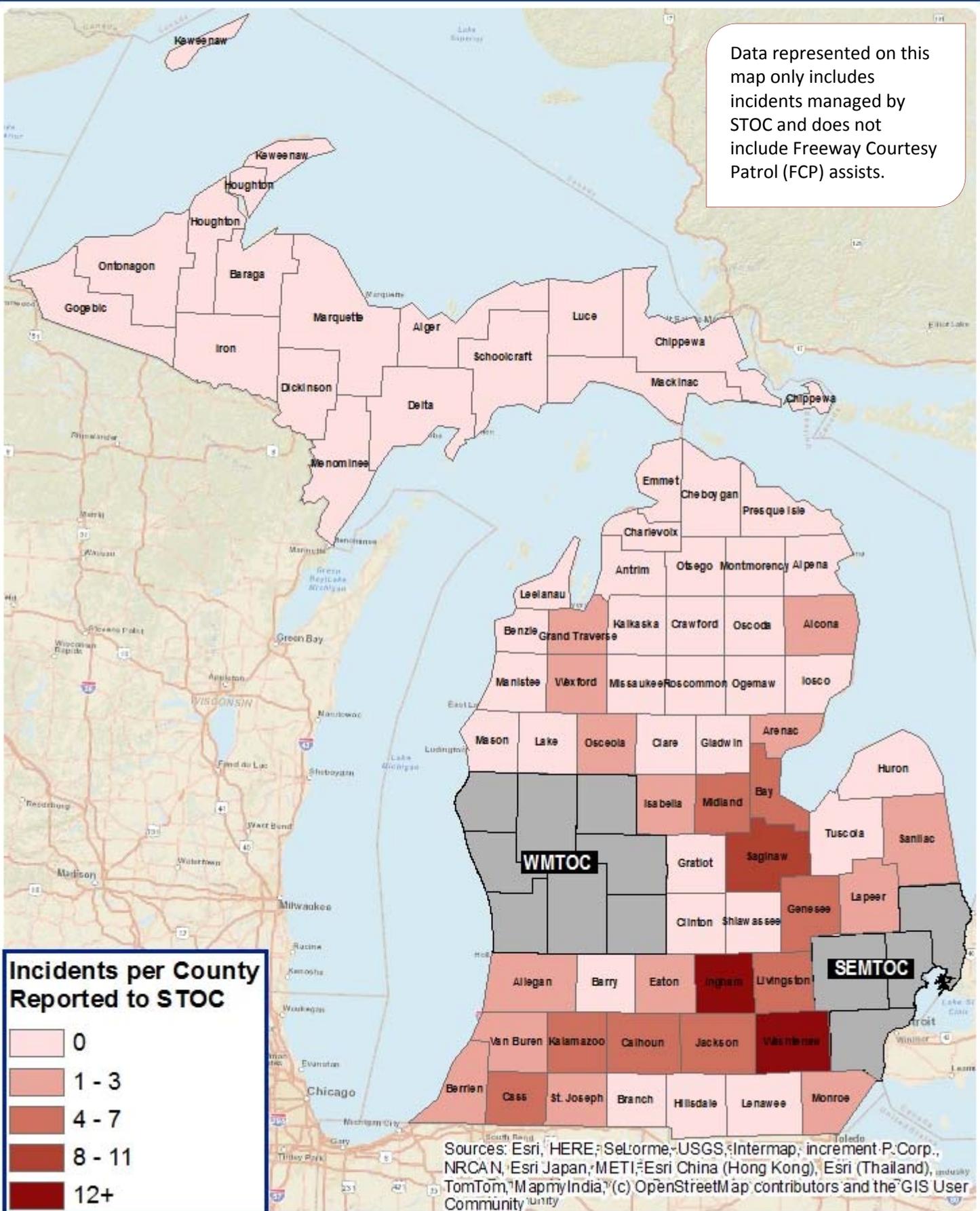
	April 2015	March 2015	April 2014
Freeway/Roadway Closures All Lanes Closed in One Direction	55	51	31
Lane Closures Only One Lane Open	8	4	52
Ramp Closures Freeway-to-Freeway	2	2	12
<b>Total</b>	<b>65</b>	<b>57</b>	<b>95</b>

## Top Duration Incidents

Location	Date/Duration	Details
SB US-23 between Fontaine Road and Malaski Road	April 6 / 822 min.	Culvert Failure
EB & WB M-55 between 27 Road and 25 Road	April 17 / 790 min.	Crash
SB I-96 BL (N. Cedar Street) at M-43 (E. Saginaw Street)	April 17 / 730 min.	Watermain Break
EB & WB M-43 (W. Main Street) at Jennision Avenue	April 20 / 654 min.	Watermain Break
WB I-94 at Baker Road	April 1 / 440 min.	Crash / Hazmat

The top duration **Incident** this month occurred along **US-23** and lasted **822** minutes, compared to the average duration of **45.7** minutes (average of all STOC managed events).

Data represented on this map only includes incidents managed by STOC and does not include Freeway Courtesy Patrol (FCP) assists.



Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P. Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, (c) OpenStreetMap contributors and the GIS User Community