

Statewide Transportation Operations Center

Serving Motorists on Michigan Freeways

www.michigan.gov/its
www.michigan.gov/drive

September 2012



In the Spotlight



The Statewide Transportation Operations Center (STOC) receives incident notification through several avenues:

- Stakeholders report incidents as they are often on scene or possibly the first responder to the scene of an incident.
- Other MDOT Transportation Operations Centers (TOCs) including the Southeast Michigan TOC, the West Michigan TOC and the Blue Water Bridge TOC call and/or e-mail the STOC.
- Dispatch Centers such as Michigan State Police, local police agencies, and County Sheriff Departments relay information to the STOC in real time and advise of changes as they occur.
- Mi Drive Web site reports traffic data through national traffic providers who obtain traffic data from various vehicle probes on the roadway in near real-time.
- Closed Circuit Television (CCTV) cameras provide incident identification and verification.
- Media reports incidents from tipsters to the Internet which is periodically monitored by the STOC.
- Nixle Alerts are built on the most secure, reliable, and high-speed distribution platform, ensuring that trusted, geographically relevant information is immediately available by text message, by email, and over the Web.
- Radio Reference hosts hundreds of live audio broadcasts of Police, Fire and Emergency Medical Services.

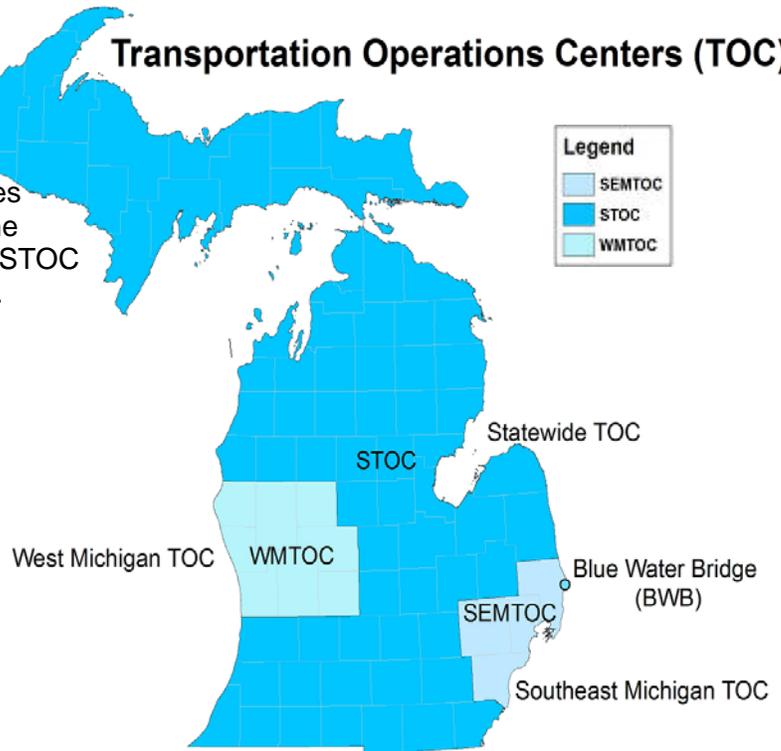
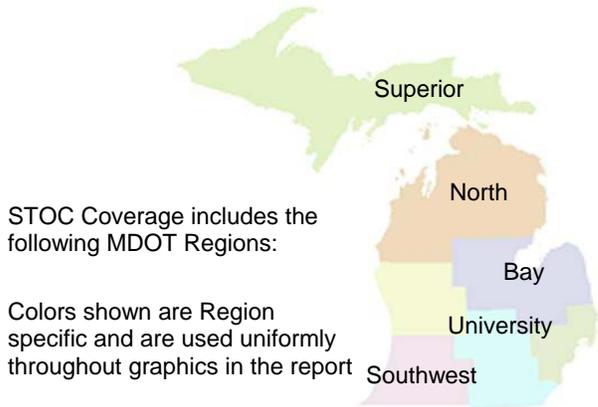
An incident is an unplanned event that impacts the shoulder, lane(s), or a ramp of a State of Michigan trunkline, when the STOC receives this information it begins the incident management process of notifying the public to avoid congestion and secondary incidents.

Compiled by:
URS

Transportation Operations Center (TOC) Coverage Areas

The Statewide TOC (STOC) is responsible for traffic operations along more than 1,300 miles of freeway in the state of Michigan along with the operations on a number of MDOT arterials, the STOC has ITS equipment along 218 miles of roadway.

Transportation Operations Centers (TOC)



ITS Equipment List

Closed-circuit Television (CCTV) cameras

CCTV cameras allow for pinpointing and monitoring of traffic events so that information may be disseminated quickly and accurately

	<u>Totals</u>		
	<u>Sept.</u>	<u>Aug.</u>	<u>% Change</u>
	(In Coverage Area)		

34	24	41.7
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Dynamic Message Signs (DMS)

DMS allow for sending messages to motorists to inform of traffic events that may be impacting their route ahead

37	33	12.1
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Vehicle Detector Stations (VDS)

VDS allow for traffic-impacting events to be spotted, travel times to be calculated and speed maps to be generated

41	34	20.6
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Environmental Sensor Stations (ESS)

ESS, working together as part of a larger Road Weather Information System allow for road maintenance personnel to better manage approaching weather

25	25	0.0
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Summary

Data Key

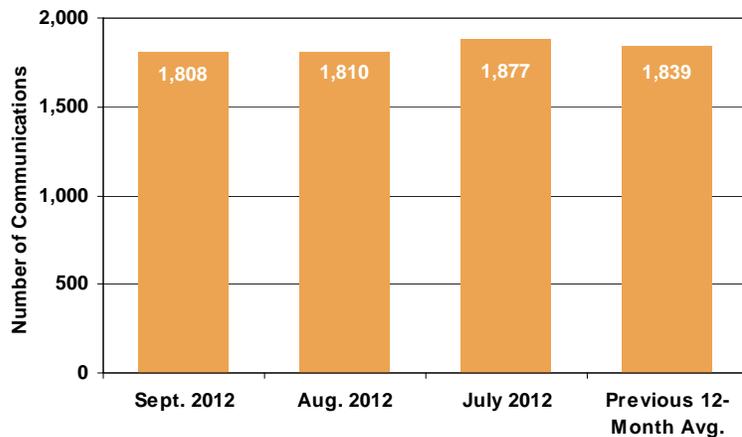
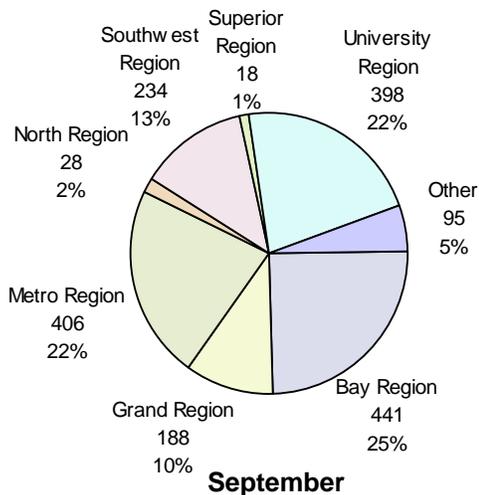
September 2012

	Current Month	Previous 12-Month Average
STOC Communications Activity 	Total Communication	
Operators log all incoming and outgoing control room communications, engaging various incident responders and stakeholders.	Calls: 306	271
	E-mails: 1,502	1,568
Unplanned Incidents* 	Total Incidents ^	
Operators log information about each unplanned incident including date/time, location, traffic impact, duration, and associated traveler information.	104	227
Construction Activity 	Incidents Occurring in Work Zones	
Operators maintain a list of ongoing construction projects and contacts for these projects. This activity also includes maintenance operations.	1	2
Daily Shift Report 	System Availability	
Operators track maintenance issues for all ITS equipment, including CCTV cameras, VDS, and DMS.	CCTV: 99%	89%
	VDS: 100%	79%
	DMS: 100%	99%

* An **incident** is an unplanned event that impacts the shoulder, lane(s), or a ramp of a State of Michigan trunkline (a route signified with an I-, US-, or M- name). An incident will also occur in the STOC coverage area and under any of the following types: crash, debris, vehicle fire, abandoned vehicle (unless otherwise noted), or police situation.

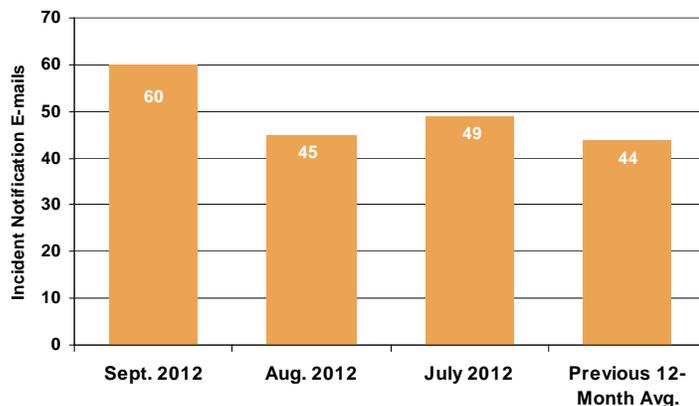
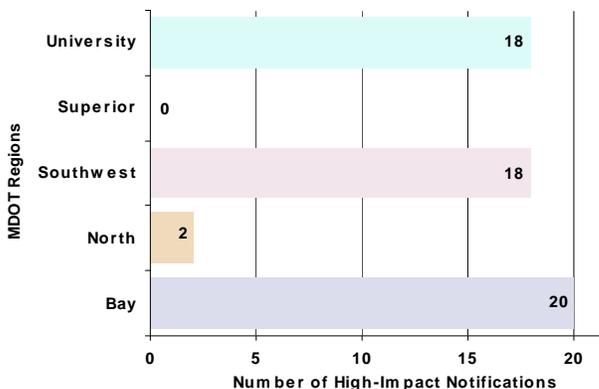
An **event** incorporates all incidents along with other types such as planned construction projects, weather and special events such as concerts or sporting events.

^ STOC will no longer monitor unverified incidents in Genesee County per protocol change effective July 1, 2012.



These charts segment all incoming and outgoing calls and e-mails that Control Room Operators field per MDOT region. STOC is connected to various first responder data (Nixle.com, emergency dispatch centers, Michigan State Police) especially in the Bay Region. STOC looks to use these charts to identify outreach to other regions throughout the state.

High-Impact Incident Notifications and History

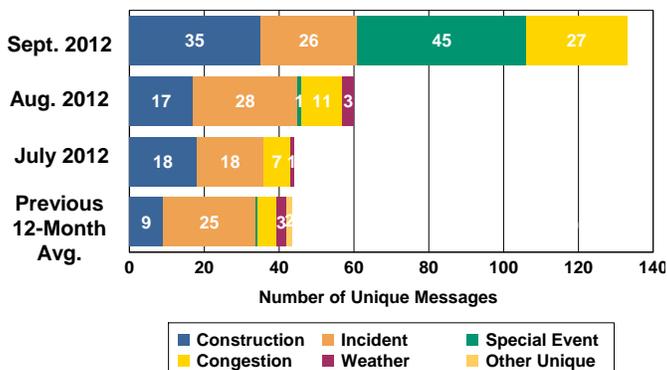


These graphs enumerate high-impact incident e-mail notifications defined as:

- > Complete closure of a freeway in one or both directions
- > Only one lane of traffic in one direction open
- > Freeway to freeway ramp closure

STOC Control Room Operators send e-mails to a prescribed group of stakeholders. High-impact incidents cause the highest impact to traffic congestion.

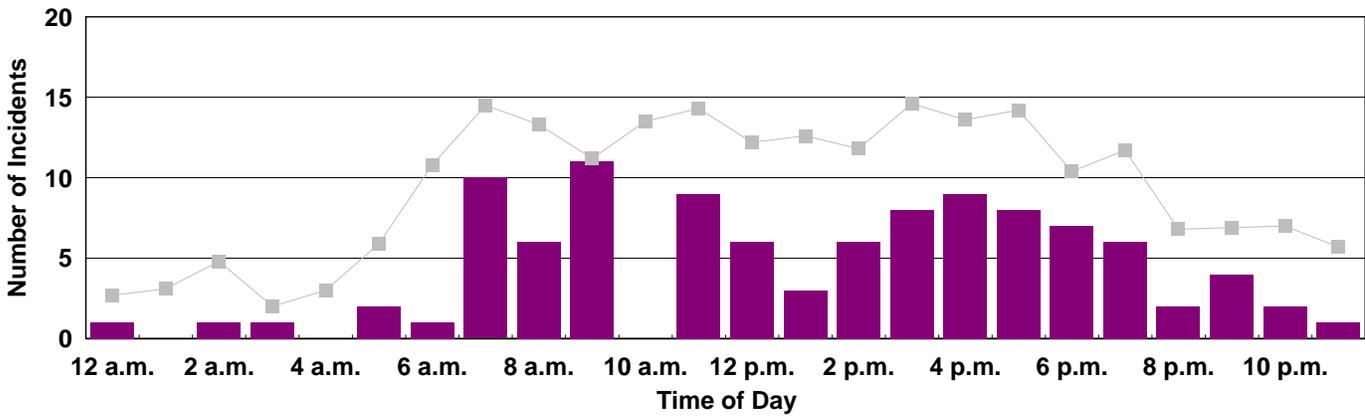
DMS Messages by Type ^



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

^ STOC will no longer monitor unverified incidents in Genesee County per protocol change effective July 1, 2012.

Total of Unplanned Incidents per Hour ^

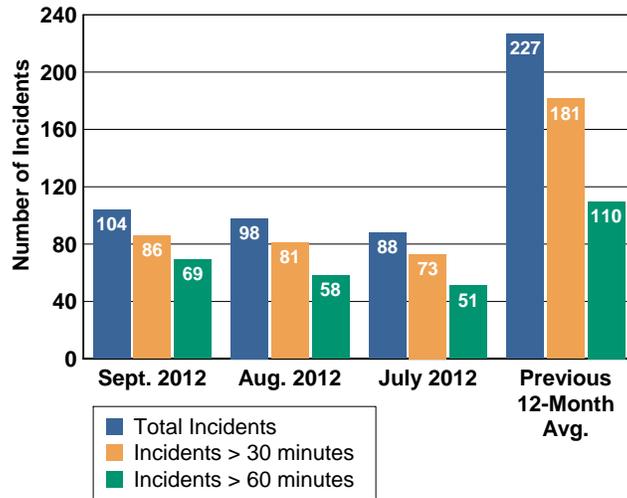


This chart segments incidents per hour. STOC management staff uses these charts to identify peak hours to properly staff Control Room Operators. The line shows the hourly incident average for the previous 12 months.

Incident Duration History ^



This graph shows the duration history of incidents (excluding events noted by operators as abandoned vehicles). Incident duration is the time between awareness of an incident and removal of all evidence of the incident, including debris or remaining assets



Most Utilized DMS



This list demonstrates the most utilized DMS during the month. The DMS listed are utilized most frequently with unique messages. A unique message is any message other than a travel time or Public Service Announcement

1. EB I-96 at Grand River MM146 (17 messages deployed)
2. SB US-23 at M-59 (16 messages deployed)
3. I75MM1092-DMS (NB) Dort Hwy (8 messages deployed)
4. EB I-94 at Liberty (8 messages deployed)

Traffic Impact Types by Region



This table breaks down all incidents by type and by Region. This data informs the STOC on what type of incidents are handled and where the highest percentage of incidents occur.

	Crashes	Debris	Police Situation	Other	Fire	Total
Bay	44 46.3%	1 100.0%	0 0.0%	0 0.0%	4 66.7%	49
North	2 2.1%	0 0.0%	0 0.0%	0 0.0%	1 16.7%	3
Southwest	22 23.2%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	22
Superior	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0 0.0%	0
University	27 28.4%	0 0.0%	0 0.0%	2 100.0%	1 16.7%	30
Total	95	1	0	2	6	104

^ STOC will no longer monitor unverified incidents in Genesee County per protocol change effective July 1, 2012.



Incidents by Freeway

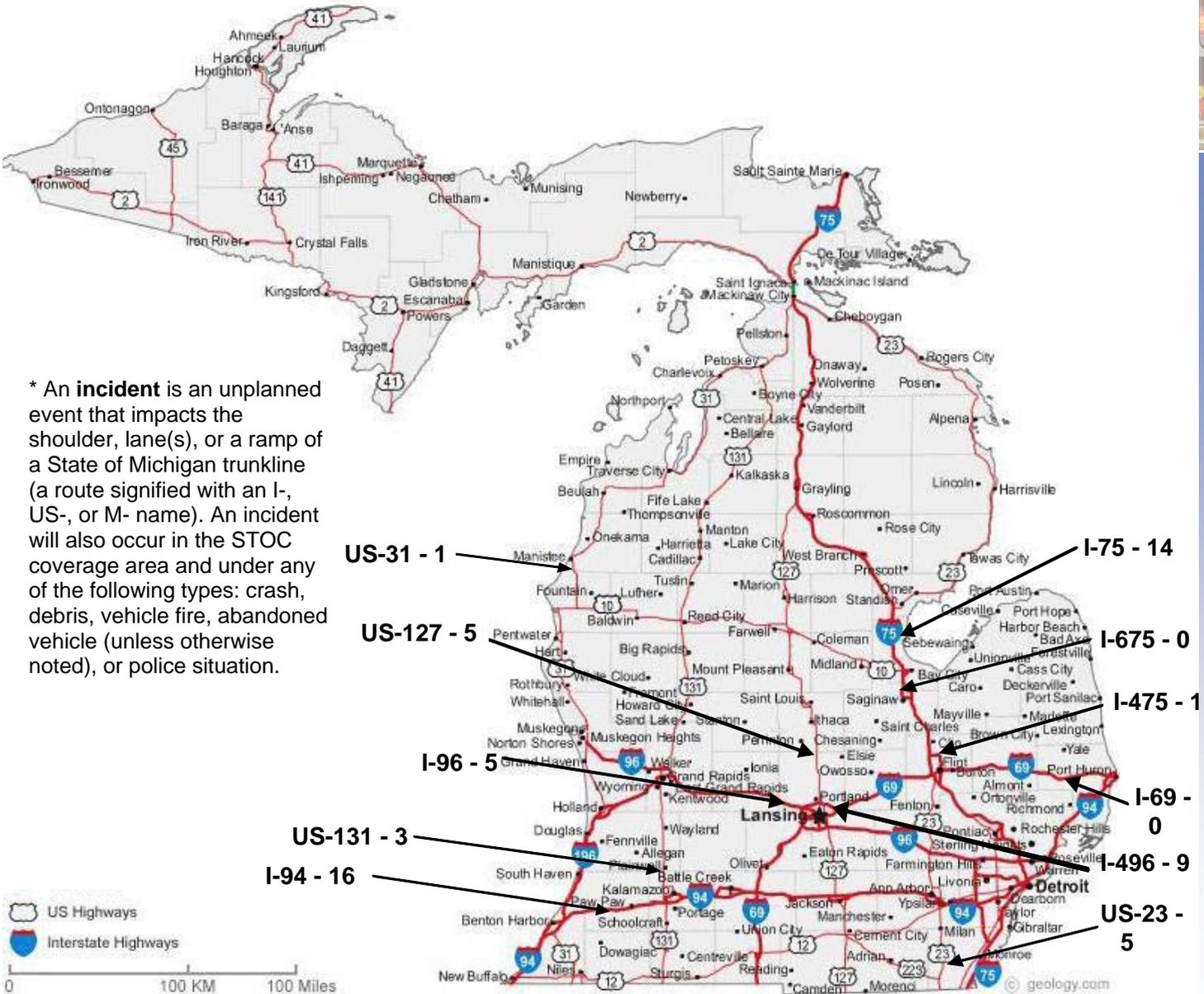


This table enumerates the number of incidents located on major freeways and the number of incidents per mile throughout the STOC's coverage area. (Only reflects incidents where STOC has received notification and in the STOC coverage area)

Below is a map of the freeways that are monitored by the STOC and lists the total number of incidents that were detected during the month.

Freeway	Sept. 2012		Aug. 2012		July 2012		Previous 12-Month Avg.	
	Total	per mi.	Total	per mi.	Total	per mi.	Total	per mi.
I-475 (17 mi.)*	1	0.1	3	0.2	-	-	11.2	0.7
I-496 (12 mi.)*	9	0.8	1	0.1	2	0.2	1.0	0.1
I-675 (7 mi.)*	-	-	1	0.1	1	0.1	0.5	0.1
I-69 (178 mi.)*	-	-	5	-	3	-	25.0	0.1
I-75 (288 mi.)*	14	-	11	-	8	-	60.5	0.2
I-94 (187 mi.)*	16	0.1	23	0.1	6	-	9.7	0.1
I-96 (76 mi.)*	5	0.1	8	0.1	5	0.1	3.7	-
US-127 (165 mi.)*	5	-	4	-	5	-	2.3	-
US-131 (91 mi.)*	3	-	5	0.1	7	0.1	2.3	-
US-23 (93 mi.)*	5	0.1	1	-	3	-	16.8	0.2
US-31 (85 mi.)*	1	-	-	-	1	-	0.4	-
Month Total	59	-	62	0.1	41	-	133.4	0.1

* Reflects freeway mileage within the current STOC coverage area.



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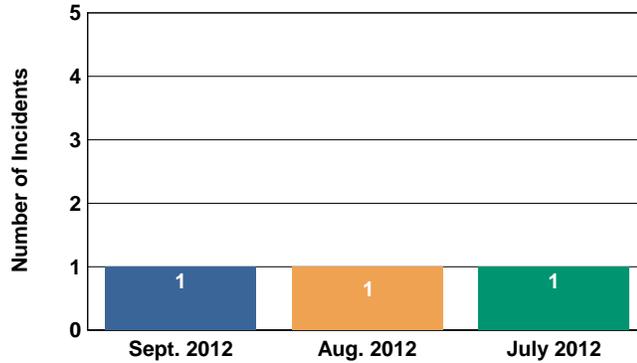
Incident Management



Incidents Occurring in Work Zones



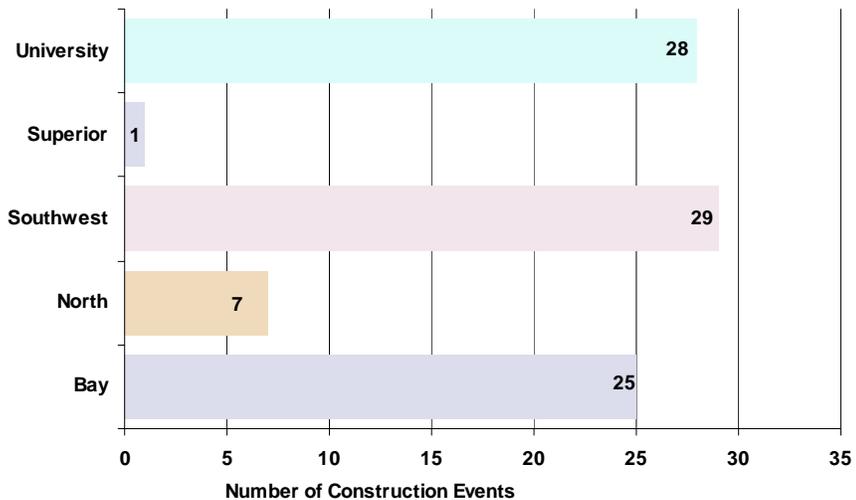
This graph indicates how many incidents took place within a work zone. With construction postings using DMS and the Mi Drive Web site, STOC strives to keep a low number of incidents in the work zones.



Construction Events per Region



This graph segments all new construction events for the month received by the STOC by Region.



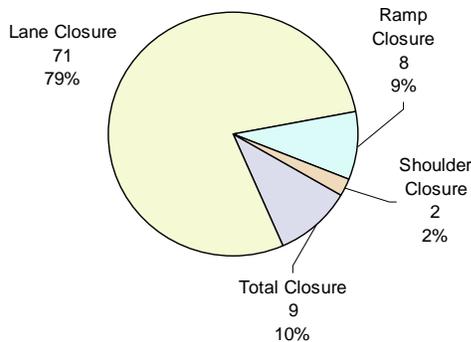
September

Construction Events per Closure Type



September

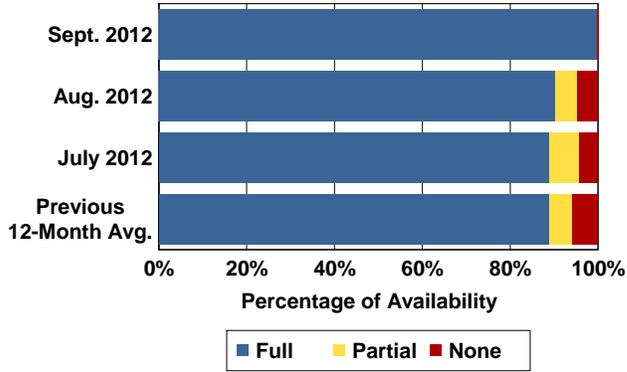
This chart breaks down the closure type for each project that the STOC receives via phone call or E-mail. A lane closure is used more than a roadway closure whenever possible to minimize motorist delays and detours.



Construction Activity



Overall CCTV Camera Availability



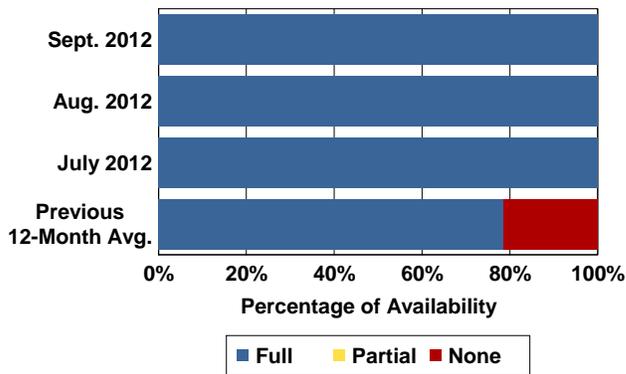
CCTV Cameras Below 95% Availability



Location	Full	Partial	None
None.			

Percentages of availability are reported for the current month based on data reported daily.

Overall Detector Availability



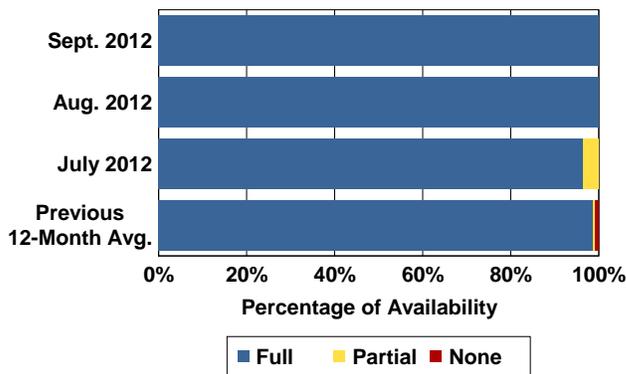
Vehicle Detectors Below 95% Availability



Location	Full	Partial	None
None.			

Percentages of availability are reported for the current month based on data reported daily.

Overall DMS Availability



DMS Below 95% Availability



Location	Full	Partial	None
None.			

Percentages of availability are reported for the current month based on data reported daily.

The graphs on the left show the percentage of availability of all the ITS devices (CCTV, Detector, DMS) located in the STOC coverage area. If a device is under 95 percent available for a given month, the device is listed in the tables shown on the right. STOC uses this information to be aware of the operational devices so when incidents occur, operators know which ITS devices can help alert motorists quickly and accurately.