Performance Measurement/Management

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Session 3: Performance Measurement/Management

- Which technologies does your agency currently use for collecting data on the operational performance of the road network?

  RITIS

- Are the measures used by your agency to track system performance currently available to the general public? If so, is this via a web-accessible interface?

  Yes & Yes

- Does your agency currently utilize any performance measures or management tools that consider multiple modes of transportation? If so, which modes are considered?

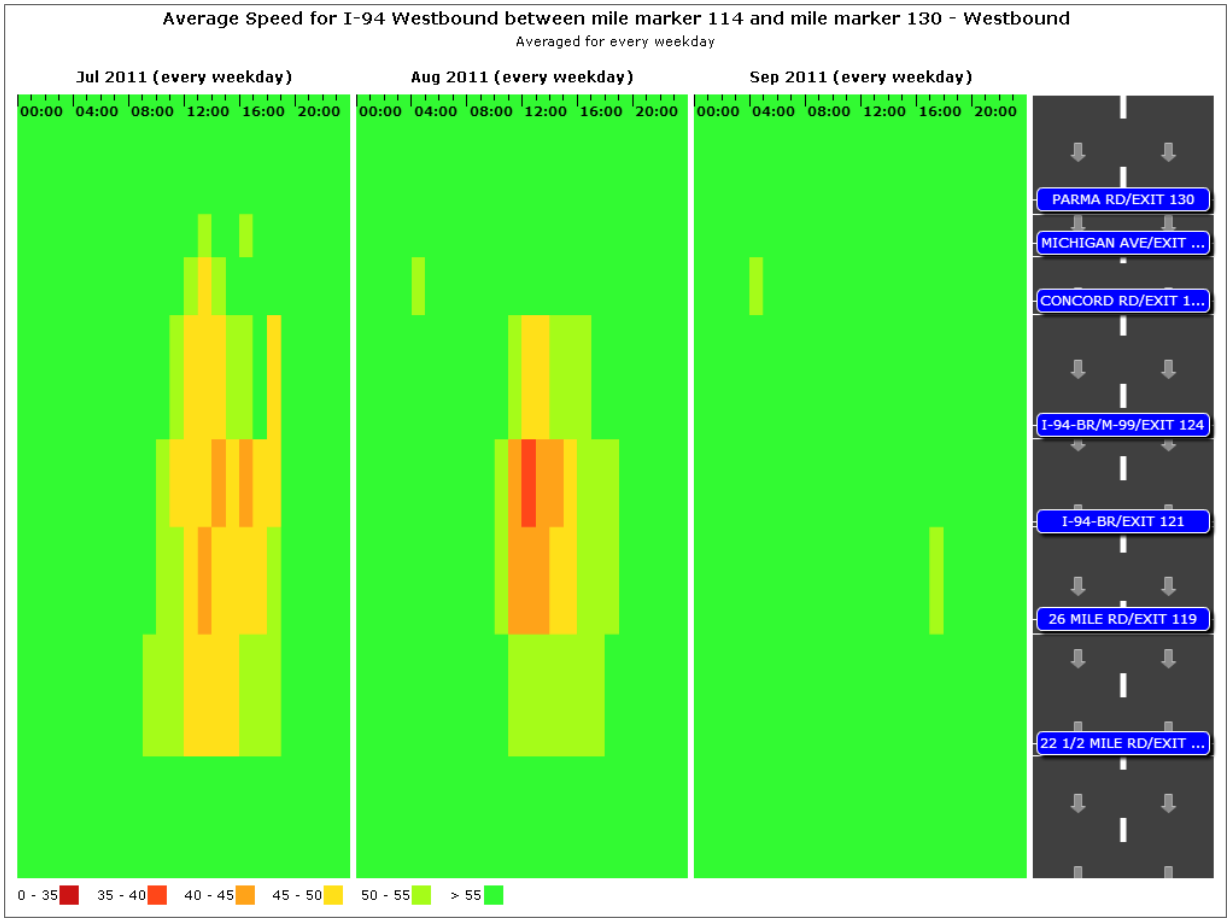
  Yes, passenger transportation has a scorecard

Session 3: Performance Measurement/Management

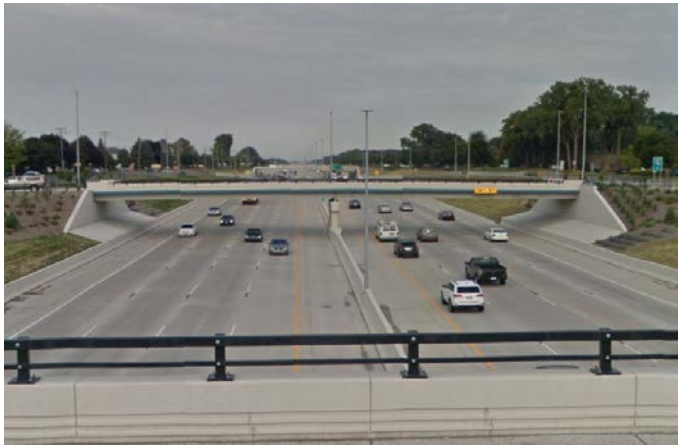
- Which of the following performance areas does your agency currently measure? Which specific measure(s) are utilized?

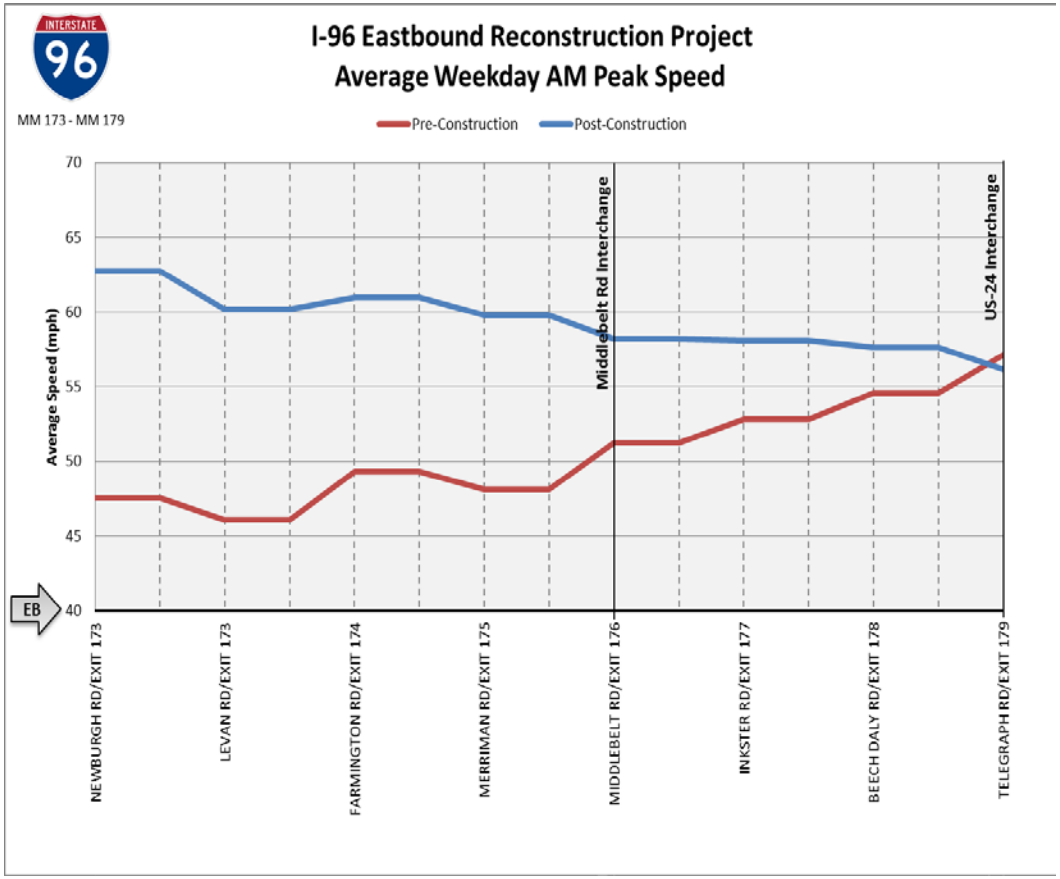
Yes	• Travel time reliability (TTR) on Interstate segments
Yes	• TTR on non-Interstate NHS segments
Yes	• Peak-hour travel times on Interstate and non-Interstate NHS segments
No	• Truck [commercial vehicle] TTR (TTTR)
Yes	• Levels of congestion on Interstate segments for general purpose and truck traffic
Yes	• Excessive user delay

RITIS Software (using HERE probe data)

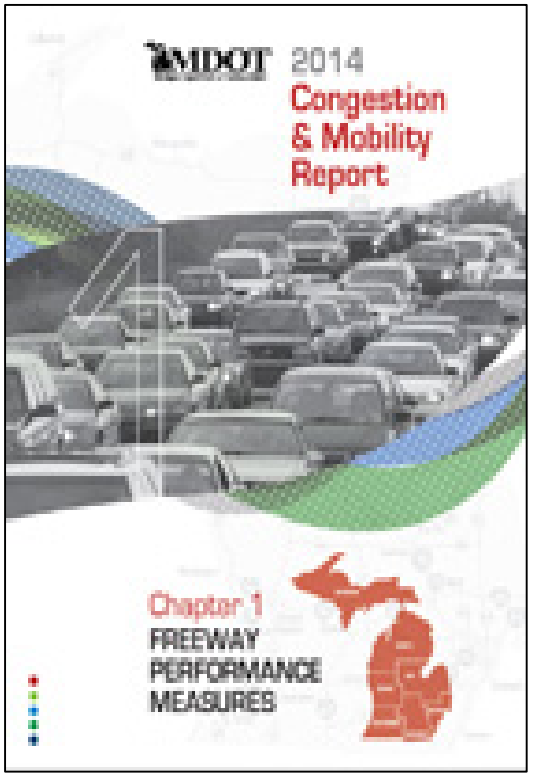


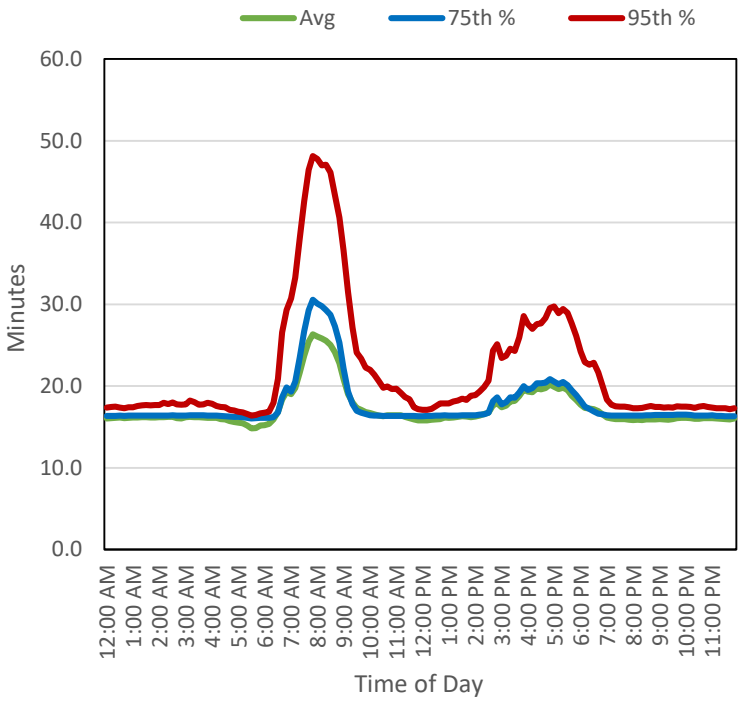
Travel Time and Speed Measurements

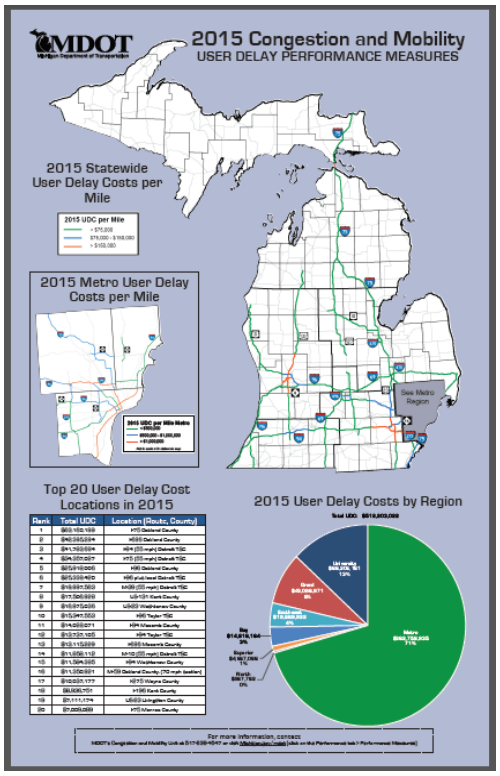




Annual Congestion and Mobility Report (Includes Reliability Calculations/Tables)

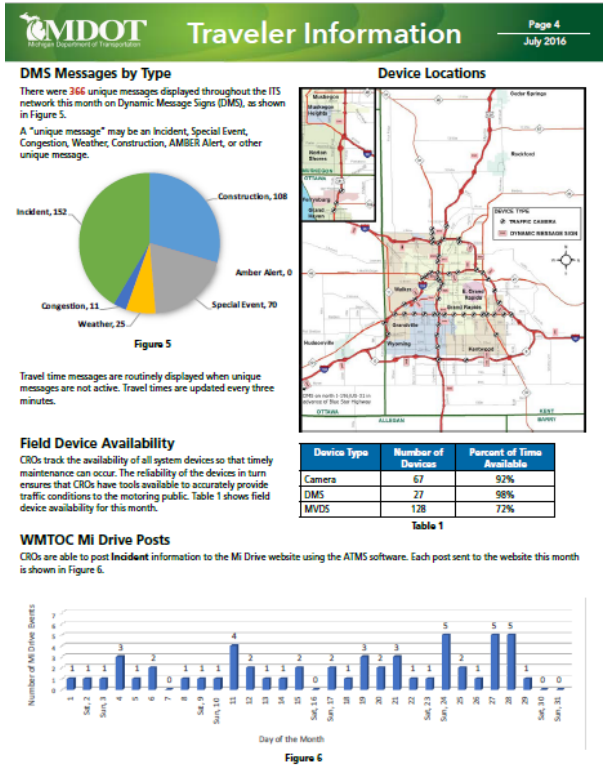






TOC Performance Measures

= Each TOC has Monthly Performance measures report and Annual report



MDOT Traveler Information — Page 4 — July 2016

DMS Messages by Type

There were 366 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.

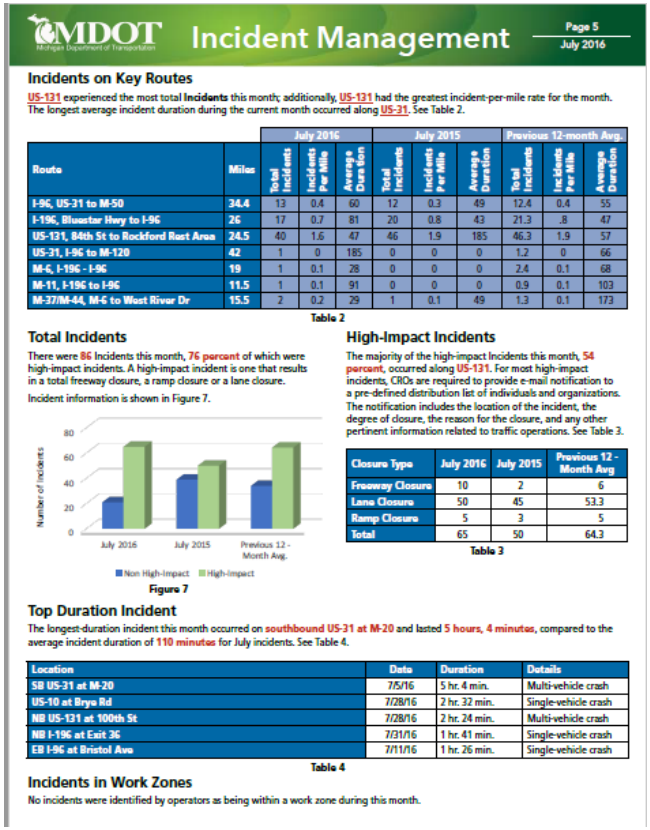
Device Type	Number of Devices	Percent of Time Available
Camera	67	92%
DMS	27	98%
MVDS	128	72%

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



MDOT Incident Management — Page 5 — July 2016

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 US-31. See Table 2.

Route	Miles	July 2016 Total Incidents	July 2016 Incidents Per Mile	July 2016 Average Duration	July 2015 Total Incidents	July 2015 Incidents Per Mile	July 2015 Average Duration	Previous 12-month Avg. Total Incidents	Previous 12-month Avg. Incidents Per Mile	Previous 12-month Avg. Average Duration
I-96, US-31 to M-50	34.4	13	0.4	60	12	0.3	49	12.4	0.4	55
I-196, Blue Star Hwy to I-96	26	17	0.7	81	20	0.8	43	21.3	.8	47
US-131, 84th St to Rockford Rest Area	24.5	40	1.6	47	46	1.9	185	46.3	1.9	57
US-31, I-96 to M-120	42	1	0	185	0	0	0	1.2	0	66
M-6, I-196 - I-96	19	1	0.1	28	0	0	0	2.4	0.1	68
M-11, I-196 to I-96	11.5	1	0.1	91	0	0	0	0.9	0.1	103
M-37/M-44, M-6 to West River Dr	15.5	2	0.2	29	1	0.1	49	1.3	0.1	173

Table 2

Total Incidents

There were 86 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

High-Impact Incidents

The majority of the high-impact Incidents this month, 54 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	July 2016	July 2015	Previous 12 - Month Avg
Freeway Closure	10	2	6
Lane Closure	50	45	53.3
Ramp Closure	5	3	5
Total	65	50	64.3

Table 3

Top Duration Incident

The longest-duration incident this month occurred on southbound US-31 at M-20 and lasted 5 hours, 4 minutes, compared to the average incident duration of 110 minutes for July incidents. See Table 4.

Location	Date	Duration	Details
SB US-31 at M-20	7/5/16	5 hr. 4 min.	Multi-vehicle crash
US-10 at Brye Rd	7/28/16	2 hr. 32 min.	Single-vehicle crash
NB US-131 at 100th St	7/28/16	2 hr. 24 min.	Multi-vehicle crash
NB I-196 at Exit 26	7/31/16	1 hr. 41 min.	Single-vehicle crash
EB I-96 at Bristol Ave	7/11/16	1 hr. 26 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.

Includes TOC activity and some system performance measures

TOC Performance Measures

= Traffic Incident Management PM's aligned with national measures.

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.

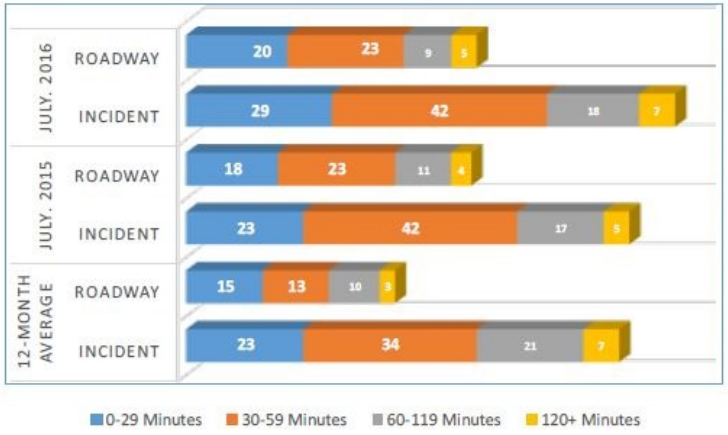


Figure 9

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 **80** total crashes this month, **4 percent** were **Secondary Crashes.**

TOC Performance Measures

= TOC data supports Statewide Scorecard measures

Top Duration Incident

The longest-duration incident this month occurred on **southbound US-31 at M-20** and lasted **5 hours, 4 minutes**, compared to the average incident duration of **110 minutes** for July incidents. See Table 4.

Location	Date	Duration	Details
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US-10 at Brye Rd	7/28/16		
NB US-131 at 100th St	7/28/16		
NB I-196 at Exit 36	7/31/16		
EB I-96 at Bristol Ave	7/11/16		

Table 4

Incidents in Work Zones

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

MDOT Michigan Department of Transportation
Transportation System Performance Measures
Last Updated 06/01/2016

Home Back Zoom

- Overview »
- Condition Trends »
- Measures by Goal Area »
- Trunkline Bridges
- Trunkline Pavement
- Railroads
- Airport Pavement
- Passenger Transportation
- Carpool Lot Pavement
- Crash Reduction
- Safety Cost Savings
- Risk/Vulnerability
- Facilities Modernization
- Access Expansion
- Traffic Incident Mgmt.

Full Screen On/Off Send Feedback

Traffic Incident Management

AIM:

Reduce Delays: Minimize disruption to mobility resulting from incidents.

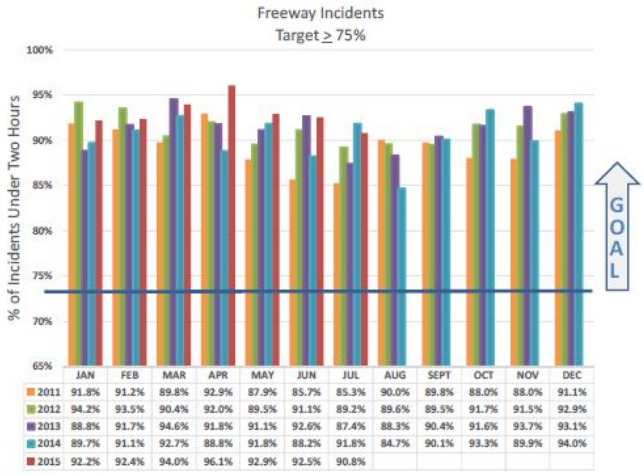
Measure:
Percentage of incidents under 2 hours.

Definition:
A traffic incident is an unplanned event that affects or impedes the normal flow of traffic. A traffic incident requires a response to protect life or property, and to mitigate its impacts. Traffic incidents, for example, include motor vehicle crashes, disabled vehicles, and other occurrences that require an emergency response.

Standard:
Target = Greater than 75% of freeway closures having a duration of less than 120 minutes.

Status:
The 2014 average of percentage of incident-related freeway closures less than 120 minutes is 90.5%.

Last Reported Status:
The 2013 average percentage of incident-related freeway closures less than 120 minutes was 91.3%.



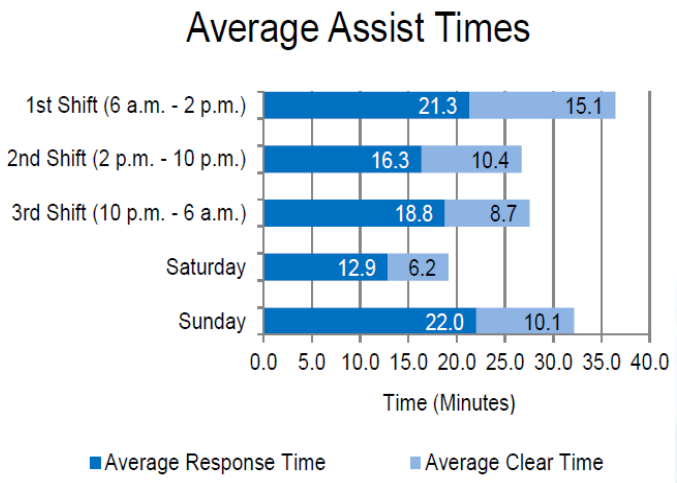
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC
2011	91.8%	91.2%	89.8%	92.9%	87.9%	85.7%	85.3%	90.0%	89.8%	88.0%	88.0%	91.1%
2012	94.2%	93.5%	90.4%	92.0%	89.5%	91.1%	89.2%	89.6%	89.5%	91.7%	91.5%	92.9%
2013	88.8%	91.7%	94.6%	91.8%	91.1%	92.6%	87.4%	88.3%	90.4%	91.6%	93.7%	93.1%
2014	89.7%	91.1%	92.7%	88.8%	91.8%	88.2%	91.8%	84.7%	90.1%	93.3%	89.9%	94.0%
2015	92.2%	92.4%	94.0%	96.1%	92.9%	92.5%	90.8%					

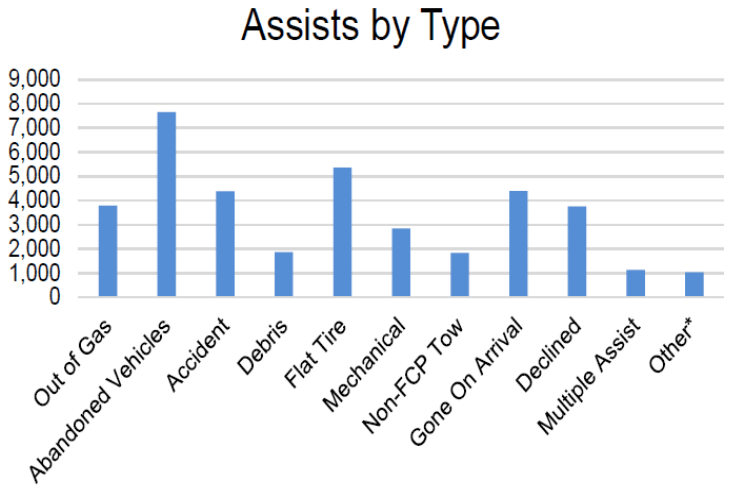
Click link to view: Traffic Incident Management Details

NOCoE

TOC Performance Measures

Freeway Courtesy Patrol



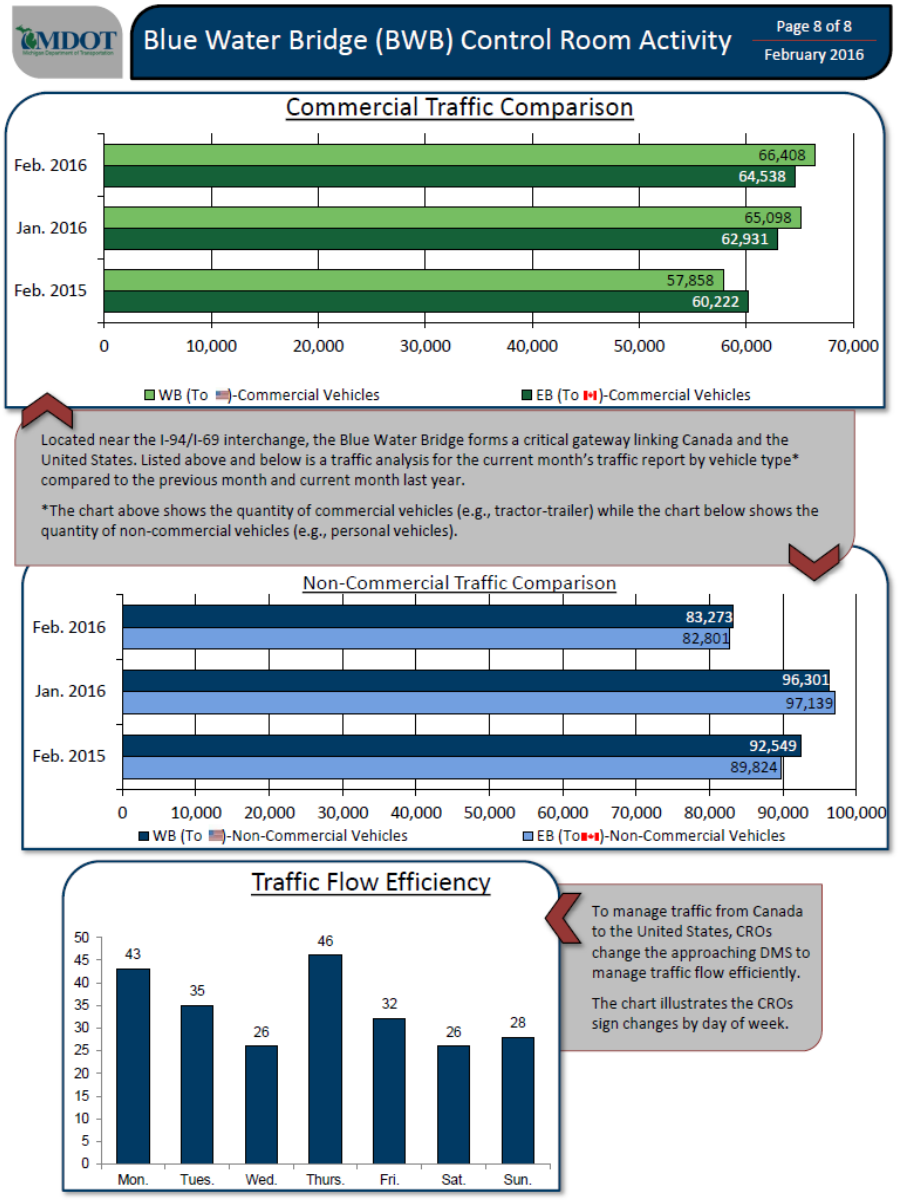


* Other includes cell phone assist, FCP tow, provided directions, traffic control, and motorist transport

TOC Performance Measures

- Blue Water Bridge

	YEAR-TO-DATE	
	2015	2016
Passenger Cars	1,816,827	1,674,502
Trucks	917,685	974,171
Buses & Misc.	3,735	3,082
TOTAL	**2,738,247**	**2,651,755**



TOC Performance Measures

After Action