

State of the Practice in Traffic Incident Management (TIM) Performance Measurement

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WHY MEASURE TIM PERFORMANCE?

Demonstrate TIM Program Effectiveness & Efficiency

Enhance Overall TIM Performance Management

Demonstrate Fiscal Accountability of TIM Program/Activities

Improve Communications & Relationships with TIM Partners

Reduce Congestion, Increase System Reliability, and Increase Safety

BACKGROUND

2006 FHWA Focus State Initiative (FSI) resulted in 3 national TIM performance measures:

- **Roadway Clearance Time (RCT)** – Time between the first recordable awareness of an incident by a responsible agency and the first confirmation that all lanes are available for traffic flow.
- **Incident Clearance Time (ICT)** – Time between the first recordable awareness of an incident by a responsible agency and the time at which the last responder has left the scene.
- **Secondary Crashes** – The number/percentage of unplanned crashes beginning with the time of detection of the primary incident, where a crash occurs as a result of the original incident either within the incident scene or within the queue in either direction.

2011 NCHRP Project 20-24(37)D – Made recommendations for improving TIM performance measurement:

- Continue to “market” the importance of collecting and reporting TIM PM data
- Build on existing TMC collection capabilities and practices and have transportation agencies take on the lead responsibility
- Provide transportation agencies with guidelines and resources
- Develop definitions and standard data elements
- Adopt “Arrival Time” as a national level TIM PM
- Incorporate collection and reporting of TIM PMs into an annual National TIM PM Assessment Program

2011 FHWA TIM PM Adoption Campaign:

- Investigate and identify issues of definition, data collection, and analysis
- Determine what performance measures were being collected by the top 40 metropolitan areas
- Establish a national baseline
- Establish a system that enables FHWA to build on the baseline

2014: NCHRP 07-20: Guidance For Implementation of TIM Performance Measures

- Standard definitions
- Standard data elements for TIM performance analysis
- Database schema
- Data dictionary
- Database queries
- Example applications

Ongoing FHWA Institutionalization of TIM Performance Measurement:

- Step-by-step guidance
- Outreach materials
- Prototype database and dashboard
- Workshops with transportation agencies and law enforcement

STATE OF THE PRACTICE

DATA SOURCES and COLLECTION

- Transportation (e.g., TMCs, Freeway Service Patrols)
- Law Enforcement (e.g., CAD and Crash Reports)
- Other (e.g., Fire, EMS)

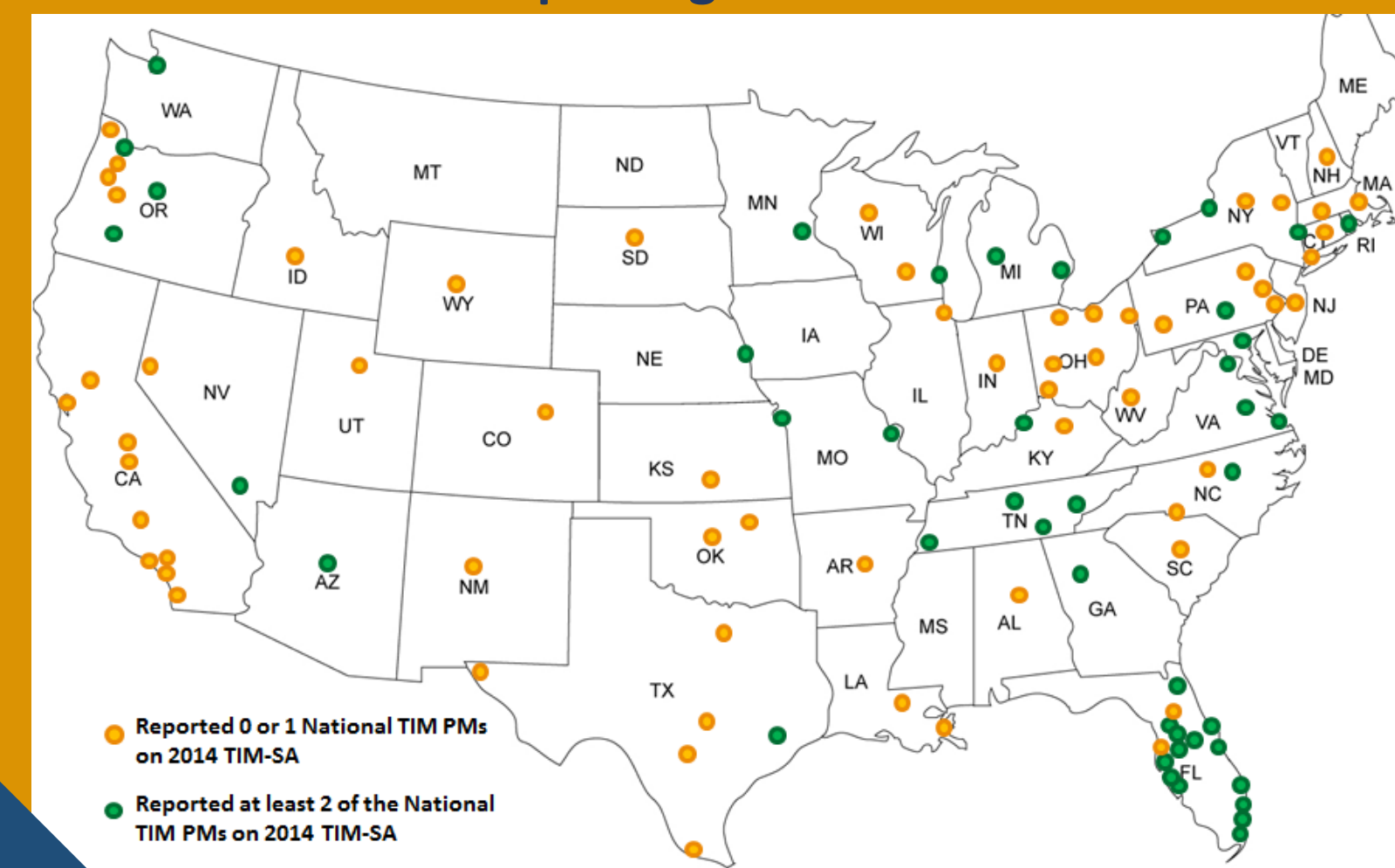
Incident Entry Screen – Las Vegas FAST

TIM performance data can come from the information that TMC operators enter into the system, such as time stamps, secondary incident occurrence, and other data elements associated with an incident. An example from the Freeway and Arterial System of Traffic (FAST) in Las Vegas is shown left.

Florida Highway Patrol Electronic Crash Form

The Florida Highway Patrol is dedicated to supporting the collection of TIM performance measures. Time stamps for calculating RCT and ICT have been part of the Florida state crash report since 2011.

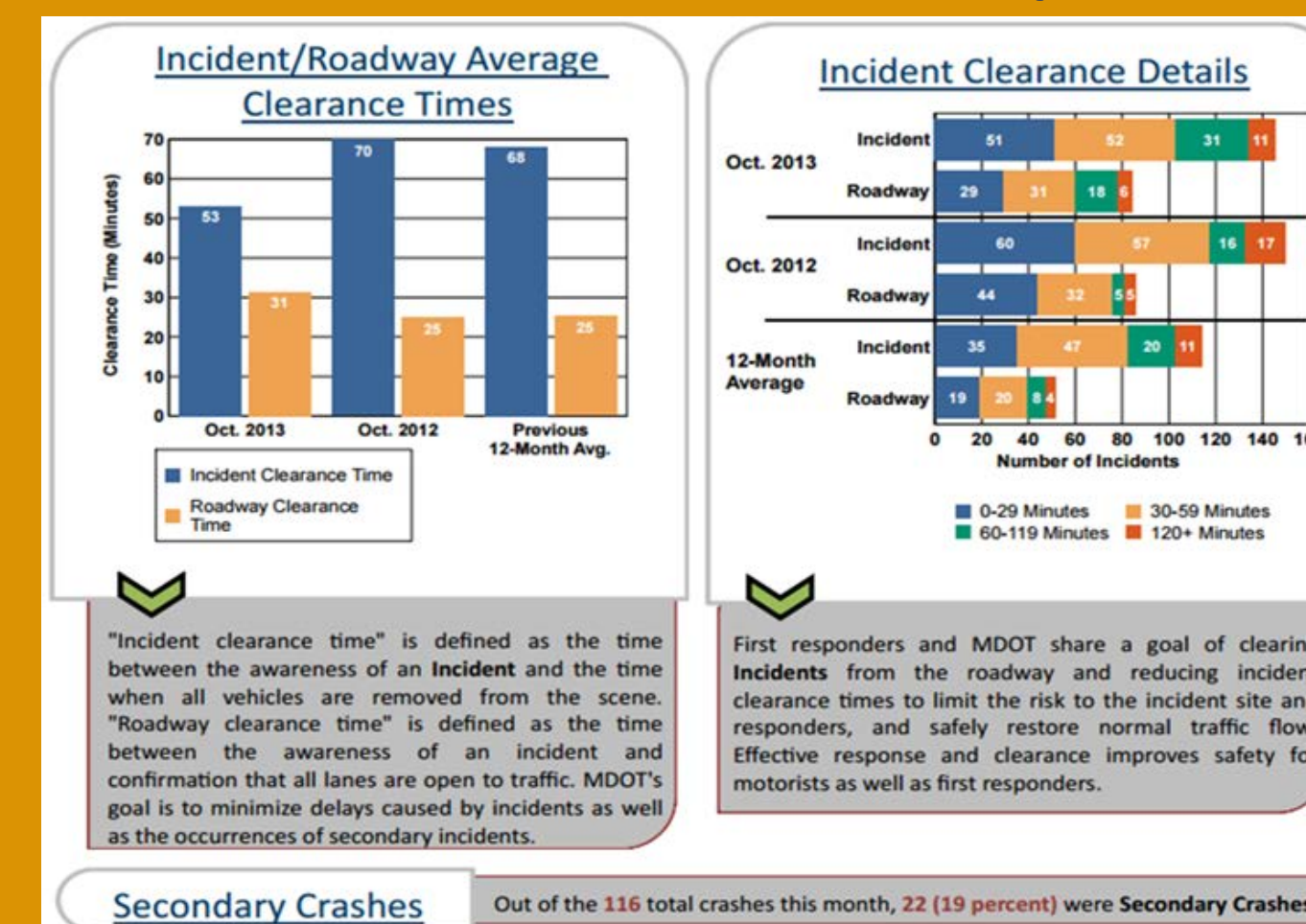
Status of TIM PM Reporting – 2014 TIM Self-Assessment



ANALYSIS and REPORTING

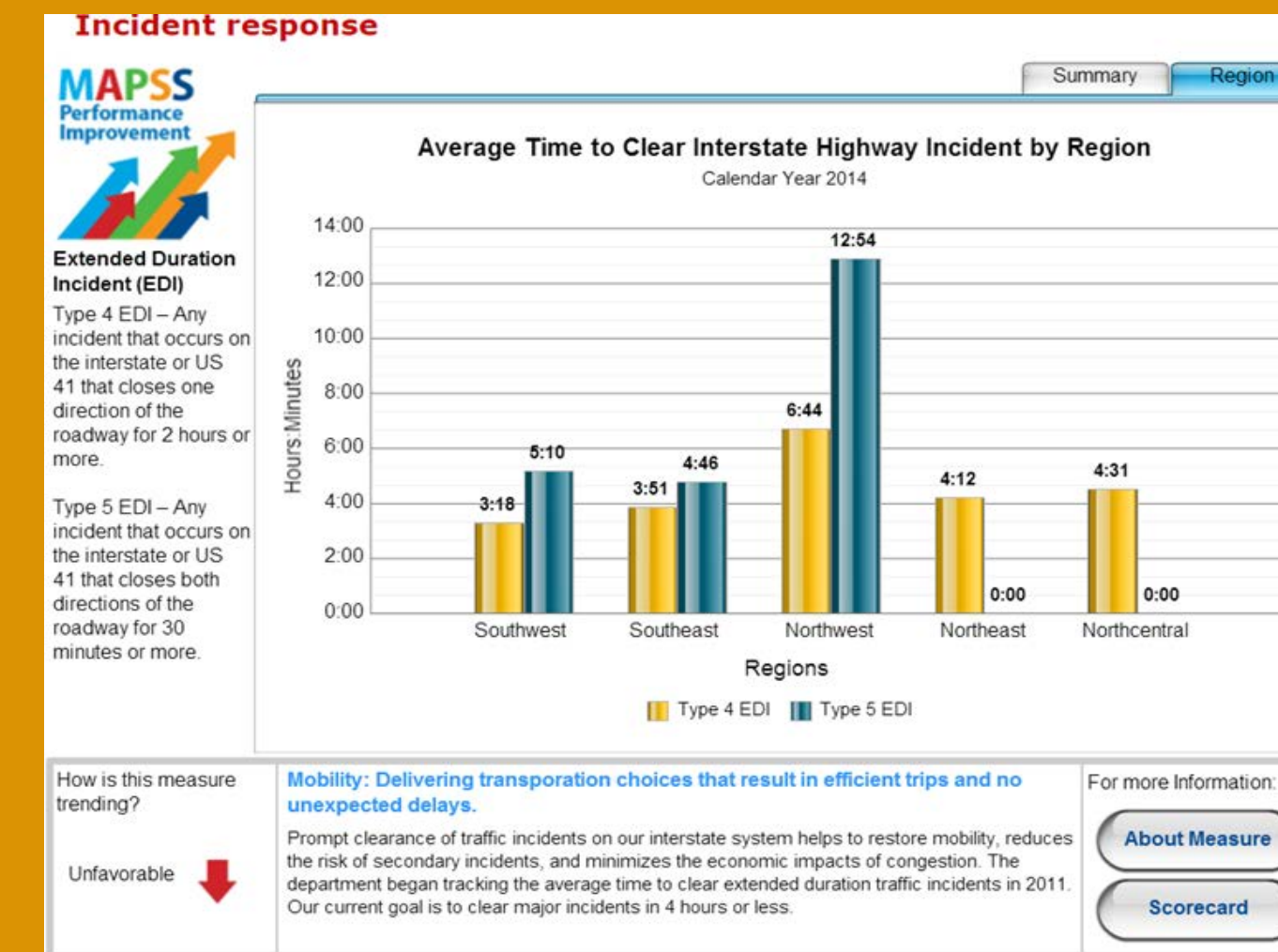
- Reports (e.g., monthly, quarterly)
- Dashboards
- Scorecards
- Displays
- Data mining

WMTOC's September 2014 Performance Measures Report



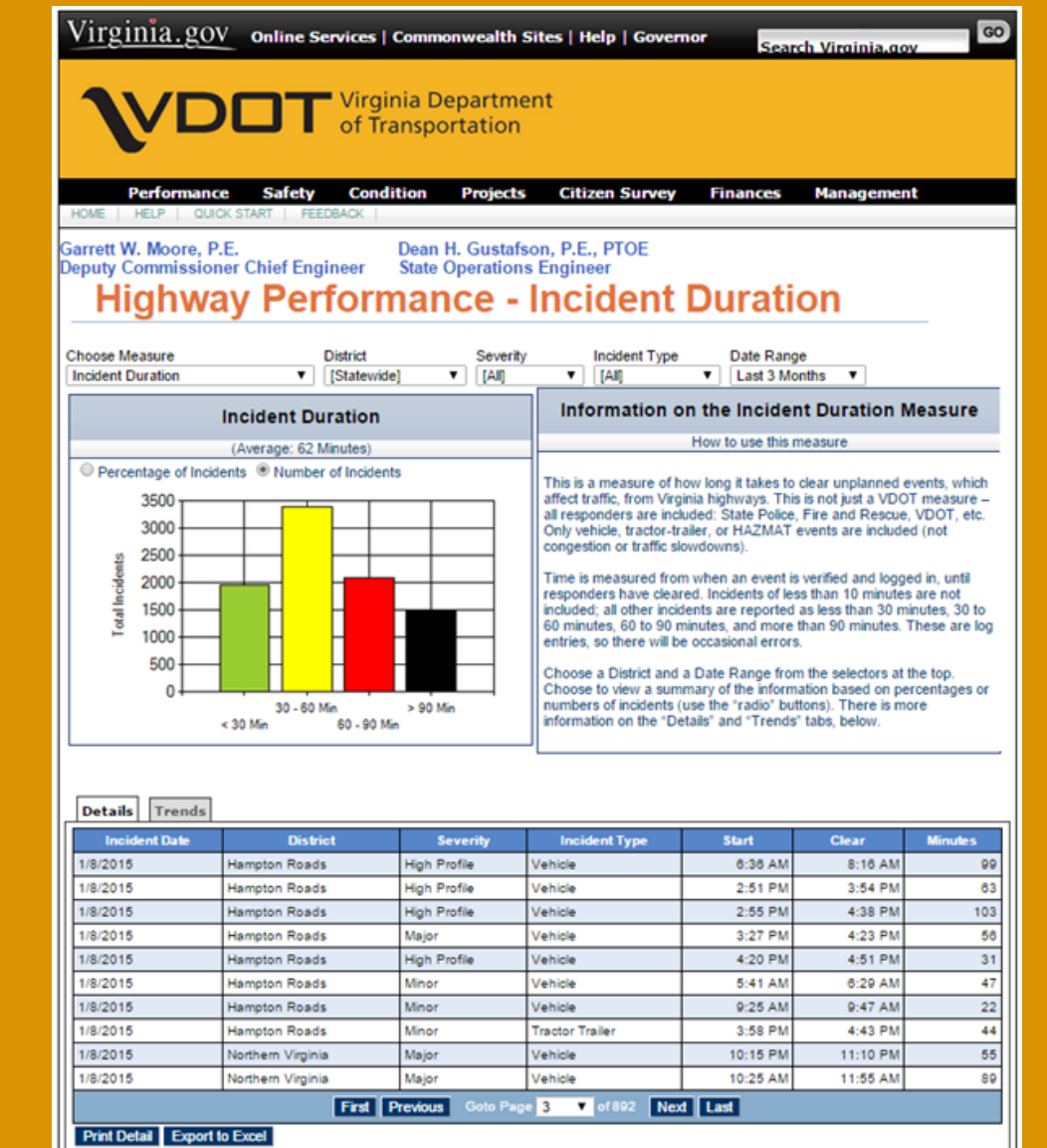
Weekly, monthly, quarterly, and/or annual performance reports, developed and available for various audiences, are a common way of reporting TIM performance. Michigan DOT's *Monthly Performance Measures Reports* for the Western Michigan TOC (shown above) and the Southeast Michigan TOC are archived and available to the public via MDOT's website.

WisDOT MAPSS Scorecard - Incident Clearance Goal Area



A quarterly MAPSS Performance Improvement Report summarizes the progress of selected performance measures on a two-page scorecard and then details the progress of each measure in the body of the report.

VDOT Dashboard – Incident Durations



Dashboards are generally geared towards the public. VDOT's online dashboard presents a variety of performance data, including ICTs. The data can be filtered to show ICT by district, incident severity, incident type, and for various time frames.

Florida DOT District 4 TMC Control Room



For internal and real-time use of TIM performance measures, Florida DOT District 4 displays the current values for RCT on the video wall in the TMC control room.

AVAILABLE RESOURCES

- Business Case for TIM PM
- Outreach Documents
- Step-by-Step Guide to Institutionalization
- TIM PM Tool - <http://nchrptimpm.timnetwork.org/>
- Guidance for Implementation of TIM PM: Final Guidebook
- Prototype TIM PM Database and Dashboard (TBD)