

Traffic Incident Management Self-Assessment

2005 National Report

**Office of Transportation Operations
Federal Highway Administration
November 2005**

EXECUTIVE SUMMARY

Background

The Traffic Incident Management (TIM) Self Assessment (SA) provides a tool and a process for State and regional program managers to periodically assess progress in achieving a successful multi-agency program to manage traffic incidents effectively and safely. The tool helps managers identify specific parts of their TIM programs that need special attention. The Self Assessment also provides FHWA with a national picture of broader program areas on which to focus national program initiatives. The TIM SA process fulfills a number of important goals:

- It helps raise the level of awareness of practices and strategies used in managing traffic incidents;
- It facilitates communication and sharing of best practices among professionals from transportation, public safety and the private sector working together to successfully manage traffic incidents;
- It serves as a working tool to identify gaps in existing efforts to effectively manage traffic incidents.
- It provides an opportunity to benchmark progress at the agency level, and provides information to the Federal Highway Administration (FHWA) that can help in assessing the state of the practice in traffic incident management on a national basis.
- It assists FHWA in measuring the effectiveness of its Traffic Incident Management Program and shaping the future direction of that program.

The FHWA initiated the TIM SA process in 2003 in the Nations top 75 urban areas. FHWA Division Offices re-defined these 75 census areas census into 80 operational areas for the SA. Baseline assessments were completed in 78 of these 80 areas and in 2005 re-assessments were completed in 40 areas. Table 12 at the end of this report shows the Baseline and re-assessment status of each of these 80 urban areas.

The initial assessments of 78 areas that were completed in 2003 and 2004 (and one in 2005) form the SA baseline data against which the 2005 assessments and assessments in subsequent years will be evaluated.

2004 TIM Self-Assessment Results

A total of 40 re-assessments were completed in 2005 in urban areas that had established Baseline Scores in 2003-2004. Table ES1 compares the results of the 40 re-assessments to the Baseline data.

**Table ES1
Mean Score for Each Section (Baseline and 2005)**

Section	Number of Questions	Mean Score		% Change in scores from Baseline (n=40)	Section Weights
		Base-line	2005		
Program and Institutional Issues	12	36.3%	43.1%	18.8%	30%
Operational Issues	14	57.6%	61.6%	6.8%	40%
Communication and Technology Issues	8	41.3%	50.1%	21.5%	30%
Overall Total	34	45.9%	52.4%	14.3%	100%

Program and Institutional Issues (Strategic Level)

The overall increase in Program and Institutional Issues section scores in 2005 from the Baseline was 18.8%. Strong percentage increases were noted in performance measurement (although the scores remain low), post-incident de-briefing and training. The FHWA Traffic Incident Management Focus States Initiative on Performance Measurement will improve the state-of-the-practice in traffic incident management program performance measurement nationwide through the efforts of 11 States that are participating in the initiative. The initiative will enable other States to improve their measurement of multi-agency Traffic Incident Management Program performance by generating a suite of Nationally applicable performance measures. Advances in performance measurement will highlight the need for greater inter-agency strategic program planning for TIM. It will also lead to stronger technical integration among agencies, particularly transportation and law enforcement, to access and link data from these sources that are needed for broader program performance measurement. The strengthening of strategic and support program levels will enable greater achievement at the tactical level – the safe and quick clearance of traffic incidents. The National Traffic Incident Management Coalition (NTIMC) is beginning a broad outreach effort to strengthen the Coalition and give it greater visibility among its member associations. This effort and the NTIMC’s work to establish a National Unified Goal for Traffic Incident Management will place additional emphasis on the need for greater strategic TIM program level efforts in regional and statewide TIM programs.

Operational Issues (Tactical Level)

The increase in Operational Issues section scores in 2005 from the Baseline was 6.8%. The Operational Issues section had the highest score of the three sections – 61.6%. Most new or emerging programs initially focus on working at the “tactical level” to clear incidents more quickly and most success in TIM has been achieved at this program level. While improvements continue to be made tactically, it is logical to expect faster rates of improvement in areas that have had fewer successes in the past. The greatest improvement in the Operational program level was in the Responder and Motorist Safety section, most

notably in incident traffic control. Strong improvement was also seen in establishing quick clearance policies and in establishing criteria for defining major incidents and incident classifications. The Traffic Incident Response (TIR) Scan trip to Europe in 2005 focused on tactical operations. Recommendations from this scan trip will be manifest in the Scan Technology Implementation Plan for follow-up action. The NTIMC is also addressing a number of tactical issues, especially responder safety and traffic control.

Communication and Technology Issues (Support Level)

Scores in the Communication and Technology Issues section experienced a 21.5 percent increase in 2005 from the Baseline, the largest percentage increase of the three assessment areas. There were significant improvements in all three subsections of this program level – Integrated Interagency Communications (31.8%), Transportation Management Systems (17.5%) and Traveler Information (23.5%). There has been a significant increase in activity in recent years to link communications systems in public safety and transportation to facilitate response and coordination to natural and manmade emergencies. This activity has benefited traffic incident management programs as evidenced in the improved scores in Integrated Interagency Communications. The greatest percentage score increase in the Communication and Technology Issues section program level came in providing motorists with travel time estimates for route segments. The FHWA Associate Administrator for Operations issued a Memorandum to FHWA field offices on July 16, 2004 encouraging locations that are not currently providing travel time information on their dynamic message signs (DMS) to do so. The growth in Traffic/Transportation Management Centers (TMCs) and in the ITS that they manage has continued and regional systems architectures have been established in most major urban areas.

Summary

The Traffic Incident Management Self Assessment scores increased in 40 urban areas by 14.3 percent in 2005 from the 2003-2004 Baseline scores of 78 urban areas. The highest scores were achieved in the Operational Issues (or tactical level) section of the Self Assessment (61.6%). The greatest increases in scores occurred in the Communications and technology Issues (or support level) section (21.5%). The Program and Institutional Issues (or strategic level) section had the lowest scores in the Baseline and remained the lowest scoring section in the 2005 re-assessment.

The greatest increases in scores for individual question in the Self Assessment occurred in Traffic Incident Management Program performance measurement, provision of travel time estimates for route sections, and integrated interagency communications.

As shown in Table ES2, the top five highest scoring questions all received a mean score greater than 2.7. All five top scoring questions were in the Operational Issues Section.

**Table ES2
Top 5 Mean Score (2005)**

Mean Score Rank in 2005/ Baseline	Question Number	Question	2005 Mean Score (n=40)	% Scoring 3 or Higher (2005)	Change in 2005/ Baseline Mean Scores
1/2	4.2.1.2. Operational Issues	Identify high-ranking agency members available on 24/7 basis to respond to a major incident (Major Incident Response Team)?	3.11	83%	7.3%
2/4	4.2.1.3. Operational Issues	Have a pre-identified (approved) contact list of resources (including special equipment) for incident clearance and hazardous materials response?	2.93	73%	2.4%
3/5	4.2.3.6. Operational Issues	Use motorist assist service patrols?	2.91	78%	6.9%
4/1	4.2.3.5. Operational Issues	Have a pre-qualified list of available and contracted towing and recovery operators (to include operators' capabilities)?	2.83	63%	-2.7%
5/3	4.2.3.3. Operational Issues	Have specific policies and procedures for hazardous materials response that also address maintenance of traffic flow?	2.73	65%	-5.5%

Table ES3 lists the five questions that received the lowest scores. The five questions receiving the lowest scores were the same questions that scored lowest in 2004. The four lowest scoring questions were in the Program and Institutional Issue category indicating that more program focus is needed in this area. The activities of the National Traffic Incident Management Coalition and national level efforts such as the TIM Focus States Initiative on Performance Measure are underway and will improve the state-of-the-practice in this Strategic program area.

**Table ES3
Bottom 5 Mean Score (2005)**

Mean Score Rank in 2005/ Baseline	Question Number	Question	2005 Mean Score (n=40)	% Scoring 3 or Higher (2005)	Change in 2005/ Baseline Mean Scores
34/34	4.1.3.1. Program and Institutional Issues	Have multi-agency agreements on what measures will be tracked and used to measure program performance?	1.15	10%	80.2%
33/33	4.1.3.2. Program and Institutional Issues	Have agreed upon methods to collect and analyze/track performance measures?	1.15	8%	79.5%
32/32	4.1.3.4. Program and Institutional Issues	Conduct periodic review of whether or not progress is being made to achieve targets?	1.19	25%	59.9%
31/30	4.1.3.3. Program and Institutional Issues	Have established targets for performance (Response, Clearance)?	1.41	13%	20.7%
30/31	4.3.3.3. Communication and Technology Issues	Provide motorists with travel time estimates for route segments?	1.47	15%	48.5%

Some of the urban areas with the highest total scores in Baseline reported slightly lower total scores when revisiting their assessments in 2005. The Self Assessment process was new in 2003-2004 and the assessing teams were not familiar with the tool and the scoring key. Better guidance was given in scoring for the 2004 and 2005 re-assessments with examples of specific program items to look for in each question and how they should be scored. That some of the highest scoring urban areas in 2003-2004 Baseline reported slightly lower scores a year later indicates that the 2004 and 2005 re-assessments, done with the benefit of a more detailed scoring guide, might be more realistic.

The assessments are performed by multi-agency, multi-disciplinary teams consisting of representative from transportation, law enforcement, fire and rescue, emergency medical services and towing and recovery and other partners in each urban area. Some teams may be small (5 or 6) and some may be large (20 or more) especially if the assessment is conducted

in a regular meeting of an active Traffic Incident Management team or task force. The membership on the teams may change from year to year and the new members may have a different view (and score) for some of the questions. Small changes in scores, up or down, may reflect nothing more than changes in personnel on the assessment teams. Also, the Baseline data consists of assessment from 78 locations while the 2005 data consists of a subset of 40 of those locations.

Table ES-4 shows the five questions that had the largest gains in mean scores in 2005 from the Baseline. Scores increased for these five questions by roughly a half point. Four of the five largest score increases came in questions ranking in the bottom five in the Baseline. Scores increased by a quarter point or more for 16 of the 34 questions. Overall, the scores increased for all questions by an average of slightly more than a quarter point (0.255).

Table ES4
Largest Changes in Mean Score (2005 from Baseline)

Mean Score Rank in 2005/ Baseline	Question Number	Question	2005 Mean Score (n=40)	% Scoring 3 or Higher (2005)	Change in 2005 Mean Scores from Baseline
22/26	4.3.1.2 Communication and Technology Issues	Provide data and video information transfer between agencies and applications (TMC-CAD integration)?	1.96	33%	0.53
34/34	4.1.3.1. Program and Institutional Issues	Have multi-agency agreements on what measures will be tracked and used to measure program performance?	1.15	10%	0.51
33/33	4.1.3.2. Program and Institutional Issues	Have agreed upon methods to collect and analyze/track performance measures?	1.15	8%	0.51
31/30	4.3.3.3. Communication and Technology Issues	Provide motorists with travel time estimates for route segments?	1.47	15%	0.48
32/32	4.1.3.4 Program and Institutional Issues	Conduct periodic review of whether or not progress is being made to achieve targets??	1.19	8%	0.44