2020 Traffic Incident Management Capability Maturity Self-Assessment National Analysis Report

Publication No. FHWA-HOP-21-022 September 2021

U.S. Department of Transportation
Federal Highway Administration

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TECHNICAL REPORT DOCUMENTATION PAGE

1. Report No. FHWA-HOP-21-022	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle 2020 Traffic Incident Management Capability Maturity Self-Assessment National Analysis Report		5. Report Date September 2021	
		6. Performing Organization Code	
7. Authors Rebecca Brewster, Lauren Delich		8. Performing Organization Report No.	
9. Performing Organization Name and Address Leidos Inc. 1750 Presidents Street Reston, VA 20190 American Transportation Research Institute 2110 Powers Ferry Road, Suite 470 Atlanta, GA 30339		10. Work Unit No. (TRAIS) 11. Contract or Grant No. DTFH6116D00053	
12. Sponsoring Agency Name and Address U.S. Department of Transportation Federal Highway Administration Office of Operations 1200 New Jersey Avenue, SE Washington, DC 20590		13. Type of Report and Period Covered Analysis report, 2020 14. Sponsoring Agency Code HOP	
15. Supplementary Notes Paul Jodoin, Traffic Incident Management Program Manager, served as the TOCOR for this task.			
16. Abstract This report presents a summary of the 2020 Traffic Incident Management Capability Maturity Self-Assessments (TIM CM SA) completed by transportation personnel from 99 locations across the country between September and December, 2020. Forty-one scored questions in the TIM CM SA are grouped into three sections: Strategic, Tactical, and Support. The TIM CM SA underwent a major revision in 2020 to reduce the number of questions from 55 to 41. Additionally, the scores were recalibrated to use the 2015 TIM CM SA as the new baseline against which progress will be measured here and in the future. The 2020 overall TIM CM SA score was 70 percent (out of a possible 100 percent), representing a 9.3 percent increase over the new baseline.			
17. Key Words traffic incident management, TIM, capability maturity, strategic, tactical, support, self-assessment		18. Distribution Statement No restrictions.	
19. Security Classif. (this report) Unclassified	20. Security Classif. (this page) Unclassified	21. No. of Pages 36	22. Price N/A

Form DOT F 1700.7 (8-72) Reproduction of completed page authorized.

SI* (MODERN METRIC) CONVERSION FACTORS

APPROXIMATE CONVERSIONS TO SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
in	inches	25.4	millimeters	mm
ft	feet	0.305	meters	m
yd	yards	0.914	meters	m
mi	miles	1.61	kilometers	km
		AREA		
in^2	square inches	645.2	square millimeters	mm^2
ft^2	square feet	0.093	square meters	m^2
yd^2	square yard	0.836	square meters	m^2
ac	acres	0.405	hectares	ha
mi^2	square miles	2.59	square kilometers	km^2
		VOLUME		
fl oz	fluid ounces	29.57	milliliters	mL
gal	gallons	3.785	liters	L
ft^3	cubic feet	0.028	cubic meters	m^3
yd^3	cubic yards	0.765	cubic meters	m^3
	NOTE: volumes greater than 1,000 L shall be shown in m^3			
		MASS		
oz	ounces	28.35	grams	g
lb	pounds	0.454	kilograms	kg
T	short tons (2,000 lb)	0.907	megagrams (or “metric ton”)	Mg (or “t”)
		TEMPERATURE (exact degrees)		
°F	Fahrenheit	5 (F-32)/9 or (F-32)/1.8	Celsius	°C
		ILLUMINATION		
fc	foot-candles	10.76	lux	lx
fl	foot-Lamberts	3.426	candela/m^2	cd/m^2
		FORCE and PRESSURE or STRESS		
lbf	poundforce	4.45	newtons	N
lbf/in^2	poundforce per square inch	6.89	kilopascals	kPa

APPROXIMATE CONVERSIONS FROM SI UNITS

Symbol	When You Know	Multiply By	To Find	Symbol
		LENGTH		
mm	millimeters	0.039	inches	in
m	meters	3.28	feet	ft
m	meters	1.09	yards	yd
km	kilometers	0.621	miles	mi
		AREA		
mm^2	square millimeters	0.0016	square inches	in^2
m^2	square meters	10.764	square feet	ft^2
m^2	square meters	1.195	square yards	yd^2
ha	hectares	2.47	acres	ac
km^2	square kilometers	0.386	square miles	mi^2
		VOLUME		
mL	milliliters	0.034	fluid ounces	fl oz
L	liters	0.264	gallons	gal
m^3	cubic meters	35.314	cubic feet	ft^3
m^3	cubic meters	1.307	cubic yards	yd^3
		MASS		
g	grams	0.035	ounces	oz
kg	kilograms	2.202	pounds	lb
Mg (or “t”)	megagrams (or “metric ton”)	1.103	short tons (2,000 lb)	T
		TEMPERATURE (exact degrees)		
°C	Celsius	1.8C+32	Fahrenheit	°F
		ILLUMINATION		
lx	lux	0.0929	foot-candles	fc
cd/m^2	candela/m2	0.2919	foot-Lamberts	fl
		FORCE and PRESSURE or STRESS		
N	newtons	2.225	poundforce	lbf
kPa	kilopascals	0.145	poundforce per square inch	lbf/in^2

*SI is the symbol for International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380. (Revised March 2003)

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AAR	after-action review
CAD	computer-aided dispatch
CMF	Capability Maturity Framework
FHWA	Federal Highway Administration
HazMat	hazardous material
ICS	incident command system
ICT	incident clearance time
ME	medical examiner
MUTCD	Manual on Uniform Traffic Control Devices
NIMS	National Incident Management System
PM	performance measure
RCT	roadway clearance time
SHRP2	second Strategic Highway Research Program
SSP	Safety Service Patrol
TIM	traffic incident management
TMC	traffic management center
TTC	temporary traffic control
TtT	train-the-trainer

EXECUTIVE SUMMARY

The Federal Highway Administration (FHWA) developed the Traffic Incident Management Capability Maturity Self-Assessment (TIM CM SA) in 2002 to evaluate the state of practice in traffic incident management (TIM) programs in the United States. State and local TIM program managers use the TIM CM SA to benchmark and evaluate the success of their TIM programs and help identify opportunities to improve their programs.

In 2020, the TIM CM SA underwent major revisions to reduce the number of questions from 55 to 41, and to make the 2015 TIM CM SA scores the new baseline against which progress will be measured here and in the future. Prior to 2015, FHWA used the assessments completed in 2003, 2004, and 2005 (78 total) to determine baseline scores. The TIM CM SA underwent major revisions in 2007, 2011, and 2015. Two factors drive the new 2015 baseline: (1) TIM CM SA scoring guidance, which was instituted in 2015 to remove subjectivity in how participants score their programs, and (2) advancement of state of practice in TIM programs since the original assessments in 2003, as well as updated assessment questions. Benchmarking against 2015 scores is a more reliable measure of TIM program progress.

In 2020, a total of 99 locations completed a TIM CM SA for the national analysis, up from 94 in 2019. This included six new locations that submitted a TIM CM SA for the first time. The 41 scored questions in the TIM CM SA were grouped into three sections: Strategic, Tactical, and Support. Table 1 shows the average score for each TIM CM SA section from the new 2015 baseline and 2020, along with the percent change from the baseline.

Table 1. Mean score for each section in the 2020 Traffic Incident Management Capability Maturity Self-Assessment (baseline and 2020).

Section	Number of Questions	Mean Score (%)		High Score 2020 (possible)	Change from Baseline (%)	Section Weights (%)
		Baseline	2020			
Strategic	21	58.9	64.7	40.3 (45)	9.9	45
Tactical	17	69.3	75.9	45.0 (45)	9.5	45
Support	3	63.3	67.0	10.0 (10)	5.9	10
Overall	41	64.0	70.0	93.0 (100)	9.3	100

Note: The numbers in this table demonstrate general patterns, and have been rounded for ease of communication.

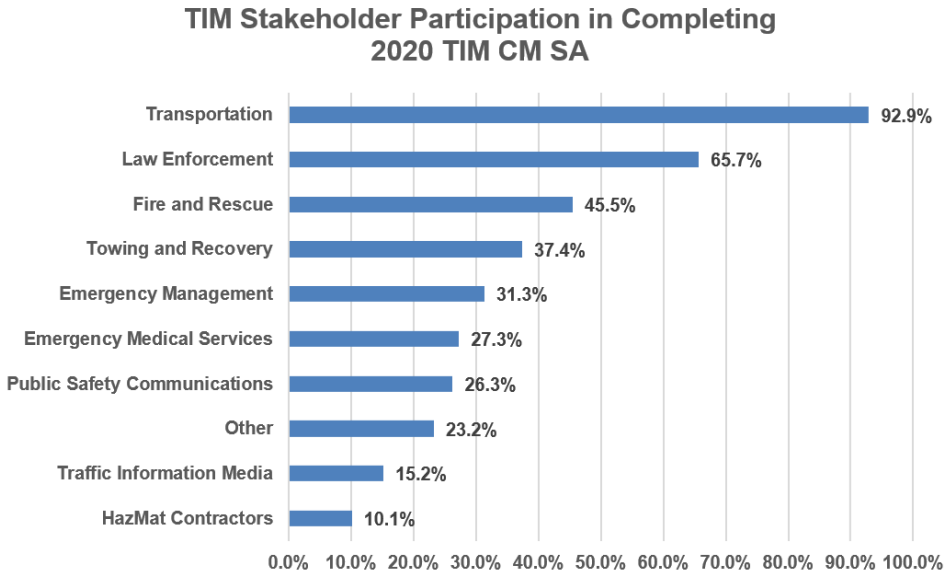
The 2020 TIM CM SA mean scores were calculated by population for the top 40 metropolitan areas, and the top 75 metropolitan areas. All other submittals were included in the mean score for non-top 75 metropolitan areas. The overall mean 2020 score was 70.0 percent (out of 100 percent), a 9.3 percent increase over the 2015 baseline. Mean scores were higher in larger metropolitan areas than in smaller areas:

- Top 40 metro areas: 74.5 percent
- Top 75 metro areas: 73.1 percent
- Non-top 75: 66.8 percent
- Overall: 70.0 percent

The TIM CM SA is intended to represent the consensus opinion of TIM stakeholders completing an annual assessment in each TIM program area (city/region/State). Starting with the 2017 TIM CM SA, an optional question was added to identify which TIM stakeholders (by stakeholder type, not by a specific name or agency) had been involved in completing the annual assessment. Despite limited in-person meetings in 2020 to complete the TIM CM SA, 77 percent of the TIM CM SA submissions included input from two or more stakeholder groups. Additionally, participation by six stakeholder groups increased in 2020:

- Law enforcement
- Fire and recovery
- Towing and recovery
- Emergency medical services
- Hazardous materials (HazMat) contractors
- Other

Figure 1 shows the percentage involvement of TIM stakeholder groups in completing the 2020 TIM CM SA. Stakeholders in the "Other" group are safety service patrol providers, local/regional governments, public works departments, consultants, port and turnpike authorities, transit, and universities. Appendix A lists all 41 TIM CM SA questions, their respective 2015 baseline and 2020 scores, and percentage of programs scoring a 3 or higher on each question.[1]



Source: FHWA.

% = percent. HazMat = hazardous material. TIM = traffic incident management. TIM CM SA = Traffic Incident Management Capability Maturity Self-Assessment.

Figure 1. Graph. 2020 Traffic Incident Management Capability Maturity Self-Assessment stakeholder participation.

[1] Scores of 3 and 4 indicate the highest levels of progress for a particular question.

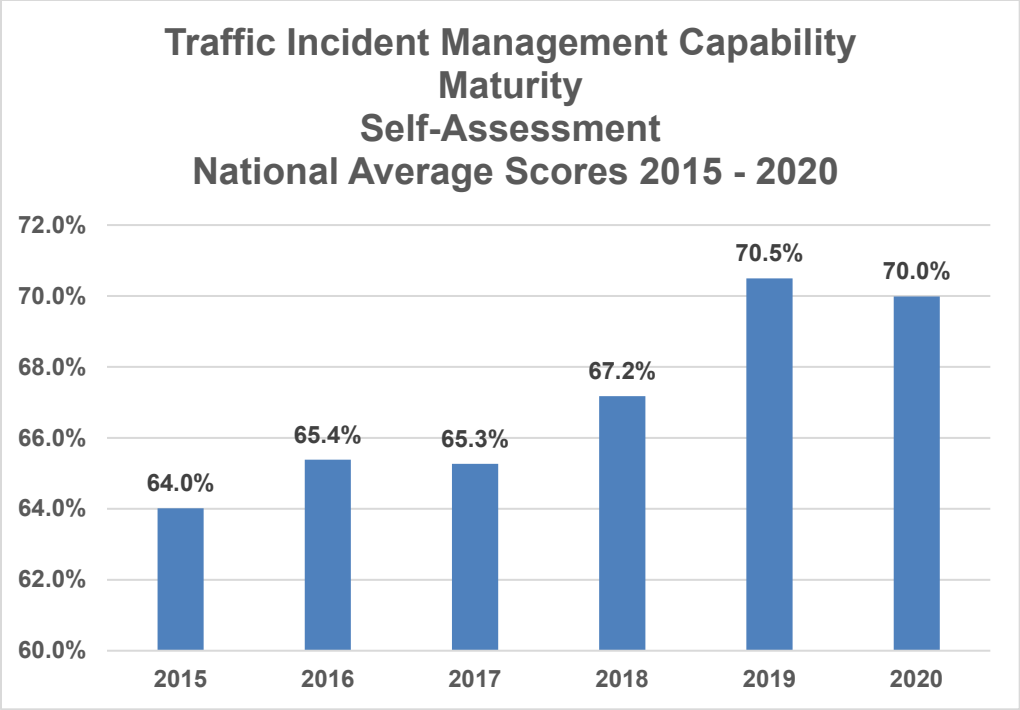
CHAPTER 1. INTRODUCTION

Since initial development of the Traffic Incident Management Capability Maturity Self-Assessment (TIM CM SA), the assessment questions, scoring, scoring guidance, and section weighting have changed to reflect advancements in traffic incident management (TIM) practices. In 2020, the TIM CM SA underwent major revisions to reduce the number of questions from 55 to 41, and to make the 2015 TIM CM SA scores the new baseline against which progress will be measured here and in the future. The Federal Highway Administration (FHWA) removed questions based on user feedback, as well as questions that routinely had high scores year after year, indicating those specific practices had been institutionalized among TIM programs. The 41 scored questions in the 2020 TIM CM SA were grouped into three sections: Strategic, Tactical, and Support.

Because of these revisions, it was necessary to recalibrate the baseline scores to protect the value of the TIM CM SA as a tool to measure national TIM progress over time. Given the scope of revisions in 2007, 2011, 2015, and 2020, FHWA decided to use the 2015 scores as the new baseline. Recalibrating baseline scores involved the following two steps:

- Mapping the 2015 TIM CM SA questions to the 2020 TIM CM SA questions to ensure the recalibrated score only included those questions remaining in 2020.
- Changing the weighting for the Strategic, Tactical, and Support sections, given the fewer questions across all three sections; this same section weighting was applied to 2015–2019 scores to align with 2020 scores.

Figure 2 shows the recalibrated national average scores from the 2015 baseline to the 2020 TIM CM SA. The slight decrease in the national average score (0.7 percent) between 2019 and 2020 is the result of the lower scores from nine locations that did not participate in the 2019 TIM CM SA. The average score for those nine locations was 53.4 percent, well below the national average score of 70.0 percent. The average score for the 90 locations that participated in the 2019 and 2020 TIM CM SAs was 71.9, which would have been an increase over the 2019 national average score of 70.5 percent.



Source: FHWA.

% = percent.

Figure 2. Graph. 2015–2020 Traffic Incident Management Capability Maturity Self-Assessment national average scores.

Interest in the TIM CM SA remains high nearly 20 years after its initial development. More than 100 participants attended a training webinar on the 2020 TIM CM SA, held on September 1, 2020.[2] Similarly, the 2020 TIM CM SA had 99 submittals for inclusion in the national analysis, up from 94 in 2019.

Throughout the three sections of the 2020 TIM CM SA, the percentage change over the 2015 baseline was generally less than 10 percent. However, several TIM program areas did see their scores increase by 10 percent or more over 2015 scores.

[2] Federal Highway Administration, Traffic Incident Management Capability Maturity Self-Assessment Training Webinar, (September 1, 2020).

CHAPTER 2. STRATEGIC SECTION

The number of questions in the Strategic section was reduced from 28 to 21, and grouped into three subsections:

- Formal Traffic Incident Management (TIM) Programs
- TIM Training and After-Action Reports
- TIM Performance Measures (TIM PM)

The TIM PM subsection is the largest, with 12 questions. Overall low TIM PM scores have typically resulted in the Strategic section scoring the lowest of the three sections; the 2020 Traffic Incident Management Capability Maturity Self-Assessment (TIM CM SA) is no different. The Strategic section scored a 64.7 percent compared to 75.9 percent in Tactical and 67.0 percent in Support. This year's Strategic score, however, represents a 9.9 percent increase over the baseline of 58.9 percent. Among the three subsections, the average scores were:

- Formal TIM Programs: 3.0
- TIM Training and After-Action Reports: 2.7
- TIM PM: 2.3

Key to the success of a formal TIM program is regular meetings for TIM team member agencies. Among the 2020 TIM CM SA participants, 68 percent indicated meeting at least four times per year, if not more. Participants noted that in 2020 their teams met virtually to advance their TIM programs, rather than in person.

Three questions in the Strategic section addressed the Federal Highway Administration's (FHWA) national TIM Responder Training Program, which was originally developed as part of the second Strategic Highway Research Program (SHRP2). Respondents were asked to score their participation in SHRP2 training, if the training is conducted in a multidiscipline setting, and if the training has been incorporated into the State or local academy and/or technical college curriculums. Prior to the 2020 TIM CM SA revisions, respondents had been asked to score their programs based on the number of responders who had completed the training, relative to the total number of responders in the State. The FHWA decided to remove this question from the TIM CM SA, because training participation is tracked through a separate initiative. According to FHWA data, as of December 14, 2020, more than 507,000 individuals have received the training, which represents 43.8 percent of total responders to be trained.[3]

Despite the challenges of in-person training in 2020, TIM responders had additional training opportunities beyond SHRP2 training including Incident Command System/National Incident Management System, livestock incidents, cable barrier incident response, hazardous materials (HazMat), push/pull/drag, and queue awareness.

[3] Federal Highway Administration, National TIM Responder Training Program Update, Talking TIM Webinar (December 15, 2020).

Five questions in the 2020 TIM CM SA had an average score at least 20 percent higher than the baseline; four of these questions were in the Strategic section, as shown in table 2. This indicates that, despite a short time line between the new 2015 baseline and 2020, TIM programs continue to make improvements in these four areas.

Table 2. Strategic questions with a score at least 20 percent higher than the baseline.

Question	Mean Score		Change from Baseline (%)
	Baseline	2020	
5. Are funds available for TIM activities?	2.4	3.0	23.0
8. Has the SHRP2 TIM Responder Training, or equivalent, been incorporated into the State or local academy and/or technical college curriculums?	1.8	2.4	34.7
18. Is the number of Secondary Crashes being measured and used? FHWA defines Secondary Crashes as the "number of unplanned crashes beginning with the time of detection of the primary crash where a collision occurs either a) within the incident scene or b) within the queue, including the opposite direction, resulting from the original incident."	1.9	2.3	22.8
19. How is data for the number of Secondary Crashes collected?	1.9	2.3	22.2

Note: The numbers in this table demonstrate general patterns, and have been rounded for ease of communication. TIM = traffic incident management. SHRP2 = second Strategic Highway Research Program.

Within the same time period between the 2015 baseline and 2020 TIM CM SA, four questions had scores that decreased from the baseline, all in the TIM PM subsection, as shown in table 3.

Table 3. Traffic Incident Management Performance Measures questions with an average score below the baseline.

Question	2020 Average Score	Change from Baseline (%)
11. Which of the following data collection and analysis practices best align with your region for RCT?	2.4	-8.5
15. Which of the following data collection and analysis practices best align with your region for ICT?	2.4	-10.4
16. Has the TIM program established performance targets for ICT?	2.1	-1.8
21. How does your agency use Secondary Crash performance data to influence TIM operations?	1.9	-14.6

Note: The numbers in this table demonstrate general patterns, and have been rounded for ease of communication. ICT = incident clearance time. RCT = roadway clearance time. TIM = traffic incident management.

For questions 11 and 15 concerning data collection and analysis for roadway clearance time (RCT) and incident clearance time (ICT), approximately 20 percent of respondents scored their programs with a 1. According to the TIM CM SA scoring guidance, programs should be scored

with a 1 if "Data are present but not necessarily accessible or useful because they are not collected with a focus on performance measures."[4] As shown in table 4, primarily the non-top 75 areas are not yet using the available data to measure RCT and ICT.

Table 4. Data collection and analysis questions for incident clearance time and roadway clearance time.

Question	Top 40 Metropolitan Area Average Score	Top 75 Metropolitan Area Average Score	Non-Top 75 Average Score
11. Which of the following data collection and analysis practices best align with your region for RCT?	2.6	2.7	2.1
15. Which of the following data collection and analysis practices best align with your region for ICT?	2.6	2.6	2.1

Note: The numbers in this table demonstrate general patterns, and have been rounded for ease of communication. ICT = incident clearance time. RCT = roadway clearance time.

Although scores for TIM PM questions have traditionally been low, progress continues in this area. As shown in table 5, only two questions in the 2020 TIM CM SA had an average score below 2.0, both on Secondary Crashes.

Table 5. 2020 questions with an average score below 2.0.

Question	Baseline	2020 Average Score
20. Has the TIM program established performance targets for a reduction in the number of Secondary Crashes?	1.4	1.6
21. How does your agency use Secondary Crash performance data to influence your TIM operations?	2.2	1.9

Note: The numbers in this table demonstrate general patterns, and have been rounded for ease of communication. TIM = traffic incident management.

TIM programs with the highest scores in the Strategic section are shown in table 6.

Table 6. Highest-scoring programs in the Strategic section.

Traffic Incident Management Program
Atlanta, Georgia
Buffalo, New York
Columbus, Ohio
Louisville, Kentucky
Miami-Dade County, Florida

[4] Federal Highway Administration, Traffic Incident Management Capability Maturity Self-Assessment 2020 User Guide and Questions (September 1, 2020).

CHAPTER 3. TACTICAL SECTION

The number of questions in the Tactical section was reduced from 22 to 17. The 17 questions focused on the following three areas:

- Traffic Incident Management (TIM) Laws.
- Policies and Procedures for Incident Response and Clearance.
- Responder and Motorist Safety.

The Tactical section was the highest-scoring section in the 2020 Traffic Incident Management Capability Maturity Self-Assessment (TIM CM SA), with an overall score of 75.9 percent. Table 7 shows that the five highest-scoring questions appeared in the Tactical section.

Table 7. Five highest-scoring questions in 2020.

Question	2020 Average Score	Percent of TIM CM SA Scoring 3 or Higher
38. Are TIM responders following high-visibility safety apparel requirements as outlines in the MUTCD?	3.4	91.9
25. Is there a Safety Service Patrol program in place for incident and emergency response?	3.3	81.8
28. Do towing and recovery procedures/rotation list policies deploy resources based on type/severity of incident?	3.3	83.8
22. Is an Authority Removal Law in place?	3.3	80.8
31. For incidents involving a fatality, is there a procedure in place for early notification and timely response of the Medical Examiner?	3.3	82.8

MUTCD = *Manual on Uniform Traffic Control Devices*. TIM CM SA = Traffic Incident Management Capability Maturity Self-Assessment.

Questions 25 and 26 asked respondents about safety service patrols (SSPs). Question 25 asked about the existence of an SSP, and question 26 asked respondents to score the SSP level of coverage. Table 8 shows the scoring guidance for question 25.

Table 8. Scoring guidance for question 25.

	25. Is there a Safety Service Patrol program in place for incident and emergency response?
Score 1 if:	There is no Safety Service Patrol Program.
Score 2 if:	A baseline Safety Service Patrol Program is in place that focuses on providing motorist assistance only (i.e., provides gasoline, changes flat tires, assists with minor repairs, etc.).
Score 3 if:	A mid-level Safety Service Patrol Program is in place that, in addition to motorist assistance, provides incident response services and clearance resources. The patrol vehicles used typically have the ability to relocate vehicles out of travel lanes through use of push bumpers or tow straps, or through use of wrecker or flatbed vehicles.
Score 4 if:	There is a sustained full-function Safety Service Patrol Program in place that provides motorist assistance, performs clearance and recovery services, and assists with emergency traffic control and scene management. There is a comprehensive training program which includes classroom and hands-on training that all Safety Service Patrol operators must complete.

Out of any question on the 2020 TIM CM SA, question 25 had the highest percentage (63.6 percent) of responses with a score of 4; this demonstrates that TIM programs across the country are relying on full-function SSPs as a core part of incident response. Furthermore, SSPs are not limited to major metropolitan areas—43 percent of locations that scored question 25 with a 4 are non-top 75 locations.

Question 26 asked respondents to score the level of coverage provided by their SSPs. The TIM CM SA scoring guidance provides the following information to score SSP coverage with a 4: "The Safety Service Patrol Program operates a large enough fleet to provide ample coverage on all major roadways (i.e., interstates, limited access highways) identified as needing service based on traffic volumes and/or incident frequency."[5] Among all respondents, 47 percent scored their SSP level of coverage with a 4; among those respondents, 40 percent were non-top 75 locations. Respondents were also asked to provide details on their SSPs, including levels of coverage, days and hours of operation, services provided, number of vehicles, equipment on vehicles, and operator training. Among respondents who reported levels of coverage, there was a combined total of 4,700 centerline miles and 10,250 lane miles, with a median of 115 centerline miles and 220 lane miles.

According to the *2019 Traffic Incident Management Capability Maturity Self-Assessment National Analysis Report*, question 32 concerning procedures for removing the deceased before arrival of the medical examiner (ME) had one of the lower average scores.[6] The 2019 report specifically identified this as an area of continued training and focus. In 2020, question 32 had an

[5] Federal Highway Administration, Traffic Incident Management Capability Maturity Self-Assessment 2020 User Guide and Questions (September 1, 2020).

[6] Federal Highway Administration, 2019 Traffic Incident Management Capability Maturity Self-Assessment National Analysis Report, FHWA-HOP-20-007, (Washington, DC: November 2019).

average score of 2.7 (i.e., a 9.9 percent increase over the 2019 score) and is now 29.9 percent over the 2015 baseline score of 2.1.

Table 9 lists the TIM programs with the highest scores in the Tactical section.

Table 9. Highest-scoring programs in the Tactical section.

Traffic Incident Management Program
Atlanta, Georgia
Bakersfield – Fresno, California
Northern Virginia, Virginia
Sacramento, California
San Diego, California

CHAPTER 4. SUPPORT SECTION

The number of questions in the Support section was reduced from five to three, and its section weighting was reduced from 20 to 10 percent. With an average score of 67 percent, scores in the Support section increased 5.9 percent over the 2015 baseline. Questions in the Support section focused on traffic incident management (TIM) video, signal timing changes to support traffic management, and pre-planned or alternate routes for moving traffic away from an incident.

With an average score of 2.9, question 39 was the highest-scoring question in the Support section: "Is TIM video captured via Traffic Management Centers (TMC) and/or public safety Computer-Aided Dispatch (CAD) systems, and is it shared with other disciplines for real-time operational purposes?" Out of all respondents, 76.8 percent scored question 39 with a 3 or higher. Immediately following question 39, a non-scored supplemental question (question 39a) asked respondents to describe their level of public safety CAD integration with traffic management center/traffic operations center software and systems. All but one location provided a score for this question; the average 2020 score was 2.5, unchanged from 2019.

With an average score of 2.4, question 40 was the lowest-scoring question in the section, which asked about signal timing changes to support traffic management during incident response. Less than 50 percent of respondents scored this question with a 3 or higher. Table 10 lists the TIM programs that achieved the highest scores in the Support section.

Table 10. Highest-scoring programs in the Support section.

Traffic Incident Management Program
Alachua – Bradford, Florida
Atlanta, Georgia
Jacksonville, Florida
Lee – Charlotte, Florida
Louisville, Kentucky
Norfolk – Virginia Beach, Virginia
Northern Virginia, Virginia
Philadelphia, Pennsylvania
Phoenix, Arizona
Polk County, Florida
San Bernardino, California
San Francisco – San Jose, California
Sarasota, Florida

CHAPTER 5. SUMMARY OF RESULTS

In the 2020 Traffic Incident Management Capability Maturity Self-Assessment (TIM CM SA), the average overall score was 70.0 percent (out of 100 percent). Mean scores were calculated for the top 40 metropolitan areas (by population), top 75 metropolitan areas, and non-top 75 metropolitan areas. The Tactical section received the highest scores (75.9 percent). The Strategic section had the largest percentage increase (9.9 percent) in scores from the baseline.

The six lowest-scoring questions appeared in the Traffic Incident Management Performance Measures (TIM PM) subsection, shown in table 11. The TIM PM subsection has historically seen lower scores ever since the initial assessments in 2003. For five of the six questions, less than 50 percent of respondents scored their programs with a 3 or higher. This indicates additional work is needed in the TIM PM area.

Table 11. Lowest-scoring questions in 2020.

Question	2020 Average Score	Percent of TIM CM SA Scoring 3 or Higher
20. Has the TIM program established performance targets for a reduction in the number of Secondary Crashes?	1.6	15.2
21. How does your agency use Secondary Crash performance data to influence your TIM operations?	1.9	29.3
16. Has the TIM program established performance targets for ICT?	2.1	36.4
17. How does your agency use ICT performance data to influence your TIM operations?	2.3	47.5
18. Is the number of Secondary Crashes being measured and used? FHWA defines Secondary Crashes as the "number of unplanned crashes beginning with the time of detection of the primary crash where a collision occurs either a) within the incident scene or b) within the queue, including the opposite direction, resulting from the original incident."	2.3	55.6
19. How is data for the number of Secondary Crashes collected?	2.3	49.5

FHWA = Federal Highway Administration. ICT = incident clearance time. TIM = traffic incident management. TIM CM SA = Traffic Incident Management Capability Maturity Self-Assessment.

APPENDIX A. SUMMARY OF 2020 TRAFFIC INCIDENT MANAGEMENT CAPABILITY MATURITY SELF-ASSESSMENT RESULTS

Table 12. 2020 Traffic Incident Management Capability Maturity Self-Assessment scores.

Question	Mean Score			Percent Scoring 3 or Higher	
Strategic	**Baseline**	**2020**	**Change from Baseline (%)**	**Baseline**	**2020**
1. Is there a formal Traffic Incident Management (TIM) program that is supported by a multidiscipline, multi-agency team or task force, which meets regularly to discuss and plan for TIM activities?	2.9	3.1	7.3	66.3	81.8
2. Are all disciplines represented and key agencies participating in on-going TIM enhancement activities/efforts?	2.9	3.1	9.8	66.3	84.8
3. Is there a full-time position within at least one of the participating agencies with responsibility for coordinating the TIM program as their primary job function?	2.8	3.0	9.5	52.6	64.6
4. Is planning to support TIM activities, including regular needs assessments, done across and among participating agencies?	2.7	2.9	8.9	55.8	70.7
5. Are funds available for TIM activities?	2.4	3.0	23.0	40.0	67.7
6. Have stakeholders in the region participated in a second Strategic Highway Research Program (SHRP2) National TIM Responder Training Program, or equivalent, Train-the-Trainer (TtT) session and are they actively training others?	2.5	2.8	8.9	47.4	64.6
7. Is the SHRP2 TIM Responder Training being conducted in a multidiscipline setting?	3.0	3.0	2.4	66.3	66.7

Note: The numbers in this table demonstrate general patterns, and have been rounded for ease of communication.

Table 12. 2020 Traffic Incident Management Capability Maturity Self-Assessment scores. (continuation)

Question	Mean Score			Percent Scoring 3 or Higher	
Strategic	**Baseline**	**2020**	**Change from Baseline (%)**	**Baseline**	**2020**
8. Has the SHRP2 TIM Responder Training, or equivalent, been incorporated into the State or local academy and/or technical college curriculums?	1.8	2.4	34.7	10.5	36.4
9. Does the TIM program conduct multidiscipline, multi-agency after-action reviews (AARs)?	2.6	2.8	8.8	45.3	61.6
10. Is Roadway Clearance Time (RCT) measured and used by your agency? The Federal Highway Administration (FHWA) defines RCT as the "time between first recordable awareness of an incident by a responsible agency and first confirmation that all lanes are available for traffic flow."	2.5	2.7	8.1	53.7	63.6
11. Which of the following data collection and analysis practices best align with your region for RCT?	2.6	2.4	-8.5	53.7	49.5
12. Has the TIM program established performance targets for RCT?	2.2	2.5	12.5	33.7	50.5
13. How does your agency use RCT performance data to influence your TIM operations?	2.2	2.4	9.0	35.8	54.5
14. Is Incident Clearance Time (ICT) measured and used by your agency? FHWA defines ICT as the "time between the first recordable awareness of the incident and the time at which the last responder has left the scene."	2.4	2.6	7.1	49.5	57.6

Note: The numbers in this table demonstrate general patterns, and have been rounded for ease of communication.

Table 12. 2020 Traffic Incident Management Capability Maturity Self-Assessment scores. (continuation)

Question	Mean Score			Percent Scoring 3 or Higher	
Strategic	**Baseline**	**2020**	**Change from Baseline (%)**	**Baseline**	**2020**
15. Which of the following data collection and analysis practice best aligns with your region for ICT?	2.6	2.4	-10.4	53.7	48.5
16. Has the TIM program established performance targets for ICT?	2.2	2.1	-1.8	33.7	36.4
17. How does your agency use ICT performance data to influence your TIM operations?	2.2	2.3	1.8	35.8	47.5
18. Is the number of Secondary Crashes being measured and used? FHWA defines Secondary Crashes as the "number of unplanned crashes beginning with the time of detection of the primary crash where a collision occurs either a) within the incident scene or b) within the queue, including the opposite direction, resulting from the original incident."	1.9	2.3	22.8	31.6	55.6
19. How is data for the number of Secondary Crashes collected?	1.9	2.3	22.2	29.5	49.5
20. Has the TIM program established performance targets for a reduction in the number of Secondary Crashes?	1.4	1.6	16.5	10.5	15.2
21. How does your agency use Secondary Crash performance data to influence your TIM operations?	2.2	1.9	-14.6	35.8	29.3

Note: The numbers in this table demonstrate general patterns, and have been rounded for ease of communication.

Table 12. 2020 Traffic Incident Management Capability Maturity Self-Assessment scores. (continuation)

Question	Mean Score			Percent Scoring 3 or Higher	
Tactical	**Baseline**	**2020**	**Change from Baseline (%)**	**Baseline**	**2020**
22. Is an Authority Removal Law in place?	3.0	3.3	7.9	73.7	80.8
23. Is a Driver Removal Law in place?	2.9	3.0	3.7	72.6	78.8
24. What activities are in place to outreach to and educate responders and the public about the value of TIM laws in place as well as the overall goals and benefits of TIM?	2.4	2.7	15.8	46.3	71.7
25. Is there a Safety Service Patrol program in place for incident and emergency response?	3.1	3.3	7.6	74.7	81.8
26. What level of coverage does the Safety Service Patrol program provide?	2.9	3.1	7.8	74.7	77.8
27. Are temporary traffic control (TTC) devices (e.g., cones, advanced warning signs, etc.) pre-staged in the region to facilitate timely response?	2.6	2.9	10.5	52.6	68.7
28. Do towing and recovery procedures/rotation list policies deploy resources based on type/severity of incident?	3.1	3.3	4.6	74.7	83.8
29. Do towing and recovery procedures/rotation list policies include company/operator qualifications, equipment requirements, and/or training requirements?	2.8	3.1	10.6	63.2	75.8
30. Do towing and recovery procedures/rotation list policies include penalties for non-compliance of response criteria?	2.5	2.9	16.5	55.8	66.7
31. For incidents involving a fatality, is there a procedure in place for early notification and timely response of the Medical Examiner?	2.9	3.3	12.4	66.3	82.8

Note: The numbers in this table demonstrate general patterns, and have been rounded for ease of communication.

Table 12. 2020 Traffic Incident Management Capability Maturity Self-Assessment scores. (continuation)

Question	Mean Score			Percent Scoring 3 or Higher	
Tactical	**Baseline**	**2020**	**Change from Baseline (%)**	**Baseline**	**2020**
32. For incidents involving a fatality, is there a procedure for the removal of the deceased prior to Medical Examiner arrival?	2.1	2.7	29.9	66.3	54.5
33. Are there procedures in place for expedited crash investigations?	2.7	2.8	4.6	51.6	64.6
34. Do TIM responders routinely utilize temporary traffic control devices to provide traffic control for the three incident classifications (minor, intermediate, major) in compliance with the *Manual on Uniform Traffic Control Devices* (MUTCD)?	2.8	3.1	10.7	61.1	78.8
35. Do TIM responders routinely utilize traffic control procedures to provide back of traffic queue warning to approaching motorists?	2.7	3.0	7.8	63.2	74.7
36. Is there a mutually understood procedure/guideline in place for safe vehicle positioning?	2.9	3.2	10.7	63.2	82.8
37. Are there mutually understood procedures/guidelines in place for use of emergency-vehicle lighting?	2.7	2.9	8.0	63.2	69.7
38. Are TIM responders following high-visibility safety apparel requirements as outlined in the MUTCD?	3.3	3.4	4.6	63.2	91.9

Note: The numbers in this table demonstrate general patterns, and have been rounded for ease of communication.

Table 12. 2020 Traffic Incident Management Capability Maturity Self-Assessment scores. (continuation)

Question	Mean Score			Percent Scoring 3 or Higher	
Support	**Baseline**	**2020**	**Change from Baseline (%)**	**Baseline**	**2020**
39. Is TIM video captured via Traffic Management Centers (TMC) and/or public safety CAD systems and is it shared with other disciplines for real-time operational purposes?	2.8	2.9	2.1	68.4	76.8
40. Are there policies or procedures in place for signal timing changes to support traffic management during incident response?	2.2	2.4	10.2	33.7	44.4
41. Are there pre-planned detour and/or alternate routes identified and shared between TIM stakeholders?	2.6	2.8	6.2	58.9	61.6

Note: The numbers in this table demonstrate general patterns, and have been rounded for ease of communication.

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Office of Operations Web Site
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September 2021
FHWA-HOP-21-022