



# Traffic Incident Management

## L01 e-Tool Demo

*North Central Texas Council of Governments  
(NCTCOG)*




U.S. Department of Transportation  
Federal Highway Administration

AMERICAN ASSOCIATION  
OF STATE HIGHWAY AND  
TRANSPORTATION OFFICIALS

**AASHTO**

TRANSPORTATION RESEARCH BOARD  
OF THE NATIONAL ACADEMIES

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- North Central Texas Council of Governments (NCTCOG) in Dallas-Fort Worth, TX region
  - Reducing congestion in the region through a coordinated, regional Freeway Incident Management (FIM) program focused on the quick detection and clearance of incidents
  - Essential program elements include a Mobility Assistance Patrol (MAP) program and a FIM training course




NCTCOG has a desire to improve business processes within the following topics:

1. Institutionalizing their performance measurement process
2. Establishing a regional TIM group to meet on a regular basis
3. Identifying a sustainable funding source that would allow them to expand service for their Mobility Assistance Patrol (MAP) Program
4. Improving incident identification, response, traffic management, and clean-up
5. Improved communication between police and tow truck companies

## Step 1: Identifying Influences

The first step in this methodology involves determining what influences made it apparent that there is a need to improve business processes in order to improve travel time reliability. There are three categories of influences identified in the SHRP2 Report: Integrating Business Processes to Improve Travel Time Reliability. They are top down, also known as “big directive”, event driven, and needs or opportunity based, also known as “grassroots”.

<b>TIER</b>	<b>DESCRIPTION OF INFLUENCE</b>	<b>CASE STUDIES</b>
<b>Tier 1: Big Directive (Top Down)</b>	Big-directive influences are typically legislative requirements or management-level directives. Broad external factors such as safety concerns, economic parameters, or larger governmental accountability initiatives also may drive the influence. Big-directive influences tend to greatly accelerate process development, integration, and change and also increase accountability of those responsible for implementing.	<ul style="list-style-type: none"> <li>• WSDOT Joint Operations Policy Statement and Instant Tow Program</li> <li>• NCDOT Traffic and Safety Operations Committee</li> <li>• Kansas Speedway Special Event Traffic Management</li> </ul>
<b>Tier 2: Event Driven</b>	Event-driven influences are caused by a specific event or hazard that prompts a need for improving process integration. The initial event can prompt change, but if the event does not recur, momentum or support for the change can erode over time.	<ul style="list-style-type: none"> <li>• MDOT Work Zone Traffic Control Modeling</li> <li>• NDOT I-80 Winter State-Line Closures</li> </ul>
<b>Tier 3: Needs Based/ Opportunity Based (Grassroots)</b>	Needs-based/opportunity-based influences evolve over time according to recurring needs. These types of changes typically affect day-to-day operations and begin at the grassroots level of an organization.	<ul style="list-style-type: none"> <li>• Florida Road Rangers Freeway Service Patrol Program</li> <li>• The Palace at Auburn Hills Special Event Traffic Management</li> <li>• San Pablo Avenue Signal Retiming</li> <li>• AZTech Regional Archived Data Server</li> <li>• United Kingdom Active Traffic Management</li> </ul>



To complete Step 1, choose the type of influence applicable to the current process from the drop-down menu below. Use the box below to describe the influences for the process that caused a need to improve travel time reliability.

When finished, click Next at the top/bottom of the screen to move on to step 2.

Choose type of influence:

Top-down ▼


Please describe your influences:

Current business processes were influenced by a Big Directive (Top Down) to be more responsive to incident management and clearance; however, there was also a Needs Based/Opportunity Based (Grassroots) influence at the staff level to improve incident management and response. The current interlocal agreement between Dallas PD and DSO was implemented because police officers saw that things weren't working well and decided to implement the change. When DSO assumed responsibility for traffic management on the freeways within the City of Dallas' jurisdiction, they continued this approach but implemented different business processes for responding to incidents.

Air quality issues, which may be classified as a top-down influence, are another influence on the towing component of the region's FIM program, since Dallas is considered a non-attainment area.

In addition, there are policy level influences that restrict the processes that can be used for incident clearance. The City of Dallas uses a rotation policy with private vendors, while the DSO has an agreement with the Dallas County Towing Consortium. |






## **Step 2: Defining the specific reliability goal**

The second step in this methodology is to identify and define the reliability goal or goals that the agency can use to measure the effect of the business process implemented to improve travel time reliability. A reliability goal focuses agency efforts on the problem at hand regardless of any specific process used to achieve that goal. Goals also assist in the development of benchmarks that an agency can use to determine how well the process is meeting the identified need.

Reliability goals may include

- Reducing incident clearance time
- Providing 24/7 operations
- Improving resource efficiency
- Reducing congestion
- Reducing delays




Use the area below to describe the reliability goal for this process. Be sure to choose a measurable goal related to improving travel time reliability.

When finished, click Next at the top/bottom of the screen to move on to step 3.

Please describe your reliability goal(s):

Reduce delay due to commercial vehicle crashes. Commercial vehicle crashes cause significant delays and are really becoming an issue. Several downtown area Interstates are also designated as hazardous material routes, which adds additional travel delays and response burden when there is an incident.

Improve incident response capabilities/reduce response times. Heavy duty wrecker response times are slow, especially when they get caught upstream of the crash site in the backup. There is also a need to improve routing for police officers responding to a crash location. DSO typically dispatches multiple squads to respond to a crash. Goals include increasing responder access to CCTV video feeds, improving sharing of resources between the City and County, and improving the efficiency of response to the scene.




### **Step 3: Identifying and Documenting Current Business Processes**

Once reliability goals are identified, it is important to identify and document the current business process and workflow. A business process defines a series of actions or activities that result in a specific or desired outcome to accomplish a specific organizational goal. The process includes actions that are taken every day, but the connections between all stakeholders, their roles, the communication or data flows, and the intersection of those data or communication flows may not have been formally mapped at this point. The purpose of this step is to formally document the current process to visually facilitate a better understanding of that process.

There are important benefits in documenting the existing or baseline processes. One benefit is understanding how the data flows, the decisions points, and where the process integration occurs. Understanding the critical entities and actions that effect travel time reliability and performance on a broader scale will help an agency identify areas for improvement. By documenting the current processes, the agency or stakeholders will also be able to identify critical gaps or issues and key components or enablers to establish a more efficient process. Documenting the processes also helps to identify stakeholders that are missing from the current process, and formalize roles and responsibilities to improve the continuity of the business process with personnel changes.





To describe your existing process, either upload a pertinent Business Process Model file or describe the process in the box below. When finished, click Next at the top/bottom of the screen to move on to step 4.

Upload new or select existing Business Process Model file:

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Upload

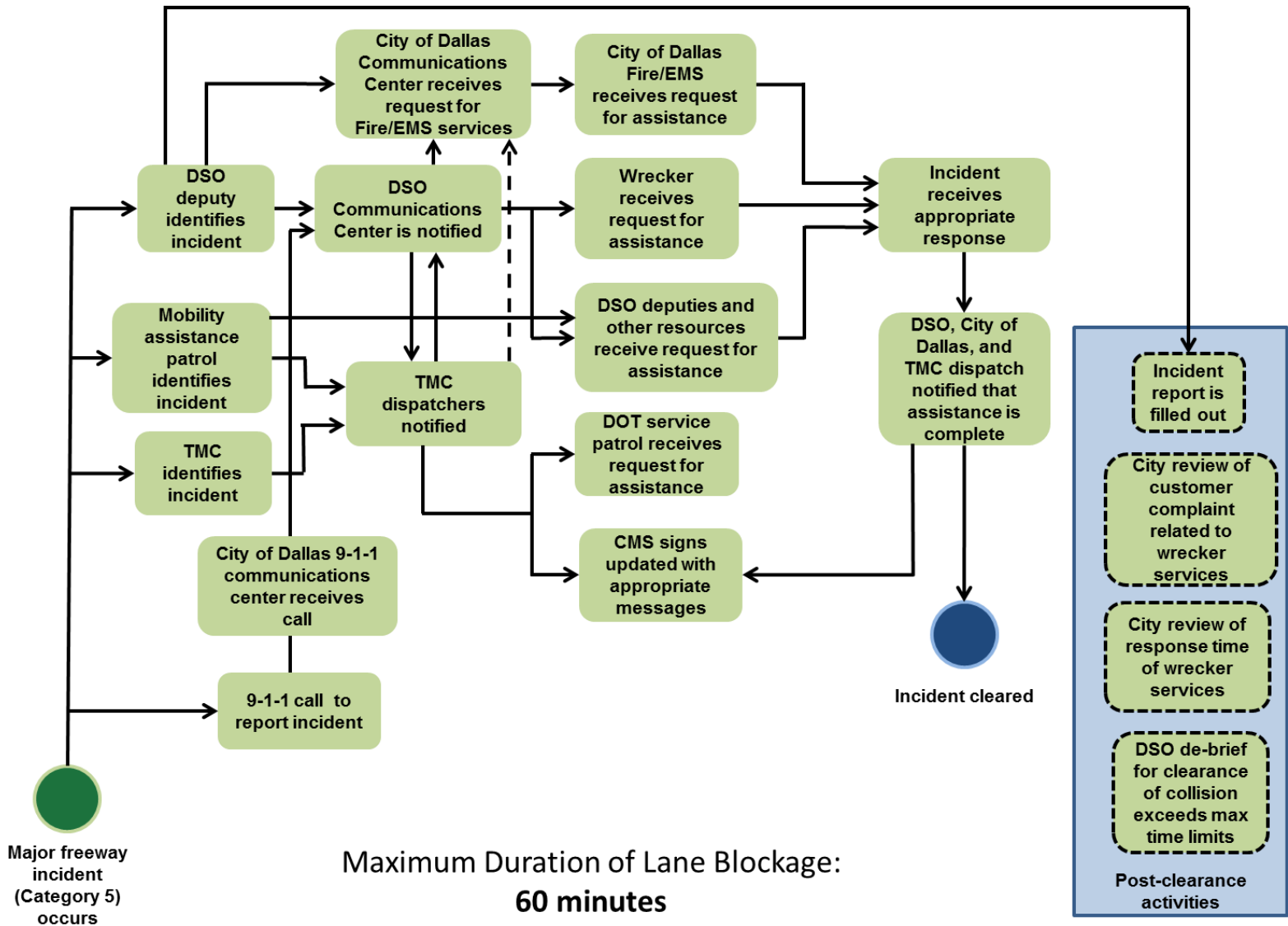
Open


Remove

Please describe your existing process (optional):

The sequence of events is the same for commercial vehicles, except that the 60 minute timeframe will typically get stretched. It was suggested that TMC involvement could help to direct response vehicles to the site or provide video feeds to first responders. During special events, police officers also monitor for traffic and homeland security issues.


DSO performs a debrief when incidents go beyond a specific clearance time goal. They generate Over Limit Reports to see which incidents go over the clearance time goals. These typically involve major incidents and fatalities. Commercial vehicle rollovers also frequently go outside typical incident classification parameters. The debriefs allow them to identify systematic problems and specific improvements that can be made. |





## **Step 4: Developing/Changing and Implementing Process**

This step is broken down into two parts. The first, develop or change the process, builds upon the process map built in step 3. Solutions to identified needs and goals are addressed here and incorporated into the existing process maps. Utilizing the influences identified in Step 1 will help to guide the changes in processes to improve travel time reliability. Involving key personnel that work closest to the process is beneficial, as they will have extra incentive to produce an effective process.



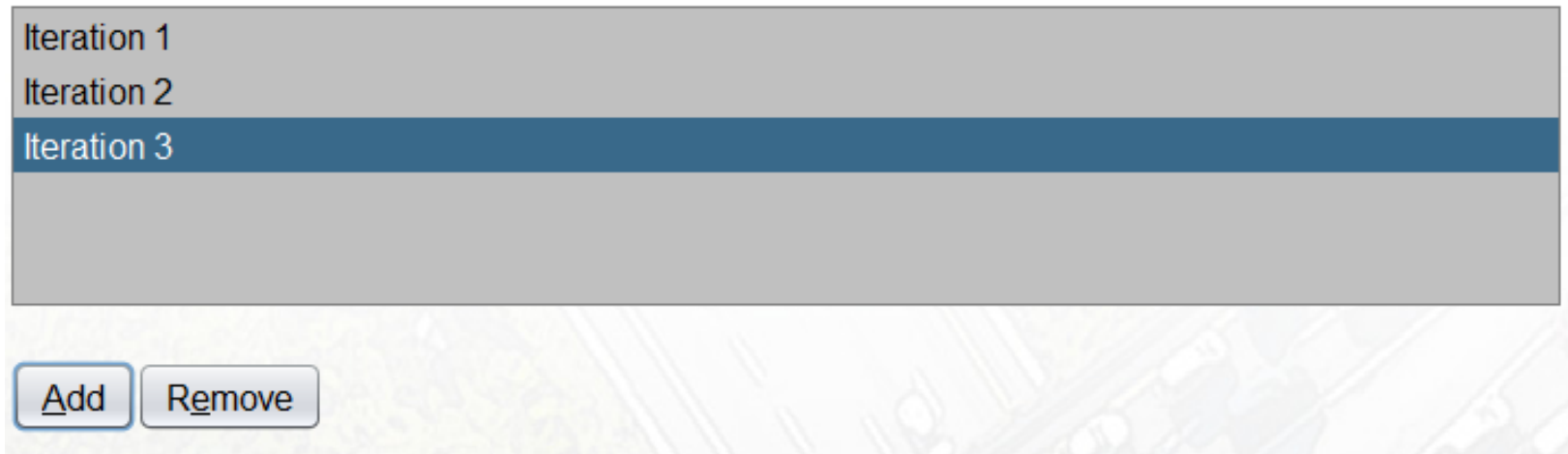
Because step 4 may have multiple iterations before it is deemed acceptable to move on, this tool will allow the storage of information for multiple iterations.

**To add an iteration**, click the Add button then update the process maps and use the text box at the bottom of the page to describe how the changes were implemented.

**To view or edit an old iteration**, click on the appropriate iteration.


When finished, click Next at the top/bottom of the screen to move on to step 5.

Iterations:



The screenshot shows a list of iterations within a grey-bordered container. The list contains three items: 'Iteration 1', 'Iteration 2', and 'Iteration 3'. 'Iteration 3' is highlighted with a dark blue background. Below the list, there are two buttons: 'Add' and 'Remove', both with rounded corners and a light blue gradient.

Iteration 1
Iteration 2
Iteration 3



Add New Or Changed Process Documents in Iteration 1:

Upload

Open

Remove


Please describe your newly developed or changed process in Iteration 1 (optional):

Improve efficiency within the individual components of the incident timeline.

Please describe how you will implement your process in Iteration 1:

The 60 minute timeline could be broken out to identify gaps in the individual components of the timeline (e.g., response time for emergency responders, response time for wreckers, incident clearance time, etc.) and improvements needed to close the gaps. |






## **Step 5: Assessing Process**

Step 5 involves assessing the process. Some level of assessment is important to determine the effectiveness of that process. Step 5 is the third part of the iterative cycle introduced in step 4. The results of this assessment are then either fed back into step 4 in order to make additional changes, or are used in moving forward to the next step of the overall process.

Ensuring that a measure of success, a method for continuous evaluation, and data needed to complete the evaluation is important. These things provide a means to communicate the effectiveness of the process with senior managers and vital staff. By measuring the effectiveness of the process, opportunities are available to periodically evaluate performance in an ongoing effort for improvement of travel time reliability. It is also important to assess processes against pre-implementation conditions; this will provide an opportunity to determine if any changes made to business processes are effective at improving travel time reliability.



Please describe the performance measures you will be assessing in Iteration 1:

Reliability performance measures include the buffer index and national TIM measures related to incident response/clearance times.

Please describe the methods you will use to evaluate your performance measures in Iteration 1:


TxDOT and the Tollway Authority have incorporated the performance measures into their control system to track measures and secondary crashes. Tow truck operators are required to respond to incidents within a specific time period, and these performance measures are reported to the County on a regular basis. |

Please describe the data you will need to evaluate your performance measures in Iteration 1:

Please enter the collected data you need to evaluate your performance measures in Iteration 1:

Please detail the findings/results of your evaluation in Iteration 1:


Performance measures have worked well in helping them to identify FIM improvement areas.



## **Step 6: Documenting Process**

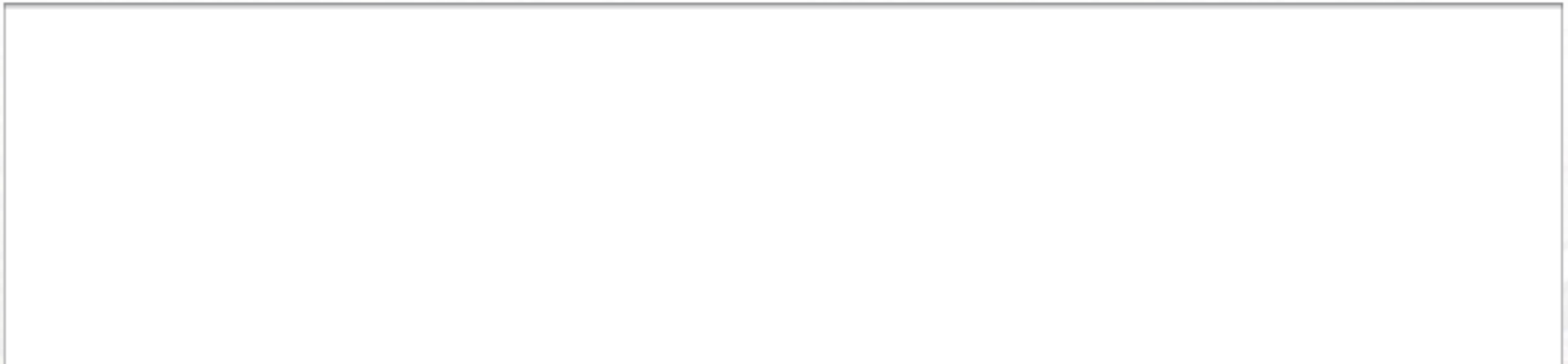
Documentation typically occurs once the process has been implemented and proven effective. Documentation is intended to provide detailed steps of the business process, the evaluation process, and the stated benefits and lessons learned. Documentation should also include the roles and responsibilities of the stakeholders involved in the future.

Documentation will help to demonstrate performance against the goals identified in Step 2 and will also facilitate easier updates and modifications to the process in the future. If time is not available to prepare detailed process models, it is recommended that at minimum, key steps, relationships, information exchanges, and other details be documented. These types of documentation can be achieved through developing internal memorandums, informal memorandums of understanding (MOU), user guides, or other complex agreements between stakeholders.



Below is an area available to describe the documentation for this process, as well as an option to upload the documentation. Large documents, such as user guides, and diagrams should be uploaded. To access a document that has been uploaded, select the document, and then click Open. When finished, click Next to move on to the final step.

Please describe how you will document your process/changes:




## **Step 7: Institutionalizing the Process**

The seventh and final step is institutionalizing the process. It is the way in which a new or changed process is incorporated into existing policies or management programs. Institutionalizing typically starts at the higher levels of an organization, but must be able to survive changes in management and personnel. The most successful business processes rely on linking the process to firmly established agency goals, objectives, or mission-critical activities.

There are four main strategies and considerations to keep in mind when institutionalizing processes. The first item to keep in mind is the importance of buy-in and ongoing support for the process. If the stakeholders do not support and encourage the use of identified business processes, it may not remain a viable process. The second strategy that will greatly assist in institutionalizing business processes is developing formal documentation that is accessible and available to all stakeholders. This formal documentation and accessibility of the documentation will help institutionalize implemented processes to improve travel time reliability.

The third consideration is focusing on the sustainability of the documentation. Formal agreements tend to last longer than informal ones. Lastly, remember that performance management programs can provide an important back-check and justification for continued support of implemented processes. A success performance management program extends beyond monitoring and reporting on key performance indicators by using the outcomes to better inform management and programmatic decisions.





Use the text box below to describe how the process will be institutionalized. Keep the strategies and considerations discussed above in mind when completing this section.

Please describe how you will institutionalize your process: