



Traffic Guidelines Manual

ORIGINATOR State Traffic Engineer	6-3-10
CHAPTER 6	Work Zone Traffic Control
SECTION 3	Elements
SUBJECT 10	Work Zone Incident Management Plans (IMPs)

Introduction

Incident management plan is a set of strategies used to manage work zone traffic operations. These strategies include monitoring traffic conditions within the work zone and adjusting traffic operations based on changing conditions. IMP's address unplanned events or incidents for TMP project type 2 and 3 on freeways/expressways, and all TMP type 4 projects to ensure effective management of responses within the work zone. Formal IMP documents are not required for TMP type 2 and 3 projects on conventional highways, but if the project has detours or other temporary access restrictions, coordinate with emergency service providers regarding incident and access planning. Modify and update the IMP to address field issues as they occur. An IMP helps the contractor and the Department to respond appropriately to incidents during construction within a reasonable timeframe in order to maintain traffic flow through the work zone safely. The IMP is part of the TMP and shall be submitted along with the TMP at the time of the completion of the draft PS&E. The draft IMP should be submitted along with the TMP worksheet at the time of the Design Study Report (DSR).

It is the intent of WisDOT to minimize impacts and delays to motorists and to promote safety in work zones. Planning for traffic incidents that occur within work zones is a critical component of reducing delay and increasing the safety, mobility and reliability of the highway system. The level of complexity of the IMP reflects the duration and complexity of the project and its impacts in the corridor/network. Long-term, complex reconstruction projects, such as the Marquette Interchange, necessitate comprehensive effort with procedures and processes to support the project. Short-term projects on lower-volume roads may simply require a meeting and/or some ongoing coordination with the appropriate local or regional emergency response agency.

Each project presents unique problems for emergency responders and the management of incidents that occur in the work zone. The intent of an IMP is to provide guidance and assistance in selecting mitigation strategies that meet the needs of the WisDOT, the contractor, and emergency responders, while enhancing safety and mobility.

Answers to the questions listed below may help identify appropriate elements in the IMP.

- How will this project impact emergency responses in this corridor?
- Are there access issues for responding to incidents within the work zone?

- If an incident closes the highway in one or both directions, how will traffic be re-routed?
- Are there strategies to minimize project impacts on response agencies?
- Are there strategies to minimize incident impacts on the public?
- Are there procedures that would enhance incident clearance and safety?
- How will project personnel coordinate and assist emergency responders?

If it is determined that additional strategies are needed to ensure stakeholders' needs are met during construction, the strategies should be identified, documented, and implemented. They may include:

- Contact lists for construction and utility personnel, (Include with IMP documentation when the contact lists become available.)
- Procedures for communicating with the contractor during an incident, (Include with IMP documentation when the procedures become available.)
- Procedures for updating response agencies on traffic control changes,
- Emergency access requirements,
- Variable message signs or other traveler information strategies,
- Detour routes to be used in the event of a long-term incident.

On more complex projects where there is no traffic incident management in place, project staff and the contractor should meet with response agencies in the area to identify concerns and consider a full range of strategies to address these concerns. On projects with multiple phases, it may be necessary to develop a plan for each phase of the project. The procedures and recommended strategies should be documented and distributed to all response agencies and construction personnel. Strategies that require implementation (e.g. signing, ITS devices, traffic management center, service patrol) should be planned and budgeted as part of the project and implemented at the start of the project. Training and follow-up sessions will be necessary to ensure that all agencies and construction personnel are familiar with the procedures in the plan. These should also be reviewed, revised and updated as necessary throughout the life of the project.

Some of the tools that might be included in the documentation include:

- Incident levels and associated actions,
- Lists of response agencies,
- Roles and responsibilities of response agencies,
- Contact information and procedures,
- Scene management guidelines,
- Predetermined alternate routes,
- Resource information,

On any project, the minimum requirement should be to identify whether there is an existing program and determine the role of the contractor in implementing the program. Project staff or the contractor should also contact appropriate response agencies in the corridor to discuss their concerns with the proposed work zone and agree to procedures and strategies that will support traffic incident management. This communication and coordination is essential for any work zone. On more complex projects, this coordination will become more formalized and require the involvement of more stakeholders. It will necessitate a greater commitment of time and resources on the part of the contractor.

IMP Requirements

Identify Stakeholders

In order to ensure work zones are safe and minimize the impact and delay to the traveling public, the plan should be developed in a collaborative effort with the emergency response and public safety community and incorporated in the transportation management plan. Planning for incidents that occur within work zones is a critical component for reducing delay and increasing the safety and reliability of the transportation system. Identify special events that may occur during the construction and may affect work times. Acquire special event coordinator contact information

The Regional Project Development Section (PDS) is responsible for developing a project's TMP. The IMP should be developed by the Regional PDS in coordination with the Regional Traffic Section and Statewide Traffic Operations Center (STOC).

Costs

Determining the costs to procure and deploy certain traffic control devices and types of mitigation strategies need to be identified during the scoping of the project. At the latest, the costs should be determined with the TMP.

Work Zone Incident Management Plan Standard Format (i.e., Incident Response Guide)

Each work zone IMP should include an Incident Response Guide that provides a quick, in-the-field reference to response personnel. This ensures fast, effective and consistent responses to incidents. The format listed below in Figure 1 is the standard table of contents that should be used when developing each IMP. The requirements of each section are described more in depth within this document.

Figure 1. Work Zone Incident Management Plan Outline

Project Summary
Checklists
STOC Checklist
Law Enforcement Checklist
Project Leader Checklist
Regional Incident Management Coordinator (RIMC) Checklist
Regional Duty Officer (RDO) Checklist

Emergency Contact Information (when it becomes available)
Alternate Routes
Work Zone Queue Backup Levels
Available Barricade Locations for Ramp Closures
Activation of Traveler Information Systems
Normal Configuration
Operational Backups (No Incident)
Backups (Incident)
Closed Highway
Appendices
A. Alternate Route Maps (develop or insert if already available)
B. Queue Backup and Work Zone Location Maps
C. Emergency Access, Pullout and Traveler Information Equipment Location Map
D. Project Location Map
E. Traffic Volume Charts

Project Summary

The project summary and description should be described in the IMP. It may simply be the description used in the TMP document. The project summary should describe the location and type of project, the number of construction stages including where the closures will occur and anticipated dates and special events that may affect the work zone. Also include a brief description of traffic volumes and any extraordinary circumstances that need to be accounted for.

Checklists

Checklists are provided for use by the STOC, law enforcement officer, project leader, Regional Incident Management Coordinator (RIMC) and Regional Duty Officer (RDO) in the event of an incident on the freeway/expressway system. Regular check-ins and after action reviews are recommended for all involved.

During an incident involving a work zone on the highway system, the STOC should follow the checklist listed below in order to collect the necessary information regarding the incident which occurred, contact the response team and update the traveler information systems with appropriate up-to-date information.

STOC Checklist

- When receiving call from law enforcement, ensure they provide the following information:
 - Location of incident
 - Is it located in a work zone
 - Affected lanes
 - Incident type
 - Approximate incident duration
 - Extent of backup
- Must have immediate contact with:
 - RIMC when there is a full highway closure in one or both directions that is expected to last greater than two hours
 - RIMC whenever back-ups with or without an incident reach 3 miles or greater.
 - Contact PIO, if available
 - After incident and/or backup, ensure message boards are returned to lower level or normal configuration.
 - RDO if contractor or project staff assistance is needed in a work zone
 - SINS e-mail sent for any incident blocking 50% or more of the highway lanes and/or a system ramp
 - Freeway Service Team (if available)
- Once Alternate Routes are implemented, STOC will refer to the alternate route guide.
- Change traveler information in the following order:
 - Message Boards
 - Message on Highway Advisory Radio
 - Place 511 message if necessary
- Regular check ins

During an incident involving a work zone on the highway system, the responsible law enforcement agency should follow the checklist listed below in order to report the necessary information regarding the incident which occurred, identify the severity of the incident, and deploy traffic control.

Law Enforcement Checklist

- Contact dispatch to report any incident or backups and the following information:
 - Identify incident type

- Location of incident
- Indicate best route to incident
- Extent of backup
- Establish a field command post
- Is it located in a work zone
- Affected lanes
- Identify Incident Classification
 - Minor – Less than 30 minutes incident duration
 - Intermediate – 30 minutes to 2 hour incident duration
 - Major – Greater than 2 hour incident duration
- Initiate traffic control as appropriate.
 - If traffic message boards required, contact STOC
- Inform media of highway incident (TIA)
- State Patrol Dispatch will contact STOC 1-800-375-7302 and advise of the above information.
- If assistance is needed in work zone, contact STOC
- If specialized equipment is needed in work zone see contact list or list contacts:
 - Equipment type: _____ Contractor Contact: _____
(Ex. Crane to move barrier wall)
- At the conclusion of the incident make appropriate demobilization notifications.

The WisDOT Project Leader will follow the necessary steps during an incident.

Project Leader Checklist

- Project Leader will contact event incident commander or State Patrol Duty Officer as situation warrants.
- Project Leader will function as liaison for Contractors
- Project Leader will contact Project Manager and/or Project Supervisor at backups of 5 miles or as situation warrants.

The WisDOT Regional Incident Management Coordinator (RIMC) will follow the necessary steps during an incident.

RIMC Checklist

- RIMC will contact Project Leader as situation warrants
- RIMC will contact event incident commander or State Patrol Duty Officer as situation warrants
- RIMC will function as liaison for County Highway Departments
- RIMC will contact DTSD Regional Duty Officer at backups of 5 miles or as situation warrants.
- RIMC will perform regular check ins

The WisDOT Regional Duty Officer (RDO) will follow the necessary steps during an incident.

RDO Checklist

- RDO will coordinate project resources with Contractor or Regional Staff as situation warrants.
- RDO will coordinate media release as situation warrants
- RDO will mitigate traffic delays if possible.

Emergency Contact Information

This table should be a complete list of contacts that may be notified during an incident within the work zone and completed at the time of the pre-construction meeting or as soon as the contact information is known. Additional persons may be identified.

* = Indicates number can be used 24 hours

AGENCY	CONTACT	OFFICE	CELL/OTHER
STATE TRAFFIC OPERATIONS CENTER (STOC)			
STOC	Main Number	800-375-7302*	414-227-2166 (Office)
LAW ENFORCEMENT			
Wis. State Patrol Emergency			
State Patrol Dispatch			
State Patrol Officers			
_____ County Sheriff			
_____ County Sheriff			
_____ Police Dept.			
_____ Police Dept.			
_____ Police Dept.			

____ Police Dept.			
____ Police Dept.			
____ Fire Dept.			
____ EMS			
DOT REGION MANAGEMENT			
Regional Duty Officer			
RIMC			
DOT Supervisor – PDS			
DOT Manager – PDS			
Regional Director			
Maintenance Supervisor			
Traffic Supervisor			
COUNTY PERSONNEL			
____ County Commissioner			
____ County Commissioner			
PROJECT STAFF			
Project Field Office			
Project Leader			
Project Manager			
PRIME CONTRACTOR			
Specialized Equipment Contractor			
TRAFFIC CONTROL - GENERAL			

General _____			
Message Boards _____			
OTHER TRAFFIC/EMERGENCY CONTACTS			
DOT Public Information Officer			
Freeway Service Team			
Special Events Coordinators			

Alternate Routes

If the corridor does not already have alternate routes established, project-specific alternate routes should be identified with each work zone on the highway system. Consistency in selecting alternate routes is an important aspect of the program. The following criteria provide a common starting point for evaluating potential alternate routes.

- Use state highways whenever possible
- Consider long truck routes when available
- Avoid alternate routes with weight restrictions
- Avoid height restrictions imposed by bridge clearances, power lines, etc.
- Avoid routes that require traffic to make 90-degree turns
- Avoid at-grade railroad crossings, especially those with a high number of trains
- Avoid four-way stops
- Select routes that carry traffic in the same general direction as the Interstate
- Minimize length of alternate routes
- Consider routes with coordinated signal timing plans or avoid routes with multiple uncoordinated signals
- Avoid traversing residential areas and school zones
- Carefully consider all route options and closure requirements at interchanges, especially system interchanges

Based on these criteria, a preliminary list of emergency alternate routes can be identified for freeway segments within a given study area. Potential routes should be evaluated to ensure that the roadway can handle freeway-type traffic volumes. A field review of potential emergency alternate routes should be conducted to confirm route selection. For further guidance in determining appropriate alternate routes, contact the STOC.

Provide brief explanation of alternate routes.

Ex. The preferred alternate routes for I-94 are the existing frontage roads. These provide quick access by traffic and limit the amount of adverse travel. If traffic back-ups extend beyond the listed access points, longer alternate routes can be implemented.

Explain alternate routes in detail below and provide alternate route maps in Appendix:

Ex. For SB: Traffic can be diverted west on WIS-100 (Ryan Rd) to WIS-36, southwest on WIS-36 to US-45, south on US-45 to WIS-20 and then east on WIS-20 back to I-94. For NB: Traffic can be diverted west on WIS-20 to US-45, north on US-45 to WIS-36 to WIS-100 (Ryan Rd) and then east on WIS-100 back to I-94.

If traffic backups extend beyond the access points of the barricade locations listed, longer alternate routes can be implemented.

Provide information on who needs to be contacted for each alternate route option:

Ex. Contact STOC, State Patrol, Racine County, Village of Caledonia when alternate routes are implemented. See Contact list.

See Appendix for Alternate Route Map to be used for this project.

Work Zone Queue Backup Levels

Queue backups should be based on the start of the work zone for each direction that may be affected. To determine queue backups, the General Lane Closure Impact Analysis found on UW Transportal (<http://transportal.cee.wisc.edu/closures/devel/>) or a separate analysis should be used. Maps of the queue backup and work zone including crossover locations shall be provided in the Appendix of the IMP.

Available Barricade Locations for Ramp Closures

The IMP shall identify a list of the available barricade locations. During an incident, the Incident Commander organizes the ramp closures. Locations of barricades shall be included on the Specialized Equipment Location Map in the appendix.

Available Barricade Locations

Highway Ramp & Direction	Number of Barricades	Distance from Work Zone
<i>Ex. Hwy KR to I-94 East (SB) ramp</i>	<i>1 ramp gate</i>	<i>1 mile</i>

Activation of Traveler Information Systems Scenario Examples

Contact STOC at 800-375-7302 for activation of traveler information systems. Choose the sample messages below for use on traveler information devices.

Normal Configuration

Contact STOC

Operational Backups (No Incident)

Radio Message:

There are significant delays affecting motorists heading <direction> on <mainline highway> between <highway> and <highway> in <county> County. Motorists are encouraged to use alternate routes to avoid delays.

Message Board # _____ at _____:

Traffic Delay Ahead/Alternate Route Exit ##

Traffic Delay Ahead/Use Alternate Route

Delays XX Miles Ahead/Tune to AM #####

Additional message boards can be placed along the highway to notify the motorist.

Backups (Incident)

Radio Message:

As of <date/time>, law enforcement is reporting that a traffic incident is adversely impacting motorists heading <direction> on <mainline highway> between <highway> and <highway> in <county> County. Motorists are encouraged to use alternate routes to avoid delays.

Message Board # _____ at _____:

Incident Ahead Use/Alternate Route Exit ##

Incident Ahead/Use Alternate Route

<Left/Right/Center> Lane Blocked/Expect Delays

<Left/Right/Center> Lane Blocked/Use Alternate Route

Delays XX Miles Ahead/Tune to AM #####

Additional message boards can be placed along the highway to notify the motorist.

Blocked Highway

Radio Message:

As of <date/time>, law enforcement has closed <mainline highway> between <highway> and <highway> in <county> County to <direction> traffic. Motorists traveling <direction> must exit <mainline highway> and use alternate routes.

Message Board # _____ at _____:

Incident Ahead Use/Alternate Route Exit ##

Highway Closed Ahead/Exit at <highway>

Highway Closed Ahead/Follow Alternate Route

Highway Closed Ahead/Tune to AM ####

Additional message boards can be placed along the highway to notify the motorist.

Regularly review and revise the IMP to monitor current practices, identify and resolve issues to minimize frequency of incidents and severity. Assign an individual(s) on complex projects with the responsibilities of ensuring the IMP is up to date.