

GUIDANCE FOR  
WORK ZONE SAFETY AND MOBILITY  
ON FEDERALLY FUNDED LOCAL AGENCY PROJECTS

**INTRODUCTION AND PURPOSE**

The Federal Highway Administration, through 23 CFR Part 630, Subpart J, has amended the National Highway Work Zone Safety Program and implemented Work Zone Safety and Mobility requirements for all Federal-Aid highway projects. FHWA mandated implementation of its policy by all State Departments of Transportation by October, 2007. Local Agency compliance is mandated on all Federal aid projects by January 1, 2009.

This policy is intended to be used by Local Agencies within the State of Michigan as a guide as they plan and design their individual construction projects. This policy is intended to be followed by the local municipal agencies for construction of all projects which are funded in part or in whole with Federal funds, and for all projects that propose construction work on MDOT-owned facilities or are located within MDOT-owned right of way. In accordance with the Federal regulations, this policy will be periodically reviewed for effectiveness and applicability, and revised or updated as necessary.

Work Zone Safety and Mobility regulations require that a Transportation Management Plan (TMP) be prepared for each Federal Aid Highway project. The TMP is a process to enhance the safety of road workers and users as well as efficiently address mobility through and around active work forces. A typical TMP incorporates early project planning to assess, minimize and mitigate impacts to road users, local residents, businesses, and communities at large, provides for proper traffic control in and around the work zone, includes monitoring and measuring; impacts, mitigation measures, and public information initiatives. The TMP consists of three primary components:

1. Temporary Traffic Control Plan (TTCP)
2. Transportation Operation Plan (TOP)
3. Public Information Plan (PIP)

It is important to note that local municipal agencies currently comply with the intent of the Work Zone Safety and Mobility requirements for all municipal projects that are totally or partially funded with Federal Aid. For example, as part of the project planning process, each local agency currently:

- Notifies emergency service providers and public safety agencies that the construction will take place.
- Determines how the project will affect day-to-day public services and activities, and any special considerations that must be included in the construction project to accommodate these services and activities.
- Considers how each project will affect or be affected by local civic events.

- Determines the effect of the project on school activities including school bus routes.
- Meets with MDOT representatives if any proposed work on the project will be completed in the MDOT trunkline right of way.
- Conducts some sort of public information dissemination, informing interested or affected stakeholders of the upcoming project, and conducting public information meetings.

Also, construction documents prepared for each project may include several elements of the Temporary Traffic Control Plan, including but not limited to some or all of the following items:

- Construction plan sheets representing the maintaining traffic plan, which consist of at least locations and descriptions of temporary signing and traffic control devices.
- If required for the project, construction plan sheets showing locations of detour routes.
- Special provisions for maintaining traffic during construction.
- Pay items and quantities for use during construction.

### **IMPLEMENTING THE POLICY**

In order to meet the requirements of this policy, the local agency documents how the policy requirements were addressed, using the attached checklists in the Appendix of this document. Using the program application that is prepared for each federally-funded project, the local agency will certify whether the project is Significant and certify that the appropriate worksheet checklists were completed and included in the agency's project file. The program application and checklists are reviewed at the grade inspection meeting, conducted for the project by the Michigan Department of Transportation (MDOT) Local Agency Program staff engineer. Copies of the checklists are then kept in the local agency's permanent file for the project.

Additional information and reference material is available on the MDOT website, at the following weblink:

- [http://www.michigan.gov/documents/mdot/MDOT\\_WorkZoneSafetyAndMobilityManual\\_233891\\_7.pdf](http://www.michigan.gov/documents/mdot/MDOT_WorkZoneSafetyAndMobilityManual_233891_7.pdf)
- MDOT Local Agency Program website ([www.michigan.gov/mdotlap](http://www.michigan.gov/mdotlap))

Also, information and guidance is available at the Federal Highway Administration (FHWA) website, at:

- <http://www.ops.fhwa.dot.gov/wz/index.asp>

### **TRANSPORTATION MANAGEMENT PLAN (TMP)**

During the planning stage of a project, the local municipal agency will determine if the project poses a Significant Impact. A Significant Impact is defined as a project or work zone

which, without proper traffic control and mitigation efforts, would cause “unreasonable delay, inconvenience, or risks” to road users, and road workers, residents, businesses or the community.

The threshold for “unreasonable delay, inconvenience or risks” may vary widely depending on locations, traffic conditions, and expectations. For example, a detour route of five (5) miles may be acceptable for rural projects, but considered unreasonable in urban areas. Similarly the use of a gravel surfaced road for a detour may or may not be acceptable depending on location. Therefore local municipal agencies and their professional consultants should use the following criteria as guidelines in determining whether a Federal-Aid funded project poses a Significant Impact.

### **GUIDELINES TO USE IN DETERMINING SIGNIFICANCE**

Information in the following sections includes several guidelines for the Local Agency and its consultant to use in determining whether a project is Significant. For purposes of this document, “Urban Areas” is defined as projects located within the Urban Area boundary, as determined by the local Metropolitan Planning Organization (MPO). Small Urban projects are located in municipalities with a population between 5,000 and 50,000 persons. Rural Area projects are projects that are not classified as “Urban” or “Small Urban” projects.

#### **Safety Considerations**

During the project planning and design phase, the local agency and its design professional should obtain copies of the current crash history report for the area. As part of the planning and design phase, the agency should also develop an action plan that would be followed in case of emergency situations that develop in the work zone. This plan may be developed in coordination with local and regional public safety departments, health officials, and/or emergency response groups, as appropriate.

The Agency should keep copies of the crash report as part of its design file and record.

#### **Urban Area and Small Urban Area Projects**

- Duration: intermittent lane closures or flagging operations or both, for a construction period exceeding three days, or a road closure for greater than 10 hours per day, all in a particular work zone.
- Detour length: exceeding 3 miles.
- Increase in travel time through or around the work zone of a period exceeding 15 minutes.
- Length of work zone exceeding one mile.
- Project proposes construction within MDOT-owned right of way.
- All projects where signalized intersections exist within the project limits, except signal installation or maintenance.

## Rural Area Projects

- Duration: intermittent lane closures or flagging operations or both, for a construction period exceeding five days, or a road closure for greater than 10 hours per day, all in a particular work zone.
- Detour length: exceeding 10 miles.
- Increase in travel time through or around the work zone of a period exceeding 20 minutes.
- Length of work zone exceeding one mile, or projects having shorter lengths but also having several intersections with major streets.
- Project proposes construction within MDOT-owned right of way.
- All projects where signalized intersections exist within the project limits, except signal installation or maintenance.

In addition, the Local Agency and its engineer may consider the following items in determining whether the project is Significant:

- If the work zone is located near or on routes to emergency facilities such as hospitals, fire and police stations; schools; major employers, or venues for major community events including sports and entertainment venues, then the local agency must address these items as part of the TMP process.
- Evaluation of the crash history for the area.
- The proposed work zone is likely to increase the number or severity of the particular type of crash noted in the crash history analysis.
- Sight distance is limited in or near the work zone.
- The work zone is located in a business district (ie downtown area, central business district, etc).

Projects in all areas are deemed Nonsignificant when the Local Agency's engineer determines that any of the following conditions exist:

- Work Zone is entirely within residential streets with speed limits of 25 MPH or less.
- The proposed project does not affect travel lanes (ie work is proposed to be located in the public right of way but not in the existing roadway).
- Flagging operations less than 10 hours per day and the work zone duration is less than one week.
- Conducting tasks such as design surveying, sign installation, geotechnical investigations, or repair tasks, unless these tasks require a lane closure for a period that would normally make a construction project Significant.

Projects which are determined to be Significant will require the Local Agency to prepare and complete the following tasks:

- Temporary Traffic Control Plan (TTCP)
- Transportation Operation Plan (TOP)
- Public Information Plan (PIP)

Projects deemed Nonsignificant are not required to implement a Transportation Operation Plan or a Public Information Plan, although these two phases of the TMP are encouraged where appropriate. As stated previously, such Nonsignificant Federal Aid projects require portions of the TTCP to be included in the project documents.

### **TEMPORARY TRAFFIC CONTROL PLAN (TTCP)**

The Temporary Traffic Control Plan addresses how the local municipal agency will control traffic in and around the Work Zone. Elements of the TTCP include maintenance traffic plan sheets, construction details and typical sections, contract specifications, special provisions for maintaining traffic, staging plans, detour plans, and pay items related to this work.

The TTCP for Significant projects shall be project specific. Part 6 of the MMUTCD and/or Chapter 9 of the AASHTO Roadside Design Guide may be referenced as part of the project specific TTCP.

“Project Specific” plans or details will address for each major stage or traffic shift:

- Striping
- Signing
- Barricades
- Traffic Signal Control (where applicable)
- Detour Plans (including special signs and advance warning signs)
- Pay Items

For projects deemed Nonsignificant, the local municipal agency may still decide to implement a TTCP, incorporating the items listed above. In addition, the TTCP prepared by the Local Agency may either directly include the following documents, or include them by reference:

- Part 6 of the current edition of the Michigan Manual of Uniform Traffic Control Devices (MMUTCD)
- Chapter 9 of the AASHTO Roadside Guide: “Traffic Barriers, Traffic Control Devices, and other Safety Features for Work Zones (2002)”

### **TRANSPORTATION OPERATION PLAN (TOP)**

The Transportation Operation Plan (TOP) addresses strategies for mitigating the impacts of the work zone. This plan addresses work zone and detour traffic management, minimizing or

mitigating effects on local residents, businesses and community, and monitoring/measuring mobility during work activity.

The Transportation Operation Plan (TOP) for Significant projects shall address:

- Emergency vehicle access within, around, or through the work zone.
- School bus access and bus stop locations within the work zone.
- Public transportation services (taxi, bus, etc.).
- Non-motorized and pedestrian users and facilities.
- Planned community sponsored events.
- Business access.
- Enforcement efforts and provisions
- Emergency plan and contact numbers for:
  - vehicle crashes in the work zone
  - worker injuries
- Detour options including road conditions, length and travel time.
- Detour maintenance standards and provisions.
- Consideration of adjusting work schedules to minimize traffic impacts.

### **PUBLIC INFORMATION PLAN (PIP)**

The Public Information Plan (PIP) addresses efforts to inform road users, local officials, business, residents and the community at large.

The PIP for Significant projects may outline efforts to inform stake holders during planning of the project, when the project is imminent, and upon completion of the project. The plan will outline who will initiate the specific Public Information step (road agency, community or contractor) and when. The PIP should inform the public of the project type and objectives, project location and limits, and impacts that the project is expected to have on the motoring public.

Public Information steps which may be implemented include:

- Meetings before, during and after a project with:
  - Local officials
  - General public
  - Affected property owners
  - Affected businesses
- Newspaper ads, notices, press releases
- Web site information
- Brochures
- Mailings
- Changeable message signs
- Broadcast media, including radio, television, etc.
- On-site Project Information contact signs

A PIP for nonsignificant projects is not required. However, as stated previously, most local municipal agencies currently complete several PIP-related tasks during their projects.

### **MONITORING THE WZS&M PLAN**

The effectiveness of the WZS& M Plan will be monitored and compared to delay time, safety and inconvenience prior to the work zone initiation. If delay time or inconvenience is significantly increased or otherwise unacceptable, mitigation measures such as additional signing, establishing alternate route, decreased flagger delays, etc., should be considered and implemented where possible. Safety considerations for workers and motorists must be addressed.

Similarly, the local agency should inspect and monitor conditions along the detour route. The condition of detour roads, signing and time to complete the detour should be recorded in a detour log. Adjustments to minimize impacts of the detour should be recorded, as well as effectiveness of these adjustments.

Effectiveness of the TOP efforts including enforcement, delay time, and detour log may also be recorded on the inspector's daily log.

For cases of crashes occurring in the work zone, the Local Agency and its design professional should evaluate the crash event, and determine whether the project's Temporary Transportation Control plan needs to be modified to minimize the chances of similar crashes occurring during the remainder of the project.

### **RECORDS RETENTION**

As stated previously, the Work Zone Safety and Mobility checklists must be filled out and retained in the Local Road Agency's project files. Detour inspection records may be recorded on the Inspector's Daily Log. These records are not intended to be submitted to MDOT, but are subject to MDOT and FHWA auditing.

Costs associated with the PIP and maintenance of the detour route may be eligible for Federal reimbursement on FHWA funded projects, subject to necessary approvals.

APPENDIX I

CHECKLISTS

for use in

WORK ZONE SAFETY AND MOBILITY  
DETERMINATION



# Work Zone Safety & Mobility Determination Worksheet

Date Completed \_\_\_\_\_ By: \_\_\_\_\_

Project Number \_\_\_\_\_

Project Name \_\_\_\_\_

MDOT Job Number JN \_\_\_\_\_

MDOT Control Section CS \_\_\_\_\_

Work Zone Location \_\_\_\_\_

Work Zone Limits From: \_\_\_\_\_

To: \_\_\_\_\_

Approved Work Description \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*Complete the enclosed sheets as necessary. When completed, print the completed sheets and include them in your project file.*

# Work Zone Safety & Mobility Determination Worksheet

**Complete Sections I and II of this Worksheet for all Projects**

## SECTION I - DETERMINATION OF SIGNIFICANCE

### Sheet IA Complete this Sheet for ALL projects

- Yes  No Project proposes construction within MDOT-owned right of way.
- Yes  No Project is not entirely within residential streets with speed limits  $\leq$  25 mph
- Yes  No The ADT > 200 vehicles/day
- Yes  No Flagging operations > 10 hours/day, > 5 days, and increases delays exceeding the "Significant Project" threshold (>15 minutes for Urban and Small Urban projects, > 20 minutes for Rural projects)
- Yes  No Project is located within the existing roadway
- Yes  No Project affects travel lanes
- Yes  No Expected delays exceed the "Significance" threshold (>15 minutes for Urban and Small Urban projects, > 20 minutes for Rural projects)
- Yes  No Work Zone or detour route is on the main route to or from emergency facilities (ie hospitals, fire & police stations), schools, major employers or major community events including sports and entertainment venues
- Yes  No The area has a high history of crashes
- Yes  No Work Zone significantly increases the likelihood of crashes (e.g. rear end crashes)
- Yes  No Sight Distance in or near the Work Zone is limited.
- Yes  No The work zone is located in a Central Business District

If **No** is checked for **ALL** statements on this Sheet, then the project is **NONSIGNIFICANT**.  
**PROCEED TO** Section II, Temporary Transportation Control Plan (TTCP).

If **"Yes"** is checked for **ANY** statement on this Sheet, the project **MAY STILL BE SIGNIFICANT**.  
For Urban and Small Urban projects, **CONTINUE** to Sheet IB.  
For Rural projects, **CONTINUE** to Sheet IC.

*Complete the enclosed sheets as necessary. When completed, print the completed sheets and include them in your project file.*

# Work Zone Safety & Mobility Determination Worksheet

**Complete Sections I and II of this Worksheet for all Projects**

## **SECTION I - DETERMINATION OF SIGNIFICANCE**

**Sheet IB Complete this Sheet for Urban and Small Urban projects**

For Urban and Small Urban projects, complete Sheet IA and this sheet. **DO NOT COMPLETE** Sheet IC.

For Rural projects, complete sections IA and IC, and **DO NOT COMPLETE** this sheet.

<input type="checkbox"/> Yes	<input type="checkbox"/> No	Project proposes construction within MDOT-owned right of way
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Flagging Operations > 10 hours/day
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Flagging Operations > 5 days
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Road closure > 10 hours
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Detour length > 3 miles
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Increase in travel time through or around the work zone > 15 minutes
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Length of work zone > 1 mile
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Work zone includes a signalized intersection (except signal installation or maintenance).

If **Yes** is checked for any of the above items, then the project is determined to be **SIGNIFICANT**.  
If **No** is checked for **ALL ITEMS** on this Sheet, the project is **NONSIGNIFICANT**.

**PROCEED TO** Section II, Temporary Transportation Control Plan (TTCP).

*Complete the enclosed sheets as necessary. When completed, print the completed sheets and include them in your project file.*

# Work Zone Safety & Mobility Determination Worksheet

**Complete Sections I and II of this Worksheet for all Projects**

## **SECTION I - DETERMINATION OF SIGNIFICANCE**

**Sheet IC Complete this Sheet for Rural projects**

For **Rural projects**, complete this Sheet AND Sheet IA. **DO NOT COMPLETE Sheet IB**

For Urban and Small Urban projects, complete Sheets IA and IB, and **DO NOT COMPLETE** this sheet.

<input type="checkbox"/> Yes	<input type="checkbox"/> No	Project proposes construction within MDOT-owned right of way
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Flagging Operations > 10 hours/day
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Flagging Operations > 5 days
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Road closure > 10 hours
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Detour length > 10 miles
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Increase in travel time through or around the work zone > 20 minutes
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Length of work zone > 3 miles
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Work zone includes a signalized intersection (except signal installation or maintenance).

If **Yes** is checked for any of the above items, then the project is determined to be **SIGNIFICANT**.

If **"No"** is checked for **ALL ITEMS** on this Sheet, the project is **NONSIGNIFICANT**.

**FOR ALL PROJECTS, PROCEED TO** Section II, Temporary Transportation Control Plan (TTCP).

*Complete the enclosed sheets as necessary. When completed, print the completed sheets and include them in your project file.*

# Work Zone Safety & Mobility Determination Worksheet

**Complete Sections I and II of this Worksheet for all Projects**

## **Section II Temporary Transportation Control Plan (TTCP)**

Sheet IIA

For **Nonsignificant** Projects, select and implement **ONE** of the following:

\_\_\_\_\_ The TTCP is Part 6 of the MMUTCD and/or Chapter 9 of the AASHTO Roadside Design Guide. "Traffic Barriers, Traffic Control Devices and other Safety Features for Work Zones (2002)" and is incorporated by reference in the plans or specifications

\_\_\_\_\_ A project specific TTCP has been developed addressing each major stage of traffic control including striping, signing barricades, signal control, detour plans, pay items, etc.

For **Significant** Projects, implement the following:

Section II B

\_\_\_\_\_ A project specific TTCP has been developed addressing each major stage of traffic control including striping, signing barricades, signal control, detour plans, pay items, etc.

For **ALL** projects, **CONTINUE** to Section III, Transportation Operation Plan (TOP)

*Complete the enclosed sheets as necessary. When completed, print the completed sheets and include them in your project file.*

Work Zone Safety & Mobility Determination Worksheet

**Section III Transportation Operation Plan (TOP)**

**Complete this Sheet for All Significant Projects.**

**For Nonsignificant Projects a TOP is not required, but should be considered.**

Briefly describe how the following are addressed:

Emergency vehicle access within, around, or through the work zone: \_\_\_\_\_  
\_\_\_\_\_

School bus access and bus stops within the work zone: \_\_\_\_\_  
\_\_\_\_\_

Public Transportation facilities, services, access, etc. \_\_\_\_\_  
\_\_\_\_\_

Nonmotorized and pedestrian facilities, access, services, etc. \_\_\_\_\_  
\_\_\_\_\_

Community events, or large sports and entertainment events (ie concerts, art fairs, races, etc)  
\_\_\_\_\_  
\_\_\_\_\_

Business access: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Adjusted work schedules considered to minimize traffic impacts \_\_\_\_\_  
\_\_\_\_\_

Law Enforcement efforts and Provisions: \_\_\_\_\_  
\_\_\_\_\_

Alternative routes and detours considered: \_\_\_\_\_  
\_\_\_\_\_

Alternative route or detour maintenance provisions: \_\_\_\_\_  
\_\_\_\_\_

For detours, list the person or agency responsible for monitoring and inspecting the detour route recording travel time, safety, signing, and road conditions, and recommending adjustments to be made.  
\_\_\_\_\_

For **ALL** projects, **CONTINUE** to Section IV, Public Information Plan (PIP).

*Complete the enclosed sheets as necessary. When completed, print the completed sheets and include them in your project file.*

# Work Zone Safety & Mobility Determination Worksheet

## Section IV Public Information Plan

**Complete this Sheet for All Significant Projects.  
For Nonsignificant Projects a PIP is not required, but should be considered.**

Which of the following have been, or will be, used to inform the Public of this Project? Check all that apply and explain as necessary. Explain if these measures will be incorporated for various stages. Keep copies of supporting documentation in your project file.

Meetings with:

\_\_\_\_\_ Local Officials

\_\_\_\_\_ General Public

\_\_\_\_\_ Affected Property Owners

\_\_\_\_\_ Affected Business Owners

\_\_\_\_\_ Other persons or groups affected by the project

\_\_\_\_\_ Newspaper ads, notices, press releases

\_\_\_\_\_ Web site information

\_\_\_\_\_ Brochures, or Flyers

\_\_\_\_\_ Mailings

\_\_\_\_\_ Changeable message signs

\_\_\_\_\_ Radio or Television

\_\_\_\_\_ On-site project information signs

\_\_\_\_\_ Other (Describe) \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*Complete the enclosed sheets as necessary. When completed, print the completed sheets and include them in your project file.*