

# Montana Department Transportation

## Work Zone Safety and Mobility Transportation Management Plan Development Process

2015

### Background

Montana Department of Transportation's WZSM policy and guidance is predicated on the FHWA requirement to include a Transportation Management Plan (TMP) for every project. In most cases, the TMP will consist of a Traffic Control Plan (TCP) only. Many projects will include a Traffic Operations (TO) and Public Involvement (PI) component as well. Significant, or Level 1, projects require that the TCP, TO, and PI are all included in the TMP.

### TMP Process

Ideally, the TMP process should start with the Preliminary Field Review. The Project Design Manager (PDM) is responsible to ensure that the TMP is developed for each project and to ensure that the components of the TMP are incorporated into the project design and plans package as appropriate. A worksheet and a help guide have been developed to facilitate the process. All of the WZSM tools and guidelines are available in the [MDT Work Zone Safety and Mobility Toolbox](#).

Depending on the complexity and level of significance for any given project, the PDM is encouraged to enlist members of the design team to help with the TMP development. Headquarters and district construction staff are a critical part of the TMP team for most projects. In addition, the District Construction Operations Engineer has been assigned the role of TMP Coordinator for all projects. This means that he/she will be involved in project design decisions through all phases of design, by participating in project meetings and plan reviews, and in construction decisions including those involving the TMP components.

Tasks for a successful TMP:

Design stage	Staff responsible	Tasks
Nomination	Nominator	Review Impact Level Checklist to determine project WZSM significance If significant, check the "Significant Work Zone Project" box in PPMS Review Appendices TMP Worksheet and Help Guide for potential WZSM strategies; include additional costs in nomination as necessary
Preliminary Field Review (PFR)	PDM, designer	Confirm project WZSM significance If significant, check the "Significant Work Zone Project" box in PPMS Start the TMP worksheet and save to DMS Review TMP worksheet with design team during PFR Document decisions and estimated costs in PFR report
Alignment and Grade Review (AGR)	PDM, TMP team*	Determine level of TMP necessary for project Identify internal and external stakeholders Fill out or update TMP worksheet to identify applicable strategies to reduce WZSM impacts during construction Focus on traffic management issues and begin drafting Traffic Control and Sequence of Operations special provision. Discuss: <ul style="list-style-type: none"><li>• Specific treatments for addressing roadside construction hazards</li><li>• Sequencing activities for realistic and efficient construction schedules</li></ul>

		<ul style="list-style-type: none"> <li>• Signing and delineation during different stages of construction</li> <li>• Hauling and roadway crossing operations</li> <li>• Temporary advisory, regulatory, and warning signs</li> <li>• Needs for requesting project level law enforcement</li> <li>• Pedestrian, bicycle, and ADA accommodations</li> <li>• Traffic control and construction limitations during community events</li> <li>• Acceptable Level of Service (LOS), travel time delay goals and the acceptable queue lengths</li> <li>• Need to accommodate wide or oversized loads</li> </ul>
Scope of Work (SOW)	PDM	<p>Document traffic control, sequencing, detour proposals</p> <p>Request traffic information or modeling to determine LOS impacts for strategies such as lane closures</p> <p>Document feedback from public involvement information gathered</p>
Plan-In-Hand (PIH)	PDM, Design team, TMP team*	<p>Review TMP worksheet</p> <p>Discuss and resolve issues related to WZSM strategies</p> <p>Review Special Provisions related to traffic control, sequencing, detours, night time work provisions/requirements, constructability</p> <p>Discuss wide load restrictions and placement of signing</p> <p>Define peak hours, allowed lane or road closures, LOS issues</p> <p>Address safety concerns related to construction work in High Crash Corridors or at locations with recorded crash incidents</p> <p>Address railroad involvement related to WZSM strategies</p>
Final Plan Review (FPR)	PDM, Design team, TMP Coordinator	<p>Focus on construction zone issues, safety concerns, traffic control and sequencing</p> <p>Ensure all identified strategies are included in the design or addressed specifically with Special Provisions or notes</p> <p>Ensure WZSM strategies are included in the bid items, as appropriate</p> <p>Contact MCS to ensure oversized loads are appropriately accommodated</p> <p>Answer the following questions:</p> <ul style="list-style-type: none"> <li>• Are the Special Provisions adequate?</li> <li>• Is adequate signing provided?</li> <li>• Is the appropriate traffic control included?</li> <li>• Is a public involvement plan included if necessary?</li> <li>• Does the plan set incorporate all of the construction strategies identified in the TMP Worksheet?</li> </ul>

\* See list below for suggested TMP members

#### TMP Team Members for Significant Projects

- Project Design Manager - required
- Road plans designer (or consultant designer)
- Construction Operations Engineer (TMP Coordinator) – required
- Construction Traffic Control Engineer
- District Construction Engineer, Operations Engineer, or Engineering Project Manager
- District Engineering Services Engineer, Projects Engineer, or Traffic Engineer
- Traffic Project Engineer if necessary for capacity issues, safety accommodations such as traffic signals, or signing issues
- MDT Maintenance Superintendent or Chief
- FHWA Operations Engineer or Safety/Traffic Design Engineer (required for Projects of Division Interest)
- City officials for urban projects
- Emergency Response officials (may be volunteers)

## **On-line Tools and Resources: MDT Work Zone Safety and Mobility Toolbox**

### **Impact Level Checklist**

The Impact Level Checklist is to be used for all projects that have the potential to cause a significant impact to the travelling public during construction. The checklist will assist the nominator or PDM in determining whether or not a project qualifies as a significant, or Level 1, project.

### **TMP Worksheet and Help Guide**

The worksheet and help guide are meant to be used together. If possible, use the most recent version of the documents from the toolbox, and fill out the worksheet electronically. The help guide will step you through the process of filling out the worksheet. In addition, it contains explanations and definitions for all of the strategies identified in the worksheet as well as considerations to think about before using some of the strategies.

The TMP Worksheet has multiple sheets, each with a tab at the bottom of the spreadsheet:

1. Project Background
2. TMP Elements Table
3. Comments & Revisions
4. TMP Issues & Action Items
5. Options Analyses
6. Work Type Codes
7. Work Type Definitions

#### 1. Project Background

The first sheet of the worksheet contains project information, project design staff information, and a cost summary. Document as much as possible for easy future reference. Refer to the help guide for instructions on filling out this sheet.

#### 2. TMP Elements Table

The second section of the worksheet is used to identify and document potential strategies and associated costs for mitigating work zone safety and mobility impacts. The strategies have been customized to MDT construction practices and follow those listed in the WZSM Guidelines. They are described in more detail in the TMP Help Guide. Each checkbox has a drop-down menu. An “X” signifies that the TMP team has selected the strategy to be included in the project design and/or plan package. A “?” means that the strategy may be used. A blank means that the particular strategy will not be used for the project.

Costs can be entered when a strategy is selected. Currently, MDT has not started tracking costs for most of the strategies. However, there are some strategies and traffic control devices that have known costs and these should be entered in the worksheet to ensure that the project cost estimate accounts for WZSM items.

The TMP Elements Table should be updated as the plan package develops. By Final Plan Review, there shouldn't be any “?” left in the worksheet. All construction-related strategies that were marked with an “X” must be included in the final PS&E as appropriate (design details, Special Provisions, bid items, etc.).

### 3. Comments & Revisions

Documentation is very important in the TMP process. At a minimum, the TMP will be updated at the various milestones of the project (AGR, SOW, PIH, etc.). Anytime a major element is added or removed, this should be documented as a revision. Questions will come up later in the design process or during construction, and the TMP Worksheet can serve as the one place to track the decisions made regarding specific TMP strategies. **The final worksheet, including the comments page, should be provided to the TMP Coordinator.** The TMP worksheet will serve as a good reminder for the TMP Coordinator, since he/she should have been involved in all of the major decisions during the design process.

### 4. TMP Issues & Action Items

The TMP Issues & Action Items list can serve as a tracking document for the PDM to document issues that are brought up during discussions with external stakeholders (emergency services, City/County, Highway Patrol, businesses) and during TMP or plan review meetings. For each item, the PDM and team should clearly describe the issue or concern; provide a solution; and list an action item and person responsible. When items are completed, note the completion date in the action column. When items are incorporated into a TMP strategy, describe the action in the action column or on the Comments & Revisions sheet, whichever is more appropriate.

### 5. Options Analysis

The Options Analysis sheet is available to help document and decide between different strategies. For example, one possible scenario may be to shift the alignment to allow traffic to stay on the existing roadway, while another option is to incorporate various design and traffic control strategies. This type of documentation and organized analysis process can help the team, especially when external stakeholders are involved.

### 6. Project Work Type Codes

MDT code numbers assigned to construction work.

### 7. Work Type Definitions

Descriptions of the construction work types to assist with determining the work type code.

### **Additional Information**

Training presentations and internet resources are available. Work zone related Standard Special Provisions can be accessed through the MDT Standard Specifications link.

[http://www.mdt.mt.gov/business/contracting/standard\\_specs.shtml](http://www.mdt.mt.gov/business/contracting/standard_specs.shtml)

Relevant topics include:

Contract Time	Incentive, Disincentive
Detour – Construct and Maintain	Traffic Control and Sequence of Operations
Dust Control	Traffic Control – Lump Sum
Public Advisory	Motorcycle Advisory Signs
Public Relations	

FHWA and Workzonesafety.org have developed on-line clearinghouses for information related to work zone safety and mobility. FHWA has compiled research reports, case studies, state DOT examples and best practices, along with publications that help clarify and guide the Work Zone Safety and Mobility rule. Links are provided on the Highways Bureau work zone safety web page.

## PPMS Identification

There is a Significant Work Zone Project check box on the Header-Nomination page in PPMS. Significant projects can be tracked through OPX2 and PPMS when the check box is used. Both the nominator and the PDM can perform this task. For Level 1 projects, the PDM is expected to check the box when updating cost estimates in PPMS.

## Header - Nominations

Requested Ready Date:  Last Update: 13-FEB-2009 Date Entered:  Stage: PIH  PM: ROUSE-DUSTIN

**Project Information**

UPN: 5133 Unit: 000 ID: IM 15-4(99)192,IM 15-4(105)192,IM 15-4(127)192,IM 15-4(126)192 User: STRATTON-DAWN

Eng: GRADE, GRAVSUR, PMS, WID, INTERIMPR  Source:

Name: CAPITOL INTCH-HLNA Scope: RECONSTRUCTION

Desc: G,GS,PMS,WID H

Work Type: 140 - RECONSTRUCTION - WITHOUT ADDED CAPACITY  Proj-ID Prefix: IM

Counties: LEWIS & CLARK Finance Dist: 3 Commission Code:  STIP Override:

Dept. Rtes: I-15 Admin Dist: 3 Status Date: 15-AUG-2003 Status: Active

Significant Work Zone Project:  FHWA Full Oversight PE:  FHWA Full Oversight Construction:

**Counties & Districts (only one)**

Use Roadlog Lookup

State Wide  County Wide

District Wide  City Wide

Roadway Specific

**Proposed ROW Utilities**  N/A

Rail Agreements  Utility Agreements

ROW Acquisition  ROW Relocations

Permits/Easements  Access Management

**Proposed Environmental**  N/A

EIS  4F

EA  Wetlands

Categorical Exclusion  Title VI Impact

SPA-124

check this box to denote significant project

## Conclusion

Other tools and resources can be used as needed. Remember, the TMP will continue to evolve and develop over the life of a project. Plan adjustments and the creation of special provisions will help incorporate strategies that were identified using the TMP worksheet. No single person is expected to develop the TMP alone. Input is needed from many disciplines from Design to Construction to Maintenance as well as from external stakeholders. This is intended to be a team-oriented process.