

# WORK ZONE SAFETY AND MOBILITY MANUAL

## Policy Statement:

The Tennessee Department of Transportation's policy is to plan, design, construct, maintain, and operate safe and efficient work zones. The control of all road users (as defined by the [MUTCD, Section 1A.13](#)) through a work zone is an essential part of highway construction, utility work, maintenance, and right-of-way use permits.

Two principles guide the planning and implementation of the Work Zone Safety and Mobility (WZSM) program:

- A. The safety of motorists, pedestrians, bicyclists, individuals with disabilities, and workers is the top priority and must be an integral part of every project.
- B. Traffic mobility shall be considered on every project. The movement of all forms of traffic through work zones should be inhibited as little as possible. Traffic is inhibited by reduced speeds caused by speed limit reductions, traffic congestion, and crashes. Speed reductions should be implemented according to TDOT's Work Zone Speed Limit Policy.

## Work Zone Safety And Mobility (WZSM) Program.

TDOT will systematically consider and manage work zone impacts, and it will develop, implement, and maintain work zone assessment and management procedures. Consideration and management of work zone impacts begin at project inception, continue through all phases of design, include construction activities, and conclude with a Work Zone Safety and Mobility Process Review (see Chapter 3) to enhance efforts to address safety and mobility on current and future projects. Each phase of work zone assessment and management should include implementation of improvements in work zone processes and procedures, data and information resources, and training programs.

This WZSM program shall be implemented on all federal-aid-funded and state-funded projects. All state/local agreements for projects shall include a requirement that the WZSM policy be followed. Utilities shall be required to follow the WZSM policy for all utility work done as a part of a federal aid project, regardless of whether the work is at the project expense or solely at the utility company's expense.

## Goals and Objectives:

- A. Maximize safety in all work zones having TDOT oversight by reducing fatality, injury, and property damage crashes statewide.
- B. Minimize delay and other negative operational aspects of work zones.
- C. Promote consistency in all phases of work zone development, including planning, design, implementation, and operation.

## Definitions:

### Exempt Project

An exempt project is a project receiving state and/or federal funds, but has been preapproved to not have a determination completed. To be exempt it must be listed as a qualifying project on the list below and meet the all the qualitative requirements listed below.

The qualifying projects listed below generally have minimal impacts to traffic and if they met the qualitative requirements then they are considered exempt.

### **Qualifying Projects:**

Brush Control/Mulching	Erosion Control
Litter Removal	Ditch Repair
Fence Repair	Mowing
Drainage Structure Repair ( <i>off road</i> )	Slide Repair ( <i>minor</i> )
Utility Projects w/o Motorist Impact	Sinkhole Repair ( <i>minor</i> )
Brine/Snow Removal	Flood Damage ( <i>minor</i> )
Vegetation Spraying	Weather-Related Events ( <i>minor</i> )
Sweeping/Debris Removal	Pavement Marking ( <i>moving</i> )
Pavement Patching	Pavement Marking
Attenuator Installation/Repair	Sign Replacement
Shoulder Repair	Sign Repair
Bridge Inspection	Guardrail Installation/Repair
Tunnel Maintenance	Deck Patching

**AND**

### **Qualitative Requirements:**

Not on or over a freeway	Less than three days in duration
Work does not occur during peak traffic	

### **Federal-Aid Highway Project**

A *Federal-Aid Highway Project* refers to highway construction, maintenance, safety, and utility projects funded in whole or in part with federal-aid funds.

### **Highway**

#### ***A highway includes:***

- A road, street, and parkway;
- A right-of-way, bridge, railroad-highway crossing, tunnel, drainage structure (including public roads) on dams, signal, guardrail, and protective structures in connection with a highway; and
- A portion of any interstate the cost of which is assumed by a state transportation department, including such facilities as may be required by the United States Customs and Immigration Services in connection with the operation of an international bridge or tunnel.

### **Highway Worker**

A *highway worker* includes, but is not limited to, personnel of the contractor, subcontractor, Tennessee Department of Transportation, local agency, and law enforcement performing work within the right-of-way of a transportation facility.

### **Freeway**

A *freeway* is a divided highway with full control of access.

### **Non-Significant Projects**

A *non-significant project* is one that does not meet the significant project criteria described herein.

### **Positive Protection Device**

A *Positive Protection Device* refers to a device that contains and/or redirect vehicles and meets the crashworthiness evaluation criteria contained in the [AASHTO Manual for Assessing Safety Hardware \(MASH\)](#).

## Professional Engineer

A *Professional Engineer* is an engineer licensed in the State of Tennessee as a Professional Engineer.

## Public Information Strategies

The *Public Information (PI) strategies* are communication strategies that seek to inform affected road users, the general public, area residences and businesses, and appropriate public entities about the project, the expected work zone impacts, and the changing conditions on the project. Public information may include information on the project characteristics, expected impacts, closure details, and commuter alternatives. Some PI strategies are detailed in Appendix A. If needed, a PI Plan will be completed by TDOT's Community Relations Division and attached to the TMP document.

## State Highway System

The *State Highway System* includes all interstates, U.S. highways, and State highways.

## Significant Project

A *Significant Project* is one that, alone or in combination with other concurrent projects nearby, is anticipated to cause sustained work zone impacts that are greater than what is considered tolerable. Use the following criteria to determine if a project is Significant:

- All freeway projects within the boundaries of a designated Transportation Management Area (TMA) that occupy a location for more than three days with either intermittent or continuous lane closures.
- All freeway system projects where all lanes in one direction will be closed.
- A project on a non-freeway with an AADT of at least 50,000 vehicles per day., where all lanes in one direction will be closed.

## Temporary Traffic Control Plan

A *Temporary Traffic Control (TTC) plan* describes measures used for facilitating road users through a work zone. A TTC plan shall be consistent with the provisions under Part 6 of the *MUTCD* as adopted by the State, and with work zone hardware recommendations in Chapter 9 of the *American Association of State Highway and Transportation Officials (AASHTO) Roadside Design Guide*. The TTC plan shall either be a reference to specific TTC elements in the *MUTCD*, be approved standard TTC plans, or be designed specifically for the project.

## Transportation Management Area (TMA)

For the purposes of this manual, Tennessee's TMAs are the MPO and TPO areas, and the counties below:

Region 1	Region 2	Region 3	Region 4
Anderson	Bradley	Davidson	Fayette
Blount	Hamilton	Maury	Madison
Carter		Montgomery	Shelby
Hamblen		Robertson	
Jefferson		Rutherford	
Knox		Sumner	
Loudon		Williamson	
Sevier		Wilson	
Sullivan			
Washington			

### **Transportation Management Plan**

A *Transportation Management Plan (TMP)* lays out a set of coordinated transportation management strategies and describes how they will be used to manage the impacts of the work zone. Transportation management strategies for a work zone include temporary traffic control measures and devices, transportation operations strategies, and public information strategies. See template in Appendix D.

### **Transportation Operations Strategies**

The *Transportation Operations (TO) strategies* are strategies that will be used to mitigate the impacts of the work zone on the operation and management of the transportation system within the work zone impact area. Some TO strategies are detailed in Appendix A.

### **Work Zone**

The *Work Zone* is an area of a highway with construction, maintenance, or utility work. A work zone is typically marked by signs, channelizing devices, barriers, pavement markings, and/or work vehicles. It extends from the first warning sign or high-intensity rotating, flashing, oscillating, or strobe lights on a vehicle to the *END ROAD WORK* sign or the last temporary traffic control device.

### **Work Zone Crash**

*Work Zone Crash* means a traffic crash in which the first harmful event occurs within the boundaries of a work zone or on an approach to or exit from a work zone, resulting from an activity, behavior, or control related to the movement of the traffic units through the work zone. This includes crashes occurring on approach to, exit from, or adjacent to work zones that are related to the work zone.

### **Work Zone Data**

*Work Zone Data* is useful to make an informed assessment of the success of efforts to manage work zones and their impacts. Available data and information can provide the basis for assessing performance and taking appropriate actions to improve performance on individual projects as well as district-wide and statewide processes and procedures. Before the process review, relevant information will be gathered for selected projects by the Traffic Operations Division.

### **Work Zone Impacts**

*Work Zone Impacts* refer to work zone-induced deviations from the normal range of transportation system safety and mobility. The extent of the work zone impacts may vary based on factors such as road classification, area type (urban, suburban, and rural), traffic and travel characteristics, type of work being performed, time of day/night, and complexity of the project. These impacts may extend beyond the physical location of the work zone itself and may occur on the roadway on which the work is being performed, as well as other highway corridors, other modes of transportation, and/or the regional transportation network.