

Work Zone Strategies

Training Course



U.S. Department of Transportation
**Federal Highway
Administration**



SAFER ROADS SAVE LIVES

About This Course

- ◆ This material is based upon work supported by the Federal Highway Administration (FHWA) under grant agreement No. DTFH61-06-G-00004



Developed & Presented by

American Traffic

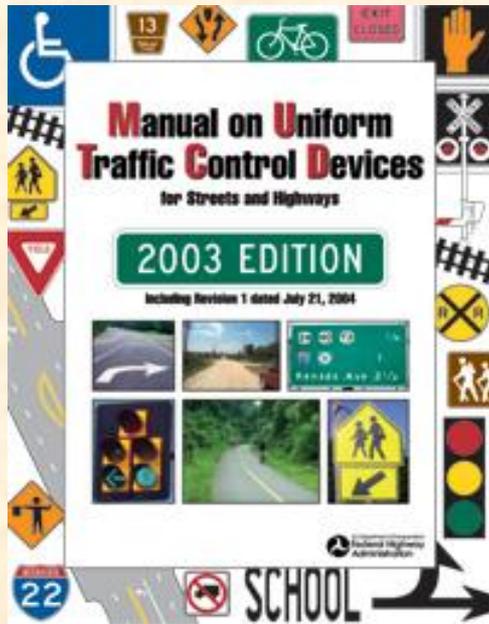
Safety Services Association



SAFER ROADS SAVE LIVES

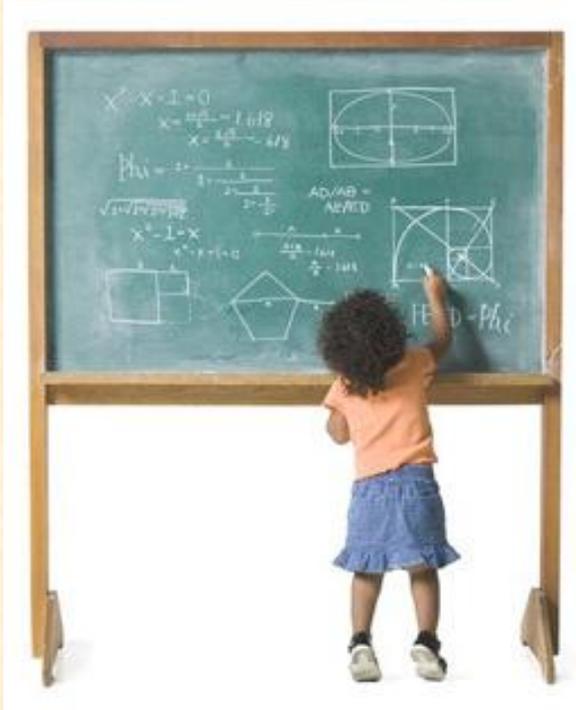


About this course



- ◆ Based on:
 - ◆ The 2003 *Manual on Uniform Traffic Control Devices (MUTCD)*
 - ◆ FHWA's "*Developing Transportation Management Plans*"
 - ◆ Other work zone-related publications

About this course



- ◆ Although participants are expected to be familiar with basic aspects of WZTC, **basic concepts will be reviewed**
- ◆ Provides **an approach** for the selection of an appropriate construction work zone type

About the "Strategies"

◆ There is a **need for guidance** on the degree of effort necessary and the strategies available when developing Transportation Management Plans (TMPs)



Course Objectives

- ◆ To discuss various **strategies** available to work zone designers
- ◆ To provide **guidance** to help you identify, evaluate and select work zone strategies
- ◆ To discuss strategies as related to **Transportation Management Plans (TMP)**

Upon completion, you will be able to:

- ◆ Know the various available work zone strategies
- ◆ Be able to identify, evaluate and select strategies for work zone traffic control strategies



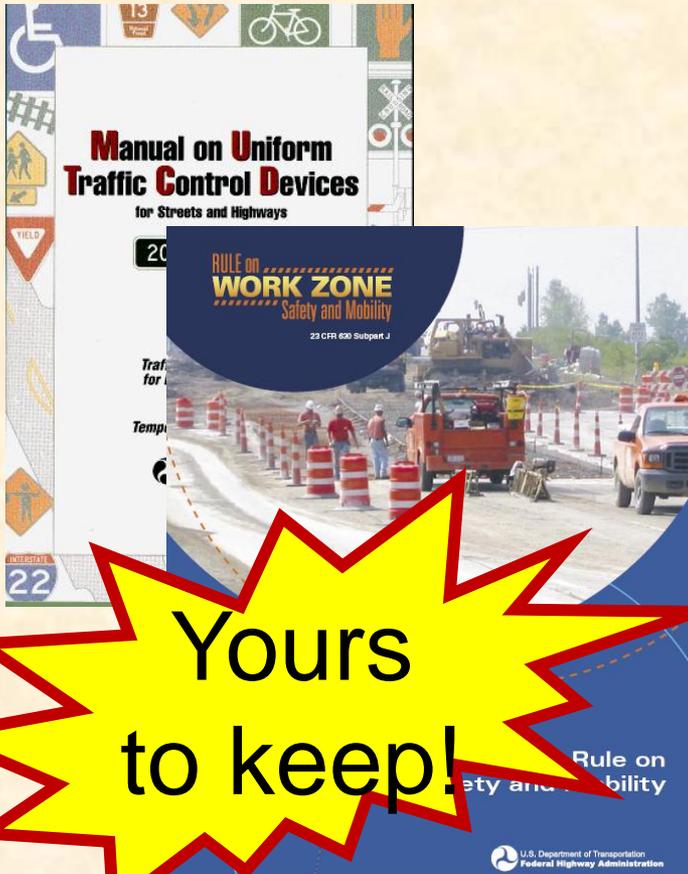
"WZ Strategies" ***Training Course***

- ◆ 1.5-day course
- ◆ Begins promptly at 8:00 AM
- ◆ Ends tomorrow no later than NOON



**Flexible
schedule!!**

Course Materials



- ◆ Course notebook
- ◆ MUTCD
- ◆ *Implementing the Rule on Work Zone Safety and Mobility*
- ◆ *Summary of Work Zone Impact Management Strategies (MD SHA)*
- ◆ Pencil
- ◆ Tent name sign

Course Schedule: DAY 1

1	Course Introduction
2	Temporary Traffic Control (TTC) Strategies
3	Public Information (PI) Strategies
4	Transportation Operations (TO) Strategies
5	Identifying & Evaluating Strategies
6	Strategy Selection Considerations

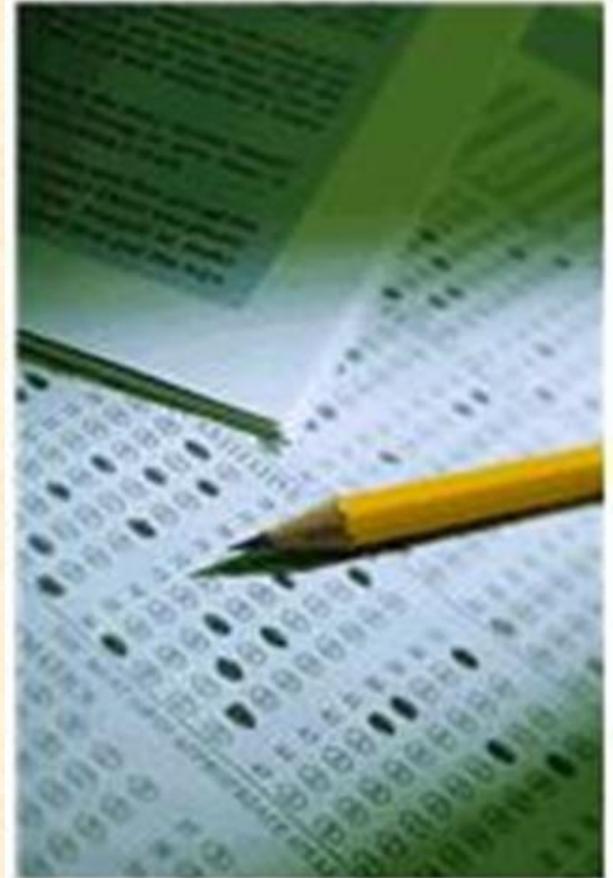
Course Schedule: DAY 2

7	Case Study (Full Closure)
8	Workshop
	Closing (Exam and Adjourn)

**Done by
NOON!**

Exam

- ◆ **25 true/false questions**
- ◆ 4 pts each = 100 pts
- ◆ 30 minutes
- ◆ Open book, open notes
- ◆ Passing grade = 80%



Also



◆ *"Any opinions or recommendations expressed in this course are those of the instructor and do not necessarily reflect the views of ATSSA or the Federal Highway Administration (FHWA)"*

-MODULE 1- Introduction



Module Objectives

- ◆ Define work zone strategies
- ◆ Discuss the need for work zone strategies
- ◆ Discuss Transportation Management Plans (TMP)

Work Zone "Strategies"

- ◆ An approach for mitigating the impacts of work zones, while ensuring constructability
- ◆ Must be selected when there are two or more competing interests or alternatives



Strategy: an approach, method, or series of maneuvers for obtaining a specific goal or result

Work Zone "Strategies"

- ◆ Once selected, they are used to develop:
 - ◆ Contract requirements
 - ◆ Transportation Management Plans (TMP)
 - ◆ A Traffic Control Plan (TCP)

All designed to OPTIMIZE the cost and effectiveness of construction, traffic management, safety, mobility & social needs.

Why do we Need Work Zone Strategies? And Now?

- ◆ Work zone fatalities remain high
- ◆ Work zone congestion is worsening
- ◆ Customer dissatisfaction is high
- ◆ ***Work Zone Safety and Mobility Rule*** requires a Transportation Management Plan (TMP) for all Federal-aid highway projects

How do we optimize safety and mobility in work zones?

Analyzing multiple strategies

-  Advantages and disadvantages
-  Considering the needs of all the stakeholders



Module Recap

- ◆ How many people die in traffic crashes in the USA every year? In WZ?
- ◆ When are TMPs required?
- ◆ What are the 3 components of a TMP? When are all 3 components required?
- ◆ What are the benefits of TMPs?



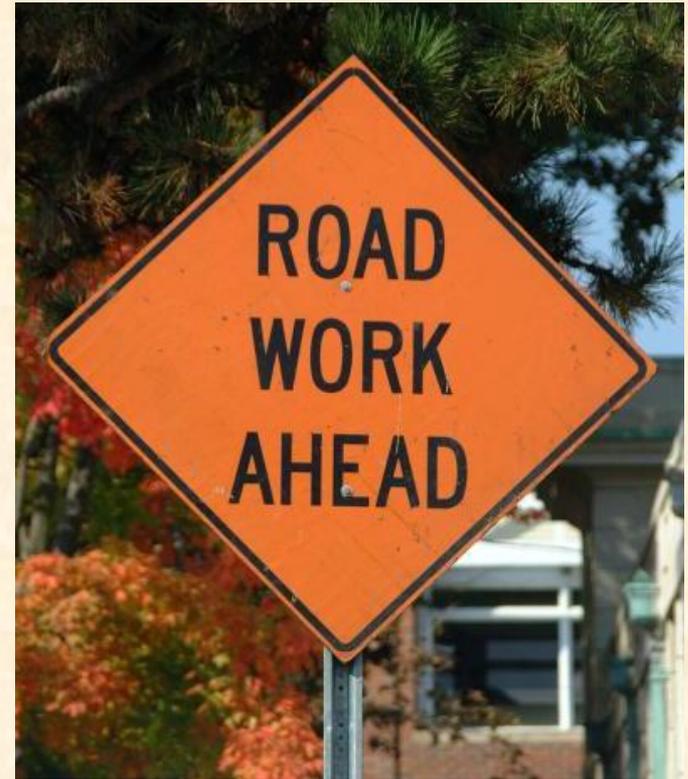
***-MODULE 2-
Temporary
Traffic
Control
(TTC)
Strategies***

Module Objectives

- ◆ Review sources of Federal and State TTC standards and guidelines
- ◆ Discuss common TTC strategies

TTC Strategies are detailed in a Traffic Control Plan

- ◆ Consistent with the standards and guidelines of the *MUTCD*, *Roadside Design Guide*, and applicable documents



TTC Strategies Can be Divided Into:

- A. Temporary traffic control (TTC)
- B. Traffic control devices
- C. Contracting & innovative construction strategies



Advantages/Disadvantages of Nighttime Work

Advantages

Lower traffic volumes

Lower traffic impacts

Lower impact to commercial activity

Disadvantages

Higher agency cost

Higher speeds; more impaired drivers

Crew social patterns disrupted

Noise and possible compromise of quality

C. Contracting Strategies

1. Conventional contract model
2. Alternative contracting techniques
3. Evaluation of contractor designs



Module Recap

- ◆ Which type of warning light is used for delineation?
- ◆ Name two advantages of nighttime work zones?
- ◆ Name 2 alternative contracting strategies?
- ◆ What is lane rental?



-MODULE 3- Public Information & Outreach Strategies

Module Objectives

- ◆ Discuss public information and outreach strategies
- ◆ Discuss typical steps involved in public information and outreach campaigns

Public Information (P.I.) and Outreach Strategies

- ◆ Communicate w/ information:
 - ◆ Road users
 - ◆ The general public
 - ◆ Area residents and businesses
 - ◆ Public entities
- ◆ Required under the Transportation Management Plan (TMP)

P.I. Strategies Considerations

- ◆ To provide information to stakeholders before the project starts to make them aware of:
 - ◆ ***The expected work zone impacts and***
 - ◆ ***the State's actions to mitigate these impacts***

Ways to Communicate Work Zone Information

- ◆ Maps
- ◆ Employee newsletters
- ◆ Video
- ◆ CB radio network (for truckers)
- ◆ Billboards
- ◆ Advertising on buses
- ◆ Information center or kiosk

Module Recap

- ◆ Why develop and implement a public information and outreach campaign?
- ◆ Name 3 public information techniques
- ◆ Which three messages are typically incorporated in wz campaigns?

-MODULE 4- Transportation Operation (TO) Strategies



Module Objectives

- ◆ Discuss TO strategies and their application to work zones

Transportation Operation Strategies

- A. Intelligent Transportation Systems (ITS)
- B. Demand management strategies
- C. Corridor/network management strategies
- D. Incident management and enforcement strategies

Module Recap

- ◆ Name two ITS strategies applicable to work zones
- ◆ Name 2 demand management strategies
- ◆ Name 2 incident management strategies



-MODULE 5- Identifying and Evaluating Alternative Work Zone Strategies

Module Objectives

- ◆ Discuss work zone impacts assessment
- ◆ Discuss factors for identifying and evaluating WZ strategies
- ◆ Discuss strategies used in developing an effective TMP

Work Zone

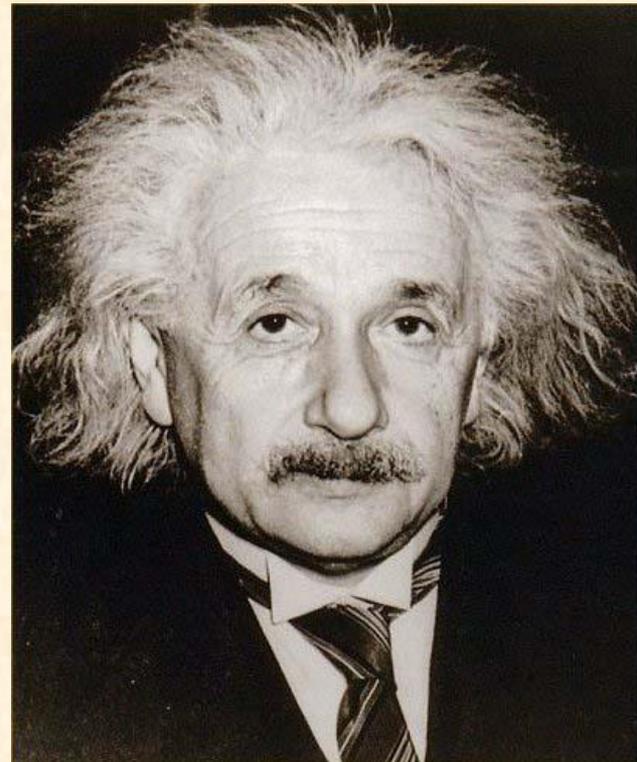
Impacts Assessments

 **A comprehensive, integrated and proactive work zone management and design effort**



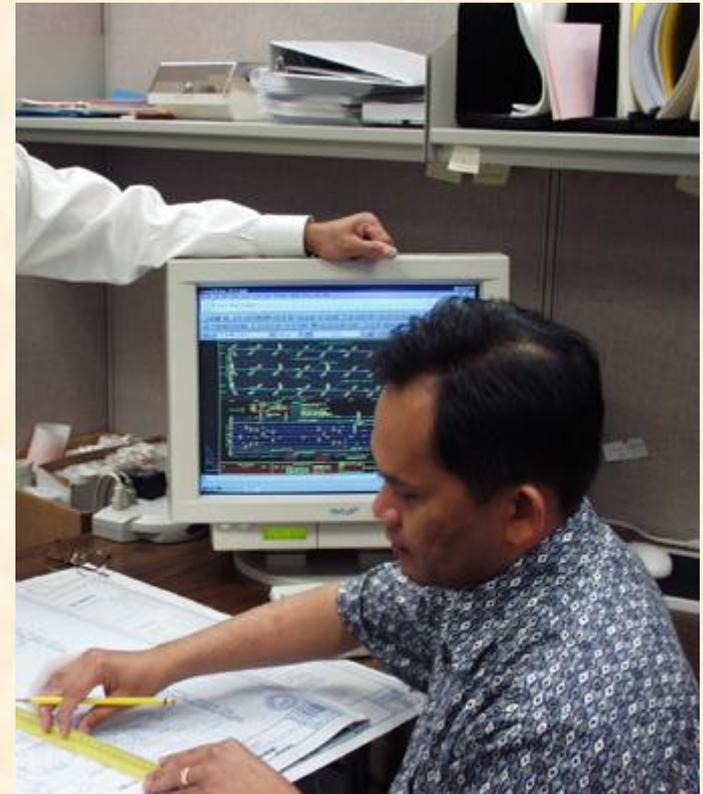
What is WZ Impacts Assessment?

 The **process of understanding** the safety and mobility impacts of a road construction/maintenance/rehabilitation project



WZ Impacts Assessment During Preliminary Engineering

- ◆ Early project-level planning
- ◆ Develop an overall design concept
- ◆ Identify ways to implement the project
- ◆ Develop design concepts



Comparative Analysis Should Consider:

1. Access
2. Basic traffic functionality & operation
3. Capacity and queues
4. Constructability
5. Cost
6. Human environment & other modes

Module Recap

- ◆ What is w/z impacts analysis?
- ◆ Name two road user factors to consider in the evaluation of TTC strategies
- ◆ Name two agency factors
- ◆ Name two factors that affect capacity



-MODULE 6- Strategy Selection Considerations

Module Objectives

- ◆ Discuss factors to consider when selecting a work zone strategy
- ◆ Discuss essential data requirements

Strategy Selection Considerations

- ◆ There is more than one strategy available
- ◆ Choose the strategy that will minimize construction costs while maximizing safety and mobility
- ◆ **The process of deciding involves the analysis of many factors**

Factors to Consider in Selecting the Best Strategy

1. Traffic management considerations
2. Operational performance
3. Construction requirements
4. Constructability
5. Emergency planning
6. Coordination with stakeholders

Presented in Checklists!

Module Recap

- ◆ Name some factors to consider when selecting the best strategy
- ◆ How is a capacity analysis useful?
- ◆ Is ONE strategy always the best option?

-MODULE 7- Full Road Closure Case Study



Module Objectives

- ◆ Examine an example of a full road closure in Portland, OR
- ◆ Discuss the project's:
 - ◆ Background
 - ◆ Planning
 - ◆ Operations
 - ◆ Benefits
- ◆ Lessons learned

Case Study Introduction

- ◆ I-84 Banfield Freeway in Portland, OR
- ◆ Oregon Department of Transportation (ODOT)
- ◆ This project illustrates a successful application of the full closure approach in 2002

FULL ROAD CLOSURE FOR WORK ZONE OPERATIONS: A Case Study

**Using Weekend Closures to
Expedite Road Rehabilitation
and Minimize the Impacts on
Motorists and Road Builders**

**I-84 Banfield Freeway
in Portland, Oregon**



Source

- ◆ FHWA report
- ◆ December 2004
- ◆ Available online

Benefits/Impacts of I-84 Full Road Closure

Benefit	Comment
Duration	Reduced 85%
Worker & traveler safety	Improved
Cost	Reduced \$100K
Quality	Improved ride
Public sentiment	Positive

Module Recap

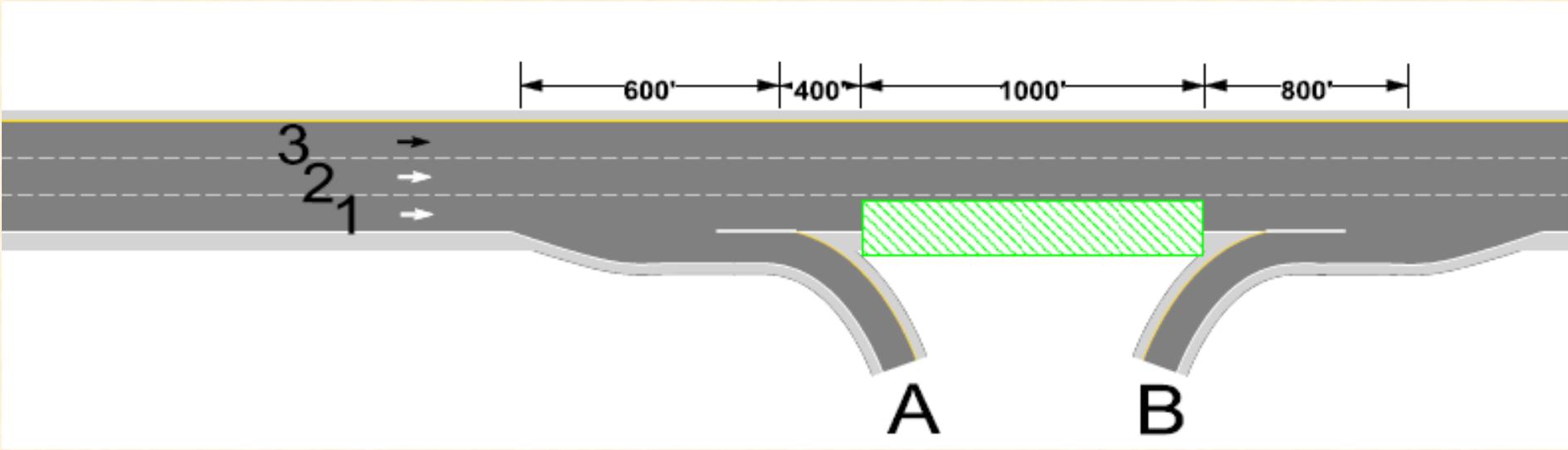
- ◆ Why do you think the full closure on I-84 was successful?
- ◆ Which tools were used for:
 - ◆ TCP?
 - ◆ PI?
 - ◆ TO?



-MODULE 8- Workshop

Module Objectives

- ◆ Apply the concepts learned to a real-world scenario





Closing

Module Objectives

- ◆ Review the “Parking Lot”
- ◆ Review course objectives
- ◆ Complete course evaluation form
- ◆ Take exam
- ◆ Adjourn!

Course Objectives

- ◆ To discuss various strategies available to work zone designers
- ◆ To provide guidance to help you identify, evaluate and select work zone strategies
- ◆ To discuss strategies as related to Transportation Management Plans

You should now:

- ◆ Know the various available work zone strategies
- ◆ Be able to identify, evaluate and select strategies for work zone traffic control



***Thank You for
Choosing
ATSSA for
Your Training
Needs!***

Be Safe!

