Work Zone Strategies

Training Course

U.S. Department of Transportation
Federal Highway Administration

ATSSA
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

ATSSA
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

Yours to keep!
**Course Schedule: DAY 1**

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## Course Schedule: DAY 2

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**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)"

He said what?
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

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
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<tr>
<td>Lower traffic volumes</td>
<td>Higher agency cost</td>
</tr>
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<td>Lower traffic impacts</td>
<td>Higher speeds; more impaired drivers</td>
</tr>
<tr>
<td>Lower impact to commercial activity</td>
<td>Crew social patterns disrupted</td>
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<td></td>
<td>Noise and possible compromise of quality</td>
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</table>
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
Discuss public information and outreach strategies

Discuss typical steps involved in public information and outreach campaigns
Public Information (P.I.) and Outreach Strategies

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

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<th>Benefit</th>
<th>Comment</th>
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<tr>
<td>Duration</td>
<td>Reduced 85%</td>
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<tr>
<td>Worker &amp; traveler safety</td>
<td>Improved</td>
</tr>
<tr>
<td>Cost</td>
<td>Reduced $100K</td>
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<tr>
<td>Quality</td>
<td>Improved ride</td>
</tr>
<tr>
<td>Public sentiment</td>
<td>Positive</td>
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Module Recap

Why do you think the full closure on I-84 was successful?

Which tools were used for:
- TCP?
- PI?
- TO?
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!