Temporary Traffic Control Design Specialist
(For Traffic Control Supervisors)
Training Course
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

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SAFER ROADS SAVE LIVES
About this course

Based on the 2003 Edition of the *Manual on Uniform Traffic Control Devices*

Intended for Traffic Control Supervisors and others responsible for designing of Traffic Control Plans (TCP)
About this course

- Requires TCS certification
- If you do not have it, there is a two-day course available
- TCDS certification available
TCDS Certification for Supervisors Available

- Must be applied for separately
- Application form included in course materials
TCDS Certification Requirements

- TCS certification in good standing
- 80% or better on this course’s test
- One year (2000 hours) work zone design experience
- Provide two references
- Be approved by the ATSSA Certification Board
About this course

- One-day course
- Three workshops
- Ends no later than 5:00 PM

Flexible schedule!!
Upon completion, you will be able to:

- Recognize the design elements of work zone traffic control
- Apply these to real-world scenarios
- Design basic traffic control plans
- Know techniques and procedures for designing effective, efficient and safe TCPs
Course Materials

- Course notebook
- MUTCD (Parts 1, 5, 6)
- Pencil
- Tent name sign

Yours to keep!
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Exam

- 40 multiple choice questions
- 2.5 pts each = 100 pts
- 60 minutes
- Open book, open notes
- Passing grade = 80%
MODULE 1
Introduction
Module Objectives

Define work zone traffic control and its impact on safety and mobility

Discuss the designer’s role in proper work zone traffic control

Discuss Transportation Management Plans (TMP)

Discuss the source of TTC standards and guidelines
The Positive Side of Work Zones

- Better infrastructure
- Safer roads
- Added capacity
- Improved mobility

Work zones resulted in the highways we have today!
Conflicting goals?

- Maintain traffic flow
- Keep costs down

Maximum levels of safety

TTC impact on traffic flow is important, but not at the expense of safety!
To consider ALL factors and ALL users involved, the standards and guidelines, and apply engineering judgment to develop the BEST possible Traffic Control Plan.
What is a “Significant Project”? 

Projects that alone or in combination with other concurrent projects nearby, are anticipated to cause sustained work zone impacts that are greater than what is considered tolerable based on State policy and/or engineering judgment.
What is a Traffic Control Plan?

- A plan that addresses traffic safety and control through the work zone
- Consistent with the complexity of the project
- Consistent with MUTCD, Roadside Design Guide, and state standards
- Adjusted to field conditions
Transportation Operations (TO) Component

Addresses sustained operations and management strategies of the work zone impact area, such as:

- Demand Management
- Corridor/network Management
- Enforcement
- Traffic Management
National Standards and Guidelines

- Primary source is the *Manual on Uniform Traffic Control Devices*

Discussed in the TCT and TCS courses
Module Recap

- How many people die in traffic crashes in the USA every year? In WZ?
- How do we make work zones safer?
- What are the 3 components of a TMP?
- Where do we find National TTC standards and guidelines?
- What about in this state?
MODULE 2 - Preliminary Design Concepts
Module Objectives

Discuss preliminary design concepts

Review the three factors used to categorize TTC zone applications:

1. Duration
2. Location
3. Work type (constructability)

Discuss methods to handle traffic
Integrating TMP Within Project Development

Programming → Preliminary Design

Planning → Final Design

Operations ← Construction

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What makes one work zone strategy better than another one?

- Less delay?
- Shorter duration?
- Shorter queues?

These are MOEs!
Other Factors to Consider

1. Work duration
2. Work location
3. Constructability
MUTCD Categories of Work Duration

A. Long-term stationary
B. Intermediate-term stationary
C. Short-term stationary
D. Short duration
E. Mobile
MUTCD
“Locations of Work”

A. Outside the shoulder
B. On the shoulder with no encroachment
C. On the shoulder with minor encroachment
D. Within the median
E. Within the travel way
3. Work Type

- Nature of the work?
- Access requirements?
- Drainage issues?
- Construction equipment?
- Size of work area?

"Constructability"
Methods to Handle Traffic

A. Lane Constriction
B. Lane Closure
C. Shared Right-of-Way
D. Temporary Bypass
E. Intermittent Closure
F. Crossover
G. Shoulder Use
H. Median use
I. Detour
J. Lane Separation
K. Total Closure
Module Recap

Name three wz MOEs
How long are “long-term” projects?
What are “simplified procedures?”
Name some constructability issues
What is lane constriction?
What are the potential benefits of full closures?
MODULE 3 - TTC Design Strategies
Module Objectives

Discuss planning considerations
Discuss design strategies:
1. Use of police services
2. Phasing/Staging
3. Contracting
Design Strategies to Discuss

1. Use of police services
2. Phasing
3. Contracting
3. Contracting Strategies

- Incentives
- Alternative contracting strategies
Alternative Contracting Strategies Used in WZ

1. A+B bidding
2. Design-build contracting
3. Incentive-disincentive provisions
4. Lane rental
5. Flexible notice to proceed
Module Recap

- Name some data requirements of work zones
- What is the difference between police “presence” and “enforcement”? 
- Name some phasing considerations
- Name two contracting strategies
MODULE 4 - Roadside Design
Module Objectives

- Discuss work zone roadside safety concepts
  - Drop-offs
  - Above-ground hazards
- Discuss drop-off protection
Work Zone Roadside Design

Based on concepts from the AASHTO *Roadside Design Guide* (Part of MUTCD)

The specifics vary from State to State

Permanently roadways apply to temporary roadways
**Drop-off Protection in Work Zones**

Allow for “DYNAMIC DEFLECTION”
Which Treatment?
REVIEW: Lane Closure with Barrier
Module Recap

- What is a “drop-off”?
- What is considered a “non-recoverable slope”?
- What is the clear zone?
- Where is the clear zone measured from?
- How do we protect drop-offs within the clear zone?
-MODULE 5
Traffic Control Plan (TCP)
Module Objectives

- Discuss strategies used in developing an effective TCP
- Discuss TCP requirements
- Discuss component parts of a good TCP
The Traffic Control Plan

- Describes temporary traffic control measures to be used for facilitating road users through a work zone
- Specific requirements may be detailed in various publications, depending on the state
Putting the TCP Together

1. Plan orientation
2. Scale
3. Stationing
4. ID/Approval blocks
5. Legend
6. General notes
7. Special notes
8. Typical drawings
9. Detailed drawings
10. Match lines
11. Related documents
Module Recap

- What is a TCP?
- Name typical parts of a TMP
- Name some tools that can be used to draw TCPs
-MODULE 6-
Other Considerations
Module Objectives

Discuss “other” considerations
1. Work in urban areas
2. Pedestrian considerations
   • ADA
3. Motorcycle considerations
4. Bicycle considerations
What is an Urban Area?

An area normally characterized by:
- Relatively low speeds
- Wider range of traffic volumes
- Narrower lanes
- Frequent intersections & driveways
- Significant pedestrian traffic
- More businesses & houses

Source: 2003 MUTCD
ADA Issues
The Answer

Use your engineering judgment to make the adjustments you feel are necessary to provide for the safest conditions and satisfy user needs!
3. Motorcycle Considerations

- Crashes tend to be serious
  - 1 of 10 crashes is fatal
- Crashes are increasing
- No MUTCD requirements
  - Considered a “motor vehicle”
- Some feel they deserve special considerations
Module Recap

- What are some of the problems associated with urban work zones?
- Name some pedestrian considerations? ADA considerations?
- What are problems associated with motorcycles in work zones?
- Name some bicycle considerations
-CLOSING-
Module Objectives

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