The Basics of Temporary Traffic Control – What Every Contractor Should Know

James E. Bryden, PE
jbryden@nycap.rr.com

2009 Traffic Management & Work Zone Safety Conference
Orlando, Florida - March 11, 2009
What is Temporary Traffic Control - TTC?

TTC is the use of temporary traffic control devices, flaggers, police officers, and other safety devices and features to guide traffic through an area of a highway where road user conditions are changed by road work or an incident.
Common Terminology

- TTC – Temporary Traffic Control
- TTCZ - Temporary Traffic Control Zone
- WZ – Work Zone
- WZTC – Work Zone Traffic Control
- TTCP – Temporary Traffic Control Plan
- TTCD – Temp. Traffic Control Device
- M&PT – Maintenance and Protection of Traffic
- MOT – Maintenance of Traffic
Why should contractors care about temporary traffic control?

(1) because it’s the right thing to do and

(2) because it’s profitable.
Safety is Caring About People

“Everyone gets to go home at the end of the day.”
Tractor/Trailer accident
99-5119 w/attenuator
HRM EB 881-9303-1015+
Safety is Profitability

- Insurance costs
- Productivity and constructability
- Traffic impacts
- Liability
How serious is the WZ Problem?

- 835 fatalities in 2007
- $4.4 B Annual Cost
- 75 workers killed by vehicles/equipment
Objectives of TTC

- Safety — protect roadway users and workers
- Mobility — maintain traffic flow and minimize adverse impacts associated with congestion, travel restrictions, and work activities
- Constructability — complete the project on time, within budget, meeting quality standards

These are competing objectives — successful projects require a carefully considered balance of all three objectives.
Safety

Mobility

Constructability
Good TTC
Achieves Multiple Goals

- Movement of vehicles, bicycles, pedestrians
- Accommodates transit operations
- Provides access to property and utilities
- Protects workers and work operations
- Allows efficient completion of the work

Bottom line = reasonably safe & efficient movement of road users while protecting workers & completing work efficiently
Roadway Users

- Motorists
- Bicyclists
- Pedestrians
- Includes persons with disabilities
- Adjacent properties owners must also be accommodated
Fundamental Principles

- Essential part of highway work
- Minimize restrictions on road user movements
- Provide clear and positive guidance
- Routine day and night inspections
- Maintain roadside safety
- Provide adequate worker training
- Maintain good public relations
- TTC in place before work starts, removed when not needed
- Provide legal authority for WZTC
TTC Standards & Guidance
Where is it written?

- MUTCD
- AASHTO Policy on Geometric Design
- AASHTO Roadside Design Guide – Chapter 9
- FHWA Subpart J – WZ Safety and Mobility
- FHWA Subpart K – Temporary TCDs
- FHWA Part 634 – Worker Visibility
- FHWA Website – Roadside Hardware
- Highway Agency Standards, Specs, Plans & Proposals
- OSHA 1926
Federal MUTCD

- 23 U.S.C. 109(d), 402(a) – national standard for all TCDs on any street, highway, or bike trail open to public travel.
- Each state shall be in substantial compliance
- Part 6 – Temporary Traffic Control
- TTCZ Devices – Signs, channelizing devices, others
- 46 Typical Applications
- Chapter 6I – Traffic Incident Areas

www.fhwa.dot.gov
Common TTCDs

- Signs
- PCMS, APs
- Channelizing Devices
- Pavement Markings
- Lighting devices
- Temp. Traffic Barrier, Crash Cushions
Typical Applications - TAs

TAs illustrate traffic control approaches for a variety of common WZ situations

- Illustrative examples – NOT standards
- TAs should be altered, when needed, to meet actual conditions
- MUTCD includes 46 TAs.
- TAs can be adapted, combined to address other situations.
Figure 6H-4. Short-Duration or Mobile Operation on Shoulder (TA-4)

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

Typical Application 4
Figure 6H-39. Median Crossover on Freeway (TA-38)

Typical Application 39

Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and for letter codes used in this figure.
Traffic Control Plans

- TAs are a starting point
- Traffic Management Plans – complex projects
- Contract plans and specs provide additional details
- Most agencies provide standard details for TTC setups
- Contract plans often include detailed drawings
Common WZ Myths

• Workers are at the greatest risk
• WZ intrusions are a big problem
• Excessive speed is our biggest problem
• Drivers are the enemy
• We can’t control WZ safety
Key WZ Safety Staff

- CEO
- WZ Safety Program Director
- Executive managers/supervisors
- Project supervisors and foremen
- Project WZ Supervisor
- Individual workers
Contractor Planning

- Work crew staffing plan
- Worker training
- Material availability
- Project Site Patrol
- Overhead power lines
- Emergencies and contingencies
- Operational restrictions
Other Aspects of TTC

- TTC considered in bidding process
- Contractor partnering with owner agencies
- Participation in industry associations
- Support WZ safety advocacy efforts
- Insurance Co. support and services
Helpful Websites

- http://www.fhwa.dot.gov/
- http://mutcd.fhwa.dot.gov/
- http://www.transportation.org/
- http://www.artba.org/
- http://www.agc.org/
- http://workzonesafety.org
- http://www.atssa.com/
- http://www.trb.org/
- http://www.liuna.org/