

# WORK ZONE DEVICES & LAYOUTS

## *TRAINING AND RESOURCES FOR LAW ENFORCEMENT*



## DID YOU KNOW....

- 32,287 traffic fatalities every year nationwide occur
- 576 of those occur in work zones
- More police officers are killed by traffic than by bullets
- 4 times more officers were killed when struck by vehicles than in accidental shooting over the last 10 years



Source: [www.nhtsa.dot.gov](http://www.nhtsa.dot.gov), [www.fbi.gov](http://www.fbi.gov)



# WHY ARE WORK ZONES A CONCERN?

- **Speeding**
- **Hazards present**
- **Exposed Workers**
- **Situations not familiar to the drivers**
- **Others?**



# COMMON PITFALLS WHEN USING LAW ENFORCEMENT OFFICERS IN WZ

1. **Lack of Communication** between work zone (WZ) participants
2. **Lack of Planning and Coordination** of traffic control responsibilities
3. **Inadequate Training** of law enforcement personnel (LEO) in traffic control procedures within highway work zones



# COURSE OBJECTIVES

1. To provide you with a working knowledge of traffic control work zones
2. To define your roles and responsibilities when working in work zones



# LAW ENFORCEMENT'S ROLES AND RESPONSIBILITIES

1. Training in WZ operations and safety
2. Follow chain of command/dispatch procedures/know your points of contacts
3. Agency liaison attends pre-construction meetings
4. Ongoing evaluation of the WZ



# TYPICAL WORK ZONE STAKEHOLDERS

1. Highway Agency
2. Contractor
3. Contractor's Point of Contact
4. Traffic Control Technicians
5. Law Enforcement



# HIGHWAY AGENCY

- State DOT or Local Agency
- Responsible for the overall project including the Traffic Control Plan
- Considered the “final authority”



# CONTRACTOR(S)

- Responsible for the building and maintaining of the project
- Ensure that the traffic control is correct on a daily basis
- DO NOT have the authority to place officers contrary to established procedures and/or endanger the police officer
- Should provide a daily work zone briefing to police officers prior to the beginning of each shift or special enforcement activity



# CONTRACTOR'S POINT OF CONTACT

- Represents the contractor in the field
- In charge of project activities in the field
- Responsible for inspection and documentation



# TRAFFIC CONTROL TECHNICIANS

- Reports to the Point of Contact
- A very good source for Traffic Control Plan issues
- Should have work zone training



# LAW ENFORCEMENT OFFICERS

- Be trained in basic work zone operations and safety
- Obtain names & numbers of contractor personnel and Point of Contact
- Attend the project's pre-construction meeting



# PRE-CONSTRUCTION MEETING

- A meeting where everyone involved with the project discusses:
  - Roles and Responsibilities
  - Construction Details
  - Procedures & Schedules
  - Decisions that need to be made
  - Questions that have not been answered



# WHAT TO DO WHEN WORKING IN A WORK ZONE?

1. Stay in communication
2. Be visible
3. Be alert
4. Drive-Through
5. Monitor Traffic Control Plan Compliance



# STAY IN COMMUNICATION

- **Contact Project Engineer or Point of Contact for clarification and project details**
- **What information should be discussed?**
  - Project objectives
  - Project schedule
  - Your location
  - Contact Information
  - Concerns about safety
  - Enforcement areas



## BE VISIBLE

- If outside of the patrol vehicle and within the work zone, a retro-reflective safety vest **MUST** be worn
- Identify the safest and most efficient location



# DRIVE-THROUGH

- Drive-through the work zone in both directions in order to become familiar with the work zone and all of its activities
- Determine a safe places to investigate crashes and perform enforcement
- To identify hazardous conditions



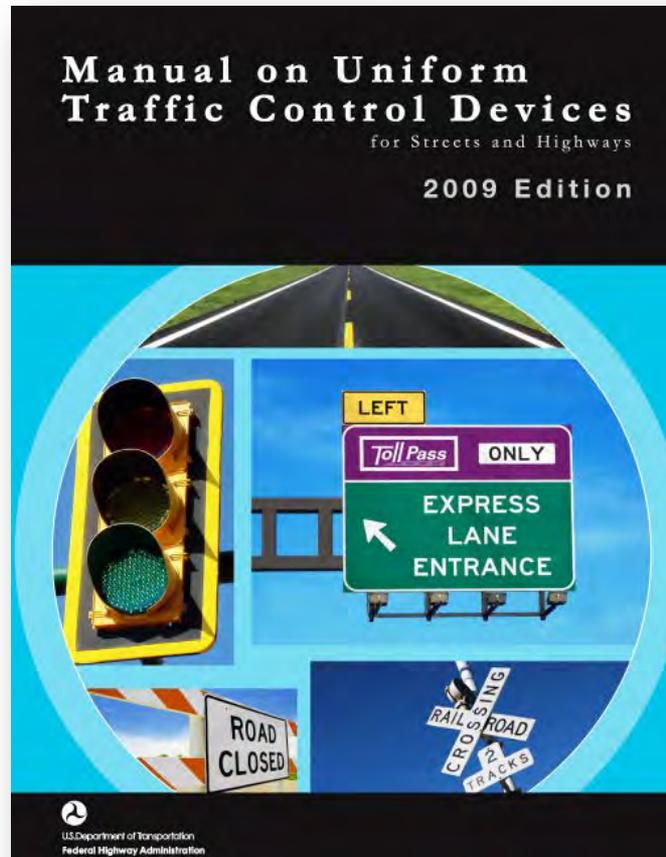
# MONITOR TRAFFIC CONTROL PLAN COMPLIANCE

- Officers are NOT responsible for Traffic Control Compliance inspections, but are a valuable resource in identifying potential problems
- If any problems are detected, notify a supervisor or a point of contact



# GUIDELINES AND MATERIALS

- Manual on Uniform Traffic Control Devices (MUTCD)



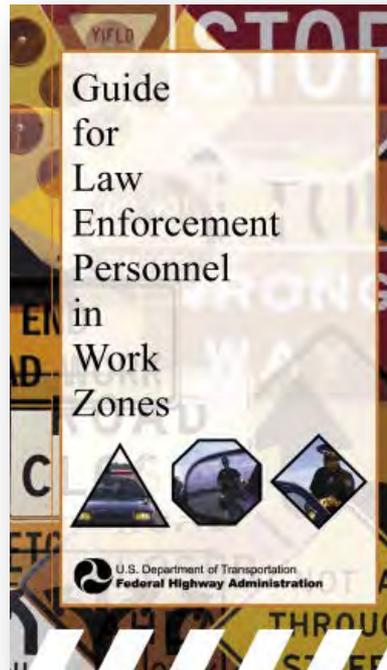
# GUIDELINES AND MATERIALS

- **Manual on Uniform Traffic Control Devices (MUTCD)**
  - Minimum standards
    - States and local agencies can have more restrictive standards
  - Applies to all streets and highways open to public travel
  - DOES NOT address use of law enforcement officers in Work Zones
  - DOES NOT show location of police vehicles



# GUIDELINES AND MATERIALS

- Guide for Law Enforcement Personnel in Work Zones



# WORK ZONE DEVICES

- Vests
- Signs
- Portable Changeable Message Signs (PCMS)
- Barricades
- Cones
- Drums
- Flexible tubular markers
- Arrow panels
- Concrete Barriers
- Lighting
- Striping/skip lines
- Attenuators



# WORK ZONE LAYOUT

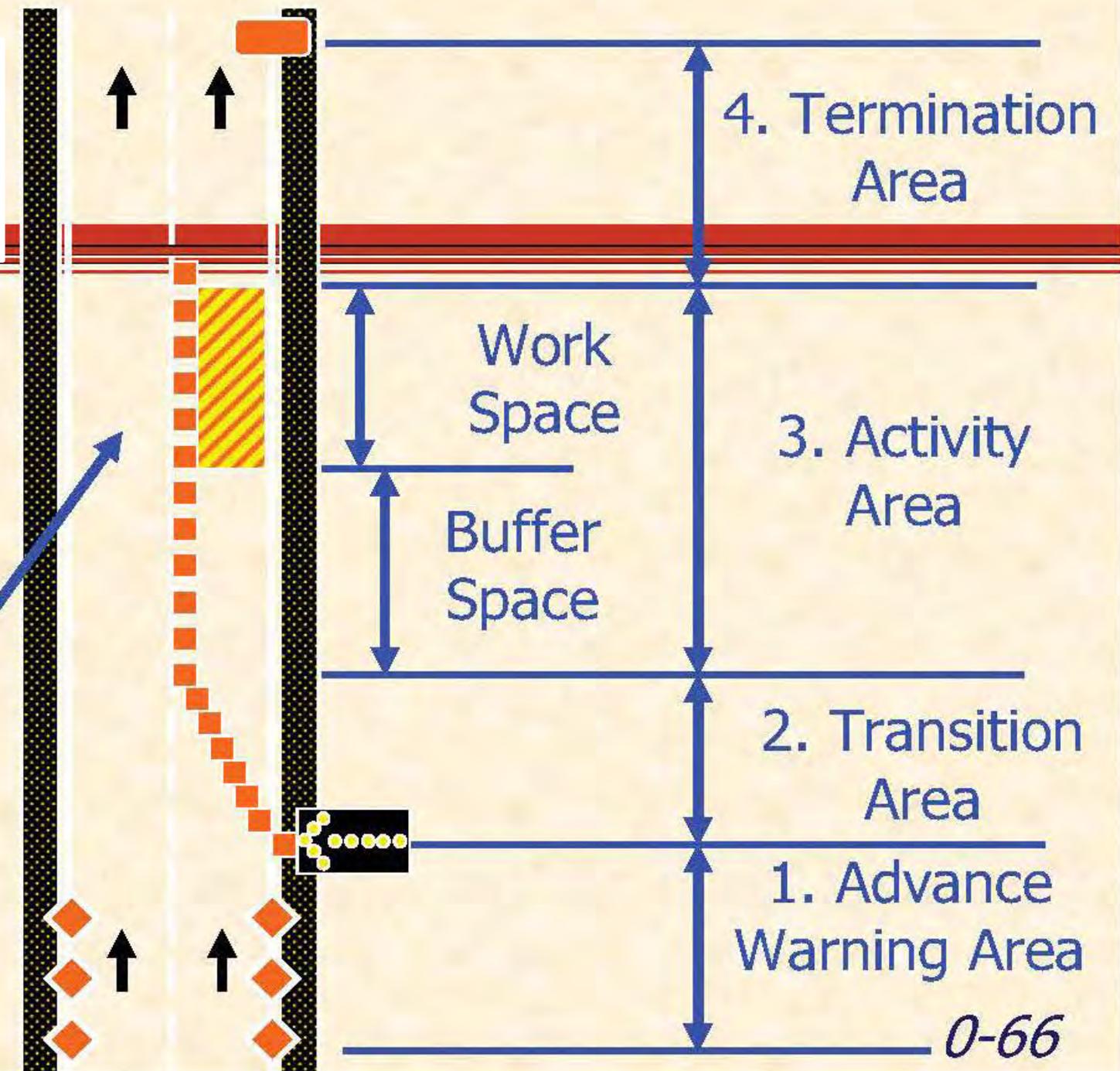
1. Advance Warning Area
2. Transition Area
3. Activity Area
4. Termination Area



# Parts of a Work Zone

Traffic Space

*Not to scale*



# ADVANCE WARNING AREA

- Uses advance warning signs to warn drivers and help make decisions
- Usually a “3 Step” process
  - A = 1<sup>st</sup> Sign: Gets the driver’s attention
  - B = 2<sup>nd</sup> Sign: Communicates the problem
  - C = 3<sup>rd</sup> Sign: Tells drivers what to do

*\*use Minimum Sign Guidelines of Guide for LE, page 12*



# TRANSITION AREA

- **Typically uses channelizing device to form a taper**
  - Type of channelizing devices:
    - Cones (for short duration only)
    - Drums
- **Minimum length of taper as specified in MUTCD**
  - *use Taper Lengths and Device Spacing chart from the Guide for LE page 16 and new (longer) Addendum Buffer Length distances*
- **Based off of Perception Reaction Times (PRT)**
- **Arrow Boards**
  - *page 15 of the Guide for LE*



# ACTIVITY AREA

- **Buffer Space**
  - Recovery area for errant vehicles
  - Protects the workers
  - ALWAYS EMPTY
    - No vehicle or equipment should be parked in the buffer space at any time
- **Work Space**
  - The area where the actual work is taking place
- **Traffic Space**
  - The space open for public to pass safely



# TERMINATION AREA

- Termination Taper (optional)
- END ROAD WORK Sign
- Resume SPEED sign



# NIGHTTIME CONDITIONS

- Drive Through May Identify Issues
- Reflective Qualities
- Work Zone Lighting
- Construction Vehicle Lighting



# OTHER ISSUES

- Installing/Removing Stationary Work Zone Closures
- Day to Day Changes
- Effected By Traffic Spikes and Commuter Patterns
- Emergency/Maintenance Vehicle Crossovers
- Construction Crossovers/Traffic Shifts



# LAW ENFORCEMENT IN WZ VIDEO

# WHAT'S WRONG WITH THIS PICTURE?



# WHAT'S WRONG WITH THIS PICTURE?

-Improperly mounted sign



# WHAT'S WRONG WITH THIS PICTURE?



# WHAT'S WRONG WITH THIS PICTURE?



-Advance Warning sign is obstructed by channelizing device.



# WHAT'S WRONG WITH THIS PICTURE?



# WHAT'S WRONG WITH THIS PICTURE?

-Improper use of a flagger paddle

-Signing is sending a conflicting message to drivers



# WHAT'S WRONG WITH THIS PICTURE?



# WHAT'S WRONG WITH THIS PICTURE?



# WHAT'S WRONG WITH THIS PICTURE?



# WHAT'S WRONG WITH THIS PICTURE?

The signing and pavement markings provide the driver with conflicting messages.



# CONCLUSION

## *Law Enforcement Officers Need to:*

- Understand the Uniformity of Work Zones and the Proper Devices & Layouts
- Identify Problems & Deficiencies
- Report Them Through Proper Channels
- Understand the Minimum Standards of the MUTCD



# QUESTIONS?



# PRESENTERS

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