NATE

THE COMMUNICATIONS INFRASTRUCTURE CONTRACTORS ASSOCIATION

WORK ZONE SAFETY GUIDELINES

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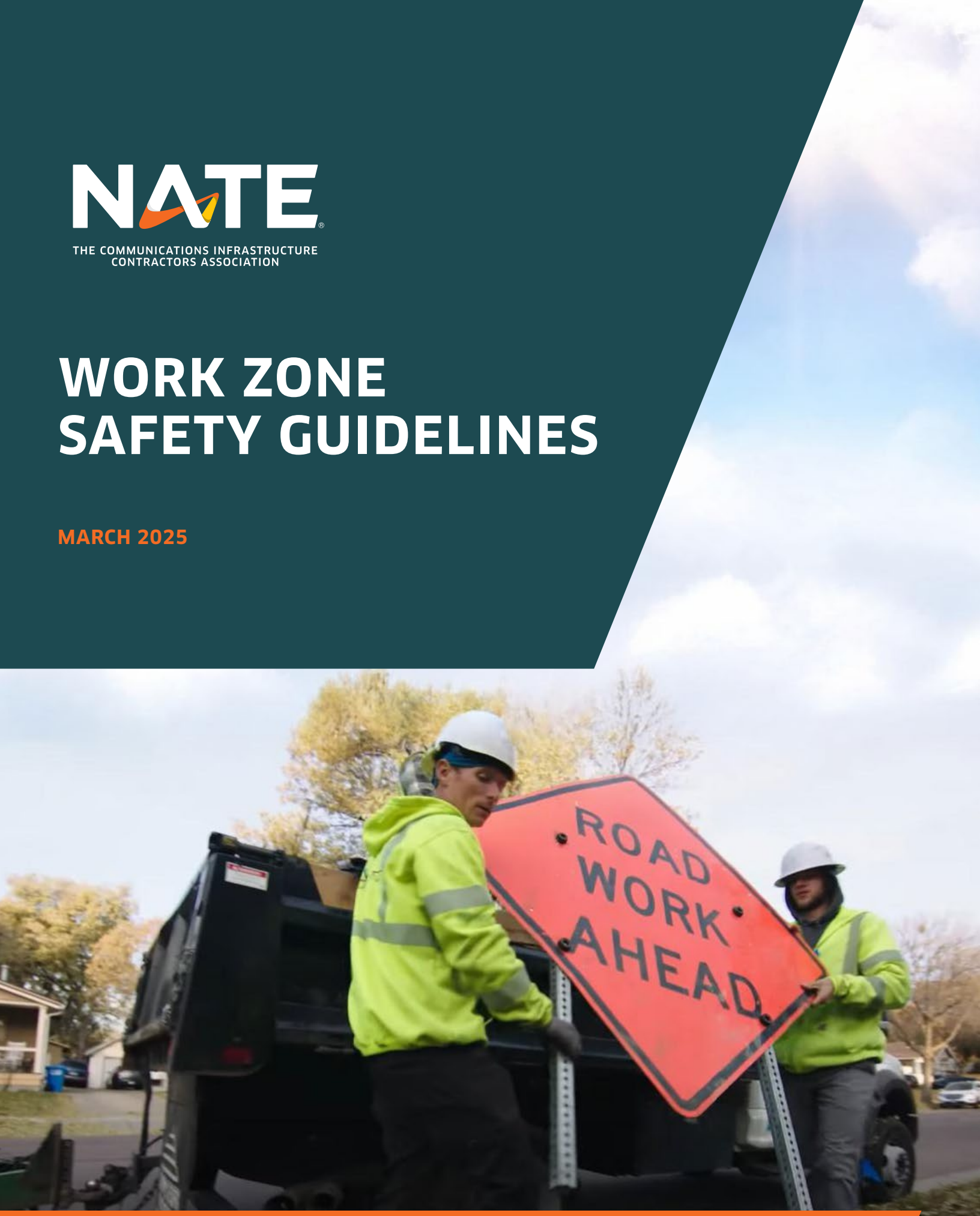

INTRODUCTION

Work zone safety is critical to ensure the well-being of workers, drivers, and pedestrians in and around construction or maintenance sites. In addition to setting the minimum standards and guidelines to ensure uniformity of traffic control devices across the nation, The Manual on Uniform Traffic Control Devices (MUTCD) in Part IV sets minimum standards for work area protection when working on public roadways. The most current MUTCD shall be utilized as the in-depth resource on traffic control devices. This NATE guideline provides a high-level overview of work zone safety on select topics to assist in an effort to reduce accidents and improve efficiency in work zones. This document is not intended to cover the full breadth of work zone safety. Employers can use these guidelines to help them develop their own plans to satisfy their unique needs.

1 | TRAFFIC CONTROL PLANS (TCP)

A Traffic Control Plan (TCP) is a comprehensive design that outlines how traffic will be managed through or around a work zone. It is essential for maintaining safety and ensuring minimal disruption to traffic flow while protecting both workers and the public.

KEY ELEMENTS OF A TCP

- **Traffic Flow Patterns:** Detailed routing of vehicles and pedestrians, indicating detours, lane closures, and temporary signage.
- **Work Zone Boundaries:** Clear delineation of the work zone using barriers, signs, and devices.
- **Signage and Markings:** Proper use of regulatory, warning, and guide signs, as well as pavement markings.
- **Speed Limits:** Temporary speed reductions in work zones to accommodate construction activities.
- **Traffic Control Devices (TCDs):** Proper placement of cones, barrels, barriers, and other devices to redirect traffic safely.
- **Work Zone Duration:** The expected duration of the work zone, including any lane restrictions or closures.
- **Emergency Access:** Plans to maintain clear access for emergency vehicles.

CONSIDERATIONS

- **Compliance with Standards:** All TCPs should conform to local, state, or federal traffic control standards, such as those outlined in the Manual on Uniform Traffic Control Devices (MUTCD).
- **Monitoring and Adjustment:** Continuously monitor traffic flow and adjust the plan as needed to improve safety or alleviate congestion.

2 | PERSONAL PROTECTIVE EQUIPMENT (PPE)

Personal protective equipment (PPE) is essential for safeguarding workers in the hazardous environment of a work zone. Proper PPE should be worn by all personnel working within the designated work area, and the company may determine the level of PPE needed based on the situation. For example, flaggers may be required to don additional high visibility garments then that worn by workers within the zone.

REQUIRED PPE

- **High-Visibility Clothing:**
  - Workers should wear high-visibility vests or shirts (preferably fluorescent yellow-green, orange, or red) with reflective stripes, ensuring they are visible in both daylight and low-light conditions.
  - Retroreflective vests or jackets must meet the American National Standards Institute (ANSI) 107 Standard.
- **The employer shall determine whether additional PPE is required within the work zone.**

3 | FLAGGING OPERATIONS

Flaggers play a critical role in directing traffic safely through work zones, especially when flagging is necessary due to lane closures, detours, or other traffic disruptions. Flaggers must be trained and equipped to manage traffic safely and effectively.

FLAGGING GUIDELINES

- **Flagger Training:** Flaggers must be trained and/or certified in the proper signaling techniques, safety protocols, and communication methods, as determined by the authority having jurisdiction. Work Zone Safety provides information on state training requirements for flaggers.
- **Flagger Equipment:**
  - **Stop/Slow Paddle:** Flaggers should use standardized hand signals or stop/slow paddles to control the movement of traffic (see section 6L.03 of the MUTCD for device requirements).
  - **Communication Devices:** Radios or other communication tools are necessary for flaggers to coordinate with other flaggers or workers on site.
  - **Protective Gear:** Flaggers must wear high-visibility vests or clothing, hard hats, and any other PPE as required by site-specific conditions.
- **Flagger Positioning:** Flaggers should stand in a safe position where they can clearly see approaching vehicles and be seen by drivers. They must be positioned so that they are not exposed to moving traffic. Flaggers may only enter a travel lane when traffic has stopped and it is safe to do so.
- **Timing, Coordination, & Communication:** Flaggers should attend pre-job briefings or JHA reviews with the crew. Flagging operations must be coordinated to minimize delay and ensure smooth traffic flow. Flaggers should always communicate with each other when working in pairs or teams. Methods of communication with the work crew should be established to alert the crew of changes in the traffic pattern, emergency vehicles, and danger.

4 | TRAFFIC CONTROL DEVICES

TYPES OF DEVICES

Various traffic control devices (TCDs) are used to direct, warn, and protect traffic and workers in a work zone.

These include:

- **Cones:** Used to channel traffic or delineate work zone boundaries. Typically used in lower-speed zones.
- **Barrels:** Larger and more visible than cones, barrels are used in high-speed areas and can withstand more impact.
- **Barricades:** Physical barriers that block or divert traffic. Barricades should be marked with retroreflective tape to enhance visibility at night.
- **Traffic Signs:**
  - **Warning Signs:** Include signs like "Road Work Ahead," "Detour," and "Reduced Speed Limit."
  - **Regulatory Signs:** Such as “No Parking” or “Lane Closed.”
  - **Guide Signs:** Indicate detour routes or alternative directions.
- **Temporary Traffic Signals:** Used to manage traffic in areas with alternating one-lane traffic or complex intersections.
- **Arrow Boards:** Direct traffic in the appropriate direction, often used for lane closures or detours.
- **Message Boards:** Used for providing advanced warning of detours, lane closures, or other road conditions.
- **Flashing Lights and Beacons:** Employed to enhance the visibility of traffic control devices, especially at night.

PLACEMENT AND MAINTENANCE

- Devices should be properly spaced and positioned to ensure maximum visibility and effectiveness.
- Regular checks and maintenance of devices are necessary to ensure they remain visible, intact, and functional.
- Traffic control devices, such as cones, shall be uniform in placement. For example, devices used in a taper should all be the same type of device, height, color, etc.
- It is a best practice to drive the work zone after establishing the temporary traffic pattern, prior to commencing work activities, to ensure the temporary traffic controls are adequate.

5 | PEDESTRIAN REQUIREMENTS

In work zones where pedestrians are present, it is essential to provide pathways that are compliant with the Americans with Disabilities Act (ADA) and clear signage to protect them from potential hazards.

PEDESTRIAN SAFETY GUIDELINES

- **Safe Walkways:** Pedestrians must be routed away from the construction zone, where possible. If this is not feasible, temporary walkways with adequate barriers (e.g., fences or barricades) should be provided to protect pedestrians from traffic and construction activities. Pedestrians should never be exposed to vehicle traffic.
- **Signage and Warnings:**
  - Clearly mark pedestrian pathways with appropriate signage, such as "Pedestrian Detour" or "Walkway."
  - Use warning signs to alert pedestrians to potential hazards, like uneven surfaces or construction activities.
- **Crosswalks:** Maintain and mark temporary crosswalks, where necessary, to help pedestrians safely navigate through or around the work zone.
- **Lighting:** Provide adequate lighting on pedestrian pathways, particularly during night-time or low-light conditions.
- **Access for Disabled Persons:** Ensure that temporary pedestrian routes are accessible to individuals with disabilities, in compliance with the Americans with Disabilities Act (ADA).

MONITORING PEDESTRIAN MOVEMENT

- Workers should be trained to be vigilant about pedestrian movement and potential safety risks in the work zone. Pedestrians routinely violate the directions provided for movement around work areas.
- Traffic control plans should account for pedestrian activity, ensuring that work zone adjustments do not disrupt pedestrian access or safety.

CONCLUSION

Ensuring work zone safety requires careful planning and execution. By implementing proper traffic control plans, providing appropriate PPE, effectively managing flagging operations, using the correct traffic control devices, and safeguarding pedestrians, work zones can be managed in a way that minimizes risks and ensures the safety of everyone involved. Regular training, monitoring, and adherence to safety standards are essential for maintaining a secure work environment.

MUTCDs & Traffic Control Devices Information by State:
mutcd.fhwa.dot.gov/resources/state_info/index.htm