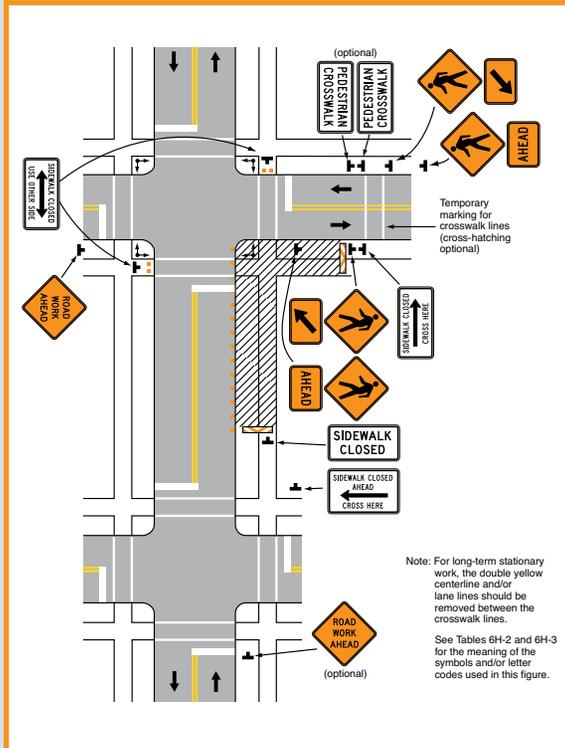


## Typical Applications

Typical Applications are illustrative examples that show how to apply temporary traffic control principles and standards to various work zone situations, as in the case of short duration or mobile operations on the shoulder, illustrated below.



Typical Application 29, Figure 6H-29.  
Crosswalk Closures and Pedestrian Detours

For a complete list of the typical applications for maintenance operations, see the *The Manual on Uniform Traffic Control Devices* <http://mutcd.fhwa.dot.gov/index.htm>.



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For more information on Typical Applications for Maintenance Operations, see:

*The Manual on Uniform Traffic Control Devices*  
<http://mutcd.fhwa.dot.gov/index.htm>

*Traffic Control Handbook for Mobile Operations at Night* <http://www.ops.fhwa.dot.gov/wz/resources/publications/publications.htm>

*Maintenance Work Zone Safety: Pocket Guide of MUTCD's Guidance on Temporary Traffic Control* at: [ATSSA.com](http://ATSSA.com)

The National Work Zone Safety Information Clearinghouse  
<http://www.workzonesafety.org/>

FHWA's Work Zone Safety and Mobility Program  
<http://ops.fhwa.dot.gov/wz/>

FHWA Office of Safety's Work Zones  
<http://safety.fhwa.dot.gov/wz/>

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This material is based upon work supported by the Federal Highway Administration under Grant Agreement No. DTFH61-06-G-00004. Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the Federal Highway Administration.

Photographs courtesy of the AAA Foundation for Traffic Safety.

# Work Zone SAFETY:

## Temporary Traffic Control for Maintenance Operations



## Maintenance Operations and Temporary Traffic Control

Roadway maintenance activities occur in close proximity to traffic, creating a potentially dangerous environment for workers, drivers, and incident responders. In many such cases, a Temporary Traffic Control (TTC) Zone will be needed to both protect workers and incident responders as well as to allow for the safe and efficient movement of road users through or around TTC Zones. There are seven fundamental principles for TTC Zones that should be taken into account on every maintenance project, regardless of size or duration:

1. **Plan for traffic safety.** Road users and worker safety are a high priority element.
2. **Interfere with traffic as little as possible.** Avoid abrupt changes to traffic patterns that would require rapid or unexpected maneuvers.
3. **Provide clear, positive guidance on how to get through the TTC Zone.** Give adequate advance warning about the upcoming TTC Zone to all road users, including drivers, cyclists, and pedestrians (including disabled pedestrians) by using appropriate traffic control devices, such as cones or signs, and by removing or covering any conflicting devices. Provide a safe alternate route for pedestrians when the sidewalk is closed.



4. **Perform continuous inspection and maintenance of TTC devices.** Trained personnel should perform the inspections and schedule the repair or replacement of devices as necessary. (See *ATSSA Quality Guidelines for Traffic Control Devices* for guidance.)
5. **Maintain roadside safety throughout the operation.** Provide a buffer zone for errant vehicles and store equipment and materials where they will not get hit.
6. **Make sure workers are properly trained and certified.** All those who are involved with planning, installation, maintenance, and removal of a TTC Zone should have the appropriate safety and TTC training. (Check for state and local requirements.)
7. **Maintain good public relations.** Provide appropriate advance notice and cooperate with the news media in publicizing TTC Zone(s) that will impact pedestrian, cyclist, and vehicle traffic.

## Work Duration and Appropriate Devices

Work duration and location are key elements in identifying the number and types of devices used in the TTC Zone. Work durations for maintenance work typically fall into three categories:

- **Short-term stationary work** occurs during a single work shift and occupies a location for more than one hour within a single daylight period. Cones and portable signs are options for traffic control devices at these locations. Short-term stationary activities include:
  - Light standard repair.
  - Pothole repair or patching.
  - Bridge or culvert repair.
- **Short-duration work** occupies a location for up to one hour. Portable traffic control devices are an option for a TTC, and vehicles may use signs or arrow panels to assist with TTC. Shadow vehicles may also be used for worker safety. Examples of short duration work include:
  - Pavement sampling.
  - Repair and replacement of small roadside signs.
  - Replacement for raised pavement markers.

“Safety in short-duration or mobile operations should not be compromised by using fewer devices simply because the operations will frequently change its location.” (source: MUTCD 6G.02)

- **Mobile work** moves intermittently or continuously. The same devices and vehicles apply to mobile work can be used for short duration operations. Examples of mobile work include:
  - Pavement marking installation.
  - Pavement sweeping.
  - Mowing in the highway right-of-way.
  - Snow removal.

“Warning signs, high-intensity rotating, flashing, oscillating, or strobe lights on a vehicle, flags, and/or channelizing devices should be used and moved periodically to keep them near the mobile work area.” (source: MUTCD 6G.02)

