

Glossary

Activity Area

That part of a Temporary Traffic Control (TTC) zone where the work actually takes place. It consists of the work space, traffic space, and buffer space(s).

Advance Warning Area

The area of a TTC zone used to inform the motorist what to expect ahead. This area may contain devices ranging from a single sign or vehicle warning light on a vehicle to a series of signs and the use of a portable changeable message sign (PCMS). The location of the beginning of the TTC zone is dependent upon its visibility to motorists. Good visibility is achieved where the sight distance is sufficient to meet the Decision Sight Distance (D).

Advance Warning Following Distance (F)

The distance in a mobile operation between the Shadow Vehicle and the Work Vehicle. It is used to provide advance warning to traffic that some type of work is being done within the traffic lane. Traffic will have to change lanes, slow down, and wait for a safe time to pass, or adjust their position within the lane to allow for a narrower traffic lane. The Shadow Vehicle shall be equipped with appropriate advance warning signing. Typical Advance Warning Following Distances (F) are included in the TTC Distance Charts. This distance is a range with a minimum of the recommended distance between Advance Warning Signs (A), and a maximum of the Decision Sight Distance (D). These distances are dependent upon the roadway and traffic conditions.

Advance Warning Sign Spacing (A)

The distance between signs or between a sign and some other location or device within the TTC zone. This distance is determined by the posted speed limit. Signs should be placed to allow adequate time for a motorist to read the signs and react accordingly. Typical Advance Warning Sign Spacings (A) are included in the TTC Distance Charts.

Advisory Speed

The recommended speed for all vehicles operating on a section of highway based on the highway design, operating characteristics, and conditions.

Alternate Pedestrian Routes (APR)

A temporary pedestrian facility created to replace an existing pedestrian facility impacted by a work zone. The APR must contain accessibility features consistent with the features present in the impacted pedestrian facility.

Approach Sight Distance

The distance by which a motorist can visually identify a work space. This work space may be a flagger station, a lane closure, a slow moving or stopped vehicle, or any other situation requiring adjustments by the motorist.

Attended Work Space

A work space is considered to be attended when the TTC devices are reviewed for knock-downs or other needed adjustments on an hourly basis.

Average Daily Traffic (ADT)

The average 24-hour volume of traffic during a stated time period divided by the number of days in that period.

Buffer Space

The space which separates traffic flow from a work area providing a margin of safety for both the driver and workers. It is important that the buffer space be free of equipment, workers, material, and vehicles.

Clear Zone

The work zone clear zone is the unobstructed (clear of obstructions, hazards, or fixed objects), relatively flat area impacted by construction that extends outward from the edge of the traveled way. Because of the limited horizontal clearance available and the heightened awareness of motorists through work zones, recommended clear zones are less than those for the non-construction conditions. Table 6K-1 gives typical clear zone widths that should be provided when roadside space is available (see Roadside Safety in General Guidelines, page [6K-n](#) for more information).

Table 6K-1: Recommended Clear Zones

Speed (mph)	Width (ft)
60 or greater	30
45-55	20
40	15
35 or less	10

Crashworthy

A characteristic of roadside devices that have been successfully crash tested in accordance with the National Cooperative Highway Research Program (NCHRP) Report 350, "Recommended Procedures for the Safety Performance Evaluation of Highway Features" or the American Association of State Highway and Transportation Officials (AASHTO) "Manual for Assessing Safety Hardware (MASH)."

Deadheading

The process of transporting vehicles and equipment between work sites while traveling at less than the minimum speed limit or substantially slower than prevailing traffic, totally or partially in the travel lanes. Deadheading shall be treated as a mobile operation.

Decision Sight Distance (D)

The total distance traveled during the length of time required for a driver to:

- Detect an unexpected or otherwise difficult-to-perceive information source or hazard in a roadway environment that may be visually cluttered,
- Recognize the hazard or its potential threat,
- Select an appropriate speed and path, and
- Initiate and complete the required maneuver safely and efficiently.

In the Field Manual, the Decision Sight Distance (**D**) is used to determine the minimum distance required for the driver to see a flagger (as the flagger is located in a vulnerable location) or work areas in layouts with minimal signing. It is also used to determine if an operation qualifies as Mobile (see definition of Duration). The required Decision Sight Distances (**D**) are included in the TTC Distance Charts.

Divided Road

A highway or two roadways where opposing traffic is separated by a median (ditch, barrier, curbing, etc.), and where the median is generally wide enough to place TTC devices. Temporary traffic control for divided multi-lane roads may also be used for one-way roadways.

Drivable

Capable of being driven on safely without a significant reduction in speed.

Downstream Taper

The taper at the end of the activity area which guides traffic back into its original lane. When used, this taper is a minimum length of approximately 100 feet with a 20-foot spacing between channelizing devices.

Duration

The length of time any work operation occupies a specific location or causes a traffic obstruction without changing the location. This time is measured from the first disruption to traffic until the total clearing of the area. The following durations are defined in overlapping intervals. Temporary Traffic Control layouts for longer durations may always be used for shorter durations, especially when roadway attributes such as traffic volume and speed, and the work space location may warrant higher levels of traffic control.

- **Mobile** - when an operation is continuously moving or stopped in one location for periods of 15 minutes or less. The Temporary Traffic Control (TTC) devices are typically vehicle-mounted. The work area should change by at least the Decision Sight Distance (**D**) for it to be considered a change in location.
- **Short Duration** - when an operation stays in one location during daylight conditions from 15 minutes to 1 hour.

- **Short Term** - when an operation stays in one location during daylight conditions from 15 minutes to twelve hours.
- **Intermediate Term/Night** - when an operation stays in one location during daylight conditions from 15 minutes to no more than three days, or stays in one location during hours of darkness.
- **Long Term** - when an operation stays in one location for more than three days. A project specific traffic control plan is typically required.

Engineering Judgment

The evaluation of available pertinent information, and the application of appropriate principles, standards, guidance, and practices as contained in this Manual and other sources, for the purpose of deciding upon the applicability, design, operation, or installation of a traffic control device. Engineering judgment shall be exercised by an engineer, or by an individual working under the supervision of an engineer, through the application of procedures and criteria established by the engineer. Documentation of engineering judgment is not required.

Expressway

Any multi-lane, divided highway for through traffic with partial control of access and generally with at-grade intersections.

Flashing Arrow Board

A device with a matrix of elements displaying either flashing or sequential messages, including caution, arrow, and chevrons. This provides warning and directional information to assist road users navigating through or around a TTC zone.

Fixed Object

Hazards that are firm, unyielding, and greater than 4 inches in height along the roadside such as bridge piers, abutments, footings, walls, posts, trees, construction equipment, supplies, stockpiles, and large boulders.

Following Distance (F)

See Advance Warning Following Distance (F).

Freeway

A divided highway with full control of access (i.e. has ramps and no at-grade intersections).

High Speed Road

A roadway where the posted speed limit is 45 miles per hour or greater.

Intermediate Volume Road

A roadway with volume between 400 and 1500 ADT.

Lane Closure

A closure of one or more lanes of the roadway to traffic. Work operations that restrict adjacent lane width should consider various lane closure alternatives depending upon volume and speeds on the roadway.

Lane Width

For traffic control purposes, a minimum lane width of 10 feet should be provided. Anything less than 10 feet shall be approved by the road authority.

Lateral Buffer Space

The space that separates the traffic space from the work space. It is typically the extra space provided between traffic and workers, excavations, pavement edge drop-offs, or an opposing lane of traffic. Traffic lanes may be closed to provide for lateral buffer space. See Figure 6K-7, Longitudinal Drop-off Guidelines (pages [6K-aj](#) through [6K-al](#)) for more information.

Longitudinal Buffer Space (B)

The distance between the transition area and the work space. If a driver does not see the advance warning or fails to negotiate the transition area, a buffer space provides room to stop before the work space. Typical Longitudinal Buffer Spaces (B) are included in the TTC Distance Charts.

Low Speed Road

A roadway where the posted speed limit is 40 miles per hour or less.

Low Volume Road

A roadway with volume less than 400 ADT.

Merging Taper (L)

This taper is used on a multi-lane road to close a lane and combine its traffic from that of the adjacent lane. Its length is dependent on the posted speed of the roadway. Higher speeds require a longer distance for traffic to merge lanes. Typical Merging Tapers (L) are included in the TTC Distance Charts.

Motorist

An operator of a motorized vehicle intended to be used on a roadway.

Multi-Lane Road

A roadway where two or more lanes of traffic travel in the same direction. A multi-lane roadway may be classified as either undivided or divided.

Occupied Work Space

A work space is considered to be occupied when workers are present within the work space. Temporary Traffic Control (TTC) devices should continuously be reviewed by workers and adjustments made as needed.

Off Shoulder

A work space located primarily off of the shoulder, or which causes little or no restrictions on the use of the shoulder. This work space should have little or no interference with traffic such that traffic speeds generally are not reduced.

Pilot Car

A specially marked vehicle that leads motorists through a work zone.

Portable Changeable Message Sign (PCMS)

A sign either trailer-mounted or vehicle-mounted that is capable of displaying more than one message, changeable by remote or automatic control.

Posted Speed Limit

The speed limit determined by law and shown on regulatory Speed Limit signs. It is used in the Temporary Traffic Control Distance Charts to determine the spacing of TTC devices and the lengths of various tapers on the TTC layouts.

Protection Vehicle

The vehicle that is placed in advance of the work space and equipment to block errant motorists from entering the work space.

Road, Roadway

That portion of a highway improved, designed, or ordinarily used for vehicular travel and parking lanes, but exclusive of the sidewalk, berm, or shoulder even though such sidewalk, berm, or shoulder is used by persons riding bicycles or other human-powered vehicles.

Road Authority

The roadway agency or private owner having jurisdiction over a road open to public travel.

Roll Ahead Distance (R)

The recommended minimum distance from the front of the Protection Vehicle to the beginning of the work space. A Protection Vehicle may be used in a mobile operation to provide extra safety for the workers. Typical Roll Ahead Distances (**R**) are included in the TTC Distance Charts.

Rural Highway

A highway where traffic is normally characterized by lower volume, higher speed, fewer turning conflicts, and fewer conflicts with pedestrians.

Shadow Vehicle

Vehicle(s) placed in advance of the work space in a mobile operation to provide advance warning to motorists. Because mobile operations generally have advance warning signing mounted on vehicles, the spacing between vehicles should be the Advance Warning Following Distance (**F**) as included in the Temporary Traffic Control Distance Charts.

Shifting Taper

The taper used to move traffic from the traffic lane onto a by-pass or shoulder. This traffic maneuver generally requires half the distance than a merging taper. See Figure 6K-11, TTC Distance Charts (page [6K-ap](#) or back cover) for the length of a shifting taper (**L/2**).

Shoulder Closure

A closure of the roadway shoulder for work operations. The shoulder becomes unusable by traffic for vehicle maneuvers or break-downs. TTC layouts for work operations using or on a shoulder are dependent on the type of shoulder usage and duration.

Shoulder Taper

The taper used to close the shoulder to traffic so that shoulder work can be performed or equipment can be placed on the shoulder. Since this taper is used to guide errant traffic back into its normal lane path, it does not require a full merge distance. The taper length is reduced to one-third of a merging taper length. See Figure 6K-11, TTC Distance Charts (page [6K-ap](#) or back cover) for the length of a shoulder closure taper (**L/3**).

Spotter

A person on the work crew whose sole duty is to warn the work crew of impending danger. The Spotter is not a Flagger. The Flagger's role is to direct traffic.

TMA (Truck/Trailer Mounted Impact Attenuator)

Energy-absorbing devices attached to the rear of vehicles in work zones that primarily reduce the severity of impacts from errant vehicles.

Temporary Pedestrian Access Route (TPAR)

A temporary, continuous, and unobstructed walkway within a pedestrian circulation path that provides accessibility.

Temporary Traffic Control (TTC) Plan

A plan describing the traffic controls to be used for facilitating vehicle and pedestrian movements through a Temporary Traffic Control zone.

Temporary Traffic Control (TTC) Zone

An area of a highway where road user conditions are changed because of a work zone or incident by the use of Temporary Traffic Control devices, flaggers, uniformed law enforcement officers, or other authorized personnel. See Figures [6K-9](#) and [6K-10](#), Component Parts of a Temporary Traffic Control Zone.

Termination Area

That part of a TTC zone located beyond the work space which guides traffic back into its normal traffic path. A longitudinal buffer space may be used between the end of the work space and the beginning of the downstream taper.

Traffic Control Device

A sign, signal, marking, or other device used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, pedestrian facility, or shared-use path by authority of a public agency having jurisdiction.

Traffic Space

That part of the roadway open to traffic that is next to the activity area. Traffic routing is provided with channelizing devices of various sizes and shapes. For a description of the various types of channelizing devices and their general uses, see the Temporary Traffic Control Devices section starting on page [6K-r](#).

Transition Area

That part of the TTC zone that moves traffic from its normal path or lane into the traffic space. This movement of traffic is done through the use of channelizing devices and directional signing placed in various types of tapers.

Turn Lane Closure

The closure of a right or left turn lane for work operations. Signing in the TTC zone shall provide adequate warning to the motorists and provide an alternative turning maneuver. Layouts from the various roadway types should be reviewed for the best alternate depending upon roadway intersection design, traffic control (stop, yield, signals, etc.), speed limit, and volume.

Two-Lane, Two-Way Road

A roadway consisting of two opposing lanes of undivided traffic.

Two-Way Continuous Left Turn Lane

That part of the roadway that has a continuous two-way, left turn lane located between the opposing lanes of traffic. This design variation may be found on either two-lane, two-way roads or multi-lane roads.

Two Way Taper

The taper used on a two-lane, two-way road to change the road into a single lane of two-way traffic. It is primarily used for flagging operations and other traffic control situations. It is typically 50 feet in length and contains 5 equally spaced channelizing devices.

Undivided Road

A roadway where opposing traffic lanes have no physical separation barriers except pavement markings (where required).

Urban Street

A type of street normally characterized by relatively low speed, wide ranges in traffic volume, narrower roadway lanes, frequent intersections/driveways, significant pedestrian traffic, and/or more roadside obstacles.

Volume

The number of vehicles passing a given point on the roadway or the Average Daily Traffic (ADT).

Work Space

That part of the TTC zone closed to traffic and set aside for workers, equipment, and materials. The space requirements for a specific TTC zone will determine the type of TTC layout that is appropriate for the project. The layout will specify the appropriate sign locations, flagger stations, and tapers depending on the type of work space.

Work Zone

An area of a roadway where road user conditions are changed because of a work space by the use of TTC devices, flaggers, uniformed law enforcement officers, or other authorized personnel.

Work Zone Speed Limits

A regulatory speed limit in a Temporary Traffic Control zone. The two types, Workers Present and 24/7 Construction, each require proper documentation to approve and install. Under certain conditions a workers present speed limit is required. Contact the road authority. See "Speed Limits in Work Zones Guidelines" for details: <http://www.dot.state.mn.us/speed/pdf/WZSpeedLimitGuideline.pdf>.