

Medians Safety Procedures

Last Updated: Jan 2020

Pre-Trip:

- Have a plan
- Everyone has a safety vest or reflective high-vis shirt
- Vehicle and arrow board lights functional
- Appropriate number of cones (36") are present (minimum of 3)
- All tools and equipment are present, and all items are secure

Key points:

- Wear all appropriate PPE: High vis and reflective clothing or safety vest (always), Safety toe shoes (always), Work gloves and Safety glasses as needed
- Wear properly rated hearing protection when necessary
- Do not use headphones while on the medians. Use cell phones only for work-related activities
- Keep time spent in traffic to a minimum – have a plan before getting on site
- Maintain the highest level of awareness and do not rush through tasks on a median
- Never expect a vehicle to go around you, stay clear of traffic – Awareness Awareness Awareness!!!
- Use caution when driving the truck onto curbs / hardscapes – less than 5mph
- Set up and clean up cones as soon as possible, monitor intermittently to assure cones remain in place
- Turn on arrow board / beacon in advance (30s), gradually reduce speed until no one is behind
- Be considerate of citizens who do not take notice of arrow board – Turtle method – See below
- Always seek out safest area to walk. Use caution when walking on un-level surfaces.
- When walking on a median, walk towards oncoming traffic so you can see cars approaching.
- Work perpendicular to road, facing towards the nearest lane, to avoid falling backwards into the street.
- Use caution when working while others are spraying pesticides
 - If with someone hand weeding, have them work ahead of the pesticide applicator
- Leave an area at any time if someone is making you feel unsafe or uncomfortable. Defend yourself however you need to in the event of an assault.
- Stop work and inform your technician / supervisor if you feel you cannot complete the assigned work safely.
- Pesticide Applications:
 - Wear all additional PPE - long sleeves, long pants, unlined gloves, face mask, safety glasses; or whatever the label of the most restrictive chemical requires
 - Do not enter area where pesticides have been applied without appropriate PPE until it is safe to do so as designated by the pesticide label(s).
 - Applicator should inform crew members of sites where pesticides were used.
 - Secure sprayers and additional chemical in the truck bed
 - Never store chemical inside the truck cab
 - Tarp the sprayers and additional chemical if left for extended periods of time.
 - Be sure to have "pesticide applied" flags and sharpie

Worksite Safety:

- Do not hesitate to call someone else out on unsafe acts
- Wear appropriate PPE – do not put off putting on safety glasses / work gloves
- Maintain three points of contact getting into and out of vehicles / equipment
- Exercise proper lifting procedures for heavy items – lift with your knees, do not twist while lifting
- Use sunscreen and insect repellent as necessary
- Keep tools organized in vehicles as well as at the worksite – keep tools pointed downwards
- Always engage the safety lock when power tools are not in use

Site Access:

- Option 1 - Park on-site
 - Do not obstruct the normal flow of traffic
 - Park on the median hardscape (Figure #1) or between centerlines of road (Figure #2)
 - Use corner caution lights on arrow board (4-bulb flashers) and beacon
 - Use cones as recommended
 - Two cones behind vehicle, one cone in front
- Option 2 - Temporary median access
 - Park as far back as possible in the turn lane near the median (see Figure #3)
 - Keep time spent obstructing normal flow of traffic to a minimum – less than 1 hour
 - Use corner caution lights on arrow board (4-ball flashers) and beacon
 - Use cones as recommended
 - Two cones behind vehicle, one cone in front
- Option 3 - Park off-site
 - Park in surrounding parking lots or on surrounding streets in normal parking spots
 - City Cone Policy
 - One cone in front or behind vehicle depending on which way vehicle will exit
- Option 4 - Mobile Operations
 - Obstructs the normal flow of traffic
 - Work moves intermittently or continuously (can stop up to 15 minutes)
 - Use directional arrow for whatever way traffic needs to move and beacon
 - Never sacrifice safety measures unless setting up equipment creates more of a hazard than the actual operation
 - Use cones as recommended
 - No cones if only stopping briefly – more of a hazard
 - When stopping for extended periods use two vehicles and additional cones
- Option 5 - Formal Traffic Control – Streets Department
 - Streets Department set-up and tear-down of lane closures
 - Operations obstructing normal flow of traffic requiring more than 15 minutes of stopping
 - Request must be submitted a min of two workdays prior to start date, due by noon (10a on Fri).
 - Work on major roadways (arterials) requires longer notice (a full week or more).

- Specific work times may be limited to 8:30a – 3:30p or 9a – 3p for arterials
- Use cones as recommended
 - Do not move cones placed by traffic control supervisor to enter lane closure unless 100% necessary
 - Add additional cones as necessary
 - Do not decrease open lane width to less than 10ft
- Option 6 - Pedestrian Traffic Control
 - Follow similar process for working on or near sidewalks as you do in streets
 - Do not block sidewalks for long periods of time – get formal traffic control when needed
 - Use cones to designate work area
 - Keep all tools and equipment within work area

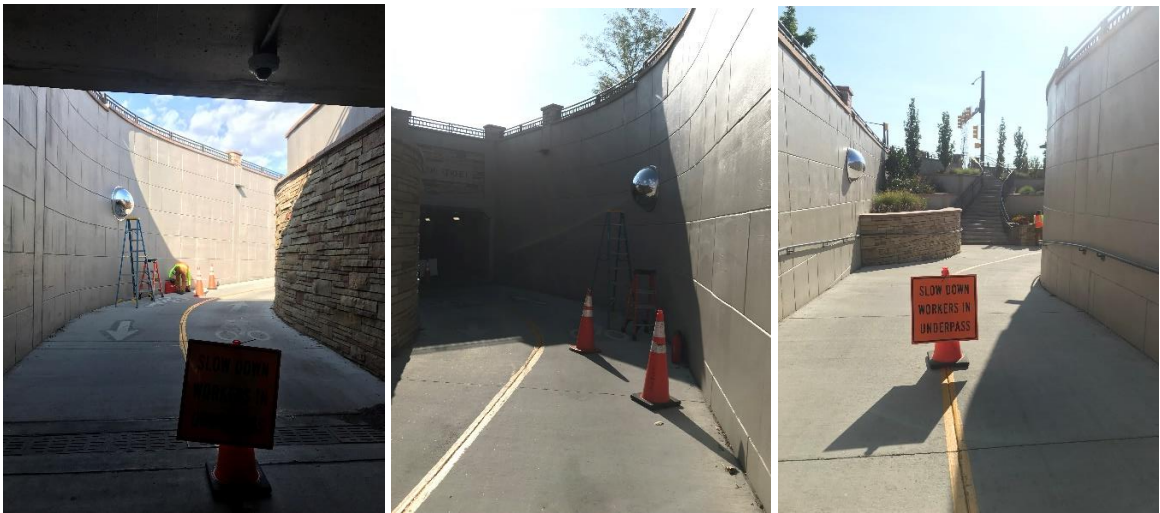
Site Set-Up:

- Level 1: Access Options 1 & 2
 - Type of Work –
 - Fully contained on median
 - Examples:
 - Minor trash / weeds clean up
 - Minor pruning / deadheading
 - Pesticide applications
 - Site landscape / irrigation inspections
 - Minor irrigation repairs
 - 811 Locates
 - Duration of Work –
 - Less than 1 hour parking at/on median
 - Safety Precautions –
 - Follow order of recommended site access options
 - Use cones as recommended
- Level 2: Access Option 3
 - Type of Work –
 - Mostly contained on median
 - Tools or Equipment may extend over median occasionally
 - Examples:
 - Heavy trash / weeds clean up
 - Heavy pruning / deadheading
 - Heavy Pesticide applications
 - Complicated site landscape / irrigation inspections
 - Complex irrigation repairs
 - Planting on wide medians
 - Duration of Work –
 - More than 1 hour parking off site
 - Safety Precautions –

- Follow order of recommended site access options
 - Set cones around median / work area
 - Set up “Workers Ahead” signs on both ends of site
 - Maintain all lane widths to at least 10ft
- Level 3: Access Option 4
 - Type of Work –
 - Somewhat contained on median
 - Tools or Equipment often extend over median
 - Examples:
 - Edge of median pruning / deadheading
 - Edge of median irrigation repairs
 - Short median leaf blow outs / clean up
 - Retrieve piles of debris from median
 - Duration of Work –
 - Less than 1 hour moving operations
 - Safety Precautions –
 - Follow site access Option 4 for Mobile Operations
 - Set cones around truck and work area, move as necessary
 - Maintain all open lane widths to at least 10ft
- Level 4: Access Option 5
 - Type of Work –
 - Not contained on median
 - Tools or Equipment often extend over median
 - Tools / Equipment / Debris in street
 - Examples:
 - Large median leaf blow outs / clean up
 - Planting on narrow medians
 - Mulching on large medians
 - Duration of Work –
 - More than 1 hour
 - Safety Precautions –
 - Follow site access Option 5 for Formal Traffic Control
 - Set cones around truck and work area, move as necessary
 - Maintain all open lane widths to at least 10ft

Special Scenarios:

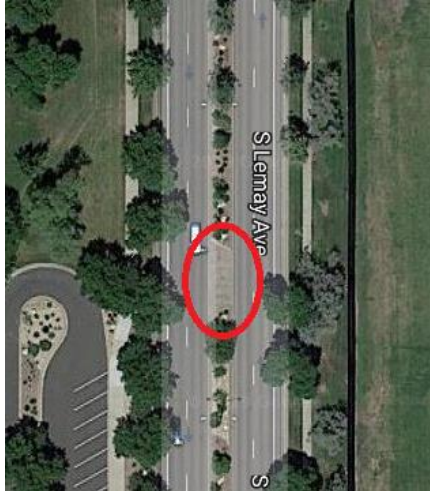
- Roundabouts
 - The easiest way to work on a roundabout is to park on the hardscape area surrounding the planted area
 - Large trucks often cut into the roundabout hardscape as they drive around
 - Be cautious of any vehicles, tools, or equipment parked on these edges
 - EX: South side of Horsetooth and Ziegler Roundabout
 - It is often difficult to exit from the center roundabout – be patient
- Slow drive for trash / weeds on medians or parkways
 - Stopping time less than 15 minutes
 - Follow site access Option 4 for Mobile Operations
 - Do not obstruct traffic if possible, park on/off site if necessary.
- Underpass work
 - When working on the bike / pedestrian trails in areas such as the CSU underpass
 - Use cones around work area as well as “Slow Down Workers in Underpass” signs



-
- Work on sidewalks
 - Full closure of a sidewalk is necessary if tools / equipment /debris is spanning the entire sidewalk making it impassable.
 - It is possible to cone off only the work area if the sidewalk is still passable, while maintaining a minimum width of at least 4ft.
 - Formal traffic control is required if there is not at least 4ft of width open on sidewalk
 - Use Option 6 for Pedestrian Traffic Control
- Mulching on a short median
 - Duration less than 1 hour
 - Preferred to follow site access Option 2 for Temporary Median Access
 - Could follow site access Option 4 for Mobile Operations if required (time stopped less than 15 minutes)
- Mobile Operations may require two arrow board vehicles depending on location
 - Sections on Lemay of Horsetooth and Lemay L medians requires occasional debris clean up on edges median

- This is a somewhat fast process, less than 15 minutes stopping
- Option 4 for Mobile Operations is the most reasonable option
- Due to the curve on Lemay, it is difficult to see from farther back on curve
- Recommended to use two arrow boards, one visible from before the curve and one at the location of the work
- See Table 6C-2 below about stopping sight distance as a function of speed

Figures:



• *Figure 1*



• *Figure 2*



● Figure 3

References:

Table 6C-2. Stopping Sight Distance as a Function of Speed

Speed*	Distance
20 mph	115 feet
25 mph	155 feet
30 mph	200 feet
35 mph	250 feet
40 mph	305 feet
45 mph	360 feet
50 mph	425 feet
55 mph	495 feet
60 mph	570 feet
65 mph	645 feet
70 mph	730 feet
75 mph	820 feet

* Posted speed, off-peak 85th-percentile speed prior to work starting, or the anticipated operating speed

Duration of Work

Work duration is a major factor in determining the number and types of devices used in temporary traffic control zones. As a general rule, the longer the operation will last, the more traffic control devices are needed.

- A. Long-Term Stationary - Work that occupies a location more than 3 days.
- B. Intermediate-Term Stationary - Work that occupies a location from overnight to 3 days, or nighttime work lasting more than 1 hour.
- C. Short-Term Stationary- Daytime work that occupies a location for 1 to 12 hours.
- D. Short Duration - Work that occupies a location up to 1 hour.
- E. Mobile - Work that moves intermittently (stops up to 15 minutes) or continuously.

Liability

Steps to Minimize Liability:

- have a traffic control plan
- follow the MUTCD (Manual on Uniform Traffic Control Devices)
- minimize traffic disruptions
- promptly remove devices
- train all personnel
- inspect work zone sites periodically for conformance

Elements of a Good Inspection Program:

- routine schedule
- report form
- hazard identification
- adequate personnel and inventory
- repair verification
- formal documentation

Minimum Documentation should include:

- starting and ending time of work
- location of work
- type, condition and position of traffic control devices
- names of personnel
- type of equipment used
- any change in temporary or permanent regulatory devices
- additional information should be gathered in the event of an accident

Supervisor's Checklist

1. Follow Part 6 of the MUTCD. It is the national standard for work zone traffic control.
2. CDOT S-Standard Plans and Specifications and the Project Special Provisions should be used to supplement the MUTCD.
3. Have a plan before going to the work site.
4. Remove the devices in a timely manner
5. Ask yourself, "What is the driver's view?"

Training Information

For information regarding training for Flagging, Traffic Control Technicians and Traffic Control Supervisors, contact the Colorado Contractors Association (CCA) at 303-290-8611 or contact the ATSSA Roadway Safety Training Institute at 877-642-4637 or visit the website at <http://www.atssa.com/TrainingCertification/CourseInformation.aspx>

Copies of this booklet may be purchased from CDOT Bid Plans at 4201 E. Arkansas Ave. in Denver. The phone number is 303-757-9313.



- From: <https://www.codot.gov/library/traffic/traffic-manuals-and-guidelines/fed-state-co-traffic-manuals/mutcd/MUTCD09r1r2editionhl.pdf>
- 2009 Edition Page 619
- CHAPTER 6G. TYPE OF TEMPORARY TRAFFIC CONTROL ZONE ACTIVITIES
- Section 6G.01 Typical Applications
- Support:
- 01 Each TTC zone is different. Many variables, such as location of work, highway type, geometrics, vertical and horizontal alignment, intersections, interchanges, road user volumes, road vehicle mix (buses, trucks, and cars), and road user speeds affect the needs of each zone. **The goal of TTC in work zones is safety with minimum disruption to road users.** The key factor in promoting TTC zone safety is proper judgment.
- 02 Typical applications (TAs) of TTC zones are organized according to duration, location, type of work, and highway type. Table 6H-1 is an index of these typical applications. These typical applications include the use of various TTC methods, but do not include a layout for every conceivable work situation.
- 03 Well-designed TTC plans for planned special events will likely be developed from a combination of treatments from several of the typical applications.
- Guidance:
- 05 Typical applications should be altered, when necessary, to fit the conditions of a particular TTC zone.
- Option:
- 06 Other devices may be added to supplement the devices shown in the typical applications, while others may be deleted. The sign spacings and taper lengths may be increased to provide additional time or space for driver response.
- Support:
- 07 Decisions regarding the selection of the most appropriate typical application to use as a guide for a specific TTC zone require an understanding of each situation. Although there are many ways of categorizing TTC zone applications, the four factors mentioned earlier (work duration, work location, work type, and highway type) are used to characterize the typical applications illustrated in
-
- Chapter 6H.
- Section 6G.02 Work Duration
- Support:
- 01 Work duration is a major factor in determining the number and types of devices used in TTC zones. The duration of a TTC zone is defined relative to the length of time a work operation occupies a spot location.
- Standard:
- 02 **The five categories of work duration and their time at a location shall be: A. Long-term stationary is work that occupies a location more than 3 days. B. Intermediate-term stationary is work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than 1 hour. C. Short-term stationary is daytime work that occupies a location for more than 1 hour within a single daylight period. D.**

Short duration is work that occupies a location up to 1 hour. E. Mobile is work that moves intermittently or continuously.

- Support:
- 03 At long-term stationary TTC zones, there is ample time to install and realize benefits from the full range of TTC procedures and devices that are available for use. Generally, larger channelizing devices, temporary roadways, and temporary traffic barriers are used.
- December 2009 Sect. 6G.01 to 6G.02
- Page 620 2009 Edition
- Support:
- 06 In intermediate-term stationary TTC zones, it might not be feasible or practical to use procedures or devices that would be desirable for long-term stationary TTC zones, such as altered pavement markings, temporary traffic barriers, and temporary roadways. The increased time to place and remove these devices in some cases could significantly lengthen the project, thus increasing exposure time.
-
- Support:
- 08 Most maintenance and utility operations are short-term stationary work.
- 09 As compared to stationary operations, mobile and short-duration operations are activities that might involve different treatments. Devices having greater mobility might be necessary such as signs mounted on trucks. Devices that are larger, more imposing, or more visible can be used effectively and economically. The mobility of the TTC zone is important.
- Guidance:
- 10 Safety in short-duration or mobile operations should not be compromised by using fewer devices simply because the operation will frequently change its location.
- Option:
- 11 Appropriately colored or marked vehicles with high-intensity rotating, flashing, oscillating, or strobe lights may be used in place of signs and channelizing devices for short-duration or mobile operations. These vehicles may be augmented with signs or arrow boards.
- Support:
- 12 During short-duration work, it often takes longer to set up and remove the TTC zone than to perform the work. Workers face hazards in setting up and taking down the TTC zone. Also, since the work time is short, delays affecting road users are significantly increased when additional devices are installed and removed.
- Option:
- 13 Considering these factors, simplified control procedures may be warranted for short-duration work. A reduction in the number of devices may be offset by the use of other more dominant devices such as high-intensity rotating, flashing, oscillating, or strobe lights on work vehicles.
- Support:
- 14 Mobile operations often involve frequent short stops for activities such as litter cleanup, pothole patching, or utility operations, and are similar to short-duration operations.
- Guidance:
- 15 Warning signs and high-intensity rotating, flashing, oscillating, or strobe lights should be used on the vehicles that are participating in the mobile work.
- Option:
- 16 Flags and/or channelizing devices may additionally be used and moved periodically to keep them near the mobile work area.
- 17 Flaggers may be used for mobile operations that often involve frequent short stops.
- Support:
- 18 Mobile operations also include work activities where workers and equipment move along the road without stopping, usually at slow speeds. The advance warning area moves with the work area.
- Guidance:
- 19 When mobile operations are being performed, a shadow vehicle equipped with an arrow board or a sign should follow the work vehicle, especially when vehicular traffic speeds or volumes are high. Where feasible, warning signs should be placed along the roadway and moved periodically as work progresses.

- 20 Under high-volume conditions, consideration should be given to scheduling mobile operations work during off-peak hours.
- 21 If there are mobile operations on a high-speed travel lane of a multi-lane divided highway, arrow boards should be used.
- Sect. 6G.02 December 2009
- 2009 Edition Page 621
- Standard:
- 22 Mobile operations shall have appropriate devices on the equipment (that is, high-intensity rotating, flashing, oscillating, or strobe lights, signs, or special lighting), or shall use a separate vehicle with appropriate warning devices.
- Option:
- 23 For mobile operations that move at speeds of less than 3 mph, mobile signs or stationary signing that is periodically retrieved and repositioned in the advance warning area may be used.
-