Work Zone Safety for Signal Maintainers

Traffic signal maintainers provide a vital service to keep the traveling public safe, but in doing so they may face dangers from moving vehicles, falls and electrocution.

The common denominator in these incidents was failure to set up a safe work zone. With preparation, training and proper planning, incidents like these can be prevented.
Near-Side Work Spaces

Near-side work spaces, as depicted in MUTCD Figure 6H-21, are simply handled as a midblock lane closure. A problem that might occur with near-side lane closure is a reduction in capacity, which during certain hours of operation could result in congestion and backups.

When near-side work spaces are used, an exclusive turn lane may be used for through vehicular traffic.

Where space is restricted in advance of near-side work spaces, as with short block spacings, two warning signs may be used in the advance warning area, and a third action-type warning or a regulatory sign (such as Keep Left) may be placed within the transition area.
Far-Side Work Spaces

Far-side work spaces, as depicted in MUTCD Figures 6H-22 through 6H-25, involve additional treatment because road users typically enter the activity area by straight-through and left- or right-turning movements. When a lane through an intersection must be closed on the far side, it should also be closed on the near-side approach to preclude merging movements within the intersection. If there are a significant number of vehicles turning from a near-side lane that is closed on the far side, the near-side lane may be converted to an exclusive turn lane.

Typical Application 22 shows traffic control for closure of the right lane on the far side of an intersection.

Typical Application 23 shows traffic control for closure of the left lane on the far side of an intersection.
In-the-Intersection Work Spaces

MUTCD Figures 6H-26 and 6H-27 provide guidance on applicable procedures for work performed within the intersection. If the work is within the intersection, any of the following strategies may be used:

- A small work space so road users can move around it
- Flaggers or uniformed officers to direct road users
- Work in stages so the work space is kept to a minimum
- Road closures or upstream diversions to reduce road user volumes

Typical Application 26 shows a small work space closure in the center of an intersection that road users can move around.

Typical Application 27 shows the use of flaggers for an in-the-intersection road closure at the side of an intersection.
Depending on road user conditions, flaggers and/or a uniformed law enforcement officer should be used to control traffic.

The MUTCD provides general guidance for all three of the above categories, but work spaces often extend into more than one portion of the intersection. In such instances, some discretion must be used in developing an appropriate traffic control plan by combining features shown in two or more of the typical applications. In addition, the safety of pedestrians and bicyclists present at the intersection must be ensured by adding elements of other plans as appropriate.

The effect of the work upon signal operation should also be considered, and temporary corrective actions should be taken, if necessary. Corrective actions may include revising signal phasing and/or timing to provide adequate capacity, maintaining or adjusting signal detectors, and relocating signal heads to provide adequate visibility as described in MUTCD Part 4.

**Electrical Considerations**

According to National Safety Services, 10% of all fatal work injuries in the US every year are the result of falls, and 53% of fall accidents are a result of electrocution.

A general guideline for working near power lines is to maintain a clearance of at least ten feet between the primary power line and any part of your body, equipment or vehicle. If there is any question regarding whether proper clearance is available, contact the utility for assistance.

**Aerial Lift Safety and Fall Protection**

Aerial lift trucks should only be used by properly trained personnel. When working from an elevated bucket, keep your feet firmly on the floor of the bucket at all times and always remember to wear a harness secured to the bucket with a lanyard. Maintain equipment on a regular basis, and inspect the vehicle and all personal fall protection devices before each and every use.
References and Resources


- Sign spacing, taper lengths and other MUTCD Chapter 6 information is summarized in the T2 Center Work Zone Guidebook, which makes an excellent pocket reference: [https://www.t2center.uconn.edu/pdfs/Work%20Zone%20Safety%20Guidebook_Final.pdf](https://www.t2center.uconn.edu/pdfs/Work%20Zone%20Safety%20Guidebook_Final.pdf)

- T2 Center’s Custom Training Brochure: [https://www.t2center.uconn.edu/pdfs/Custom%20Training%20Program%20Flyer%20(2018).pdf](https://www.t2center.uconn.edu/pdfs/Custom%20Training%20Program%20Flyer%20(2018).pdf). To set up custom training in Fall Protection & Prevention and/or Bucket Truck Safety for your organization, contact Lisa Knight at (860) 486-4396 or lisa.knight@uconn.edu.