Infrastructure Health & Safety Association™
Work Safe for Life

Best Practices for Traffic Control During Nighttime Operations

This information is designed to help contractors meet the requirements for traffic control when working at night on public roadways.

Work-zone lighting

Construction and maintenance activities often create conditions that are particularly hazardous at night when the ability of drivers to see clearly is reduced. Section 1.14 of the *Ontario Traffic Manual Book 7 Temporary Conditions* (OTM Book 7) outlines the requirements for lighting the work area and the roadway through the work zone.

Lighting the work area

- The *Occupational Health and Safety Act* requires adequate lighting for its intended use.
- The need for illumination by floodlight or steady burning lamps must be thoroughly investigated.
- Care must be taken to ensure that lighting used to illuminate the worksite is not aimed at drivers, making it more difficult for them to see their intended path.
- Lighting systems used for nighttime work in work zones must be mounted at least 5 m above the roadway, except for dome or balloon-style lights with soft, wide light that does not produce glare.
- Lighting should be set up so that it is aimed in an arc from 90° to the traffic flow, up to 45° away from the traffic, but under no circumstances should lights be aimed at, or spill over onto, oncoming traffic.
- Any additional lighting mounted on construction or maintenance equipment should be directed and focused on the immediate work area, and should not be used as general floodlights to illuminate a construction site.
- Lighting should not interfere with motorists' ability to navigate their way through the work zone.

Lighting the roadway through the work zone

- Nighttime construction often requires that lighting of working areas be brighter than the adjacent roadway. Although directed away from the driver's path, some illumination typically spills onto the pavement surface and is reflected into the driver's field of vision. Illuminating the

roadway through a work zone can reduce the impact of the construction lighting on the driver.

Anti-glare Screening

Anti-glare screening on freeway construction work zones should be considered, to reduce the impact of headlights on the driver, when

- a crossover is built on a freeway
- the median width is reduced to 4 m or less
- a curved highway alignment directs headlights into the path of opposing drivers
- nighttime truck volume is greater than 10%
- nighttime traffic volume is Level of Service (LOS) D or greater.

Note: Anti-glare screening should not be used in the winter because of the impact on snow drifting.

Provisions for short-duration nighttime operations

Work duration is a major factor in determining the number and types of signs and devices to be used in temporary work zones and the manner in which they are used. For short-duration nighttime operations, there are three specific conditions.

Condition A – Nighttime shoulder or road edge work

- Use a TC-2B or TC-2A sign as required according to Table A in *OTM Book 7*.
- Use a 360° flashing amber light and 4-way flashers.
- Use appropriate retroreflective sheeting on all traffic-control devices.
- Use TC-51B cones with a retroreflective collar.
- Use TC-54 or TC-52 cones on multi-lane roads.

Condition B – Nighttime lane closure or lane encroachment

- Follow all the requirements listed under Condition A.
- Use a truck-mounted or trailer-mounted TC-12 flashing arrow board. (For speeds of 70-90 km/h, the visibility distance at night must be 600 m for the light. For speeds of 60 km/h and lower, the visibility distance must be 450 m.)
- Avoid conducting nighttime roadwork in the fog, when roads are slippery, or when visibility is poor.
- Follow the taper lengths as outlined in Table B (for long-duration work) instead of Table A.

Condition C – Situations requiring traffic control for pedestrians

- Follow the requirements of Condition A or B or a combination of both.
- Use pedestrian barricades.

Personal protective equipment (PPE)

- Any worker who may be endangered by vehicular traffic during nighttime operations must wear retroreflective silver strips encircling each arm and leg, as required by the Regulations for Construction Projects 213/91, Section 69.1 (4).
- For nighttime work, *OTM Book 7* requires that a traffic control person (TCP) wear a CSA-certified hard hat[1] with reflective tape, use a reflectorized traffic control sign, and carry a flashlight with a red or orange cone attachment and spare batteries. The TCP must be provided with proper and adequate lighting so that the person is clearly visible in both directions. The TCP station and equipment must also be well-illuminated.

Nighttime safety tips

- Inspect the work zone by driving through it at night, after the traffic control devices for the work zone are in place.
- Inspect traffic control equipment at night to assure that the level of retroreflectivity is adequate and the devices are clearly visible and legible.
- Make sure signs that convey regulatory, warning, or guidance (directional) information that is relevant during hours of darkness are legible and conspicuous at night.
- Keep signs clean, legible, and in good working condition to ensure good visibility at night.
- Make sure all traffic cones used for nighttime operations have white reflective collars.
- Consider using delineators to help drivers identify lane alignments at night.
- Never point work vehicles upstream at night.

[1]A Class E Type I or Type II hard hat meets the requirements of CSA standard Z94.1-05: Industrial Protective Headwear.