

# Improving Traffic Control for Night Work Zones



Nighttime roadwork has increased over the last few years and will continue to grow out of necessity. While there are reduced traffic volumes at night, the safety issues relating to traffic control are a major concern.

Research has shown that the following strategies can improve traffic safety and mobility in night work zones:



- ◆ Enhanced Traffic Control Devices
- ◆ Controlling Speed and Increasing Driver Awareness
- ◆ Visibility of Workers
- ◆ Providing Good, Glare-free Illumination
- ◆ Visibility of Work Vehicles
- ◆ Accommodating Pedestrians

# Creating Safer Work Zones: Improving Operations on Bo

## Enhanced Traffic Control Devices

Several strategies can improve the visibility and overall effectiveness of traffic control devices in night work zones:

- Use drums, vertical panels, or Type II barricades in tapers instead of cones. These devices provide more target area than cones.
- Use retroreflective materials on all channelizing devices. Research shows that brighter devices improve detection by drivers.
- Close spacing of channelizing devices—40 ft. or less—provides more positive driver guidance.
- Channelizing devices used at night should be inspected on a regular basis to ensure they are in good physical condition, and properly placed.



## Visibility of Workers

High visibility apparel and temporary illumination are essential to ensure that workers are visible to all drivers including work vehicle and equipment operators.

- All workers should wear high-visibility apparel.
- To enhance visibility, light colored clothing should be worn under the high-visibility apparel.
- High-visibility apparel should make the worker recognizable over the entire range of body motions.
- The use of colors such as yellow-green for worker apparel may help to differentiate the worker from the orange colored work vehicles, signs, drums, etc.
- If workers are exposed during dawn or dusk situations, visibility can be improved by the use of fluorescent colors.
- Temporary illumination should be provided at all work locations to make workers visible.
- An operational plan should be developed for night work to address risks associated with worker exposure to traffic, work vehicles and equipment.
- Workers should be trained in procedures to avoid hazards associated with reduced visibility.



# Both Sides of the Barrel



## Visibility of Work Vehicles

Collisions involving work vehicles and equipment may increase at night because of reduced visibility. The following procedures may reduce the risk of crashes at night:

- Two rotating or flashing amber beacons visible from 1000 ft should be displayed on all trucks and equipment used at night in work zones.
- Vehicles operated by inspectors and supervisory staff within the work zone should use at least one rotating beacon.
- In addition to rotating or flashing beacons, vehicles should display 4-way emergency flashers when stopped or moving slowly in or adjacent to a work zone.
- Warning lights and 4-way emergency flashers should be turned off whenever the vehicle is moving at normal speeds for substantial distances or parked and protected from traffic flow.



## Controlling Speed and Increasing Driver Awareness

While it is desirable to maintain normal speeds, work zone restrictions may sometimes necessitate reduced speed limits. Lane width reductions, severe alignment changes, workers exposed to high-speed traffic, and other conditions may indicate the need for a reduced speed limit. Whether or not the speed limit is reduced, adequate enforcement is important to ensure that posted speed limits are obeyed. In all cases, drivers should be kept aware of current conditions in night work zones so that they can seek alternate routes and/or adjust their driving behavior as necessary. The following methods are considered effective for controlling speeds and increasing driver awareness of work zone activities.

- Law enforcement
- Credible Speed Limits
- Real-time Information on Changeable Message Sign
- Media Work Zone Information Updates
- Pavement Rumble Strips
- Advance Diversion and Detour Information



## Providing Good, "Glare-free" Illumination

Properly aimed and adjusted work lights can provide good illumination without causing glare problems. Control of glare can be achieved by adhering to accepted design principles for temporary lighting, and through frequent inspections by project staff to ensure that the results are acceptable. In some cases, shielding the luminaries may be necessary in addition to aiming adjustments.



## Accommodating Pedestrians

Although pedestrians are normally less common in night work zones, the temporary traffic control plan must safely accommodate all pedestrians who may be present. Pedestrians should be provided a safe, accessible route that is separated from vehicular traffic and construction activities. When relocated pedestrian routes cross the roadway, the crossings should be located at signalized or traffic-controlled intersections whenever possible. Temporary lighting may be needed on relocated pedestrian routes to ensure that they can be safely followed, and that any potential hazards can be seen. For more information on pedestrian accommodation in work zones see brochure number FHWA-SA-03-011.

Reference: National Cooperative Highway Research Program, Report 476

<http://safety.fhwa.dot.gov/programs/wsz.htm>



U.S. Department  
of Transportation  
**Federal Highway  
Administration**

FHWA-SA-03-008