NCHRP Report 627

Traffic Safety Evaluation of Nighttime And Daytime Work Zones

The intent of this project was to determine how daytime and nighttime work zones affect crash risk and rates. Identified were similarities and differences in the characteristics between traffic crashes during daytime and nighttime work zones. The report also suggested various management practices to promote safety and mobility in daytime and nighttime work zones. The following is a recap of information presented in the report.

Nighttime and Daytime Work Zone Effects on Crashes

Overall, working at night does not result in significantly greater crash risk for an individual road user travelling through the work zone. This compares to the same type of work performed in the same type of work zone during the day. Crashes that occur in nighttime work zones are not necessarily more severe than those in similar daytime work zones. The percentage of rear-end traffic crashes are substantially lower during the nighttime periods.

Although the increased risk of a crash is similar, differences do exist in the types of crashes that occur at nighttime and daytime work zones. Crashes involving workers, construction vehicles or equipment, construction materials and debris, and intrusion crashes are a higher percentage of crashes at night.

Performing night work for those work activities that require temporary lane closures reduces the total safety impacts to the motoring public.

Management Policies, Procedures, and Practices to Improve Nighttime and Daytime Work Zone Safety

The following are several strategies to consider implementing during the design and construction phases:

- Practices to reduce the number and duration of work zones required.
- Use of full directional roadway closures via median crossovers or detours onto adjacent frontage roads.
- Use of time-related contract provisions to reduce construction durations.
- Moving appropriate work activities, such as temporary lane closures, to nighttime hours.
- Use of demand management programs to reduce volumes through work zones.
- Designing adequate future work zone capacity into highways.

- Use of full roadway closures that require traffic detours onto adjacent surfaced streets.
- Improvement of work zone traffic control device visibility.
- Efforts to reduce flaggers' exposure.
- Efforts to reduce workspace intrusions and consequences, primarily at long-term high-volume work zones.

Current MDT Practices

MDT uses and/or has implemented a large number of the strategies recommended in this report. The Work Zone Safety and Mobility Policy produced the Transportation Management Plan (TMP). The TMP team, created during the design phase of projects, determines which of these and other strategies identified in the TMP Data Sheet are appropriate to minimize work zone impacts.

The Uniformed Law Enforcement and Temporary Traffic Control Device Quality guidances give our field construction crews additional help in providing safe and mobile work zones.