

UNSIGNALIZED INTERSECTION SAFETY STRATEGIES



Improve Visibility of the Intersection by Providing Lighting

WHERE TO USE

Unsignalized, unlit intersections with substantial patterns of nighttime crashes. In particular, patterns of rear-end, right-angle, or turning crashes on the major-road approaches to an unsignalized intersection may indicate that approaching drivers are unaware of the presence of the intersection.



Photo by: FHWA

DETAILS

Providing lighting at the intersection itself, or both at the intersection and on its approaches, can make drivers aware of the presence of the intersection and reduce nighttime crashes.

KEY TO SUCCESS

Identifying sites where a lack of lighting is truly a significant factor in the nighttime crash experience. Also, develop an appropriate lighting system following AASHTO and the Illuminating Engineering Society of North America (IESNA) criteria.

ISSUES

Lighting is feasible only where an appropriate supply of electrical power is available. This is not usually a problem in urban and suburban areas, but some rural intersections where lighting would be desirable may be isolated from power sources.



TIME FRAME ●●○

A lighting project generally requires at least 1 year to implement because the lighting system must be designed and the provision of electrical power must be arranged.

COSTS ●●●○

The provision of lighting involves both a fixed cost for lighting installation and an ongoing maintenance and power cost.

EFFECTIVENESS

PROVEN: Minnesota evaluated the effectiveness of installing streetlights at rural intersections. As part of the evaluation, Minnesota conducted a literature review and found that previously published research reported 25 to 50% reductions in the nighttime crash/total crash ratio due to the installation of intersection lighting. Based upon a comparative crash analysis and a before-after evaluation, Minnesota concluded that the installation of streetlights reduced nighttime crashes at rural intersections and would be more effective in reducing nighttime crashes than either rumble strips or overhead flashing beacons. From an economic standpoint, Minnesota indicated that the benefits associated with the installation of streetlights at rural intersections outweigh the costs by a margin of 15 to 1. Based upon the Minnesota study and previous studies, providing lighting at an intersection improves the safety of an intersection during nighttime conditions by (1) making drivers more aware of the intersection, which improves drivers' perception-reaction times, (2) enhancing drivers' available sight distances, and (3) improving the visibility of nonmotorists.

COMPATIBILITY

This strategy can be used in conjunction with most other strategies for improving safety at unsignalized intersections. In particular, this strategy may be compatible with Strategy E11 (Install Flashing Beacons), a strategy that also requires an electrical power source.

For more details on this and other countermeasures: <http://safety.transportation.org>

For more information contact:

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