

# UNSIGNALIZED INTERSECTION SAFETY STRATEGIES



## Install Flashing Beacons at Stop-Controlled Intersections

### WHERE TO USE

Unsignalized intersections with patterns of right-angle crashes related to lack of driver awareness of the intersection on an uncontrolled approach and lack of driver awareness of the stop sign on a stop-controlled approach.



Photos by: FHWA & Texas Transportation Institute

### DETAILS

Overhead flashing beacons can be used at stop-controlled intersections to supplement and call driver attention to stop signs. Flashing beacons are intended to reinforce driver awareness of the stop sign and to help mitigate patterns of right-angle crashes related to stop sign violations. At two-way stop-controlled intersections, flashing beacons are used with red flashers facing the stop-controlled approaches and yellow flashers facing the unstopped approaches. At all-way stop-controlled intersections, red flashers face all approaches. Use of overhead flashing beacons can increase the visibility of intersections for approaching drivers, and can be used in conjunction with the signing, delineation, and flashing improvements discussed in Strategy E1.

### KEY TO SUCCESS

Select intersections with crash patterns appropriate to mitigation by flashing beacons. Otherwise, the use of a flashing beacon may provide no safety benefit (or a negative safety benefit). Crash types mitigated by flashing beacons may include right-angle, rear-end, and turning crashes.



## ISSUES

If the flashing beacons are not properly placed where they are clearly visible to approaching drivers, they may not be effective. Flashing beacons also should not be overused. Their effectiveness is attributed in part to their relative uniqueness (i.e., they are not typically found at every stop-controlled intersection). Some agencies have reported crashes at red/amber flashers where a driver facing a red flasher assumed that the intersecting approach also had a red flasher.

Flashing beacons are generally well understood by drivers. At times, drivers on minor streets may be confused regarding the nature of control on the major street.

## TIME FRAME ●○○○

Use of flashing beacons does not require extensive development; flashing beacons can be installed within 3 to 6 months. The major implementation problem is providing power to the site.

## COSTS ●○○○

Costs of installing flashing beacons are generally nominal, with the greatest cost being the provision of power to the site.

## EFFECTIVENESS

**TRIED:** Several studies have evaluated the safety effectiveness of flashing beacons at stop-controlled intersections. Ohio compared the safety at rural, low-volume intersections controlled by stop signs and controlled by flashing beacons in conjunction with stop signs. Ohio found that flashing beacons generally reduced vehicular speeds on the major road, particularly at intersections with sight distance restrictions, but the flashing beacons were not necessarily effective in reducing stop sign violations or crashes. Similarly, California found that overhead yellow-red flashing beacons did not significantly reduce the number of fatal crashes at stop-controlled intersections. Therefore, additional research may be desirable to further evaluate the safety effectiveness of this strategy.

Florida estimated that overall crashes may be reduced up to 26% and injury crashes may be reduced up to 50% after installing flashing yellow-red signal indications.

## COMPATIBILITY

This strategy can be used in conjunction with most other strategies for improving safety at unsignalized intersections.

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

### For more information contact:

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