



ITS for Nighttime Safety

The U.S. roadway fatality rate is three times higher at night compared to daytime, with 76% of pedestrian fatalities occurring at night. Intelligent Transportation System (ITS) technologies have the potential to enhance nighttime safety and save lives in situations where non-motorists mix with traffic during darkness.¹

This document provides examples of ITS technologies deployed to support nighttime roadway safety. The featured benefits, costs, and lessons learned are based on ITS project evaluations contained in the ITS Databases at: www.itskrs.its.dot.gov. **Click on each example to learn more.**



BENEFITS



Rectangular Rapid Flashing Beacons (RRFB) in Vermont

RRFBs improved driver yield rates by 12% to 43%, reduced pedestrian jaywalking by 14%, and increased the likelihood by 3 that a vehicle would yield to a pedestrian.



Thermal Imaging Cameras in New York

The thermal imaging sensors accurately detected 87% of high-density foot traffic at nighttime.



Gap Distance System in Missouri

Automated leader-follower truck mounted systems decreased average gap distance and speed differences, decreased GPS signal loss, and saved a projected \$30,326 in injury costs.

COSTS



LED Crosswalk Control in Canada

Treatments in British Columbia ranged from \$10,000 to \$125,000.



Rectangular Rapid Flashing Beacons (RRFB) in Vermont

RRFB crosswalk control treatments in Vermont cost \$10,000 per crosswalk.

LESSON LEARNED



Use thermal cameras for dark, non-lit areas.



Consider irregular pedestrian movements when deploying ITS, especially in large cities.

1. FHWA, [Nighttime Visibility for Safety](#).