

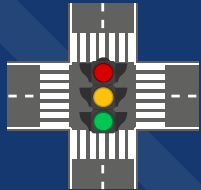


ITS for Intersection Safety

In the United States, around one-quarter of traffic fatalities and half of all traffic injuries occur at intersections each year. Intelligent Transportation System (ITS) technologies are a key part of achieving USDOT's vision of zero deaths and serious injuries on our nation's roadways.¹

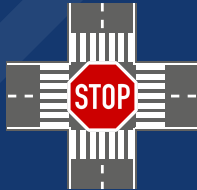
Year 2020 Intersection-Related Traffic Fatalities¹

3,537



Fatalities at Signalized Intersections

7,089



Fatalities at Unsignalized Intersections

1,674



Pedestrian Fatalities at Intersections

355

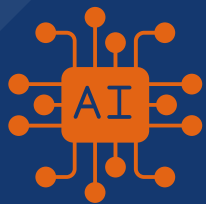


Bicyclist Fatalities at Intersections

BENEFITS

1

Pedestrian Countdown Signals (PCS) display a real-time countdown of the remaining time for the flashing "DON'T WALK" and "WALK" pedestrian crossing intervals. In a study in Charlotte, NC and Philadelphia, PA, PCS were estimated to reduce crashes at intersections by 8%, resulting in an expected annual benefit of \$12,900.



An AI-based Traffic Management System developed by the Nevada DOT is used to reduce the frequency of traffic crashes, particularly at high-risk intersections. Reporting shows the system contributed to a 17% reduction in primary crashes at intersections in Las Vegas.

2

3

Intersection Conflict Warning Systems (ICWS) detect vehicles and alert motorists about conflicts when approaching intersections. A pooled fund study in Minnesota, Missouri, and North Carolina reported significant crash reductions after ICWS. On average, crashes were reduced 27% at 2-lane at 2-lane intersections and 17% at 4-lane at 2-lane intersections.

COSTS

From the pooled fund study, North Carolina DOT evaluated ICWS installation costs over 15 years. The costs ranged from \$9,000 to \$142,500, in 2014 dollars, depending on type of ICWS, which approaches were installed, and intersection type.

LESSONS LEARNED

Based on the ICWS pooled fund study, deployers suggested placing warning signs according to MUTCD guidelines for better driver response time. Also, keeping prototype systems operational 24/7 is a challenge due to staffing gaps and technical and maintenance issues.

The featured benefits, costs, and lessons learned are based on ITS project evaluations contained in the ITS Databases at: www.itsknowledgeresources.its.dot.gov. **Click on each example to learn more.**