

TECH NEWS

TECHNOLOGY NEWS

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Rural intersections benefit from street lights

Are isolated rural intersections safer with intersection lighting at night? Yes, according to a Minnesota DOT-sponsored study led by CTRE staff.

Background

Nationally, half of all fatal crashes occur at night, even though people travel between 66 and 75 percent fewer miles at night than during the day.

Further, intersection-related crashes accounted for about 28 percent of fatal crashes in the U.S. (31 percent of fatal crashes in Minnesota) in 2003.

Roughly 37 percent of these intersection-related fatal crashes in Minnesota occurred at night.

Shauna Hallmark, assistant professor of civil engineering at Iowa State University, and Hillary Isebrands, Zach Hans, and Tom McDonald of CTRE, along with Howard Preston and Richard Storm of CH2MHill, evaluated the effectiveness of lighting at rural isolated intersections in Minnesota.

The study looked at the crash history of 34 rural stop-controlled intersections before and after lighting was installed.

Project findings

Hallmark's project strengthens findings from earlier research that street lighting does improve nighttime safety at rural intersections.

Before and after analyses showed that the nighttime crash rate decreased by 35 percent after intersection lights were installed, while the daytime crash rate increased 30 percent during the same period.

In addition, the ratio of nighttime to total crashes decreased by 32 percent in the after period.

During the next two years, 15 more intersections at which lighting was recently installed will be added to the database and evaluated.

The results of this research help engineers determine crash and volume warrants for installing street lights at isolated rural stop-controlled intersections.

"We hope the findings and recommended crash and volume warrants assist all agencies in Minnesota (and other rural states, like Iowa) evaluate their existing lighting warrants for rural intersections," says Hillary Isebrands, a research assistant on the project.



Lights at the Highway 65 and West Bay Drive intersection in Itasca County, Minnesota, improve driver safety at night.

For more information

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