

ABSTRACT

The first phase of the study of intersection lighting and accidents conducted using data from 1964 through 1971 yielded the conclusion that the installation of intersection lighting reduced the nighttime accident frequency by 52%.

	<u>Nighttime Accident Rate</u>
Before Intersection Lighting	1.89 per MEV
After Intersection Lighting	0.91 per MEV
Nighttime Accident Reduction	52%

With this conclusion, this project (the second phase), was initiated to determine the relative benefit of a higher level of lighting as opposed to minimum lighting. Twenty pairs of intersections with similar geometrics were selected. Some lights were turned out at one intersection of each pair to produce a lighting level differential. Based on the results of this research, the lighting level of lighted rural at-grade intersections does not have a significant effect on the accident frequency.

	<u>Nighttime Accident Rate</u>
Full lighting level	1.06 per MEV
Reduced lighting level	1.01 per MEV
Differential:	5%

At the nineteen "reduced lighting" intersections, the number of lighted luminaires was reduced from 101 to 46 with a corresponding reduction in energy consumption of over 100,000 Kilowatt hours per year. This energy conservation measure could reduce consumption by an estimated 1,000,000 Kilowatt hours per year if initiated on more than 200 earlier primary, rural installations.