Project Information Form

Reporting Period: 01/01/2014 – 06/30/2014

Project Title	Evaluation of the Cost Effectiveness of Illumination as a Safety Treatment at Rural Intersections
University	Georgia Institute of Technology
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Funding Source(s) and Amounts Provided (by each agency or organization)	NCTSPM - $75,000 GDOT - $75,000
Total Project Cost	$150,000
Agency ID or Contract Number	DTRT12GUTC12
Start and End Dates	11/1/13 – 05/01/15
Brief Description of Research Project	Late-night and early-morning driving periods have significantly higher incident and fatality rates than other periods of the day. Many of these crashes occur at rural intersections and intersection illumination provides a proven safety countermeasure to help ameliorate these risks. However, intersection illumination remains one of the main contributors to electrical power consumption in roadway maintenance and operations. With increasing resource constraints and increasing demands, state transportation agencies need better decision making tools that consider the cost-effectiveness of illumination compared to other safety treatments. This study seeks to provide a better understanding of the relationship between illumination and crash occurrence at rural intersections and to synthesize this understanding as guidance for transportation agencies to determine how and when illumination is cost effective. This study uses existing crash and illumination data to establish the relationship between illumination levels and observed crash rates and crash severities at rural intersections in order to develop a cost-

	effectiveness framework to compare different illumination levels relative to current State DOT practices. Illumination levels will be collected manually with handheld light meters as well as semi-automatically using image processing technology. The crash data will be obtained from the Georgia crash database. The findings from this research is expected to significantly aid GDOT and other State DOTs to objectively determine if a rural intersection should be illuminated or if safety objectives can be met with reduced illumination level. This knowledge will aid engineers in making effective design and operational decisions that are cost effective without compromising desired safety goals. Additionally, this study will provide summary of the best practices and provide recommendation for practitioners as to the most cost-effective approaches.
Describe Implementation of Research Outcomes (or why not implemented) (Attach Any Photos)	*Nothing to report at this time*
Impacts/Benefits of Implementation (actual, not anticipated)	*Nothing to report at this time*
Web Links • Reports • Project website	
Names of students who are financially supported by this grant	Franklin Gbologah
Names of students who are participating (but not financially supported) by this project	Yukon Aurora Pratiti Khan Gul Amir Nick Henderson