

# ROADSIDE ASSISTANCE VEHICLE LIGHTING AND SAFETY

## INTRODUCTION

Towing and roadside assistance personnel are at risk of being struck by passing motorists while responding to disabled vehicles, crashes, and other roadway incidents. Static and flashing emergency or hazard vehicle lighting are common countermeasures to enhance the conspicuity of vehicles stopped or working on the roadside. While there have been efforts to evaluate various aspects of emergency vehicle lighting existing research does not clearly point to a best lighting solution for safety, especially when considering limitations of individual studies as well as state and local laws or regulations that impose constraints on some aspects of lighting. The AAA Foundation for Traffic Safety is working with researchers at Iowa State University to identify and evaluate optimal lighting solutions for service vehicles.

## PROJECT GOAL AND PLAN

The main objective of the proposed research is to better understand the impact of different lighting configurations on roadside worker safety. The project will review the regulations for each state and the District of Columbia regarding allowable lighting for roadside service vehicles. A literature review and synthesis will be conducted of all previous U.S. and international studies related to markings and lighting for roadside service vehicles and other work vehicles. Next, an in-depth computer simulation will be employed to identify optimal beacon, light bar, and work light configurations and placement. Finally, a subset of promising lighting configurations will be evaluated in a field study.

## Project Team

[Iowa State University](#)  
John Shaw, MUP PE  
(Principal Investigator)

[AAA Foundation for Traffic Safety](#)  
William Horrey, Ph.D.  
(Project Manager)

## Period of Performance

December 2023 – December 2025