

ROADSIDE SERVICE VEHICLES: EFFECTS OF WORK LIGHT GLARE ON WORKER SAFETY

INTRODUCTION

Roadside assistance is a high-risk occupation, with fatalities and injuries far exceeding other occupations. Nighttime work is especially dangerous as glare from both warning lights and work lights can make it difficult to see personnel (a condition known as disability glare). Current practices regarding work lighting in the towing industry could potentially exacerbate the problem of nighttime glare at towing scenes (e.g., use of multiple flood lights at different angles). As drivers pass the towing scene, glare from these lights can make it more difficult to observe a tow operator on foot. The AAA Foundation for Traffic Safety is working with researchers at Mount Sinai to gain insights concerning the impacts and possible solutions for the issue of work lighting on service vehicles.

PROJECT GOAL AND PLAN

The main goal of the project is to provide guidance concerning ideal work light properties and best practices regarding their placement and use, considering both the safety of passing vehicles as well as the needs of the service providers. The project team will first characterize existing practices for lighting on service and tow vehicles and analyze the visual tasks performed by service workers and the environments and conditions under which they are performed. Based on the initial findings, empirical experimental investigations will be conducted to compare specific lighting conditions including light levels, light source configurations (size, number, location), location(s) of illuminated areas, and geometric characteristics (angle and direction of light). Initial experiments will be conducted in the laboratory using scale model scenes and apparatus to identify promising configurations for full-scale outdoor demonstration at night. These activities will also be informed throughout the proposed project by input invited from practitioners and advocates for service and towing vehicle operator safety.

Project Team

Mount Sinai

John Bullough, PhD
(Principal Investigator)

AAA Foundation for Traffic Safety

William Horrey, PhD
(Project Manager)

Period of Performance

Q3 2025 – Q2 2027