

Testing UV-C Lighting Technology to Improve Rural Transit Systems

PROJECT TITLE

Testing UV-C Lighting Technology to Improve Rural Transit Systems

STUDY TIMELINE

March 2021 – June 2022

INVESTIGATORS

Peter Tse, PhD, Dartmouth College,
Peter.Tse@dartmouth.edu
Cody Plante, Dartmouth College
cody.m.plante@dartmouth.edu

VTRANS CONTACTS

Daniel Currier, Public Transit Coordinator,
Dan.j.currier@vermont.gov
Ross MacDonald, Public Transit Manager,
Ross.macdonald@vermont.gov

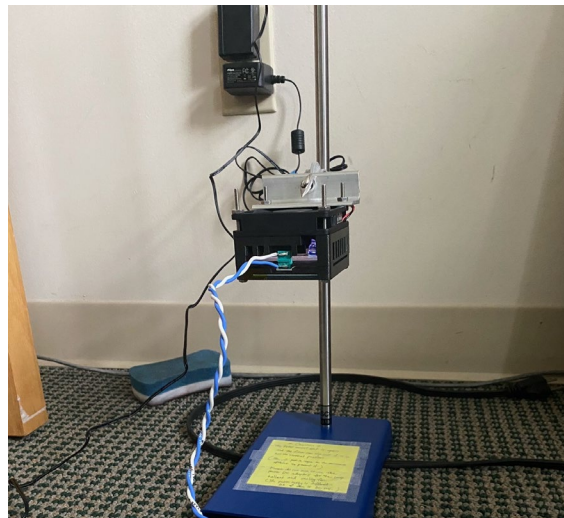
KEYWORDS

Public Transit, Ultraviolet Light, COVID-19

More information about the VTrans Research Program, including additional Fact Sheets, can be found at: <http://vtrans.vermont.gov/planning/research>

Introduction or Problem Statement

Vermont transit providers are seeking solutions to cost-effectively and efficiently sanitize public transit vehicles to combat the spread of viruses. UV-C lighting shows promise as a measure to kill viruses but is largely unproven in real-world transit operations. This project will test the efficacy of UV-C lighting products to stop the spread of COVID-19 compared to current cleaning protocols. If effective, results will inform statewide procurement of the technology.



Methodology or Action Taken

VTrans will work with Dartmouth College and selected Vermont transit providers to design and implement the project. Full size buses and cutaways operated on fixed routes will be targeted. Volunteer drivers, who provide on-demand service in rural areas, will also participate in the project. The project will use a simple design, implemented across 30 vehicles evenly divided between 35' buses, cutaways and cars. One half of the vehicles in the study will be outfitted with UV-C air filtration devices and one half will serve as a control group and have an air filtration device without UV-C installed. The study will collect samples from the air filters, analyzing for virus content.

Conclusions or Next Steps

The project will compare the impact of the existing sanitizing protocols and air filter without UV-C (placebo) against the UV-C light intervention. In addition to analyzing virus content on filters, using a self-reported survey, we will measure driver and passenger sick days, attempting to correlate the intervention with health outcomes.

Potential Impacts and VTrans Benefits

Testing UVC Lighting Technology to Improve Rural Transit Systems project will develop and deploy innovative solutions in two major areas: (1) Vehicle, facility, equipment and infrastructure cleaning and disinfection; (2) measures that strengthen public confidence in transit.