

Research Need Statement 653

I. Need Statement Champions and Information

I.A. Need Statement Champion Information

- I.A.1. First and Last Name of Research Champion: **Scot Edgeworth**
- I.A.2. Research Champion's Office: **Metro Operations & Maintenance**
- I.A.3. Research Champion's Phone Number: **651-775-9496**
- I.A.4. Research Champion's Email: scot.edgeworth@state.mn.us

I.B. Research Co-Champion

- I.A.1. First and Last Name of Research Co-Champion: **Sgt. Mike Krukowski**
- I.A.2. Research Co-Champion's Office: MN State Patrol, Office of Pupil Transportation
- I.A.3. Research Co-Champion's Phone Number: 651-350-2014
- I.A.4. Research Co-Champion's Email: michael.krukowski@state.mn.us

I.C. Research Needs Title (115 Characters): **School Bus Stop-arm Violations**

I.D. Project Sponsor: **Joint MnDOT and Local Road Research Board**

II. Research Need Background and Description

II.A. Research Need Background

S.A.V.E stands for Stop-Arm Violation Enforcement/Education.

The opportunity to create a data collection system for the advancement of reducing/eliminating stop arm violations with the primary goal of student safety.

II.A.1. Describe the problem or opportunity.

School bus stop-arm violations are risking the lives of Minnesota's school-aged children. Evidence supports (media outlets and the judicial system) that stop-arm violations occur daily on local, county, and state roadways. A national multi-year study shows that on average 81,800 illegal passes occur on a daily basis. In Minnesota, the average is 611 illegal daily passes.

II.A.2. If applicable, describe how this project will build on previous research.

Not Applicable.

A preliminary literature review was conducted using the following keywords, School bus(es), stop-arm, traffic Violations, boarding, etc. Relevant results have been attached to this need statement.

II.A.3. If applicable, include the title/s or previous research.
Not Applicable.

II.A.4. What is the **objective** of the proposed research?

A statewide data collection system is needed to aggregate the scope of the problem, but also to create an automated workflow process for reporting the violations to the appropriate law enforcement agency. Additionally, the system will enhance enforcement efforts and community outreaches to teach the importance of the obeying school bus stop-arm, and create the necessary reporting for support at local country, and state levels.

III. Strategic Priorities, Benefits, and Expected Outcomes

Section III. is for MnDOT sponsored and co-sponsored projects only; all LRRB projects proceed to section IV.

III.A. MnDOT Strategic Priorities

Instructions: Briefly describe how the project aligns with the following MnDOT Research Strategic Priorities. Complete all that apply.

III.A.1. Innovation & Future Needs:

Create support by raising awareness of the issue:

- ❖ Enforcement efforts are enhanced. Current methods are extremely reactive in nature, creating a continual uphill battle. With the SAVE system, an officer quickly identifies a problem location(s) within their respective enforcement boundary resulting in a more proactive approach.
- ❖ Education of drivers will increase and aid in identifying driver training gaps. This allows the opportunity for better teaching strategies in conveying the dangers of illegally passing a school bus during the student loading/unloading process.
- ❖ Through data analysis school districts and private bus companies can determine if a stop location is high risk due to environmental influence(s) or driver behavior.

III.A.2. Advancing Equity:

III.A.3. Asset Management:

To be determined as project evolves. However, students are the biggest assets and their safety are of the utmost importance.

III.A.4. Safety:

Student safety is, and always will be paramount. However, bus drivers and other motorist's safety is equally important. Driving is a privilege and all motorists have a duty to drive responsibly while behind the wheel.

III.A.5 Climate Change & Environment:

III.B. Expected Outcomes

Instructions: Check all expected direct outcomes of this research.

- New or improved technical standard, plan, or specification
- New or improved manual, handbook, guidelines, or training
- New or improved policy, rules, or regulations
- New or improved business practices, procedure, or process
- New or improved tool or equipment
- New or improved decision support tool, simulation, or model/algorithm (software)
- Evaluation of a new commercial product
- Other. Please specify below:

III.C. Expected Benefits

Instructions: Select all expected benefits that may be realized if the findings and recommendations from this research is adopted or implemented

III.C.1. Construction Savings Choose an item.

III.C.2. Decrease Engineering/Administrative Costs Choose an item.

III.C.3. Environmental Aspects Choose an item.

III.C.4. MnDOT Policy Choose an item.

III.C.5. Lifecycle Choose an item.

III.C.6. Operations and Maintenance Savings Choose an item.

III.C.7. Reduce Risk Choose an item.

By reducing stop-arm violations, direct risk to students is diminished.

III.C.8. Reduce Road User Cost Choose an item.

III.C.9. Safety **Reduction of crash frequency**

III.C.10. Technology Choose an item.

Implementation of a web-based data collection system to create automated workflow processes.

III.C.11. Other, please describe below:

IV. Technical Advisory Panel

Instructions: Please list the name and affiliation of individuals to consider for the Technical Advisory Panel.

- ❖ School Bus Companies (Private or Public)
- ❖ Law Enforcement (state, county and local)
- ❖ Department of Public Safety/Office of Traffic Safety (DPS/OTS)
- ❖ Minnesota Department of Transportation – Districts
- ❖ Minnesota Department of Health (MDH)
- ❖ MET Council

Your assigned Project Advisor is available to answer questions and provide guidance (assigned by the Office of Research & Innovation).

Your Project Advisor is: **Marcus Bekele**, (651)366-3903, marcus.bekele@state.mn.us