

HAAS Alert in Maryland



By Maryland Department of Transportation

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Benefits Statement

By equipping 175 Maryland Department of Transportation State Highway Administration (SHA) vehicles with real-time digital alert systems, this project enhances safety by notifying motorists about emergency responder vehicles in advance, potentially saving lives and reducing crashes. It also improves traffic flow, saving time for both drivers and responders.

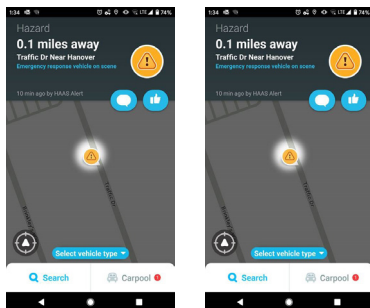
In this case study you will learn:

1. The installation of real-time digital alert systems in 175 SHA vehicles for the safety of both first responders and the traveling public.
2. How these systems aim to prevent accidents by notifying motorists about emergency responder vehicles, potentially saving lives and reducing crashes.
3. How anecdotal evidence suggests success, expanding SHA's safety services for all travelers in Maryland.

BACKGROUND

This project involved the installation or use of existing in-vehicle units for 175 Maryland Department of Transportation State Highway Administration (SHA) vehicles that could send real-time digital alerts to motorists over third-party platforms (e.g., Waze) as well as through connected vehicle applications, when responders and roadway crews are on scene and en route. This effort aligns with the 2021-2025 SHA Connected and Automated Vehicle (CAV) Implementation Plan and general TSMO Plan strategies.

The need for such technology is supported by multiple factors. In the first four months of 2021 alone, TSMO contractors experienced three vehicle hits to their truck-mounted attenuators while on the shoulder. In April 2021, a signal truck unit was struck and the driver severely injured while performing normal work duties at an intersection. On average, SHA vehicles are hit at a rate of about one per month. When SHA piloted this technology, the public did recognize its presence through these third-party applications, and the number of collisions with emergency vehicles were significantly reduced.



This technology is expected to help the public know ahead of time that emergency responder vehicles are on scene, allowing them more time to shift out of their lane and keep space between themselves and staff operating in the field. The goal is to have little to zero vehicle impacts for the vehicle equipped with this technology as a preventive mechanism.

TSMO PLANNING, STRATEGIES AND DEPLOYMENT

This project met the necessary criteria to be part of Maryland’s Highway Safety Improvement Program (HSIP) Implementation Plan for State Fiscal Year 2022 as the technology to be deployed under the project is expected to help the public know ahead of time that emergency responder vehicles are on scene, thereby potentially saving lives and reducing serious injury crashes. SHA coordinated with the relevant stakeholders to identify the functional requirements, establish the project goals, and determine potential solutions, in compliance with the Systems Engineering (SE) process. It should be noted that the State was seeking a solution that did not require significant funding or significant modifications to their existing vehicles, particularly since most of the agency’s vehicles already had Automatic Vehicle Location (AVL) technology installed. Through the procurement process, SHA selected a vendor, and SHA staff were responsible for the installation of the technology on the vehicles. Since the initial installation, SHA has continued the HAAS Alert services, which provides enhanced safety for all.

COMMUNICATIONS PLANNING AND EXECUTION

SHA initially identified its Coordinated Highways Action Response Team (CHART) Program’s Response Vehicles as they are registered “emergency vehicles” and would be in operation most often on the roadside/roadway. This then led to collaboration with various SHA offices and Districts to identify other vehicles and positions that would benefit from the technology (e.g., attenuator trucks, stake body/ Management of Traffic (MOT) trucks, and team leader pick-up trucks). It should also be noted that due to the CHART Program’s ability to leverage its existing AVL system, which was compatible with HAAS, SHA was able to

expand the number of vehicles to be placed on the system. Once the initial installations had been completed (totaling 108 vehicles), SHA's Office of Transportation Mobility and Operations (OTMO) coordinated with its Office of Communications to prepare a notice about the deployment of this technology for the benefit of the traveling public in Maryland.

OUTCOME, BENEFITS AND LEARNINGS

This project involved the installation or use of existing in-vehicle units for 175 SHA vehicles that could send real-time digital alerts to motorists over third-party platforms (e.g., Waze) as well as through connected vehicle applications, when responders and roadway crews are on scene and en route. This technology is expected to help the public know ahead of time that emergency responder vehicles are on scene, allowing them more time to shift out of their lane and keep space between themselves and staff operating in the field. The goal is to have little to zero vehicle impacts for the vehicle equipped with this technology as a preventive mechanism. When SHA piloted this technology, the public did recognize its presence through these third-party applications, and the number of collisions with emergency vehicles were significantly reduced. Since this project was deployed recently, there has not been enough time to conduct a formal and rigorous analysis of its success. However, anecdotal data indicate that this project is already successful. Moreover, it expands upon one of SHA's major services areas, which is to provide Maryland's travelers with timely and reliable traveler information, enabling them to remain alert of roadway conditions as well as enhancing safety by reducing primary and secondary incidents.