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Research Notes

Maintenance

Pilot Testing of Work Zone Intrusion Alarms

Pilot testing Work Zone Intrusion Alarm (WZIA) systems in active work zones to determine effectiveness in enhancing highway worker safety.

NOVEMBER 2023

Project Title:
Work Zone Intrusion Alarms

Task Number: 3875

Start Date: June 16, 2021

Completion Date: November 16, 2023

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WHAT IS THE NEED?

The California Department of Transportation (Caltrans) sponsored a prior research study that identified, evaluated, and tested commercial WZIA systems in a closed and controlled environment. The goal was to confirm the function and value these systems can bring to work zones (WZs) and identify which, if any, systems should be considered for active WZ pilot testing and potential full implementation into Caltrans business operations.

Caltrans employees set up highway lane closures to create WZs for workers to conduct highway maintenance activities. Even with proper equipment and standard layouts, unauthorized vehicles still enter these WZs, compromising the safety and well-being of workers and traveling motorists. There is a need to evaluate the effectiveness of WZIA systems in minimizing risks to highway workers.

WHAT ARE WE DOING?

This research project plans to pilot test selected work zone intrusion alarm systems (identified in the previous research project) in active Caltrans work zones to evaluate their effectiveness, benefits, and shortcomings in real-world conditions.

A brief literature review will be conducted to identify any additional work zone intrusion alarm systems available in the market. A list of active work zone locations will be identified, and detailed deployment, testing, and data collection plans will be

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developed for each identified active work zone location. The selected work zone intrusion alarm systems will be tested, and evaluation results will be documented in a final report. The goal is to see if any of the selected WZIA systems should be considered for implementation in Caltrans.

WHAT IS OUR GOAL?

The goal of this research project is to test and determine the effectiveness of WZIAs in active WZs. A confirmed appropriate level of WZIA effectiveness may support Caltrans' utilization of WZIA systems to augment the current Caltrans Standard Plans, thereby improving Caltrans worker safety.

WHAT IS THE BENEFIT?

The implementation of WZIA systems can help Caltrans improve business practices for enhancing worker safety.

WHAT IS THE PROGRESS TO DATE?

As of November 2023, here is the progress to date:

The research team procured a new work zone intrusion alarm called Alphanet OverWatch which was recommended by the Task Manager and officials in Caltrans District 11. The system was tested and on the Sacramento State Campus roads to ascertain the system capabilities, performance. The first draft of the final report has been reviewed by Caltrans.

For more information, please contact the task manager.

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