

From: Willy Gayle

To: Behnam Ghaffari

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Message:

Intelligent Transportation Systems (ITS) and connected and automated vehicle (CAV) technologies are rapidly developing in the transportation industry, making it imperative for infrastructure owners and operators (IOOs) to stay up to date with these emerging technologies. In preparation for vehicle-to-infrastructure (V2I), infrastructure to vehicle (I2V), and generally vehicle to everything (V2X) connectivity on our roadways, the Maryland Department of Transportation State Highway Administration (MDOT SHA) is pursuing a variety of CAV initiatives throughout the state, including participation in the national effort to meet the Signal Phase and Timing (SPaT) Challenge, performing planning and engineering for queue around curve warnings, and specifically for this report, the deployment of a detection and notification strategy to warn drivers via connected vehicle (CV) communication of a vulnerable user in the roadway. MDOT SHA is taking the systems engineering approach to prepare for the deployment of wireless communication via Dedicated Short Range Communication (DSRC) and for this project, the future of Cellular Vehicle to Everything (C-V2X).

MDOT SHA's primary objective is to deploy roadside equipment at a single pedestrian crosswalk that can broadcast a wireless signal when the crosswalk is occupied. The roadside unit (RSU) will serve as supporting infrastructure for CV applications, allowing vehicles nearing a defined crosswalk to "connect" and gain situational awareness of vulnerable users via a DSRC and C-V2X-compatible onboard units (OBU). The goal of this specific deployment is to promote safety, with the larger ambition of working toward state-wide integration of CV technologies. Deployment of RSUs and other ITS equipment will provide support to many of Maryland's ongoing CAV initiatives. As connected data becomes more abundant through deployments similar to this one, it may be possible to incorporate this data into traffic management as a whole to provide travelers with a safe and efficient system. MDOT SHA will continue to work to overcome hurdles, encourage private investment, and coordinate with public agencies in the realm of ITS and CAV testing and deployment.