

# CAV Tech & Enhancing Safety for Vulnerable Road Users

The Maryland CAV Working Group met at MDOT Headquarters on April 17, 2023. The primary theme of the event was Vulnerable Road Users, and a number of demonstrations and conversations focused on this topic. A panel of experts from industry, government, and academia weighed in on the issue, as summarized below.

## NOTABLE QUOTES (paraphrased)

We need to improve awareness and education of technologies.	<i>Mansoureh Jeihani, Morgan State University</i>
There are apps out there for VRU safety; just need to promote them more.	<i>Ed Jones, Prince George's County Transportation</i>
A lot of people can't afford to use technology today.	<i>Terry Yang, University of Maryland College Park</i>
Software development is way ahead of the hardware manufacturers.	<i>Ed Jones, Prince George's County Transportation</i>
'Build it and they will come' won't work with automation technology.	<i>Bogdan Butoi, Merlin Mobility</i>
CAV is transportation's moonshot; find a piece you can solve, solve it & move on.	<i>Peter Carnes, Lantern Vision Systems</i>

## SUMMARY POINTS

### Understanding the Technology & Human Interface

- Need to push the envelope to help bicyclists, pedestrians, roadway workers, and roadway users with disabilities.
- VRU data should be included on vehicle dashboards, not just signal timing data.
- Data processing should be performed at local intersections to improve reliability. This also helps to improve communications latency.
- Once get the data, it's only effective if you can communicate it.
- No tech will do it all; need to combine tech and overlay to cover the map of possibilities
- How fast can a message be delivered to a stakeholder? Communication latency is important.
- Most of the interfacing with a person outside of the vehicle today, is with smart phones.
- Flashing beacons are being used to interface with the hearing impaired; audible messaging is being used to interface with the visual impaired.

### Stakeholder (VRU) Engagement

- Maryland CAV Technology Subgroup is working on a data exchange playbook now for local governments to use.
- Technology affordability is an issue for many; we should have a system that accommodates everyone, not just those who can afford it. Not everyone has a smart phone.
- We need to be inclusive of all stakeholder groups and all different kind of systems.
- Need partnerships with public and private sectors.
- The education piece is a must. Users need to better understand the technology available to them today.
- MDOT MVA has reached out to driving instructors to educate on vehicle technology.

### Barriers to Local Readiness

- We need to have people get services and understand best use. Needs are different in urban and rural areas: bus preemption for urban areas; emergency preemption in rural areas. Need to show benefits & be equitable.
- Liability is an issue. Who is responsible for a crash? Auto manufacturers are trusting their own technology.
- Budget is an issue; not enough money to go around to address the many needs. Need low-cost solutions.
- Issues with funding and priorities at the local level. CAV isn't happening now, so the focus is on the needs of today.
- Not everyone has access to technology used to broadcast messages in a work zone.
- We should build out the infrastructure now, as it will take time to adequately integrate VRUs; should be baking the tech in now so that it's ready when the fleet picks up to read.
- Local agencies are partial to their own equipment. Need to be open to new ideas and solutions. We need leadership on potential for inter-jurisdictional partnerships.