



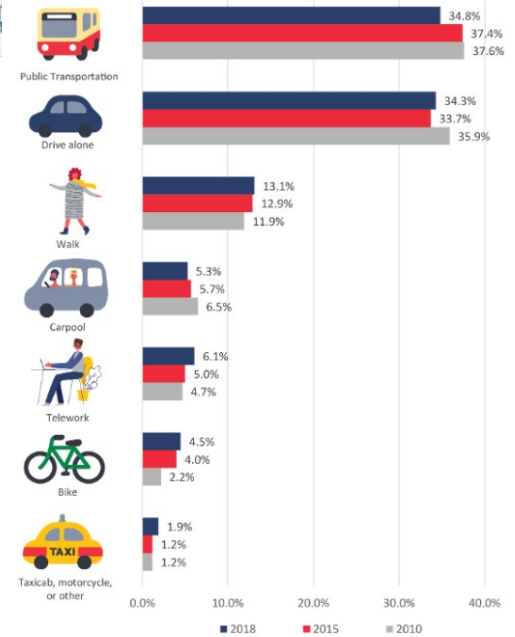
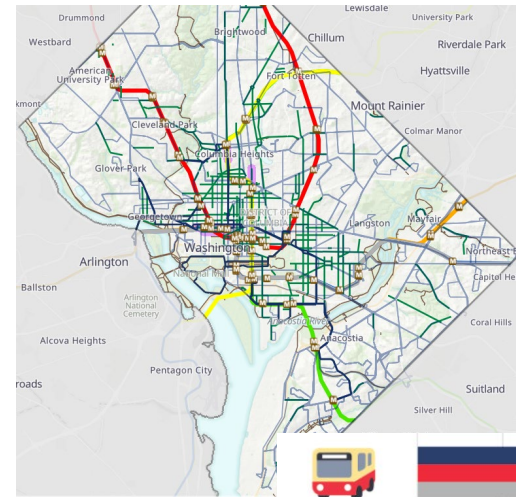
DDOT CAV Deployment: Pedestrian and Cyclist Safety “Sandbox”



Maryland Connected & Automated Vehicles Working Group
August 10, 2021

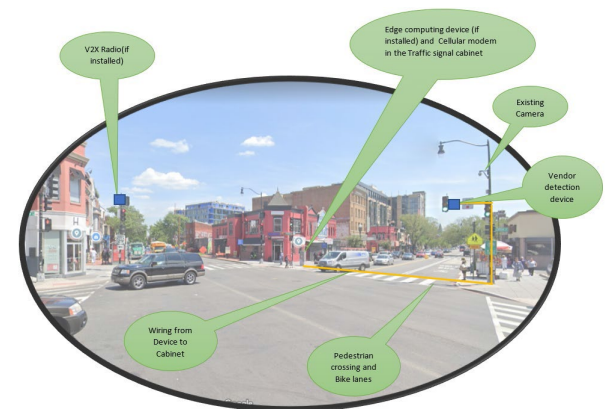
DDOT's Approach

- Shaped by unique characteristics
 - Highly visible environment
 - High proportion of out-of-state travel
 - Many stakeholders
 - High non-vehicle mode share
 - Arterial roadway network
- Guiding principles
 - Strategic, goal-oriented planning and coordination
 - Limited physical infrastructure investment
 - Piloting before full-scale implementation



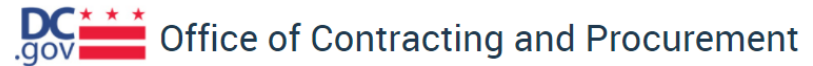
Sandbox Overview

- Technology
 - Demonstration of emerging technology solutions for pedestrian and cyclist safety in intersections, including
 - Technology that enhances agency situational awareness of intersection activity
 - Technology that provides auditory or visual alerts for pedestrians, cyclists, and/or drivers approaching crosswalks based on real-time activity in the intersection
 - Up to five vendors to demonstrate technology at a “sandbox” intersection or corridor
- Objective
 - Approach for quickly bringing on multiple vendors to address specific agency need - hopefully first of many!
- Procurement
 - Funded by research program
 - Consultant support established late 2020 for solicitation outreach, facilitation of incentive awards, facilitation of installation, maintenance, and removal, and evaluation



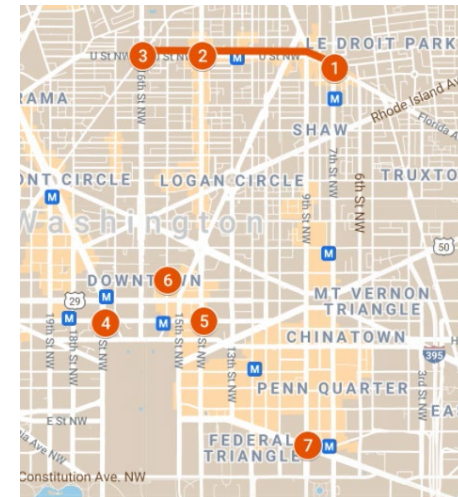
Sandbox Progress to Date

- RFI to capture vendor solutions/interest
 - Closed June 2021
 - 24 responses from vendors
 - Technology types:
 - Passive detection technologies
 - Analytics
 - Edge computing devices
 - Crowdsourced data technologies
 - Connected vehicle technologies
- Intersection/corridor selection considerations
 - Pedestrian and cyclist volumes
 - Crash rate
 - Bicycle facilities
 - Installation requirements
 - Existing monitoring equipment
 - Planned projects



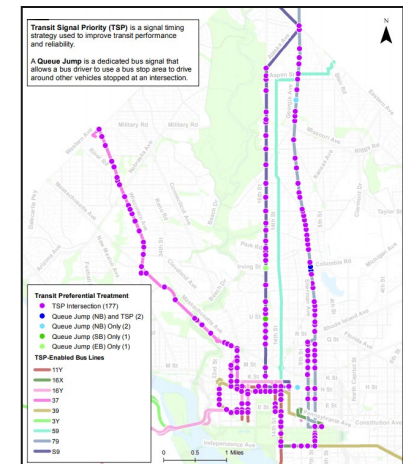
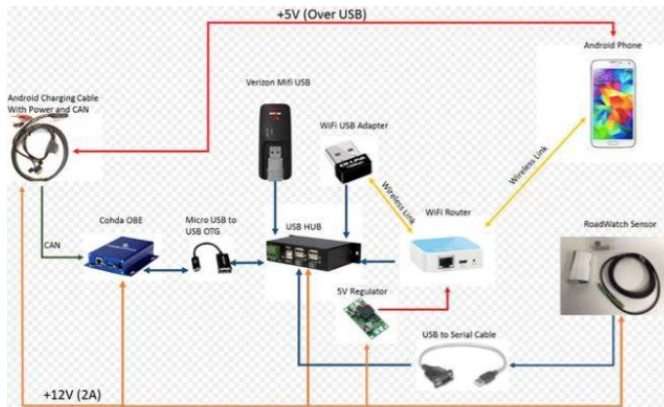
Solicitation Details

Solicitation:	DCKA-2021-I-0049
Caption:	Emerging Technology Solutions for Pedestrian and Cyclist Safety in Intersections
Subcontracting Requirement:	N/A
Status:	Open



Other CAV Deployments

- Transit Signal Priority (2017)
 - Cellular-based transit signal priority for buses on three corridors comprising 179 intersections
 - Testing, procurement, installation and ongoing evaluation in conjunction with WMATA
- Multi-Functional OBU (2017)
 - OBUs for five state safety patrol vehicles with V2V, V2I, AVL, pothole detection, and road surface temperature detection
- SPaT Portal (2018)
 - API for real-time traffic signal data, shared with third parties who sign data use agreement
 - 600+ intersections, 4 third parties with access
 - Notable use case: “time-to-green” provided to drivers via in-vehicle display



Challenges

- Procurement sometimes driven by political pressure, what “looks cool”, rather than strategic approach
- Often fail to fully consider prior to procurement
 - Use cases
 - Inter-agency coordination
 - Infrastructure investment
 - Long-term maintenance
 - Evaluation
- Further exacerbated by staff capability and/or capacity
- Even non-traditional procurement is slow

Lessons Learned

- Other emerging technology solutions provide framework and insight for future CAV deployment
 - Dedicated pick-up/drop-off zones for use by transit, taxis, and TNCs
 - Demand-based parking
 - Personal delivery device and dockless vehicle permitting and operations
 - Probe vehicle data to inform planning and operational decision making
- Supportive programming and policy often more impactful than infrastructure
 - Pilot Evaluation & Screening – strategic, agency-wide approach for emerging technology pilots
 - AV Testing Program Rulemaking (Draft) – permitting process and framework for testing
 - Partnership with Ford/Argo – on-road testing, data exchange

