NORTHERN VIRGINIA TRANSPORTATION AUTHORITY

# Transportation Technology Committee Meeting

Tuesday, June 17, 2025
9:00 a.m. EST
2600 Park Tower Drive, Suite 601
Vienna, VA 22180
*This meeting will be held in person and accessible via YouTube.*

# AGENDA

1. **Call to Order/Welcome** — Chair Snyder

## Action

2. **Approval of September 27, 2023, Meeting Summary Minutes** — Chair Snyder
   *Recommended Action: Approval of the September 27, 2023 Meeting Summary Minutes*

## Discussion/Information

3. **Member Introductions**

4. **NVTA's Role in Transportation Technology** — Keith Jasper, NVTA

5. **Action Plan for the Transportation Technology Committee** — Keith Jasper, NVTA

6. **Summary of Transportation Planning Board's (TPB) Technology Inventory Survey** — Griffin Frank, NVTA

7. **NVTA Updates** — Monica Backmon, CEO, NVTA

8. **Adjournment**

## Next Meeting

*TBD*

NORTHERN VIRGINIA TRANSPORTATION AUTHORITY

# SUMMARY MINUTES

Wednesday, September 27, 2023
8:30 AM, EST.
3040 Williams Drive, Suite 200
Fairfax, VA 22031
*This meeting was conducted in person and livestreamed via NVTA's YouTube Channel*

1. Call to Order/Welcome
   - ✓ The meeting was conducted in person at 3040 Williams Drive, Suite #200, Fairfax, VA 22031 and virtually over Zoom. Chair Snyder called the meeting to order at 8:34 a.m.

   Attendees:

   - ✓ TTC Members: Chair David Snyder, Supervisor Walter Alcorn, Hari Sripathi, Andrew Burke, Michael Garcia, Jim Kolb, Vice Chair Jeanette Rishell, participated virtually due to personal reasons.
   - ✓ NVTA Staff: Keith Jasper, Principal, TPP; Harun Rashid, Planning and Analytics Manager; Griffin Frank, Regional Transportation Planner, and Hannah Pajewski, Regional Transportation Planner
   - ✓ Others: Ashley Jones (CISA) and Emily Odom (FBI).

*Members of the public, jurisdiction and agency staff were in person and were able to watch the meeting livestreamed via NVTA's YouTube Channel.*

## Action Items

2. Approval of November 30, 2022, Draft Meeting Summary Minutes — Chair Snyder
   - ✓ The November 30, 2022 meeting summary was approved unanimously.

## Discussion/Information Items

3. Cybersecurity: Cybersecurity in Transportation — Emily Odom, FBI
   - ✓ Ms. Odom explained FBI's role in Cyber-crime prevention and common cyber security incidents/vulnerabilities that the FBI responds to from targeted industries such as government, businesses, financial and technological institutions. The main goal of a cyberattack is to obtain sensitive information from individuals like names, passwords, and financial records to feed their cybercriminal ecosystem.
   - ✓ Ms. Odom explained that the top 2 vulnerabilities for cyberattacks include:

- Unpatched and outdated systems – the time between when a system update/patch becomes available and the time that is actually installed accounts for the most vulnerable period for cyberattacks. 80-90% of attacks occur within this time period.
    - It is vital to keep your system software up to date so that periods of vulnerability are minimized from potential threats.
    - FBI does not recommend paying ransom to unlock+ data, but ultimately it is the businesses' choice. The key is to have a plan prior to an attack and to consider different decisions based on different scenarios and importance of data. Chairman Snyder emphasized the importance of this topic since it has happened locally. Ms. Odom advised to contact her and the FBI immediately if this occurs.
- Lack of education and training – accidentally clicking on a phishing email or responding to suspicious emails/phone calls which expose valuable resources. 82% of breaches involved the human element (stolen credentials, phishing, misuse, or simply an error). Cyber actors use AI, which has advanced in its ability to pretend to be financial decision makers in order to target others with the goal of acquiring sums of money.
    - Add an additional step(s) into your business plan when a fund exchange takes place above a certain threshold to verify the identity of all parties involved
    - Minimizing risks like implementing awareness and training programs and confirming payments via telephone prior to dispersing funds

✓ Ms. Odom explained how, when, and what you should report regarding any cyberincident. Greater detail can be found within the presentation slide deck.

✓ Overall, Ms. Odom informed TTC members on the collection of incidents can allow the aggregation and connection of data for the FBI to push cybersecurity alerts efficiently and prevent future attacks. The FBI's goal is to act as a resource against cyberattacks and to hold bad actors accountable while protecting your best interests/reputation.

✓ Vice Chair Rishell suggested that NVTA incorporates concepts of cybersecurity into the criteria for funding transportation technology improvement projects such as standards for training requirements, redundancy, and requirements for software updates.

✓ Supervisor Alcorn suggested that NVTA draw upon resources from member jurisdictions that have committed time to researching cybersecurity components from a local level to allow NVTA to gain knowledge on the topic.

<u>Cybersecurity and Infrastructure Security Agency</u> Ashley Jones, CISA

- ✓ Ms. Jones shared that CISA is a new federal agency that works to lead the national effort to understand, manage, and reduce risk to our cyber and physical infrastructure. CISA's goals are to defend against urgent threats and hazards of today and to strengthen critical infrastructure and address risks in the mid/long-term.
- ✓ Ms. Jones shared CISA's 5 mission areas that directly support the protection of critical infrastructure:
    - Plan, coordinate, and conduct security surveys and assessments
    - Plan and conduct outreach activities
    - Support National Special Security Events (NSSEs) & Special Event Activity Rating (SEAR) events
    - Respond to incidents
    - Coordinate and support improvised explosive device awareness and risk mitigation training
- ✓ Ms. Jones shared that CISA is a non-regulated agency, so cybersecurity offerings are Voluntary and are No-Cost to the inquiring party. This means that CISA can recommend services that fit your needs, but that is by no means required or regulated. These services include:
    - Assessments and evaluations
    - Preparedness activities
    - Partnership development
    - Strategic messaging and advisement
    - Incident response assistance
- ✓ Ms. Jones shared cybersecurity training resources offered by CISA. CISA offers access to cybersecurity training and workforce development to develop a more resilient and capable cybernation through www.cisa.gov/cybersecurity-training-exercises. Ms. Jones shared a plethora of online resources offered by CISA ranging from Known Exploited Vulnerabilities Catalog to Cyberincident Response filing (see presentation for links).
- ✓ Mr. Jasper asked about collaboration between agencies/jurisdictions and the awareness of cybersecurity during data exchange interactions to which Ms. Jones answered that CISA acts as a facilitator and liaison as a trusted joining agency that can be trusted to exchange sensitive information.
- ✓ CISA is in the process of calling transit agencies to offer cybersecurity assistance and Ms. Jones requested that committee members and NVTA reach out to their respective transit agencies to contact CISA for cybersecurity guidance in any form.
- ✓ Mr. Jasper asked if CISA has been involved with or has suggestions about sharing information amongst numerous agencies/jurisdictions. Ms. Jones said that conversations between agencies are taken to see if they are comfortable with sharing

certain information. Once clearance is provided, then interagency information can be shared. CISA serves as the facilitator of partnerships collaboration between agencies.

- ✓ Ms. Jones informed the committee of a metropolitan working group which is open for new members in the region.
- ✓ Mr. Alcorn inquired about grant programs offered by CISA. Ms. Jones shared that CISA has a State and Local Cybersecurity Grant Program which helps eligible entities address cybersecurity risks and threats to information systems owned or operated by or on behalf of State, Local, and Territorial governments and Tribal governments.

4. NVTA InNoVAtion Initiatives Poster — Keith Jasper, Principal, TPP
   - ✓ Mr. Jasper provided an update on NVTA's poster that was shared at the Intelligent Transportation Society of Virginia Annual Conference. The poster is a snapshot of the many NVTA initiatives and displays that NVTA is doing to drive progress towards a technologically innovative transportation network.

5. Transportation Technology Strategic Plan (TTSP) – Recap of First Substantive Update — Keith Jasper, Principal, TPP
   - ✓ Mr. Jasper informed the Committee that the Authority's unanimously approved updates to the TTSP (during their November 2022 meeting) that were previously endorsed by the TTC have now been incorporated into the TTSP. The updates include:
   - ✓ Expansion of scope for existing strategy #4 which now addresses ways to maximize potential benefits of Connected and Automated Vehicles. Strategy #4 was retitled to "Enhance operations of the multimodal transportation system through connectivity and automation.";
   - ✓ Expansion of existing strategy #8 which aims to advance decarbonization of the transportation system to include new technologies; and
   - ✓ Addition of a 9th strategy titled "Enhanced mobility in the region through innovation and emerging technologies in transit."
   - ✓ The updated plan has been posted to NVTA's Transportation Technology webpage.

6. Artificial Intelligence in Transportation — Keith Jasper, Principal, TPP
   - ✓ Mr. Jasper discussed the possible inclusion of an Artificial Intelligence-focused strategy into the TTSP. NVTA is a co-sponsor of RM3P (Regional Multimodal Mobility Program, which includes an AI-Based Decision Support System and could enhance the network through connectivity and automation (strategy #4) and contribute to regional coordination and interoperability (strategy #7).

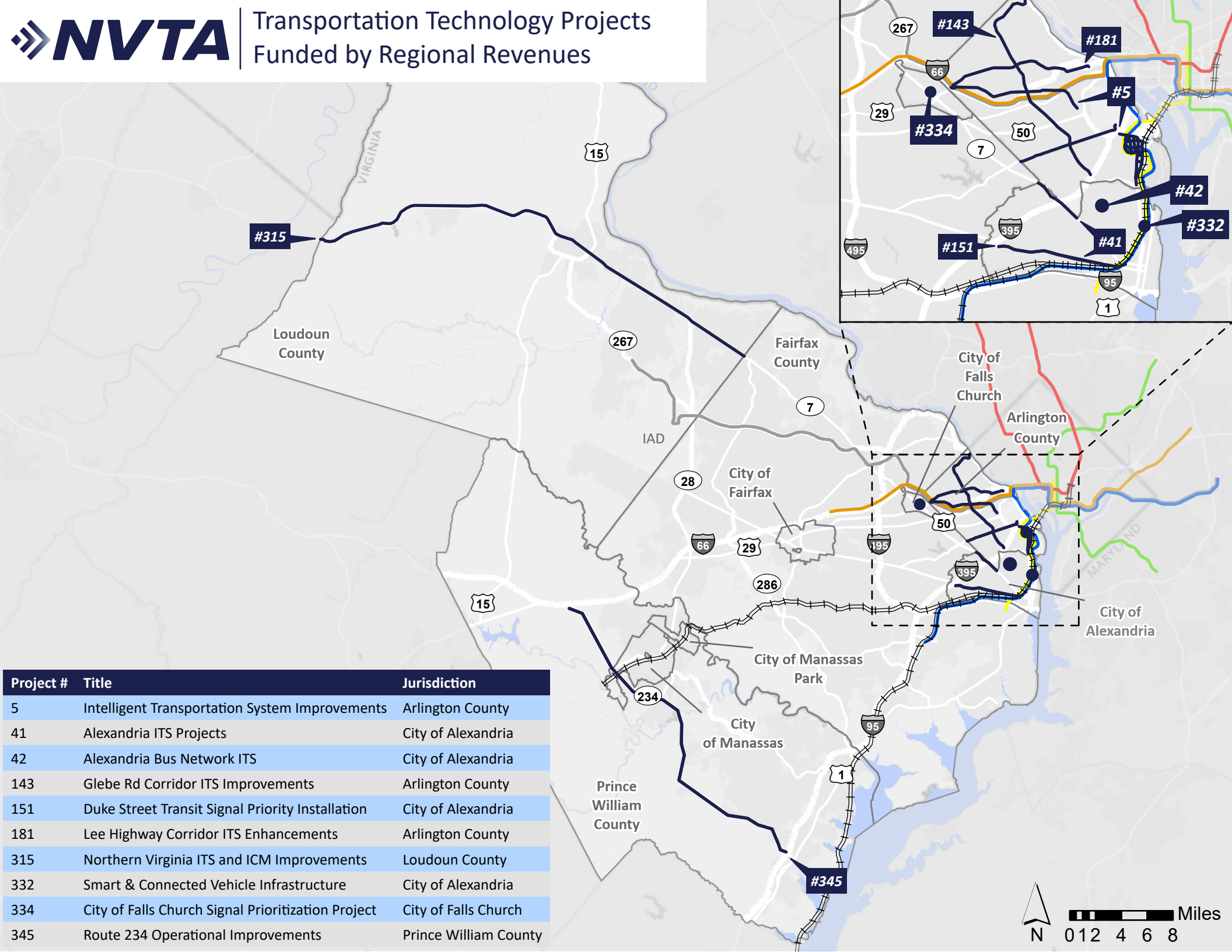
- ✓ Mr. Jasper explained how AI could be used to predict traffic congestion based on data collected over time and attempt to reroute traffic in real time to other routes or modes, thus improving travel time reliability.
- ✓ Supervisor Alcorn responded by saying that there are multiple forms of AI and it would be specific about which one it is referring to, specifically tools used in the real world. There should be research on what AI tools would help NVTA do its job. Supervisor Alcorn said he is open to NVTA applying for grant funding for an AI-focused demonstration project.
- ✓ Vice Chair Rishell asked how the chances of hacking AI, for uses it was not intended for, could be reduced.
- ✓ Supervisor Alcorn responded that AI applications are developed as a black box making them very difficult to penetrate. The larger threat may be for a person misusing the technology for unintended consequences, but so far, he has not heard of any major stories of hacking.
- ✓ Mr. Jasper noted that the second season of InNoVAtion Luch & Learns will be kicking off in November with Dr. Sanchez from Virginia Tech presenting on "Artificial Intelligence Uses in Transportation". The Winter season will consist of a presentation on the first Thursday of the next three months, starting in November. Presentations will focus on transportation technology related topics.

7. NVTA Updates — Monica Backmon, CEO
   - ✓ Mr. Jasper shared the NVTA update.
   - ✓ He stated that $1 billion of NVTA's local revenues has been distributed to NVTA's jurisdictions, with many projects being transit or bicycle/pedestrian oriented.
   - ✓ The ongoing Six Year Program update is currently in the eligibility review period. Overall, 32 applications have been received, and three of these have transportation technology as the primary mode.
   - ✓ Cambridge Systematics has been selected for NVTA's Preliminary Deployment Plan for Bus Rapid Transit (PDP-BRT). Formal approval will take place at the October Authority Meeting.

8. Member Updates
   - ✓ Chair Snyder expressed interest in the exploration of the difference between electric, fuel cell, and hydrogen vehicles and their viability to gain traction as a prominent replacement of traditional gasoline vehicles.
   - ✓ Chair Snyder also offered the idea of a regional funding mechanism for innovative technology pilot projects in which failure is not penalized. Supervisor Alcorn supported this idea.

9. Adjourn
   - ✓ The meeting ended at 10:19 am.

# NVTA | Transportation Technology Projects Funded by Regional Revenues




| Project # | Title | Jurisdiction |
|---|---|---|
| 5 | Intelligent Transportation System Improvements | Arlington County |
| 41 | Alexandria ITS Projects | City of Alexandria |
| 42 | Alexandria Bus Network ITS | City of Alexandria |
| 143 | Glebe Rd Corridor ITS Improvements | Arlington County |
| 151 | Duke Street Transit Signal Priority Installation | City of Alexandria |
| 181 | Lee Highway Corridor ITS Enhancements | Arlington County |
| 315 | Northern Virginia ITS and ICM Improvements | Loudoun County |
| 332 | Smart & Connected Vehicle Infrastructure | City of Alexandria |
| 334 | City of Falls Church Signal Prioritization Project | City of Falls Church |
| 345 | Route 234 Operational Improvements | Prince William County |

# TPB MEMBER TECHNOLOGY INVENTORY SURVEY

## Overview

Andrew Burke
TPB Transportation Engineer

NVTA Transportation Technology Committee
June 17, 2025

National Capital Region
**Transportation Planning Board**

# Background and Purpose

- Snapshot of current technology use by member agencies in the TPB region
- Build on past surveys – Traffic Signal Timing, Power Back-up, and Technology Surveys
- Inform future planning activities and feed into ITS architecture update

# Technology Survey – Scope of Work

- Survey performed by team from ICF and Mead & Hunt in coordination with members of TPB staff
- Transportation Systems Management & Operations (TSMO) service areas were selected as the focus of the survey
- In addition, information on Emerging Technologies, Communications Networks, and available GIS datasets were collected in survey efforts
- Online form or word document options used for agency responses
- Existing technologies versus planned technologies – 2 year implementation cutoff

# TSMO Categories Surveyed

- **Active Traffic and Demand Management** (Adaptive Ramp Metering, Managed Lanes, Variable Tolling, etc.)
- **Traffic Management Centers** (e.g., Arterial Management, Real-time traffic management, Real-time dynamic messaging, etc.)
- **Traffic Signal Operations** (e.g., Adaptive Traffic Signal Control, Traffic Responsive Signal Control, Automated Traffic Signal Performance Measures (ATSPMs), etc.)
- **Integrated Corridor Management** (e.g., Roadway Incident Detection, Incident Response, Support System for Arterial Traffic Signals, etc.)

# TSMO Categories Surveyed Continued

- **Traveler Information** (e.g., Advanced Transportation Management Systems (ATMS), website, smart phone applications, etc.)
- **Work Zone Operations** (e.g., Smart Work Zone, Variable Speed Limit, Real-time Work Zone Information, etc.)
- **Emergency Transportation Operations** (e.g., Decision Support Systems, Evacuation Management, etc.)
- **Connected and Automated Vehicle Deployment** (e.g., SPaT Messages Broadcast, BSM Messages Broadcast, CV applications, etc.)
- Plus **Emerging Tech., Comm. Networks, and GIS datasets**

# Participating Agencies

District Department of Transportation (DDOT)

Maryland Department of Transportation State Highway Administration (MDOT/SHA)

Virginia Department of Transportation (VDOT)

Arlington County

City of Alexandria

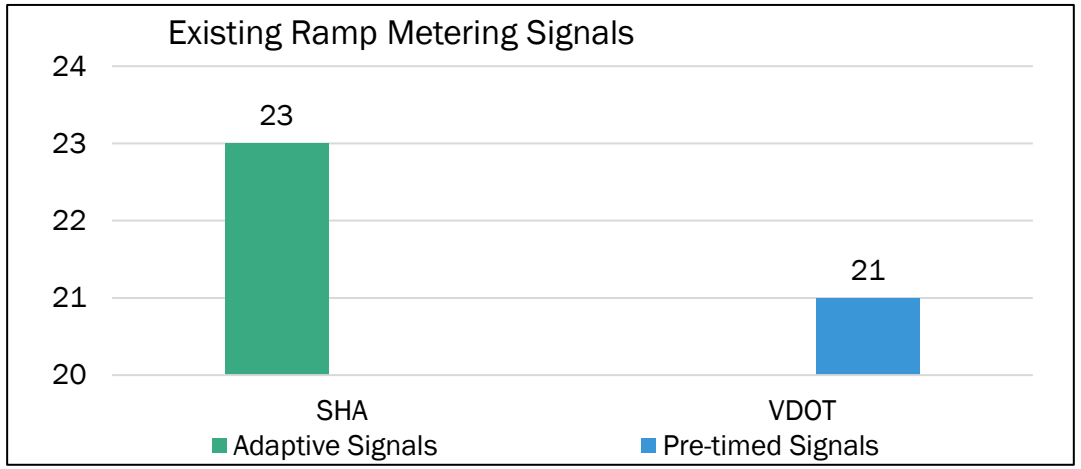
City of Fairfax

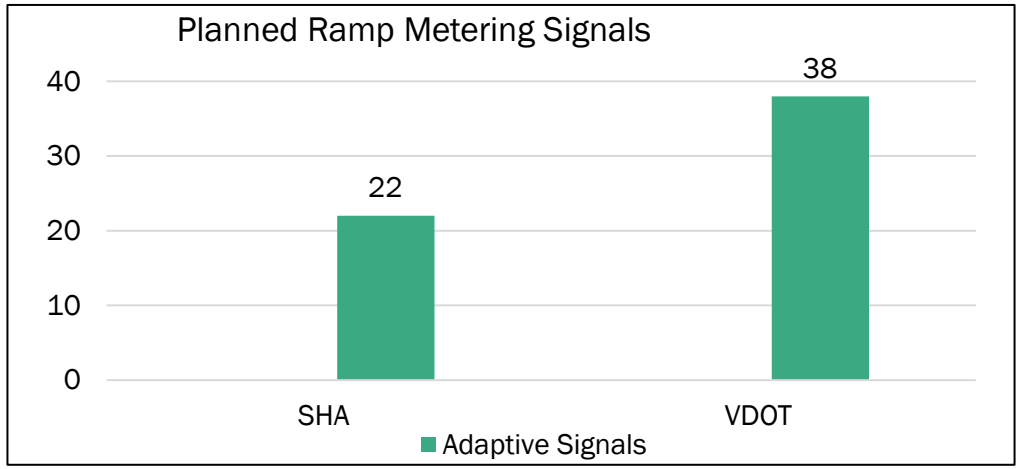
City of Gaithersburg

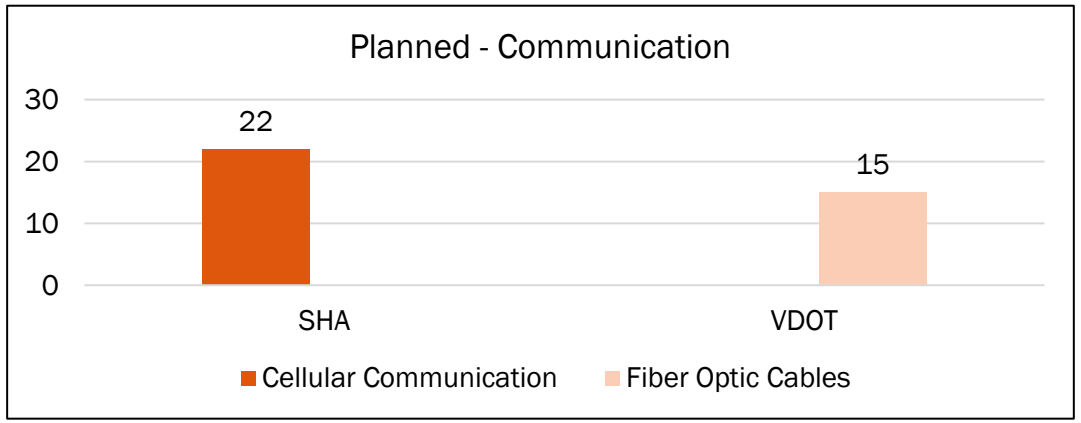
City of Manassas

Montgomery County Department of Transportation (MCDOT)

# Result Highlights - Active Traffic and Demand Management



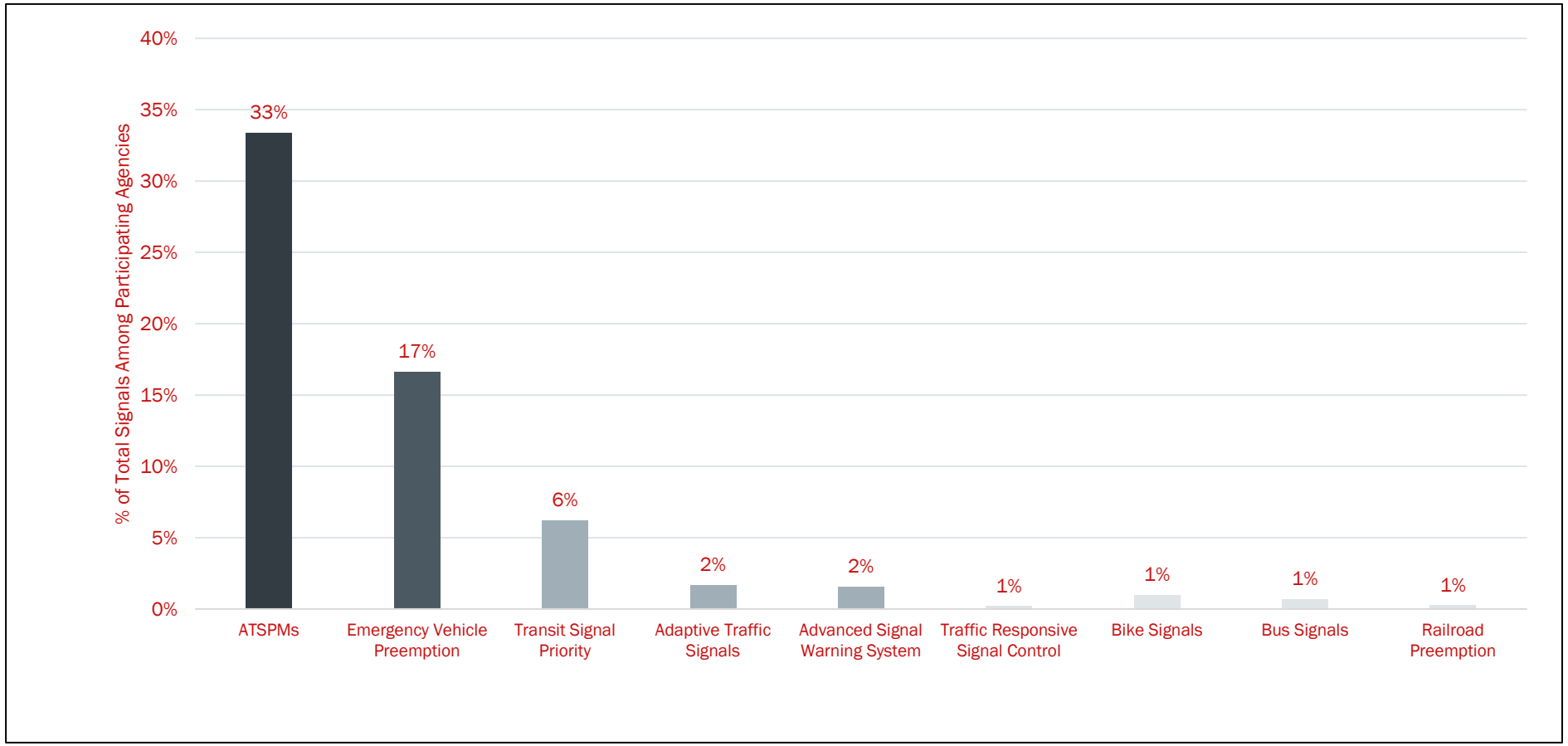




## Ramp Metering Detectors:

- **SHA:**
  - 23 Locations with Existing Video Detectors, 23 Locations Existing Radar Detectors
  - 22 Locations Planned Video Detectors; 22 Locations Planned Radar Detectors

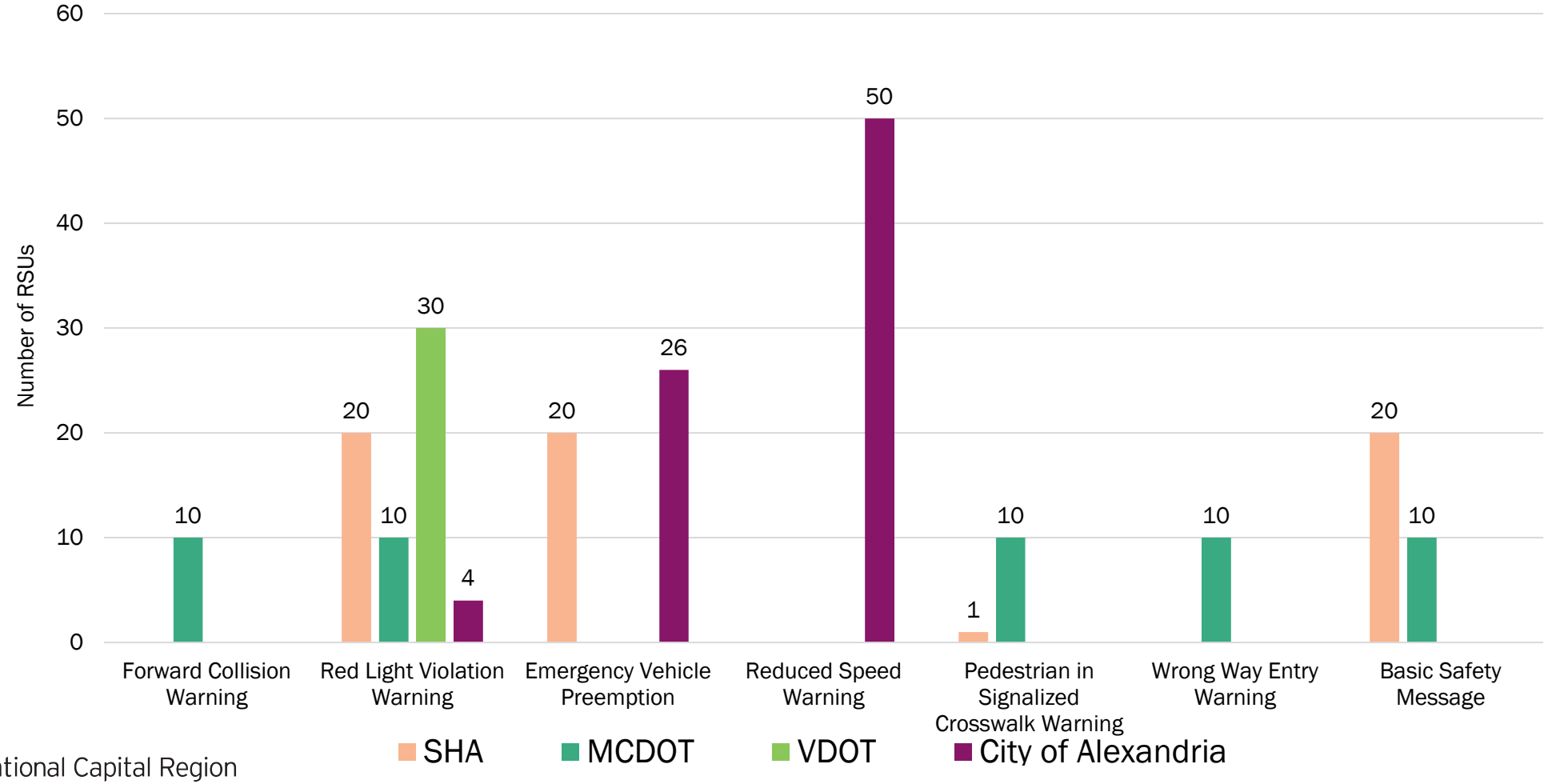
# Result Highlights - Traffic Signal Operations

## EXISTING TRAFFIC SIGNAL STRATEGIES



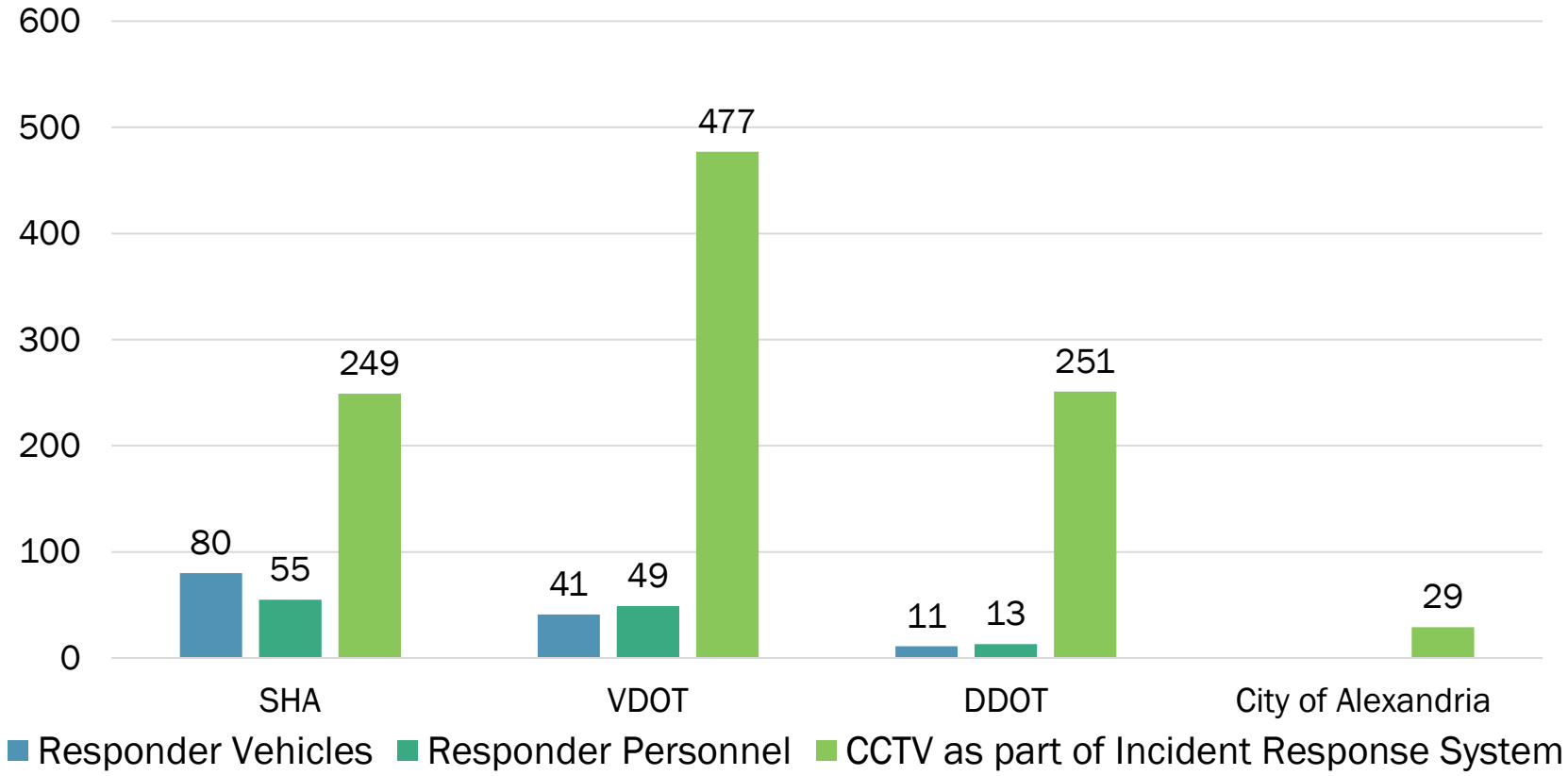
# Result Highlights – CAV Deployment

## Safety Applications – Existing Roadside Units (RSU)



# Result Highlights - Integrated Corridor Management

## Incident Response System



# Conclusions & Next Steps

- Technology changes at fast pace, use Systems Performance, Operations and Technology Subcommittee (SPOTS) as technology showcase
- Encourage increased member participation in future surveys
- Research making survey a “living document” and resource directory for members

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