TRANSPORTATION TECHNOLOGY COMMITTEE
Wednesday, April 13, 2022, 8:30 am
Electronic meeting and livestreamed on YouTube

MEETING SUMMARY

I. **Call to Order/Welcome**

- Chairman Snyder called the meeting to order at 8:30 am.
- Attendees:
  - **TTC Members:** Councilmember/Chairman David Snyder (City of Falls Church and Authority Member); Mayor Jeanette Rishell (City of Manassas Park and Authority Member); Hari Sripathi (VDOT); Dr. Richard Mudge (Compass); Mike Garcia (FCDOT); Reginald Viray (Virginia Tech Transportation Institute) and Dr. Robert Schneider (Potomac and Rappahannock Transportation Commission).
  - **NVTA Staff:** Monica Backmon (Chief Executive Officer); Dr. Sree Nampoothiri (Senior Transportation Planner) and Mackenzie Love (Regional Transportation Planner).
  - **Others:** Amanda Hamm (Office of Strategic Innovation Virginia Department of Transportation).

Action

II. **Summary Notes of October 27th, 2021, Meeting**
The meeting summary was approved unanimously, with abstention from members not present.

Discussion/Information

III. **Transportation Technology Strategic Plan Update**

- Ms. Love provided an overview of progress that has been made towards implementation of the Transportation Technology Strategic Plan (TTSP) since the last meeting of the Committee in October 2021. This included continued work to integrate the TTSP into the TransAction update process; increased outreach and education through an update to NVTA's Driven By InNoVation newsletter which now features TTSP content monthly; and incorporation of a new position to NVTA's State and Federal Legislative Program and Legislative Priorities to "Support use of effective transportation technology."
- She also informed the Committee of any major developments locally and/or in the transportation sector as a whole that are relevant to each of the eight strategies included in the TTSP. She went on to note three important developments that did not directly map to one of the existing eight strategies, including OmniRide's consideration of a microtransit pilot, National Highway Traffic Safety

Administration's (NHTSA) finalization of the first occupant safety protection standards for autonomous vehicles (AVs), and the Virginia Department of Transportation's (VDOT) finalization of a Connected and Automated Vehicle Investment Roadmap.

IV. **Presentation of VDOT's Connected and Automated Vehicle Program**

- Ms. Amanda Hamm presented information about the VDOT's Connected and Automated Vehicles (CAV) Program. She indicated that CAVs could beneficially or adversely impact safe, accessible, and efficient travel in the Commonwealth, and this program is intended to prepare VDOT to maximize benefits. (She also noted that VDOT will not seek to regulate what is inside an AV, such as sensor arrays.)
- There are four primary tasks associated with the program including:
    - A literature review and CAV readiness assessment;
    - Identification of use cases and creation of an investment roadmap;
    - Production of an education strategy and;
    - Development of a business strategy.
- Ms. Hamm provided examples of CAV developments across the Country, such as:
    - TuSimple, an autonomous trucking company operating routes from Tucson to Phoenix at night;
    - General Motors' Cruise Program has petitioned the NHTSA to allow the sale of low/Zero Emissions autonomous vehicles to begin next year;
    - The NHTSA has issued a narrow initial ruling on occupant safety for Automated Driving Systems (ADS). Additional rule making is expected.
    - Nuro has been developing external airbags to protect pedestrians in the event of a crash of one of their autonomous delivery vehicles.
- She also shared information on several CAV efforts already underway in Virginia:
    - A Cellular Vehicle-to-Everything (C-V2X) Deployment;
    - The Fairfax County Automated Shuttle;
    - A Work Zone Builder App; Connected Smart Vests prototype and pilot and;
    - The Automated Truck Mounted Attenuator (ATMA) program.
- VDOT is also participating in external initiatives like Federal Highway Administration's (FHWA) Cooperative Automation Research Mobility Applications (CARMA) testing; Daimler's testing of automated trucks on I-81; and two US DOT grant funded projects led by the Virginia Tech Transportation Institute. The first will work to develop a Concept of Operations (CONOPS) for managing mixed trucking fleets that include Automate Driving Systems (ADS), and the second will create an optimized automated driving corridor demonstration.
- Ms. Hamm closed her presentation with additional information about the VDOT CAV Program, focusing on the recently completed Readiness Project. This effort detailed I-495 readiness factors and used a maturity scale of 1-4 (with 4 being the readiest) to assess these. She noted that the Commonwealth received a rating of 2 for most factors and pushed into level 3 in some areas (like the Research Council), but none reached level 4.
    - The project also selected 12 of the 80 use cases for AV technologies initially proposed for VDOT to focus on going forward. These translate to 24 different potentials for investments on a roadmap that covers the next 6 years.
- Mayor Rishell asked if VDOT could share its plans for public education.
    - Ms. Hamm indicated that the Department's efforts will be more focused on the investment aspects of CAVs currently, but some bigger projects will

eventually involve public engagement. However, she was unable to provide detail on this, as a procurement effort was underway for related actions.

- Ms. Backmon noted that the consultant team working on TransAction informed her that the lifecycle of a vehicle is approximately 15 years. She asked how we can encourage use of technology in the face of these trends. She also asked if VDOT was considering the potential retrofitting of existing vehicles.
    - Ms. Hamm said that retrofitting vehicles for automation would be complicated but that it may be feasible to increase connectivity on existing vehicles through aftermarket systems or apps.
    - This led to a discussion of the distinctions between "autonomous," which means the functioning of the vehicle is completely self-contained, and "automated" which could provide incremental benefits to Human Driven Vehicles overtime.
    - Dr. Mudge added that he thinks retrofits to increase automation or support autonomous functioning will be more likely on special purpose vehicles and provided the example of precision docking in trucking.
    - Dr. Schneider suggested that since vehicles are lasting longer, the marketplace may begin to focus more on software updates/subscriptions than sales.
- Dr. Nampoothiri indicated that NVTA may be interested in sharing some of the resources the Commonwealth has developed as part of its CAV Program with the Regional Jurisdiction Coordination Committee (RJACC.) Ms. Hamm invited NVTA staff to contact her about this.
- Mr. McAndrew expressed a desire to see the Commonwealth address safety of those outside CAVs. Further he suggested there may be an opportunity for the Commonwealth to lead efforts to address speed assistance features which are currently optional by working with manufacturers.
    - Ms. Hamm indicated that the Connected Vehicle Pool Fund (in which VDOT is a leader), is exploring concepts like sue warnings that may help with speed and is addressing safety for Vulnerable Road Users.

V. **TTSP candidate topic overview and discussion**

- Chairman Snyder led the members of the Committee in a discussion of topic areas for potential addition to the TTSP. Throughout that discussion the Committee also asked questions of and received information from Amanda Hamm and NVTA Staff, who provided an overview of the relationship between the TTSP and the ongoing update of Northern Virginia's long-range transportation plan, TransAction. Several Committee members also shared their unique expertise on an array of transportation innovations including AVs, hydrogen propulsion systems, pedestrian safety, and the status of vehicle fleets including turn-over rates and the prospects for existing personal and public vehicles to be modified for emerging technologies.
    - Chairman Snyder indicated a desire to translate all of this information into projects that are fundable in the near term.
    - Mr. Sripathi emphasized the importance of not prescribing how an objective should be achieved, and instead to allow flexibility to encourage innovation.
    - Dr. Nampoothiri added that NVTA's update of TransAction is looking at prioritizing projects as VDOT mentioned. This includes working with jurisdictions to develop a list of projects and use of gap analysis to identify gaps, particularly those that are interjurisdictional and/or not tied to a location. Examples of this can include low/ZEV (Zero Emissions Vehicles) and fueling

stations, projects to prepare for CAV deployments, the Regional Multimodal Mobility Program (RM3P), Bus Rapid Transit (BRT) systems and microtransit. He also noted that the next NVTA Six Year Program (SYP) onwards will be based on this updated TransAction.

- Ultimately the Committee advised NVTA Staff to explore two topics further and make recommendations for incorporating them into the plan. These topics were connected and automated vehicles and related infrastructure like smart intersections, and transit innovation with a focus on microtransit. The committee made special emphasis to NVTA's Core Value of safety while noting the Core Values of Equity and Sustainability will also be applied. Finally, the Committee requested recommendations on how to enhance the representation of hydrogen propulsion systems and infrastructure within the TTSP.

VI. **7th Annual Northern Virginia Transportation Roundtable Recap**

- The 7th Annual Northern Virginia Transportation Roundtable was held on Wednesday March 30, 2022. The event was comprised of two panels, the first of which focused on electrification and also touched on other propulsion options like hydrogen. Both the content of the panel and the subsequent moderated discussion were highly relevant to TTSP strategy #8 to "Advance decarbonization of the transportation system." The speakers in the second panel presented on an array of innovations being developed in the transportation sector in the Northern Virginia region and beyond. This included a presentation on how the TTSP is informing scenario analysis work as part of the TransAction update; information on New York City's Central Business District Tolling Program, which is relevant to TTSP Strategy #5 to "Develop pricing mechanisms that manage travel demand and provide sustainable travel options"; an update on the Regional Multi-Modal Mobility Program (RM3P), which is relevant to several TTSP strategies, most notably #5 to "Develop pricing mechanisms that manage travel demand and provide sustainable travel options" and #7 to "Enhance regional coordination and encourage interoperability in the transportation system"; and a presentation on use of AVs for local deliveries, which is relevant to TTSP Strategy #4 to "Minimize potential for Zero Occupancy passenger Vehicles" and the discussion of potential topics to add to the TTSP as described above.

VII. **NVTA Update**

- Ms. Backmon informed the Committee of upcoming opportunities to provide feedback on NVTA's FY2022 – 2027 Six Year Program (SYP). These include the Public Comment Period, which will be open from April 15th – May 22nd; the Annual Northern Virginia Joint Transportation Meeting on May 4th, which will also serve as the Open House for the SYP; and the Public Hearing on May 12th.

VIII. **Member Updates**

- Chairman Snyder invited all members to provide any feedback on developments in their own work and/or on TTSP-related content and deliverables, at any time.

Adjournment

- The meeting adjourned at approximately 10:14 am.