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## NORTHERN VIRGINIA TRANSPORTATION AUTHORITY

### M E M O R A N D U M

**FOR:** Chair Phyllis J. Randall and Members  
Northern Virginia Transportation Authority

**FROM:** Monica Backmon, Executive Director

**DATE:** May 6, 2021

**SUBJECT:** Transportation Technology Strategic Plan: Adoption of the Eight Strategies and Implementation of the associated Action Plan

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- 1. Purpose.** To seek Northern Virginia Transportation Authority (NVTA) adoption of the eight strategies described in the Transportation Technology Strategic Plan (TTSP), and for NVTA staff to commence implementation of the TTSP Action Plan.

Since emerging transportation technologies will continue to provide new opportunities and challenges related to the Authority's vision for the Northern Virginia transportation system, the TTSP must evolve to remain current. Consequently, NVTA staff will provide regular updates on the TTSP, and needed changes. NVTA staff will provide an annual update starting in May 2022, or as needed.

Additionally, NVTA staff will seek public feedback during 2021 as part of broader public engagement activities planned for the TransAction update.

- 2. Suggested Motion.** *I move adoption of the Eight Strategies contained in the Transportation Technology Strategic Plan and implementation of the TTSP Action Plan.*

- 3. Background.** Over the past three decades, the deployment of transportation technologies has become commonplace. These technologies are usually referred to by their acronym ITS (Intelligent Transportation Systems), and comprise a combination of information and communications technologies. In Northern Virginia, VDOT has been, and continues to be, an ITS leader for highway applications. These include smart traffic control centers, dynamic message signs, travel information systems such as 5-1-1, traffic signal systems with capabilities to interact with 'connected' vehicles, open-road toll payment systems, CCTV live feeds, roadway-weather systems, etc. For transit agencies, applications include real time travel information, integrated fare/parking payment systems, parking management systems, etc.

The Authority has funded a number of ITS projects, at a modest cost, mostly in Arlington and Alexandria. NVTA has also funded some projects that include electric transit vehicles and associated maintenance/storage facilities as part of transit expansion projects. More

recently, NVTA has collaborated with the Commonwealth to develop the Regional Multi-Modal Mobility Program (RM3P), which combines traditional ITS technologies with emerging technologies such as artificial intelligence and dynamic incentives. RM3P is an innovative project because it seeks to address the region's transportation mobility, accessibility, and reliability needs through deployment of existing and emerging technologies, at a regional scale.

During the development of the current version of TransAction, adopted in October 2017, it was apparent that transportation technologies were expected to become an increasingly important component of the regional transportation system. Indeed, TransAction included analyses associated with the potential impacts of transportation technologies, and their potential to meet the region's transportation needs in a manner that reduces the dependence on traditional infrastructure approaches.

Subsequently, NVTA's Executive Director established the Transportation Technology Committee (TTC) in early 2019 to provide advice and guidance on this subject. The TTC is comprised of nationally recognized experts in the field of transportation technology, together with local, regional, and state leaders. Councilmember Snyder chairs the TTC and Mayor Rishell is the Committee's Vice-Chair. Authority member Mr. Jim Kolb also serves as a TTC member.

One early recommendation from the TTC was for NVTA to focus on the region's transportation needs to determine appropriate ways to embrace technology, rather than trying to find a role for technology, simply because it was new. During the past two years, the TTC's advice and guidance has supported the development of a draft Transportation Technology Strategic Plan (TTSP) for the region, with a particular focus on the roles that NVTA could play that were not already being addressed by Federal, State, and other regional initiatives.

Over recent months, NVTA's Statutory Committees – Planning Coordination Advisory Committee (PCAC) and Technical Advisory Committee (TAC) – have reviewed the draft TTSP, as have the Planning and Programming Committee (PPC) and the Regional Jurisdiction and Agency Coordinating Committee (RJACC). During the February, March, and April 2021 meeting cycles, the TAC, PCAC, and PPC reviewed and subsequently took action to recommend that the Authority approve the TTSP's eight strategies and associated action plan.

While NVTA has an approved organizational Five-Year Strategic Plan (adopted in November 2017), it has never developed a plan that focuses on a specific transportation topic such as technology. Based on research conducted by NVTA staff during the development of the TTSP, no local or regional governmental entities in Virginia have adopted anything of similar breadth or depth to the TTSP, with the City of Alexandria's Smart Mobility initiative being one of the closest points of comparison.

- 4. Transportation Technology Strategic Plan (TTSP).** The TTSP will be a ‘living document’, updated on a regular basis as technologies continue to evolve and new legislation is enacted. In addition to background, contextual, and other supporting information, the TTSP has four key components

  - a. Eight initial strategies that address congestion, access to jobs, cybersecurity and privacy, zero occupant passenger vehicles, congestion pricing, communications infrastructure, coordination and interoperability, and de-carbonization of the transportation system. The eight strategies are listed in an attachment to this memo.
  - b. Nine potential NVTA roles for each strategy – Funding, Policy, Advocacy, Champion, Facilitation, Stakeholder, Planning, Outreach/Education, and Observer. Each strategy has between three and seven associated NVTA roles. Each NVTA role is associated with between one and seven strategies.
  - c. Three core values – equity, sustainability, and safety – that are consistent with the TransAction vision, approved by the Authority in December 2020. This will facilitate integration between the TTSP and TransAction. The strategy descriptions explain how they each supports the three core values – effectively overlaying the approach to the development, maintenance, and future implementation of the TTSP.
  - d. An Action Plan that identifies an approach, including schedule, to initiate the implementation of each strategy. Each action is linked to one or more strategies, enabling clear traceability between strategies, roles, and actions. Strategies have associated measure of effectiveness to enable progress monitoring. Initial actions for the next six months are listed in an attachment to this memo.
- 5. Public Engagement.** By developing the draft TTSP in conjunction with the TTC, and then thoroughly vetting it with all relevant NVTA committees, the TTSP has embraced a broad range of perspectives. With that said, public feedback may further enrich the TTSP. Technology-related components will be included in planned TransAction public engagement activities during spring 2021. This approach will further strengthen the integration of the TTSP and TransAction, while allowing other aspects of the TTSP to advance, e.g. planning related actions.
- 6. Monitoring and Updates.** Since evolving transportation technologies will continue to provide new opportunities and challenges related to the Authority’s vision for the Northern Virginia transportation system, the TTSP must also evolve to remain current. NVTA staff will provide regular updates on implementation of TTSP action plan activities, and proposed changes, via the Executive Director’s monthly report to the Authority. Significant changes will be more formally addressed through statutory, standing, and staff committees, and future Authority action where necessary. Subject to Authority action, NVTA staff will provide an annual update starting in May 2022. This approach will provide regular opportunities for NVTA’s committees and the Authority to review and adjust the strategies, NVTA roles and TTSP Action Plan, as well as incorporate any enhancements resulting from public feedback, TransAction analyses, and/or changes in the traffic technology

environment.

7. **Next steps.** Subject to Authority action, NVTA staff will coordinate with the TransAction consultant team to incorporate transportation technology components into public engagement activities. NVTA staff will commence other action plan activities.

**Attachments:**

- Link to the full TTSP: <https://thenovaauthority.org/wp-content/uploads/2021/05/TTSP-Draft-V11-with-Action-Plan-as-of-5.5.21.pdf>.
- List of Eight TTSP Strategies
- List of Planned TTSP Action Plan Activities through October 2021



## Northern Virginia Transportation Authority

*The Authority for Transportation in Northern Virginia*

The Northern Virginia Transportation Authority's (NVTA) inaugural Transportation Technology Strategic Plan (TTSP) is comprised of eight strategies, each of which has been evaluated in terms of NVTA's three core values; **safety, equity and sustainability**.

The strategies were identified and defined with the guidance of the Executive Director's Transportation Technology Committee, and subsequently reviewed and vetted by NVTA's Statutory Committees (Planning Coordination Advisory Committee and Technical Advisory Committee) and the Planning and Programming Committee (an NVTA Standing Committee).

The strategies are listed below (please note that these are in no particular order and their numbering does not reflect prioritization or timing):

Recommended Strategies		Intent of Strategy (long term)
1	Reduce congestion and increase throughput	Support deployment of transportation technologies that improve performance and optimize efficiency of the regional multimodal transportation system
2	Maximize access to jobs, employees and housing	Support deployment of transportation technologies that increase travel options and awareness of them
3	Maximize cybersecurity and privacy for members of the public	Monitor concerns on behalf of Northern Virginians, and leverage NVTA processes where appropriate and feasible
4	Minimize potential for Zero Occupancy passenger Vehicles	Identify measures to address avoidable increases in passenger vehicle miles traveled
5	Develop pricing mechanisms that manage travel demand and provide sustainable travel options	Identify technology-related measures at a regional scale to dynamically address congestion, including incentives; revenues will be re-invested in equitable solutions
6	Maximize the potential of physical and communication infrastructure to serve existing and emerging modes	Support adaptation of existing resources to support desirable technologies such as CASE vehicles, travel apps, micro modes and robust data collection
7	Enhance regional coordination and encourage interoperability in the transportation system	Leverage regional synergies in the deployment of transportation technologies
8	Advance decarbonization of the transportation system	Support deployment of transportation technologies that reduce greenhouse gas emissions



The TTSP describes strategies for advancing the beneficial use of technology in transportation, in alignment with NVTA Core Values, and identified roles the NVTA can take in pursuit of them. It also recognizes that the objectives of the TTSP cannot be achieved by NVTA alone, and relies on the strong coordination and partnerships that are foundational to NVTA's work in the region.

The TTSP Action Plan aims to map the strategies and roles to direct actions, and details any assumptions that were made in doing so. A potential trigger point and metrics for measuring success of each action are also suggested.

***The TTSP Action Plan recommends the following actions be undertaken between May and October, 2021:***

- Transportation technology evaluation ratings
- TransAction
  - Integration of technology-related strategies into the TransAction scenario analysis work
  - Public engagement under the TransAction umbrella
- Technology-related Outreach
  - Development of a more comprehensive approach to technology-related outreach and education that builds upon the 'Driven by Innovation' eBlast
  - Ongoing monitoring of market trends and trigger points
- Identify potential technology-related additions to NVTA's Legislative Program
- White Paper development
  - Collaborate on a process for development of future regional transportation policies
  - Identify and prioritize topics for potential future regional transportation policies
- Identify potential technology-related refinements to future NVTA SYP project selection process (post-TransAction update)

\* As NVTA has not previously developed regional transportation policies, any such policies (whether they are in response to the TTSP or any other factor) will first require broad agreement on a collaborative process for policy development. As part of this policy development process, consideration will be given to a prioritized list of potential policy topics. Detailed regional transportation policy development will not commence prior to agreement on both a process and a list of prioritized topics.

**Updates and review:**

NVTA Staff will provide regular updates on progress towards the above actions, which were derived from the TTSP Action Plan, through the NVTA Executive Director's monthly report to the Authority. The full TTSP will be maintained as a living document, to reflect the continued evolution of transportation technologies, and to allow NVTA staff the flexibility to update and refine it as necessary. That said, no significant changes or additions to the TTSP, as determined by the NVTA Executive Director, will occur without prior Authority Approval.