

NVTA DRAFT Transportation Technology Strategic Plan

Executive Summary

The Transportation Technology Strategic Plan (TTSP) is a first-of-a-kind initiative to take such a comprehensive and multi-modal position on how transportation technology can be leveraged to support the NVTA's vision for the NoVA transportation system in the coming years. Subject to Authority approval, this proactive initiative will be integrated with TransAction, the Long Range Transportation Plan for Northern Virginia¹. As part of TransAction, the TTSP is one of many factors that may necessitate a review of, and possible enhancements to, NVTA's project selection process for future Six Year Program updates. Since NVTA's Six Year Program is based on the prevailing adopted version of TransAction, any changes would not come into effect until the FY2024-2029 Six Year Program at the earliest, which is the first update following the anticipated adoption of TransAction in November 2022. In addition, the TTSP will potentially support NVTA's Legislative Program, technology-related outreach/education, and development of regional transportation policy guidance.

The TTSP:

- **Is a tool that will inform a proactive approach to adoption of transportation technology;**
- **Considers how transportation technologies support the region's vision, i.e. needs-driven NOT technology-driven;**
- **Is a living document that will be updated as transportation technologies evolve;**
- **Includes an Action Plan that enables NVTA to think big, start small, and build momentum with respect to adoption of transportation technologies in the region.**

It is comprised of eight strategies, each of which has been evaluated in terms of NVTA's three core values; **safety, equity** and **sustainability**. (More information about the Core Values and their application can be found in Chapter 1.2 of the TTSP, and in the "Application of Core Goals" section for each of the eight strategies in Chapter 3 of the TTSP.) The strategies and NVTA roles 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):

¹ <https://thenovaauthority.org/planning/process/>

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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

Table 1 - Strategy Intentions

To best accommodate the current observed pace of innovation, the strategies provide a high-level overview of their respective topics and strive to incorporate flexibility into the nine possible NVTA roles proposed to address them. *Descriptions of the roles can be found in Chapter 1.4 of the TTSP.*

Strategy		NVTA Roles								
		Authority Roles			Shared Roles			Staff Roles		
Number	Name	Funding	Policy	Advocate	Champion	Facilitate	Stakeholder	Planning	Outreach/ Education	Observer
1	Reduce congestion and increase throughput	✓		✓	✓	✓		✓	✓	
2	Maximize access to jobs, employees and housing	✓			✓	✓		✓	✓	
3	Maximize cybersecurity and privacy for members of the public	✓					✓			✓
4	Minimize potential for Zero Occupancy passenger Vehicles		✓	✓	✓	✓		✓	✓	
5	Develop pricing mechanisms that manage travel demand and provide sustainable travel options		✓	✓			✓	✓	✓	
6	Maximize the potential of physical and communication infrastructure to serve existing and emerging modes	✓			✓	✓		✓	✓	
7	Enhance regional coordination and encourage interoperability in the transportation system	✓			✓	✓		✓	✓	
8	Advance decarbonization of the transportation system	✓	✓	✓	✓	✓		✓	✓	

Table 2 - Strategies Mapped to NVTA Roles

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The scope of innovation demands similar careful consideration and treatment, so the TTSP will focus on topics that are directly and feasibly applicable to the context of Northern Virginia and are supported by the Authority. Additionally, the strategies will not duplicate other mature efforts in the region (like the fare payment technologies, variable priced tolls on freeways or ride matching. However, dynamic vanpool matching may be revisited as relevant initiatives evolve) and will instead explore novel concepts. *See Chapter 2.1 of the TTSP, for additional information about related initiatives.*

NVTA Staff view Strategic Plans as visionary documents, and thus created an Action Plan to help guide measurable and tangible progress towards TTSP objectives.

Actions included in the plan are traceable to at least one of the eight TTSP strategies and include measure(s) of effectiveness. The plan will also define who will be responsible for an action and when, as identified by trigger points, which may be internal or external (e.g. federal/state legislation or market penetration thresholds.) Typically, NVTA Staff will initiate actions, but all actions will rely on the strong coordination and partnerships that are foundational to NVTA's work in the region. Finally, the plan will detail a process for monitoring, review and update of the TTSP and its Action Plan.

No significant TTSP changes/additions, as determined by the NVTA Executive Director, will occur without prior Authority approval. Examples of significant changes include:

- Changes to the methodology for the project selection process associated with NVTA's Six Year Program
- Changes/additions to NVTA's annual legislative program
- Development of regional transportation policies

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.

As a living document, NVTA staff will revise the TTSP to reflect changing circumstances. The Executive Director's monthly report to the Authority will outline such changes together with other progress updates such as:

- Integration of relevant strategies into the TransAction scenario analysis work
- Public engagement under the TransAction umbrella
- Ongoing monitoring of market trends and trigger points
- Development of a more comprehensive approach to outreach and education that builds upon the 'Driven by Innovation' eBlast
- Process and prioritization of white papers related to potential future regional transportation policy

After Authority adoption of TransAction, the TTSP will be regularly reviewed, and updated if necessary. As noted above, significant changes will require Authority approval.

Through this process, the TTSP and its Action Plan aim to achieve the following benefits:

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1. Proactive approach will leverage transportation technologies that support NVTA's vision, and mitigate those that do not, through planning, policy, advocacy, funding, and other means;
2. TransAction scenario (sensitivity) analysis will support data-driven decision making by the Authority with respect to development of TransAction and subsequent project selection during future funding programs. While scenarios could reflect a range of external considerations, the TTSP will guide the development of technology-related scenarios;
3. Consistent approach to NVTA's transportation technology investments will increase synergies and maximize return on investments and taxpayer dollars;
4. Coordinated planning, deployment and operations, especially enabled by secure, real time information, will enhance multimodal travel choices and contribute to a more seamless travel experience for Northern Virginians;
5. By raising awareness and understanding of transportation technologies, NVTA will inform Northern Virginians about the features, benefits, costs, and appropriateness of deploying such technologies in the region.
6. Open and regular exchange of ideas between NVTA staff and jurisdiction/agency staff will strengthen the regional approach to transportation technologies.