TECHNICAL ADVISORY COMMITTEE
Wednesday, April 21, 2021
7:00 pm
(Virtual meeting and livestreaming via YouTube)

AGENDA

I.   **Call to Order/Welcome**   Chairman Boice

Action

II.   **Resolution finding need to conduct meeting electronically**   Chairman Boice
Recommended action: Adoption of resolution

III.   **Summary Notes of March 17, 2021 Meeting**   Chairman Boice
Recommended action: Approval of meeting notes [with abstentions from those who were not present]

IV.   **Transportation Technology Strategic Plan & Action Plan**

Mr. Jasper, Principal,
Transportation Planning and Programming
Recommended action: Recommend the Authority adopt the eight strategies (in the Transportation Technology Strategic Plan) and Action Plan

Discussion/Information

V.   **TransAction Update**   Mr. Jasper, Principal,
Transportation Planning and Programming

VI.   **NVTA Update**   Ms. Backmon, Executive Director

Adjournment

VII.   **Adjourn**

Next Meeting (Virtual)
Wednesday, April 21, 2021
7:00 pm

21NORTHERN VIRGINIA TRANSPORTATION AUTHORITY

TECHNICAL ADVISORY COMMITTEE

RESOLUTION FINDING NEED TO CONDUCT MEETING BY ELECTRONIC COMMUNICATION MEANS DURING GOVERNOR'S DECLARED STATE OF EMERGENCY DURING COVID – 19 PANDEMIC

APRIL 21, 2021 MEETING ELECTRONICALLY

April 21, 2021

WHEREAS, on March 12, 2020, the Governor of Virginia declared a state of emergency in Virginia in response to the spread of novel coronavirus, or COVID-19, a communicable disease of public health threat as so declared by the State Health Commissioner on February 7, 2020 ("COVID-19"); and

WHEREAS, in subsequent Executive Orders, particularly Executive Order Nos. 53 and 55, as amended, the Governor of Virginia, among other measures designed to ensure safe physical distancing between individuals, prohibited public and private in person gatherings of 10 or more individuals and ordered all individuals in Virginia to remain at their place of residence, with limited exceptions, to mitigate the impacts of COVID-19 and prevent its spread; and

WHEREAS, the Northern Virginia Transportation Authority (Authority) – Technical Advisory Committee (Committee) finds that it has a responsibility to demonstrate to the public, through the Authority's conduct, the importance of maintaining proper physical distance from others and to avoid gathering in public where the risks of infection are highest, and to take measures that promote physical distancing in order to protect the public health and mitigate the impacts and spread of COVID-19, including, among others, conducting meetings electronically whenever possible; and

WHEREAS, on April 22, 2020, the Virginia General Assembly adopted, and the Governor signed, budget bill amendments to HB 29 that expressly authorize "any public body, including any state, local, [or] regional body" to "meet by electronic communication means without a quorum of the public body . . . physically assembled at one location when the Governor has declared a state of emergency . . ., provided that (i) the nature of the declared emergency makes it impracticable or unsafe for the public body . . . to assemble in a single location; (ii) the purpose of the meeting is to discuss or transact the business statutorily required or necessary to continue operations of the public body . . . and the discharge of its lawful purposes, duties, and responsibilities" among other provisions; and

WHEREAS, member jurisdictions of the Northern Virginia Transportation Authority have adopted continuity of government ordinances pursuant to Va. Code Ann. § 15.2-1413 which ordinances, among other provisions, contemplate regional bodies of which the locality is a member meeting electronically to transact business to assure the continuity of government; and

NOW, THEREFORE, BE IT RESOLVED, that the Northern Virginia Transportation Authority Technical Advisory Committee hereby finds that meeting by electronic means is authorized because the nature of the declared emergency makes it both impracticable and unsafe for the Committee to assemble in a single location on April 21, 2021, to discuss and transact the business of the Authority listed on the April 21, 2021 Committee Meeting Agenda; and

        BE IT FURTHER RESOLVED, that the Committee hereby finds that meeting by electronic means is authorized because the items on the April 21, 2021 Committee Meeting Agenda are statutorily required or necessary to continue operations of the Authority and the discharge of the Authority's lawful purposes, duties, and responsibilities; and

        BE IT FURTHER RESOLVED, that the items on the April 21, 2021 Committee Meeting Agenda are encompassed within the continuity of operations ordinances adopted by member localities of the Northern Virginia Transportation Authority to assure the continued operation of the government during the disaster posed by the public health emergency resulting from COVID-19.

        Adopted the 21st day of April, 2021.

Northern Virginia Transportation Authority
The Authority for Transportation in Northern Virginia

TECHNICAL ADVISORY COMMITTEE
Wednesday, March 17, 2021, 7:00 pm
Virtual meeting and live-streamed on YouTube

MEETING SUMMARY

I. **Call to Order/Welcome**
- Chairman Boice called the meeting to order at 7:00 pm.
- Attendees:
    - **Members:** Randy Boice, Karen Campblin, Armand Ciccarelli**,** Amy Morris, Frank Spielberg, Pat Turner, Dr. Shanjiang Zhu
    - **NVTA Staff:** Monica Backmon (Executive Director), Keith Jasper (Principal), Ria Kulkarni (Regional Transportation Planner), Mackenzie Love (Regional Transportation Planner), Sree Nampoothiri (Senior Transportation Planner)
    - **Others: On YouTube live stream.**

II. **Resolution finding the need to conduct meetings electronically**
- Chairman Boice noted that as a result of the COVID-19 and Governor Northam's declaration of a State of Emergency, the Authority's Technical Advisory Committee Meeting was held electronically. He noted that the passage of the amendments to HB 29 (the FOIA Bill) allowed regional bodies such as the Authority and their committees to conduct business meetings electronically. He added that the meeting by electronic means is authorized because the Committee Meeting Agenda items are statutorily required or necessary to continue operations of the Authority. The resolution moved by Ms. Turner and seconded by Mr. Spielberg was approved unanimously.

III. **Summary of February 17, 2020 Meeting**
- The motion to approve the meeting summary moved by Ms. Morris and seconded by Ms. Turner was approved unanimously.

IV. **Transportation Technology Action Plan (TTSP)**

- Mr. Jasper revisited the TTSP and its pathway to approval. He emphasized that the TTSP comprises of eight strategies and nine identified roles for NVTA that are under the domain and align with core values of TransAction Vision, namely safety, equity and sustainability. Mr. Jasper introduced to the committee TTSP's Action Plan and sought feedback for the same.

- Ms. Love assured the Committee that an executive summary for the TTSP will be drafted as requested by the Committee.
  - The committee recommended rewording the titles of some Strategies included in the TTSP, as they could be perceived as "goals", rather than "strategies." The Committee also provided input on how values connect to strategies. It was also indicated that feedback provided by the Committee will be addressed and integrated into the Plan.
  - Chair Boice suggested clarifying language in the TTSP to avoid exclusion of updates to legacy systems from consideration via the TTSP, if emerging technologies may improve functioning. He also suggested elaborating on "underserved" which could be perceived as either "gentrified" or rural areas where there is sparse transit service.
    - Ms. Love provided an overview of the same and agreed to provide more clarity in the Plan.

- Ms. Love then provided the next steps to the TTSP Action Plan, which ties strategies to actions.
  - Ms. Love expanded on the Action Plan that will primarily focus of the roles of funding, policy, and advocacy for the Authority as defined by TTSP, which will have a time frame when action might be taken or have tangible outcomes. Other roles such as facilitating, stakeholder, outreach, and education will be undertaken continuously. She also gave an overview of strategies, their specific summaries, and showed templates of what their respective actions, components entailed, and how they would be structured/referenced. She added that actions have specific trigger points and timing that put strategies to actions.

- Mr. Jasper added that the TransAction update would include a series of scenario analyses that could define and prioritize the elements that might affect forecast for the region. Some of these scenarios could include incentivization/pricing mechanisms, Connected, Autonomous, Shared and Electric (CASE) Vehicles, or climate change. He also discussed other possible outcomes of the TTSP,

including outreach-education, impacts on NVTA legislative program(s), changes to future Six Year Program (SYP) funding and project evaluations and development of regional transportation policy.

- Mr. Jasper mentioned that electric vehicle and infrastructure have been the most recent topics of discussions at the General Assembly session.

- Mr. Jasper reiterated that the TTSP will be a "living" document and an executive summary of the plan will be shared with the Committee for recommendation to the Authority for approval in the future. He also emphasized that each action has a performance measure with the intent to monitor progress. Additionally, until TransAction is adopted in late 2022, the TTSP will be reviewed/updated every six months, incorporating feedback from the TransAction public engagement phases and relevant findings from TransAction analyses. Thereafter the TTSP will be reviewed/updated annually, typically around the anniversary of its adoption. He also noted that some of the action trigger elements (such as federal laws, Commonwealth actions, actions by member jurisdictions and other regional bodies, market factors) that fall outside the annual review cycle may also call for an update of the document.

- Mr. Jasper sought for Committee feedback on the Action Plan and requested committee members to share the plan and seek additional feedback on it as well.

- Dr. Zhu recommended revisiting the role of the document on whether it would serve as a high level guide, that guides the direction of NVTA in terms of planning (TransAction). Or perhaps serve as a detail document that promotes regional collaboration on a certain technology, facilitating coordination with counties to develop necessary EV charging infrastructure or Autonomous Vehicle Network.
  - He suggested perhaps opening it up to a broader spectrum to be inclusive of technology elements and infrastructure that is environmentally friendly, considering the pros and cons of dynamic and future technology – adaptation framework for alternative fuel technology such as hydrogen fuel cell technology that is gaining pace, for example.
  - Ms. Love responded that revisiting the executive summary should bring more clarity to the role of the document.

V. NVTA Update

- Ms. Backmon noted that the FY2022 70% regional budget, 30% local budget and operating budget will be put forth to the Authority in April for adoption. She also added that the update to the Economic Impact Analysis of NVTA investments will be presented to the Authority.

VI. Adjournment

- The meeting adjourned at 8:07 pm. The next meeting date is April 21, 2021, at 7 pm.

Transportation Technology Strategic Plan (TTSP): Recommendations

April 21, 2021

NVTA's Vision for TransAction

"Northern Virginia will plan for, and invest in, a **safe, equitable, sustainable, and integrated** multimodal transportation system that enhances quality of life, strengthens the economy, and **builds resilience**"

Approved by NVTA on December 17th, 2020

Three Core Values - Overarching Principles

1. **Equity**
   - Fairness in mobility and accessibility to meet needs of the region/sub-regions/communities
   - Facilitate social and economic opportunities by providing equitable levels of access to affordable and reliable transportation options to serve the needs of all and in particular underserved populations (low-income, minority, elderly, children, people with Limited English Proficiency (LEP), and/or people with disabilities)

2. **Sustainability**
   - Focus on meeting the needs of the present without compromising the ability of future generations to meet their needs.
   - Concept of sustainability is composed of three pillars: economic, environmental, and social

3. **Safety**
   - Minimize transportation system fatalities and severe injuries, while increasing safe, healthy, equitable mobility for all.

Timeline – Technology versus NVTA

2004/5 – Apple begins product development on a computer that uses a touch screen instead of a physical keyboard/mouse or stylus

January 2007 – Launch of iPhone 2G

January 2017 – 2.2M apps in App Store

October 2020 – Launch of iPhone 12

2035 – Which version of the iPhone?

July 2002 – NVTA created by General Assembly

September 2006 – TransAction 2030 adopted

November 2012 – TransAction 2040 adopted

July 2013 – NVTA revenue stream begins

October 2017 – TransAction update adopted

April 2021 – draft TTSP/Action Plan

2035 – Where should NVTA be?

What is the Transportation Technology Strategic Plan (TTSP)?

- Tool that will inform a proactive approach to adoption of transportation technology;
- TTSP considers how transportation technologies support the region's vision, i.e. needs-driven NOT technology-driven;
- Includes eight strategies, and up to nine NVTA roles for each strategy;
- TTSP is a living document that will be updated as transportation technologies evolve;
- TTSP Action Plan enables NVTA to think big, start small, and build momentum with respect to adoption of transportation technologies in the region.

Expected Benefits of the TTSP

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.

Recommended Strategies

	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

TTSP Strategies and NVTA Roles

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	✔	✔	✔	✔	✔		✔	✔	

Example 1:
Electric, Autonomous Transit Shuttle

Features

- Not reliant on infrastructure type
- ADA accessible
- Can operate in inclement weather and in mixed traffic

Assumptions

- There have already been successful pilot(s) of the technology in the region
- Public acceptance of the technology is growing
- The shuttles have been determined to be a sound investment and/or market is nearing price parity

Ratings

Key		
🔴	🟡	🟢
Intervention needed	Proceed with caution	Embrace

Electric, Autonomous Shuttles

Vision Statement	🟢	This type of shuttle has the potential to provide a **safe** first/last mile connection when **integrated** with transit. This would encourage use of **sustainable** mass transportation, and contribute to an **equitable** system through improved access.

			Description	Action
Core Values	Equity	🟢	• Potential first/last mile connection • Improved access • Reduced congestion and more reliable travel times	• Encourage/conduct diverse public outreach that starts with needs identification through listening • Develop white paper(s) to analyze feedback received and research, and identify best practices and/or deployment guidance • Conduct public education initiatives, to dispel myths and encourage adoption
	Sustainability	🟢	• Reduce congestion and increase throughput through mass travel options. • Reduce tailpipe emissions.	• Identify potential additions to NVTA's Legislative Program
	Safety	🟡	• Fewer fallible drivers on the road • Potential reduction in crashes • Slow speeds may not be harmonious with traffic • Object detection/differentiation abilities are an important consideration	• Develop white paper(s) to analyze state of the field and research, and identify best practices and/or project/vendor selection guidance

			Sub-Actions
Strategies	1	✔	• Increase consideration of EV, AV shuttles and pricing mechanisms in TransAction and/or SYP project selection process • Consider EV, AV shuttles and data/analysis needs and cybersecurity and/or privacy measures in NVTA procurements • Advocate for jurisdictional policies that support deployment of EV, AV shuttles • Develop and support policy(s) regarding EV charging infrastructure and/or support technology-based pricing mechanisms and investment of revenues • Advocate for Commonwealth policies that contribute to/support creation of a network of EV charging infrastructure
	2	✔	
	3	✔	
	4		
	5	✔	
	6	✔	
	7	✔	
	8	✔	

Example 2: Personal, Electric Autonomous Autos

Features
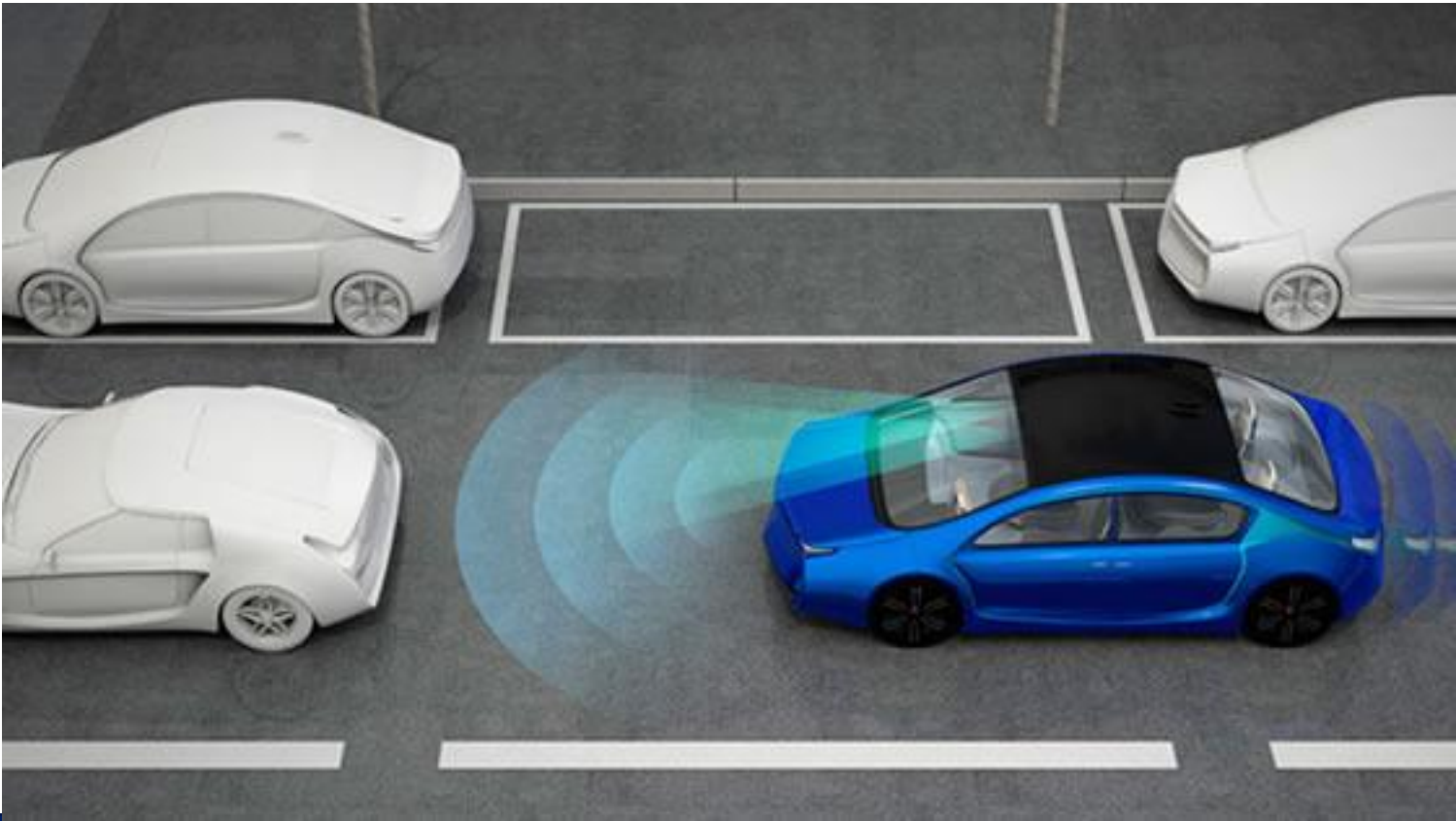
- SAE Level 5 vehicles can operate autonomously under all conditions
- May not have steering wheel or pedals

Assumptions

- Public acceptance of the technology is growing
- Fully autonomous vehicle have or are nearing entry to the public marketplace

Ratings

Key	
🔴	Intervention needed
🟠	Proceed with caution
🟢	Embrace

Personal Electric, Autonomous Vehicles

Vision Statement	🟠	Personal use of electric, autonomous vehicles have the potential to improve **safety,** and improve **sustainability** of the transportation system by reducing congestion. However, proactive steps will be necessary to ensure they are well integrated with existing modes and the

			Description	**Action**
Core Values	Equity	🔴	• Shared ownership or subscription based usage could contribute to equitable access to personal electric, autonomous vehicles • Any revenues generated from personal use of EV AVs could be reinvested in programs, infrastructure or services that support equitable access to the transportation network • AVs may contribute to more reliable travel times in the region and increased safety	• Encourage/conduct diverse public outreach that starts with needs identification through listening • Develop white paper(s) to analyze feedback received and research, and identify best practices to accommodate this mode in a manner consistent with NVTA core values
	Sustainability	🟠	• Reduce congestion and increase throughput through efficiencies of automation • Zero Occupancy passenger Vehicles may increase VMT and congestion • Reduce tailpipe emissions	• Identify potential additions to NVTA's Legislative Program • Conduct public education initiatives, to dispel myths and encourage shared usage and/or occupancy
	Safety	🟢	• Fewer fallible drivers on the road • Potential reduction in crashes • Object detection/differentiation abilities are an important consideration	• Develop white paper(s) to analyze state of the field and research, and identify best practices to accommodate this mode in a manner consistent with NVTA core values

			Sub-Actions
Strategies	1	✔	• Increase consideration of EV, AVs, pricing mechanisms and minimization of ZOV miles traveled in TransAction and/or SYP project selection process
	2	✔	
	3	✔	• Consider EV, AVs and data/analysis needs and cybersecurity and/or privacy measures in NVTA procurements
	4	✔	• Advocate for jurisdictional policies that support equitable use of EV, AVs
	5	✔	• Develop and support policy(s) regarding EV charging infrastructure, support technology-based pricing mechanisms and investment of revenues or discourage ZOV miles traveled
	6	✔	
	7	✔	• Advocate for Commonwealth policies that contribute to/support creation of a network of EV charging infrastructure
	8	✔	• Advocate for state provision/funding of pilots and research efforts

Recommendations

1. Approve the eight TTSP strategies, as described in the TTSP document*

2. Approve the TTSP Action Plan, subject to:
   - 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

Note (*): NVTA staff is not seeking NVTA approval of the TTSP document (see next slide for details)

Recommendations – Note (*)

NVTA staff is not seeking NVTA approval of the TTSP document because:

- The TTSP will be maintained as a living document to reflect the continued evolution of transportation technologies;

- NVTA staff requires flexibility to update the TTSP and, where necessary, refine the strategies and action plan, as new technologies emerge or approach market thresholds that may trigger big shifts in travel demand or behavior; and

- New federal/state legislation, or initiatives undertaken by the federal/state government or the region and its partners, may also trigger refinements to the strategies and the action plan.

TTSP Action Plan: Possible Outcomes

- Development of technology-related scenarios for TransAction scenario (sensitivity) analysis, potentially on the following:
  - Incentives and pricing mechanisms to reduce car dependency
  - Climate change and resiliency of regional transportation system
  - Pandemic 'new normal' implications of increased work-from-home and e-commerce
- Technology-related outreach/education
  - Facts and Myths: Connected, Autonomous, Shared, and Electric (CASE) vehicles
- Identify potential technology-related additions to NVTA's Legislative Program, these may include:
  - Support EV infrastructure
  - Support Zero Emission Vehicles
  - Concern regarding Zero Occupancy passenger Vehicles

TTSP Action Plan: Possible Outcomes

- Identify potential technology-related refinements to TransAction and future NVTA SYP project selection process (post-TransAction update)
  - Funding commitments could be made to be contingent on TTSP related criteria, to be identified and approved through the process laid out in the Action Plan.
  - Projects selected for future funding could be required to participate in standardization of things like transit signal priority communications

- Funding
  - TransAction Project List is the first filter for projects that can be funded using NVTA regional revenues
  - NVTA staff is currently coordinating with jurisdiction/agency staff to create the projects list(s)

- Develop a process for, and White Papers to help prioritize, future regional transportation policy, potentially on the following topics:
  - Shared mobility devices
  - Autonomous transit shuttles
  - Zero Occupancy passenger Vehicles

- Human Services transportation

Planned Actions (May thru October 2021)

- Integration of technology-related 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 technology-related outreach and education that builds upon the 'Driven by Innovation' eblast

- Collaborate on a process for development of future regional transportation policies

- Develop White Papers to prioritize potential future regional transportation policies

Review and Reporting

Using the Executive Director's monthly report, summarize status on topics such as:

• Progress against specific measures;

• Citizen and stakeholder feedback;

• Trigger points observed or anticipated;

• Relevant TransAction analyses;

• Revisions to the TTSP living document to reflect changing circumstances;

• Upcoming TTSP-related activities; and

• Consideration of significant changes/additions to the strategies or Action Plan (requiring future Authority action).

Supplementary Slides

TTSP Draft Action Plan
Consolidated Actions Table

Roles											Immediate				Near Term					Mid Term	Long Term
											Jan - March, 2021	April - June, 2021	July - Sept, 2021	Oct - Dec, 2021	Jan - March, 2022	April - June, 2022	July - Sept, 2022	Oct - Dec, 2022	2023 - 2025	2026 - 2029	2030 and Beyond
Title	Applicable Strategies										TransAction kick-off			Completion of TransAction Phase 1		TransAction adoption		Development of legislative program			
		1	2	3	4	5	6	7	8					Development of legislative program		Six Year Program Update FY2022-2027					
Funding		1A, 1B	2A	3A, 3B			6A, 6B	7A	8A												
Policy					4B	5A			8B												
Advocate		1C			4C,4D, 4E	5A			8C												
Champion		✔	✔		✔		✔	✔	✔												
Facilitate		✔	✔		✔		✔	7B	✔												
Stakeholder				✔		✔															
Planning		1A	2A	3A	4A	5B	6A	7A	8A												
Outreach/ Education		✔	✔		✔	✔	✔	✔	✔												
Observer				✔																		

Key				
Preparatory Action	Potential Direct Action	Direct Action	Follow Up Action	Continual/ Serendipitously

Bold text indicates this Role is a focus of the Strategy-Specific mini-action plans.

Technologies Mapped to TTSP Strategies

Key

Description	Symbol
Will definitely be helpful	●
Potential to be helpful	◕
Equal potential to be helpful or detrimental	◐
Potential to be detrimental	◔
Likely to be detrimental	○
Not applicable or Insuffecient Information Available	

	Strategies	Technologies										
Number	Name	Automated/Autonomous vehicles	Shared Mobility Devices (SMDs)	Signal technologies	Apps	System optimization	Drones	Changes to delivery and freight systems	Surveillance/monitoring (including telematics)	Data generation/collection/sharing	Improvements to mass transit (including BRT)	Smart technologies/cities and IoT
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	●	◐			◐						