Northern Virginia Transportation Authority
The Authority for Transportation in Northern Virginia

PLANNING AND PROGRAMMING COMMITTEE
Monday, May 3, 2021, 5:00pm
ELECTRONIC MEETING ONLY
Meeting link will be sent to the members prior to the meeting
All others will be able to view proceedings live on NVTA's YouTube Channel

AGENDA

I. **Call to Order/Welcome**   Chair

Action

II. **Resolution finding need to conduct meeting electronically**
Recommended action: Adopt resolution

III. **Summary Notes of March 25, 2021 Meeting**
Recommended action: Approve meeting notes

Action

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 (subject to Committee approval): May 31
Location: Electronic meeting

NORTHERN VIRGINIA TRANSPORTATION AUTHORITY

PLANNING AND PROGRAMMING COMMITTEE

RESOLUTION FINDING NEED TO CONDUCT

MAY 3, 2021 MEETING ELECTRONICALLY

May 3, 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) – Planning and Programming 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 Planning and Programming 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 May 3, 2021, to discuss and transact the business of the Authority listed on the May 3, 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 May 3, 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 May 3, 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 3rd day of May, 2021.

Northern Virginia Transportation Authority
The Authority for Transportation in Northern Virginia

PLANNING AND PROGRAMMING COMMITTEE
Monday, March 25, 2021, 5:00 pm
Northern Virginia Transportation Authority
ELECTRONIC MEETING
with livestreaming on YouTube

SUMMARY NOTES

I. Call to Order/Welcome

- Chairman Wilson called the meeting to order at 5:05 pm.

- Attendees:
    - **PPC Members:** Mayor Wilson (City of Alexandria); Council Member Snyder (City of Falls Church); Mayor Meyer (City of Fairfax); Mayor Rishell (City of Manassas Park); Chair Wheeler (Prince William County).
    - **Other NVTA Members:** None.
    - **NVTA Staff:** Monica Backmon (Executive Director); Keith Jasper (Principal); Sree Nampoothiri (Senior Transportation Planner); Mackenzie Love (Regional Transportation Planner).
    - **Jurisdiction/Agency Staff:** Several staff members followed the proceedings on livestreaming on YouTube Live.

Action

II. Resolution finding need to conduct meeting electronically

- Chairman Wilson noted that as a result of the COVID-19 pandemic and Governor Northam's declaration of a State of Emergency, the Authority's Planning and Programming Committee Meeting was being 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 items on the Committee Meeting Agenda are statutorily required or necessary to continue operations of the Authority. The resolution was approved unanimously.

III. Summary Notes of March 1, 2021 Meeting

- The March 1, 2021 Planning and Programming Committee meeting summary was approved unanimously.

Discussion/Information

IV. **TransAction Technology Strategic Plan – Action Plan**

- Mr. Jasper presented on NVTA's draft Transportation Technology Strategic Plan (TTSP) Action Plan, providing the background of the Strategic Plan, its evolution from December 2020, and its relationship to the long range transportation plan, TransAction.
- Ms. Love presented a summary of the feedback received so far from the Committee members:
    - Emphasis that the TTSP will take a needs-driven approach,
    - Stress that investments should be made smartly, so as to avoid obsolescence,
    - Request to clarify how TTSP will be actualized, and to provide more detail regarding how it will interact with TransAction, and
    - Recommendations to allow for flexibility in setting expectations and goals (as technology and innovative approaches are constantly evolving and being used in new ways)
- Ms. Love presented feedback received from 6th Northern Virginia Transportation Roundtable:
    - Innovative approaches that can improve transportation equity in Northern Virginia include effective and meaningful engagement; listening; providing more service and access to multiple modes; improving safety through infrastructure; reduced or free fares/trips; and provision of reliable and real-time data to the public,
    - Safety needs emerging technology could address include distracted or impaired driving; using data to target investments; and encouraging connectivity between modes
- Ms. Love presented feedback from Technical Advisory Committee (TAC) and Transportation Technology Committee (TTC) that focused on rewording of strategies
    - "Reduce congestion" to "reduce congestion and increase throughput"
    - "Maximize cybersecurity and maximize privacy for members of the public" to "Maximize cybersecurity and privacy for members of the public"
    - Minimize potential for zero occupancy vehicles" to "minimize potential for zero occupancy passenger vehicles"
    - "create a network of charging infrastructure, for use by private and fleet vehicles" to "advance decarbonization of the transportation system"
- In response to Chair Wheeler's question on what mode is covered under decarbonization, Ms. Love explained that it covers all modes and infrastructure.
- Mayor Rishell stressed that the technology should address all transportation infrastructure, current and future.
- Mayor Meyer noted that solar-powered auto was recently introduced in California, which could be considered as an example of decarbonization strategy.
- Ms. Love presented the details of the Action Plan including its structure
    - Introduction
    - Strategy-specific summaries (overview, assumptions, Action Plan)
    - Consolidated actions table
    - Next steps (monitoring progress/update cycle, review/update process)

- Mr. Jasper presented potential outcomes of the Action Plan which included development of TransAction scenario (sensitivity) analysis, outreach/education, potential addition to NVTA's legislative program, refinements to future Six Year Program project selection process, funding projects, and develop white papers identifying potential topics for future regional transportation policy.
- Mr. Jasper noted the anticipated recommendations that include approval of eight strategies and approval to begin implementation of the Action Plan. Once approved, staff will provide updates every six months and add TTSP/Action Plan in public engagement around TransAction update.
- In response to Chair Wheeler's question on explaining the details in the report to citizens, Mr. Jasper noted that the public engagement around TransAction led by consultant experts will ensure translating the key technical aspects to a language that can be understood more easily.
- Council Member Snyder suggested, and Mayor Rishell agreed, to take one particular technology and apply it to TransAction to demonstrate real-world applications – how this applies to the long range planning and project selection. He added that these need to be presented in the context of three core values of equity, safety, and sustainability. Ms. Backmon and Mr. Jasper agreed and noted that the details are expected to be developed as part of TransAction update including scenario analysis. Ms. Backmon added that the staff can take examples of technology and how it applies to the region in the context of state and federal funding and useful life of infrastructure funded.

V.   **TransAction Update**

- Mr. Jasper informed the Committee that the consultants and NVTA staff are preparing for kick-off meeting.

VI.   **NVTA Update**

- Ms. Backmon noted that the Authority, at its April 8th meeting, will receive a presentation on economic impact analysis of NVTA's investments. She noted that the primary action items include budget approvals for FY2022 70% regional revenue funds, 30% local funds, and operating budget, which were unanimously approved by the Finance Committee, and approval of FY2027 CMAQ/RSTP funding recommendations to the Commonwealth Transportation Board (CTB).

Adjournment

VII.   **Adjourn**

- The next meeting is planned for May 3, 2021. The meeting adjourned at 6:20 pm.

Transportation Technology Strategic Plan (TTSP): Recommendations

May 3, 2021

Topics

1. Why did we develop the Transportation Technology Strategic Plan (TTSP)?

2. What is the TTSP?

   • Recommended Strategies

3. What are the expected benefits of the TTSP?

4. How does the TTSP fit with NVTA's primary responsibilities?

5. How will we use the TTSP?

6. What are the possible outcomes of the TTSP Action Plan?

7. When will we update the TTSP and report back?

8. Recommendations

Why did we develop the Transportation Technology Strategic Plan (TTSP)?

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 TTSP?

- Tool that will inform a proactive approach to adoption of transportation technology;

- Provides a rational, consistent approach to identify 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;

- Living document that will be updated as transportation technologies evolve;

- Incorporates an Action Plan that enables NVTA to think big, start small, and build momentum with respect to adoption of transportation technologies in the region.

TTSP – 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

What are the Expected Benefits of the TTSP?

1. Leverage transportation technologies that support NVTA's vision, and mitigate those that do not, through planning, policy, advocacy, funding, and other means;

2. Support data-driven decision making by the Authority with respect to development of TransAction and subsequent project selection during future funding programs. The TTSP will guide the development of technology-related scenarios;

3. Enable a consistent approach to NVTA's transportation technology investments, increasing synergies and maximizing return on investments and taxpayer dollars;

4. Enhance multimodal travel choices and contribute to a more seamless travel experience for Northern Virginians, through coordinated planning, deployment and operations, especially enabled by secure, real time information;

5. Inform Northern Virginians about the features, benefits, costs, and appropriateness of deploying such technologies in the region, by raising awareness and understanding of transportation technologies;

6. Strengthen the regional approach to transportation technologies, through open and regular exchange of ideas between NVTA staff and jurisdiction/agency staff.

How does the TTSP fit with NVTA's Primary Responsibilities? – Vision

Integrated TransAction/TTSP Vision:

"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

How does the TTSP fit with NVTA's Primary Responsibilities? – Core Values

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.

How will we use the TTSP?

Two examples demonstrating our approach to evaluating technologies, and potential actions that could follow:

1. Electric, Autonomous Transit Shuttle;

2. Personal, Electric Autonomous Autos.

Note: these examples provide a high-level outline of our approach, and the evaluation ratings are illustrative only.

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		
🟥	🟨	🟩
(Red)	(Yellow)	(Green)
Intervention needed	Proceed with caution	Embrace

Electric, Autonomous Shuttles

Vision Statement	● (Green)	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	● (Green)	• 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	● (Green)	• Reduce congestion and increase throughput through mass travel options. • Reduce tailpipe emissions.	• Identify potential additions to NVTA's Legislative Program
	Safety	● (Yellow)	• 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	✓	

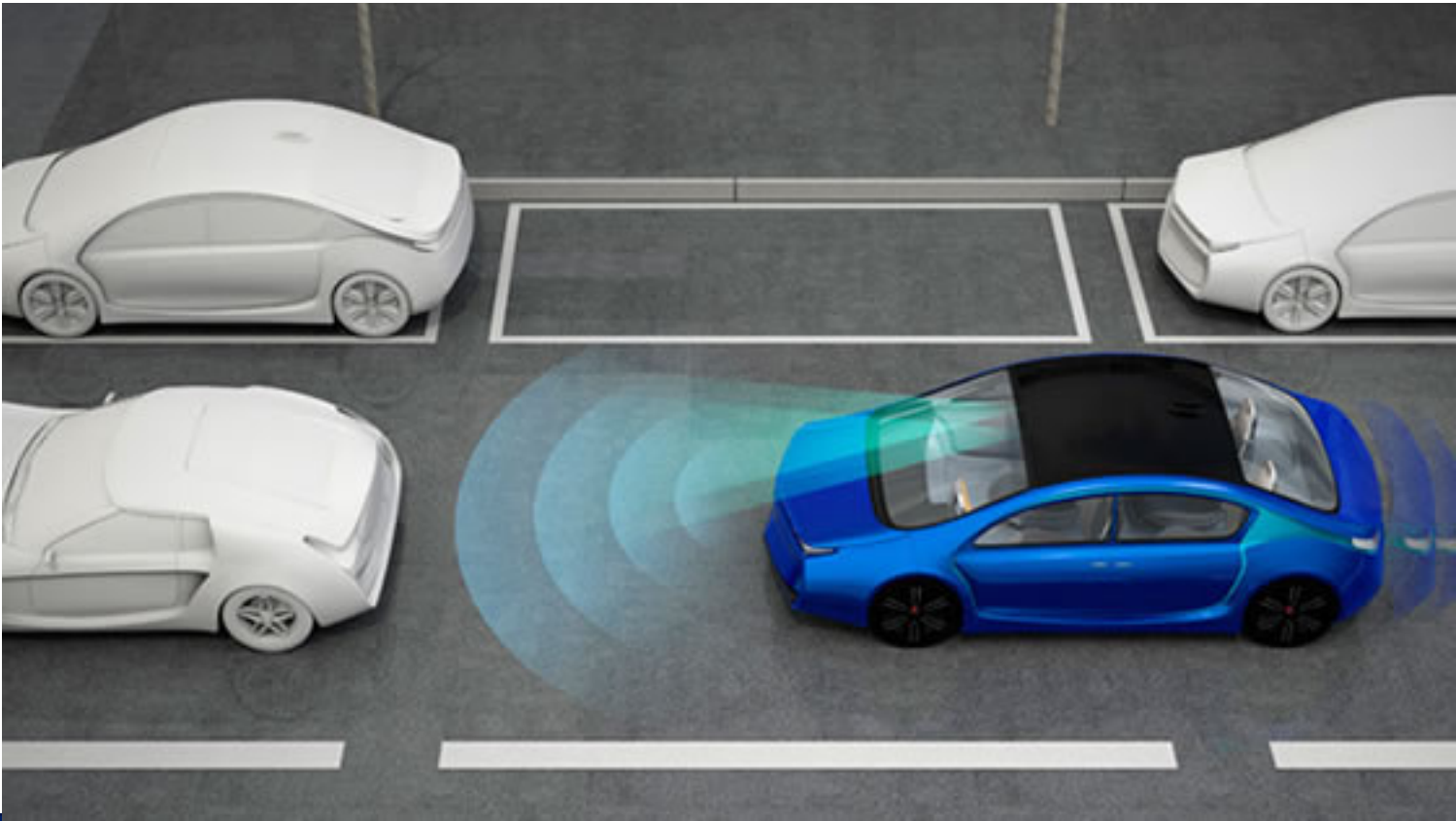# Example 2: Personal, Electric Autonomous Autos

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		
🔴	🟡	🟢
(Red)	(Yellow)	(Green)
Intervention needed	Proceed with caution	Embrace

Personal Electric, Autonomous Vehicles

Vision Statement	(Yellow)	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 cost of these vehicles **may create inequities,** if use is dependent on personal ownership.

Core Values			Description	Action
	Equity	(Red)	• 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	(Green)	• 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	(Yellow)	• 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

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

What are the Possible Outcomes of the TTSP Action Plan?

Planned Actions (May thru 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)

When will we Update the TTSP and Report Back?

TTSP Updates:

- Routine updates will occur continuously as the TTSP is a living document
- Significant updates will be undertaken in conjunction with Committees and the Authority, including:
  - 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

Report back using the Executive Director's monthly report:

- 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; and
- Upcoming TTSP-related activities.

Recommendations of NVTA Committees

- April 21, 2021: Transportation Technology Committee (TTC)
  - Unanimously approved the following: 1) Forward the full TTSP to the Authority for their information; 2) Recommend Authority approval of the eight Strategies included in the TTSP; and recommend Authority approval of the TTSP Action Plan.

- April 27, 2021: Technical Advisory Committee (TAC)
  - Unanimously approved the following: Recommend Authority approval of the eight Strategies included in the TTSP; and recommend Authority approval of the TTSP Action Plan.

- April 28, 2021: Planning Coordination Advisory Committee (PCAC)
  - Unanimously approved the following: Recommend Authority approval of the eight Strategies included in the TTSP; and recommend Authority approval of the TTSP Action Plan.

Recommendations

Recommended action:

Recommend the Authority adopt the eight strategies (in the Transportation Technology Strategic Plan) and Action Plan.

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

Supplementary Slides

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	✓	✓	✓	✓	✓		✓	✓	

TTSP Draft Action Plan
Consolidated Actions Table

Technologies Mapped to TTSP Strategies

Key

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	●	◐			◐						