

Transportation Technology Strategic Plan (TTSP) Update

November 30, 2022

Mackenzie Love, AICP
Regional Transportation Planner



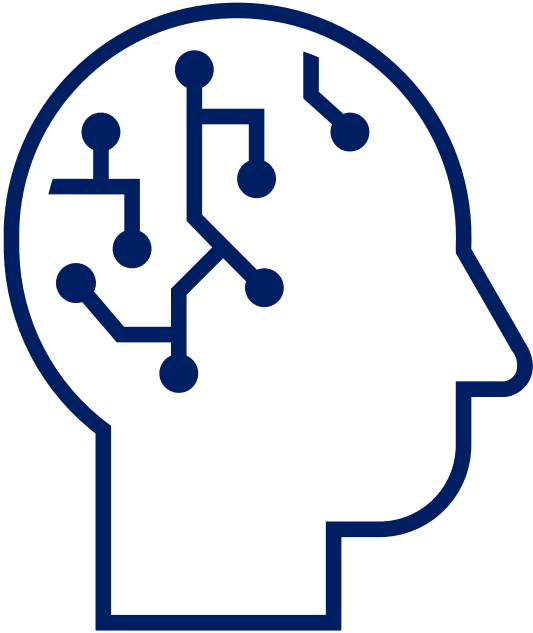


TTC Membership Update

Name	Entity	Status
Councilmember David Snyder	City of Falls Church	TTC Chair and Authority member
Mayor Jeanette Rishell	City of Manassas Park	TTC Vice Chair and Authority member
Jim Kolb	Summit Strategies Government Affairs	Authority member
Brad Stertz	Audi and PAVE (Partners for Automated Vehicle Education)	New
Dr. Richard (Dick) Mudge	Compass	
Chris Bast	Electrification Coalition	New
Superisor Walter Alcorn	Fairfax County Board of Supervisors	New
Mike Garcia	Fairfax County Department of Transportation	
Joe McAndrew	Greater Washington Partnership	
Greg Rogers	Nuro	
Dr. Robert (Bob) Schneider	Potomac and Rappahannock Transportation Commission	
Andrew Meese	Transportation Planning Board	
Michele Blackwell	Uber	Alternate
Nicholas Zabriskie	Uber	
Hari Sripathi	Virginia Department of Transportation	
Kamal Suliman	Virginia Department of Transportation	Alternate
Reginald (Reg) Viray	Virginia Tech Transportation Institute	
Myra Blanco	Virginia Tech Transportation Institute	Alternate
Zac Doerzaph	Virginia Tech Transportation Institute	Alternate
Mike Fontaine	Virginia Transportation Research Council	New



TTC Membership Update

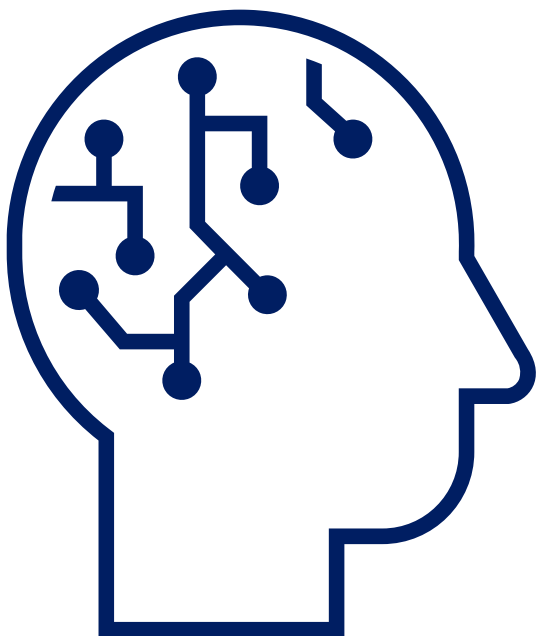


Brad Stertz

Director of Government Affairs
for Audi and Co-Founder |
Chairman of PAVE



TTC Membership Update



Chris Bast

Director of EV Infrastructure
Investments

Electrification Coalition



TTC Membership Update



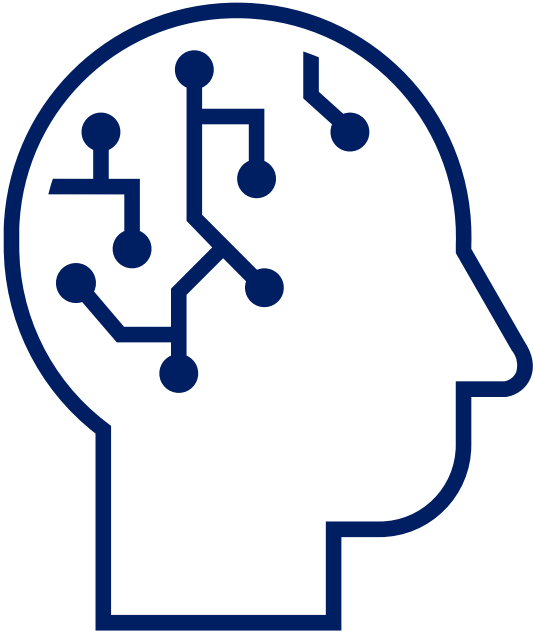
Mike Fontaine

Associate Director

Virginia Transportation
Research Council



TTC Membership Update



Walter Alcorn

Supervisor, Hunter Mill District
Fairfax County



History of the Transportation Technology Strategic Plan (TTSP)

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.

Year	Month	Milestone
2017	October	•An update to TransAction was adopted, which contained the genesis of the Transportation Technology Committee (TTC).
2018	October	•TTC established by the NVTA CEO.
2019	January	•First meeting of the NVTA Transportation Technology Committee.
2020	December	•Draft TTSP "core content" (8 strategies, 9 NVTA roles and 3 core values) shared with the TTC.
2021	January	•Draft structure for the TTSP (minus Action Plan) proposed to the TTC.
	February/ March	•First full draft of the TTSP and draft structure for the Action Plan presented to the TTC.
		•Draft structure for the TTSP shared with TAC, PCAC and PPC.
		•TTSP mini-session at the 6 th annual NoVA Transportation Roundtable.
	April	•TTC, PCAC and PPC all recommend the Authority adopt the 8 strategies and Action Plans of the TTSP.
	May	•The Authority adopted the inaugural NVTA Transportation Technology Strategic Plan's Action Plan and 8 Strategies within.
	Summer	•TTSP-related topics included in TransAction outreach and survey.
	October	•TTC receives an update on the first six months of implementation of the TTSP.
2022	November	•The Authority receives an update on the first six months of implementation of the TTSP.
	December	•The Authority unanimously adopted the 2022 State and Federal Legislative Program and Legislative Priorities, which included a new position to "Support use of effective transportation technology".
	February	•The format of NVTA's Driven By InNoVation was updated and now includes monthly features of TTSP-related content.
	July	•The TTC unanimously voted to endorse expansion of the scope of strategies 4 and 8, and to add a 9 th strategy.
	October	•Trial run of a series of InNoVation Lunch and Learn begins.
	November	•The Authority unanimously approved expansion of the scope of strategies 4 and 8, and addition of a 9th strategy.



Updates to TTSP Technology Timeline

Year	Technology Milestone	
	Event	Description
2022	Biden-Harris Administration approves NEVI plans for all 50 states, D.C and Puerto Rico	"The Biden-Harris Administration today announced it has approved Electric Vehicle Infrastructure Deployment Plans for all 50 States, the District of Columbia and Puerto Rico ahead of schedule under the National Electric Vehicle Infrastructure (NEVI) Formula Program, established and funded by President Biden's Bipartisan Infrastructure Law."
2022	Greenhouse Gas Inventory from DEQ	<ul style="list-style-type: none">• https://lis.virginia.gov/cgi-bin/legp604.exe?212+ful+SB1282• https://www.deq.virginia.gov/air/greenhouse-gases
2022	Governor Youngkin releases an update to the Virginia Energy Plan	"The plan focuses on an all-of-the above approach that harnesses nuclear, natural gas, renewables, and new energy sources to satisfy the increasing energy needs of the Commonwealth. The Plan also outlines an increase in nuclear energy and an objective to make Virginia the world's leading nuclear innovation hub. "

Other updates to watch:

- Ongoing - Developments in Advanced Air Mobility (AAM).



Progress on TTSP Implementation

Ongoing coordination with VDOT Signal Operations group

- In this Committee's most recent meeting (July 2022), the members directed staff to explore ways to facilitate the advancement of transportation technology projects, potentially by fostering coordination between planning and operations teams across the region.
- In September 2022 Mackenzie Love had an informal conversation with VDOT's Operations Engineering Manager and will attend upcoming quarterly Signal Manager's Meeting(s).



Progress on TTSP Implementation

Participation in a FHWA Listening Session on Emerging Trends and Technologies

- The FHWA is working to develop a framework for integrating Emerging Trends and Technologies (ETTs) into Transportation Systems Management and Operations (TSMO) efforts.
- Mackenzie Love was invited to participate in a listening session in September 2022, along with 8 other state and local agencies from across the country.



Progress on TTSP Implementation

Trial run of an InNoVation Lunch and Learn series

- Fully virtual, 45-minute-long sessions that focus on topics supported by the TTSP.
- Designed to provide opportunities to exchange pragmatic information practitioners could use in their day-to-day responsibilities or upcoming proposals.

- **October 20th, 2022, at 11:00am**
 - Speaker: John Zarbo, Operations Section Chief, FCDOT
 - Topic: Lessons Learned from the Relay Shuttle project in Merrifield
- **November 17th, 2022, at 11:00am**
 - Speaker: Joe Stainsby, Chief Development Officer, OmniRide
 - Topic: Lessons Learned in Preparing for the Launch of Microtransit
- **December 15th, 2022, at 11:00am**
 - Speaker: Alvaro Villagran, Director of Federal Programs, Shared Use Mobility Center
 - Topic: Best Practices for Mobility Hubs



Progress on TTSP Implementation

Trial run of an InNoVation Lunch and Learn series, continued...

		October	November	December
Topic		Automation and Connectivity in Transit	Microtransit	Mobility Hubs
Attendance	Total	20	20	TBD
	Jurisdictions	45%	25%	
	Transit Agencies and Rail	0%	15%	
	Regional Entities	10%	5%	
	State Agencies	20%	20%	
	Larger Region	0%	0%	
	Researchers	0%	0%	
	NVTA Staff and Contractors	25%	35%	
Reason for interest (for all registrants)	The subject matter	51%	46%	TBD
	The speaker(s)	0%	8%	
	They were a speaker	3%	4%	
	The host organization	26%	4%	
	Interest in innovative transportation solutions	18%	31%	
	Other	0%	4%	



Progress on TTSP Implementation

NVTA 2023 Legislative Program under development

- Current draft content for the Legislative Program includes four priority areas:
 1. Protect dedicated revenue sources and powers of the Northern Virginia Transportation Authority
 2. Restore annual long-term funding to the Authority to pre-2018 levels
 3. Protect Virginia's dedicated transportation funding
 4. **Support use of effective transportation technology**
- The next steps are:
 - December 8, 2022 – Authority is anticipated to adopt the 2023 Legislative Program



Progress on TTSP Implementation

- On July 7th, 2022, the TTC endorsed these updates to the TTSP
- On November 10th, 2022, the Authority approved them

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	Original title: Minimize potential for Zero Occupancy passenger Vehicles Approved revision: Enhance operations of the multimodal transportation system through connectivity and automation	Approved expansion: To maximize the potential benefits of Connected and Automated Vehicles, while addressing 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	Approved expansion: Support deployment of transportation technologies that reduce greenhouse gas emissions and synergistic technologies that improve resiliency.
9	Approved addition: Enhanced mobility in the region through innovation and emerging technologies in transit	Approved intent: support an array of transit innovations, in a manner that is flexible enough to adapt to future innovation.



Next Steps for TTSP Implementation

- Incorporate updates endorsed by the TTC and approved by the Authority
- Contribute to finalization of NVTA's 2023 Legislative Program
- Complete trial run of InNoVation Lunch and Learn concept
- Inform development of the agenda for the 8th Annual Northern Virginia Transportation Roundtable



TTC Input Sought on Topics for the 8th Annual Northern Virginia Transportation Roundtable

- Do you have any thoughts on the ideas listed here?
- Do you have any suggestions for speakers?
- Do you have any suggestions for additional/ different topics?

Topic	Ideas/ Questions
Federal funding and innovation	<ul style="list-style-type: none">• Are there new funding opportunities?• Are there new requirements or possibilities to feature innovation?• What could Justice40 could mean for technology projects?
Electrification	<ul style="list-style-type: none">• How could we cover this in a way that is new or useful to the region?• Should we address hydrogen or wait until more progress is made?
Bus Rapid Transit	<ul style="list-style-type: none">• Do you have contacts for BRT systems outside the region?• Are there specific technology components that would be timely to cover?
Traffic signal technology	<ul style="list-style-type: none">• Potential topics could include TSP (Transit Signal Priority), LPI (Leading Pedestrian Interval) and preemption.

TransAction (TA) Update

November 30, 2022

Keith Jasper
Principal, Transportation Planning and Programming





TransAction is...

- » A long-range multimodal transportation plan (horizon year 2045) that includes a list of 424 multimodal candidate projects, whose performance related to congestion reduction and other factors is evaluated using ten weighted performance measures, approved by NVTa in November and December 2021
- » Fiscally unconstrained, meaning that TransAction intentionally includes more projects – focused on transportation needs – than can be reasonably funded by the region
- » Geographically unconstrained, meaning that TransAction intentionally includes projects beyond NoVA that, if funded, would support the plan's vision and goals
- » Compliant with the Code of Virginia

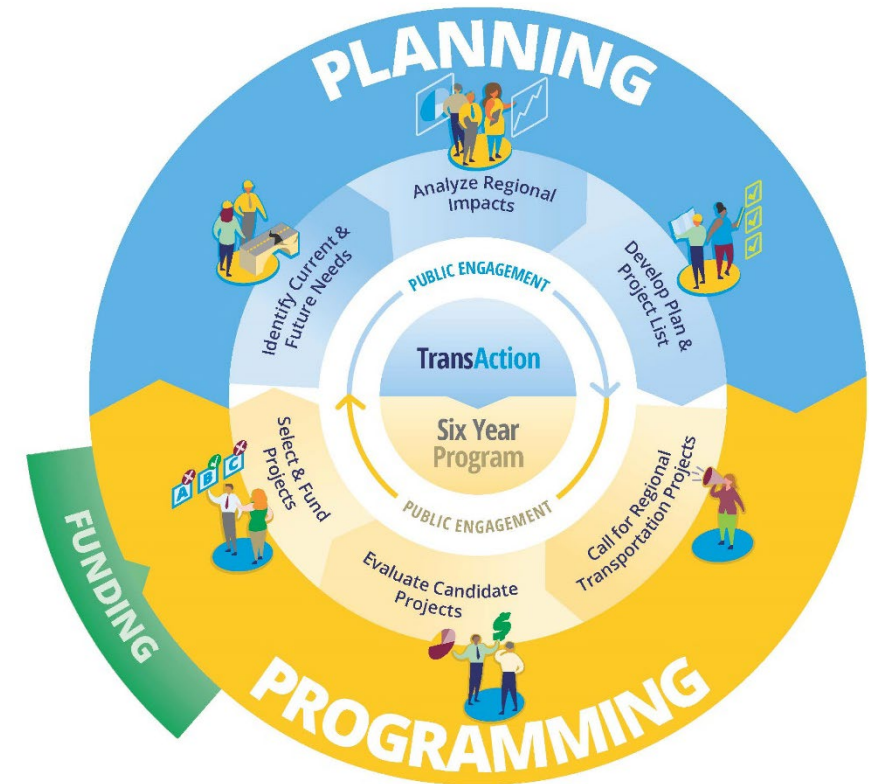


TransAction is not...

- » A land-use plan, although it does incorporate MWCOG's cooperative planning forecasts
- » A road-building plan
- » A funding document and does not commit NVT to funding any project (NVT's Six Year Program selects projects for funding using NVT's regional – 70% – revenues)
- » A project/modal prioritization or ranking tool, but TransAction does provide information that could subsequently be used for project evaluation

TransAction Activities and Schedule

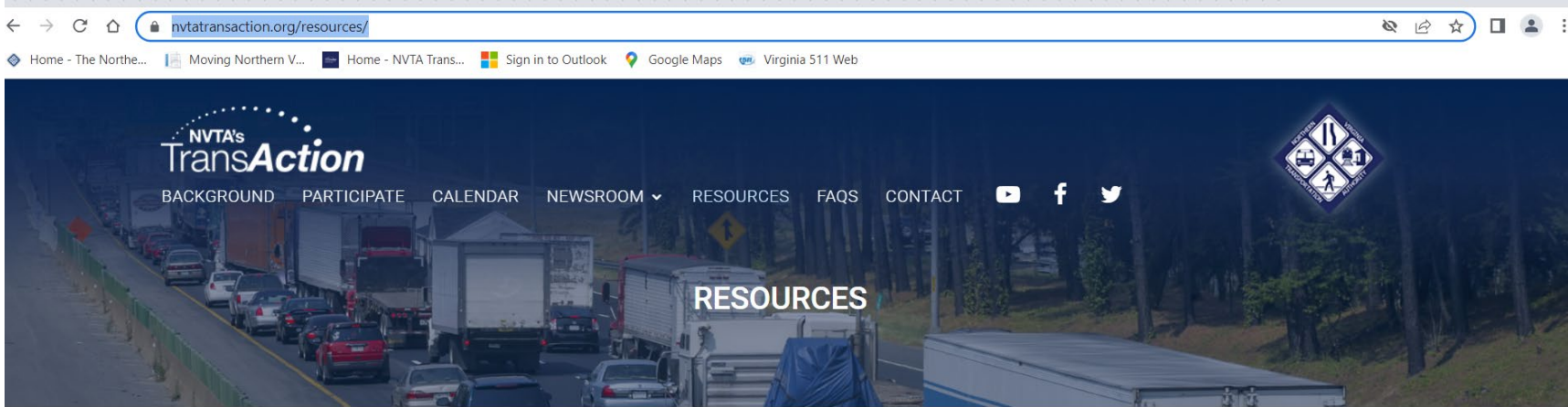
- » Nov/Dec 2021: NVTa approved TransAction goals, objectives, performance measures, and weights
- » Winter/Spring 2022: Transportation Perception Survey, web post series, TransAction project modeling and analysis
- » Summer 2022: Public comment period – August 1 – September 18th
- » Fall 2022: Finalization of plan and project list based on public comments and NVTa/committee feedback
- » November 2022: Anticipated committee endorsement of final draft of TransAction Plan and Project List
- » December 2022: Anticipated NVTa adoption of TransAction





More Information

<https://nvtatransaction.org/resources/>



Updated Draft TransAction Plan and Project List for Review by NVTA Committees (November 2022)

- [TransAction Plan](#)
- [TransAction Project List](#)
- [TransAction Project List \(sortable\)](#)
- [Interactive Map of TransAction Project List](#)

NVTA Draft TransAction Plan and Project List

The public comment period ran from August 1, 2022 to September 18, 2022, with a public hearing on September 8, 2022. Below are the full list of comments and a summary of the comments.

[Compilation of public comments received](#)

Recent Updates

NVTA Seeks Public Input on TransAction, Northern Virginia's Long-Range Transportation Plan

Aug 1, 2022

NVTA Update Newsletter Sign Up





Thank you!



Supplementary Slides



TTSP Report Card, as of November 2022

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	●	●	●	●	●		●	●	

Key	
	No role identified for NVTA
○	Role identified for NVTA
●	Some progress has been made
◐	Moderate progress has been made
◑	Substantial progress has been made
●	Task has been completed



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.



Inaugural 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



Inaugural 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	✓	✓	✓	✓	✓		✓	✓	



Inaugural TTSP 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 Inaugural TTSP Strategies

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	●	●			●						

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 Insufficient Information Available	