



Northern Virginia Transportation Authority
The Authority for Transportation in Northern Virginia

TRANSPORTATION TECHNOLOGY COMMITTEE
Wednesday, September 11, 2019, 8:30am

Northern Virginia Transportation Authority
3040 Williams Drive, Suite 200
Fairfax, Virginia 22031

AGENDA

- I. Call to Order/Welcome** Chairman Snyder

Action

- II. Approval of Meeting Summary of July 10, 2019 Meeting**

Discussion/Information

- III. Introductions and Member Updates (20 mins)**
- IV. Regional Multimodal Mobility Program Update (10 mins)**
- V. TTC Workplan (60 mins)**
- A. Recap**
- B. First Thoughts on Deliverable #1 (Appropriate Role of Technology, Challenges/Opportunities)**
- VI. Candidate Future TTC Briefings (15 mins)**

Adjournment

- VII. Adjourn**

Next Meetings:
October 23, 2019 at 8:30am (tentative)
November/December TBD

Transportation Technology Committee (TTC)

Work Plan (August 16, 2019)

Final Draft

Purpose of TTC Work Plan

- To advise the Northern Virginia Transportation Authority (NVTA) Executive Director on multi-modal transportation technologies and related transportation trends that support (or endanger) the vision of the Authority as stated in its current Five-Year Strategic Plan;
- To make specific recommendations for consideration by the NVTA Executive Director related to the development of TransAction, the regional, multi-modal, long-range transportation plan for Northern Virginia, and the development of updates to the Authority's Six Year Program. Such recommendations may include the use of transportation technologies to complement traditional transportation infrastructure and enhance the operation and performance of the regional transportation system; and
- To develop an evidence-based body of knowledge that will educate and inform regional policy makers on multi-modal transportation technologies and related transportation trends.

TTC Scope and Horizons

While the TTC's advice shall be NoVA-focused, the TTC should consider broader regional, national and international trends while embracing local transportation preferences wherever possible. TTC's recommendations should reflect the likely uncertainty in the maturation schedules of future transportation technologies and related trends, while recognizing that pilot deployment initiatives could occur much sooner, e.g. automated shuttles and delivery services.

The TTC will address transportation technologies and related trends that are occurring on multiple, overlapping timelines:

- Today, e.g. Intelligent Transportation Systems (ITS) technologies, shared mobility
- During the next couple of years, e.g. enhanced ITS technologies, Mobility as a Service (MaaS)
- Multi-decadal basis, e.g. Connected, Autonomous, Shared, Electric (CASE) vehicles

Proposed Deliverables

Four initial deliverables are proposed. Drafts will be developed by NVTA staff, in collaboration with staff from other entities where appropriate. Deliverable format will be white papers and/or presentations. Review and finalization of deliverables is expected to take up to three months for each deliverable. Deliverables will identify areas that can be directly addressed by NVTA, but will not be limited to these.

The deliverables will support the development of a Transportation Technology Strategic Plan, identifying strategies and actions that support the deployment of appropriate transportation technologies to address regional transportation needs.

Deliverables are categorized as either 'action-oriented' or 'supporting'. The former category incorporates initiatives related to how technologies will address the region's transportation needs,

identifying associated policy considerations that support the Authority's vision while mitigating any potentially negative impacts. The latter category of deliverables will provide relevant regional transportation context, and identify appropriate research and communications initiatives that support the Transportation Technology Strategic Plan.

Action-oriented deliverables

1. Appropriate Role of Technology, Challenges/Opportunities (first draft September 2019)

- Define linkages between needs and technology, e.g.:
 - Improve safety/enhance emergency management
 - Reduce congestion, first/last mile options
 - Improve access to labor, accessibility to jobs, healthcare, etc.
 - Improve access for the mobility-impaired
 - Reduce emissions/build resilience
- Identify moral/ethical and other implications related to technology deployment, and identify options to address including:
 - Equity for vulnerable populations
 - Data ownership
 - Privacy
 - Cyber Security
- Identify technology related scenarios (alternate futures) for analysis during TransAction development, e.g.:
 - Impact of travel behavior changes arising from RM3P build-out
 - Impact of travel behavior changes related to CASE vehicles
 - Impact on business location decision-making process
- Consider the operations and maintenance implications and costs of different types of technology deployments, and identify sustainable approaches to funding
- Roles and responsibilities of the public and private sectors
 - Explore opportunities for public/private partnerships, and barriers to entry for the private sector
 - What are the implications for funding, deployment, etc.?
- Adequately prepare for future technology disruptions, highlighting the need to adapt to changing circumstances and timelines
- Consider future enhancements to RM3P, and interoperability with other tools

2. Regional Technology Policy Development Needs (first draft October 2019)

- Identify regional policy development process;
- Necessary institutional infrastructure;
- Incentivize increased vehicle occupancy across all modes;
- Variable use-based pricing for EVs/AVs;
- Facilitate development of EV infrastructure;
- Data (sharing/security/privacy) policies, where possible conducting scans to better understand current practices regarding approaches being considered/applied

throughout the Commonwealth and elsewhere, as well as any barriers to data collection;

- Equitable distribution of technology benefits;
- Guidelines for funding future technology deployments, recognizing the likely life cycles for technology development through obsolescence;
- Mitigation of potentially negative impacts;
- Curb and parking management strategies; and
- CASE vehicle deployment stimulation strategies

Supporting deliverables

3. NVTA/NoVA Transportation Primer (first draft November 2019)

- Summarize regional transportation needs;
- Provide TTC members with a better understanding of TransAction vision, goals, performance measures, etc.;
- Summarize region's current transportation technology activities, e.g. Connected Corridor, RM3P, TSP, data-sharing, EV infrastructure and private sector initiatives¹;
- Identify future technology-related deployment opportunities, e.g. Bus Rapid Transit (BRT), AV-only boulevards, AV-Express Lanes;
- Identify potential funding sources for future technology ('soft infrastructure') deployments; and
- Identify existing and potential roles of public and private sectors, and opportunities for partnership.

4. Research/Outreach/Education (first draft December 2019)

- Better understand Northern Virginians' level of awareness, concerns, and desires with respect to technology;
- Using facts rather than 'hype', develop appropriate messaging for multiple target audiences:
 - Authority members; policy development, investment strategies
 - Member jurisdiction and agency staff; technical education, skill needs/gaps, encourage 'big thinking'
 - Regional stakeholders, including the business community; collaboration opportunities, synergies
 - Northern Virginians; technology awareness, safeguards, impacts, advantages, disadvantages, and value for money
 - Private sector; partnership opportunities
- Incorporate 'trigger points' into NVTA staff annual reports on transportation technologies and emerging trends. Trigger points could be when certain thresholds are

¹ Could include regional initiatives in Maryland, The District or elsewhere that are of interest to NoVA

reached, such as market penetration levels, which may in turn ‘trigger’ a review of prior analyses or assumptions.

Role of TTC members

- Review draft deliverables and provide feedback;
- Where appropriate, suggest additional work plan deliverables; and
- Inform the TTC on matters relevant to the TTC Work Plan.

DRAFT

Transportation Technology Committee



September 11, 2019



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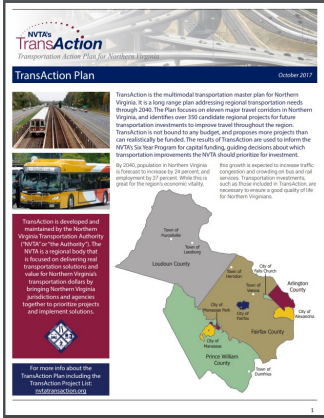
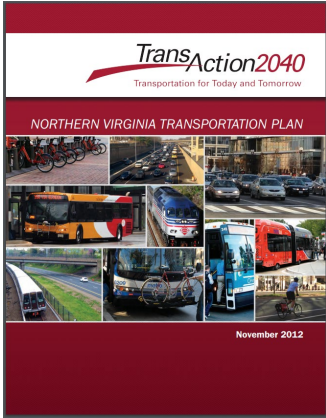
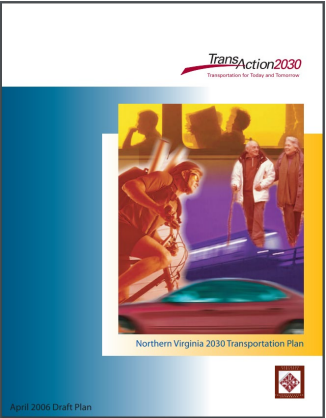
TTC Work Plan has four deliverables

- Action-oriented deliverables
 - **Appropriate Role of Technology, Challenges/Opportunities**
 - Regional Technology Policy Development Needs
- Supporting deliverables
 - NVTa/NoVA Transportation Primer
 - Research/Outreach/Education
- Ultimately this effort will lead to NVTa's Transportation Technology Strategic Plan.

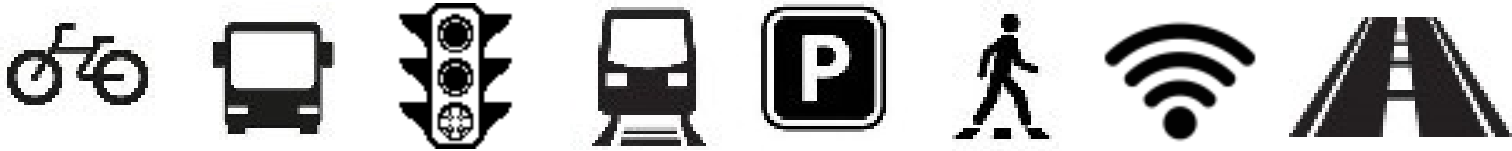


Two Primary Responsibilities

1. Develop and update the long range, multi-modal Transportation Plan for Northern Virginia → TransAction (adopted October 2017)



2. Prioritize and fund regional transportation projects → Six Year Program (adopted June 2018)





TransAction Vision and Goals

Vision

In the 21st century, Northern Virginia will develop and sustain a multimodal transportation system that enhances quality of life and supports economic growth. Investments in the system will provide effective transportation benefits, promote areas of concentrated growth, manage both demand and capacity, and employ the best technology, joining rail, roadway, bus, air, water, pedestrian, and bicycle facilities into an interconnected network that is fiscally sustainable.

Goals

1. Enhance quality of life and economic strength of Northern Virginia through transportation
2. Enable optimal use of the transportation network and leverage the existing network
3. Reduce negative impacts of transportation on communities and the environment

NVTA's TransAction
Transportation Action Plan for Northern Virginia
October 2017

TransAction is the multimodal transportation master plan for Northern Virginia. It is a long range plan addressing regional transportation needs through 2040. The Plan focuses on eleven major travel corridors in Northern Virginia, and identifies over 350 candidate regional projects for future transportation investments to improve travel throughout the region. TransAction is not bound to any budget, and proposes more projects than can realistically be funded. The results of TransAction are used to inform the NVTA's Six Year Program for capital funding, guiding decisions about which transportation improvements the NVTA should prioritize for investment.

By 2040, population in Northern Virginia is forecast to increase by 24 percent, and employment by 37 percent. While this is great for the region's economic vitality, this growth is expected to increase traffic congestion and crowding on bus and rail services. Transportation investments, such as those included in TransAction, are necessary to ensure a good quality of life for Northern Virginians.

TransAction is developed and maintained by the Northern Virginia Transportation Authority ("NVTA" or "the Authority"). The NVTA is a regional body that is focused on delivering real transportation solutions and value for Northern Virginia's transportation dollars by bringing Northern Virginia jurisdictions and agencies together to prioritize projects and implement solutions.

For more info about the TransAction Plan including the TransAction Project List: nvtatransaction.org



Goal	Objective	Performance Measure	Weight
Goal 1: Enhance quality of life and economic strength of Northern Virginia through transportation	Reduce congestion and crowding experienced by travelers in the region	Total person hours of delay*	10%
		Transit crowding*	5%
		Person hours of congested travel in automobiles*	5%
		Person hours of congested travel in transit vehicles*	5%
	Improve travel time reliability	Congestion severity: maximum travel time ratio	5%
		Congestion duration*	10%
	Increase access to jobs, employees, markets, and destinations	Percent of jobs/population within 1/2 mile of high frequency and/or high performance transit	5%
		Access to jobs within 45 minutes by auto or within 60 minutes by transit*	5%
	Improve connections among and within areas of concentrated growth	Average travel time per motorized trip between Regional Activity Centers	5%
		Walkable/bikeable environment within a Regional Activity Center	5%
Goal 2: Enable optimal use of the transportation network and leverage the existing network	Improve the safety of transportation network	Safety of the transportation system	5%
	Increase integration between modes and systems	First and last mile connections	10%
	Provide more route and mode options to expand travel choices and improve resiliency of the system	Share of travel by non-SOV modes	10%
	Sustain and improve operation of the regional system	Person hours of travel caused by 10% increase in PM peak hour demand*	5%
Goal 3: Reduce negative impacts of transportation on communities and the environment	Reduce transportation related emissions	Vehicle miles traveled (VMT) by speed	10%



First Thoughts: Possible NVTA Roles

Need	TransAction Goal/Objective	Technology Opportunities	Technology Challenges	Possible NVTA Roles (All = Inform)
Safety	2/1	AVs reduce human error	Near perfection required	Input to regional/state policies?
Emergency Management	2/4	Data/AI mitigate incident impacts	False positives, data protection issues	Funding opportunities, possibly subject to new approaches to procurement?
Congestion	1/1 1/2	CAVs increase highway efficiency, freight, env.	Uncertainty, Curb Mgt., ZOVs, increased VMT	New approaches to what we fund? Pricing/ incentives policy?
First/Last Mile	1/4 2/2 2/3	Reduce SOV VMT, active transportation	Transit impact	Funding for AV shuttles and facilities? New healthcare partnerships
Accessibility to Labor, Jobs, etc.	1/3	Strengthen regional economy, quality of life	See 'Safety' and 'Congestion'	New biz community partnerships. NVTA role in transp./land use discussion?
Accessibility for Mobility Impaired	Multiple/ non-specific	Improve quality of life, opportunities	See 'Safety' and 'Congestion'	New community partnerships, e.g. AARP
Emissions	3/1	AVs=EVs	Revenue Streams	EV infrastructure policy
Resilience	2/3	Better data=better info	Complexity of 'threats' (type/location/scale/timing/duration)	Consider investment obsolescence and need for infrastructure redundancy options
Other?				