



# Northern Virginia Transportation Authority

*The Authority for Transportation in Northern Virginia*

## PLANNING AND PROGRAMMING COMMITTEE

Monday, November 29, 2021, 5:00 p.m.

NVTA Office

3040 Williams Drive, Suite 200

Fairfax, Virginia 22031

The meeting will be livestreamed on [NVTA's YouTube Channel](#)

## AGENDA

- I. Call to Order/Welcome Chair

### Action

- II. Summary Notes of November 1, 2021, Meeting  
*Recommended action: Approve meeting notes*
- III. Approval of Performance Measure Weightings for TransAction Update  
Mr. Jasper, Principal, Planning & Programming  
*Recommended action: Recommend NVTA approval of the Performance Measure Weightings*

### Discussion/Information

- IV. TransAction: Update on Scenario Definitions Cambridge Systematics, Inc.
- V. NVTA Update Ms. Backmon, CEO

### Adjournment

- VI. Adjourn

Next Meeting: TBD



## Northern Virginia Transportation Authority

*The Authority for Transportation in Northern Virginia*

### PLANNING AND PROGRAMMING COMMITTEE

Monday, November 1, 2021, 5:00 p.m.

Northern Virginia Transportation Authority

### SUMMARY NOTES

#### I. Call to Order/Welcome

- Chairman Wilson called the meeting to order at 5:05 p.m.
- Attendees:
  - **PPC Members:** Mayor Wilson (City of Alexandria); Council Member Snyder (City of Falls Church); Mayor Rishell (City of Manassas Park); Chair Wheeler (Prince William County).
  - **Other NVTa Members:** None.
  - **NVTa Staff:** Monica Backmon (CEO); Keith Jasper (Principal); Sree Nampoothiri (Senior Transportation Planner).
  - **Jurisdiction/Agency Staff:** Proceedings were livestreamed on YouTube Live.
  - **Others:** Thomas Harrington (Cambridge Systematics).

### Action

#### II. Summary Notes of October 4, 2021, Meeting

- The October 4, 2021, Planning and Programming Committee meeting summary was approved unanimously.

#### III. Approval of Goals, Objectives, and Performance Measures for TransAction Update

- Mr. Jasper emphasized that the Committee is requested to act on the goals, objectives, and performance measures tonight while the approval of weights associated with approved measures will be acted upon at the next meeting.
- Mr. Harrington presented the suggested goals, objectives and performance measures, highlighting any changes made per feedback from NVTa committees. He noted that goals (enhance mobility, increase accessibility, improve resiliency) are what we want to achieve while core values (equity, sustainability, safety) are how we want to achieve the goals.
- Most changes suggested focuses on the measures, not the objectives themselves. Several suggested changes were considered, but not all were incorporated, and in these cases justification for that decision was provided. The most significant incorporated changes include:

- Adding a method of analyzing non-motorized projects, or aspects of projects, to the Mobility goal.
  - Relocating the emissions reduction objective from the Mobility goal to the Resiliency goal.
  - Adding bicycle accessibility to objective C, Improve Access to Jobs.
  - Including a measure of network redundancy under the Resiliency goal.
- Mr. Harrington also reported on how the goals, objectives, and performance measures, as suggested, align with NVTa's core values of equity, sustainability, and safety. He noted that each core value is represented in each of the goals.
- Council Member Snyder noted that there is a difference of opinion on i) how to reconcile the fact that reducing congestion will reduce emission but will induce vehicle miles traveled (VMT), ii) how to assure achievement of reduction in greenhouse gas (GHG) emission targets, and iii) how do we support transit-oriented development (TOD). He added that it is important to have a program that achieves all the above but also reflects the realities of the region with differences of outlooks on these topics.
- Chair Wheeler clarified and Mayor Rishell supported that development is happening and we need to support it with transportation infrastructure; it is not intended for inducing more development.
- Mr. Jasper noted that induced demand in this case is assumed to be new trips made possible by new infrastructure, not a shift in existing trip patterns. The analytical approach presented will address short- and medium-term induced demand within the model environment while the longer-term impacts are expected to be captured through planning forecasts developed by Metropolitan Washington Council of Governments/Transportation Planning Board (MwCOG/TPB) in collaboration with the jurisdictions. Mr. Harrington added that the short- and medium-term impacts are captured using feedback loops in the model.
- Mr. Jasper noted that the weights of the performance measures would decide how much importance vehicle emissions, including GHG, will get in the analysis. The statutory and standing committees will recommend weights, and the Authority will make the final decision on weights in the next set of meetings. Mr. Jasper added that in addition to the reduction of VMT itself, the reduction in congestion for auto with internal combustion engines at high and low speeds would also reduce emissions. The recommended approach will capture both. In response to Mayor Rishell's question on how emissions are calculated now, Mr. Harrington noted that the future conditions with and without projects will be evaluated using the emission rates by vehicle type, facility, type, and speeds published by the Environmental Protection Agency (EPA). Chair Wheeler noted that several studies by various agencies, including MwCOG/TPB, noted that a vast majority of GHG emissions comes from non-transportation sources.
- Mr. Jasper noted that the NVTa staff has been working for several months with the jurisdiction/agency staff to develop an updated project list to be included in TransAction. The projects we are looking at includes several transit projects and transit access projects. As part of TransAction update, the staff established and met with a Bus Rapid Transit (BRT) Planning working group that included members not

only from NVTAs jurisdictions but also from the District of Columbia, Montgomery County, and Prince George's County. The working group discussed a number of projects including BRT, commuter bus, local connectors, bike and pedestrian access projects, micro transit, etc. NVTAs has funded five BRT projects worth more than \$350 million across the region so far. In addition, several Metro and VRE projects were also funded. He concluded that the NVTAs has always supported transit-oriented development and will depend on the jurisdictions coming up with such projects in TransAction and subsequently requesting funding through NVTAs's Six Year Program update.

- In response to Mayor Wilson's clarification question on the Commonwealth's HB599 requirements on measures, Mr. Jasper noted that the Code of Virginia mentioned certain parameters but not the weights. Ms. Backmon added that HB2313 requires the Authority to give priority to congestion reduction relative to cost (CRRC) for funding, and the Authority gave higher percentage to the congestion reduction factor. Mayor Rishell added that NVTAs's investments have made a phenomenal impact on economic development though that is not the direct goal of NVTAs.
- Mayor Wilson commented that the weights will decide which measure will get high priority, and the need here is to ensure we have all the measures we think will satisfy various aspects are captured.
- In response to Chair Wheeler's question on the relationship between location of heavy congestion and induced demand, Mr. Jasper noted that these will be looked at by considering the models with and without projects and weigh the impacts using the measures and weights.
- Council Member Snyder noted that the resiliency is not necessarily redundancy and looking at redundancy only might be too limiting. Mr. Jasper responded by noting that the redundancy measure is effectively required due to language referring homeland security emergencies in HB599. Though there is some difference between redundancy and resiliency, the measure is intended to cover both as much as possible within the law. Some of the additional analysis on resiliency is planned to be covered under the scenario analyses.
- Mayor Rishell made a motion, and Chair Wheeler seconded, to recommend the Authority adopt the goals, objectives, and performance measures. The motion was passed by the Committee with Council Member Snyder abstaining.

### **Discussion/Information**

#### **IV. TransAction Online Survey: Interim Findings**

- Mr. Harrington updated the Committee on the online survey carried out between August 6<sup>th</sup> and September 19<sup>th</sup> that received more than 2300 responses.
- Respondents were asked about their transportation priorities and how they would recommend allocating resources. Both sets of responses were influenced by where the individual lived.
  - Overall, "more transit, walking and biking options" was ranked as the top priority. This was also the top priority for the inner jurisdictions, but those in

the outer jurisdiction identified “reduce traffic congestion” as their top priority.

- Overall, rail projects received the most suggestions for resource allocation. This was also the top priority for the inner jurisdictions. Fairfax County and Fairfax City respondents allocated resources evenly between roadway and rail, and respondents from outer jurisdictions allocated the most resources to roadway construction and improvement.

## **V. TransAction: Preliminary Discussion on Weightings for Performance Measures**

- Mr. Jasper explained the process of deciding weighting for the performance measures. The recommended weights from each of the three committees (PPC, TAC, PCAC) will be averaged and rounded to the nearest 5% for simplicity. The individual Committee recommendations and the averages will be presented to the Authority at their December meeting. The Authority may accept or modify these recommendations.
- Mr. Jasper provided a comparison of the weights from the online survey respondents for the recommended objectives and corresponding priority in the survey. He added that this can be considered as a starting point by the members. He added a few caveats that some of the priorities in the survey mapped to the same recommended objective and people may have had different perceptions of the issues as they apply to their personal circumstances, and short-term vs long-term needs and impacts.

## **VI. NVT A Update**

- Ms. Backmon noted that the next Authority meeting is scheduled for November 18<sup>th</sup>, which is a week after the regular schedule due to the Veterans’ Day holiday. The Authority will take action on goals, objectives, and performance measures for TransAction. The Authority will receive a presentation on FY2021 audit, which is a clean, unmodified audit.

## **Adjournment**

## **VII. Adjourn**

- The next meeting will be on November 29<sup>th</sup>, 2021. The meeting adjourned at 6:25 p.m.

# TransAction Update

*Weights for Performance Measures; Scenario Analysis*

November 29, 2021

*presented to*

*Planning and Programming Committee*



NVTA's  
**TransAction**  
*Transportation Action Plan  
for Northern Virginia*



# Agenda

1. Weighting of Performance Measures
2. Scenario Analysis
3. Next Steps/Future Meetings



# Weighting of Performance Measures







# Development & Approval Process

- » November: NVTA approves TransAction goals, objectives, and performance measures
- » December: NVTA approves weights for performance measures
- » Winter/Spring 2022: Analysis
- » Summer/Fall 2022: Public Comment/Hearing
- » November 2022: NVTA adopts TransAction

# Goals and Core Values




## Goals:

What we want to achieve

- Enhance Mobility
- Increase Accessibility
- Improve Resiliency



**Core Values:**  
How we achieve the goals

-  Equitably
-  Sustainably
-  Safely

*Core Values are associated with multiple goals, objectives, and performance measures.*

# Recommended Goals, Objectives & Performance Measures



Goal	Objective	Performance Measure	Alignment with Core Values
<b>Mobility:</b> Enhance quality of life of Northern Virginians by improving performance of the multimodal transportation system	A. Reduce congestion and delay*	A1. Total Person-Hours of Delay in autos	
		A2. Total Person-Hours of Delay on Transit	
	B. Improve travel time reliability*	B1. Duration of Severe Congestion	
		B2. Transit person-miles in dedicated/priority ROW	
<b>Accessibility:</b> Strengthen the region's economy by increasing access to jobs, employees, markets, and destinations for all communities	C. Improve access to jobs*	C1. Access to jobs by car, transit, and bike	
		C2. Access to jobs by car, transit, and bike for EEA populations	
	D. Reduce dependence on driving alone by improving conditions for people accessing transit and using other modes	D1. Quality of access to transit and the walk/bike network	
<b>Resiliency:</b> Improve the transportation system's ability to anticipate, prepare for, and adapt to changing conditions and withstand, respond to, and recover rapidly from disruptions.	E. Improve safety and security of the multimodal transportation system	E1. Potential for safety and security improvements	
	F. Reduce transportation related emissions	F1. Vehicle Emissions	
	G. Maintain operations of the regional transportation system during extreme conditions*	G1. Transportation System Redundancy	

# Process for Weighting Performance Measures



- » TAC/PCAC/PPC will each be asked to recommend weights for each approved measure, these will be averaged, and then rounded to the nearest 5%
- » Weights for individual measures will effectively be summed for each core value, additionally reflecting the priority associated with each
- » Measure weights to be recommended to NVTA during November committee meeting cycle
- » NVTA may accept or modify these recommendations prior to approval in December

# Comparison of Recommended Objectives and Survey Responses



Recommended Objective	Corresponding Priority in Online Survey	% of Weighted Score – Region	% of Weighted Score – Core jurisdictions	% of Weighted Score – Inner jurisdictions	% of Weighted Score – Outer jurisdictions
A. Reduce congestion and delay	Reduce traffic congestion	17%	14%	18%	22%
B. Improve travel time reliability	Improve travel time predictability	14%	14%	13%	14%
C. Improve access to jobs	Improve access to jobs	7%	6%	7%	10%
D. Reduce dependence on driving alone by improving conditions for people accessing transit and using other modes	Improve multimodal connectivity	11%	11%	11%	10%
	More transit, walking, biking options	20%	23%	20%	17%
E. Improve safety and security of the multimodal transportation system	Improve safety	12%	12%	11%	10%
F. Reduce transportation related emissions	Reduce greenhouse gas emissions	14%	15%	15%	11%
G. Maintain operations of the regional transportation system during extreme conditions	Prepare for travel disruptions	5%	5%	5%	6%

# Scenario Analysis





# Dealing with Uncertainty

- » The TransAction process will include analysis to better understand uncertainty:
  - Plausible futures, but not necessarily preferred or predicted
  - Assumptions-based using proxy metrics than can be modeled
  - May identify potential investment obsolescence
- » Four specific alternative futures (scenarios):
  - Pandemic-created 'New Normal'
  - Transportation Technology
  - Transportation Policy/Mechanisms
  - Climate Change



# Post-Pandemic New Normal Scenario

» What if trends observed during the pandemic continue into the long-term future?

» Assumptions Needed:

- Percent of telework, by job type and employer
- Percent of tele-school
- Change to frequency of shopping trips
- Change to frequency of at-home deliveries
- Change in willingness to use public transit/shared-ride options
- Changes to land use: office market, housing market
- Changes to vehicle ownership levels
- Increases in non-motorized travel



Should we assume long-term aversion to shared rides/transit?

Are we willing to consider major changes to land use as part of this scenario?

## 2 Technology Scenario

» Focus on implementation of Connected/ Automated/ Shared/ Electric vehicles (CASEs)

» Assumptions needed:

- Market penetration of CASEs by 2045 – personal vehicles and commercial vehicles
- Costs of using CASEs (per mile)
- Limits to CASE service area?
- Capacity increases/speed changes by roadway type due to Connectivity/Automation
- Reductions in crashes due to

Connectivity/Automation

- Parking/Vehicle Storage
- Changes to land use patterns
- Changes to trip generation:
  - Zero Occupancy Vehicle (ZOV) trips (passenger vehicles)
  - Increased trip-making (induced demand)
- Decreased transit operating costs



Are we willing to consider major changes to land use as part of this scenario?

Should dramatic increases in transit service be included?

## Incentives/Pricing Scenario

- » Implementing transportation pricing and incentive mechanisms to manage travel demand
- » Options to include:
  - Free transit
  - Shared-ride incentives
  - Incentives to shift travel time
  - Roadway pricing structure: e.g. VMT pricing vs. Congestion pricing
  - Changes to parking/curbside pricing regionally



Are we more  
interested in VMT  
pricing?  
Congestion pricing?  
Something else?

# Climate Change Scenario

## » Options:

- How will the transportation system work if infrastructure is lost to climate change?
- Do combining technology, pricing incentives, and telework acting together achieve Northern Virginia's climate goals?
  - What level of electrification would be necessary?

Considering work already done by MWCOG, what is going to be the most interesting? The most useful?



# Next Steps



NVTA's  
**TransAction**  
*Transportation Action Plan  
for Northern Virginia*



# Development & Approval Process

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# Reference Slides







# Current TransAction (October 2017)

## » Vision Statement:

“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.”

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%

\* Measure included in HB 599 rating process.