TECHNICAL ADVISORY COMMITTEE
Monday, November 22, 2021, 7:00pm
3040 Williams Drive, Suite 200
Fairfax, Virginia 22031
(In-person meeting and livestreamed via YouTube)

AGENDA

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

Action

II.	**Summary Notes of October 20th, 2021 Meeting** *Recommended action: Approve meeting notes*	Chair Boice
III.	**Approval of Performance Measure Weightings for the TransAction update** *Recommended action: Recommend NVTA approval of the Performance Measure Weightings*	Dr. Nampoothiri, Senior Transportation Planner

Discussion/Information

VI.	**TransAction: Updates on Modeling and Scenario Definitions**	Cambridge Systematics, Inc.
VII.	**NVTA Updates**	Ms. Monica Backmon, CEO
VIII.	**Member Updates**	

Adjournment

IX.	**Adjourn**

Next Meeting
TBD

Northern Virginia Transportation Authority
The Authority for Transportation in Northern Virginia

TECHNICAL ADVISORY COMMITTEE
Wednesday, October 20, 2021, 7:00 pm
Live-streamed on YouTube

MEETING SUMMARY

I. Call to Order/Welcome

- Chairman Boice called the meeting to order at 7:01 pm at the NVTA Office.
- Attendees:
  - **Members:** Randy Boice, Karen Campblin, Armand Ciccarelli. Amy Morris, Frank Spielberg, Pat Turner, Dr. Shanjiang Zhu.
  - **NVTA Staff:** Monica Backmon, CEO; Dr. Sree Nampoothiri, Senior Transportation Planner; Mackenzie Love, Regional Transportation Planner
  - **Consultants:** Tom Harrington & Dalia Leven (Cambridge Systematics)
  - **Others:** On YouTube live stream.

II. Summary of September 29, 2021, Meeting

- The motion to accept the meeting summary was approved unanimously.

III. TransAction: Goals, Objectives and Performance Measures

- Dr. Nampoothiri opened this discussion with an overview of work the Committee and NVTA have undertaken on TransAction thus far. He noted that the content presented in this meeting represents a combination of all of these efforts, but that Committee members are welcome to continue to make suggestions or recommendations for changes.
- Ms. Leven presented the suggested goals, objectives and performance measures, highlighting any changes made per feedback from NVTA committees:
  i. Goals
    1. She highlighted a need to more clearly distinguish between goals and core values. For this reason, she explained goals as "what we want to achieve" and core values as "how we want to achieve them".
  ii. Objectives and Performance Measures
    1. 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:

a. Relocating the emissions reduction objective from the Mobility goal, to the Resiliency goal.

b. Slight changes to the language used to describe measures, to make the content more understandable.

c. Adding bicycle accessibility to objective C, Improve Access to Jobs.

d. Adding a method of analyzing non-motorized projects, or aspects of projects, to the Mobility goal.

- Ms. Leven also reported on how the goals, objectives and performance measures, as suggested, align with NVTA's core values of equity, sustainability and safety. She noted that each core value is represented in each of the goals.

- After the conclusion of the presentation, Ms. Turner made a motion to recommend the Authority adopt the goals, objectives and performance measures. Ms. Morris seconded the motion, and it was then passed unanimously by the Committee.

IV. **TransAction: Interim Findings from the Online Survey**

- Mr. Harrington provided a summary of the 2021 TransAction Survey. He highlighted that there were 2,318 participants and that the survey was available and completed in English, Korean and Spanish. (He did note that the survey did not apply a random sample recruitment method, and thus the sample is not statistically representative of the NVTA region.)

    i. Survey participation was encouraged through the NVTA website and social media outlets, pop-up events, geofenced ads and stakeholder outreach.

    ii. Mr. Harrington indicated that the core of the NVTA region (Arlington County and the Cities of Alexandria and Falls Church) was overly represented in the survey sample, while the outer areas (Counties of Loudoun and Prince William; Cities of Manassas and Manassas Park) were undersampled and noted that some responses were also received from outside the region. Low-income individuals and minorities were also underrepresented, but the elderly were overrepresented.

        1. Ms. Turner asked how responses from outside the region differed from those inside the region, noting that many people commute to this area from Fredericksburg and West Virginia.

        2. Mr. Harrington said it may be possible to compare survey responses to understand this topic.

    iii. Mr. Harrington then briefly explained each of the following results of the survey:

1. Approximately one third of respondents anticipate changing their travel behavior after the pandemic. This was least likely among persons who bike or walk to commute.

2. Trip distance (76%), travel time reliability (60%), traffic congestion (51%), and access to frequent transit (49%) were the factors most likely to influence mode choice. Additionally, only 12% of respondents reported that they were not interested in trying transit.

3. Respondents were more likely to consider using an Electric Vehicle (EV) once there is more readily available infrastructure (64%) and once the price is similar or lower than the price of a gasoline-powered car (58%). Separately, they were more likely to use an Automated Vehicle (AV) once they had confidence that AVs were safe (61%).

4. Respondents were asked about their transportation priorities and how they would recommend allocating resources. Both of these sets of responses were influenced by where the individual lived.

   a. 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.

   b. 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

- Dr. Nampoothiri described the process that will be undertaken to establish weightings for performance measures:

  i. The weights suggested by each committee in November will be averaged and rounded to the nearest 5%. The averaged weights, along with sums of these for each core value, will be presented to the NVTA Authority in December. The Authority may accept or modify these recommendations prior to approval.

- Dr. Nampoothiri then shared a chart that illustrated how results from the TransAction survey could inform considerations of performance measure weightings.

    i. Dr. Zhu asked how these would be applied to the Committee's decision process?

        1. Dr. Nampoothiri said that this information was provided as a point of reference, to consider alignment with public sentiment, but that this committee's recommendations should be primarily based on their technical expertise.

    ii. Mr. Frank Spielberg asked if it would be possible to use different weights for different areas of the region, given the discrepancies in their indicated priorities?

        1. Ms. Leven indicated that these were system-wide metrics.

        2. Ms. Backmon added that NVTA's charge is to go beyond boundaries and pursue a regionally consistent approach, a sentiment that Chair Boice agreed.

    iii. Mr. Spielberg requested that the Committee members be provided with weights from the preceding TransAction, to inform their considerations, and Dr. Nampoothiri committed to share that information.

    iv. Chair Boice reminded the Committee that NVTA's enabling legislation places great emphasis on congestion reduction and suggested that priority be reflected in weighting.

VI. NVTA Update

- Ms. Backmon announced that Chairman Boice would be presenting a Committee update to the Authority during their November meeting, and that the Chair of the Planning Coordination Advisory Committee would do the same in December.

- She also informed the Committee that a call for projects for the last Six Year Program to be conducted before the adoption of TransAction update, closed on October 1st. NVTA Staff are currently reviewing the submissions, which totaled $1.3 billion in requests.

- Mr. Backmon indicated that NVTA's Legislative Program for the coming year is under development. Restoration of $38.5 million dollars of funding will be the top priority.

VII. Adjournment

- The meeting adjourned at 8:10 pm. The next meeting date is November 22, 2021.

TransAction Update

Weights for Performance Measures; Scenario Analysis

November 22, 2021

presented to

Technical Advisory Committee

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**
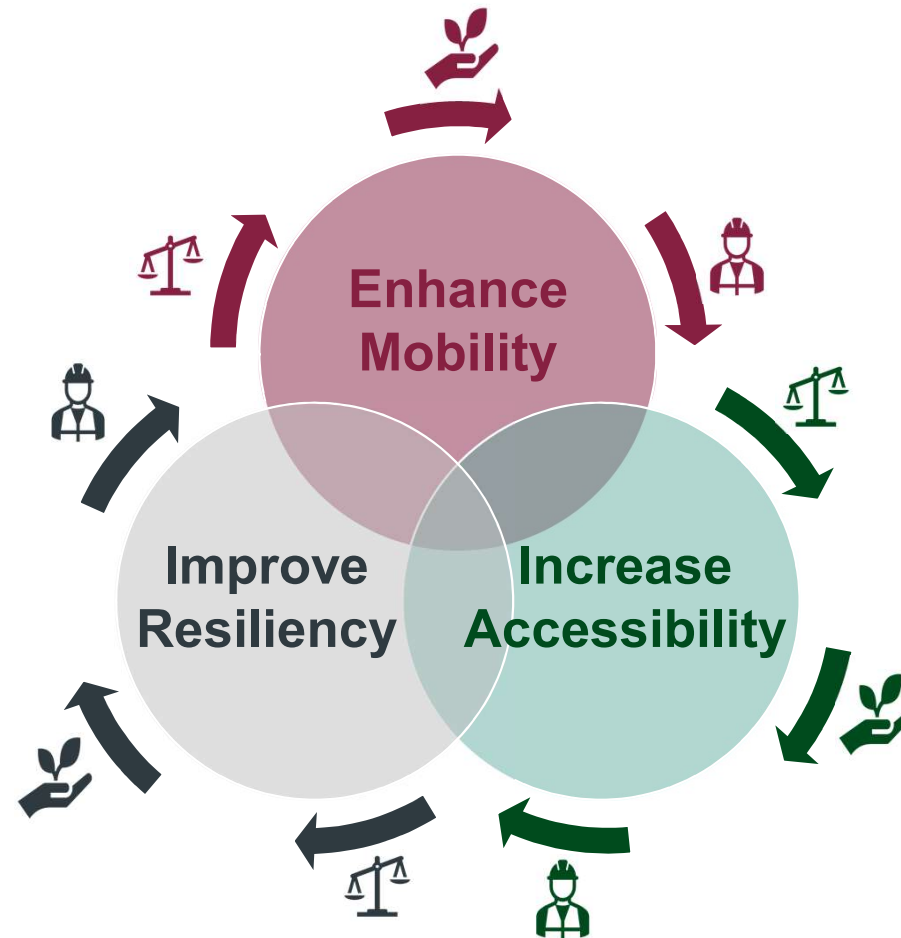
Core Values:
How we achieve the goals

- 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
Mobility: 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	⚖️ 🤲
Accessibility: 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	⚖️ 🤲 👷
Resiliency: 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	⚖️ 👷

* Measure included in HB 599 rating process.

NVTA's TransAction

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%

NVTA's TransAction

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?

NVTA's TransAction

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?

NVTA's TransAction

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?

NVTA's TransAction

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

Development & Approval Process

» November: NVTA approves TransAction goals, objectives, and performance measures

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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.

NVTA's TransAction