Northern Virginia Transportation Authority
The Authority for Transportation in Northern Virginia

TECHNICAL ADVISORY COMMITTEE
Wednesday, November 16, 2016, 7:00pm
NVTA Office
3040 Williams Drive, Suite 200
Fairfax, Virginia 22031

AGENDA

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

Action

II. **Approve Meeting Summary of October 12, 2016**
Recommended Action: Approval [with abstentions from those who were not present]

III. **TransAction: Performance Measures** Mr. Jasper

Discussion/Information

IV. **NVTA Update** Mr. Jasper

Adjournment

V. **Adjourn**

Next Meeting: December 21, 2016
7:00pm
NVTA Office

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3040 Williams Drive, Suite 200
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SUMMARY NOTES

I. Call to Order/Welcome — Chairman Boice

- Chairman Boice called the meeting to order at 7:10pm.
- Attendees:
  - Members: Randy Boice; Armand Ciccarelli; Bob Dunphy; Doug Fahl; Pat Turner.
  - NVTA Staff: Monica Backmon (Executive Director); Keith Jasper (Principal, Transportation Planning and Programming); Sree Nampoothiri (Transportation Planner); Harun Rashid (Transportation Planner).
  - Other: Noelle Dominguez (Fairfax County); Jason Mumford (AECOM); Douglas Stewart (Virginia Sierra Club); Stu Whitaker (Transiters).

II. Meeting Summary of August 17, 2016 Meeting and September 21, 2016 — Chairman Boice

- Ms. Turner moved approval of the August 17, 2016 meeting summary; seconded by Mr. Dunphy. Mr. Boice moved approval of the September 21, 2016 meeting summary; seconded by Ms. Turner. Both motions carried unanimously with abstention from those who were not present at the respective meetings.

Discussion/Information

III. NVTA Update — Ms. Backmon

- Ms. Backmon informed the Technical Advisory Committee (TAC) members that the next Authority meeting is scheduled for October 13, 2016. She added that the agenda items include adoption of the Transportation Projects Reserve Policy, elimination of Contingency Reserve, a resolution supporting Smart Scale applications from jurisdictions, and appointment of a new Vice Chairman of the Authority.

IV. TransAction Update Mr. Jasper

- Mr. Jasper introduced Mr. Mumford, the consultant project manager for the TransAction update. Mr. Jasper requested the committee deliberate on developing a recommended list of performance measures for plan evaluation.
- Mr. Mumford presented a summary of discussions from the August and September TAC meetings which included a desire to reduce the number of measures, revise/remove some measures and the difficulty in measuring the Goal 3 measures.
- In response to Mr. Dunphy's request to clarify the difference between Goal 1 and Goal 2, Mr. Mumford noted Goal 1 is more focused on capacity expansion, while Goal 2 is more focusd on efficiency of existing facilities.
- In general, the members agreed that the congestion reduction and reliability measures were good.
- There was general agreement that the connectivity and access measures need to be revised. Mr. Dunphy pointed to the State of the Commute Survey results from the Transportation Planning Board (TPB) and suggested that the average distance/time/speed of trips from point A to point B would be easily understandable for the public. He added that the Baltimore metropolitan planning organization (MPO) looked at time taken to reach a certain percentage of jobs as a measure of access/connectivity. Mr. Boice noted that the percent of jobs/population within ½ mile of transit could be very low in the outer suburbs, while high in the core areas, due to the inherent development pattern. He suggested this can cause difficulty in comparisons.
- Mr. Fahl suggested looking at TPB's regional activity centers (RAC) to explore connectivity measures. He added that both inter- and intra-activity center connectivity are important. Mr. Dunphy noted that the measure of 45 minutes travel by auto/60 minutes travel by transit would be different for a trip from an outer jurisdiction to the core versus a trip within the core, since the number of jobs accessible could be vastly different for each case. He suggested looking at different time limits for inter- and intra-activity center connectivity measures.
- Mr. Fahl mentioned that the NVTA should rise above the parochialistic mentality jurisdictions may fall into and address regional transportation solutions that can support land use planning in general. He suggested consistency with local comprehensive plans may not be an appropriate measure. Mr. Mumford noted that the projects considered in TransAction are already coming from comprehensive plans and other local plans, thus are consistent with local planning efforts. In general, the committee agreed to remove this measure. The members wanted to let other NVTA committees know that while the objective of supporting and strengthening local land use objectives is important, consistency with the plans may not be the best way to measure it.
- In response to Mr. Dunphy's question regarding the difficulty of measuring household transportation cost, Mr. Fahl noted that people consider decisions on housing based on large periodic costs such as mortgage and taxes, while

transportation costs are metered out over time and therefore complicated to measure. In general, the members supported removal of this measure.

- Mr. Mumford noted that some TAC members and TransAction Subcommittee members considered safety a tricky measure, but it has direct impact on reliability. Mr. Jasper added that the NVTA staff will explore the possibility of discussing the safety data availability and analysis practices with the Virginia Department of Transportation (VDOT) staff. Mr. Fahl opined that all projects are expected to improve safety and therefore the measure may be unnecessary. Mr. Dunphy added that the impacts of safety might already be measured indirectly under other measures, such as reliability.
- The members opined that the objectives of integrating modes and giving travel options (2.2 and 2.3) are similar and could be measured with share of non-SOV travel.
- The members agreed to keep the measures for travel demand management and improving operations. Ms. Turner and Mr. Fahl noted that the travel time measure during a 10% increase in peak demand is important to understanding system reliability during an emergency.
- The members opined that the cost benefit analysis is important and staff should explore the best way to do this with the congestion reduction relative to cost (CRRC) ratio as the basis. Mr. Fahl added that the cost benefit score is important, but did not necessarily demand the highest weighting.
- On the notion of including operational cost for both roads and transit in the analysis, Ms. Turner asked if the two are considered different. Ms. Backmon noted that VDOT has certain responsibilities and plans for road maintenance, but transit operations are left to the transit agencies and jurisdictions.
- Mr. Fahl noted that some proposed measures, such as the amount of impervious area and right of way (ROW) impacts, are usually addressed at the project level and may not be appropriate at the planning level. Ms. Turner added that new technologies are expected to improve emissions and reduce the need for measuring the same at plan level. In general, the members felt that reduction of VMT could be a good proxy for all these measures.
- In general, the members agreed that the measures related to Goal 1 should get the highest weighting followed by Goal 2 and Goal 3, respectively.
- The members requested NVTA staff revise the list of measures based on the discussion and present the revision to the entire committee.

Adjournment

V. Adjourn Chairman Boice

- Meeting adjourned at 9:30pm.

Summary of Candidate TransAction (TA) Measures: TAC Comments (in red)

TA Goals	Proposed TA Objectives		Candidate TA Measures/Weightings[1]			TransAction 2040 Measures/Weightings			FY2017 Program Measures/Weightings	
Goal 1: Enhance quality of life and economic strength of NoVA through transportation HIGHEST WEIGHTAGE	1.1	Reduce congestion and crowding experienced by travelers in the region	1.1.1	Total Person Hours of Delay **(HB599)**		2.8	Reduces roadway congestion	6.67	Project reduces roadway congestion (HB599 overall rating)	45
			1.1.2	Transit Crowding **(HB599)**						
			1.1.3	Person Hours of Congested Travel in Automobiles **(HB599)**		2.1	Addresses existing significant level of service (LOS) deficiencies for all modes of transportation	3.33		
			1.1.4	Person Hours of Congested Travel in Transit Vehicles **(HB599)**						
	1.2	Improve Travel Time Reliability	1.2.1	Congestion Severity: Maximum Travel Time Ratio		2.2	Addresses existing structural and maintenance deficiencies for all modes of transportation	3.33		
			1.2.2	Congestion Duration **(HB599)**		1.1	Improves capacity and reliability of freight	6.67		
	1.3	Improve connections among and within population and employment centers	1.3.1	Percent of jobs/population within 1/2 mile of transit						
			1.3.2	Access to Jobs within 45 mins by auto and 60 mins by transit **(HB599)**						
			1.3.3	Aggregate travel time between MWCOG-defined Regional Activity Centers		4.1	Improves connections between multiple Activity Centers	6.67	Project improves connections between multiple Activity Centers	5
			1.3.4	Lane miles and sidewalk miles within ½ mile radius RAC					Project connects jurisdictions and modes	5
	~~1.5~~	~~Support and strengthen local land use objectives~~	~~1.5.1~~	~~Consistency with local planning efforts (qualitative assessment)~~		4.2	Supported by a Comprehensive Plan	6.67		
	~~1.6~~	~~Reduce household transportation costs~~	~~1.6.1~~	~~Average cost per commute trip~~						
						2.3	Able to be readily implemented	6.67	Project will be advanced as a result of FY2017 Program funding;	15
Goal 2: Enable optimal use of the transportation network and leverage the existing network LESS WEIGHTAGE	2.1	Improve the safety of transportation network	2.1.1	Serious injuries and fatalities by mode EXPLORE FURTHER		2.5	Improves the safety of the transportation system	6.67	Project improves the safety of the transportation system	5
	2.2	Provide more route and mode options, and increase integration between modes and systems ~~Provide more route and mode options to expand travel choices and improve resiliency of the system~~	2.2.1	Share of travel by non-SOV modes ~~Last mile connections (qualitative assessment)~~		1.2	Supports multiple use development patterns in a walkable environment	6.67	Supports multiple use development patterns in a walkable environment	10
						1.4	Creates multimodal choices for travelers as indicated by increases in transit capacity	3.33		
						1.3	Creates multimodal choices for travelers as indicated by increases in non-SOV mode share	3.33		
	2.4	Manage travel demand during peak periods	2.4.1	Number of SOV trips during peak periods		2.6	Increases person-miles traveled by non-SOV modes.	3.33		
	2.5	Sustain and improve operation of the regional system				2.7	Increases person-miles traveled by SOV mode	3.33		
			2.5.1	Person hours of travel in congested/crowded conditions		2.9	Reduces person-hours traveled	6.67		
			2.5.2	Person hours of travel caused by 10% increase in PM peak hour demand **(HB599)**						
						5.1	Improves the management and operation of existing facilities through technology applications	6.67	Project improves the management and operation of existing facilities through technology applications	5
	2.6	Optimize investments by increasing benefits relative to costs for short-, medium-, and long-term timeframes	2.6.1	Cost Benefit Analysis: Congestion Reduction Relative to Cost (CRRC) ratio EXPLORE ADDING OTHER BENEFITS		N/A	Benefit/Cost Rating		Congestion Reduction Relative to Cost (CRRC) ratio	N/A
						6.1	Leverages private or other outside funding	6.67	Project leverages private or other outside funding	5
Goal 3: Reduce negative impacts of transportation on communities and the environment LOW WEIGHTAGE	~~3.1~~	~~Reduce greenhouse gas emissions~~	~~3.1.1~~	~~GHG emissions based on VMT by speed~~		2.4	Reduces vehicle-miles traveled (VMT)	6.67	Project reduces vehicle-miles (VMT)	5
	~~3.2~~	~~caused by transportation~~	~~3.2.1~~	~~Amount of impervious area~~						
	~~3.3~~	~~Reduce stormwater runoff~~	~~3.3.1~~	~~Number of ROW expansions that impact resources~~		3.1	Right-of-way minimizes impacts on sensitive areas	6.67		
		~~Protect environmental and cultural assets and resources~~					See TransAction 2040 measure 2.4		See TransAction 2040 measure 2.4	
	3.1	Reduce transportation-related air pollution	3.1.1	Criteria pollutant emissions based on VMT by speed						

[1] Note: **'HB599'** indicates measure used by VDOT during the HB599 Evaluation and Rating process for the FY2015-16 and FY2017 Programs.

Candidate TA Measures/Weightings[1]		Measure Definitions 11/16/16
1.1.1	Total Person Hours of Delay **(HB599)**	Daily number of person-hours of travel above free-flow travel time for motorized trips (automobile and transit) with extra weight given to auto and transit trips experiencing congested conditions (congested vs. free-flow travel time ratio greater than 2.0).
1.1.2	Transit Crowding **(HB599)**	Daily number of transit route-miles experiencing crowded conditions (local bus > 1.0 seating capacity; express bus and commuter rail > 0.9 seating capacity; Metrorail > 100 passengers/car).
1.1.3	Person Hours of Congested Travel in Automobiles **(HB599)**	Daily number of person-hours of travel in congested conditions, where "congested" is travel time in excess of 2.0 times the free-flow travel time.
1.1.4	Person Hours of Congested Travel in Transit Vehicles **(HB599)**	Daily number of person-hours of travel in congested conditions (buses on roadways), where "congested" is travel time in excess of 2.0 times the free-flow travel time.
1.2.1	Congestion Severity: Maximum Travel Time Ratio	Maximum ratio of congested travel time to free-flow travel time during the AM and PM peak period.
1.2.2	Congestion Duration **(HB599)**	Number of hours of the day auto and transit passengers experience heavily congested travel conditions (travel time ratio greater than 2.0) times the number of facility miles.
1.3.1	Percent of jobs/population within 1/2 mile of transit	Percent of activity within 1/2 mile of Metrorail, commuter rail, or high capacity bus service [Subcommittee clarified as "high capacity transit", to be defined]
1.3.2	Access to Jobs within 45 mins by auto and 60 mins by transit **(HB599)**	Number of jobs that can be reached from each household based on a 45 minute travel time by automobile or a 60 minute travel time by transit
1.3.3	Aggregate travel time between MWCOG-defined Regional Activity Centers	Average travel time per trip for motorized trips between and among zones within one mile of Regional Activity Center centroids.
1.3.4	Lane miles and sidewalk miles within ½ mile radius RAC	Total lane miles and sidewalk miles within ½ mile of RAC centroids. [Subcommittee discussed using Pedestrian Environment Factor, or PEF: the number of street blocks, pedestrian and bike facilities, and transit stops times the population and employment density divided by the total developable zone area, and averaged with the zone PEFs within one half mile.]
2.1.1	Serious injuries and fatalities by mode EXPLORE FURTHER	[Subcommittee discussed using crash rate per VMT by speed class – TBD]
2.2.1	Share of travel by non-SOV modes	Number of non-SOV trips.
2.4.1	Number of SOV trips during peak periods	Number of non-SOV trips during peak periods. [Subcommittee combined this measure with 2.2.1 and presenting a weighted average for peak vs. off-peak]
2.5.1	Person hours of travel in congested/crowded conditions	Daily number of person-hours of travel in congested conditions (auto and bus on roadways) where "congested" is travel time in excess of 2.0 times the free-flow travel time. [See Measures 1.1.3 and 1.1.4]
2.5.2	Person hours of travel caused by 10% increase in PM peak hour demand **(HB599)**	Change in PM peak period person-hours of travel resulting from a 10 percent increase in PM peak hour (5-6pm) trip-making.
2.6.1	Cost Benefit Analysis: Congestion Reduction Relative to Cost (CRRC) ratio EXPLORE ADDING OTHER BENEFITS	Reduction in annual person hours of delay per capital dollar.
3.1.1	Criteria pollutant emissions based on VMT by speed	VMT by speed class in AM and PM peak and off-peak periods. [Speed classes and weights to be defined]

[1] Note: **'HB599'** indicates measure used by VDOT during the HB599 Evaluation and Rating process for the FY2015-16 and FY2017 Programs.