

## NORTHERN VIRGINIA TRANSPORTATION AUTHORITY

MEMORANDUM

**FOR:** Members, Northern Virginia Transportation Authority

**FROM:** Chairman Martin E. Nohe, Planning and Programming Committee

**DATE:** December 5, 2016

**SUBJECT:** Approval of Performance Measures for TransAction Update

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- 1. Purpose.** To seek Northern Virginia Transportation Authority approval of the performance measures to be used in the analysis for the TransAction Update. These performance measures will be used in the evaluation of projects/packages of projects in TransAction.
- 2. Suggested Motion:** *I move Authority approval of the performance measures for the TransAction Update.*
- 3. Background.** The Planning and Programming Committee (PPC) met on Monday, December 5, 2016, to review the NVTA staff recommendations for the candidate performance measures to be used in the evaluation of projects/packages of projects in TransAction. In developing these recommendations, NVTA staff took into account the interim findings of the TransAction-related public engagement activities that were conducted during the fall, and recommendations made in November by the Planning Coordination Advisory Committee (PCAC), the Technical Advisory Committee (TAC), and the TransAction Subcommittee comprising jurisdiction and agency staff.
- 4. Discussion.** For most measures, all three committees were agreement and the NVTA staff recommendation is to support their recommendations. In these cases, the PPC agreed with the NVTA staff recommendations.

For those measures where the committees were not fully in agreement, NVTA staff again provided their recommendation and an associated justification. With minor rewording for one measure, the Committee discussed and agreed with the NVTA staff recommendations.

Subject to the one minor rewording, the PPC unanimously agreed to recommend the Authority approve the fifteen TransAction performance measures recommended by NVTA staff. These are included as Attachment A to this memorandum. This attachment also includes the previously adopted (in December 2015) TransAction Vision and Goals, and the Objectives that support the Goals. The Objectives have been finalized in the attachment on the assumption that the Authority approves the TransAction Performance Measures.

The presentation made by NVTA staff to the PPC on December 5<sup>th</sup> is also included as Attachment B. The first part of this presentation includes a summary of current public engagement findings. The second part provides more detail on the process for developing the NVTA staff recommendations.

5. **TransAction Goals.** During the PPC discussion on performance measures, it was suggested that consideration be given to rewording of Goal 3. While no action is requested at this time, Authority members may wish to provide guidance on the following options:

Goal 3 (adopted wording): Reduce negative impacts of transportation on communities and the environment

Goal 3 (revised wording – option 1): Increase positive impacts of transportation on communities and the environment

Goal 3 (revised wording – option 2): Address potential impacts of transportation on the environment

6. **Next steps.** The TransAction Update is on schedule to be adopted in October 2017. Recommendations for the weightings associated with the TransAction performance measures will be developed during January 2017, with Authority action planned for February 2017.

**Attachments:**

- A. PPC recommendation for TransAction measures
- B. PPC presentation, including interim findings from fall public engagement activities

# VIII, A

## TransAction Measures: PPC Recommendations (12/5/2016)

### Vision<sup>1</sup>

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	Objectives	Recommended Measures <sup>2</sup> / Weightings <sup>3</sup>		
<b>Goal 1:</b> Enhance quality of life and economic strength of Northern Virginia through transportation	1.1 Reduce congestion and crowding experienced by travelers in the region	1.1.1	Total Person Hours of Delay <b>(HB599)</b>	
		1.1.2	Transit Crowding <b>(HB599)</b>	
		1.1.3	Person Hours of Congested Travel in Automobiles <b>(HB599)</b>	
		1.1.4	Person Hours of Congested Travel in Transit Vehicles <b>(HB599)</b>	
	1.2 Improve Travel Time Reliability	1.2.1	Congestion Severity: Maximum Travel Time Ratio	
		1.2.2	Congestion Duration <b>(HB599)</b>	
	1.3 Increase access to jobs, employees, markets, and destinations	1.3.1	Percent of jobs/population within 1/2 mile of high frequency and/or high performance transit	
		1.3.2	Access to Jobs within 45 mins by auto, and within 60 mins by transit <b>(HB599)</b>	
	1.4 Improve connections among and within areas of concentrated growth	1.4.1	Average travel time per motorized trip between Regional Activity Centers	
		1.4.2	Walkable/bikeable environment within a Regional Activity Center	
<b>Goal 2:</b> Enable optimal use of the transportation network and leverage the existing network	2.1 Improve the safety of transportation network	2.1.1	Safety of the transportation system	
	2.2 Increase integration between modes and systems	2.2.1	First and last mile connections	
	2.3 Provide more route and mode options to expand travel choices and improve resiliency of the system	2.3.1	Share of travel by non-SOV modes	
	2.4 Sustain and improve operation of the regional system	2.4.1	Person hours of travel caused by 10% increase in PM peak hour demand <b>(HB599)</b>	
<b>Goal 3:</b> Reduce negative impacts of transportation on communities and the environment	3.1 Reduce transportation-related emissions	3.1.1	Vehicle miles traveled (VMT) by speed	

<sup>1</sup> Vision and Goals were adopted in December 2015

<sup>2</sup> **'HB599'** indicates measure used by VDOT during the HB599 Evaluation and Rating process for the FY2015-16 and FY2017 Programs.

<sup>3</sup> Recommendations for weightings of individual measures will be considered in January 2017



## **TransAction Draft Performance Measures**

**Planning and Programming Committee**  
**December 5, 2016**

# Overview

1. Introduction
2. Online Survey (Interim Summary)
3. Focus Groups (Interim Summary)
4. Stakeholder Workshop
5. Public Engagement Interim Summary
6. Committee Recommendations
7. NVRTA Staff Recommendations
8. Next Steps



# 1. Introduction

- Why are TransAction measures needed/how will they be used?
  - The measures support the Vision, Goals, and Objectives of TransAction, and will be used to evaluate the impact of each iteration of the plan.
- How/when will TransAction measures be weighted?
  - As with TransAction 2040 and the Authority's funding programs, each measure will be weighted to reflect the Authority's priorities.
  - Weightings of adopted measures will be considered in early 2017.
- Integration of HB599 process into TransAction
  - Enhances regional transportation planning, streamlines the planning process, and achieves significant efficiency and effectiveness gains.
  - All 'bottom up' projects (submitted by jurisdictions and agencies) and 'top down' projects (addressing unmet travel needs) will be evaluated as part of one or more project packages.

# 1. Overall Approach

- TransAction Vision and Goals adopted in Dec. 2015
- Objectives and supporting measures developed by the TransAction Subcommittee
- Public Engagement (Fall 2016)
  - More focused on objectives than measures
  - Online survey, focus groups, stakeholder workshop, GMU workshops
- Committees (Fall 2016)
  - More focused on measures than objectives
  - Discussed at multiple PCAC and TAC meetings; recommendations during November meeting cycle (including TA Subcommittee)
  - PPC considers all inputs; makes recommendation on measures Dec. 5
- Authority action planned on Dec. 8

## 2. Online Survey

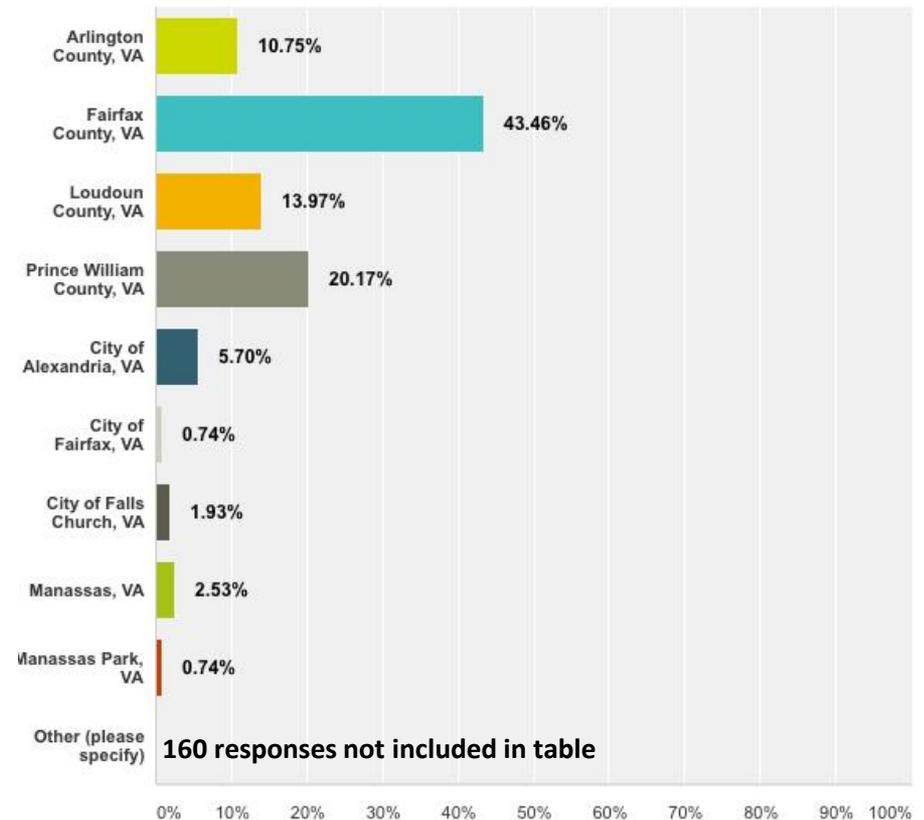
- 6 weeks October 18 – November 28
- Accessed by online SurveyMonkey link and promoted:
  - NVTA TransAction website
  - Pop-in events with paper and online surveys: City of Fairfax Library, Herndon Senior Center, the Eden Center, and Loudoun Senior Center to reach underrepresented groups
  - Eblasts to TransAction distribution list
  - Facebook and Twitter managed campaign
  - Chairman Nohe via Dr. Gridlock
  - Press release



# 2. Online Survey

- 2,771 respondents representing all areas of Northern Virginia as well as other parts of Virginia, Maryland, DC and West Virginia

In which county or city do you currently live?  
*Summary of NoVa residents only*



# 2. Feedback on Priority Objectives

- Asked participants to rate objectives

33. As we look to make transportation improvements in Northern Virginia, it's important for us to understand what is important and meaningful to you. Please rate the importance of the following actions that improve NoVa's transportation network and quality of life.

	Not at all important	Not very important	Somewhat important	Very important	No Opinion
Reduce delays during commute hours	<input type="radio"/>				
Increase travel time reliability throughout the day	<input type="radio"/>				
Reduce crowding on bus and rail	<input type="radio"/>				
Increase connections between business / residential centers	<input type="radio"/>				
Reduce transportation costs	<input type="radio"/>				
Improve roadway safety to reduce vehicle crashes	<input type="radio"/>				
Increase access to rail stations for pedestrians, bikes and buses	<input type="radio"/>				
Increase the number of travel options (e.g. bus, rail, rideshare)	<input type="radio"/>				
Reduce the number of single-occupancy vehicles during commute hours	<input type="radio"/>				
Reduce impacts of transportation on the environment	<input type="radio"/>				

# 2. Feedback on Priority Objectives

- Ranking of priorities across NoVa, and a comparison between inside the Beltway and outside the Beltway

**\*Inside the Beltway:**  
Alexandria, Arlington, Falls Church

**\*\*Outside the Beltway:**  
Fairfax County, Fairfax City, Loudoun County,  
Manassas, Manassas Park, Prince William County

Priority Objective	All (2771)	Inside the Beltway* (370)	Outside the Beltway** (1639)
Reduce delays during commute hours	1	4	1
Increase travel time reliability throughout the day	2	2	2
Increase the number of travel options	3	1	4
Improve roadway safety to reduce vehicle crashes	4	7	3
Increase connections between business/residential centers	5	6	5
Increase access to rail for pedestrians, bikes and buses	6	3	6
Reduce impacts of transportation on the environment	7	8	7
Reduce crowding on bus and rail	8	5	9
Reduce transportation costs	9	10	8
Reduce number of SOVs during commute hours	10	9	10

## 2. What Else Did We Learn?

- Respondents think regionally because they move throughout NoVa to live, work, shop, go to appointments and seek entertainment
- Respondents very much appreciated an opportunity to provide their input
  - “Thanks for gathering this important information. Best of luck on future improvements!”
  - “Thanks for considering public input.”
  - “I appreciate being asked about local transportation needs; I've lived here for 47 years.”
  - “Thank you for the opportunity for letting me voice my opinions.”
- Additional analysis will be provided in January 2017

# 3. Focus Groups

- Conducted four, 2-hour focus groups Nov 9 & 10
  - 2 each for residents inside and outside the Beltway
  - 40 participants total, representative of residents of all member jurisdictions, demographic segments and commuting preferences



# 3. Feedback on Priority Objectives

- Number of focus group participants who identified each objective as a “high priority”

Priority Objective	Total	Inside the Beltway	Outside the Beltway
Reduce delays during commute hours	33	17	16
Increase travel time reliability throughout the day	22	13	9
Improve roadway safety to reduce vehicle crashes	19	8	11
Increase the number of travel options	13	7	6
Reduce transportation costs	12	6	6
Increase access to rail for pedestrians, bikes and buses	11	4	7
Reduce number of SOVs during commute hours	10	4	6
Increase connections between business/residential centers	8	4	4
Reduce crowding on bus and rail	8	7	1
Reduce impacts of transportation on the environment	7	3	4

Inside the Beltway and Outside the Beltway participants were recruited by zip code

# 3. What Else Did We Learn?

- Residents strongly value reliability (and feel like it is lacking)
- While a certain level of congestion can be tolerated, congestion is affecting people's lives – when they commute and where they work (and to a lesser degree where they live)
- Congestion limits how often residents travel for non-work trips
- There is support for public transportation to reduce congestion, however there is hesitation to give up personal SOV travel
- Public transit use and support is strongest for those who commute into DC
- Policy suggestions include financial incentives for transit usage and flexible work hours
- A regional transportation implementation tracking website was suggested
- Additional analysis will be provided in January 2017

# 4. Stakeholder Workshop

- 13 participants divided into four geographies on October 25
- Objectives were viewed as interrelated, varied by geography
- 3 priorities were important across all geographies:
  - increase travel options
  - increase connections between business/residential centers
  - Increase access to rail

Participating Organizations: AARP, Bike Loudoun, City of Fairfax Economic Development Office, Committee for Dulles, Crystal City BID, Fairfax Alliance for Better Biking, NOVA Chamber, Northern Virginia Regional Commission, Northern Virginia Transportation Alliance, Prince William County Department of Economic Development, Southeast Fairfax Development Corporation, Springfield Chamber, Virginia Sierra Club





**NVTA TransAction Workshop**  
 Tuesday, October 25, 8am-10am  
 Northern Virginia Transportation Authority  
 3040 Williams Drive, Suite #200, Fairfax, VA 22031

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You have been divided into groups representing geographic areas in Northern Virginia to discuss transportation-related characteristics and concerns, and help NVTA select appropriate multimodal objectives (i.e. measures) for the TransAction Plan. These objectives will be used to evaluate the effectiveness of a range of possible multimodal regional transportation improvements throughout Northern Virginia.

**First** review the multimodal objectives and identify those that your group considers are relevant to your sub-area.

**Next** allocate a percentage amount out of 100% for each selected objective:  
 Higher % = MORE IMPORTANT    Lower % = LESS IMPORTANT  
*Note that you may allocate 0% if the objective is not relevant. You may also add new objectives.*

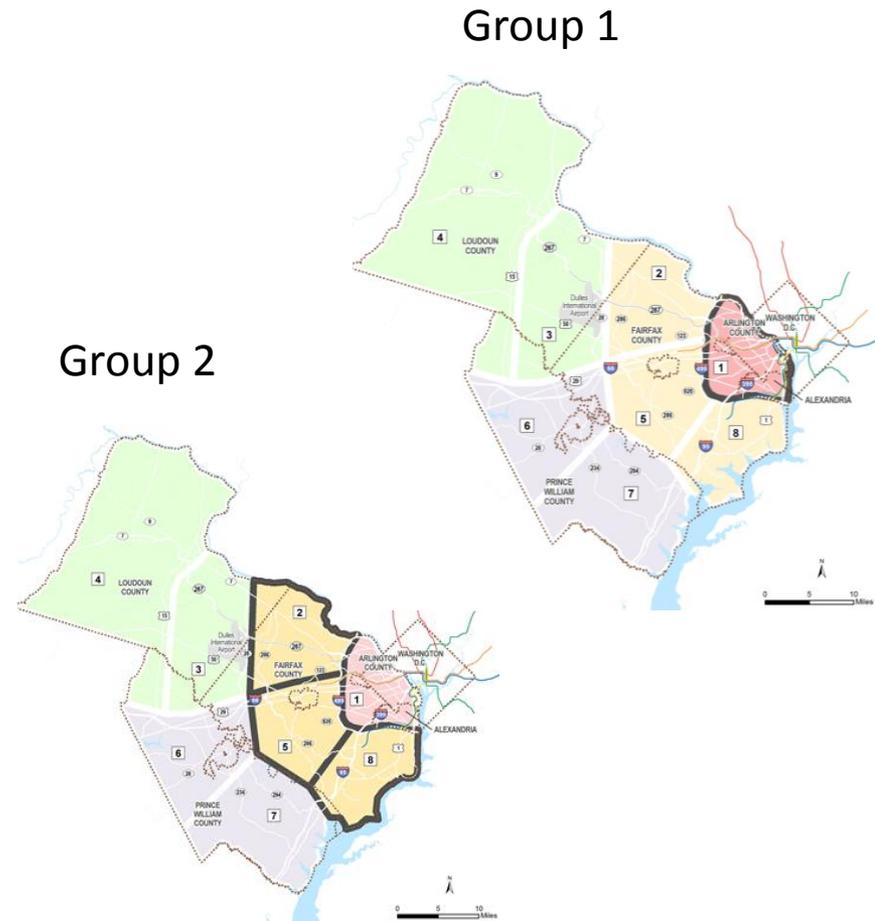
**Last** prepare for your group's "report back" explaining why you selected certain objectives, and not others, and what the percent breakdown is.

Multimodal Objectives	% (out of 100%)
A. Reduce delays during commute hours	_____
B. Increase travel time reliability throughout the day	_____
C. Reduce crowding on bus and rail	_____
D. Increase connections between business/ residential centers	_____
E. Reduce transportation costs	_____
F. Improve roadway safety to reduce vehicle crashes	_____
G. Increase access to rail stations for pedestrians, bikes and buses	_____
H. Increase the number of travel options (e.g. bus, rail, rideshare)	_____
I. Reduce the number of single-occupancy vehicles during commute hours	_____
J. Reduce impacts of transportation on the environment	_____
_____	_____
_____	_____
_____	_____

Workshop Instructions

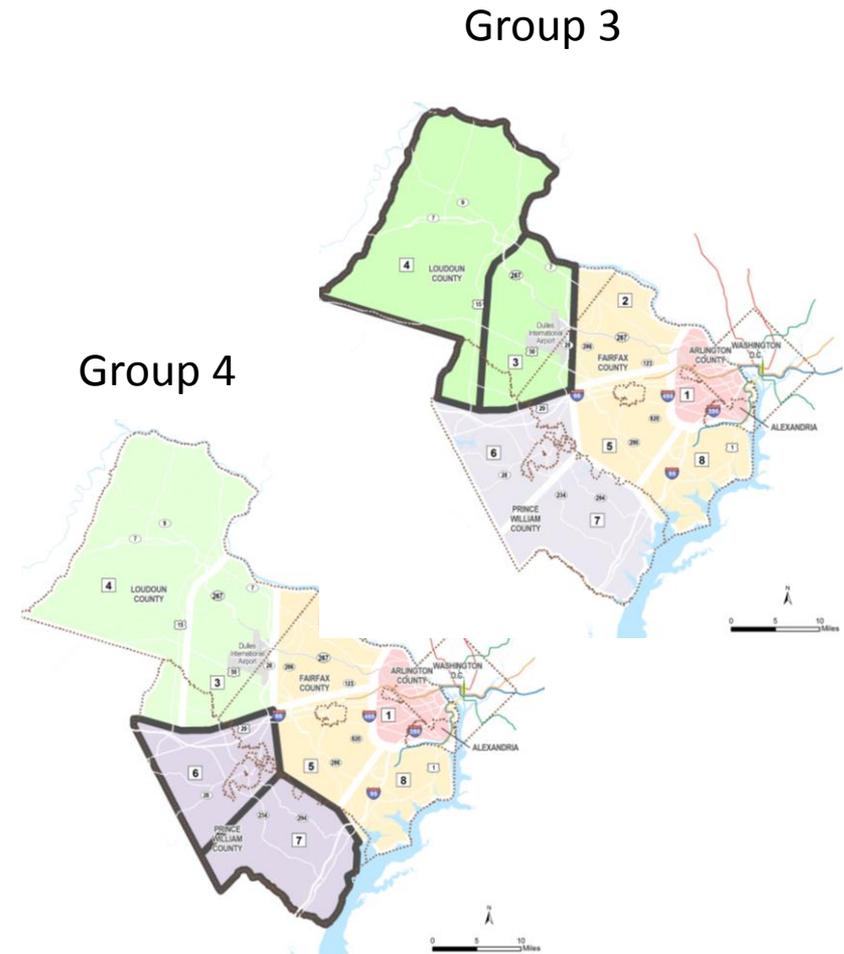
# 4. Feedback on Priority Objectives

- Groups 1 and 2 prioritized measures that correspond with urbanized areas (e.g. Arlington, Alexandria, Tysons, Reston, Merrifield, etc.):
  - increase travel options
  - increase connections between business/residential centers



# 4. Feedback on Priority Objectives

- Groups 3 and 4 prioritized measures that correspond with growing communities/ employment centers requiring longer trips (e.g. Chantilly, Sterling, Gainesville, PWC Innovation):
  - increase travel time reliability
  - reduce delays during commute hours



# 4. What Else Did We Learn?

- Participants suggested that addressing higher priority objectives will also help to address lower priority objectives
- Participants considered that the public has a higher tolerance for transit crowding and a lower tolerance for vehicular delays
- Transportation pricing can serve as a policy tool to facilitate desired outcomes (e.g. congestion pricing, transit discounts, parking subsidies)
- Suggested NEW objectives:
  - Implementation of new technologies across the region
  - Improved marketing of transportation options

# 4. GMU Workshops

- Conducted two workshops on November 17 & 28
  - Fairfax Campus (Engineering, Major)
  - Arlington Campus (Transportation Systems, Masters)
  - 37 students participated in total, mostly millennials
- Young transportation professionals
  - Many of the Masters students were part time, with full time jobs
- Workshop on Prince William campus planned in January 2017



# 4. Feedback on Priority Objectives

- Number of GMU students who identified each objective as a “high priority”

Priority Objective	Total	Arlington Campus	Fairfax Campus
Reduce delays during commute hours	27	11	16
Increase travel time reliability throughout the day	17	9	8
Reduce impacts of transportation on the environment	14	6	8
Reduce number of SOVs during commute hours	12	6	6
Increase the number of travel options	10	3	7
Increase access to rail for pedestrians, bikes and buses	7	1	6
Improve roadway safety to reduce vehicle crashes	6	2	4
Reduce crowding on bus and rail	5	3	2
Increase connections between business/residential centers	3	1	2
Reduce transportation costs	2	1	1

# 4. What Else Did We Learn?

- Most students (both campuses) drove to school
- Highest priorities are so high; but lower priority does not equate to unimportant
- Preference to not drive, but transit alternatives where they exist are too slow, infrequent, or unreliable
- Uber/Lyft are the new taxis
- Reluctance to ride in self-driving vehicles, at least in the near future
- Suggested NEW objective:
  - Enhanced driver education, 'etiquette' training, enforcement, re-testing
- Additional analysis will be provided in January 2017

# 5. Public Engagement Interim Summary

- Priority objectives that were generally viewed as important:
  - Reduce delays during commute hours
  - Increase travel time reliability throughout the day
  - Increase the number of travel options
  - Increase access to rail
  - Increase connections between business/residential centers
- More important inside the Beltway:
  - Reduce crowding on bus and rail
- More important outside the Beltway:
  - Improve roadway safety to reduce vehicular crashes
- Lower priority objectives:
  - Reduce impacts of transportation on environment
  - Reduce transportation costs
  - Reduce SOVs during peak hours

# 6. Committee Recommendations

- More focused on measures than objectives
- Considered previously used measures and criteria
- What did we learn about TransAction measures?
  - Broad agreement on the majority of measures; retain most, but combine/delete some
  - Retain all seven HB599 measures
  - Several measures could be applied later in the TransAction development process, or during the development of the FY2018-23 Six Year Program
- Minimize the number of measures where possible

# 6. What Else Did We Learn?

- What did we learn about priorities?
  - Focus on measures that are consistent with VA Code and the Authority's priorities
  - Ensure measures are modally balanced
- Allow for flexibility in defining and addressing regional significance across different jurisdictions
- Facilitate trade-offs among projects that perform well against different measures

# 7. NVTA Staff Recommendations

- Identified areas of agreement and disagreement in the PCAC, TAC, and TransAction Subcommittee recommendations:
  - NVTA staff supports recommendations where all three committees are in agreement (14 measures)
  - NVTA staff provides recommendations/justifications (in green) where the committees are not in agreement (8 measures/2 new measures)
- Additional considerations for PPC members:
  - Preference to minimize total number of measures (TransAction 2040 included 18 measures; FY2017 Program included 9 measures; benefit/cost analysis conducted separately for both)
  - Measures with duplicative impact may be somewhat redundant, e.g. reducing congestion and reducing emissions
  - Defer some measures until later in the TransAction process, especially measures requiring a more qualitative approach, e.g. consistency with Comprehensive Plans, leveraging non-NVTA regional revenues

# 7. NVTA Staff Recommendations

- Areas of agreement – Goal #1 (Enhance quality of life and economic strength of NoVA through transportation)
  - Retain 1.1.1 thru 1.1.4 (four HB599 measures)
  - Retain 1.2.1 thru 1.2.2 (includes one HB599 measure)
  - Retain 1.3.2 (one HB599 measure)

# 7. NVTA Staff Recommendations

- Areas of agreement – Goal #2 (Enable optimal use of the transportation network and leverage the existing network)
  - 2.1.1; updates previous approach; uses VDOT crash data based on Equivalent Property Damage Only (EPDO) values
  - Retain 2.3.1
  - Delete 2.5.1; Retain 2.5.2 (one HB599 measure)
  - Delete 2.6.1; apply at a later stage, using a modified version of the CRRC approach used for the FY2017 Program
- Areas of agreement – Goal #3 (Reduce negative impacts of transportation on communities and the environment)
  - Combine 3.1.1 and 3.4.1 and rename ‘**Vehicle miles traveled (VMT) by speed**’

# 7. NVTA Staff Recommendations

- Areas of disagreement – Goal #1 (Enhance quality of life and economic strength of NoVA through transportation)
  - 1.3.1: PCAC recommended to delete; TAC recommended to retain; Subcommittee revised wording as ‘...**high frequency or high performance** transit’

Retain with revised wording as indicated above: supportive of increased transit accessibility in areas of higher travel demand; public engagement findings support retention

# 7. NVTA Staff Recommendations

- Areas of disagreement – Goal #1 (continued)
  - 1.4.1: TAC and Subcommittee recommended retaining similar versions of this measure for travel among/between regional activity centers

Retain with modified wording ‘Average travel time per (motorized) trip between Regional Activity Centers’: supportive of improved regional mobility; public engagement findings support retention

- NEW: TAC and Subcommittee recommended adding a new measure related to Objective 1.4 for travel within a regional activity center:
  - ‘Lane miles and sidewalk miles within ½ mile radius of a RAC’ (TAC)
  - ‘Pedestrian Environment Factor’ (TA Subcommittee)

Such a measure is supportive of improved regional mobility and broadly consistent with public engagement findings. However, the NVTA staff recommendation is for a qualitative approach using the measure:

- ‘Walkable/bikeable environment within a Regional Activity Center’

# 7. NVTA Staff Recommendations

- Areas of disagreement – Goal #1 (continued)
  - 1.5.1: PCAC revised wording ‘~~Consistency~~ Aligned with...’; TAC and Subcommittee recommended to delete  

Delete: general expectation but no requirement to be consistent with local planning efforts; address later in the process, e.g. during development of Six Year Program
  - 1.6.1: PCAC recommended to retain; TAC and Subcommittee recommended to delete  

Delete: without including housing costs, cost per commute trip alone may be misleading; public engagement findings do not support retention

# 7. NVTA Staff Recommendations

- Areas of disagreement – Goal #2 (Enable optimal use of the transportation network and leverage the existing network)
  - 2.2.1: TAC recommended to delete; PCAC and Subcommittee revised wording as ‘**First and** last mile...’

Retain: represent a potentially important component of regional solutions; public engagement findings support retention

- 2.4.1: PCAC and Subcommittee recommended to delete; TAC recommended to retain

Delete: Retained measure 2.3.1 addresses share of travel by non-single occupant vehicles; public engagement findings do not support retention

- NEW: PCAC recommended adding a new measure related to Objective 2.6 ‘**Leverages non-NVTA regional revenues**’

Delete: address later in the process when more robust data likely available

# 7. NVTA Staff Recommendations

- Areas of disagreement – Goal #3 (Reduce negative impacts of transportation on communities and the environment)
  - 3.2.1 and 3.3.1: PCAC and Subcommittee recommended to combine, and rename ‘**impacts on sensitive areas**’; TAC recommended to delete

Delete: availability of sufficient and consistent data will undermine robust analysis; public engagement findings do not support retention

# 7. NVTA Staff Recommendations

- If the PPC accepts the NVTA staff recommendations:
  - 15 measures will be retained (including all seven HB 599 measures)
  - 9 measures will be deleted (of which two will be addressed later in the process)

# 8. Next Steps

- Authority action on TransAction performance measures at December 8<sup>th</sup> meeting
- Committees will revisit weights on adopted performance measures during January 2017 meeting cycle
- PPC will consider weights late January 2017, and develop recommendation
- Authority action on weighting of adopted TransAction performance measures at February 9<sup>th</sup>, 2017 meeting