

**NORTHERN VIRGINIA TRANSPORTATION AUTHORITY****MEMORANDUM**

**TO:** Chair Phyllis J. Randall and Members  
Northern Virginia Transportation Authority

**FROM:** Michael Longhi, Chief Financial Officer  
Keith Jasper, Principal, Transportation Planning and Programming

**DATE:** May 8, 2020

**SUBJECT:** TransAction Contract Amendment 6: COVID-19 2020 Travel Behavior

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1. **Purpose:** To seek Northern Virginia Transportation Authority (NVTA) approval of Amendment 6 to the 2015 TransAction Update contract as unanimously recommended by the Finance Committee.
2. **Suggested Motion:** *I move Northern Virginia Transportation Authority approval of the attached TransAction Contract Amendment 6: COVID-19 2020 Travel Behavior in an amount not to exceed \$50,000.*
3. **Background/Discussion:**
  - a. After a competitive procurement process, the Authority approved a contract for the update to the Northern Virginia regional transportation plan (TransAction) on July 23, 2015.
  - b. Ongoing technical support was envisioned in the original TransAction Update contract with AECOM Technical Services Inc., with the understanding such support services would be managed through amendments to the original contract.
  - c. This amendment will allow NVTA and the region to better understand the staged recovery impact from COVID-19 on the region's multimodal transportation network, testing the effects of revised 'work from home' assumptions on transportation operating conditions and capital investment decisions.
  - d. The Authority's Executive Director is currently in discussion with the regional business community on current and post COVID-19 impacts affecting transportation.
  - e. The results of this analysis will provide data that could benefit NVTA's jurisdictional members, transit agencies and the business community.
  - f. The attached proposed amendment document references the technical specifications (scope), schedule and costs outlined in AECOM's attached proposal dated April 24, 2020.
  - g. Funds for these technical services are within the original contract budget adopted in 2015.

- h. The current TransAction contract term ends in July 2020. The proposed amendment includes an extension to August 30, 2020, in case a formal presentation to the Authority is requested.

**Attachments:** TransAction Update Contract Amendment 6.  
AECOM Proposal dated April 24, 2019



# Northern Virginia Transportation Authority

The Authority for Transportation in Northern Virginia

## NVTA TransAction 2040 Update (RFP #2015-01)

### Contract Amendment #6 – COVID-19 2020 Travel Behavior

May 14, 2020

This document defines additional tasks and deliverables related to ongoing analysis supporting TransAction. The additional work relates to updating Task 12: Interim Updates during Plan Lifecycle:

#### **Task 12: *Interim Updates during Plan Lifecycle***

*Objective: to enable interim updates (as needed) of the TransAction long range transportation plan following adoption and prior to the next full update.*

#### **Background:**

The Northern Virginia region is seeing a dramatic reduction in travel in response to the COVID-19 Pandemic. In anticipation of a staged recovery from the Pandemic, NVTA has an opportunity to better understand how the multi-modal transportation network would perform under different demand scenarios. Specifically, as business leaders and government officials set policy for returning to work, the Authority wishes to test the effects on transportation operating conditions and capital investment decisions.

This effort supports the Authority's role as the region's multi-modal transportation planning and funding organization.

#### **Schedule:**

- May 15: Anticipated NTP
- June 1: Input scenarios defined
- June 15: Outputs and draft technical memorandum
- June 30: Final technical memorandum

**Contract Term:** The contract term is amended from an end date of July 23, 2020 to August 30, 2020 in case a presentation of result to the Authority is requested.

Specific Amendment 6 deliverables and pricing is detailed on the attached proposal from AECOM Technical Services Inc. dated April 24, 2020.

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Monica Backmon  
NVTA Executive Director

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AECOM (Signature)

\_\_\_\_\_  
Date

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Date

DRAFT

April 24, 2020

Mr. Keith Jasper  
Northern Virginia Transportation Authority  
3040 Williams Drive, Suite 200  
Fairfax, VA 22031

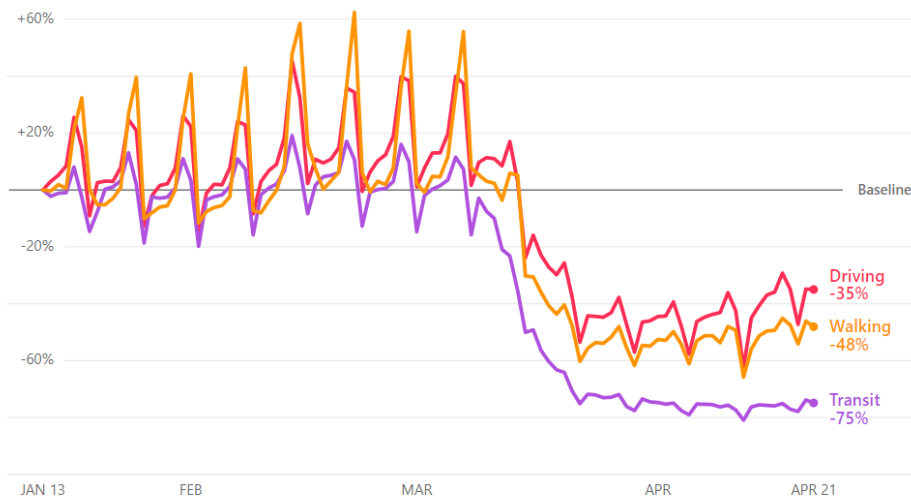
Dear Mr. Jasper:

**Re: 2020 Travel Behavior – NVTA Network Scenario Tool**

The Northern Virginia region, like most metropolitan regions around the world, is seeing a dramatic reduction in travel in response to the COVID-19 Pandemic. In anticipation of a staged recovery from the Pandemic, NVTA is working with its member jurisdictions and public stakeholders to better understand how the multi-modal transportation network would perform under different demand scenarios. In other words, as business leaders and government officials set policy for returning to work, the Authority wishes to test the effects on transportation operating conditions and capital investment decisions.

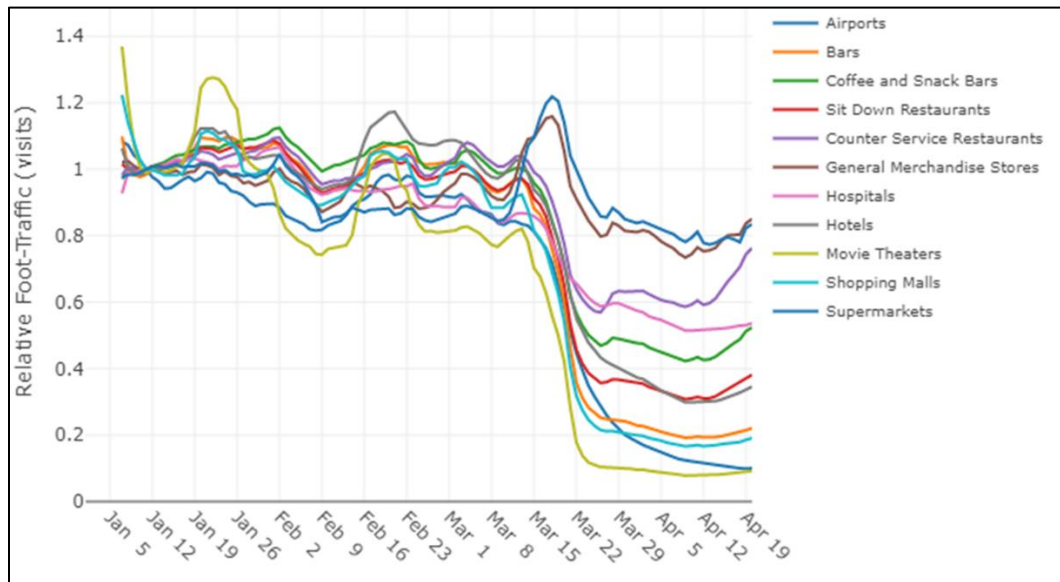
This letter outlines a **draft scope of services** to prepare forecasts and demonstrate transportation network performance under different region-wide scenarios. AECOM proposes to perform this work under the current TransAction contract, which has a period of performance through July 2020.

***Change in Routing Requests for the U.S. as Reported by Apple***



Source: <https://www.apple.com/covid19/mobility>

**U.S. Consumer Activity During COVID-19 Pandemic**



Source: <https://www.safegraph.com/dashboard/>

**Background**

The regional transportation analysis conducted as part of TransAction 2040 Update (work completed 2015-2019) included a detailed TRANSIMS model that replicates fine-grained origins/destinations and relies upon dynamic assignment to simulate peak period traffic conditions across the regional study area.

*Goals, Objectives, and Performance Measures*

The TransAction plan centers on a set of goals, objectives, and performance measures which were the subject of extensive stakeholder input and thorough technical vetting. The set of measures and weights establishes continuity between TransAction and the NVTA’s subsequent funding programs. The current scenario testing will refer to the same measures for ease of comparison and implicit concurrence on the baseline condition.

*TransAction 2040 Update: Goals, Objectives, Performance Measures, and Weights*

Goals	Objectives	Performance Measures <sup>1</sup>	Goals Supported <sup>2</sup>	NVTA Adopted Weights	
Goal 1: 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 (HB599)	① ③	10%	
		1.1.2 Transit Crowding (HB599)	① ②	5%	
		1.1.3 Person Hours of Congested Travel in Automobiles (HB599)	① ③	5%	
		1.1.4 Person Hours of Congested Travel in Transit Vehicles (HB599)	① ③	5%	
	1.2 Improve Travel Time Reliability	1.2.1 Congestion Severity: Maximum Travel Time Ratio	① ②	5%	
		1.2.2 Congestion Duration (HB599)	① ② ③	10%	
	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	5%	
		1.3.2 Access to Jobs within 45 mins by auto or within 60 mins by transit (HB599)	①	5%	
	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	5%	
		1.4.2 Walkable/bikeable environment within a Regional Activity Center	① ③	5%	
	Goal 2: 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	① ②	5%
		2.2 Increase integration between modes and systems	2.2.1 First and last mile connections	① ②	10%
			2.2.2 Provide more route and mode options to expand travel choices and improve resiliency of the system	① ② ③	10%
		2.3	2.3.1 Travel by non-SOV modes	① ② ③	10%
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 (HB599)	②	5%		
Goal 3: 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	③	10%	

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

[2] TransAction performance measures are designed to support multiple goals. See below for distinction between primary and secondary goals, as supported by each measure.

① ② ③ indicate primary goal supported by each measure.

① ② ③ indicate other goals supported by each measure.

**Technical Assumptions**

This work will focus on the model-based performance measures, and exclude the qualitative and “off-model” measures. The primary model-based measures include:

- Total Person Hours of Delay
- Transit Crowding
- Person Hours of Congested Travel in Automobiles
- Person Hours of Congested Travel in Transit Vehicles
- Congestion Severity: Maximum Travel Time Ratio
- Congestion Duration [hours\*lane-miles]
- Number of jobs within 45 minutes by auto or within 60 mins by transit
- Vehicle miles traveled (VMT) at speeds with high emission rates

The 2025 model run will be the focus of this task, recognizing that the TransAction network focused on predicting 2040 conditions. The 2025 evaluation was then scaled down according to land use differences

between the two model years. In other words, the 2040 baseline transportation network will be used for the 2025 model runs.

The key input variables will relate to the numbers and types of trips generated for the new 2025 scenarios.

The grid-based performance measures will be aggregated region-wide for the scenario-specific model runs and compared to the 2025 baseline performance measures.

Transit ridership and service levels have been drastically impacted by the pandemic. Making significant changes to the transit routes and service levels coded in the model is beyond the scope of this effort, but the scenario assumptions could include changes to the transit mode share to account for social distancing guidance for transit vehicles and stations. These assumptions may have noticeable impacts to both highway and transit related performance measures.

### **Scenario Testing and Reporting**

The intent is to provide some degree of flexibility to NVTA in defining the input conditions (numbers and types of trips) to better understand the range of near-term impacts to the transportation network.

To scope this effort, we have assumed up to four input scenarios. Development of these scenarios will involve interactive, iterative work between AECOM and NVTA staff. The scenarios may be structured, for example, to represent different phases of COVID-19 Pandemic recovery, or different telework policies by government and businesses.

As input to the scenario development, we are including in the cost estimate a virtual meeting with national AECOM and Heart & Mind staff representatives who have been tracking response planning across different business sectors.

Outputs will include grid maps to illustrate select performance measures, and tables to summarize quantitative results.

The set of input scenarios and outputs will be documented in a brief technical memorandum, to be presented to NVTA in draft form, then updated based on NVTA comments.

### **Schedule**

The work assumes the following completion milestones:

- May 15: Anticipated NTP
- June 1: Input scenarios defined
- June 15: Outputs and draft technical memorandum
- June 30: Final technical memorandum



**Cost Estimate**

Staffing and Hours by Task	P.M. (Roden)	Modeler	Senior Planner (Mumford)	Planner (Volz)	Heart & Mind	Totals
1) Model preparation	12	24				
2) Input scenarios	8	24	8	8	8	
3) Model runs	12	48				
4) Output reporting	8	24	8	24	8	
Totals:	40	120	16	32	16	
Cost:	\$13,000	\$19,250	\$3,680	\$4,640	\$4,000	\$44,570

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Monica Backmon  
NVTA Executive Director

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Jason Mumford  
Vice President  
AECOM Technical Services, Inc.

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Date

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Date