Evaluation of Significant Transportation Projects in Northern Virginia Transportation District

Fact Sheet

Spring 2014

Study Update April 2014

Since the fall 2013 update, the Virginia Department of Transportation (VDOT) and the Department of Rail and Public Transportation (DRPT) (the "study team") have worked closely with the Commonwealth Transportation Board (CTB), the Northern Virginia Transportation Authority (NVTA), and local/regional transportation and transit representatives, to develop the methodology to select, evaluate and rate significant transportation projects in Northern Virginia.

This effort (referred to below as the "Rating Study" or "study") was mandated by legislation passed by the Virginia General Assembly in July 2012. The enacting legislation *(Code of VA, §33.1-13.03:1)* requires that the study evaluate significant highway, transit and technology projects and rate them in terms of their ability to reduce congestion and improve mobility during a homeland security emergency.

Although the legislative requirement is for the Rating Study to evaluate at least 25 projects, NVTA and CTB have together nominated 37 projects for evaluation and rating. VDOT has sufficient resources to evaluate and rate 40 projects as part of this effort.

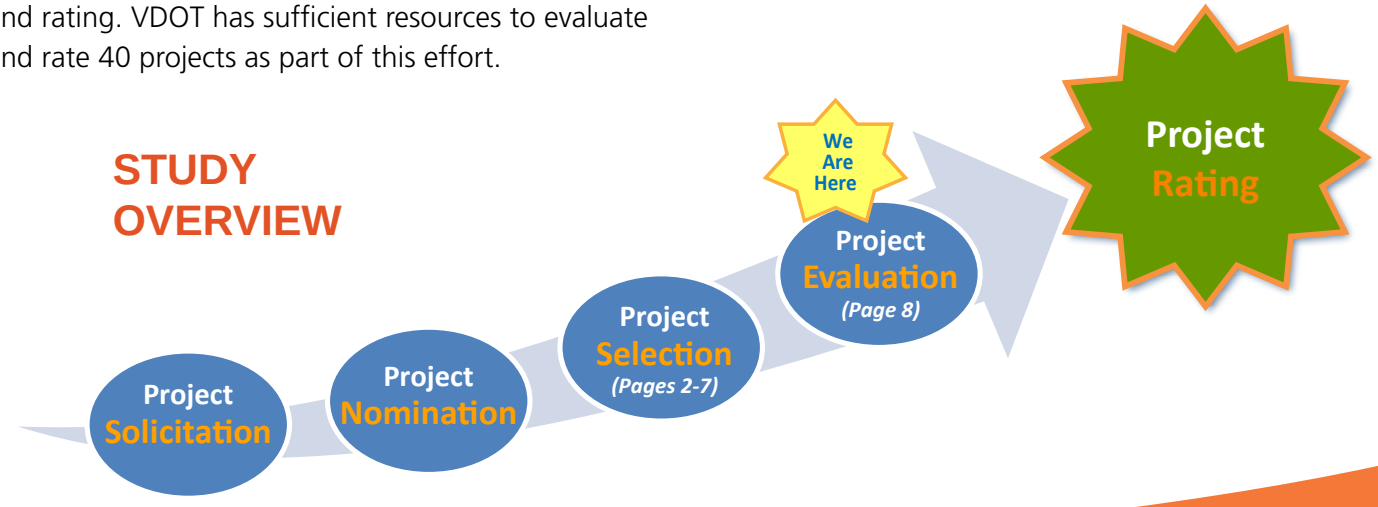
This spring update focuses on the Project Selection analytical framework that was established to examine each candidate project to determine its significance from a regional perspective and its potential to reduce congestion and improve mobility during a homeland security emergency. This framework can also be used as a screening tool in the event that many more projects are nominated than there are resources to evaluate.

Read our Fall 2013 Fact Sheet to learn about:

- The Study and Its Framework
- Legislative Requirements
- Study Team, Tasks & Process
- Schedule Highlights

Available online at:

www.virginiadot.org/projects/resources/NorthernVirginia/Significant_Projects_-_Fact_Sheet.pdf



PROJECT SELECTION FRAMEWORK ESTABLISHED

The Project Selection framework adopted for the study provides guidelines for the NVTA and the CTB to nominate transportation projects for evaluation and rating.

October - December 2013

CTB Sets Overarching Principles to Guide Rating Study

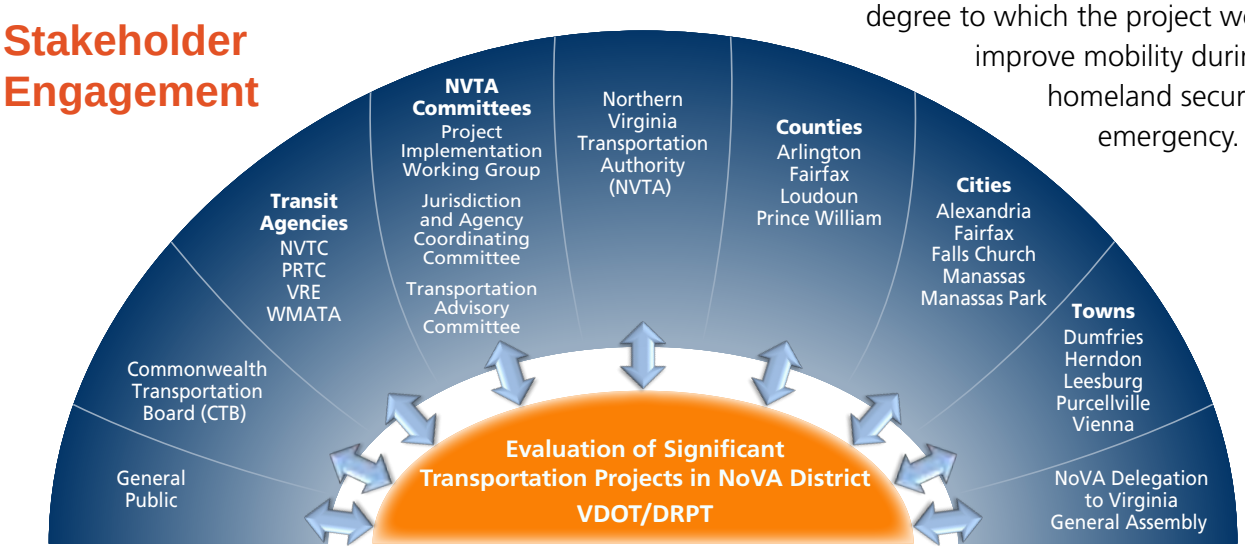
In October 2013, the CTB endorsed six guiding principles that establish priorities for the Rating Study. These priorities were derived from the Virginia Statewide Transportation Plan (VTrans 2035 Update). Prior to a project being selected for evaluation and rating, the project must pass a first step: it must be consistent with at least one of six CTB Study Priorities.

- Preserve and Enhance Statewide Mobility Through the Region
- Increase Coordinated Safety and Security Planning
- Improve the Interconnectivity of Regions and Activity Centers
- Reduce the Cost of Congestion to Virginia's Residents and Businesses
- Increase System Performance by Making Operational Improvements
- Increase Travel Choices to Improve Quality of Life for Virginians

Project Selection Helps Identify and Select Significant Projects that Reduce Congestion

The second step in the screening process was to develop the approach to select projects that would move to the detailed evaluation and rating phase of the study. In partnership with the NVTA, its member jurisdictions and transit agencies, and the Peer Review Group (independent subject matter experts from outside of Virginia), the study team developed an objective and quantitative process known as the "Project Selection" model. Working collaboratively with stakeholders, the study team finalized eleven criteria and their corresponding weights to help identify and select significant transportation improvements that have the potential to reduce congestion and improve emergency mobility.

The eleven criteria fall within three categories: (1) the degree of significance of a transportation improvement project, (2) the degree to which the project is likely to reduce congestion, and (3) the degree to which the project would improve mobility during a homeland security emergency.



Criteria to Select Projects

(Sorted by relative importance as determined by the project stakeholders)

Project Significance Criteria

- **Connects Regional Activity Centers** – The project enhances or expands transit, HOV/HOT or roadway connections between non-contiguous regional activity centers.
- **High Travel Volume** – The project is in a corridor that serves a high volume of person trips.
- **Designated Corridors** – The project is on a facility in/near Northern Virginia and included in the Statewide Mobility System, Corridors of Statewide Significance, in a Super NoVA corridor or in a TransAction 2040 corridor.
- **Connects Major Facilities** – The project enhances or completes connections between interstate highways, principal arterials or transit stations, park-&-ride lots and DCA or IAD airports.
- **Project Type** – The project includes a highway, rail, bus, technology, or large scale travel demand management investment.

Congestion Reduction Potential Criteria

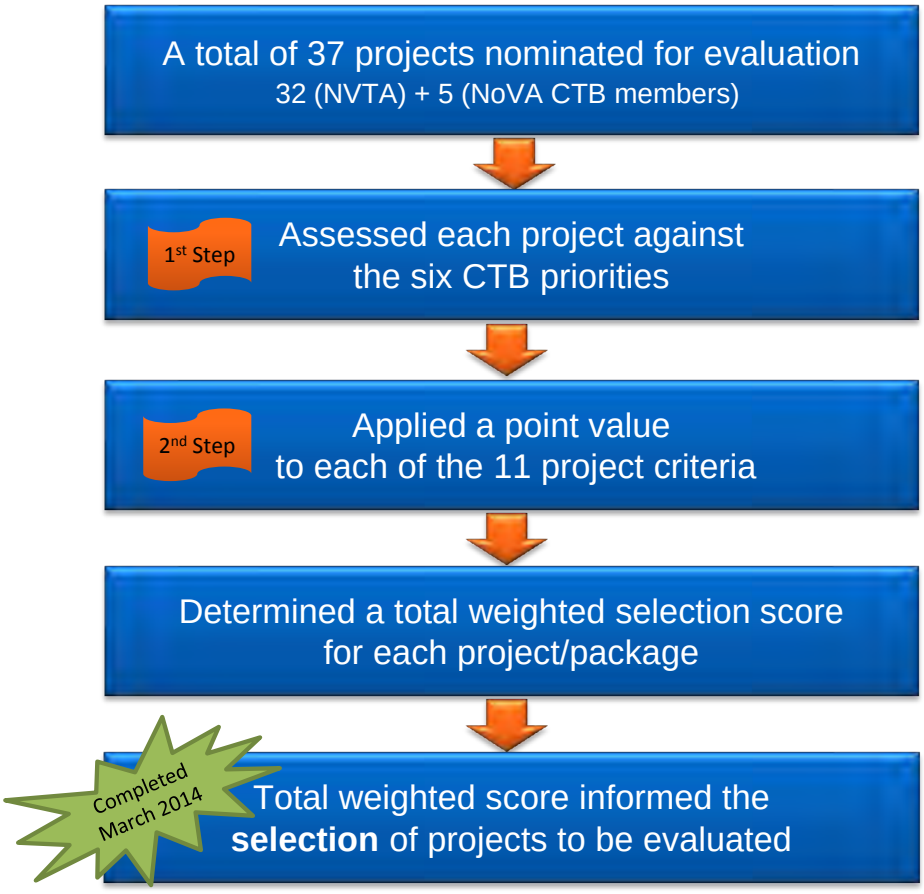
- **Congestion Duration** – The project corridor experiences moderate to heavy congestion for multiple hours of the day.
- **Adds Capacity** – The project adds person moving capacity to a congested location, facility or corridor.
- **Person Hours of Delay** – The project is located in a corridor with significant person hours of delay.
- **Congestion Severity** – The project is located in a heavily congested corridor.
- **Reduces Vehicle Trips** - The project has the potential to reduce vehicle trips on a congested facility or corridor.

Homeland Security Mobility Criteria

- **Facility and Operational Improvements** – The project improves regional mobility in the event of a homeland security emergency.

A selection score was calculated for each project based on the above criteria. **The selection scores do not represent a project's ultimate congestion rating; they are used to help determine which projects move to the evaluation and rating phase of the study.**

Project Selection Process



Public and Agency Coordination

Please visit the project website often to stay abreast of the study's progress.

Project Website

www.virginiadot.org/projects/northernvirginia/evaluating_significant_projects.asp

Study Contact

Valerie Pardo
Transportation Planning Manager
VDOT NOVA Transportation Planning
Valerie.Pardo@vdot.virginia.gov
703-259-1736

PROJECT NOMINATIONS

February – March 2014

NVTA Endorses Nominations

After the study team and stakeholders concurred on the methodology of how to select and evaluate proposed projects, VDOT/DRPT issued a call for nominations. This presented an opportunity for NVTA member jurisdictions to complete the necessary documentation and forward their potential projects to VDOT/DRPT through the NVTA.

At their February 20th meeting, NVTA approved a list of project nominations to undergo Project Selection analysis for the Rating Study. Projects recommended for nomination included individual projects and project packages. All projects were considered for inclusion in the NVTA nomination process except for mass-transit projects that increase capacity, as these are legally exempt from the rating required by 2013 legislation (HB 2313).

What is a Project?

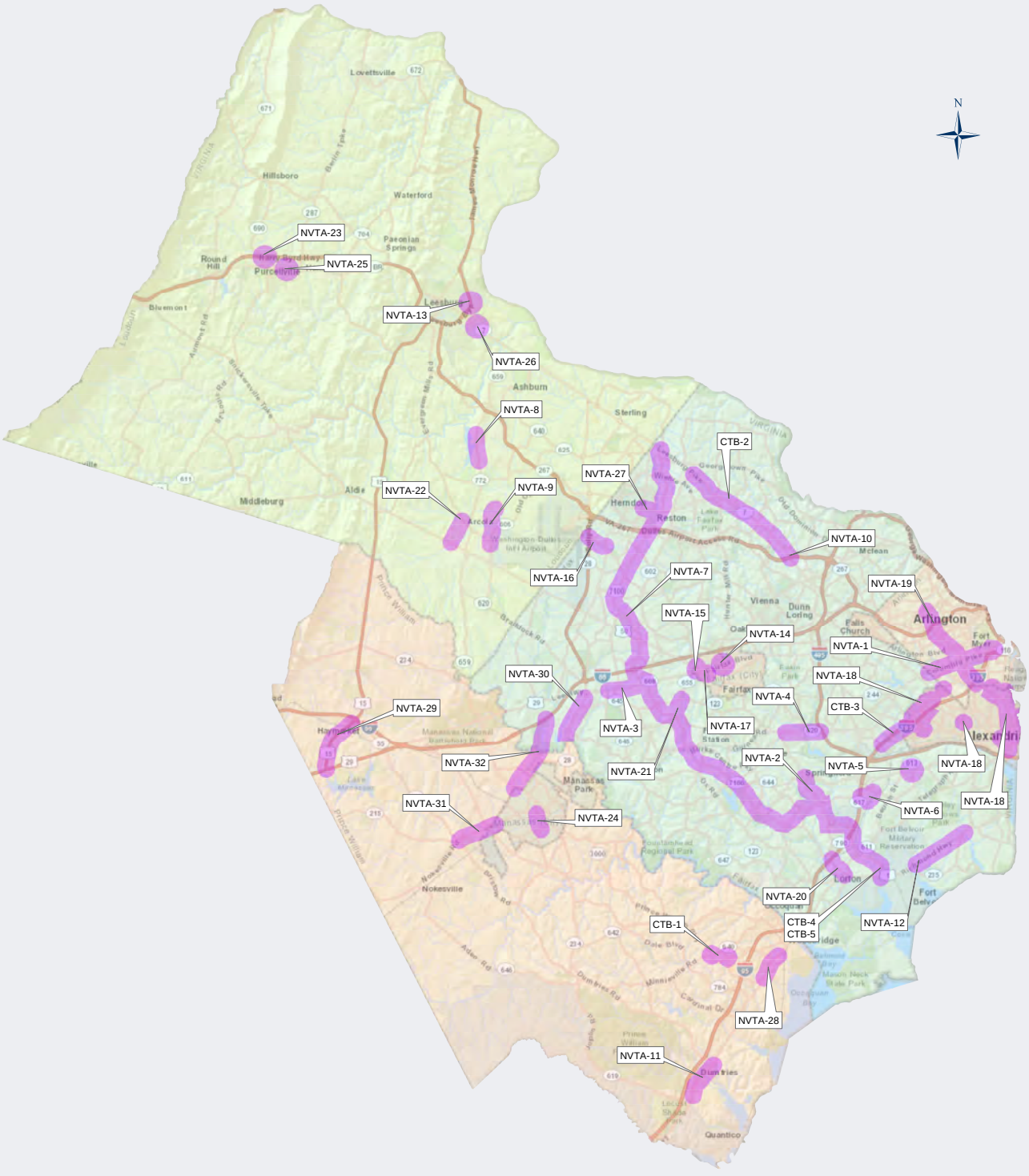
For the purposes of this study, a project is defined as one or more complementary investments that attempt to provide a comprehensive solution to a congestion problem. A project may include a combination of highway, transit, technology and/or travel demand management improvements and any access components, such as pedestrian, bicycle and parking improvements which enhance the project's effectiveness in reducing congestion.

In total, there were 37 projects nominated by the NVTA and CTB for evaluation and rating. Twenty-five were roadway widenings, ten were interchange/intersection projects, and two were intelligent transportation projects. All nominated projects met at least one of the six CTB Priorities, passing the first step in the Project Selection Framework.

In March, the study team assessed the NVTA and CTB nominated projects with regard to each project's significance and potential to reduce congestion using the Project Selection approach endorsed by the NVTA (second step in Project Selection Framework). Using the project selection scores as one of its considerations, the NVTA then recommended that all of the 37 projects be included in the study's detailed evaluation and rating exercise. Please refer to the map of nominated projects and their descriptions on pages 6 and 7.

In this first cycle of project nominations and rating, it was not necessary to screen any projects from the detailed evaluation and rating because there are enough resources to analyze all 37 projects. In future updates of the study, there could be more projects nominated for evaluation and rating than available resources will permit. In that situation, the Project Selection model will be a valuable tool to screen projects for regional significance and congestion reducing potential.

Projects Nominated for Evaluation and Rating



Projects Nominated for Evaluation and Rating			
Project ID	**Project Name**	**Agency**	**Project Description**
NVTA-1	Columbia Pike Multimodal Streets	Arlington	Improve Columbia Pike with left turn lanes, signalized intersections, bicycle & ped improvements and removal of 2 loop ramps at VA 27 interchange.
NVTA-2	Rolling Road Widening	Fairfax Co.	Widen Rolling Rd from 2 to 4 lanes between Old Keene Mill Rd and Springfield/Franconia Pkwy. Will include pedestrian and bike facilities.
NVTA-3	US 29 Widening	Fairfax Co.	Widen Lee Highway (US 29) from Union Mill Rd to Buckley's Gate Drive including bicycle and pedestrian improvements.
NVTA-4	Braddock Road HOV Widening	Fairfax Co.	Widen Braddock Road to include a HOV lane in each direction from Burke Lake Rd to I-495 and improve bicycle and pedestrian facilities.
NVTA-5	South Van Dorn St & Franconia Rd Interchange	Fairfax Co.	Construct a grade-separated interchange at Franconia Road /South Van Dorn St.
NVTA-6	Frontier Dr Extension	Fairfax Co.	Extend Frontier Dr from Franconia - Springfield Pkwy to Loisdale Rd including access to Metro Station.
NVTA-7	Fairfax Co. Pkwy Improvements	Fairfax Co.	Widening from 4 to 6 lanes of segments of Fairfax Co. Parkway between Rolling Rd and the Dulles Toll Rd.
NVTA-8	Belmont Ridge Rd	Loudoun Co.	Widen Belmont Ridge Rd (VA 659) from 2 lanes to 4 lanes between Turo Parish Rd and Croson Ln including turn lanes and signalization.
NVTA-9	Loudoun Co. Pkwy	Loudoun Co.	Construct 4-lane Loudoun Co. Pkwy between Creighton Rd and US 50.
NVTA-10	Route 7 Bridge Widening	Fairfax Co.	Widen VA Route 7 Bridge over Dulles Toll Road from 4 to 6 lanes, including pedestrian/bike facilities.
NVTA-11	US 1 Widening and Relocation - Dumfries	Town of Dumfries	Widen US 1 from 2 to 3 lanes in each direction, while relocating southbound US1 to the same alignment as the northbound lanes.
NVTA-12	US 1 Widening - Fairfax	Fairfax Co.	Widen US 1 from 4 lanes to 6 lanes between Napper Rd and Mt. Vernon Memorial Hwy (VA235) in Fairfax Co.
NVTA-13	Route 15 Bypass/Edwards Ferry Road Interchange	Leesburg	Construct a grade-separated interchange at the Route 15 Bypass and Edwards Ferry Road.
NVTA-14	Northfax Intersection (US29/50 @ VA123)	City of Fairfax	Geometric improvements at Route 29/50 at Route 123 including extension of a third NB lane on Route 123 and a dual left turn from SB Route 123.
NVTA-15	Jermantown/US 50 Roadway Improvements	City of Fairfax	Geometric improvements at US 50 and Jermantown Rd including addition of a third WB lane to Bevan Lane and widening of NB Jermantown Rd.
NVTA-16	Frying Pan Road Widening	Fairfax Co.	Widen Frying Pan Road to 4 lanes between VA 28 and Centreville Rd.
NVTA-17	Kamp Washington Intersection (US 50/29 @ VA236)	City of Fairfax	Geometric and signalization improvements at US 29/50 and VA 236, including addition of a third southbound lane on VA 236.
NVTA-18	Real-Time Adaptive Traffic Control & Management	Alexandria	Phase II of the Real-Time Adaptive Traffic Control & Data Management System to monitor congestion in real-time and redirect traffic.
NVTA-19	Glebe Rd Corridor ITS Improvements	Arlington	Adaptive Traffic Control System on Glebe Road in Arlington Co.
NVTA-20	Pohick Road Widening	Fairfax Co.	Widen Pohick Road from 2 to 4 lanes between Richmond Highway (US1) and I-95.
NVTA-21	Shirley Gate Road Extension	Fairfax Co.	Extend Shirley Gate Road from Braddock Rd to Fairfax Co. Parkway.
NVTA-22	Northstar Blvd Extension	Loudoun Co.	Extend Northstar Blvd from Evergreen Mills Rd to US 50.
NVTA-23	Route 7/690 Interchange	Loudoun Co.	Construct an interchange at VA 7 and VA 690 in Purcellville.
NVTA-24	Route 234/Grant Avenue Reconstruction	Manassas	Reconstruct VA 234/Grant Ave between Lee Ave and Wellington Rd to include wider travel lanes, a dedicated turn lanes, and ped/bike improvements.
NVTA-25	Main St & Maple Ave Intersection	Purcellville	Intersection improvements at Maple Ave and Main St in Purcellville, including the addition of dedicated turn lanes.
NVTA-26	Route 7/Battlefield Pkwy Interchange	Leesburg	Construct a grade-separated interchange VA 7 and Battlefield Parkway.
NVTA-27	East Elden Street Widening	Herndon	Widen East Elden St from Fairfax Co. Parkway to Van Buren St in Herndon.
NVTA-28	Route 1 Widening - Prince William	Prince William	Widen US 1 from 4 lanes to 6 lanes between Featherstone Rd and Marys Way in Prince William Co.
NVTA-29	Route 15 Widening	Prince William	Widen US 15 from 2 to 4 lanes between US 29 and VA 55, including construction of a new railroad overpass.
NVTA-30	Route 28 Widening - Fairfax	Fairfax Co.	Widen VA 28 from 4 to 6 lanes south of US 29 in Fairfax Co.
NVTA-31	Route 28 Widening - Prince William	Manassas/PWC	Widen VA 28 from 4 to 6 lanes between Godwin Drive and Linton Hall Rd.
NVTA-32	Route 28 - Godwin Drive Extension	Manassas	Extend Godwin Drive north from VA 234 Business to a new interchange with I-66. Also includes grade separation of Godwin Drive at Sudley Rd.
CTB-1	Route 294 (PW Pkwy) Grade Separation	NoVA CTB	Construct two grade separated interchanges along VA294 (Prince William Pkwy): at Minnieville Rd and Smoketown Rd.
CTB-2	Route 7 Widening	NoVA CTB	Widen VA 7 from 4 to 6 lanes and add shared-use paths between Reston Parkway and Jarrett Valley Dr.
CTB-3	I-395 Southbound Widening	NoVA CTB	Add a fourth through lane on southbound I-395 between Duke Street and Edsall Rd.
CTB-4	Fairfax Co. Pkwy - I-95 to US1	NoVA CTB	Improve Fairfax Co. Pkwy/I-95 interchange, widen from 4 to 6 lanes between I-95 and US 1, and grade-separations at US1 and John Kingman Rd.
CTB-5	Fairfax Co. Pkwy – I-95 to US 1 (Co. Alternative)	NoVA CTB	Improve Fairfax Co. Pkwy/I-95 Interchange, intersections at Loisdale Rd. and Terminal Rd., and grade separations at John Kingman Rd. and US 1

For additional details on Project Selection results, please visit:

www.virginiadot.org/projects/northernvirginia/evaluating_significant_projects.asp

NEXT STEPS: DETAILED PROJECT EVALUATION

Project Evaluation Framework Identifies Performance Measures of Effectiveness

After a nominated project has passed the CTB Priorities and Project Selection screens, the next step of the process is to analyze the project in the "Project Evaluation" phase of the study. At this stage, each Project will be evaluated using appropriate technical tools, including travel demand and traffic simulation models. A set of performance measures will be extracted from the analysis and used to assess the project's ability to reduce congestion and, to the extent possible, improve mobility during a homeland security emergency.

Throughout January, the study team worked with representatives from Northern Virginia jurisdictions, transit agencies, and the Peer Review Group and discussed the technical methods and tools that will be used in analyzing the projects selected for evaluation. Open dialogues focused on the potential performance measures that best represent (1) the project's impact on congestion and mobility, (2) the quantitative rating for a project, and (3) the relative importance of each performance measure (weights). The study team reviewed all of the comments on the proposed Project Evaluation framework and made significant changes in response to these discussions. The revised approach was endorsed by stakeholders, including members of the NVTA.

Performance Measures to Evaluate and Rate Projects (Sorted by relative importance as determined by the project stakeholders)

- **Congestion Duration** – The reduction in the number of hours of the day auto and transit passengers experience heavily congested travel conditions.
- **Person Hours of Delay** – The reduction in the number of person hours of travel time above free flow travel time.
- **Person Hours of Congested Travel in Automobiles** – The reduction in the number of person hours of travel in automobiles and trucks on heavily congested facilities.
- **Person Hours of Congestion Travel in Transit Vehicles** – The reduction in the number of person hours of travel in buses and trains on heavily congested facilities or in crowded vehicles.
- **Transit Crowding** – The reduction in the number of transit route miles experiencing crowded conditions.
- **Accessibility to Jobs** – The increase in the number of jobs that can be reached from each household based on a 45 minute travel time by automobile and a 60 minute travel time by transit.
- **Emergency Mobility** – The increase in the person hours of travel time resulting from a 10 percent increase in peak hour trip making.