Virginia Department of Transportation

Evaluation of Significant Transportation Projects in NoVA (FY17)

Project Performance and Ratings

Northern Virginia Transportation Authority

4/28/16

Agenda

- Background
- Implementation
  - FY15-16 Nominated Projects
  - FY17 Nominated Projects
- Meetings with Localities
- 2020 and 2040 Performance and Ratings
- Discussion
- Next Steps

Background: Legislation

- **HB599 was passed by the 2012 VA General Assembly**
  - **Mandated that VDOT evaluate and rate at least 25 significant transportation projects in the NOVA transportation district**
  - **Ratings to be based on the project's ability to reduce congestion and improve mobility during a homeland security emergency**
- **HB2313 was passed by the 2013 VA General Assembly**
  - **Provided a revenue stream for NVTA to fund projects**
  - **70% of the revenues to fund projects rated by HB599 and in the regional transportation plan**
  - **Pertained to all projects other than transit capacity projects**
  - **Amended in 2015 to require ratings for transit projects**

Background: Development

- **In 2013-2014, VDOT and DRPT, with CTB, NVTA and NOVA localities, implemented an evaluation and rating process**
  - **Used detailed transportation demand models to assess the congestion and mobility impacts in 2020 and 2040**
  - **Included stakeholder reviews and a Peer Review Group, consisting of subject matter experts from outside of Virginia**
  - **Developed performance measures and weights in cooperation with stakeholders and NVTA**
    - **Multimodal performance measures selected**
    - **Used *Decision Lens* process to facilitate weighting of performance measures**

Performance Measures

Congestion Reduction Measures

- **Congestion Duration (27.9%)** = reduction in the number of hours of the day auto and transit passengers experience heavily congested travel conditions.
- **Person Hours of Delay (20.3%)** = reduction in the number of person hours of travel time above free flow travel time.
- **Person Hours of Congested Travel in Automobiles (15.4%)** = reduction in the number of person hours of travel in automobiles and trucks on heavily congested facilities.
- **Person Hours of Congested Travel in Transit Vehicles (11.8%)** = reduction in the number of person hours of travel in buses and trains on heavily congested facilities or in crowded vehicles.
- **Transit Crowding (11.5%) =** reduction in the number of transit person miles experiencing crowded conditions (local bus > 1.0; express bus and commuter rail > 0.9; Metrorail > 100 passengers/car).

Mobility Measures

- **Accessibility to Jobs (9.5%)** = 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 (3.6%)** = increase in the person hours of travel time resulting from a 10 percent increase in peak hour trip making.

Project Ratings

- **Project performance score is based on the project that generated the greatest change for a given measure**
  - **The project with the greatest change is awarded 100 points**
  - **All other projects are awarded a performance score by dividing their performance by the greatest performance change**
- **Rating = the performance measure score (0-100) multiplied by the performance measure weight and summed**

FY15-16 Nominated Projects

- **The first application of the HB599 process was for the NVTA FY15-16 program**
  - **37 highway/ITS projects were evaluated and rated**
  - **NVTA used the HB599 2040 ratings to measure congestion relief in their scoring and prioritizing of projects**
  - **The ratings accounted for 35% of the NVTA score**

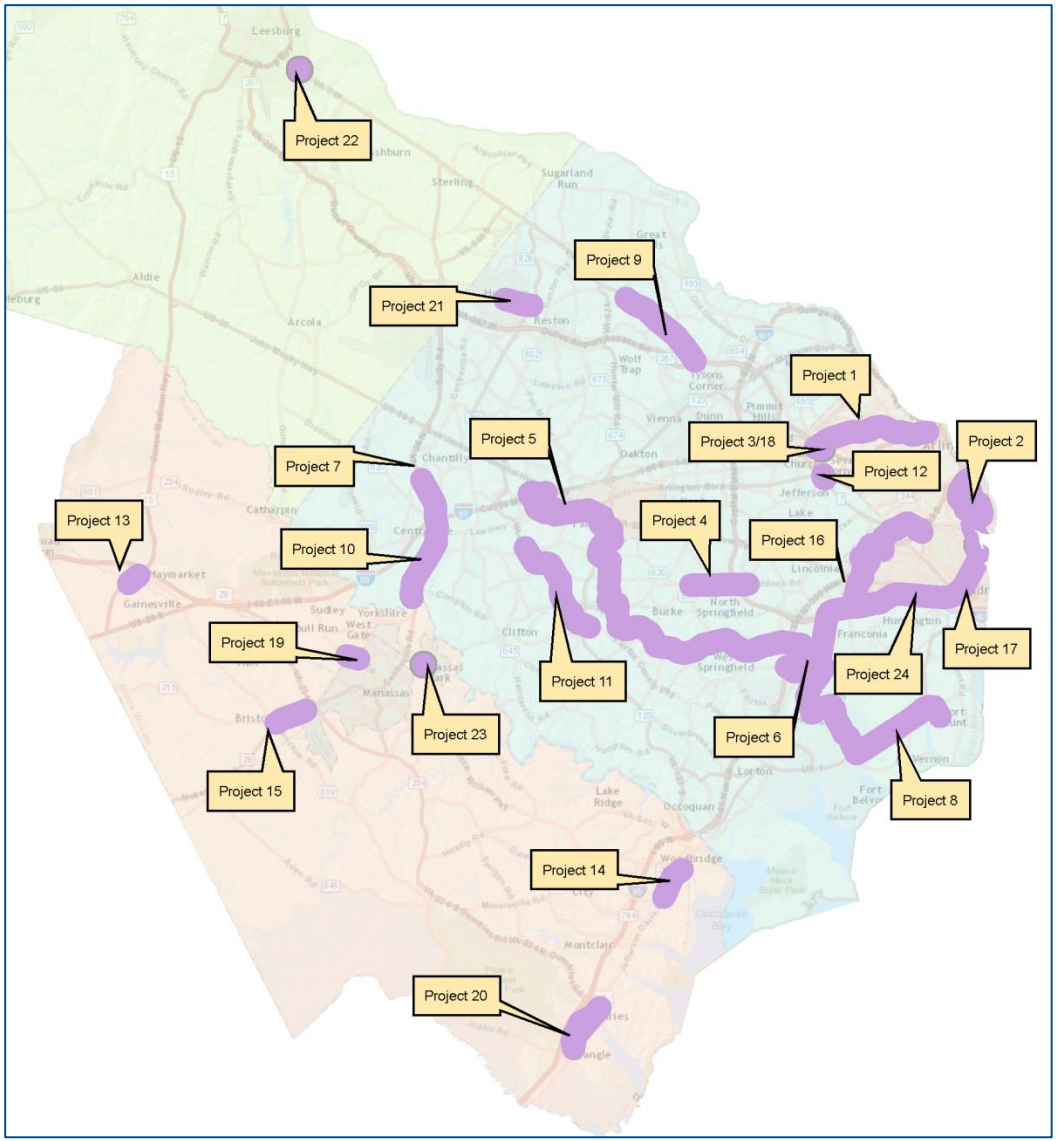
Process Changes for FY17 Application

- Modified process to evaluate and rate transit projects
  - Tested three sample large scale transit projects (fall 2015)
- Process can now evaluate multimodal projects with both highway and transit components
- Updated land uses and networks to 2015 Constrained Long Range Plan and Cooperative Forecasts (Round 8.4) for 2020 and 2040
  - Includes Transform66 projects inside and outside the Beltway
- Removed all nominated projects from baseline networks and added back one by one
  - Provides a common base for all projects
- Reevaluated projects re-submitted from the FY15-16 program using improved models

NVTA FY17 Nominated Projects

ID	Code	Project Name	Location
1	6R	Lee Highway Corridor ITS Enhancements	Arlington
2	8Y	Crystal City Streets	Arlington
3	6S	East Falls Church Bikeshare Connections	Arlington
4	7D	Braddock Road HOV Widening	Fairfax
5	9P	Fairfax Connector Bus Purchase and Service	Fairfax
6	8Z	Frontier Drive Extension and Braided Ramps	Fairfax
7	6T	I-66-Route 28 Interchange Improvements	Fairfax
8	8AA	Widening US 1 (Mt. Vernon Hwy to Napper Rd)	Fairfax
9	1S	Route 7 Widening (Colvin Forest to Jarrett Valley)	Fairfax
10	3M	Route 28 Widening (PWC Line to Route 29)	Fairfax
11	5D	Fairfax County Pkwy (Route 123 to Route 29)	Fairfax
12	6U	Seven Corners Ring Road Improvements	Fairfax
13	6V	Widen Route 15 (Route 55 to south of RR Tracks)	PWC
14	8BB	Widen Route 1 (Featherstone Rd to Mary's Way)	PWC
15	3N	Widen Route 28 (Route 234 to Linton Hall Rd)	PWC
16	8CC	Westend Transitway	Alexandria
17	8DD	Potomac Yard Metrorail Station	Alexandria
18	6W	Bikeshare Connections to Metrorail Stations	Falls Church
19	3P	Sudley Road Westbound (Godwin Dr to Dorsey)	Manassas
20	8EE	Widen Route 1 (Brady's Hill Road to Route 234)	Dumfries
21	1T	East Elden Street Widening	Herndon
22	1U	Route 7 - Battlefield Parkway Interchange	Leesburg
23	3Q	VRE Manassas Park Station Parking Expansion	VRE
24	8FF	Metrorail Blue Line Traction Power Upgrade	WMATA

FY17 Project Location Map



FY17 Nominated Project Types

- **24 projects nominated by NVTA**
  - **13 roadway improvements/widenings**
  - **6 transit projects**
  - **2 interchange construction**
  - **1 ITS traveler information / traffic management project**
  - **1 combined bike/pedestrian/transit project**

Meetings with Localities

- **February 16 – March 11: meetings / webinars with stakeholders to review project coding and impact areas**
- **April 1 – April 12: meetings / webinars with stakeholders to review project results and preliminary ratings**
  - **Described the changes to the process**
  - **Showed maps of volume and congestion impacts**
  - **Shared project-specific performance measures and draft ratings for locality's projects only**
  - **Discussed issues and potential refinements based on comments**
- **April 18: NVTA Planning and Programming Committee (PPC)**
- **April 20: NVTA Technical Advisory Committee (TAC)**

**Ratings have been modified in response to comments received since the PPC meeting, but overall project rankings have not been affected*

2020 Performance Ratings

2020 Performance Measures (4/23/16 Final Draft)				Reduce Congestion Duration (hrs*ln-mi)	Reduce Person Hours of Delay	Reduce Congested Person Hours in Autos	Reduce Congested Person Hours in Transit	Reduce Transit Crowding (PMT)	Increase Access to Jobs (45/60 minutes)	Improve Emergency Mobility (hours)	Project Rating
ID		Project Name	Location	27.9%	20.3%	15.4%	11.8%	11.5%	9.5%	3.6%	100.0%
		Northern Virginia Totals	NoVA	9,735	1,305,731	1,233,467	140,042	273,982	1,454,449	740,144	
7	6T	I-66-Route 28 Interchange Improvements	Fairfax	(52.0)	(11,095)	(11,486)	(82.0)	(37.3)	3,233	(4,898)	77.4
10	3M	Route 28 Widening (PWC Line to Route 29)	Fairfax	(49.3)	(6,477)	(7,994)	(37.3)	(9.8)	3,303	(2,756)	60.9
24	8FF	Metrorail Blue Line Traction Power Upgrade	WMATA	(5.9)	(3,130)	(531)	(1,490.9)	(1,856.0)	3,010	(2,999)	43.8
11	5D	Fairfax County Pkwy (Route 123 to Route 29)	Fairfax	(45.5)	(4,594)	(3,256)	(34.3)	(8.4)	1,574	(1,174)	42.9
8	8AA	Widening US 1 (Mt. Vernon Hwy to Napper Rd)	Fairfax	(32.7)	(1,583)	(1,021)	(29.9)	(9.6)	2,573	(847)	30.1
4	7D	Braddock Road HOV Widening	Fairfax	(26.6)	(2,132)	(3,349)	(575.3)	(10.8)	744	(297)	29.6
17	8DD	Potomac Yard Metrorail Station	Alexandria	(6.1)	(3,287)	(1,380)	(1,380.5)	(50.5)	1,928	(765)	28.5
14	8BB	Widen Route 1 (Featherstone Rd to Mary's Way)	PWC	(9.1)	(3,677)	(4,112)	(52.5)	(13.5)	2,162	(612)	24.3
20	8EE	Widen Route 1 (Brady's Hill Road to Route 234)	Dumfries	(10.3)	(4,009)	(4,201)	(1.6)	-	1,202	(447)	22.3
9	1S	Route 7 Widening (Colvin Forest to Jarrett Valley)	Fairfax	(17.0)	(2,535)	(3,402)	(25.3)	(4.5)	965	(1,145)	22.2
15	3N	Widen Route 28 (Route 234 to Linton Hall Rd)	PWC	(17.1)	(1,206)	(814)	(2.6)	(3.2)	453	(211)	14.0
16	8CC	Westend Transitway	Alexandria	(4.5)	(1,344)	(1,050)	(440.4)	(116.0)	848	(583)	13.4
1	6R	Lee Highway Corridor ITS Enhancements	Arlington	(8.6)	(553)	(401)	(18.7)	(14.6)	306	(115)	7.4
23	3Q	VRE Manassas Park Station Parking Expansion	VRE	(3.2)	(1,370)	(92)	(40.0)	(13.0)	863	(58)	7.3
22	1U	Route 7 - Battlefield Parkway Interchange	Leesburg	(10.5)	(275)	(49)	(1.5)	-	115	(221)	6.7
6	8Z	Frontier Drive Extension and Braided Ramps	Fairfax	(7.3)	(436)	(125)	(35.9)	(1.9)	209	(149)	5.9
19	3P	Sudley Road Westbound (Godwin Dr to Dorsey)	Manassas	(4.6)	(334)	(291)	(2.4)	-	261	(56)	4.3
2	8Y	Crystal City Streets	Arlington	(3.1)	(237)	(56)	(80.2)	(9.3)	370	(43)	4.0
5	9P	Fairfax Connector Bus Purchase and Service	Fairfax	(2.8)	(247)	(47)	(59.0)	(20.0)	369	(48)	3.7
12	6U	Seven Corners Ring Road Improvements	Fairfax	(4.5)	(224)	(245)	(2.8)	(1.1)	110	(85)	3.6
13	6V	Widen Route 15 (Route 55 to south of RR Tracks)	PWC	(3.5)	(157)	(140)	(1.7)	-	38	(97)	2.6
3	6S	East Falls Church Bikeshare Connections	Arlington	(1.8)	(110)	(83)	(44.2)	(10.4)	133	(125)	2.2
18	6W	Bikeshare Connections to Metrorail Stations	Falls Church	(1.8)	(110)	(83)	(44.2)	(10.4)	133	(125)	2.2
21	1T	East Elden Street Widening	Herndon	(1.2)	(56)	(174)	(2.1)	(0.4)	19	(51)	1.1

2040 Performance Ratings

2040 Performance Measures (4/23/16 Final Draft)				Reduce Congestion Duration (hrs*ln-mi)	Reduce Person Hours of Delay	Reduce Congested Person Hours in Autos	Reduce Congested Person Hours in Transit	Reduce Transit Crowding (PMT)	Increase Access to Jobs (45/60 minutes)	Improve Emergency Mobility (hours)	Project Rating
ID		Project Name	Location	27.9%	20.3%	15.4%	11.8%	11.5%	9.5%	3.6%	100.0%
		Northern Virginia Totals	NoVA	12,053	1,760,909	1,663,223	163,887	342,478	1,818,061	976,214	
7	6T	I-66-Route 28 Interchange Improvements	Fairfax	(53.3)	(13,507)	(13,634)	(153.5)	(65.5)	4,736	(7,654)	78.3
10	3M	Route 28 Widening (PWC Line to Route 29)	Fairfax	(48.8)	(6,703)	(8,681)	(56.3)	(15.0)	4,117	(4,488)	56.3
9	1S	Route 7 Widening (Colvin Forest to Jarrett Valley)	Fairfax	(49.9)	(7,281)	(9,214)	(68.8)	(46.5)	2,334	(3,461)	54.6
24	8FF	Metrorail Blue Line Traction Power Upgrade	WMATA	(17.6)	(4,813)	(1,240)	(1,656.5)	(1,439.0)	1,936	(1,531)	45.8
11	5D	Fairfax County Pkwy (Route 123 to Route 29)	Fairfax	(40.4)	(6,230)	(5,230)	(58.8)	(14.0)	2,247	(2,619)	42.7
17	8DD	Potomac Yard Metrorail Station	Alexandria	(24.1)	(4,617)	(1,688)	(1,519.5)	(65.7)	1,325	(1,069)	36.0
8	8AA	Widening US 1 (Mt. Vernon Hwy to Napper Rd)	Fairfax	(33.0)	(1,666)	(4,673)	(81.0)	(26.5)	4,415	(926)	35.1
14	8BB	Widen Route 1 (Featherstone Rd to Mary's Way)	PWC	(21.2)	(5,296)	(6,216)	(84.0)	(13.5)	3,110	(857)	33.4
20	8EE	Widen Route 1 (Brady's Hill Road to Route 234)	Dumfries	(15.0)	(5,877)	(6,351)	(2.5)	-	1,760	(625)	27.7
4	7D	Braddock Road HOV Widening	Fairfax	(25.5)	(1,368)	(1,871)	(441.9)	(16.0)	1,226	(737)	23.6
15	3N	Widen Route 28 (Route 234 to Linton Hall Rd)	PWC	(25.6)	(2,019)	(1,356)	(3.4)	(3.4)	751	(342)	19.7
16	8CC	Westend Transitway	Alexandria	(5.6)	(1,745)	(1,397)	(657.0)	(272.0)	1,021	(628)	16.3
22	1U	Route 7 - Battlefield Parkway Interchange	Leesburg	(19.1)	(772)	(639)	(2.5)	(2.0)	1,024	(483)	14.2
6	8Z	Frontier Drive Extension and Braided Ramps	Fairfax	(13.9)	(623)	(601)	(41.6)	(2.3)	243	(509)	9.9
1	6R	Lee Highway Corridor ITS Enhancements	Arlington	(10.1)	(1,211)	(878)	(48.0)	(36.5)	514	(136)	9.8
12	6U	Seven Corners Ring Road Improvements	Fairfax	(11.4)	(530)	(1,332)	(22.6)	(2.2)	172	(341)	9.0
19	3P	Sudley Road Westbound (Godwin Dr to Dorsey)	Manassas	(10.4)	(794)	(629)	(3.2)	(0.5)	433	(186)	8.3
23	3Q	VRE Manassas Park Station Parking Expansion	VRE	(4.2)	(1,659)	(249)	(48.0)	(15.0)	956	(43)	7.4
2	8Y	Crystal City Streets	Arlington	(3.4)	(357)	(299)	(137.8)	(15.0)	379	(109)	4.6
5	9P	Fairfax Connector Bus Purchase and Service	Fairfax	(4.2)	(314)	(65)	(74.1)	(25.0)	333	(55)	4.1
13	6V	Widen Route 15 (Route 55 to south of RR Tracks)	PWC	(4.9)	(287)	(282)	(2.0)	-	62	(172)	3.5
21	1T	East Elden Street Widening	Herndon	(3.8)	(115)	(210)	(4.2)	(0.4)	21	(60)	2.5
3	6S	East Falls Church Bikeshare Connections	Arlington	(2.0)	(146)	(110)	(55.0)	(13.0)	94	(163)	2.2
18	6W	Bikeshare Connections to Metrorail Stations	Falls Church	(2.0)	(146)	(110)	(55.0)	(13.0)	94	(163)	2.2

Performance Rating Summary

2020 Project Ranking (4/23/16 Final Draft)				Project Rating
ID		Project Name	Location	
7	6T	I-66-Route 28 Interchange Improvements	Fairfax	77.4
10	3M	Route 28 Widening (PWC Line to Route 29)	Fairfax	60.9
24	8FF	Metrorail Blue Line Traction Power Upgrade	WMATA	43.8
11	5D	Fairfax County Pkwy (Route 123 to Route 29)	Fairfax	42.9
8	8AA	Widening US 1 (Mt. Vernon Hwy to Napper Rd)	Fairfax	30.1
4	7D	Braddock Road HOV Widening	Fairfax	29.6
17	8DD	Potomac Yard Metrorail Station	Alexandria	28.5
14	8BB	Widen Route 1 (Featherstone Rd to Mary's Way)	PWC	24.3
20	8EE	Widen Route 1 (Brady's Hill Road to Route 234)	Dumfries	22.3
9	1S	Route 7 Widening (Colvin Forest to Jarrett Valley)	Fairfax	22.2
15	3N	Widen Route 28 (Route 234 to Linton Hall Rd)	PWC	14.0
16	8CC	Westend Transitway	Alexandria	13.4
1	6R	Lee Highway Corridor ITS Enhancements	Arlington	7.4
23	3Q	VRE Manassas Park Station Parking Expansion	VRE	7.3
22	1U	Route 7 - Battlefield Parkway Interchange	Leesburg	6.7
6	8Z	Frontier Drive Extension and Braided Ramps	Fairfax	5.9
19	3P	Sudley Road Westbound (Godwin Dr to Dorsey)	Manassas	4.3
2	8Y	Crystal City Streets	Arlington	4.0
5	9P	Fairfax Connector Bus Purchase and Service	Fairfax	3.7
12	6U	Seven Corners Ring Road Improvements	Fairfax	3.6
13	6V	Widen Route 15 (Route 55 to south of RR Tracks)	PWC	2.6
3	6S	East Falls Church Bikeshare Connections	Arlington	2.2
18	6W	Bikeshare Connections to Metrorail Stations	Falls Church	2.2
21	1T	East Elden Street Widening	Herndon	1.1

2040 Project Ranking (4/23/16 Final Draft)				Project Rating
ID		Project Name	Location	
7	6T	I-66-Route 28 Interchange Improvements	Fairfax	78.3
10	3M	Route 28 Widening (PWC Line to Route 29)	Fairfax	56.3
9	1S	Route 7 Widening (Colvin Forest to Jarrett Valley)	Fairfax	54.6
24	8FF	Metrorail Blue Line Traction Power Upgrade	WMATA	45.8
11	5D	Fairfax County Pkwy (Route 123 to Route 29)	Fairfax	42.7
17	8DD	Potomac Yard Metrorail Station	Alexandria	36.0
8	8AA	Widening US 1 (Mt. Vernon Hwy to Napper Rd)	Fairfax	35.1
14	8BB	Widen Route 1 (Featherstone Rd to Mary's Way)	PWC	33.4
20	8EE	Widen Route 1 (Brady's Hill Road to Route 234)	Dumfries	27.7
4	7D	Braddock Road HOV Widening	Fairfax	23.6
15	3N	Widen Route 28 (Route 234 to Linton Hall Rd)	PWC	19.7
16	8CC	Westend Transitway	Alexandria	16.3
22	1U	Route 7 - Battlefield Parkway Interchange	Leesburg	14.2
6	8Z	Frontier Drive Extension and Braided Ramps	Fairfax	9.9
1	6R	Lee Highway Corridor ITS Enhancements	Arlington	9.8
12	6U	Seven Corners Ring Road Improvements	Fairfax	9.0
19	3P	Sudley Road Westbound (Godwin Dr to Dorsey)	Manassas	8.3
23	3Q	VRE Manassas Park Station Parking Expansion	VRE	7.4
2	8Y	Crystal City Streets	Arlington	4.6
5	9P	Fairfax Connector Bus Purchase and Service	Fairfax	4.1
13	6V	Widen Route 15 (Route 55 to south of RR Tracks)	PWC	3.5
21	1T	East Elden Street Widening	Herndon	2.5
3	6S	East Falls Church Bikeshare Connections	Arlington	2.2
18	6W	Bikeshare Connections to Metrorail Stations	Falls Church	2.2

Next Steps

- VDOT provides final ratings to NVTA – April 30th
- Ratings integrated into NVTA evaluation process