

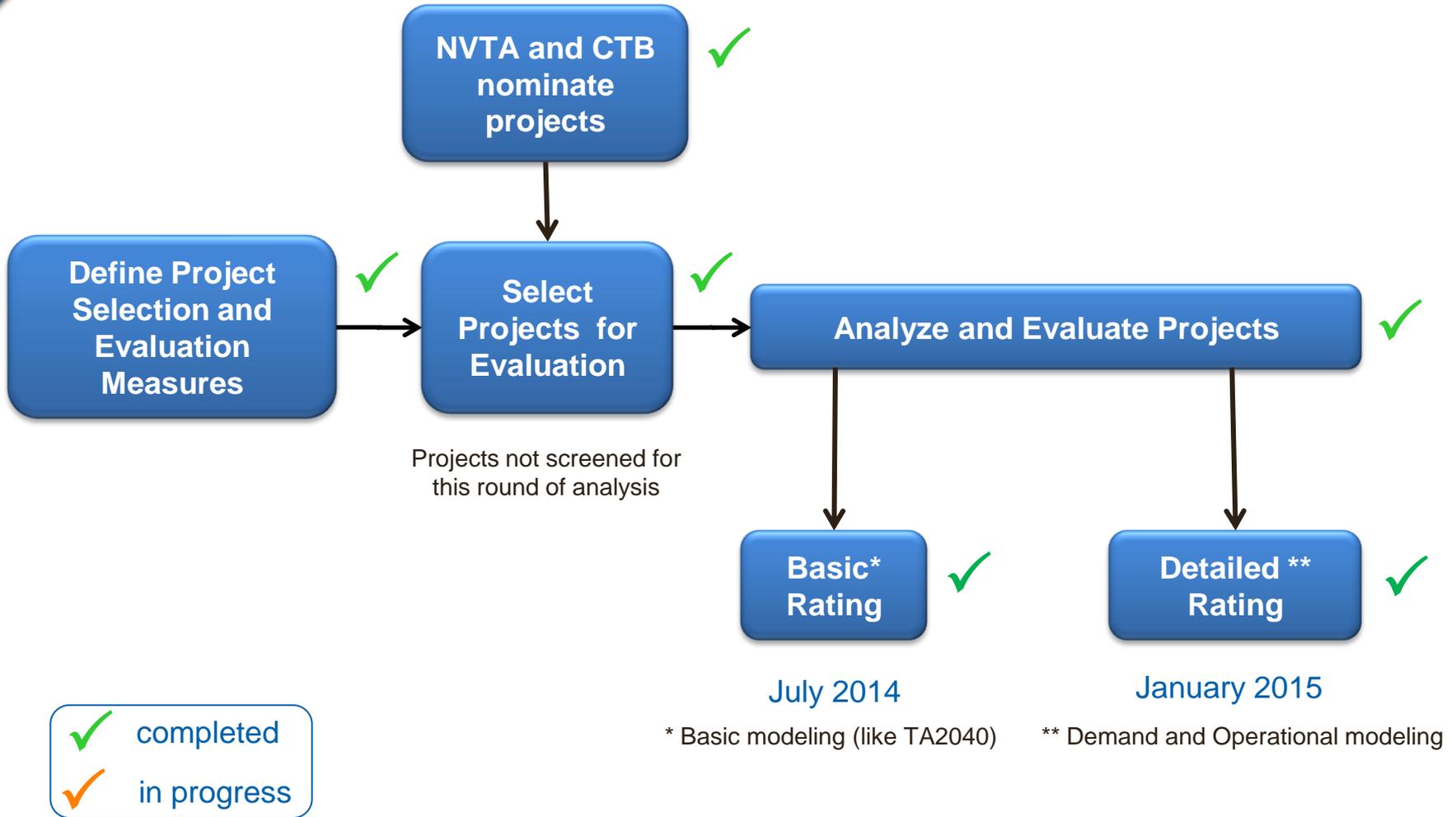


Evaluation of Significant Transportation Projects in Northern Virginia Transportation District

HB 599 Ratings Overview

NVTA - January 22, 2015

Study Approach



Detailed Ratings

- **Detailed ratings based on seven performance measures selected in cooperation with stakeholders and NVTA (January-February 2014)**
- **Prepared detailed ratings of 37 nominated projects using TRANSIMS model and local/regional networks and travel demand based on 2013 CLRP assumptions and Round 8.2 land uses**
- **Model run for 2020 and 2040 study years with and without each project**
- **Change in performance measures scored and weighted using stakeholder decision process**

Nominated Projects

- **37 projects nominated (32 NVTA, 5 NoVA CTB)**
 - **25 roadway improvements/widenings**
 - **5 interchange construction**
 - **5 intersection improvements**
 - **2 ITS traveler information / traffic management projects**

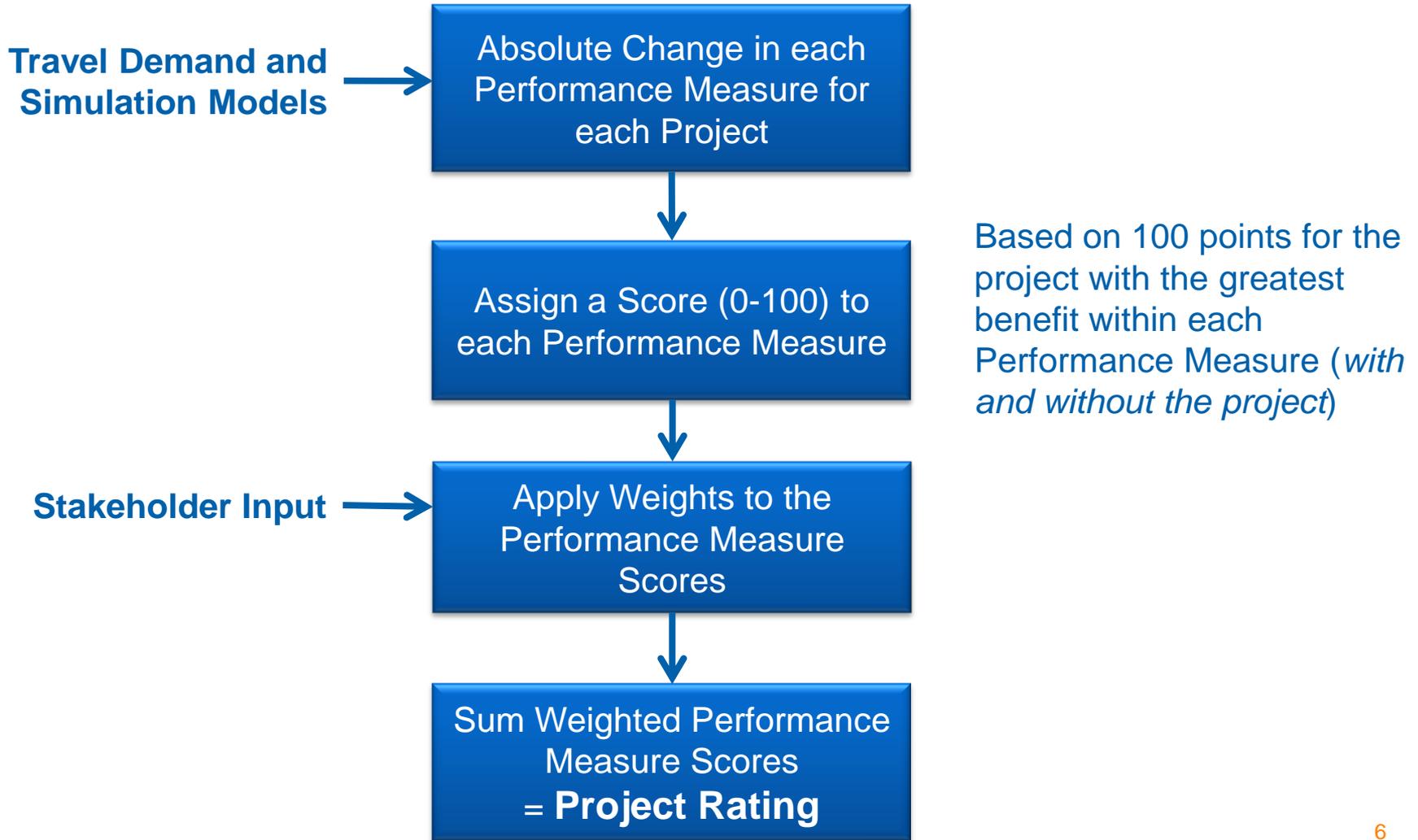
NVTA did not nominate transit projects for this round of analysis

Locality Meetings

- **Met with localities in late August to review project network coding details**
 - **Opportunity to modify/make corrections to project coding prior to detailed modeling runs**

- **Met with localities in early December to review model results**
 - **Shared information on travel times, speeds and volumes with and without the project**
 - **Opportunity to modify/make corrections to project coding prior to final modeling runs and ratings**

Evaluation and Rating Process



Performance Measure Summary

- **Congestion Duration** = reduction in the number of hours of the day auto and transit passengers experience heavily congested travel conditions.
- **Person Hours of Delay** = reduction in the number of person hours of travel time above free flow travel time.
- **Person Hours of Congested Travel in Automobiles** = 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** = reduction in the number of person hours of travel in buses and trains on heavily congested facilities or in crowded vehicles.
- **Transit Crowding** = 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).
- **Accessibility to Jobs** = 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** = increase in the person hours of travel time resulting from a 10 percent increase in peak hour trip making.

Evaluation Performance Measure Weights

Category-Attribute		Blended Weights		
		Category	Attribute	Overall
Congestion Reduction		86.9%		
	Congestion Duration		32.1%	27.9%
	Person Hours of Delay		23.3%	20.3%
	Person Hours of Congested Travel in Automobiles		17.7%	15.4%
	Person Hours of Congested Travel in Transit		13.6%	11.8%
	Transit Crowding		13.3%	11.5%
			100.0%	86.9%
Improved Mobility		13.1%		
	Accessibility to Jobs		72.6%	9.5%
	Emergency Mobility		27.4%	3.6%
			100.0%	13.1%
Total		100.0%		100.0%

2020 Performance Measures

2020 Performance Measures (1/15/15 Draft Final)		Reduce Congestion Duration (hrs*In-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 min by auto)	Improve Emergency Mobility (hours)	
Project Name (* = new facilities)	Location	27.9%	20.3%	15.4%	11.8%	11.5%	9.5%	3.6%	
NoVA-0	Northern Virginia Totals	NoVA	6,698	919,508	806,597	44,452	301,301	1,316,974	398,966
NVTA-1	Columbia Pike Multimodal Streets in Arlington	Arlington	(12.5)	(1,134)	(1,525)	(54)	-	658	(3,159)
NVTA-2	Rolling Road Widening near Springfield	Fairfax	(40.8)	(5,163)	(6,965)	(102)	-	4,150	(2,195)
NVTA-3	US 29 Widening near Centreville	Fairfax	(17.7)	(1,309)	(1,682)	(7)	-	466	(573)
NVTA-4	Braddock Road Widening near I-495	Fairfax	(11.6)	(2,760)	(3,100)	(56)	-	2,071	(1,009)
NVTA-5	South Van Dorn St & Franconia Rd Interchange	Fairfax	(9.4)	(556)	(690)	(19)	-	1,897	(416)
NVTA-6	Frontier Dr Extension in Springfield*	Fairfax	(2.5)	(57)	(222)	(1)	-	14	30
NVTA-7	Fairfax County Pkwy Improvements	Fairfax	(185.3)	(17,236)	(22,641)	(95)	-	19,563	(8,731)
NVTA-8	Belmont Ridge Rd widening near Broadlands	Loudoun	(12.1)	(566)	(655)	0	-	145	(203)
NVTA-9	Loudoun County Parkway extension to US 50*	Loudoun	(102.3)	(18,638)	(22,163)	(15)	-	1,389	(6,998)
NVTA-10	Route 7 Bridge Widening near Tysons Corner	Fairfax	(9.1)	(2,571)	(3,076)	(50)	-	432	(1,134)
NVTA-11	US 1 Widening and Relocation - Dumfries	Dumfries	(17.9)	(2,343)	(2,748)	(1)	-	334	(1,206)
NVTA-12	US 1 Widening near Ft. Belvoir	Fairfax	(13.9)	(1,492)	(1,085)	(45)	-	2,553	(677)
NVTA-13	Route 15 Bypass/Edwards Ferry Road Interchange	Leesburg	(3.4)	(964)	(434)	(1)	-	126	(349)
NVTA-14	Northfax Intersection (US29/50 @ VA123)	City of Fairfax	(1.8)	(72)	(181)	4	-	83	(36)
NVTA-15	Jermantown/US 50 Roadway Improvements	City of Fairfax	(5.3)	(376)	(506)	(9)	-	33	(157)
NVTA-16	Frying Pan Road Widening near Herndon	Fairfax	(11.5)	(417)	(656)	(19)	-	405	(172)
NVTA-17	Kamp Washington Intersection (US 50/29 @ VA236)	City of Fairfax	(4.7)	(606)	(724)	(12)	-	162	(317)
NVTA-18	Real-Time Adaptive Traffic Control & Management	Alexandria	(7.7)	(1,400)	(1,525)	(84)	-	1,241	(670)
NVTA-19	Glebe Rd Corridor ITS Improvements	Arlington	(14.4)	(2,169)	(2,390)	(282)	-	1,933	(1,034)
NVTA-20	Pohick Road Widening near Lorton	Fairfax	(1.8)	(226)	(165)	(2)	-	164	(161)
NVTA-21	Shirley Gate Road Extension to Fairfax County Parkway*	Fairfax	(3.4)	(207)	(114)	(1)	-	366	(27)
NVTA-22	Northstar Blvd Extension near Brambleton*	Loudoun	(40.7)	(4,644)	(5,793)	(1)	-	2,566	(1,921)
NVTA-23	Construct Route 7/690 Interchange near Purcellville	Loudoun	(14.1)	(1,416)	(1,265)	-	-	41	(387)
NVTA-24	Route 234/Grant Avenue Reconstruction in Manassas	Manassas	(2.7)	(405)	(201)	(0)	-	141	(168)
NVTA-25	Main St & Maple Ave Intersection in Purcellville	Purcellville	(0.1)	(104)	(10)	-	-	23	(35)
NVTA-26	Route 7/Battlefield Pkwy Interchange	Leesburg	(23.0)	(1,538)	(1,795)	(1)	-	35	(575)
NVTA-27	East Elden Street Widening in Herndon	Herndon	0.1	(60)	(24)	0	-	134	(23)
NVTA-28	US 1 Widening near Woodbridge	Prince William	(23.7)	(1,993)	(2,368)	(20)	-	2,973	(430)
NVTA-29	Route 15 Widening near Gainesville	Prince William	(0.9)	(125)	(103)	-	-	9	(83)
NVTA-30	Route 28 Widening near Centreville	Fairfax	(60.2)	(9,136)	(11,436)	(6)	-	4,869	(2,250)
NVTA-31	Route 28 Widening near Manassas	Prince William	(2.2)	(393)	(172)	-	-	181	(85)
NVTA-32	Route 28 - Godwin Drive Extension near Manassas*	Manassas/PW	(85.5)	(10,858)	(13,217)	(14)	-	3,564	(2,826)
CTB-1	Route 294 (PW Pkwy) Grade Separation near Woodbridge	Prince William	(2.2)	(940)	(208)	(1)	-	540	(393)
CTB-2	Route 7 Widening from Tysons Corner to Reston	Fairfax	(80.9)	(10,584)	(12,830)	(68)	-	1,614	(3,651)
CTB-3	I-395 Southbound Widening	Alexandria	(26.1)	(7,611)	(8,526)	(133)	-	322	(5,347)
CTB-4	Fairfax County Pkwy - I-95 to US1 near Ft. Belvoir	Fairfax	(13.6)	(4,173)	(3,979)	(41)	-	300	(1,273)
CTB-5	Fairfax County Pkwy - I 95 to US 1 near Ft. Belvoir (County Alt)	Fairfax	(11.3)	(4,333)	(3,924)	(41)	-	275	(1,175)

Projects Sorted by 2020 Ratings

2020 Draft Final Project Ratings (1/15/15)			Project Rating
Project Name (* = new facilities)	Location		
NVTA-7	Fairfax County Pkwy Improvements	Fairfax	79.1
NVTA-9	Loudoun County Parkway extension to US 50*	Loudoun	55.0
CTB-2	Route 7 Widening from Tysons Corner to Reston	Fairfax	37.6
NVTA-32	Route 28 - Godwin Drive Extension near Manassas*	Manassas/PW	37.2
NVTA-30	Route 28 Widening near Centreville	Fairfax	30.3
CTB-3	I-395 Southbound Widening	Alexandria	25.9
NVTA-2	Rolling Road Widening near Springfield	Fairfax	23.7
NVTA-19	Glebe Rd Corridor ITS Improvements	Arlington	19.3
NVTA-22	Northstar Blvd Extension near Brambleton*	Loudoun	17.2
CTB-4	Fairfax County Pkwy - I-95 to US1 near Ft. Belvoir	Fairfax	11.7
CTB-5	Fairfax County Pkwy - I 95 to US 1 near Ft. Belvoir (County Alt)	Fairfax	11.4
NVTA-4	Braddock Road Widening near I-495	Fairfax	10.6
NVTA-28	US 1 Widening near Woodbridge	Prince William	9.8
NVTA-10	Route 7 Bridge Widening near Tysons Corner	Fairfax	9.0
NVTA-18	Real-Time Adaptive Traffic Control & Management	Alexandria	8.1
NVTA-1	Columbia Pike Multimodal Streets in Arlington	Arlington	8.0
NVTA-12	US 1 Widening near Ft. Belvoir	Fairfax	7.9
NVTA-11	US 1 Widening and Relocation - Dumfries	Dumfries	7.8
NVTA-26	Route 7/Battlefield Pkwy Interchange	Leesburg	6.7
NVTA-3	US 29 Widening near Centreville	Fairfax	6.0
NVTA-23	Construct Route 7/690 Interchange near Purcellville	Loudoun	4.7
NVTA-5	South Van Dorn St & Franconia Rd Interchange	Fairfax	4.4
NVTA-16	Frying Pan Road Widening near Herndon	Fairfax	3.7
NVTA-8	Belmont Ridge Rd widening near Broadlands	Loudoun	3.0
NVTA-17	Kamp Washington Intersection (US 50/29 @ VA236)	City of Fairfax	2.6
NVTA-13	Route 15 Bypass/Edwards Ferry Road Interchange	Leesburg	2.1
NVTA-15	Jermantown/US 50 Roadway Improvements	City of Fairfax	2.0
CTB-1	Route 294 (PW Pkwy) Grade Separation near Woodbridge	Prince William	2.0
NVTA-24	Route 234/Grant Avenue Reconstruction in Manassas	Manassas	1.1
NVTA-21	Shirley Gate Road Extension to Fairfax County Parkway*	Fairfax	1.0
NVTA-31	Route 28 Widening near Manassas	Prince William	1.0
NVTA-20	Pohick Road Widening near Lorton	Fairfax	0.8
NVTA-6	Frontier Dr Extension in Springfield*	Fairfax	0.6
NVTA-14	Northfax Intersection (US29/50 @ VA123)	City of Fairfax	0.5
NVTA-29	Route 15 Widening near Gainesville	Prince William	0.4
NVTA-27	East Elden Street Widening in Herndon	Herndon	0.2
NVTA-25	Main St & Maple Ave Intersection in Purcellville	Purcellville	0.2

2040 Performance Measures

2040 Performance Measures (1/15/15 Draft Final)		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 min by auto)	Improve Emergency Mobility (hours)	
Project Name (* = new facilities)	Location	27.9%	20.3%	15.4%	11.8%	11.5%	9.5%	3.6%	
NoVA-0	Northern Virginia Totals	NoVA	11,380	1,682,538	1,654,989	71,313	538,939	1,818,061	683,974
NVTA-1	Columbia Pike Multimodal Streets in Arlington	Arlington	(20.1)	(6,952)	(7,699)	(102)	-	2,741	(446)
NVTA-2	Rolling Road Widening near Springfield	Fairfax	(51.2)	(6,767)	(8,863)	(100)	-	3,325	(2,891)
NVTA-3	US 29 Widening near Centreville	Fairfax	(45.8)	(5,371)	(5,363)	0	-	4,826	(2,445)
NVTA-4	Braddock Road Widening near I-495	Fairfax	(23.8)	(3,177)	(4,145)	(91)	-	1,899	(1,223)
NVTA-5	South Van Dorn St & Franconia Rd Interchange	Fairfax	(14.8)	(839)	(1,123)	(9)	-	2,675	(536)
NVTA-6	Frontier Dr Extension in Springfield*	Fairfax	(4.3)	(594)	(782)	(84)	-	370	(254)
NVTA-7	Fairfax County Pkwy Improvements	Fairfax	(350.1)	(53,175)	(65,930)	(610)	-	23,269	(21,994)
NVTA-8	Belmont Ridge Rd widening near Broadlands	Loudoun	(25.7)	(1,035)	(1,679)	-	-	353	(401)
NVTA-9	Loudoun County Parkway extension to US 50*	Loudoun	(122.2)	(27,219)	(32,524)	(13)	-	2,082	(10,979)
NVTA-10	Route 7 Bridge Widening near Tysons Corner	Fairfax	(13.3)	(2,796)	(3,501)	(56)	-	1,138	(954)
NVTA-11	US 1 Widening and Relocation - Dumfries	Dumfries	(52.6)	(14,415)	(17,579)	(3)	-	986	(2,166)
NVTA-12	US 1 Widening near Ft. Belvoir	Fairfax	(48.6)	(3,569)	(4,562)	(201)	-	3,724	(1,543)
NVTA-13	Route 15 Bypass/Edwards Ferry Road Interchange	Leesburg	(10.7)	(1,469)	(1,191)	(1)	-	140	(668)
NVTA-14	Northfax Intersection (US29/50 @ VA123)	City of Fairfax	0.1	(91)	(66)	(5)	-	28	(32)
NVTA-15	Jermantown/US 50 Roadway Improvements	City of Fairfax	(7.1)	(425)	(589)	(15)	-	163	(203)
NVTA-16	Frying Pan Road Widening near Herndon	Fairfax	(10.0)	(914)	(1,167)	(26)	-	1,725	(411)
NVTA-17	Kamp Washington Intersection (US 50/29 @ VA236)	City of Fairfax	(19.5)	(1,655)	(2,149)	(29)	-	256	(1,198)
NVTA-18	Real-Time Adaptive Traffic Control & Management	Alexandria	(7.5)	(2,168)	(2,250)	(114)	-	642	(1,007)
NVTA-19	Glebe Rd Corridor ITS Improvements	Arlington	(15.0)	(1,839)	(1,908)	(285)	-	1,417	(757)
NVTA-20	Pohick Road Widening near Lorton	Fairfax	(6.6)	(973)	(1,370)	(21)	-	440	(179)
NVTA-21	Shirley Gate Road Extension to Fairfax County Parkway*	Fairfax	(5.2)	(247)	371	(2)	-	662	(506)
NVTA-22	Northstar Blvd Extension near Brambleton*	Loudoun	(78.8)	(9,754)	(12,729)	(1)	-	2,035	(4,048)
NVTA-23	Construct Route 7/690 Interchange near Purcellville	Loudoun	(38.1)	(5,209)	(5,325)	-	-	26	(1,049)
NVTA-24	Route 234/Grant Avenue Reconstruction in Manassas	Manassas	(9.4)	(828)	(963)	(1)	-	312	(350)
NVTA-25	Main St & Maple Ave Intersection in Purcellville	Purcellville	-	9	(0)	-	-	11	3
NVTA-26	Route 7/Battlefield Pkwy Interchange	Leesburg	(14.7)	(858)	(1,144)	(0)	-	33	(329)
NVTA-27	East Elden Street Widening in Herndon	Herndon	(0.7)	(106)	(20)	(5)	-	296	(62)
NVTA-28	US 1 Widening near Woodbridge	Prince William	(50.6)	(6,356)	(8,633)	(88)	-	870	(1,382)
NVTA-29	Route 15 Widening near Gainesville	Prince William	(3.3)	(243)	(239)	-	-	45	(197)
NVTA-30	Route 28 Widening near Centreville	Fairfax	(68.9)	(15,805)	(18,649)	(0)	-	2,410	(2,635)
NVTA-31	Route 28 Widening near Manassas	Prince William	(54.1)	(5,599)	(6,189)	-	-	1,009	(2,172)
NVTA-32	Route 28 - Godwin Drive Extension near Manassas*	Manassas/PW	(142.3)	(21,820)	(27,320)	(18)	-	5,300	(4,501)
CTB-1	Route 294 (PW Pkwy) Grade Separation near Woodbridge	Prince William	(3.8)	(2,028)	(1,224)	(10)	-	820	(769)
CTB-2	Route 7 Widening from Tysons Corner to Reston	Fairfax	(77.9)	(25,647)	(28,016)	(70)	-	1,700	(6,835)
CTB-3	I-395 Southbound Widening	Alexandria	(27.0)	(8,001)	(8,872)	(111)	-	1,718	(3,378)
CTB-4	Fairfax County Pkwy - I-95 to US1 near Ft. Belvoir	Fairfax	(23.8)	(8,979)	(9,072)	(225)	-	274	(4,025)
CTB-5	Fairfax County Pkwy - I 95 to US 1 near Ft. Belvoir (County Alt)	Fairfax	(23.3)	(9,043)	(9,053)	(230)	-	323	(4,004)

Projects Sorted by 2040 Ratings

2040 Draft Final Project Ratings (1/15/15)			Project Rating
Project Name (* = new facilities)	Location		
NVTA-7	Fairfax County Pkwy Improvements	Fairfax	88.5
NVTA-9	Loudoun County Parkway extension to US 50*	Loudoun	30.6
NVTA-32	Route 28 - Godwin Drive Extension near Manassas*	Manassas/PW	29.3
CTB-2	Route 7 Widening from Tysons Corner to Reston	Fairfax	25.7
NVTA-30	Route 28 Widening near Centreville	Fairfax	17.3
NVTA-11	US 1 Widening and Relocation - Dumfries	Dumfries	14.6
NVTA-22	Northstar Blvd Extension near Brambleton*	Loudoun	14.5
CTB-5	Fairfax County Pkwy - I 95 to US 1 near Ft. Belvoir (County Alt)	Fairfax	12.7
CTB-4	Fairfax County Pkwy - I-95 to US1 near Ft. Belvoir	Fairfax	12.6
NVTA-2	Rolling Road Widening near Springfield	Fairfax	12.5
NVTA-12	US 1 Widening near Ft. Belvoir	Fairfax	12.0
NVTA-28	US 1 Widening near Woodbridge	Prince William	10.8
CTB-3	I-395 Southbound Widening	Alexandria	10.7
NVTA-3	US 29 Widening near Centreville	Fairfax	9.3
NVTA-1	Columbia Pike Multimodal Streets in Arlington	Arlington	9.2
NVTA-31	Route 28 Widening near Manassas	Prince William	8.7
NVTA-19	Glebe Rd Corridor ITS Improvements	Arlington	8.6
NVTA-4	Braddock Road Widening near I-495	Fairfax	6.8
NVTA-23	Construct Route 7/690 Interchange near Purcellville	Loudoun	6.4
NVTA-10	Route 7 Bridge Widening near Tysons Corner	Fairfax	4.6
NVTA-18	Real-Time Adaptive Traffic Control & Management	Alexandria	4.6
NVTA-17	Kamp Washington Intersection (US 50/29 @ VA236)	City of Fairfax	3.5
NVTA-5	South Van Dorn St & Franconia Rd Interchange	Fairfax	3.1
NVTA-8	Belmont Ridge Rd widening near Broadlands	Loudoun	3.0
NVTA-16	Frying Pan Road Widening near Herndon	Fairfax	2.7
NVTA-6	Frontier Dr Extension in Springfield*	Fairfax	2.6
CTB-1	Route 294 (PW Pkwy) Grade Separation near Woodbridge	Prince William	2.0
NVTA-13	Route 15 Bypass/Edwards Ferry Road Interchange	Leesburg	1.9
NVTA-26	Route 7/Battlefield Pkwy Interchange	Leesburg	1.8
NVTA-20	Pohick Road Widening near Lorton	Fairfax	1.8
NVTA-24	Route 234/Grant Avenue Reconstruction in Manassas	Manassas	1.5
NVTA-15	Jermantown/US 50 Roadway Improvements	City of Fairfax	1.3
NVTA-21	Shirley Gate Road Extension to Fairfax County Parkway*	Fairfax	0.9
NVTA-29	Route 15 Widening near Gainesville	Prince William	0.5
NVTA-27	East Elden Street Widening in Herndon	Herndon	0.3
NVTA-14	Northfax Intersection (US29/50 @ VA123)	City of Fairfax	0.2
NVTA-25	Main St & Maple Ave Intersection in Purcellville	Purcellville	0.0

Next Steps

- **Post final ratings to VDOT website on January 23rd**
- **Final report documenting the analysis process and modeling results in February/March timeframe**
- **NVTA will use this information in their project selection process:**
<http://thenovaauthority.org/Documents/NVTA%20FY2015-16%20project%20selection%20process%2012515.pdf>



THANKS!

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

Evaluation and Rating of Transportation Projects in Northern Virginia Transportation District