



Northern Virginia Transportation Authority

The Authority for Transportation in Northern Virginia

TECHNICAL ADVISORY COMMITTEE

Wednesday, August 17, 2016, 7:00pm

NVTA Office

3040 Williams Drive, Suite 200

Fairfax, Virginia 22031

AGENDA

- I. Call to Order/Welcome** Chairman Boice
- II. Meeting Summary of May 18, 2016 Meeting and June 15, 2016 Meeting**
*Recommended Action: Approval [with abstentions
from those who were not present]*

Discussion/Information

- III. NVTA Update** Ms. Backmon, Executive Director
- IV. TransAction Update** Mr. Jasper, Program Coordinator
- V. Development of Six Year Program** Mr. Jasper, Program Coordinator

Adjournment

- VI. Adjourn**

Next Meeting: September 21, 2016

7:00pm

NVTA Office



Northern Virginia Transportation Authority

The Authority for Transportation in Northern Virginia

TECHNICAL ADVISORY COMMITTEE

Wednesday, May 18, 2016, 7:00pm

NVTA Office

3040 Williams Drive, Suite 200

Fairfax, Virginia 22031

SUMMARY NOTES

I. Call to Order/Welcome

Chairman Boice

- Chairman Boice called the meeting to order at 7:05pm.
- Attendees:
 - o Members: Agnes Artemel; Armand Ciccarelli; Doug Fahl; Meredith Judy; Pat Turner; Shanjiaing Zhu.
 - o NVTA Staff: Monica Backmon (Executive Director); Keith Jasper (Program Coordinator); Sree Nampoothiri (Program Coordinator).
 - o Other: Michael Riddle (Fairfax County); James Davenport (Prince William County).

II. Meeting Summary of April 20, 2016 Meeting

Chairman Boice

- Mr. Fahl moved to approve the minutes of the April 20, 2016 meeting as amended to include a spelling correction. The motion was seconded by Ms. Artemel. Motion carried unanimously.

Discussion/Information

III. NVTA Update

Ms. Backmon

- Ms. Backmon noted that the May Authority meeting was held on May 12th and the Authority released all 24 FY2017 program candidate projects for public comment. It was also noted that today's presentation is the same as presented at the Authority.
- Ms. Backmon provided a summary upcoming activities for the FY2017 Program:
 - o May 19th NVTA's Finance Committee will receive an update on the bond/debt capacity scenario for the FY2017 program considering that there is a high chance of approving projects worth more than the available PayGo funds.
 - o June 9th NVTA's Authority will hold public hearing.
 - o June 14th Commonwealth Transportation Board (CTB) adopts its six year improvement plan (SYIP). This might provide an opportunity to revise the recommendations since there are four FY17 program candidate projects that are in the draft HB2 recommended list.

- o June 15th NVTAs Technical Advisory Committee will provide its recommendation to the Authority.
- o June 16th NVTAs Finance Committee will provide its recommendation on debt capacity and any cap on debt.
- o June 17th is the deadline for public comments.
- o July 1st NVTAs Planning and Programming Committee (PPC) will discuss the public comments, SYIP, and other factors and provide a recommended list of projects for FY2017 program to the Authority.
- o July 14th Authority meeting is expected to adopt the program.
- In response to Mr. Boice’s question on releasing all 24 projects for public hearing without a recommended list, Ms. Backmon informed that the Authority decided to release all 24 projects without any recommendation.
- In response to Mr. Fahl’s question on participation of VDOT and Fairfax County on the I-66/Route 28 interchange project, Ms. Backmon noted that Fairfax County has put in 15 million RSTP for preliminary study/design. She also noted that the project is in TarnsAction 2040 and the Authority would have considered the project even if it was not part of the Transform 66 project.
- Ms. Backmon affirmed to Mr. Fahl that the Authority discussed the fact that this is part of an interstate highway and the state’s responsibilities.

IV. FY2017 Program Update Presentation on Project Evaluations

Mr. Jasper

- Mr. Jasper presented the interim project evaluations including, NVTAs quantitative scores, congestion reduction relative to cost (CRRC) ratios, qualitative considerations, cost calculations, and staff recommendations.
- In response to Mr. Fahl’s question on the source of cost estimates and standards, Mr. Jasper noted that the estimates came from project sponsors. Mr. Jasper added that many of the sponsors consult with VDOT on cost estimates.
- In response to Mr. Ciccarelli’s question on criteria for not funding continuation projects, Mr. Jasper mentioned that there is no such policies exist but the six-year program based on updated TransAction could provide such directions. Ms. Backmon added that the FY2017 program drawdown policy of minimum one drawdown by June 2019 is being revisited to reflect real project progress.
- In response to questions from Ms. Turner and Mr. Fahl on handling cost over runs, Ms. Backmon noted that a contingency policy is being looked at now. She added that there is no contingency available for any of the programs at NVTAs but the State allows for a two percent variance.
- Mr. Jasper reiterated that the congestion reduction in the CRRC calculations is reduced person hours of delay and not vehicle hours of delay.
- In response to Dr. Zhu’s question on the parking scarcity at the VRE Manassas Station, Mr. Jasper noted that there is a need for extra parking.
- Mr. Fahl and Ms. Artemel noted that the Potomac Yard Metrorail station is good for economy and connectivity but may not solve congestion in the short term. Mr. Fahl hoped that the Metro Washington Council of Government

(COG) cooperative forecast 9.0 consider Potomac Yard station in place for the future years.

- In response to Ms. Turner's question on consideration of emergency evacuation, Mr. Jasper noted that emergency evacuation is one of the criteria used in HB599 evaluation.
- In response to Mr. Fahl's question on public asking for the staff recommendation, Mr. Jasper noted that the staff recommendations during the PPC meeting and TAC meeting are already in the public domain though the list released for public comment does not include any recommendation.
- In response to Mr. Ciccarelli's request to explain the selection process used by the staff, Mr. Jasper noted that the first step was to give precedence to CRRC ratio since the enabling legislation requires that. He further added that some project were taken out in the second step since they had some outstanding concerns to be resolved. In the third step, one project was added to the list since that project ranked high in the NVTa quantitative score.
- In response to Ms. Artemel's question on drawing down in the first year, Ms. Backmon noted that the projects draw down money over several years but the project must be active and first drawdown must occur before June 2019.
- In response to Mr. Boice's question on legal obligation to fund continuation projects, Ms. Backmon noted that there is no such legal requirements but a logical expectation.
- In response to Ms. Artemel's question on the impact of entering bond market for FY2017 program on the future borrowing, Ms. Backmon noted that there will be a negative impact on the available PayGo money in the future since expenses for debt services will have to come out of PayGo.
- Mr. Boice requested the Committee members to provide their comments on the evaluation and recommended list to him by the end of Monday, June 13th.

V. TransAction Update

Mr. Jasper

- Mr. Jasper informed the Committee that public engagement activities are ongoing and attendance is encouraging. He also noted the schedule of upcoming workshops and pop-up events, which are also available at the TransAction website.
- Mr. Fahl suggested a few contacts at the regional business community who can spread the word about the public engagement activities.
- Mr. Jasper also noted that the COG has offered the draft cooperative forecast 9.0 to be used in the ongoing modeling work thus providing the opportunity to use the latest information available.

Adjournment

VI. Adjourn

Chairman Boice

- Meeting adjourned at 8:46pm.



Northern Virginia Transportation Authority

The Authority for Transportation in Northern Virginia

TECHNICAL ADVISORY COMMITTEE

Wednesday, June 15, 2016, 7:00pm

NVTA Office

3040 Williams Drive, Suite 200

Fairfax, Virginia 22031

SUMMARY NOTES

I. Call to Order/Welcome Mr. Fahl

- Mr. Fahl called the meeting to order at 7:05pm.
- Attendees:
 - o Members: Agnes Artemel; Armand Ciccarelli; Doug Fahl; Meredith Judy.
 - o NVTA Staff: Monica Backmon (Executive Director); Sree Nampoothiri (Program Coordinator).
 - o Other: James Davenport (Prince William County); Mark Duceman (Town of Herndon)

II. Meeting Summary of April 20, 2016 Meeting Mr. Fahl

- The approval of the April 20, 2016 meeting summary was postponed to the next meeting due to lack of quorum.

Discussion/Information

III. NVTA Update Ms. Backmon

- Ms. Backmon noted that the June Authority meeting was held on June 9, 2016, following the Public Hearing for the FY2017 Program. The Public Hearing was attended by approximately 60 people and 28 people gave oral testimony. A large percentage of the speakers spoke in support of the Route 7 and Battlefield Parkway project in Leesburg.
- Ms. Backmon provided a summary of upcoming activities for the FY2017 Program:
 - o June 16th NVTA's Finance Committee will provide its recommendation on the use of debt as part of the funding package for the FY2017 Program, as well as a cap on the use of debt. The staff debt cap recommendation is \$170,000,000, which combined with \$267,000,000 in PayGo funds will provide \$437,000,000 in total funding for the FY2017 Program.
 - o June 14th the Commonwealth Transportation Board (CTB) adopted its Six Year Improvement Program (SYIP). There are four FY2017 Program candidate projects that are in the draft HB 2 recommended

list. Staff understanding is that all projects except the Sudley Road Widening project will still need NVTA funds.

- o June 17th at 5:00pm is the deadline for receiving public comments.
- o July 1st NVTA's Planning and Programming Committee (PPC) will discuss the public comments, CTB SYIP, and other factors, and will provide a recommended list of projects for the FY2017 Program to the Authority.
- o July 14th the Authority is anticipated to adopt the Program.

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IV. FY2017 Program Update

Mr. Nampoothiri

- Mr. Nampoothiri distributed the compilation of comments by the Committee members on the FY2017 Program candidate project list and the staff recommendations.
- Mr. Fahl presented a list of projects that were recommended by different members.
- In response to Mr. Fahl's question on the impact of the CTB's SYIP on the FY2017 Program candidates, Ms. Backmon mentioned that the CTB adopted the SYIP on Tuesday, June 14, 2016. Mr. Nampoothiri provided a handout with the list of FY2017 Program candidates who received funding in the CTB's SYIP and the dollar amounts associated with them.
- In response to questions from Mr. Ciccarelli on the qualitative criteria that were considered for the staff recommendations, Ms. Backmon mentioned that some of the considerations included Policy 17 requiring first drawdown by June 30, 2019, the progress of continuation projects and modal balance.
- Mr. Fahl and Ms. Artemel, while agreeing on the merits of the I-66/Route 28 Interchange project, noted that the project is on an Interstate highway and that the Federal and State government should carry the cost.
- Mr. Fahl noted that the I-66/Route 28 Interchange project might diminish the need for the Route 28 project in Fairfax County. Ms. Backmon noted that the entire stretch of Route 28, including the segments in Prince William County, experience congestion and that these Route 28 projects might be needed even with the interchange project.
- In response to Ms. Artemel's question on the reasons for the low ranking of the Route 28 project in Prince William County compared to that in Fairfax County, Ms. Backmon mentioned that the Prince William County candidate project is further south and is not as congested as the Fairfax segment.
- The members agreed on the merits of the Metrorail Blue Line project, but wanted to understand the impacts of the directive from Federal Transit Administration (FTA).
- Ms. Artemel noted that the Route 7 Widening project and the Silver line Metrorail are parallel facilities and the schedule of both projects could have an impact on the urgency of the Route 7 widening.
- In response to Mr. Ciccarelli's question on the components included in Lee Highway ITS project, Mr. Nampoothiri mentioned that it included components

such as adaptive signal control, Bluetooth device installation, count stations, CCTV cameras, Forward Looking Infrared detectors (FLIR) and signal timing enhancements.

- In response to Mr. Fahl's question on how well these systems work during oversaturated conditions, Mr. Ciccarelli mentioned that oversaturation alone need not result in any negative effects.
- In response to Mr. Fahl's inquiry regarding the project cost for the Route 1 Widening project in Prince William County, Ms. Backmon clarified that a change in project scope resulted in increased cost from what was reflected in the FY2015-16 Program, therefore, the project will need additional money even after the HB 2 allocation it received. She added that the East Elden Street project in Herndon has a similar situation.
- In response to Ms. Artemel's question on the Fairfax County Route 1 Widening project schedule, Ms. Backmon mentioned that the funding request is for right of way (ROW) during FY2019-23 and the construction is expected in FY2023-25. Mr. Fahl noted that this means the funding for ROW can probably wait.
- Mr. Fahl noted that the Authority does not have to spend all available money every year, adding that it might be better to accumulate some funds to allocate to larger projects.
- In response to Mr. Ciccarelli's question on the inclusion of the VRE Manassas Park project even though it was ranked lowest in the NVTQ Quantitative Scores, Ms. Backmon noted that the project ranked high in the cost effectiveness score and it also brings modal balance among recommended projects.
- In response to Mr. Fahl's question on the inclusion of the Potomac Yard Metrorail project even though it was not ranked in the top half of the cost effectiveness scores, Ms. Backmon noted that the project ranked high in the NVTQ Quantitative Scores and brings modal and geographic balance among recommended projects.
- In response to Mr. Ciccarelli's question on the exclusion of the Falls Church Bikeshare and the Manassas Sudley Road projects, Ms. Backmon noted that there were reservations about the availability of operating costs for the Bikeshare project and that the Sudley Road project received full funding in the CTB's SYIP.
- Mr. Fahl noted that it is not clear how many Bikeshare stations will be implemented.
- Based on the comments provided by the Technical Advisory Committee (TAC) members and the discussion at the meeting, Mr. Fahl listed the following projects (without any ranking) to be recommended to the PPC, as well as the Authority, with the additional comments as noted:
 - o Lee Highway Corridor ITS Enhancements
 - o Route 28 Widening – Prince William County line to Route 29
 - o VRE Manassas Park Station Parking Expansion
 - o Route 286 Fairfax County Parkway Widening
 - o Widen Route 28 to six lanes – Route 234 to Linton Hall Road

- o Route 7 Widening Phase I
- o Potomac Yard Metrorail Station
- o Widen Route 1 to six lanes – Featherstone Road to Marys Way
- o I-66/Route 28 Interchange Improvements (Note: TAC members have reservations about using NVTA regional revenues for a project that is part of the Interstate system. The members pointed out that the Federal government and the State should invest in it. Also, the transit and other components that are expected to be part of the Transform 66 Project are not clear yet.)
- o Metrorail Blue Line Traction Power Upgrades (Note: The FTA has given a directive to WMATA regarding reducing the power drawdown, through less number of cars, less frequency, or slower trains, until safety issues are resolved. The impact of this directive on the schedule of 8-car train deployment and the need for power upgrades is not clear yet.)

V. TransAction Update

Mr. Nampoothiri

- Mr. Nampoothiri informed the Committee that the spring public engagement activities for TransAction are nearing the end and the responses so far have been very good.
- Mr. Nampoothiri informed the members that the incorporation of the Metropolitan Washington Council of Governments (MWCOG) Cooperative Forecast Round 9.0 into the TransAction modeling means that there will be less information to discuss at the July TAC meeting but will provide information for a robust discussion in August. The members agreed to Mr. Nampoothiri's suggestion to cancel the July meeting and meet on August 17, 2016. Mr. Fahl requested that Mr. Nampoothiri send an email to the entire Committee announcing the cancellation.

Adjournment

VI. Adjourn

Mr. Fahl

- Meeting adjourned at 9:00pm.

NVTA's
TransAction

*Transportation Action Plan
for Northern Virginia*

Technical Advisory Committee

August 17, 2016

Agenda

Discussion/Information

1. Process and Schedule
2. Needs Assessment
 - Recap of Needs: Population, Employment, Travel Patterns, Public Feedback, Regional Needs Measures
 - Solution Package Approach
3. Measures

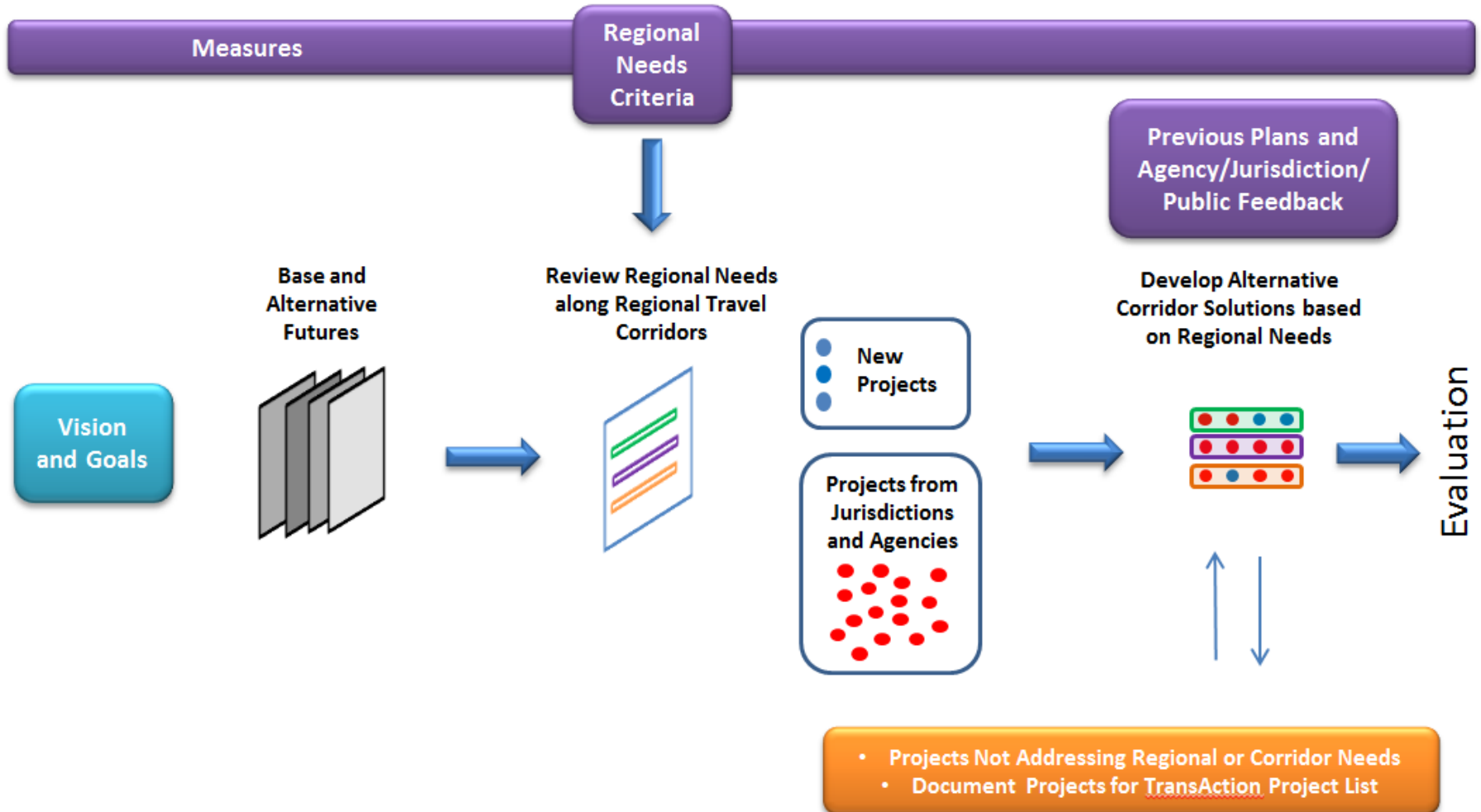
TransAction Process Overview (1 of 2)

Public Engagement

Spring/Summer 2016 Needs Assessments

Summer/Fall 2016 Solution Assessments

Plan Development



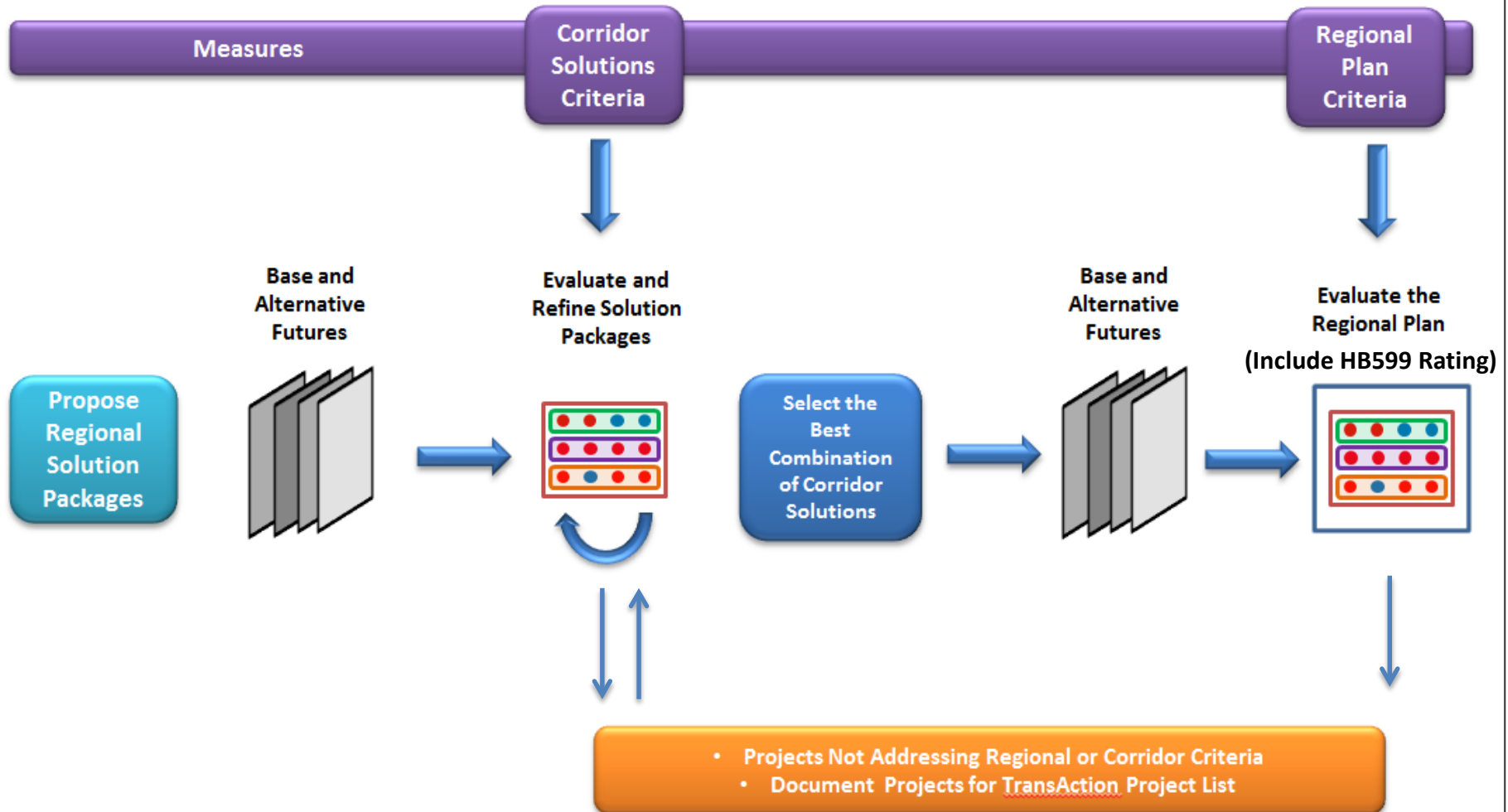
TransAction Process Overview (2 of 2)

Public Engagement

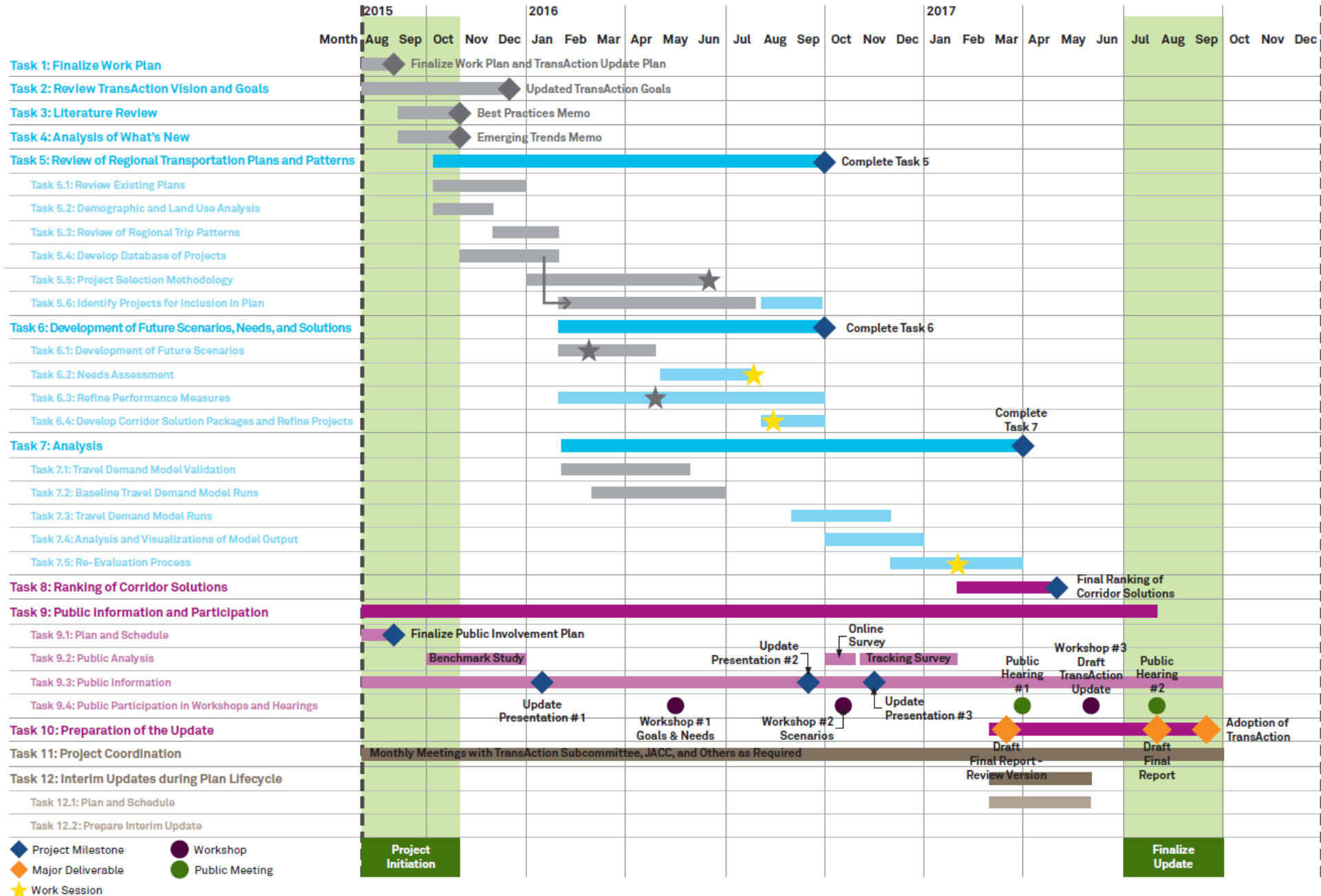
Fall 2016 Solution Assessments

Spring 2017 Plan Assessments

Plan Development



Schedule



Needs Assessment (Projected Population Growth)

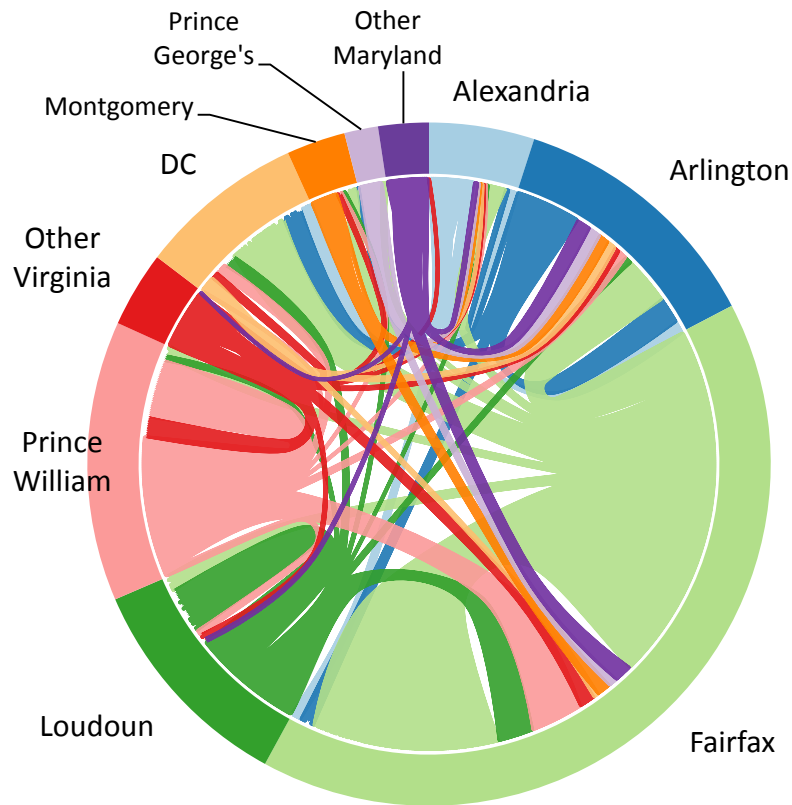
Jurisdiction	2016 Population	2040 Population	2016-2040 Growth		Portion of Growth in RACs
City of Alexandria	149,947	190,824	40,877	27%	98%
Arlington County	222,962	278,055	55,093	25%	96%
City of Fairfax	24,948	27,875	2,927	12%	100%
Fairfax County	1,132,792	1,362,443	229,651	20%	77%
City of Falls Church	13,330	17,311	3,981	30%	100%
Loudoun County	373,757	492,517	118,760	32%	34%
City of Manassas	43,613	51,452	7,839	18%	100%
City of Manassas Park	14,591	15,864	1,273	9%	100%
Prince William County	437,069	558,060	120,991	28%	19%
Northern Virginia Total	2,413,009	2,994,401	581,392	24%	60%
Washington Metropolitan Total	7,150,948	8,788,431	1,637,483	23%	46%

Needs Assessment (Projected Employment Growth)

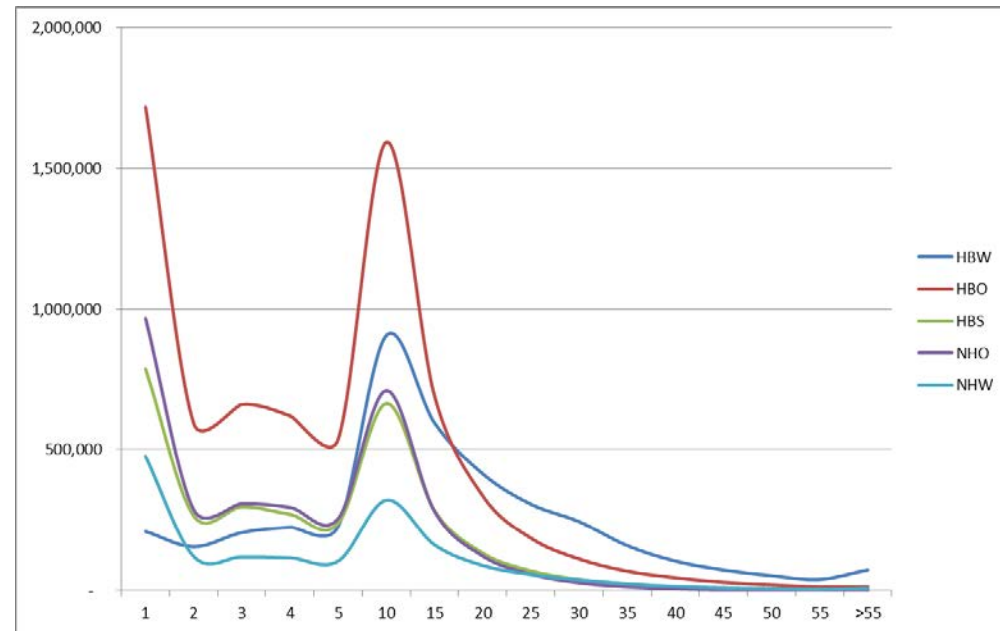
Jurisdiction	2016 Employment	2040 Employment	2016-2040 Growth		Portion of Growth in RACs
City of Alexandria	107,009	142,735	35,726	33%	97%
Arlington County	210,319	267,641	57,322	27%	96%
City of Fairfax	20,988	25,600	4,612	22%	100%
Fairfax County	663,879	864,530	200,651	30%	87%
City of Falls Church	12,458	18,300	5,842	47%	100%
Loudoun County	168,957	273,910	104,953	62%	58%
City of Manassas	27,200	31,551	4,351	16%	100%
City of Manassas Park	4,644	5,106	462	10%	100%
Prince William County	147,426	243,889	96,463	65%	30%
Northern Virginia Total	1,362,880	1,873,262	510,382	37%	72%
Washington Metropolitan Total	4,066,099	5,253,305	1,187,206	29%	60%

Needs Assessment (Travel Patterns)

Travel Patterns, 2040



Trip Length by Purpose, 2040



Purpose	Avg. Trip Length (mi)
HBW	14.54
HBO	6.58
HBS	6.07
NHO	4.93
NHW	7.44

Needs Assessment (Stakeholder Feedback)

Area 3

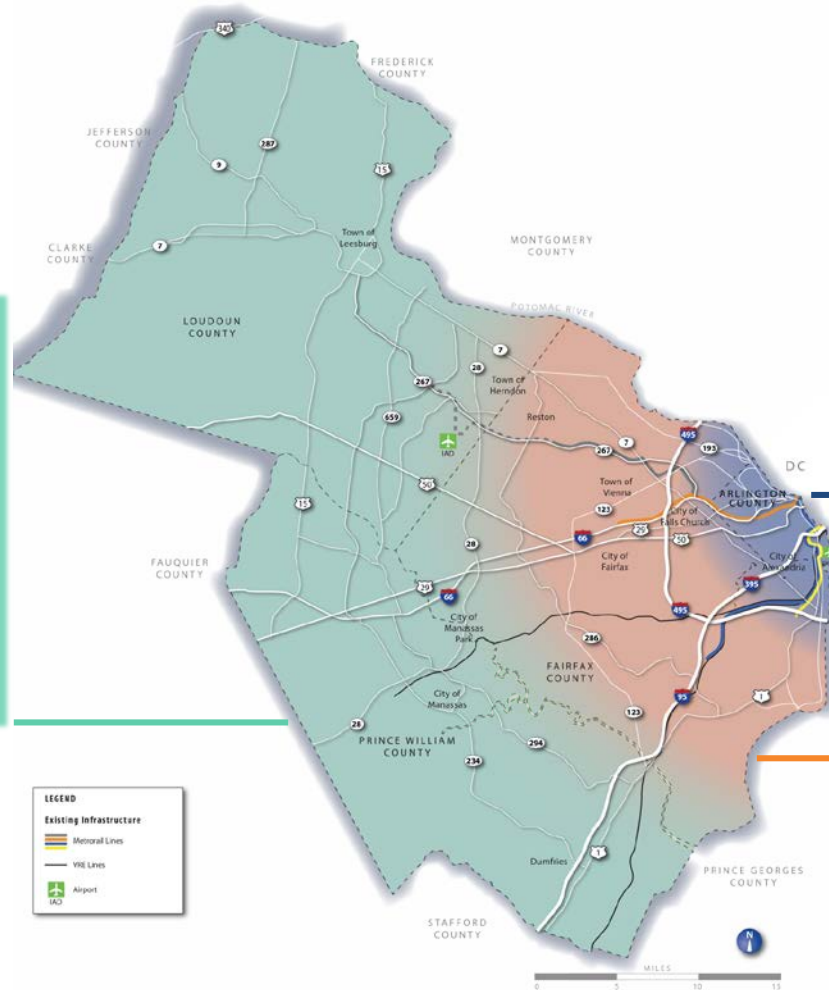
- Outer Beltway(s)
- Widening Routes 28 and 66
- River Crossings
- Multi-modal options
 - Bus Coverage and Frequency
 - Coordinating Bus Routes and Schedules Between Jurisdictions
 - VRE Hours of Operation
 - VRE Extensions

Area 1

- Metrorail Reliability
- More Integrated Transit Connections Between Service Providers and Routes
- Improved Regional Bike Network
- Affordable Housing Near Transit
- Short Trips
- Wayfinding Signage
- Pedestrian and Bicycle Safety

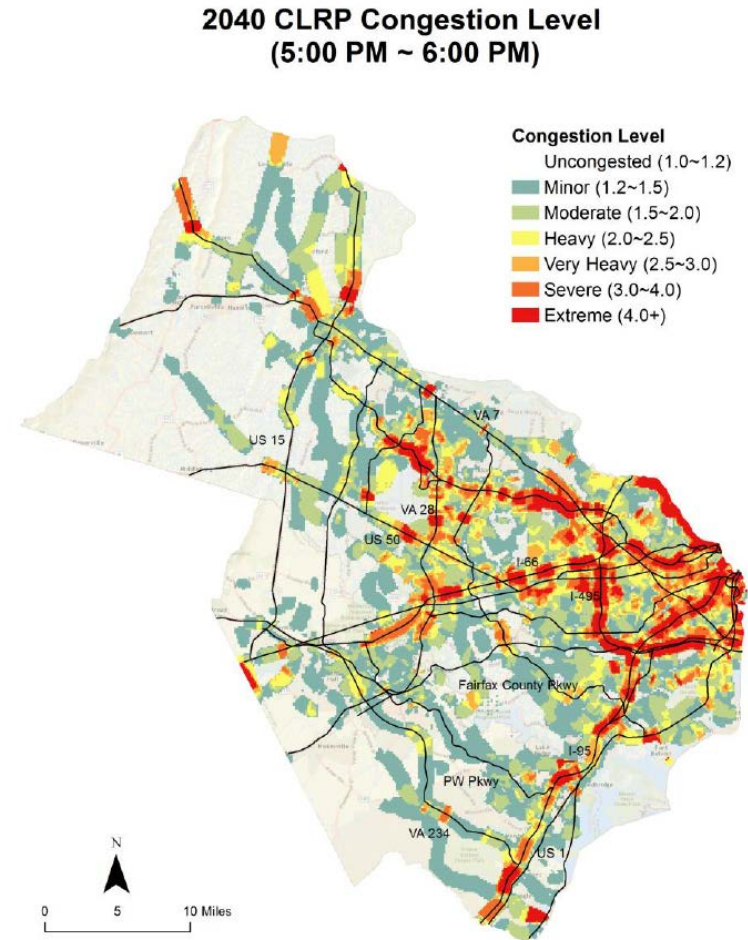
Area 2

- Metrorail Reliability
- Metrorail Access (first/last mile solutions)
- Improved Regional Bike Network
- Affordable Housing Near Transit
- Pedestrian Infrastructure
- Bus Frequency and Reliability
- ITS and Signalization
- Highway Access Ramps
- River Crossings



Needs Assessment (Quantitative Measures)

1. Total Person Delay
2. Congestion Severity
3. Transit Access
4. Transit Crowding
5. Crash Rate
6. Ped & Bike Accessibility

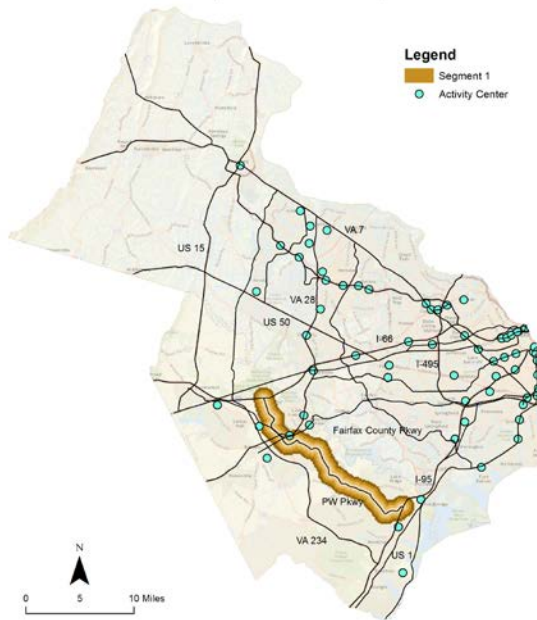


Corridor Themes and Solution Package Methodology

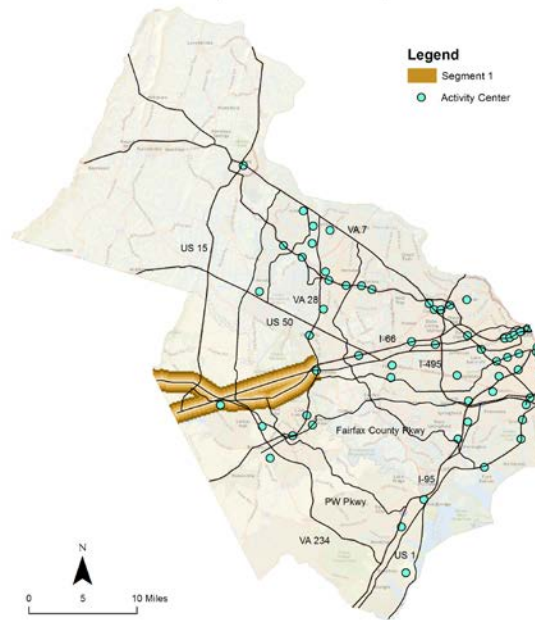
1. Define regional sub-area for solutions package, composed of single or multiple corridor segments
2. Identify regional needs in sub-area based on quantitative needs assessment and public input / stakeholder feedback
3. Develop corridor solution themes, informed by needs
4. Projects filtered by geographic proximity to corridors within regional sub-area
5. Projects assigned to corridor solution packages, informed by relation to corridor solution theme

Example Corridor Segments

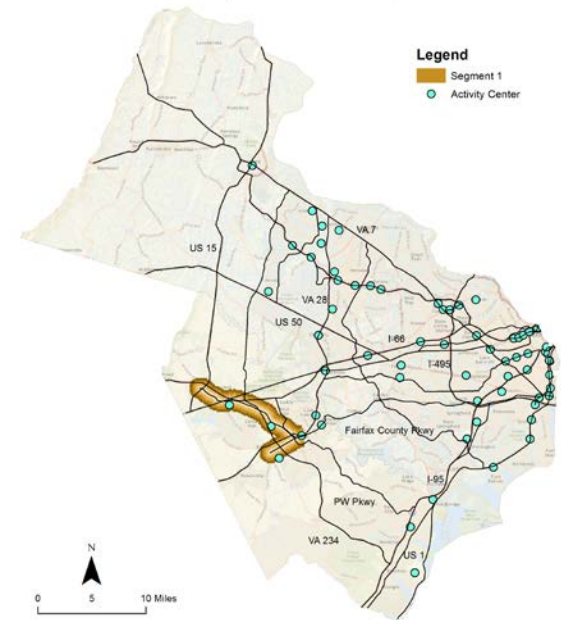
Corridor 4:
Prince William Pkwy/VA 234 Bypass
(One Mile Buffer Area)



Corridor 6:
I-66/US 29/US 50 Inner/Orange-Silver Line
(One Mile Buffer Area)



Corridor 10:
Columbia Pike/Braddock Rd/VRE Manassas/Haymarket
(One Mile Buffer Area)



Example Corridor Segments: Needs Assessment

Regional Needs Criteria (Quantitative)

Corridor Segments	Person Hours of Delay (per Sq.Mi.)			Congestion Severity (peak hour travel time ratio)			Transit Accessibility (capacity / activity)			Transit Crowding (route miles > capacity)			Crash Rate (annual/daily VMT)		Ped and Bike Accessibility (high activity avg)		
	CLRP	A	B	CLRP	A	B	CLRP	A	B	CLRP	A	B	Fatal	Non-Fatal	Walkscore	PEF	Bike (mi/sqmi)
	320	320	320	2.0	2.0	2.0	150.0	150.0	150.0	1.0	1.0	1.0	2.0	2.0	50.0	50.0	1.00
4	1,216	930	981	1.9	1.8	1.8	33.8	81.9	81.6	22.0	44.0	84.0	3.6	3.1	26.8	44.9	0.00
6-1	948	954	753	2.1	2.4	1.9	26.5	50.6	58.9	0.0	27.0	26.0	2.8	4.2	19.1	30.3	0.51
10-1	589	639	529	1.5	1.5	1.4	34.3	62.3	76.5	0.0	1.0	27.0	2.4	2.6	17.2	24.1	0.00

Previous Plans and Stakeholder Feedback (Qualitative)

- Roadway Capacity (28/66)
- Commuter Bus Coverage
- Local Bus Coverage/Service
- VRE Operation/Coverage

Specific Corridor Solutions

Approach i: focus on activity centers

Approach ii: focus on balanced roadway network

Example Corridor Solution Approaches

Approach i: Activity center focused

- Improved local roadway connections to regional activity centers in corridor
- Additional transit services feeding into activity centers
- VRE station access improvements
- Expand regional bicycle / pedestrian infrastructure near transit stations

Approach ii: Balanced roadway network

- Roadway capacity and ITS improvements to facilitate regional movements
- Expand priority bus service on I-66 HOT lanes and construct Park-and-Ride lots

Summary of TransAction Evaluation Measures

	Tier 1: Needs Assessment		Proposed Measure	Tier 2: Corridor Solution Packages		Proposed Measure	Tier 3: Regional Plan Objectives		Proposed Measure
Goal 1: Enhance quality of life and economic strength of NoVA through transportation	1	Person Hours of Delay*	Daily number of person-hours of travel above free-flow travel time for auto and transit	1	Person Hours of Delay*	Daily number of person-hours of travel above free-flow travel time for auto and transit	1	Reduce congestion and crowding experienced by travelers in the region (1a)	Total Person Hours of Delay*
	2	Congestion Severity/Duration	Maximum ratio of congested travel time to free-flow travel time	2	Congestion Severity/Duration	Maximum ratio of congested travel time to free-flow travel time	2	Improve Travel Time Reliability (1b)	Congestion Severity: Maximum Travel Time Ratio
	3	Transit Accessibility	The number of daily transit routes that serve a stop multiplied by the person capacity of each route (activity density)				3	Increase access to jobs, employees, markets, and destinations (1c)	Percent of jobs/population within 1/2 mile
	4	Transit Crowding*	Number of transit route miles with ridership greater than the vehicle capacity	3	Transit Crowding*	Number of transit route miles with ridership greater than the vehicle capacity	4	Reduce congestion and crowding experienced by travelers in the region (1a)	Transit Crowding*
				4	Improved Connections	Qualitative assessment of improvements to connections within Activity Centers	5	Improve connections among and within areas of concentrated growth (1e)	Change in travel time for access to destinations (HBW, other trip purposes) within activity centers
				5	Local and Regional Planning Efforts	Qualitative assessment of consistency with local and regional planning	6	Support and strengthen local land use objectives (1g)	Qualitative assessment of consistency with local planning efforts
							7	Reduce household transportation costs (1f)	Average cost per commute trip
Goal 2: Enable optimal use of the transportation network and leverage the existing network	5	Crash Rate	Number of crashes per VMT (for injuries and fatalities)	6	Crash Rate	Reduction in severe crashes per Vehicle Miles Traveled expected	8	Improve the safety of transportation network (2b)	Serious injuries and fatalities by mode
	6	Pedestrian and Bike Accessibility	Locations with poor accessibility for pedestrians and bicyclists				9	Increase integration between modes and systems	Qualitative assessment of improved last mile connections
				7	Non SOV-mode share	Number of trips taken by non-SOV modes, including non-motorized trips	10	Provide more route and mode options to expand travel choices and improve resiliency of the system (1d)	Share of travel by non-SOV modes
							11	Manage travel demand during peak periods (2d)	Number of SOV trips during peak periods
				8	Miles Traveled	Passenger Miles of Travel per Vehicle Miles Traveled	12	Sustain and improve operation of the regional system (2a)	PHT in congested/crowded conditions Emergency mobility*: change in MPT time cause by 10% increase in
				9	Implementation	Qualitative assessment of implementation timeline and potential for benefits to accrue over time	13	Optimize investments by increasing benefits relative to costs for short-, medium-, and long-term timeframes (2c)	Cost Benefit Analysis NVTA 'congestion reduction relative to cost' (CRRC) ratio
Goal 3: Reduce negative impacts of transportation on communities and the environment							14	Reduce greenhouse gas emissions caused by transportation (3a)	GHG emissions based on VMT by speed
							15	Reduce stormwater runoff (3b)	Amount of impervious area
							16	Protect environmental and cultural assets and resources (3c)	Number of ROW expansions that impact resources
							16	Reduce transportation-related air pollution (3d)	Criteria pollutant emissions based on VMT by speed

* Measures used by HB599 Analysis

Appendix Materials

HB 599 Performance Measures

–Congestion Reduction Measures

- **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).

–Mobility Measures

- **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.

HB 2 Performance Measures

Safety

- S1: Number of Fatal and Severe Injury Crashes
- S2: Rate of Fatal and Severe Injury Crashes

Congestion Mitigation

- C1: Person Throughput
- C2: Person Hours of Delay

Accessibility

- A1: Access to Jobs
- A2: Access to Jobs for Disadvantaged Populations
- A3: Access to Multimodal Choices

Environmental Quality

- E1: Air Quality and Energy Environmental Effect
- E2: Impact to Natural and Cultural Resources

Economic Development

- ED1: Project Support for Economic Development
- ED2: Intermodal Access and Efficiency
- ED3: Travel Time Reliability

Land Use Coordination

- L1: Land Use Policy Consistency

Advancing from Planning to Programming



Presentation to the
Technical Advisory Committee
August 17, 2016

Northern Virginia
Transportation Authority
The Authority for Transportation in Northern Virginia

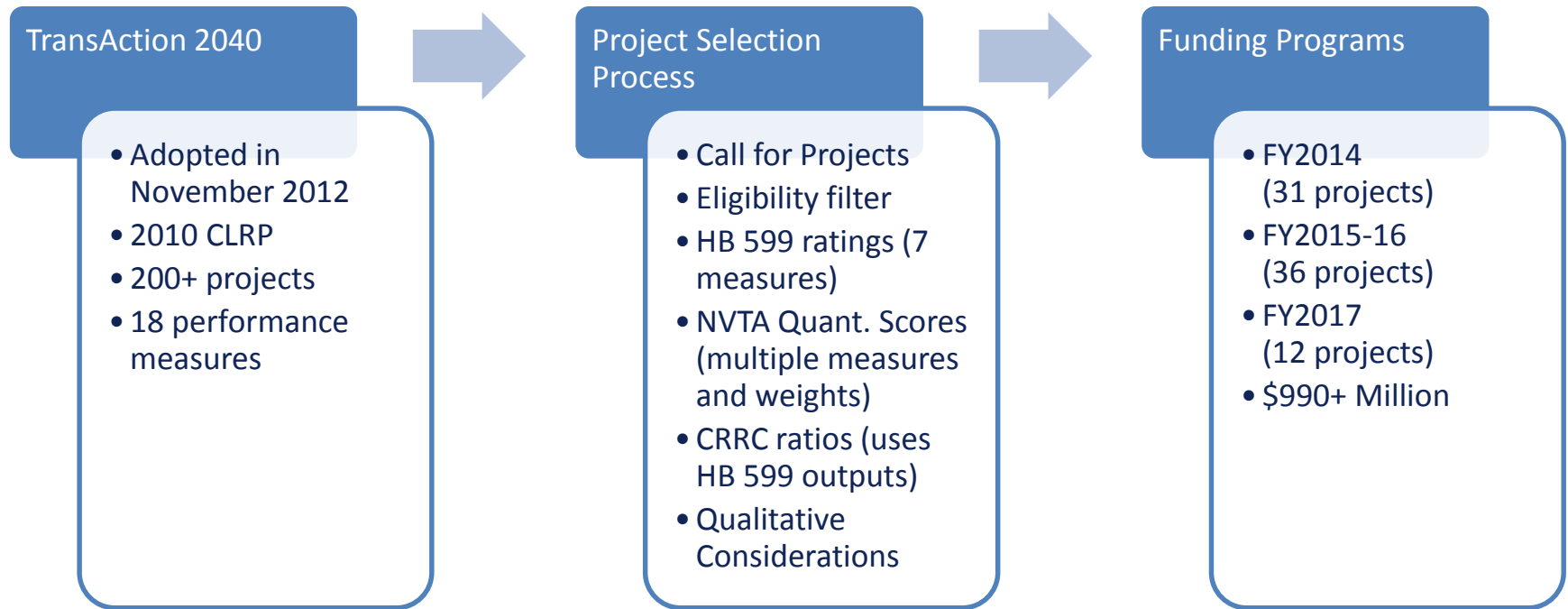
Significant Milestones



Note: Milestones shown in Calendar Year in which event was/will be enacted or adopted



'Former' Process



Note: Process shown for allocating NVTa's Regional Revenues



Key Lessons Learned

- Data-driven project selection process provides robust analysis and...lots of data;
- Successfully applied HB 599 process to all projects in FY2017 Program, regardless of mode;
- HB 599 process must be repeated for each new candidate pool, and individual project ratings cannot be subsequently re-used;
- Projects evaluated independently; synergistic effects not addressed;
- No opportunity for project sponsors to refine projects when evaluation complete;
- TransAction 2040 and HB 599 measures developed and applied independently.



TransAction Update Opportunities

- Enhanced regional transportation planning:
 - Multi-modal corridor-based approach to addressing identified regional transportation needs;
 - Project groupings will enable synergistic effects to be better understood;
 - Project sponsors will be able to refine projects based on interim evaluations;
 - Potential use of targets for key measures.

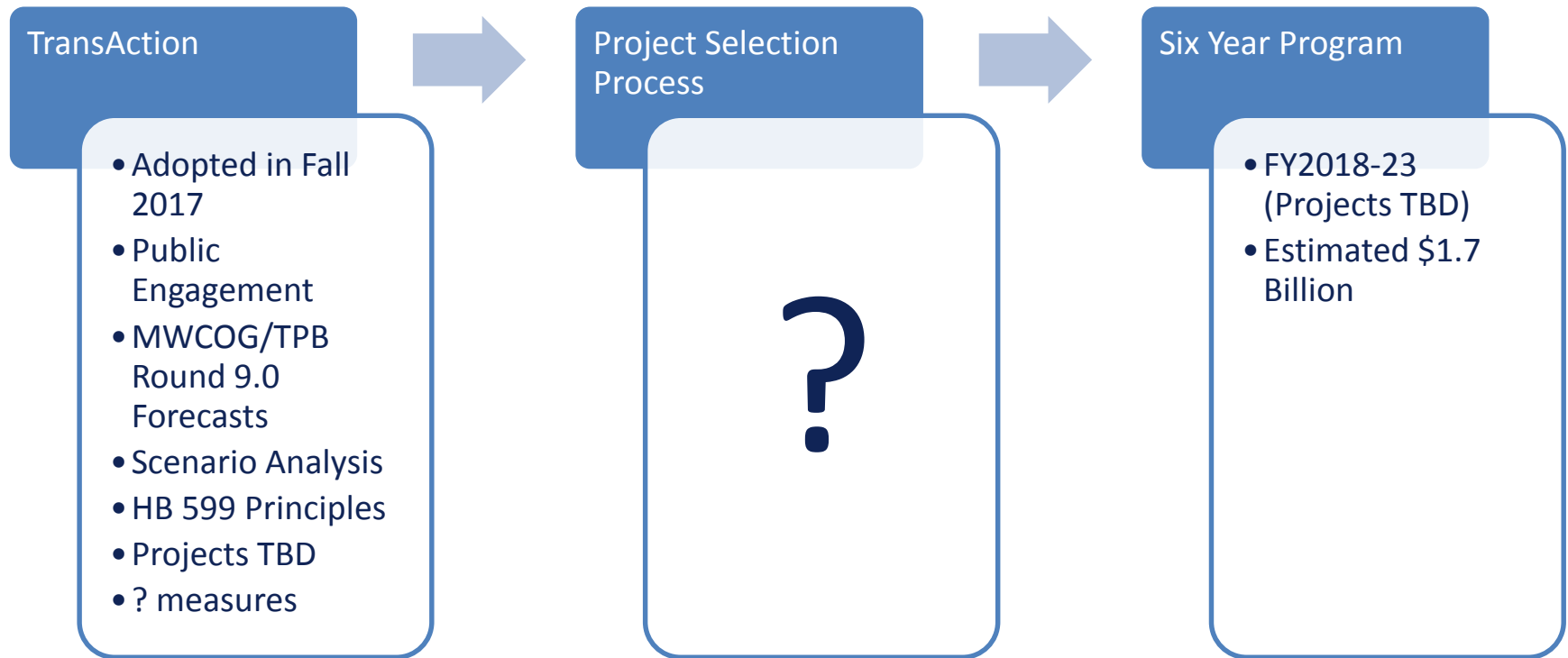


TransAction Update Opportunities

- Scenario Analysis will enhance overall robustness of TransAction:
 - Evaluation and recommendations will be based on MWCOG/TPB Round 9.0 forecasts for 2040;
 - Analysis of multiple scenarios ('alternate' futures) will provide an understanding of the sensitivity of recommendations.
- Principles of HB 599 will be integrated:
 - Consistent use of measures;
 - All projects/project groupings will be evaluated.



'Enhanced' Process



Note: Process shown for allocating NVTa's Regional Revenues



Inputs Requested

- TransAction Measures:
 - Support vision and goals;
 - Consider/combine measures used previously for TransAction 2040, HB 599, HB 2 (Smart Scale), and NVRTA's project selection process;
 - Weightings will reflect the Authority's priorities.
- Six Year Program Project Selection Process:
 - Corridor focus/project groupings;
 - Logical sequencing of projects/phases;
 - Geographic/modal balance
 - Jurisdictional priorities.

