



**Northern Virginia Transportation Authority**  
*The Authority for Transportation in Northern Virginia*

**PLANNING AND PROGRAMMING COMMITTEE**  
**Wednesday, May 3, 2017, 10:30am (note later start time)**

**Northern Virginia Transportation Authority**  
**3040 Williams Drive, Suite 200**  
**Fairfax, Virginia 22031**

**AGENDA**

- I. Call to Order/Welcome** Chairman Nohe

**Action**

- II. Approve Summary Notes of March 27, 2017 PPC Meeting**  
*Recommended Action: Approval [with abstentions  
from those who were not present]*
- III. Six Year Program Framework** Mr. Jasper  
*Recommended Action: Recommend Approval by NVTA*
- IV. Date of Public Hearing** Ms. Backmon  
*Recommended Action: Approval of recommendation to the Authority  
to authorize July 13, 2017 as the date of the TransAction Update Public Hearing*

**Discussion/Information**

- V. TransAction Preview: Baseline Analysis** Mr. Jasper
- VI. NVTA Update** Ms. Backmon, Executive Director

**Adjournment**

- VII. Adjourn**

**Next Meeting:**  
**10:00am, Wednesday May 31, 2017**



## Northern Virginia Transportation Authority

*The Authority for Transportation in Northern Virginia*

### PLANNING AND PROGRAMMING COMMITTEE

Friday, March 27, 2017, 10:00 am

Northern Virginia Transportation Authority

3040 Williams Drive, Suite 200

Fairfax, Virginia 22031

### SUMMARY NOTES

#### I. Call to Order/Welcome

Chairman Nohe

- Chairman Nohe called the meeting to order at 10:05 am.
- Attendees:
  - **PPC Members:** Chairman Nohe (Prince William County); Chairman Bulova (Fairfax County); Chairman Randall (Loudoun County); Chair Fisette (Arlington County); Mayor Rishell (City of Manassas Park).
  - **Authority Members:** Mary Hynes (Gubernatorial Appointee, CTB Member); Jim Kolb (Gubernatorial Appointee).
  - **NVTA Staff:** Monica Backmon (Executive Director); Carl Hampton (Debt and Investment Manager); Keith Jasper (Principal); Michael Longhi (CFO); Sree Nampoothiri (Transportation Planner).
  - **Staff:** Dan Malouff (Arlington County); Noelle Dominguez (Fairfax County); Bob Brown (Loudoun County); Ric Canizales, James Davenport (Prince William County); Pierre Holloman (City of Alexandria); Wendy Sanford (City of Fairfax); Dan Goldfarb (NVTC); Sonali Soneji (VRE); Maria Sinner (VDOT); Arianna Koudounas (MWCOG/TPB).
  - **Other:** Nancy Smith (Northern Virginia Transportation Alliance)

### Action

#### II. Meeting Summary Notes of January 30, 2017, PPC Meetings

- The January 30, 2017 Planning and Programming Committee meeting summary was unanimously approved.

### Discussion/Information

#### III. Development of FY 2018-2023 Six Year Program Framework

- Ms. Backmon informed the members that the schedule is for the Authority to adopt the Six Year Plan (SYP) before the end of June 2018. Mr. Jasper presented the concept of the SYP and covered topics including program development, roles,

- responsibilities, and schedule of the program, and ideas for incorporating financial principles to the plan. He mentioned that the Committee is expected to take action recommending NVTa approval at its May 3, 2017 meeting.
- Chairman Bulova and Chairman Randall requested to reword the mention of region as the economic growth engine of the Commonwealth to be more sensitive to the rest of the state.
  - Chairman Nohe and Ms. Hynes added that the wording could be modified but the idea must be highlighted since the economic growth of the region is the reason for NVTa's existence.
  - Chairman Bulova enquired whether TransAction or the SYP is the appropriate place for benefit cost analysis/rankings. Mr. Jasper replied that the benefit cost analysis within TransAction is at a very high level to compare among different groups of projects. Ms. Backmon added that the costs are estimates and will be necessarily updated for programming since there will be more information, including other funding sources, at that stage.
  - In response to Chairman Bulova's comment, Mr. Jasper noted that not having detailed costs will not preclude any project in TransAction.
  - In response to Ms. Hynes' question on looking at the benefit cost analysis at a corridor level, Mr. Jasper mentioned that the Subcommittee is still debating whether it should be at the corridor level or project level.
  - Chairman Nohe pointed out that this could be at the corridor segment level to enable decision making at a detailed granularity.
  - In response to Chairman Bulova's question on having enough cost information to analyze at the project level or the project group level, Mr. Jasper mentioned that the analysis is looks at groups of projects at the plan level and the TransAction team is working to fill some gaps through a standardized cost estimation process.
  - In response to Mayor Rishell's question, Mr. Jasper noted that the Congestion Reduction Relative to Cost (CRRC) ratios will be considered at the programming level.
  - Mr. Brown remarked that the TransAction Subcommittee has been discussing similar questions and TransAction will help jurisdictions better respond to the SYP's Call for Regional Projects.
  - Ms. Backmon stated that the projects need to be looked at in combination for plan analysis in order to understand the larger regional picture. She added that the benefit cost information can bring out the true need for the region that can be conveyed to the region and the state.
  - Ms. Hynes commented that it is a good idea to synchronize the schedule of SYP with those of SmartScale and Revenue Sharing to leverage maximum benefit from different fund sources. She added that the SYP should be synchronized with NVTC's toll revenue programming too as those revenues can be used for operations.
  - In response to Ms. Sinner's question on the two-year SYP update, Chairman Nohe mentioned that the NVTa SYP will be updating the last two years similar to SmartScale rather than Revenue Sharing, which updates the first two years. He added that the first SYP should probably have all six years programmed with the detailed first two years (higher percentage funds) but less sparsely as we go to the outer years. He also added that the updates will focus heavily on the last two years but can be flexible to make adjustments to the middle two years.
  - Mr. Canizales raised a concern about the 60-day response period to the Call for Regional Projects and suggested a 90-day response period in order to accommodate

Board and Council meeting schedules for obtaining support resolutions. Ms. Backmon reminded everyone that June 2018 is a hard deadline to adopt the SYP since from July 2018 onwards, NVTa will need to adhere to new laws with additional provisions. Chairman Nohe suggested staff explore this further.

- Chairman Nohe recommended that the Authority's debt capacity should only be used for mega projects although the definition of mega projects could be debated. Mr. Longhi noted that as per the current financial situation, debt is not necessary at this stage but can be used as an option if the need arises in the future.
- Mr. Brown suggested that the NVTa coordinate with the Commonwealth to ensure that funding approval from one source will not preclude funding from the other source even if the project is fully funded by the first source.

#### **IV. NVTa Update**

- Ms. Backmon informed the members that the April 13, 2017 Authority meeting is cancelled and the next meeting is scheduled on May 11, 2017.

#### **Adjournment**

#### **V. Adjourn**

- The meeting adjourned at 11:30 am.

# Six-Year Program (SYP) Framework



Presentation to the PPC  
*May 3, 2017*

Northern Virginia  
Transportation Authority  
*The Authority for Transportation in Northern Virginia*

# What is the SYP Framework?

- Describes how TransAction (TA) and the FY2018-23 Six Year Program will be integrated;
- Describes how the FY2018-23 Six Year Program will be developed;
- Identifies roles, responsibilities, schedule, and other ‘structural’ aspects of the FY2018-23 Six Year Program;
- Incorporates Financial Principles;
- Will not include list of projects or funding allocations.



# Desired SYP Features

- Transparent and Accountable
  - No secrets or surprises;
  - Leverages cost and time efficiencies wherever possible.
- Flexible
  - Adapts to changing circumstances, e.g. financial, transportation;
  - Maximizes Regional Revenue Fund project use through proactive cash flow and investment management.
- Predictable
  - Provides multi-year funding stream;
  - Matches expected project expenditure profile or funding verification requirements.



# Proposed SYP Features – 1

- Assuming the FY2018-23 Six Year Program is adopted in Spring 2018, subsequent updates will be adopted by:
  - Fall 2019 (FY2020-25)
  - Fall 2021 (FY2022-27)
- Updates to the SYP will accommodate:
  - Project/project phase completions;
  - Project schedule and budget adjustments (subject to NVTa policies);
  - Fluctuations in regional revenues;
  - Updated NVTa regional priorities.
- TransAction will be next updated and adopted by Fall 2022;
- Ad-hoc TransAction updates or amendments may occur under exceptional circumstances, subject to NVTa approval and the identification of an acceptable funding source.





# Integrated NVTA/CTB Schedule

CY	2017	2018	2019	2020	2021	2022	2023
<b>NVTA</b>							
TransAction							
FY2018-23 SYP							
FY2020-25 SYP							
FY2022-27 SYP							
TransAction							
FY2024-29 SYP							
<b>CTB</b>							
Smart Scale							
FY2018-23 SYIP							
Smart Scale							
FY2020-25 SYIP							
Smart Scale							
FY2022-27 SYIP							
Smart Scale							
FY2024-29 SYIP							



# Proposed SYP Features – 2

- Much like jurisdictional Capital Improvement Plans (CIPs) NVTa's SYP will set an expectation for future funding of the identified projects;
- Subject to Finance Committee recommendation, the SYP will:
  - Allocate estimated revenues (PayGo) for each year of the Program
  - Utilize the Authority's available debt capacity when fiscally prudent.



# Proposed SYP Features – 3

- For the FY2018-23 Six Year Program, and subsequent updates, the following process will be followed:
  - Finance Committee will affirm estimated available PayGo revenues for each year of the Six Year Program, through annual budget cycle;
  - NVTa staff brief jurisdiction and agency staff in detail on the SYP process;
  - ‘Call for Regional Projects’ (CfRP) will be issued by the Authority (mid 10/17), with a 60-day response period (thru mid 12/17);
  - Additional 30-day response period (thru mid 1/18) for Governing Body resolutions
  - Review of responses and evaluation of projects by NVTa staff during a 90-day period following the CfRP response deadline (mid 12/17 – mid 3/18);
  - Review of NVTa staff recommendations during the following 60-day period (mid 3/18 – early 5/18);
  - Public Hearing (5/18) and optional ‘Town Hall’ meetings during a 30-day public comment period (during 5/18);
  - Adoption of the SYP, generally at the first Authority meeting following the Public Hearing (6/18).



# Proposed SYP Features – 4

- Responses to the CfRP will identify a candidate pool of regional projects focused on Northern Virginia's transportation needs;
- The requirements of the CfRP will include, as a minimum:
  - Project description, including specific link to relevant TransAction evaluation;
  - For all project phases: cost, schedule, funding requested, external funding available (with supporting documentation);
  - Commitment to engage/recognize NVTa as a partner in all public-facing outputs, e.g. advanced coordination for public events, branding;
  - Any other documentation that highlights a project's regional significance, e.g. extent to which project addresses regional needs, scale of regional impacts, and multi-jurisdictional commitments;
  - Resolution of support from the Governing Body, or Governing Bodies in the case of multi-jurisdictional projects.



# Proposed SYP Features – 5

- The review of CfRP responses and evaluation of projects by NVTa staff will include, as a minimum:
  - Verification of accuracy and completeness of responses;
  - Validation of project eligibility and consistency with relevant NVTa policies;
  - Posting of a summary of responses to NVTa's website;
  - Review of relevant TransAction evaluations, including 'regional coherence', phasing, and sequencing of CfRP projects;
  - Calculation of CRRC ratios;
  - Consideration of the TransAction scenario analysis
  - Documentation of relevant qualitative considerations;
  - Development of initial recommendation, for review by NVTa's Committees;
  - Development of draft recommendation, based on feedback from NVTa's Committees, for Authority action.

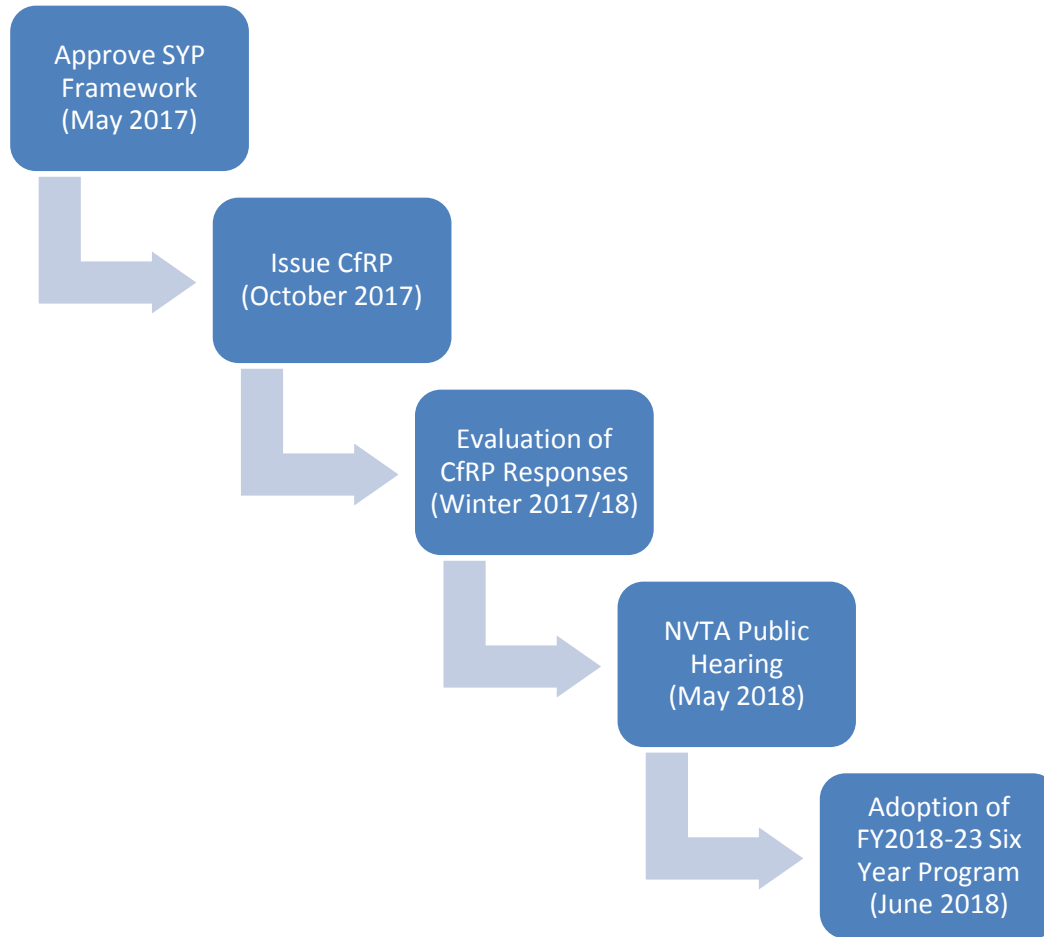


# Other SYP Considerations

- Finance Committee to recommend Financial Principles addressing:
  - Proportion of estimated available PayGo funding that should be allocated in each Fiscal Year of the SYP;
  - Factors that influence the extent to which available debt capacity should be used, and when;
  - Provision for NVRTA to provide matching funds for federal grant programs.
- Finance Committee will consider new/enhanced policies related to NVRTA's programming process.



# Key Milestones – Six Year Program





# **TransAction Preview: 2040 Baseline Conditions**

**Planning and Programming Committee**

**May 3, 2017**



# Agenda

- Process
- 2040 Baseline Conditions
- Candidate Regional Projects
- Summary of Model Results
- Next Steps

# Process

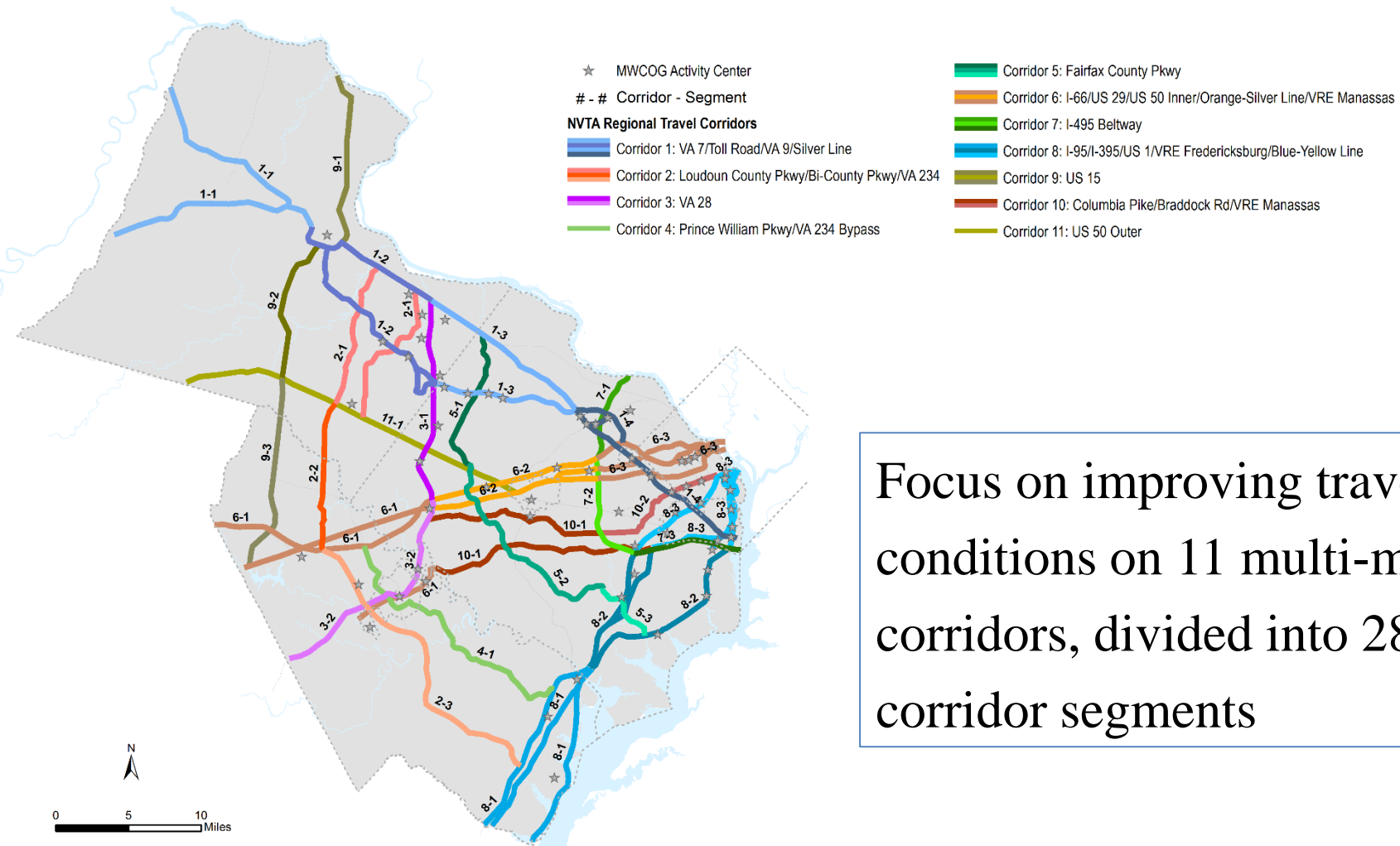
# Process – 1

- Two parallel tracks
  - Public Engagement (Spring and Fall 2016)
  - Technical Analysis

# Process – 2

- Establish 2040 TransAction Baseline
  - MWCOC Round 9.0 forecasts (population/employment)
  - Multi-modal transportation network comprising existing 2016 network plus:
    - Projects currently under construction
    - Future, committed projects with full funding
    - TransAction Baseline includes: Metrorail Silver Line Phase II, Transform 66, I-395 Express Lanes, I-95 Express Lanes extension
  - Development of four ‘alternate futures’ for scenario (sensitivity) analysis

# Process – 3



Focus on improving travel conditions on 11 multi-modal corridors, divided into 28 corridor segments

# Process – 4

- Performance Measures
  - Performance of the plan evaluated at multiple levels (regional, corridor, corridor segment)
  - Evaluation uses 15 measures, including all seven HB 599 (2012) measures; each measure weighted 5 or 10 percent
  - Integrates HB 599 process into TransAction
- Benefit/Cost Analysis
  - TransAction includes a ‘planning level’ BCA, using project cost estimates and encompassing all performance measures

# Process – 5

- Unconstrained Approach
  - TransAction embraces regional transportation solutions that address regional transportation needs
  - TransAction is a fiscally unconstrained plan
  - TransAction includes candidate regional projects with a full or partial funding need, regardless of whether such projects are eligible for NVTAs regional revenues

# Process – 6

- Analytical Approach
  - Develop a Draft Plan with a horizon year of 2040
  - Draft Plan includes a combination of ‘bottom-up’ and ‘top-down’ (e.g. ICM/ITS, TDM, high performance transit) candidate regional projects
  - Draft Plan compared to 2040 TransAction Baseline
  - Draft Plan additionally evaluated against modified 2040 baseline conditions associated with four alternate futures



# Process – 7

- Caveats
  - TransAction is a multi-modal long range regional transportation plan; it does not seek to evaluate or optimize individual projects
  - Focus on ‘bigger picture’ relative changes rather than microscopic details
  - Analytical approach addresses recurring congestion

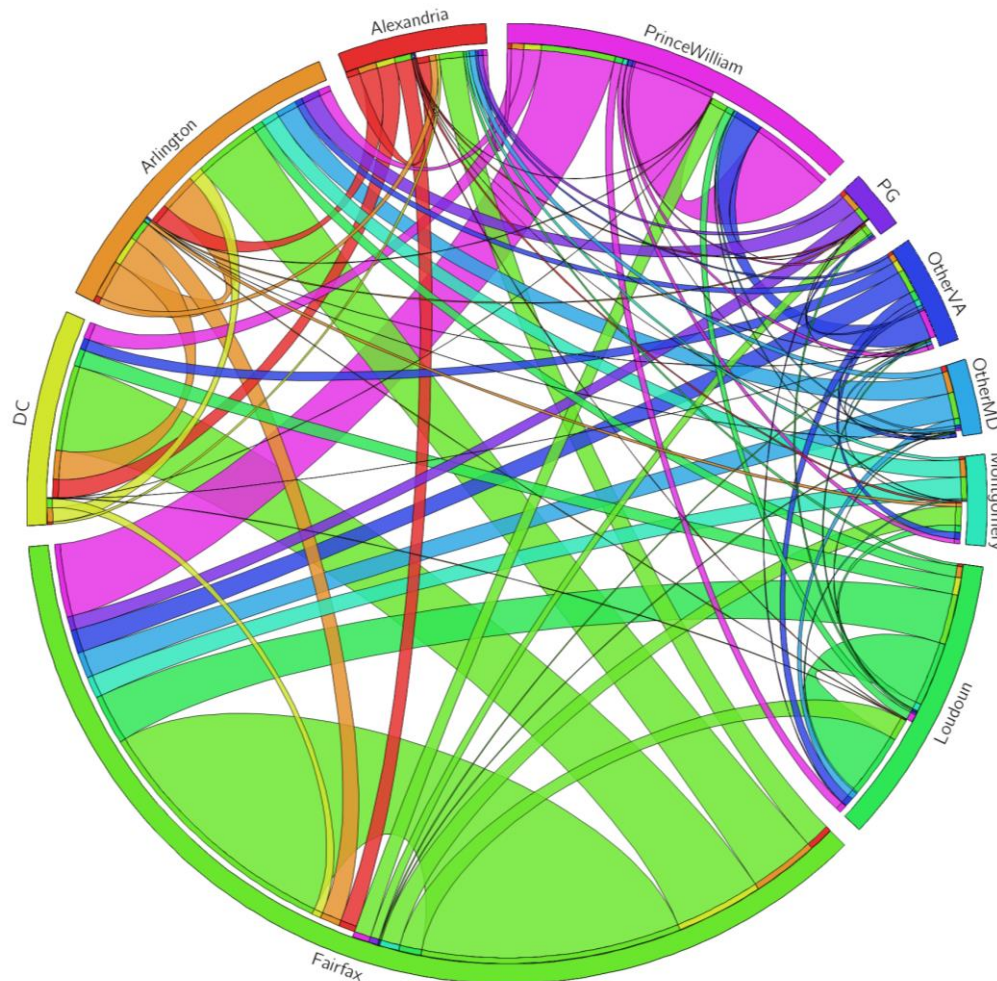
# 2040 Baseline Conditions

# 2016 vs. 2040 TransAction Baseline

	2016	2040 TransAction Baseline	% Change
Population			
Northern VA	2,413,009	2,994,401	24%
DC Metro	7,150,948	8,788,431	23%
Employment			
Northern VA	1,362,880	1,873,262	37%
DC Metro	4,066,099	5,253,305	29%

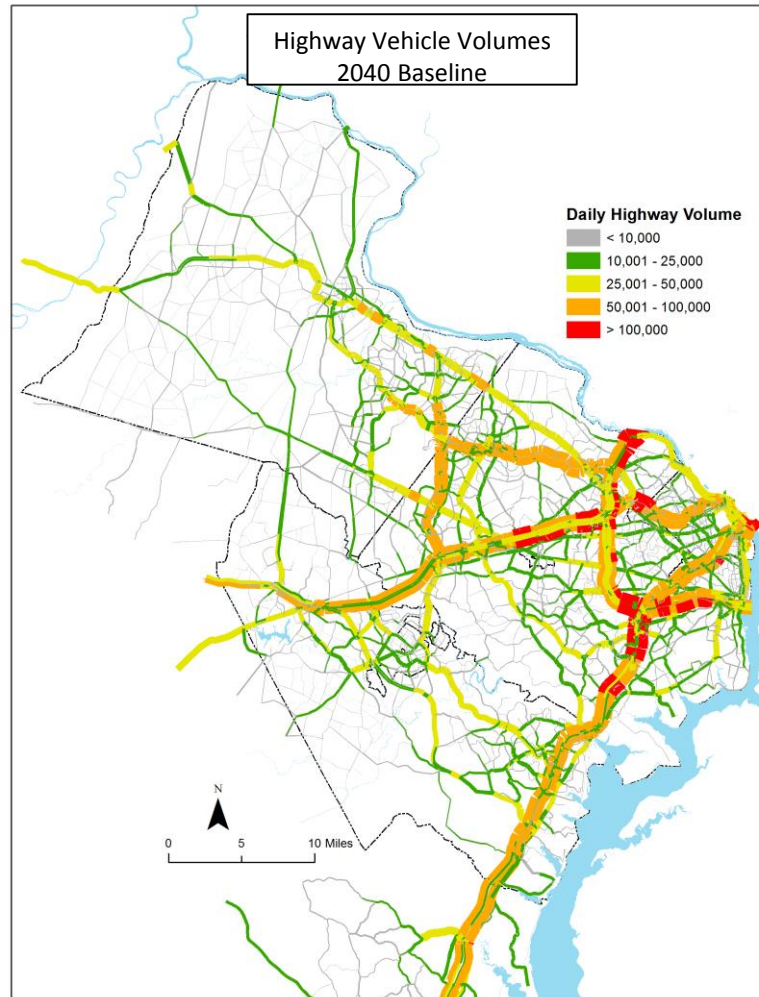
# Jurisdiction Origins and Destinations

## 2040 Commute Patterns



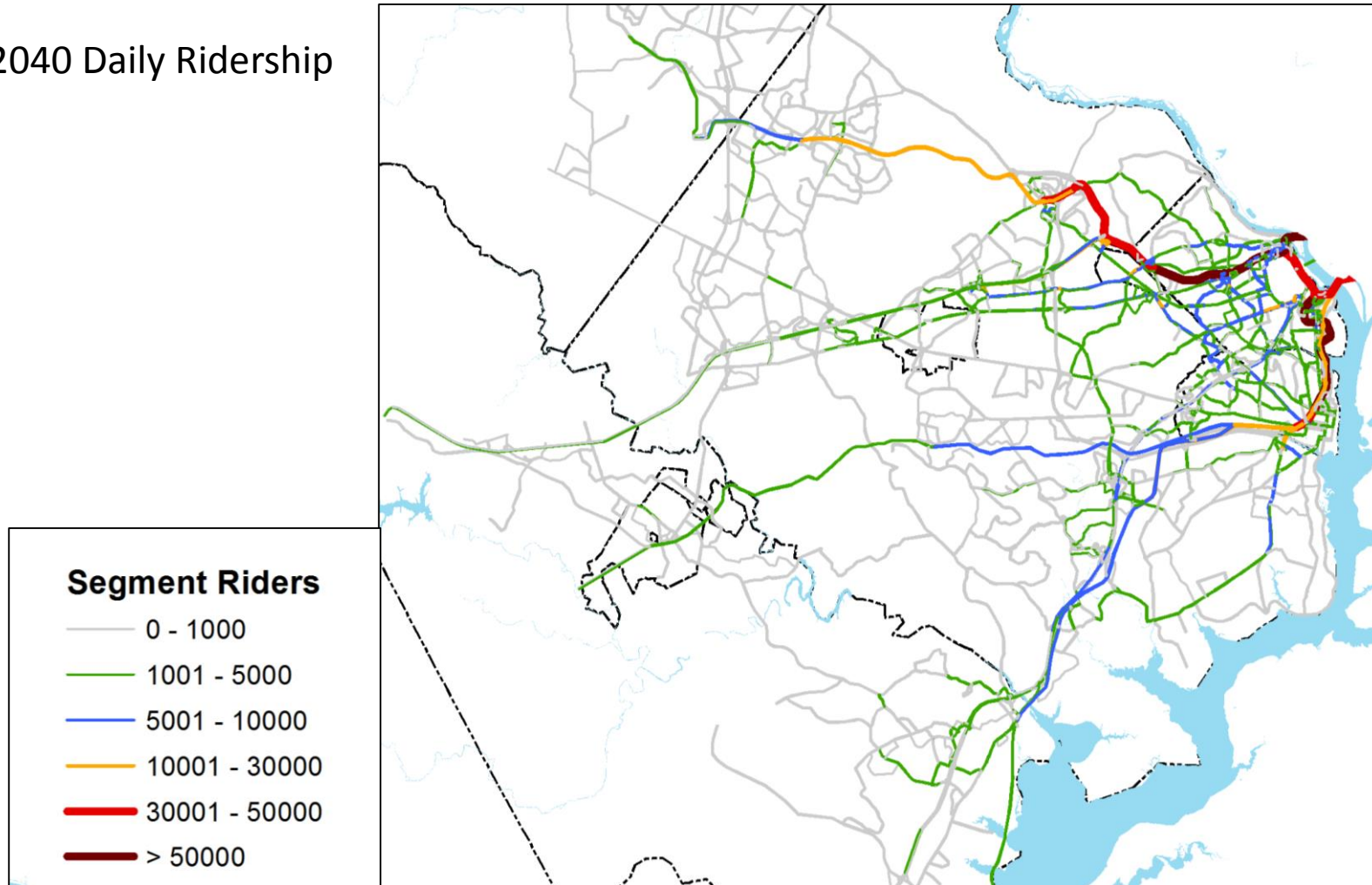
Source: MWCOC 2040 Travel Forecasts, Round 9.0 Land Use

# TransAction Baseline Vehicle Volumes



# TransAction Baseline Transit Ridership

2040 Daily Ridership



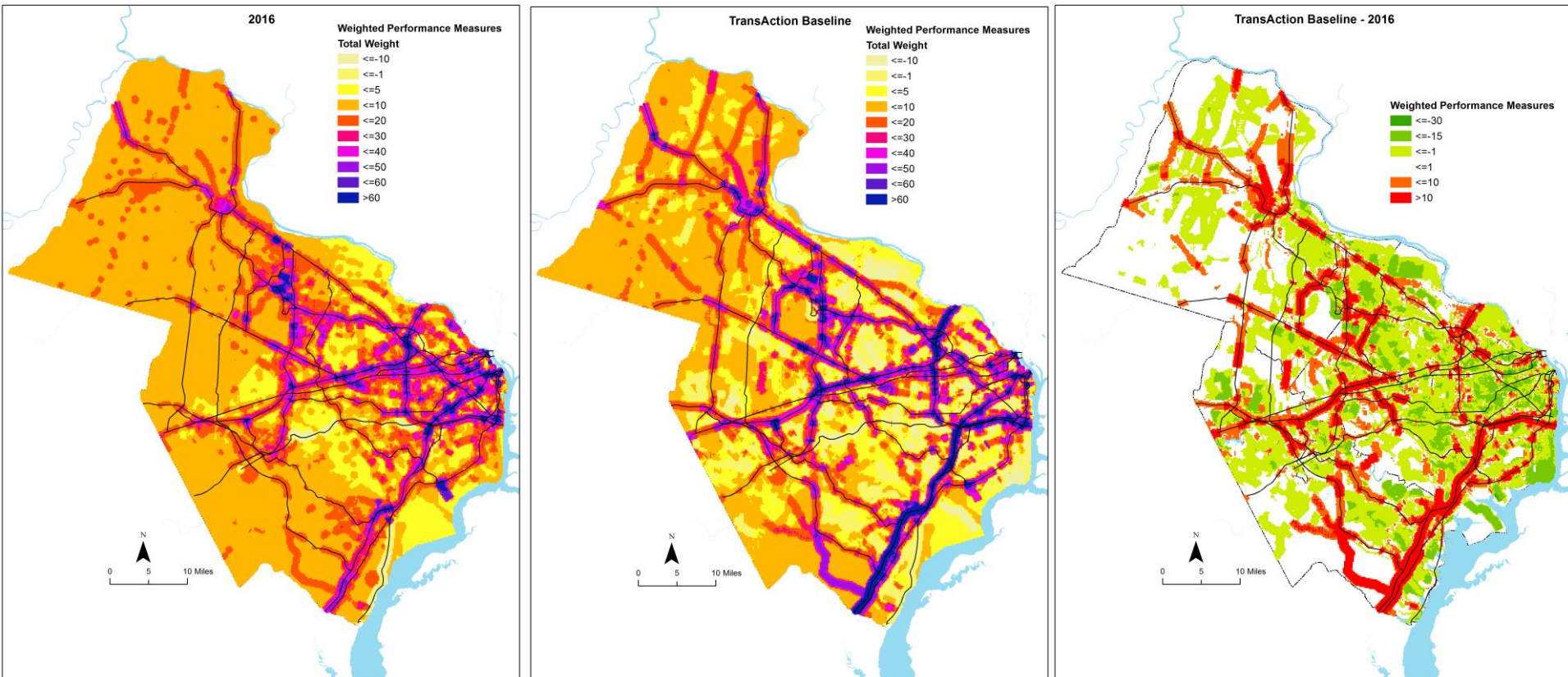
# 2016 vs. 2040 TransAction Baseline

Daily Measures	2016	2040 TransAction Baseline	% Change
Motorized Trips	8,737,000	10,462,000	19.7%
Auto Trips	7,862,000	9,432,000	20.0%
Transit Trips	876,000	1,030,000	17.6%
Transit Share	10.0%	9.8%	-0.2%
Transit Boardings	1,002,000	1,359,000	35.6%
Miles of Travel	104,838k	125,378k	19.6%
Hours of Travel	3,298,000	5,811,000	76.2%
Hours of Delay	1,007,000	3,030,000	201%
Transit Crowding	10,800	20,100	86.8%



# 2040 TransAction Baseline

2040 TransAction Baseline compared to 2016 Conditions





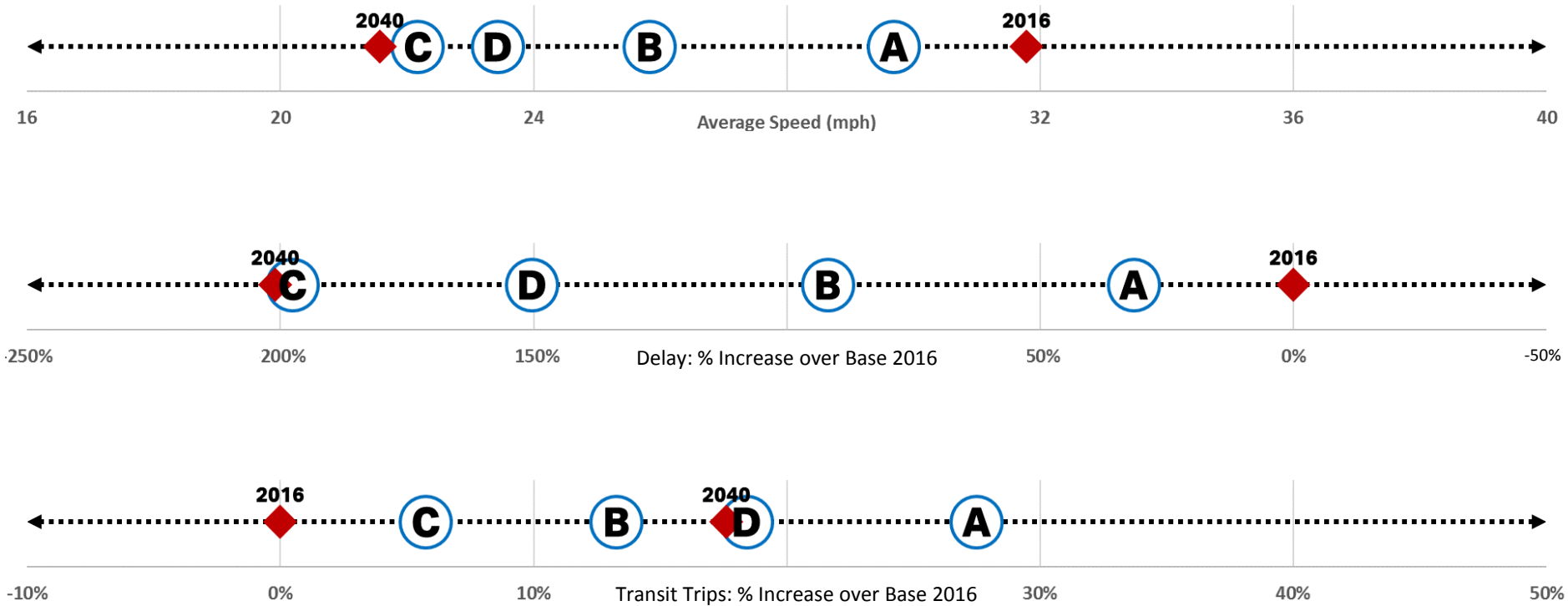
# Alternate Futures

- Four Alternate Futures tested:
  - Scenario A: Technology makes driving easier
  - Scenario B: Changes in travel behavior
  - Scenario C: Dispersed land use growth
  - Scenario D: Concentrated land use growth
- Scenarios are ‘plausible’ alternate futures, but are neither ‘predicted’ nor ‘preferred’; hybrid scenarios are ‘probable’
- Scenario (sensitivity) analysis provides an understanding of the robustness of TransAction findings and recommendations
- NVTa may wish to explore future proactive policy guidance associated with selected Alternate Futures

# 2040 TransAction Baseline vs Scenarios

Daily Measures	2016	TransAction Baseline	Scenario A	Scenario B	Scenario C	Scenario D
Motorized Trips	8,737,000	10,462,000	10,847,000	10,063,000	10,733,000	10,320,000
Auto Trips	7,862,000	9,432,000	9,731,000	9,071,000	9,807,000	9,284,000
Transit Trips	876,000	1,030,000	1,116,000	992,000	926,000	1,037,000
Transit Share	10.0%	9.8%	10.3%	9.9%	8.6%	10.0%
Transit Boardings	1,002,000	1,359,000	1,382,000	1,144,000	1,239,000	1,389,000
Miles of Travel	104,838k	125,378k	127,818k	116,615k	129,719k	121,587k
Hours of Travel	3,298,000	5,811,000	4,305,000	4,515,000	5,850,000	5,188,000
Hours of Delay	1,007,000	3,030,000	1,324,000	1,932,000	2,996,000	2,520,000
Transit Crowding	10,800	20,100	13,800	12,900	16,500	19,700

# 2040 TransAction Baseline vs Scenarios



Higher Performing →

# Alternate Futures: Key Highlights

- Scenarios A and B provide the greatest improvement in travel conditions over the 2040 TransAction Baseline
  - Scenario A has the lowest person hours of delay (less than 55% of Baseline and Scenarios C and D)
  - Scenario B has the lowest level of transit crowding
- Scenarios C and D highlight the relationship between land use and transportation
  - Scenario C appears to be the least desirable alternate future, is still better than the 2040 TransAction Baseline

# Candidate Regional Projects

# Draft Plan Projects

Total Projects in Draft Plan	Plan Cost Estimate w/ ROW (\$bn)
360	\$43.9

Project Type	Total Projects*
Roadway	240
Transit	104
Non-motorized	45
ITS <sup>1</sup> / ICM <sup>2</sup> / TDM <sup>3</sup>	30

\*Projects can be categorized as multiple types

<sup>1</sup> ITS: Intelligent Transportation Systems

<sup>2</sup> ICM: Integrated Corridor Management

<sup>3</sup> TDM: Transportation Demand Management

# Summary of Model Results

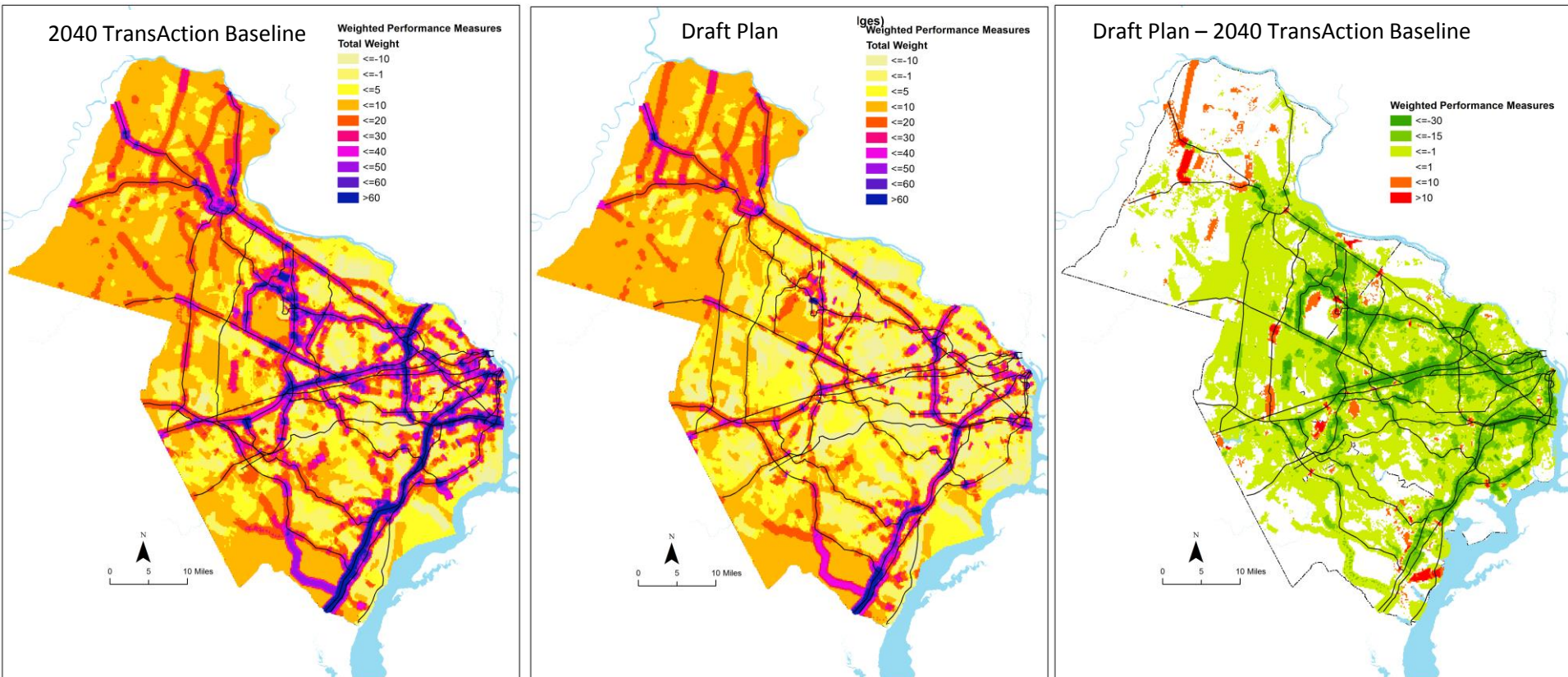
# Draft Plan: Initial Findings

Daily Measures	2016	2040 TransAction Baseline	Draft Plan	% Change
Motorized Trips	8,737,000	10,462,000	10,563,000	1.0%
Auto Trips	7,862,000	9,432,000	9,444,000	0.1%
Transit Trips	876,000	1,030,000	1,119,000	8.7%
Transit Share	10.0%	9.8%	10.6%	8.2%
Transit Boardings	1,002,000	1,359,000	1,539,000	13.2%
Miles of Travel	104,838k	125,378k	124,829k	-0.4%
Hours of Travel	3,298,000	5,811,000	4,387,000	-24.5%
Hours of Delay	1,007,000	3,030,000	1,645,000	-45.7%
Transit Crowding	10,800	20,100	7,100	-64.9%



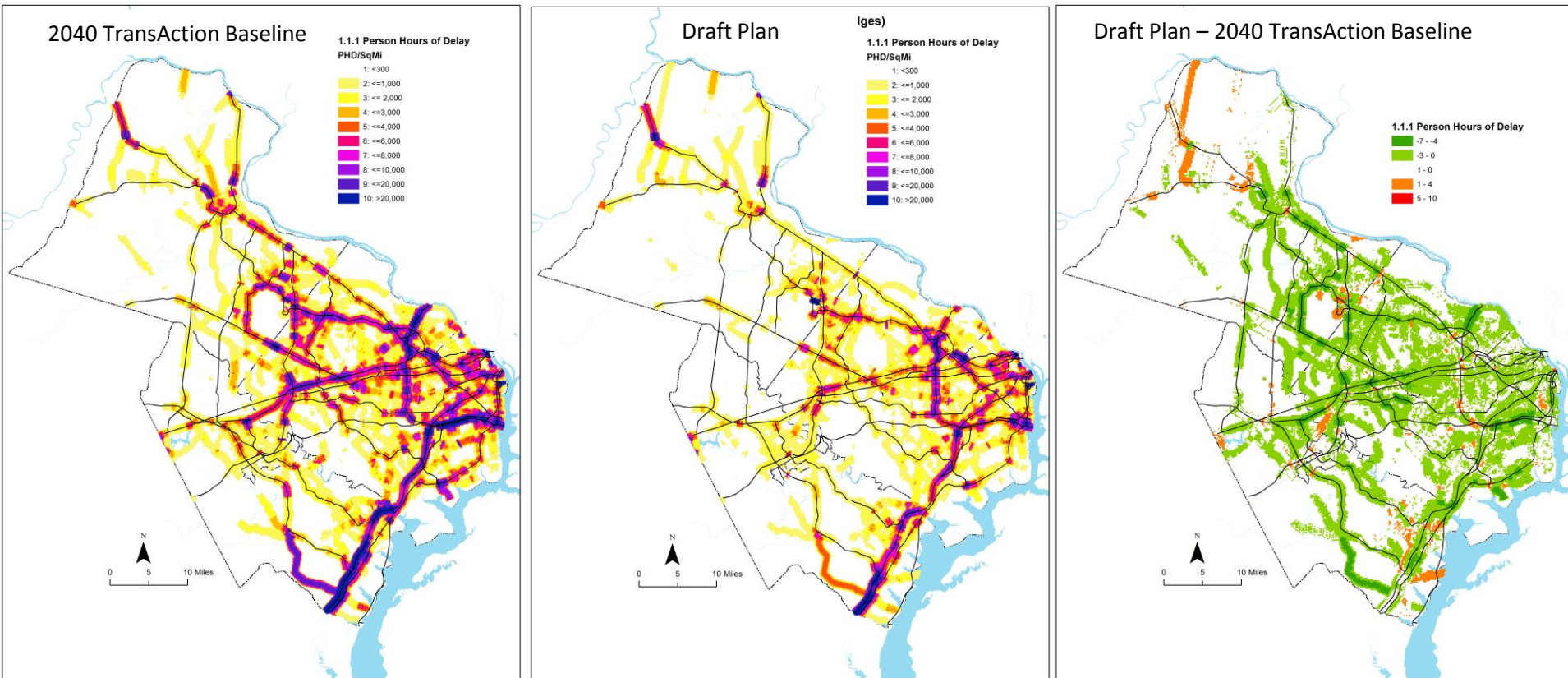
# Performance Impact

## Draft Plan compared to 2040 TransAction Baseline



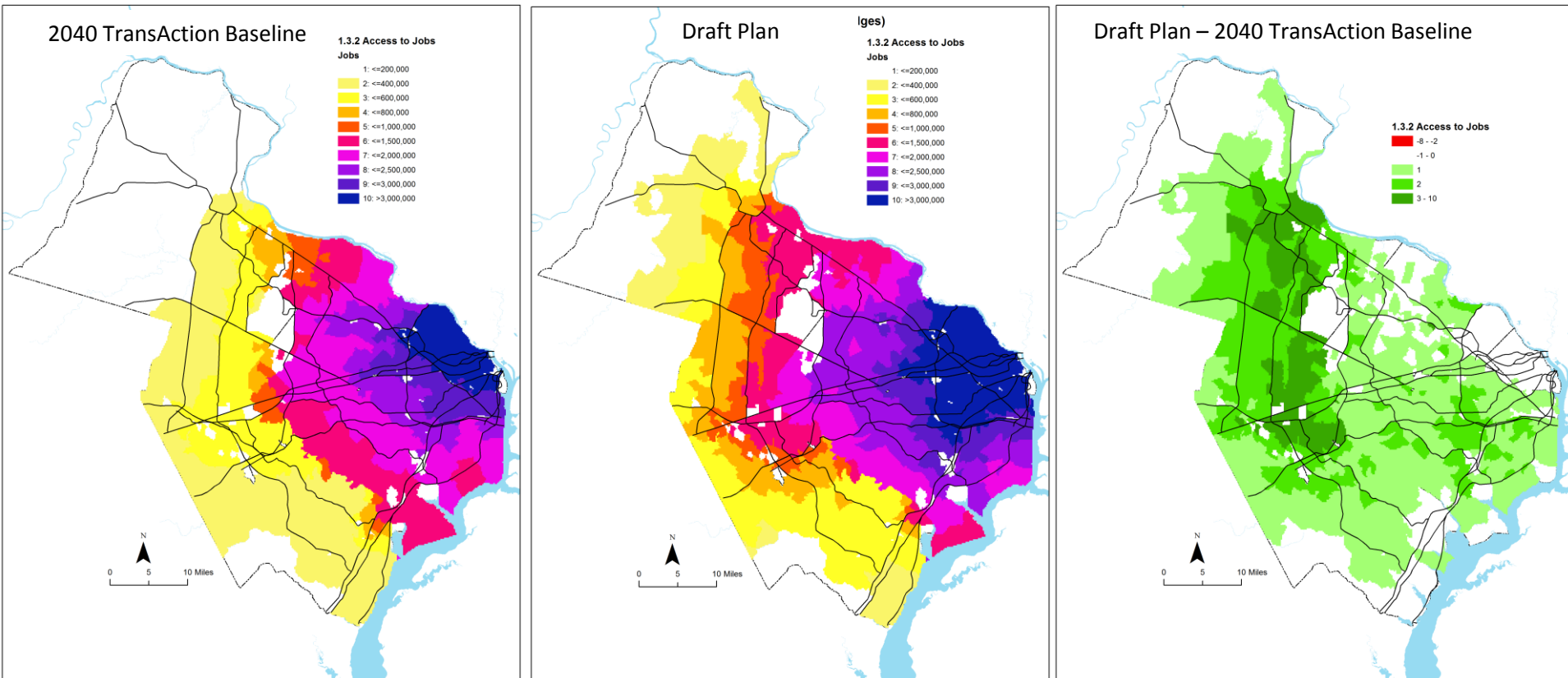
# Person Delay Impacts

Draft Plan compared to 2040 TransAction Baseline



# Access to Jobs Impact

Draft Plan compared to 2040 TransAction Baseline



# Draft Plan: Summary

- Compared to the 2040 TransAction Baseline, the Draft Plan:
  - Modestly increased total trips (1.0%), but with increased transit share (by 8.2%)
  - Person miles traveled decreased marginally, but person hours of travel and hours of delay noticeably reduced (by 25% and 46%)
  - Transit crowding significantly reduced (by 65%) to below 2016 levels, in part due to regional BRT/LRT additions
  - Noticeable improvement in job accessibility for residents in a broad corridor from Leesburg to S. Prince William Co.
  - Residual problem areas include I-95 and I-495

# Next Steps

- Preview of detailed findings and recommendations during May 2017
- Official release of draft TransAction plan June 8, 2017
- Open House and Public Hearing July 13, 2017; tentative public comment period June 9 thru July 23; includes optional Town Hall meetings
- Adoption of TransAction plan October 12, 2017

Note: all dates subject to NVTa approval