# Slide 1: Visualize 2045 Logo. TPB Logo

# Presentation Title: Visualize 2045: Highlights from the Draft Plan

Access for All Advisory Committee

September 13, 2018

Item 2

Slide 2: Introduction

Visualize 2045 aims to help decision makers and the public “visualize” the region’s future by illustrating:

• What the region aspires to do if more resources were available

• What the region can do with current levels of funding and,

• What the region must do to meet federal requirements

Slide 3: Overview

1. Introduction
2. Regional Context
3. Regional Policies
4. Aspirational Initiatives
5. Financially Constrained Element
6. Performance Planning
7. Additional Elements
8. Plan Dev. & Public Participation
9. Conclusion

Slide 4: Appendices (available at visualize2045.org)

* Appendix A Financial Plan
* Appendix B Summary of Projects in the Financially Constrained Element
* Appendix C Air Quality Conformity Report
* Appendix D PBPP System Performance Report
* Appendix E Congestion Management Process Federal Compliance and Impact on Plan Development
* Appendix F Safety Planning
* Appendix G Environmental Consultation and Mitigation
* Appendix H Report on Phase 1 of Public Outreach: Public Input Survey
* Appendix I Report on Phase 2 of Public Outreach: Public Forums and Open Houses
* Appendix J Summary of Public Comment Periods
* Appendix K Federal Compliance Checklist

Slide 5: Transportation Planning Board

Photo of aerial view of the region

* The designated metropolitan planning organization (MPO) for the Washington region
* 24 local jurisdictions
* 44 members, 38 of which are voting members

Slide 6: Our Region

Map of the region showing Activity Centers, Transportation System and Administrative Boundaries

* Approx. 3,500 square miles
* 5.7 million people
* 3.3 million jobs
* 141 Activity Centers

Slide 7: Our Transportation System

* More than 17,000 lane miles of highways and major roads
* 118 miles of Metrorail and 91 Metrorail stations
* 167 miles of MARC and VRE commuter rail and 39 commuter rail stations
* Six miles of bus rapid transit, light rail and streetcars
* Over 500 of miles of off-street paved trails and paths for walking and biking and over 200 miles of bike lanes
* Over 15 local and commuter bus systems and over 10 paratransit service providers

Slide 8: Transportation trend - Highlights

Graph of Percent of Workers Teleworking from 2001 to 2016, showing an increase from 10% to 35% and growing

* The rate of single occupancy vehicle trips has been declining in favor of other modes, although:
  + 41% of all trips are people driving alone
  + 61% of work trips are people driving alone
* Telework, ride-hailing apps, bikeshare (docked and dockless) all on the rise

Slide 9: Forecast Population Growth

Population is forecast to grow by 23% between now and 2045

* 5.7 million people today
* 6.9 million people in 2045 (approx. 1.2 million more people)
* While the projected rate of growth varies for each jurisdiction, the regional core will grow at the highest rate (35%), followed by the outer suburbs (28%), then inner suburbs (17%)
* Fairfax County and the District of Columbia are forecast to gain the most residents, each planning to grow by over a quarter-million people

Slide 10: Map of Population Growth (Today - 2045)

Scatter Plot map of the region showing today’s population and forecast population growth for 2045

* 1 dot = 500 People
* Source: MWCOG Cooperative Forecast Round 9.1

Slide 11: Forecast Job Growth

* Regional employment expected to grow 29% between today and 2045
  + 3.3 million jobs today
  + 4.3 million jobs in 2045 (approx. 1 million more jobs)
* Growth is distributed throughout the region, however growth is forecast to be higher on the western side
* Fairfax County and the District of Columbia are forecasted to have the most jobs gained, while the highest rates of job growth are forecasted in Loudoun and Prince William Counties

Slide 12: Map of Job Growth (Today - 2045)

Scatter Plot map of the region showing today’s existing jobs and forecast job growth for 2045

• 1 dot = 500 Jobs

• Source: MWCOG Cooperative Forecast Round 9.1

Slide 13: Growth Inside and Outside Activity Centers

Graph of Population in Millions Inside and Outside Activity Centers (Today – 2045)

* Population 1,300,000 New People (+23%)
* 29% inside activity centers and 71% outside activity centers today
* 35% inside activity centers and 65% outside activity centers forecast for 2045

Pie Chart of New Regional Residents Between Now and 2045 based on the 1,300,000 new people referenced above

* Inside Activity Centers – 798,309 (61%)
* Outside Activity Centers – 508,604 (39%)

Slide 14: Growth Inside and Outside Activity Centers

Graph of Jobs in Millions Inside and Outside Activity Centers (Today – 2045)

• Jobs 960,000 New Jobs (+29%)

• 65% inside activity centers and 35% outside activity centers today

• 67% inside activity centers and 33% outside activity centers forecast for 2045

Pie Chart of New Regional Jobs Between Now and 2045 based on the 960,000 new jobs referenced above

• Inside Activity Centers – 725,132 (75%)

• Outside Activity Centers – 235,687 (25%)

Slide 15: Regional Policy

A regional policy framework guides the plan

* TPB Vision
* COG Region Forward
* TPB’s Regional Transportation Priorities Plan
* Seven aspirational initiatives

The Evolution of TPB Policy Framework – photos of covers of plans for 1998, 2010, 2014, 2018

Slide 16: Aspirational Element

Aerial photo of the region with the Washington Monument in center

What the region aspires to do if more resources were available

Slide 17: Aspirational Element

Seven endorsed initiatives

1. Bring jobs and housing closer together
2. Expand bus rapid transit region wide
3. Move more people on Metrorail
4. Increase telecommuting and other options for commuting
5. Expand the express highway network
6. Improve walk and bike access to transit
7. Complete the National Capital Trail

Slide 18: Aspirational Element

TPB’s December 2017 endorsement:

The TPB “endorses the attached list of five initiatives, found to have the most potential to significantly improve the performance of the region’s transportation system compared to current plans and programs, for future concerted TPB action, and directs staff to include these initiatives in the aspirational element of the TPB’s long range transportation plan, Visualize 2045.”

\*Jan 2018 TPB passed two others

Slide 19: Aspirational Element

* Aspirational initiatives are now part of the regional policy framework
* Conducted public forums to learn what people think about the initiatives
* 14 programs highlighted in the plan show how they can support the initiatives
* Highlights projects in the financially constrained element that help support the initiatives

Slide 20: Financially Constrained Element

What the region can do with current levels of funding

* Project highlights
* Financial plan
* Performance analysis
* Air Quality Conformity

Slide 21: Projects in the Financially Constrained Element

Map of Transportation System with Major Highway Projects identified

* Includes more than 100 major projects that expand or change the region’s highway or transit system capacity
* More than 600 projects in total
* See Appendix B: Summary of Projects in the Financially Constrained Element for more details

Slide 22: Projects in the Financially Constrained Element

Chart of New Capacity in Visualize 2045

Existing

* Roadway 17,048 lane miles
* Managed Lanes (subset of roadway) 436 lane miles
* High-Capacity Transit\* 292 miles

\*High-Capacity transit defined to include Metrorail, commuter rail, streetcar, light rail or bus rapid transit

Added by Visualize 2045

* Roadway 1,388 lane miles
* Managed Lanes (subset of roadway) 461 lane miles
* High-Capacity Transit 124 miles

Total 2045

* Roadway 18,436 lane miles
* Managed Lanes (subset of roadway) 897 lane miles
* High-Capacity Transit 416 miles

Slide 23: Projects in the Financially Constrained Element

Graph of More Activity Centers connected to High-Capacity Transit

Out of 141 Activity Centers:

* 83 (59%) have access to High-Capacity Transit today
* Forecast is 100 (71%) will have access to High-Capacity Transit in 2045.

Proximity is definite as within one mile of rail or within ½ mile of Bus Rapid Transit

Slide 24: Projects in the Financially Constrained Element

The following slides highlight new or changed projects submitted for Visualize 2045 that support some of the Seven Aspirational Initiatives

1. Bring jobs and housing closer together
2. Expand bus rapid transit region wide
3. Move more people on Metrorail
4. Increase telecommuting and other options for commuting
5. Expand the express highway network
6. Improve walk and bike access to transit
7. Complete the National Capital Trail

Slide 25: Project Highlights

Initiative: Expand Express Highway Network

New I-270 and I-95/I-495 Managed Lanes Projects in Maryland and Changes to I-495 HOT Lanes Project in Virginia

* Complete by 2025
* $8.1 billion
  + ($7.6 B in MD, $0.5 B in VA)
  + Mostly private funding
  + 116 new lane miles
    - 56 miles, 2 managed lanes each direction in Maryland
    - 2 miles, 2 HOT lanes each direction in Virginia

Map with locations highlighted

Slide 26: Project Highlights

Initiative: Expand BRT Regionwide

New Bus Rapid Transit (BRT) Projects in Montgomery County

* Various segments complete in 2030, 2035, 2045
* $1.7 billion
* 50 miles
  + Randolph Rd. (10 mi.)
  + North Bethesda (3.5 mi.)
  + MD 355 (22 mi.)
  + New Hampshire Ave. (8.5 mi.)
  + Veirs Mill Rd. (6 mi.)

Map with locations identified

Slide 27: Project Highlights

Initiative: Improve Walk and Bike Access to Transit

New Bicycle Lanes in the District of Columbia

* Various segments complete in 2018, 2023
* $28 million
* 6 miles
  + Pennsylvania Ave. SE
  + 17th St. NW – K St. NE/NW
  + Irving St. NE/NW
  + New York Ave. NE

Map with locations highlighted

Slide 28: Project Highlights

Initiative: Move More People on Metrorail

Metrorail Core Capacity Improvements

* Complete by 2045
* $5.4 billion
* Implement 8-car trains system-wide during peak periods
* Make capacity improvements to stations in the core and upgrade power systems
* Removes core capacity constraint

Map of Metrorail system

Slide 29: Financial Plan

* Federal regulations require a financial plan that demonstrates how the adopted long-range plan can be implemented
* Forecast revenues must cover the estimated costs of maintaining, operating, and expanding the highway and transit system
* The plan demonstrates that the forecast revenues are reasonably expected to be available to implement Visualize 2045

Photo of a highway surrounding DC

Slide 30: Financial Plan – Methodology

* For the near-term years, agencies used revenue and expenditure budgets from the approved TIP and Capital Improvement Programs (CIPs)
* For long-term years:
  + Revenues are estimated from extrapolation of past trends as well as assumptions about future increases (beyond current legislation and appropriations)
  + Expenditures are developed from project costs in the CLRP project database as well as extrapolated costs for maintenance and operations
  + Estimated inflation rates are applied to convert estimates of revenues and expenditures to year of expenditure (YOE) dollars

Slide 31: Financial Plan – Key Assumptions (States)

* District of Columbia
  + Revenue growth rate of 2.4% after 2023
  + Most revenue come from general tax revenues
  + Suburban Maryland
    - State growth rate of 5%, federal growth rate of 3%
    - Increased private funding to build toll roads
    - Increased contribution to WMATA by the state
* Northern Virginia
  + State growth rate of 2.4%, federal growth rate of 2%
  + More regional revenues to WMATA; reduced NVTA funds
  + Assumption that state transit capital funding will continue

Slide 32: Financial Plan – Key Assumptions (WMATA)

* WMATA inputs
  + Operating revenues and costs based on extrapolation of current trends
  + Capital costs based on Capital Needs Inventory (CNI) and GM/CEO’s plan
  + Assumption that PRIIA funding ($150M/year federal, matched by DC-MD-VA) will be extended through 2045
* TPB staff modified inputs following approval of dedicated funding by DC, MD, and VA
  + New dedicated capital revenues of $500 million annually begin in 2020 and continue through 2045
  + Removal of transit core capacity constraint from Air Quality Conformity Determination travel demand model

Slide 33: Regional Revenues: Visualize 2045

Slide 34: Regional Expenditures: Visualize 2045

Slide 35: Financial Plan: Conclusions

The Financial Analysis demonstrates that the forecast revenues are reasonably expected to be available to implement Visualize 2045

* Demonstrates the region’s commitment to maintaining a State of Good Repair for highways and public transportation systems
* Provides for operations and maintenance of the existing transportation system
* Provides for capacity expansion to address forecasted growth in the region’s population and economy

The Financial Analysis is Appendix A of the Visualize 2045 plan

# Slide 36: Visualize 2045 Logo. TPB Logo.

Performance Analysis Summary

Sergio Ritacco Transportation Planner

Slide 37: Air Quality Conformity

Photo of people walking in a NOMA neighborhood on a hazy day

Slide 38: Air Quality Conformity

Graph of Mobile Source Emissions and Mobility Budgets Ozone Season VOC

The Mobile Budgets shown were developed as part of the 2008 Ozone Standard Maintenance Plan. EPA found the budgets adequate for use in conformity with an effective date of August 21, 2018.

Graph shows a decrease from about 42.5 tons per day in 2019 to 18.4 tons a day in 2045. For more information on what this graph shows, please reach out to COG staff.

Slide 39: Air Quality Conformity

Graph showing Mobile Source Emissions and Mobile Budgets Ozone Eason NOx

The Mobile Budgets shown were developed as part of the 2008 Ozone Standard Maintenance Plan. EPA found the budgets adequate for use in conformity with an effective date of August 21, 2018

Graph shows a decrease from 72.9 tons per day in 2019 to 19.5 tons per day in 2045. For more information on what this graph shows, please reach out to COG staff.

Slide 40: Air Quality Conformity

Table showing Maintenance SIP Mobile Budgets and Visualize 2045 Conformity Emissions for different activities:

* Cooperative Forecasts
* Vehicle Fleet
* Travel Demand Model
* Project Inputs
* Metrorail constraint

Slide 41: Air Quality Conformity

Table of VIN Sensitivity Test: 2025 Analysis Year for Emissions vs. Tier 1 Mobile Budgets for VOC and NOx

For more information on what this graph shows, please reach out to COG staff

Slide 42: Air Quality Conformity

Graph of Visualize 2045 Greenhouse Gas Mobile Source Emissions CO2 and Co2e Per Capita

Graph shows decrease from over time. For more information on what this graph shows, please reach out to COG staff

Slide 43: Performance Planning

Performance Based Planning and Programming, the Congestion Management Process, and Safety

* TPB champions improvements in the ways the transportation system is managed and operated
* Federal laws require target setting and progress reports through PBPP
* Visualize 2045 includes these elements of performance planning as drivers of decision making

Photo of local bridge lit up at night

Slide 44: Additional Elements

Additional elements cover other

TPB planning activities:

* Freight Planning
* Airport Systems Planning
* Intercity Buses
* Coordinated Human Service Transportation Plan
* Travel and Tourism
* Resiliency and Reliability
* Emergency Preparedness Management and Operations
* Evolving Technology

Photo of family in park with bikeshare bikes in forefront, airplane in the air and bicyclists in the distance

Slide 45: Bicycle and Pedestrian Planning

* TPB’s Bicycle and Pedestrian Plan
* Street Smart
* Two of the aspirational initiatives focus on biking and walking: completing the National Capital Trail and improving walk/bike access to transit

Photo of riders on a bike trail

Slide 46: Land-Use Coordination

Land-use and transportation are complex and intertwined

* TPB staff work closely with COG’s Department of Community Planning and Services, which informs the TPB about market conditions, real estate development, land-use plans, and growth forecasts for employment, population, and households
* Transportation/Land-Use Connections (TLC) program
* Aspirational initiative focused on bringing jobs and housing closer together

Slide 47: Equity and Inclusion

Equity Emphasis Areas (EEAs) adopted by TPB in 2017:

* Small geographic areas that have concentrations of low-income
* and/or minority populations based on Census data

EEAs can be used to

* Examine demographic patterns
* Analyze the constrained element of the plan for
* disproportionate and adverse impacts

Access for All Advisory Committee

* Advises the TPB on transportation issues, programs, policies, and services important to traditionally underserved communities

Slide 48: Transportation Demand Management (TDM)

Commuter Connections is the TPB’s TDM program

* Creates awareness of alternatives to driving alone
* Promotes and encourages TDM strategies such as employer-based parking cash-out, transit/vanpool benefits, teleworking, and flexible work schedules
* One aspirational initiative focuses on increasing the use of telework and other modes of travel besides driving alone

Photos of group of bicyclists and 2 people in a vehicle ridesharing

Slide 49: Environmental Consultation and Mitigation

A new interactive map provides a regional-level resource to inform the relationship between the transportation and environmental concerns.

[www.mwcog.org/EnviroInventoryMap](http://www.mwcog.org/EnviroInventoryMap)

Slide 50: Public Participation

Public Input Survey

* Two groups of survey respondents
* Outreach included 15 survey events, social media, and other promotion

Public Forums across the region

* Focus on the aspirational initiatives where input is most needed

Open Houses

* 3 Open Houses so people in the region can learn more about the plan

Photo of participant sharing ideas at on outreach event

Slide 51: Public Participation

What people said:

* Frustrations with system reliability
* General familiarity with the aspirational initiatives
* Desire to move more quickly in implementing changes
* Concerns about equity and regional balance
* Calls for thinking “outside the box”

Photos of outreach even participants

Slide 52: Listing of Staff involved

Photo of kid on a bike with a helmet and backpack riding through a sprinkler with other people, cars, bikes in the background

* Andrew Austin
* Andrew Meese
* Jane Posey
* Eric Randall
* Sergio Ritacco
* John Swanson
* Lori Zeller
* Abigail Zenner

[Visualize2045.org](http://www.Visualize2045.org)