

# VISUALIZE 2050

*National Capital Region Transportation Plan*

Agenda Item 4

## DRAFT TECHNICAL INPUTS FOR THE AIR QUALITY CONFORMITY ANALYSIS

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### Visualize 2050 & FY 2026-2029 TIP

Cristina Finch, AICP  
TPB Transportation Planner

TPB Access for All Committee  
March 11, 2024



National Capital Region  
**Transportation Planning Board**

# Overview

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- Background
- Current Transportation System
- Focus on Air Quality
- Comment Period Materials
- Financial Considerations
- Implementing TPB Priority Strategies
- Project Alignment with TPB Goals
- Comparison with the Visualize 2045 Plan
- Acknowledgements
- Next Steps

# Background

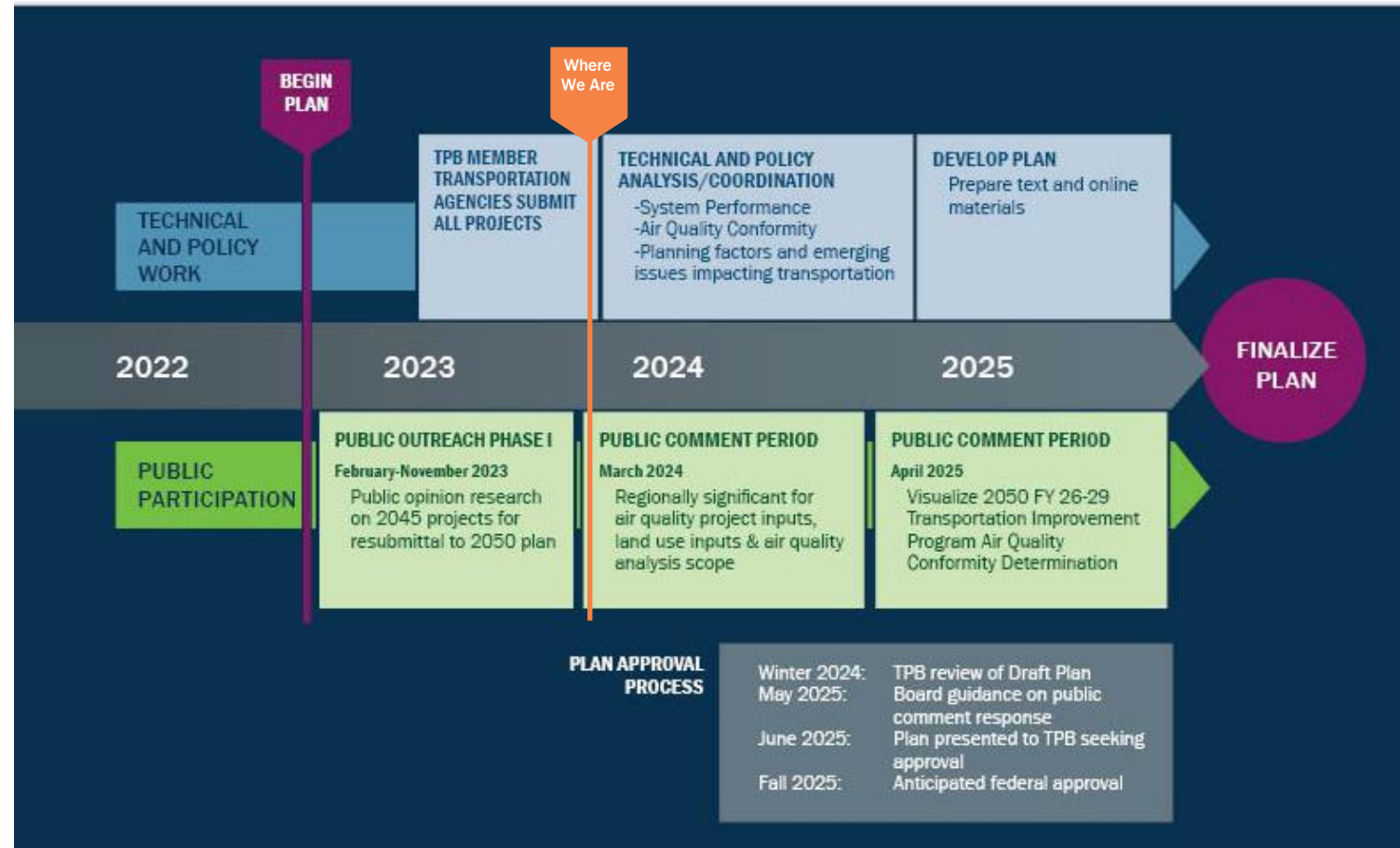
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- Via Resolution R19-2021, the TPB directed its staff to initiate an update of the Visualize 2045 plan and said that the updated plan “will be based on the concept of ‘zero-based budgeting’ where all projects, including those currently included in the Plan, must be resubmitted for consideration in such Plan.”
- June 2022            Visualize 2045 plan approved
- February 2023      TPB approved the Technical Inputs Solicitation
- March 2023           Listening sessions
- Feb. - Dec. 2023    Re-examination of projects by sponsor agencies, public comment opportunity, project inputs Q&A sessions & submittals
- Jan. - Feb. 2024    Project inputs preparation for March 2024 comment period

# Project Inputs Schedule

Projects in V2050 Financial Plan	Currently Programmed Through FY29	For Future Programming In FY30-50
Regionally Significant for Air Quality	<b>Highway or Transit Projects Project Details &amp; Total Cost Estimate due 12/29/23</b>	
	Financial Details due 1/26/25	Financial Details due 12/29/23
Not Regionally Significant for Air Quality	<b>Highway, Transit, Bike, Pedestrian, etc. Projects, Phases, or Project Grouping Categories Project Details &amp; Total Cost Estimate due 6/28/24</b>	
	Financial Details due 1/26/25	Financial Details due 6/28/24

# Where we are in the Plan Development Process





I-270 split at I-495 (MDOT/[Flickr](#))



VRE southbound Union Station (William F Yurasko/[Flickr](#))



Cycling in Washington, DC (Elvert Barnes/[Flickr](#))



Potomac Yard Transitway (BeyondDC/[Flickr](#))

# Current Transportation System

- Roadways & Tolled Lanes
  - Freeways/Expressways
  - Arterials
- Non-Motorized Facilities
- High-Capacity Transit
  - Metrorail
  - Light Rail/Streetcar
  - Bus Rapid Transit
  - Commuter/Regional Rail



## Making Our Region Better

- Many multimodal transportation options
- Travelling has its challenges
- Always try to make it better
- Serve residents, employees, visitors 25 years from now

Silver Spring, MD (Elvert Barnes/[Flickr](#))

# Transportation & Air Quality

- Forecast changes in population, employment and land use affect travel demand and patterns
- Roadway/transit capacity changes impacts travel behavior and vehicle use
- Fossil fueled motor vehicle emissions impact air quality
- TPB measures attainment of future air quality goals via air quality conformity analysis
- Robust modelling effort to conduct the analysis
- Determine if Visualize 2050 & FY 2026-2029 TIP are consistent with EPA approved mobile source emissions budgets, contribute to annual emissions reductions



Shopping in Gainesville, VA (Eric Fredericks/[Flickr](#))

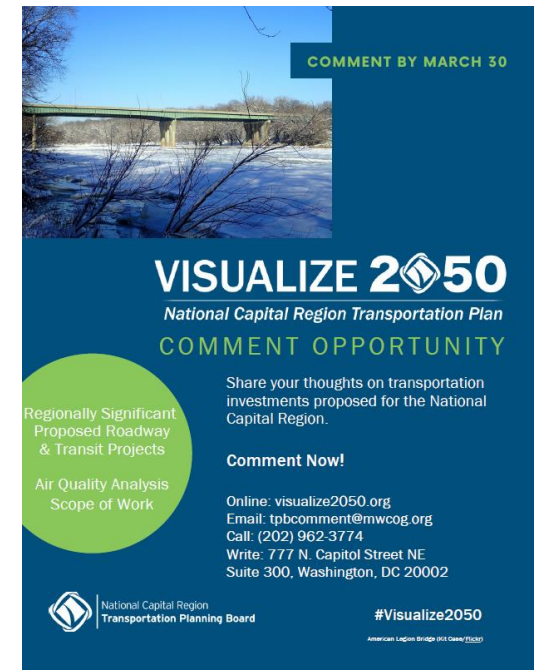


US 29 Silver Spring (mk30/[Flickr](#))



# Comment Period Outreach Methods

- Ambassadors – Sample web, news, social content, and graphics
- Email announcements (TPB News subscription list, committee mailings)
- News ads – The Washington Post, AFRO News, Washington Hispanic
- News release – shared through COG/TPB e-news and website
- Social media (Twitter, Facebook, LinkedIn)
- Web - [Visualize2050.org](https://Visualize2050.org) and [mwcog.org\tpbcomment](https://mwcog.org\tpbcomment)
- PDF flyer with comment period description, call to action, key dates, contact info
- Comment by Visualize 2050 MetroQuest form
- Other ways to comment: email, phone, letter, March TPB meeting



# Comment Period Materials

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- Visualize 2050 Website
  - Air Quality Conformity Project Input Table
  - Air Quality Conformity Scope of Work
  - Metroquest Comment Form (English and Spanish)
    - Other Methods to Provide Input (email, phone, writing, in-person at TPB meeting)
  - Project Summary Table
    - Detailed Project Information Packets
  - State Responses to Last Comment Period
- COG Website



# Air Quality Conformity Project Inputs Table

	PIT Project ID	ConID	Scenario	Improvement	Facility	From	To	Projected Completion Date
<b>DDOT</b>								
1	6103	794	LHOWEXF	Implement	DC Circulator Expansion	Rosslyn to Dupont Circle Route	Extension to U St./Howard University	2026
2	T5754	613	DCSTHST2	Construct	Benning Road Streetcar Extension	Oklahoma Avenue NE	45th Street/Benning Road Metro	2026 2030
3	<del>CE3081</del>	610	DCSTGTWN	Implement	Union Station/Georgetown Streetcar	K Street/34th Street NW	3rd Street/H Street NE	2040
4	T3212			Implement	H St. and I St Bus lanes Phase 2	13th St. NW	Pennsylvania Ave NW	2021 completed
5	<del>3212</del> T13580	7835 32666		Study-Implement	H St. NW Bus Improvements	14th St. NW	North Capitol St.	not coded-2022 completed
6	<del>CE3081</del>			Construct	K St. NW Transitway	9th St. NW	21st St. NW	2026
7	T13585	32690		Implement	U St. NW Bus Improvements	18th St. NW	9th St NW	2025
9	<del>3212</del> T13588	31057 31058 31059		Implement	8th St. SE Bus Improvements			2024
10	T13583	32646		Implement	11th St. NW Bus Improvements	Pennsylvania Ave NW	G Street NW	2024

- 600+ segments of highway/transit regionally significant projects for coding in the travel demand model
- Used for air quality conformity analysis of Visualize 2050 & FY 2026-2029 TIP
- Highlighting indicates changes from the current Visualize 2045 plan

Blue – strikethrough, not continuing

- Yellow – updates, new projects/segments

- To be approved by TPB in May 2024



March 1, 2024

**AIR QUALITY CONFORMITY ANALYSIS:  
VISUALIZE 2050 & FY 2026-2029 TIP**

**DRAFT SCOPE OF WORK**

**I. INTRODUCTION**

The list of projects solicited for the Visualize 2050 National Capital Region Transportation Plan and the FY 2026-2029 Transportation Improvement Program (TIP) is scheduled to be finalized at the May 15, 2024 meeting of the National Capital Region Transportation Planning Board (TPB). This work effort addresses requirements associated with attainment of the ozone National Ambient Air Quality Standards (NAAQS). Volatile organic compounds (VOC) and nitrogen oxides (NOx) are ozone precursor pollutants.

The amended plan must meet air quality conformity regulations: (1) as originally published by the Environmental Protection Agency (EPA) in the November 24, 1993 Federal Register, and (2) as subsequently amended, most recently on March 14, 2012, and (3) as detailed in periodic Federal Highway Administration (FHWA) / Federal Transit Administration (FTA) and EPA guidance. These regulations specify both technical criteria and consultation procedures to follow in performing the assessment.

This scope of work provides a context in which to perform the conformity analyses and presents an outline of the work tasks required to address all regulations currently applicable.

**II. FEDERAL REQUIREMENTS**

As described in the 1990 Clean Air Act Amendments, conformity is demonstrated if transportation plans and programs:

1. Are consistent with most recent estimates of mobile source emissions budgets
2. Contribute to annual emissions reductions

A-1

# Air Quality Conformity Scope of Work

- Visualize 2050 & FY 2026-2029 TIP air quality analysis must comply with Air Quality Conformity (AQC) regulations



Pollutants	Ozone Season VOC and NOx
Emissions Model	MOVES4
Conformity Test	<u>Budget Test</u> : Using EPA approved mobile emissions budgets from the 2008 Ozone NAAQS Maintenance Plan
Vehicle Fleet Data	December 2023 vehicle registration data
Geography	8-hour ozone non-attainment area
Network Inputs	Regionally significant projects
Land Activity	Cooperative Forecasts Round 10
HOV/HOT	<u>VA</u> : I-66, I-95, I-395, and I-495 are all HOT3+; all HOV facilities will be HOV2+ through 2050 <u>MD</u> : HOV facility on US 50 will remain HOV2+ through 2050; HOV facility on I-270 will convert from HOV2+ to HOT3+ when additional lanes are added;
Roadway Restrictions	Roadway restrictions, such as truck prohibitions, are reflected in the travel model network using information supplied by the Departments of Transportation
Transit Constraint	No Metrorail “capacity constraint” (removed with March 2018 passage of annual funding for WMATA agreement)
Analysis Years	2025, 2026, 2030, 2040, 2045, and 2050
Modeled Area	6,800 square mile area with 3,722 Transportation Analysis Zones (TAZs)
Travel Demand Model	Gen2/Version 2.4 or latest

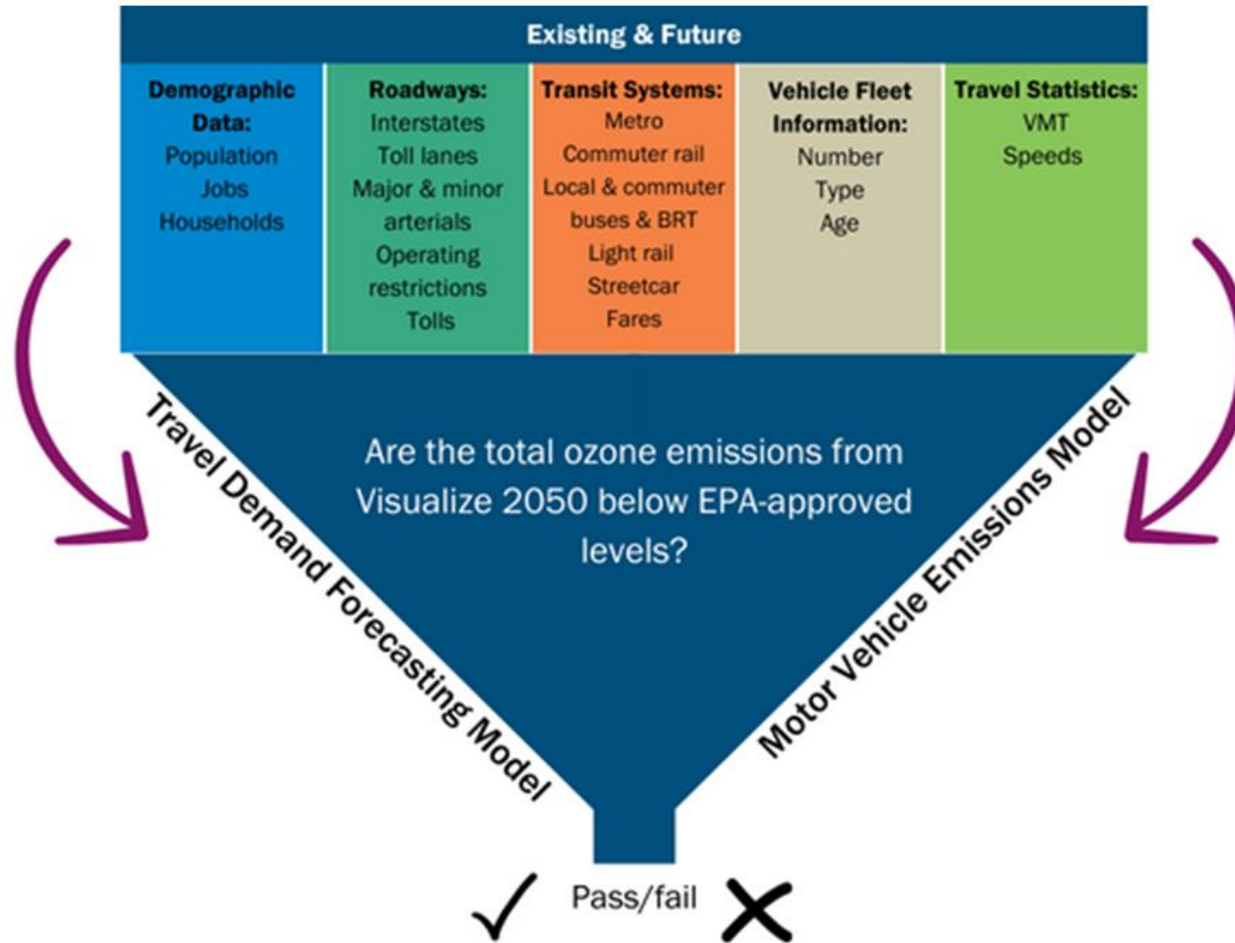
Page A-4 of March 1, 2024 Draft Air Quality Conformity Scope of Work

## AQC Scope of Work – Policy & Technical Approach

- Summary of Key Elements
  - Network Inputs
  - Land Activity
  - HOV/HOT



# Air Quality Conformity Analysis Diagram



# MetroQuest Comment Form

- Available at [visualize2050.org](https://visualize2050.org)
- Consists of five screens:
  - Introduction
  - Transportation & Air Quality
  - Two project screens
  - Wrap-Up



# Regionally Significant for Air Quality Projects

- Many transportation projects in the region will be included in the final plan
- Smaller-scale roadway, bike, pedestrian, and transit projects; maintenance & operations projects not included
- Focus for this comment period is capacity-impacting projects – adding or removing vehicle capacity, representing ~20% of regional expenditures in the financial plan
- *Only focusing on a piece of the pie for this comment period*



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# Regionally Significant for Air Quality Project Types

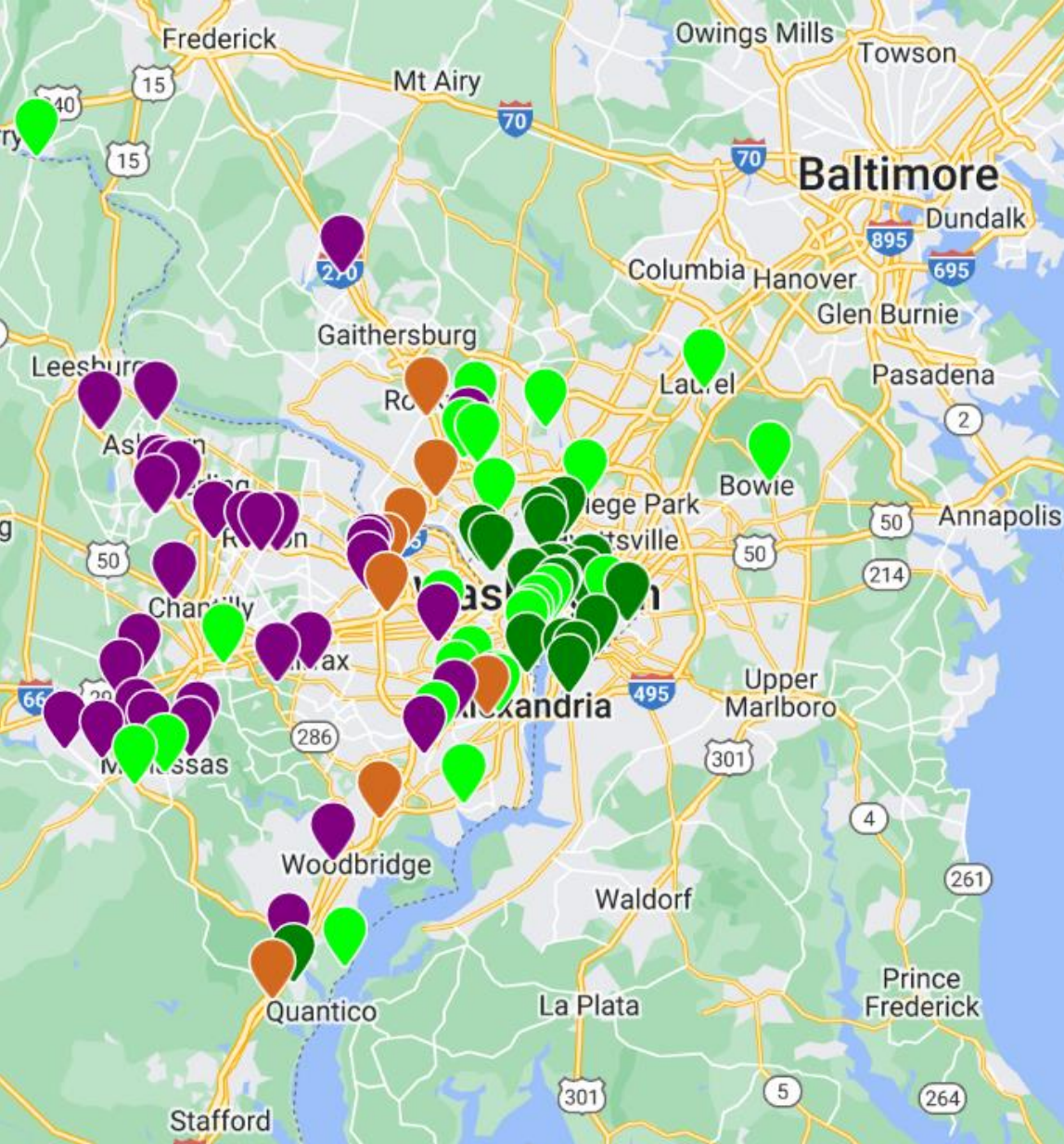
## Current Focus

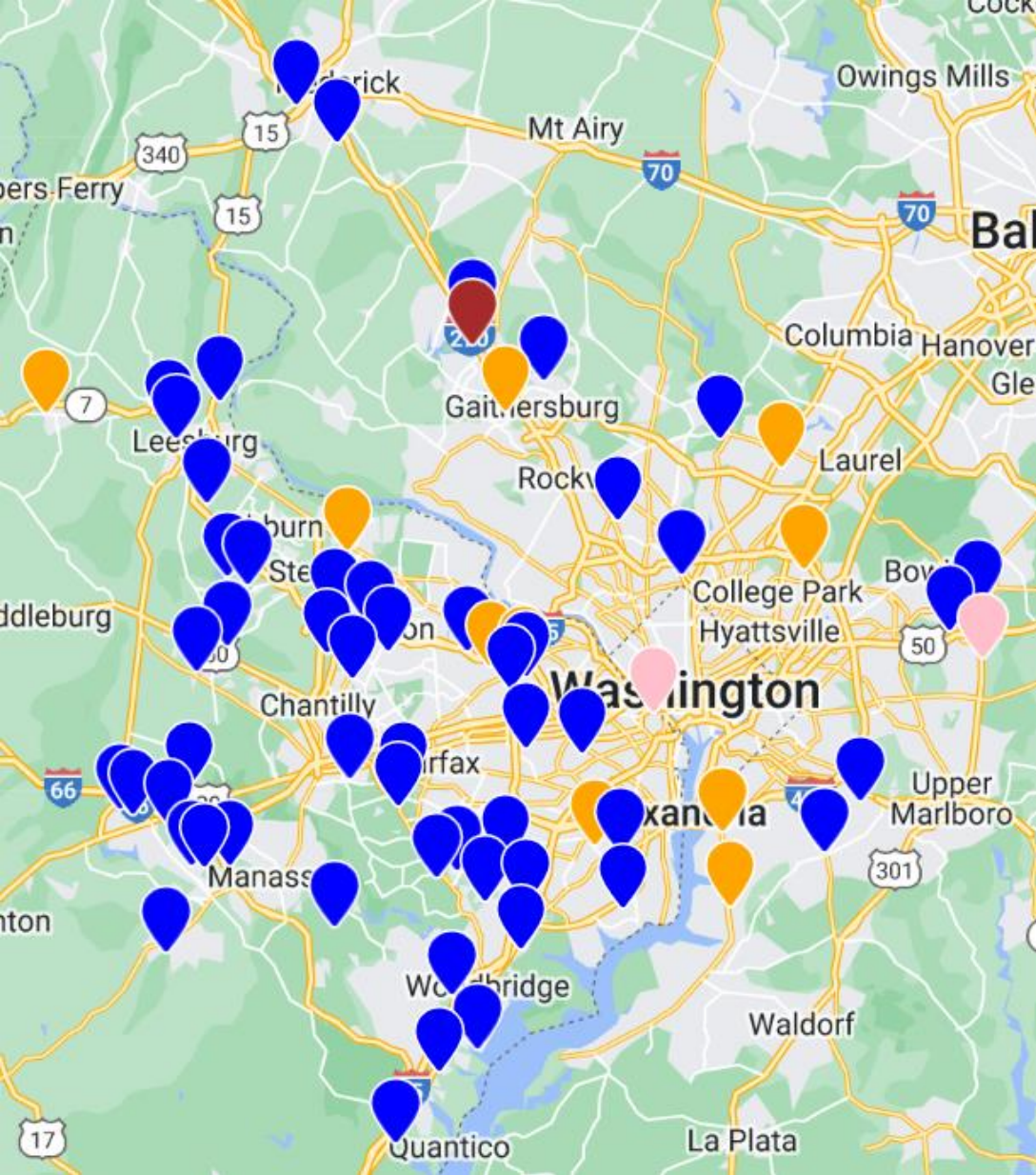
Primary Record Type - Regionally Significant for Air Quality
<b>Infrastructure</b>
Bicycle/Pedestrian - Bike/Travel lane reduction
Road - Add Capacity/Widening
Road - HOV/Managed Lanes
Road - New Construction
Bridge - New Construction
Bridge - Rehab + Add Cap
Bridge - Replace + Add Cap
Bus/BRT - Capital/Expansion
Rail/Fixed Guideways - Capital/Expansion
Rail/Fixed Guideways - Metrorail/Commuter Rail
Rail/Fixed Guideways - Streetcar/Light rail
Road - Interchange improvements
Other - Federal Lands Highway Program

Primary Record Type - Not Regionally Significant for Air Quality	
Infrastructure	
Bicycle/Pedestrian - Bike/Ped	Bus/BRT - Passenger facilities
Road - Access Mgmt	Bus/BRT - Regional Fare collection
Road - Intersection improvements	Rail/Fixed Guideways - At-Grade Crossing
Road - ITS/Technology	Rail/Fixed Guideways - Capital/SGR
Road - Recons/Rehab/Maintenance/Resurface	Rail/Fixed Guideways - Grade Separation
Road - Signal/Signs	Rail/Fixed Guideways - Maintenance
Bridge - Prev. Maint	Freight - Freight Movements
Bridge - Rehab	TDM/Micromobility - Park and Ride
Bridge - Replace	Other - Alt Fuel Infrastructure
Bus/BRT - Capital/SGR	Other - Intermodal Facilities
Bus/BRT - Maintenance	Other - Regional Fare Collection
Program/Service	Administrative
Bus/BRT - Operating	Debt Service
Rail/Fixed Guideways - Operating	Training
TDM/Micromobility - Ridesharing	Grouping Category
TDM/Micromobility - Vanpool	
Study	Other
Study/Planning/Research	Other

# Multimodal Access and Capacity Reduction Projects

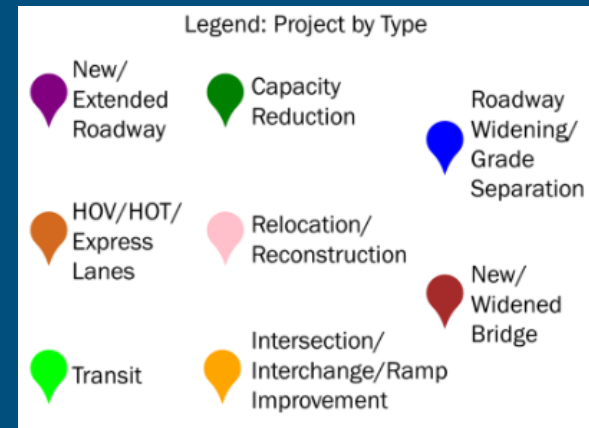
- Roadway Extension
- Transit
- HOV/HOT/Express Lanes
- Capacity Reduction






# General Purpose Roadway Projects

- Roadway Widening/Grade Separation
- Intersection/Interchange/Ramp Improvement
- New/Widened Bridge
- Relocation/Reconstruction



# Project Summary Table

- Supplementary material to better understand the projects
- Project information packets with data received from agencies linked by project name



March 1-30, 2024, Public Comment Opportunity  
 Summary Table of Draft Regionally Significant for Air Quality Projects to be completed in 2026 or [later](#)

Transit Projects by State

Project	Cost	Completion Year	Project Type	Safety	Maintenance	Reliability	Affordable and Convenient	Efficient System Operations	Environmental Protection	Resilient Region	Livable and Prosperous Communities
<b>District of Columbia</b>											
Benning Road Streetcar Expansion from Oklahoma Avenue NE to Benning Road Metro Station	\$202,664,372	2030	Streetcar Expansion								
<b>Maryland</b>											
MARC Service Improvements for Brunswick Line	\$1,825,000,000	2045	Rail Service Improvements			☑	☑				☑
MARC Service Improvements for Camden Line	\$726,000,000	2045	Rail Service Improvements			☑	☑				
MARC Service Improvements for Penn Line	\$2,497,000,000	2045	Rail Service Improvements			☑	☑	☑			☑
MD 355 New BRT Expansion from East-West Highway (MD 410) to Clarksburg Road	\$436,081,000	2030	New BRT Expansion	☑	☑	☑	☑	☑	☑	☑	☑

# Financial Considerations

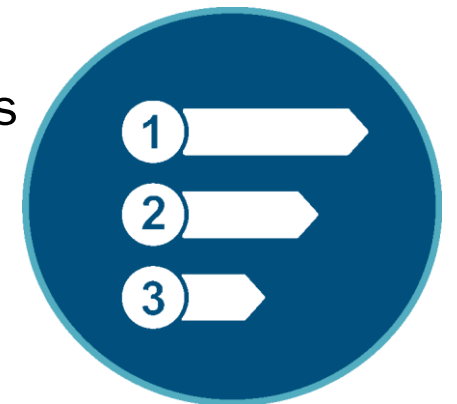
- Some projects have programmed funding
- Other projects are reasonably anticipated to receive necessary funding
- All projects have been screened and are presented in this comment period because funding expectations are reasonable for inclusion in Visualize 2050
- Regionally significant projects without reasonably anticipated funding
  - will not be included in the conformity analysis,
  - will not be included in the financial plan,
  - will not be included in the Visualize 2050 plan for construction or implementation,
  - may be listed as a “study” and “not coded” in the conformity table
- Non-regionally significant projects (e.g., trails, intersections), state of good repair projects, and operations costs will be part of the overall financial plan required as part of the Visualize 2050 plan



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# Implementation of TPB Priority Strategies

- Apply best practices to maintain the transportation system
- Apply the endorsed safety strategies
- Increase frequency & capacity of transit by expanding BRT/Transitways
- Reduce travel times on all public transportation bus services
- Move more people on Metrorail and commuter rail
- Bring jobs/housing closer by focusing growth & adding housing in ACs & HCTs
- Provide more telecommuting and other options for commuting
- Expand express lanes, with rapid transit, & allow carpool/vanpool ride free
- Improve walk/bike access to transit, especially within HCTs
- Complete the National Capital Trail Network
- Implement Transportation Systems Management & Operations measures
- Apply effective technologies that advance the TPB's goals
- Convert vehicles to clean fuels
- Develop and implement an electric vehicle charging network

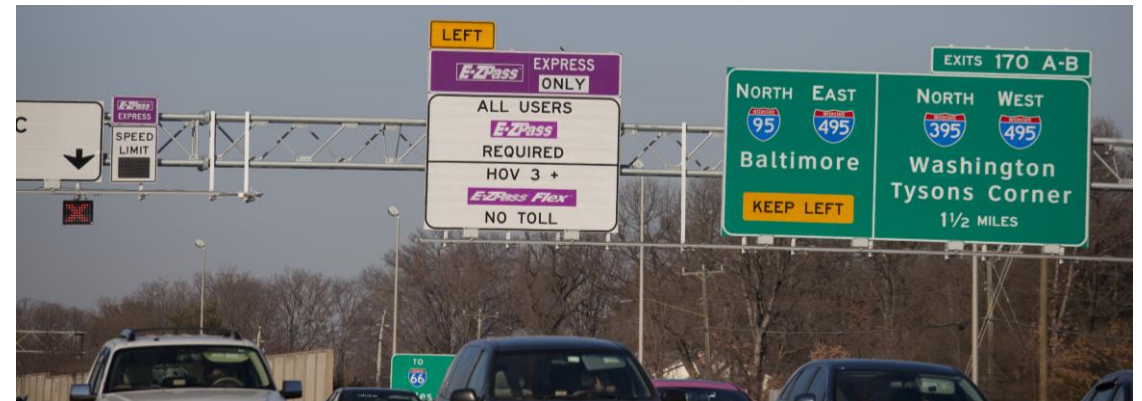


# TPB Priority Strategy: Expand Express Lanes

- Express Toll Lanes exist already on I-95, I-495, I-66
- Additional Express Toll Lanes proposed
  - MD I-495/ I-270 Y/I-270: ALB - I-370
  - VA I-495 S. of Old Dominion Dr. - ALB
  - VA I-95/495 Springfield Int. - MD 210
  - VA I-95 Turkeycock Run to Opitz Blvd.
  - VA I-495 & I-95 Truck Access
  - VA I-495 Toll Lane Ramps – Dulles Connector Rd. and Dulles Toll Rd.



MD I-270 (MDOT/[Flickr](#))



I-95 Express Lanes (VDOT/[Flickr](#))

# TPB Priority Strategy: Expand BRT/Transitways

- 37 current miles of BRT and streetcars
- Existing Bus Rapid Transit/Transitways:
  - Metroway on US 1 in Arlington/Alexandria
  - Flash on US 29 in Montgomery County
- Additional proposed BRT/Transitways:
  - MD - MD 355, North Bethesda Transitway, Randolph Road, Viers Mill Road
  - DC - Georgia Ave. and Southern Ave. Bus Lanes
  - VA - Crystal City Transitway Expansion, Duke Street, Landmark Transit Center, US 1 - Richmond Hwy BRT, West End Transitway, Potomac Ave. Bus Lane



Metroway BRT (BeyondDC/Flickr)

- Plus, proposed rail projects:
  - MD - Purple Line
  - DC - Benning Road Streetcar Ext.



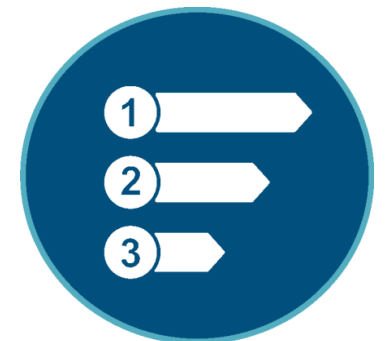
# Federal Planning Factors Alignment w/TPB Goals

Federal Planning Factors	TPB Goals
Support the <b>economic vitality</b> of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency	Livable and Prosperous Communities
Increase the <b>safety</b> of the transportation system for motorized and nonmotorized users	Safety
Increase the <b>security</b> of the transportation system for motorized and nonmotorized users	Safety
Increase the <b>accessibility and mobility</b> of people and for freight	Affordable and Convenient Reliability
Protect and enhance the <b>environment</b> , promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth, housing, and economic development patterns	Environmental Protection
Enhance the <b>integration and connectivity</b> of the transportation system, across and between modes, for people and freight	Affordable and Convenient Reliability
Promote efficient <b>system management and operation</b>	Efficient System Operations
Emphasize the <b>preservation</b> of the existing transportation system	Maintenance
Improve the <b>resiliency</b> and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation	Resilient Region
Enhance <b>travel and tourism</b>	Livable and Prosperous Communities

# Projects Alignment with TPB Goals

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- More than 75% of projects support TPB's reliability, affordability & convenience goals
- Transit projects often noted support for TPB's livable & prosperous communities goal
- Road projects – improving safety nearly always noted
- See the Project Summary Table for individual project alignment with TPB goals as indicated by TPB member agencies for projects to be completed in 2026 or later



# Additional Information on Visualize 2050 Projects

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- Agencies have undertaken a thorough review of their local and TPB priorities
- States have responded to 2023 public comments via letters to the TPB
- Some Visualize 2045 projects are no longer priorities and have not been resubmitted for Visualize 2050
- Some new projects not in Visualize 2045
  - DC 17 new projects
  - MD 0 new projects
  - VA 19 new projects
- Implementing agencies report that most air quality conformity-impacting projects include bicycle/pedestrian accommodations

# Visualize 2045 Projects Continuing

- Visualize 2045 Major Highway Projects 65 continuing
- Visualize 2045 Major HOT/HOV/Toll Lane Projects 10 continuing
- Visualize 2045 Major Transit Projects 22 continuing



American Legion Bridge (Kit Case/[Flickr](#))



I-95 Express Lanes (VDOT/[Flickr](#))



DASH Bus Alexandria (David Wilson/[Flickr](#))

# Acknowledgements - DC and MD

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- District Department of Transportation – Mark Rawlings, Samuel Brooks, Madeline Hairfield, Aaron Goldbeck, Megan Kanagy, Jennifer Klein
- Maryland Department of Transportation – Kari Snyder
- Maryland Transit Administration – Stephen Miller
- State Highway Administration – David Rodgers, Darren Bean, David Schlie
- Frederick County – Mark Mishler
- Montgomery County – Gary Erenrich
- Prince George’s County – Victor Weissberg, Erv Beckert, Noah Donoghue, Aisha Khan, James Hairston, Natalie Roach



# Acknowledgements – VA State Agencies & Counties

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- Virginia Department of Transportation – Amir Shahpar, Regina Moore, Dale Castellow
- Virginia Department of Rail & Public Transportation – Amy Garbarini
- Potomac & Rappahannock Transportation Commission – Cynthia Porter-Johnson
- Virginia Passenger Rail Authority – Naomi Klein, Christine Fix
- Virginia Railway Express – Christine Hoeffner, Nick Ruiz
- Arlington County – Dan Malouff
- Fairfax County – Malcolm Watson, Brent Riddle, Calvin Lam, Christina Cain, Paul Doku, Ray Johnson, Smitha Chellappa
- Loudoun County – Lou Mosurak, Rob Donaldson, Robert S Brown
- Prince William County – Ben Carbajal, Meagan Landis



# Acknowledgements – VA Cities and Towns

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- City of Alexandria – Philippe Simon, Jennifer Monaco, Silas Sullivan
- City of Fairfax – Chloe Ritter
- City of Falls Church – Kerri Oddenino
- City of Manassas – Brian Leckie, Chloe Del Homme
- City of Manassas Park – Steven Hall
- Town of Leesburg – Christine Roe, Renee Lafollete



# Next Steps

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- March Spread the Word! Public Comment Period from March 1-30, 2024

[visualize2050.org](https://visualize2050.org)

Agencies also review the information and provide TPB staff any corrections

Upcoming TPB Work Session and Meeting

- Thursday, March 21, 2024 – TPB Work Session at 10:30 a.m.
  - Thursday, March 21, 2024 – TPB Meeting at noon
- April Comment Period Results
  - May TPB action on Air Quality Conformity Scope of Work and Project Inputs
- TPB staff begin performance and air quality analysis of Visualize 2050 and the FY 2026-2029 TIP



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