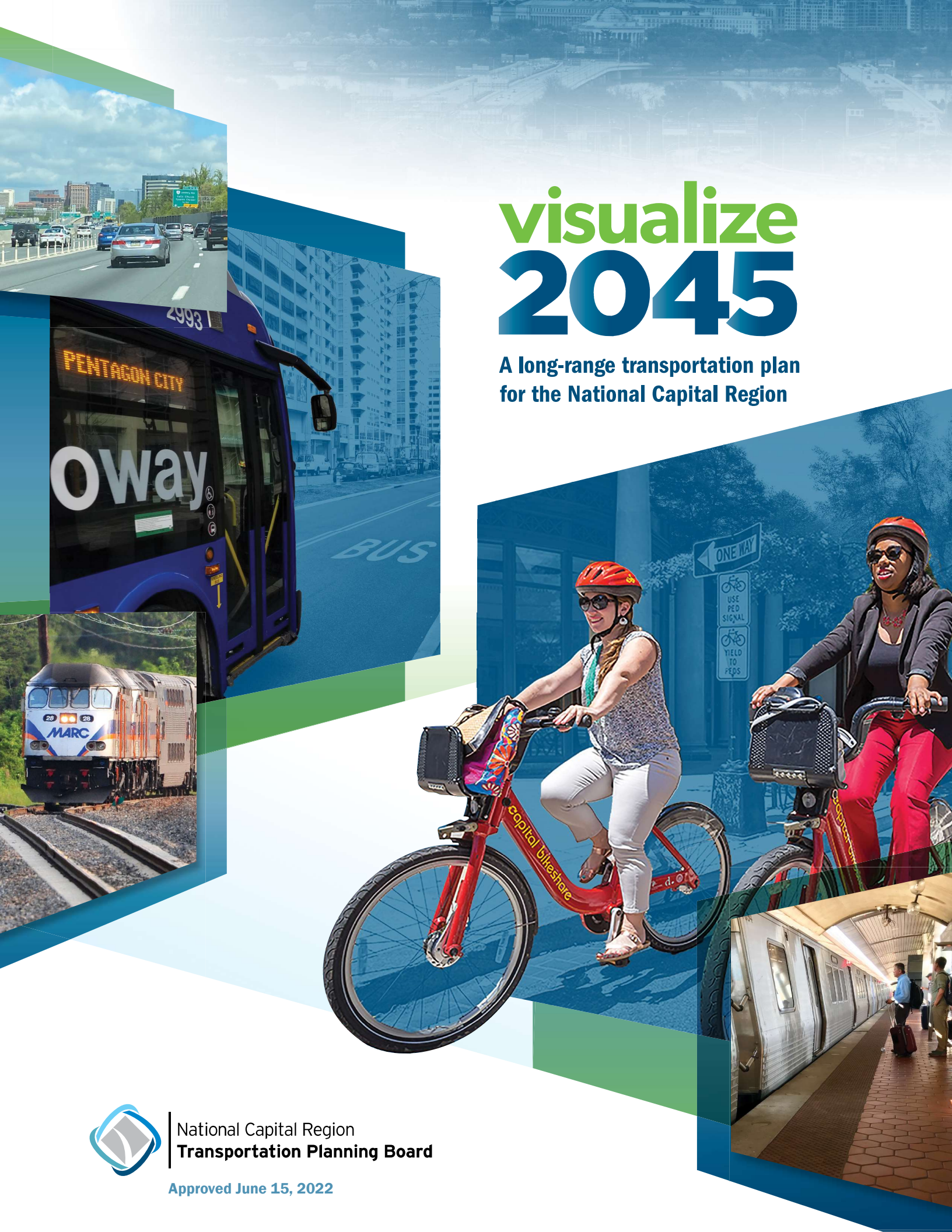


# visualize 2045

A long-range transportation plan  
for the National Capital Region



National Capital Region  
Transportation Planning Board

Approved June 15, 2022

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# visualize 2045

A long-range  
transportation plan  
for the National  
Capital Region

## TABLE OF CONTENTS

<b>Introduction</b> .....	<b>1</b>
About the TPB.....	1
Summary of the Visualize 2045 Update .....	3
Acronyms and Initialisms.....	8
<b>Chapter 1. About the Plan</b> .....	<b>11</b>
What is the Purpose of the Plan?.....	11
The Regional Planning Process .....	12
How Can You Use Visualize 2045? .....	12
Developing Visualize 2045 .....	13
Project Development .....	14
What Types of Projects are in the Visualize 2045 Project List? .....	17
Other Transportation Planning Activities in the Region.....	20
Federal Requirements .....	21
<b>Chapter 2. Where Are We Today?</b> .....	<b>25</b>
Current Issues: COVID-19, Equity, and Climate .....	26
The National Capital Region.....	28
The Regional Transportation System .....	35
Travel Patterns/Behavior in Metropolitan Washington .....	36
Environmental and Equity Considerations .....	47
<b>Chapter 3. Visualizing Our Future Together</b> .....	<b>51</b>
The TPB Policy Framework .....	52
National Goals .....	56
Anticipating and Responding to Transportation Challenges.....	57
<b>Chapter 4. What Factors Affect our Future?</b> .....	<b>59</b>
Today's Emerging and Significant Planning Considerations.....	59
Visualizing Our Future Together: Voices of the Region.....	65
<b>Chapter 5. How Do We Engage the Public?</b> .....	<b>67</b>
Why Engage the Public?.....	67
Voices of the Region.....	69
Formal Comment Periods.....	74
Ongoing Communication .....	74

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# TABLE OF CONTENTS (CONT.)

<b>Chapter 6. Strategies for a Brighter Future .....</b>	<b>75</b>
Regional Planning Activities and Strategies .....	75
How Does the TPB Identify Strategies? .....	76
How Does the Region Implement Strategies? .....	77
TPB's Aspirational Initiatives .....	79
Bring Jobs and Housing Closer Together .....	85
Expand Bus Rapid Transit and Transitways Regionwide .....	87
Move More People on Metrorail .....	91
Provide More Telecommuting and Other Options for Commuting .....	93
Expand the Express Highway Network.....	95
Improve Walk and Bike Access to Transit.....	97
Complete the National Capital Trail Network .....	99
How to Support the Aspirational Initiatives .....	101
<b>Transportation Options .....</b>	<b>102</b>
Transportation Demand Management.....	102
Bicycles, Pedestrians, and Micromobility .....	105
Transit .....	111
Intercity Travel: Buses and Rail.....	116
Driving and Riding in a Vehicle .....	117
Airport Systems Planning .....	121
<b>Strategies to Address Future and Planning Factors .....</b>	<b>123</b>
Equity and Inclusion.....	123
Coordinated Human Transportation Services Plan.....	127
Climate Change Mitigation and Resiliency.....	129
Environmental Consultation and Mitigation.....	137
Safety Planning.....	139
Land Use.....	145
Freight Planning.....	151
Funding.....	154
Public Health.....	156
Management and Operations.....	159
Emerging Technology.....	162
Transportation Planning Board CAV Principles .....	164
Emergency Preparedness and Transportation Security.....	165
Travel and Tourism .....	167

## TABLE OF CONTENTS (CONT.)

<b>Chapter 7. Funding the Transportation System.....</b>	<b>169</b>
How Do We Pay for Transportation?.....	170
Demonstrating Financial Constraint.....	171
Financial Plan Summary.....	172
Federal Programs .....	174
Projects in the Financially Constrained Element .....	175
Tracking Progress: The Financially Constrained Element and Policy Priorities .....	181
<b>Chapter 8. Planning for Performance.....</b>	<b>191</b>
Planning, Evaluating and Forecasting Performance.....	191
A Performance-Based Approach: PBPP and the CMP .....	192
Air Quality Conformity Analysis Summary .....	211
Performance Analysis Summary .....	214
<b>Chapter 9. What Happens Next?.....</b>	<b>227</b>
Looking Back .....	227
The Present Day: Tracking Progress .....	228
Looking Ahead.....	228



### VIEWING DIGITALLY?

*Click on the section you would like to jump to for fastest results.*



## APPENDICES: [Available online at visualize2045.org/draftplan](https://visualize2045.org/draftplan)

<b>Appendix A</b> .....	Financial Plan
<b>Appendix B</b> .....	Summary of Projects in the Financially Constrained Element
<b>Appendix C</b> .....	Air Quality Conformity Analysis Summary
<b>Appendix D</b> .....	PBPP System Performance Report
<b>Appendix E</b> .....	Congestion Management Process, Federal Compliance and Impact on Plan Development
<b>Appendix F</b> .....	Safety Planning
<b>Appendix G</b> .....	Environmental Consultation and Mitigation
<b>Appendix H</b> .....	Public Participation Summary
<b>Appendix I</b> .....	Summary of Public Comment Periods
<b>Appendix J</b> .....	Summary of Transit Development Plans in the TPB Region
<b>Appendix K</b> .....	Federal Compliance Checklist
<b>Appendix L</b> .....	TPB Resiliency Study Summary
<b>Appendix M</b> .....	TPB Climate Change Mitigation Study of 2021 Summary



John Sonderman/Flickr

## Introduction

### About the TPB

The National Capital Region Transportation Planning Board (TPB) is the designated Metropolitan Planning Organization (MPO) for the Washington region. Since its inception in 1965, the TPB has served as a regional forum for establishing policy principles and priorities that guide transportation decision-making. The TPB works with state and local jurisdictions and transportation agencies to bring world class transportation options to the region. As an MPO, the TPB is responsible for conducting the federally mandated transportation planning process for the metropolitan area, which includes developing and updating the regional long-range transportation plan, known as Visualize 2045, and the Transportation Improvement Program (TIP). The TPB is staffed by the Department of Transportation Planning at the Metropolitan Washington Council of Governments (COG). A summary of TPB programmatic activities can be found [online](#).

The TPB's membership is made up of representatives from the District of Columbia, Maryland, and Virginia departments of transportation, the Washington Metropolitan Area Transit Authority (WMATA), local governments, and state legislatures. There are 44 members of the TPB, 39 of which are voting members, and five non-voting members from the Metropolitan Washington Airports Authority and federal agencies.

### WHAT IS AN MPO?

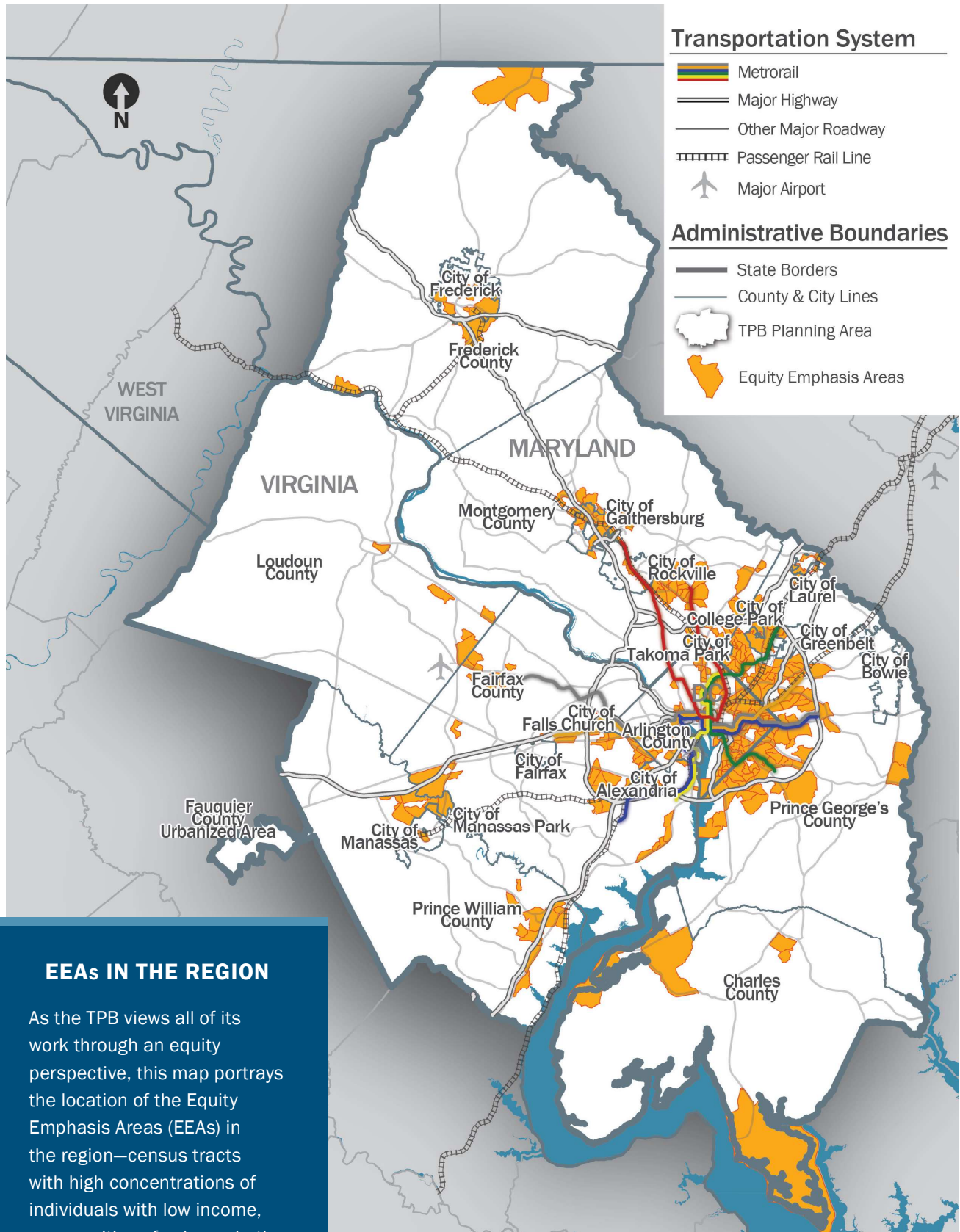
The TPB, as the region's MPO, performs a range of activities that promote an integrated approach to transportation development, but it does not exercise direct control over most funding and it does not implement projects.

The requirements of federal law compel the key transportation players in the region to work through the TPB process. The TPB exercises its role as a coordinating agency in several ways, it:

- Ensures compliance with federal laws and requirements.
- Provides a regional transportation policy framework and a forum for coordination.
- Provides technical resources for decision-making.

The TPB's planning area, the National Capital Region, is home to approximately 5.7 million people. It includes the District of Columbia and 23 surrounding counties and cities in suburban Maryland and Northern Virginia (Figure I.1). The planning area spans approximately 3,500 square miles. A detailed description of the region's demographics, transportation system, development and travel patterns can be found in Chapter 2 "Where Are We Today?".

Figure I.1: TPB Planning Area and Regional Overview Map showing Equity Emphasis Areas



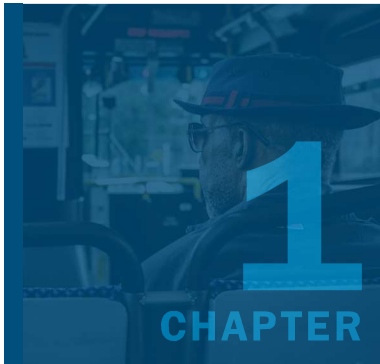
**EEAs IN THE REGION**

As the TPB views all of its work through an equity perspective, this map portrays the location of the Equity Emphasis Areas (EEAs) in the region—census tracts with high concentrations of individuals with low income, communities of color, or both.

# Summary of the Visualize 2045 Update

## Plan Organization

The plan applies an equity lens and an integrated planning approach as the region works toward shared regional goals, with a renewed emphasis on safety and climate resilience. The plan is organized into nine chapters, a summary follows:



### About the Plan

---

Chapter 1 provides an overview of the regional planning process, federal requirements, and how to get involved. It summarizes plan development and introduces key concepts, such as what types of projects are in the plan and how local projects move toward inclusion in the plan. It includes a description of opportunities to engage, roles, responsibilities, and where to find more information. This chapter also summarizes the federal requirements that TPB must comply with to produce the plan. See Appendix K for more detailed information on requirements and how the TPB demonstrates compliance.



### Where Are We Today?

---

Chapter 2 describes the regional context. This includes a description of the region's geography, demographics, and existing and projected population and jobs. It reflects on the current cultural, social, and environmental conditions that impact the planning and use of the transportation system. This chapter also describes the transportation system and services that support the region.



### Visualizing Our Future Together

---

Chapter 3 describes the TPB's policy framework—a set of goals and priorities to work toward in our region. TPB member agencies consider these when developing and selecting projects to fund and implement. The chapter discusses challenges to address as the region plans and offers a summary of public input in response to the question, “What transportation investments would future generations thank us for?”





**visualize 2045**

To learn more about Visualize 2045, check out the infographic on the next page and its companion animated video available on the [Visualize 2045 website](#).



## What Factors Affect Our Future?

The future is always uncertain, but the region's agencies work together to manage the transportation system effectively in an ever-changing world. The TPB examines many planning areas, including the federal

planning factors it must consider when planning. Chapter 4 highlights emerging and significant factors that can impact our communities and transportation demand, services, operations, maintenance, planning, and investments.



## How Do We Engage the Public?

This chapter summarizes the Voices of the Region—TPB's public engagement for the Visualize 2045 update. It describes the comment periods for Visualize 2045, the Community Advisory Committee, and other communication avenues with the public.

## Voices of the Region

### COMMUNICATING PUBLIC PERSPECTIVES

For the Visualize 2045 update, the TPB conducted public engagement known as Voices of the Region that gathered information about public perspectives and engaged residents in a regional virtual activity about TPB's Aspirational Initiatives. The perspectives of different voices of the region which come from participants from all ages, education, socioeconomic status, race, and geographic location may be found throughout the plan.

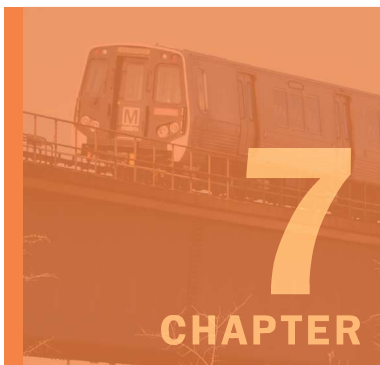
You will find magenta call-out boxes like this one that provide data and reference quotations from individuals living in our region. The Voices of the Region features in this plan update showcases how our regional transportation policies affect everyone in our region and highlights voices that have been underrepresented in the past.



## Strategies for a Brighter Future

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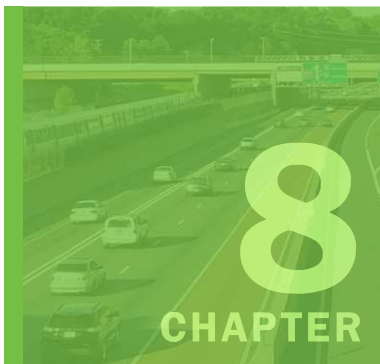
Chapter 6 describes the planning activities and strategies that the TPB and its partners use to work toward a brighter future where the transportation system serves the needs of all its users. The chapter reviews regional coordination, planning areas, policy and equity considerations, and associated activities. Topics include the Aspirational Initiatives, transportation modal options, the future factors, federal planning factors, and other planning areas.



## Funding the Transportation System

---

Chapter 7 provides an overview of transportation funding and the financial plan. It delivers information about the projects in the financially constrained element of the plan, including lists and maps. It reviews how the projects in the plan advance the TPB's goals and policy priorities, including the concepts of the Aspirational Initiatives.



## Planning for Performance

---

Chapter 8 describes the TPB's performance planning activities conducted to strive for better outcomes, as documented through the federally mandated performance-based planning and programming (PBPP) and congestion management process (CMP). The chapter summarizes the findings of the Air Quality Conformity and system performance analyses of the constrained element of Visualize 2045.



## What Happens Next?

---

Through this plan, our region Visualizes its Future Together. What will it look like? What challenges does the region face, and how does it work together to overcome them? Chapter 9 looks back at progress, reflects on challenges of the present moment and years ahead. It looks forward to actions needed to achieve the desired outcomes outlined in TPB goals, while continuing to meet the federal requirements for metropolitan planning.



This plan was prepared in accordance with 49 USC 5303(i), to accomplish the objectives outlined by the TPB, its member states, and the public transportation providers with respect to the development of the metropolitan Washington region's transportation network. This plan identifies how the region will manage and operate its multimodal transportation system (including transit, highway, bicycle, pedestrian, and accessible transportation) to meet the region's goals—for a 20+-year planning horizon, while remaining fiscally constrained.



#### FIND MORE ONLINE!

*This document includes numerous [hyperlinks](#) to make it easy for the online user to access additional information.*

*For people using the printed version of the plan, a summary of websites referenced can be found on the Visualize 2045 website plan update page: [visualize2045.org](https://visualize2045.org)*

# VISUALIZING A BRIGHTER TRANSPORTATION FUTURE

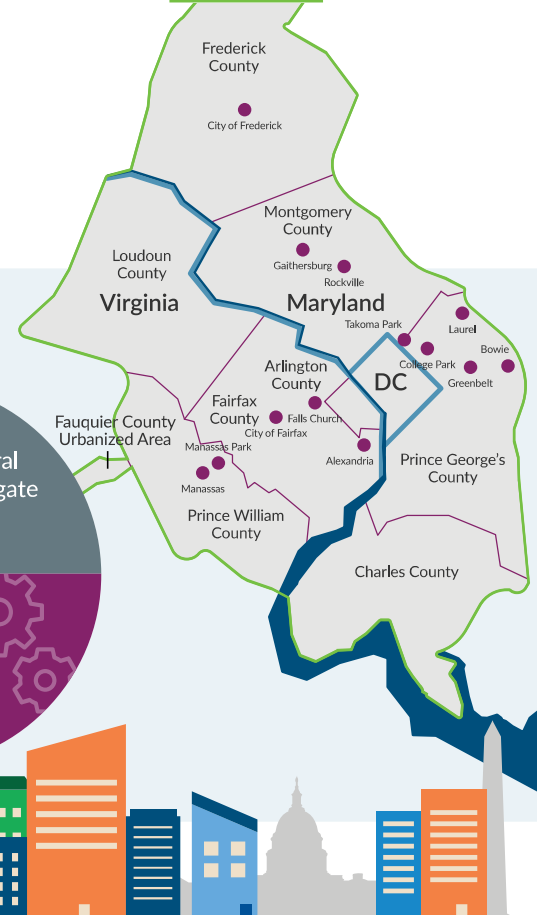
**visualize  
2045**

A long-range transportation plan for the National Capital Region

## THE CHALLENGE

- Metropolitan Washington is growing.**  
 By 2045: The number of trips per day will grow from **18 million** to **21 million**, leaving roads congested and transit crowded.
- We need real choices for how we get around.**  
 By 2045: Average delay per trip **▲ 30%** | Total delay hours **▲ 48%**
- Let's plan something better.** Visualize 2045 is our region's plan for what we *intend* to do with existing funding ...

	Today	2045	
People	5.7 million	7.0 million	▲ 23%
Jobs	3.4 million	4.3 million	▲ 26%



## THE SOLUTION



... and what we *aspire* to do by thinking regionally and acting locally:

- Bring jobs and housing closer together, so it's easy to walk, bike, and take transit to work and play.
- Expand bus rapid transit and transitways, offering the speed of rail at a fraction of the cost to build.
- Move more people on Metrorail, because longer trains and more stations mean more on-time arrivals.
- Increase telecommuting and other options for commuting, so you control your work-life balance.
- Complete the National Capital Trail Network, an accessible "bicycle beltway" for recreation and commuting.
- Improve walk and bike access to transit, so getting around your community is safer and easier.
- Expand the express highway network, helping cars and buses get there faster.

Implement effective strategies to mitigate climate change and support resilient communities.

## THE IMPACT

Shorter trips. More affordable travel options. More time with friends and family.

Source: TPB

## Acronyms and Initialisms

Abbreviation	Planning Term
AC	Activity Center
AQC	Air Quality Conformity
BRT	Bus Rapid Transit
CAVs	Connected and Automated Vehicles
CEAP	Climate and Energy Action Plan
CMP	Congestion Management Process
COG	Metropolitan Washington Council of Governments
DOT	Department of Transportation (DDOT, VDOT, MDOT)
EEA	Equity Emphasis Area
EV	Electric Vehicle
FAST ACT	Fixing America's Surface Transportation (FAST) Act
GHG	Greenhouse Gas
HCT	High Capacity Transit
HOV	High Occupancy Vehicle
HOT	High Occupancy Toll lane
ITS	Intelligent Transportation System
LRTP	Long-Range Transportation Plan
M&O	Management and Operations
MARC	Maryland Area Regional Commuter Train Service
MAP-21	Moving Ahead for Progress in the 21 <sup>st</sup> Century Act
MPO	Metropolitan Planning Organization
PBPP	Performance-Based Planning and Programming
RTPP	Regional Transportation Priorities Plan
RTS	Regional (Household) Travel Survey
SOV	Single Occupant Vehicle
TAFA	Transit Access Focus Area
TDM	Travel Demand Management
TIP	Transportation Improvement Program
TLC	Transportation Land-Use Connections
TNC	Transportation Network Companies
TPB	National Capital Region Transportation Planning Board
TSP	Transit Signal Priority
TTR	Travel Time Reliability
VMT	Vehicle-Miles Traveled
VRE	Virginia Railway Express
WMATA	Washington Metropolitan Area Transit Authority

---

## A Few Key Terms:

### Clean Air Act (CAA)

The Clean Air Act is the law that defines EPA's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer. The TPB's Air Quality Conformity analysis responds to requirements of this Act.

### Congestion Mitigation & Air Quality (CMAQ) Program

The CMAQ program provides funds for projects and activities which reduce congestion and improve air quality. To be eligible for CMAQ, projects and activities must contribute to the National Ambient Air Quality Standards and must be included in a Transportation Improvement Program.

### Fiscally Constrained

Federal requirements are such that the long-range transportation plan and the Transportation Improvement Program are required to be fiscally constrained, which means that the projects listed in these documents must have funding sources that are reasonably available over the life of the plan/program to pay for both the capital and operating cost of the proposed improvements.

### Core, Inner & Outer Suburbs

The TPB uses these terms in the plan when referring to variations in travel, land-use and demographics in the region. The region's core includes the District of Columbia, Arlington County, and the City of Alexandria. The Inner Suburbs: Montgomery County, Prince George's County, Fairfax County and Cities. The Outer Suburbs: Charles, Frederick, Loudoun, Prince William Counties and the Cities within (including portions of Fauquier County).







# 1

## CHAPTER About the Plan

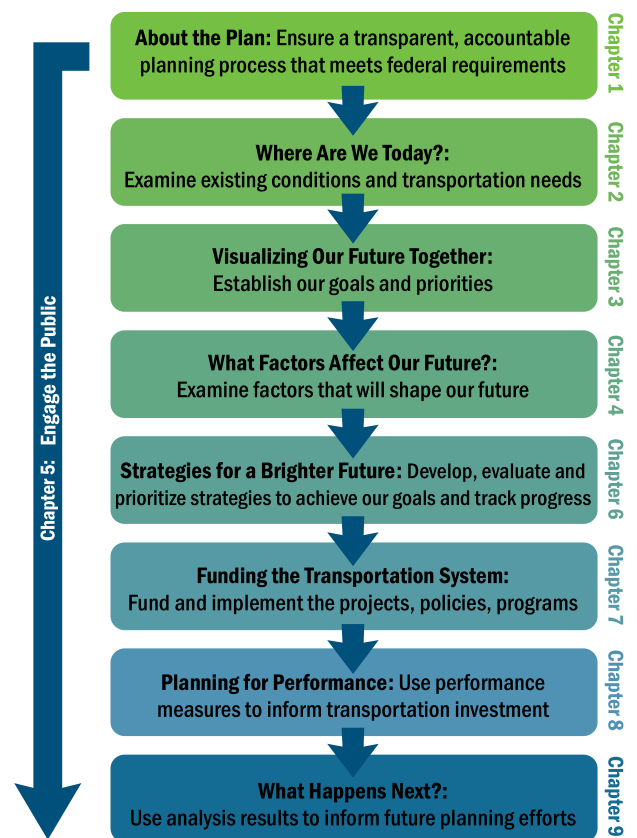
### What is the Purpose of the Plan?

The TPB documents the regional planning process, activities, and planned investments for the region's transportation future through Visualize 2045, the region's long-range transportation plan (LRTP). This plan describes how the TPB and its many member jurisdictions and independent transit agencies work together to achieve shared goals.

The plan reports how the TPB and its members tackle challenges facing the region, gather public opinion, and advance the most effective strategies to make progress on the region's goals today and in the future. Each transportation agency in the region plans and funds programs, policies, and projects that respond to regional and local goals. Those projects that rise to regional significance are included in the project list of this plan, so long as sufficient revenue is available to pay for the projects. This plan reports on the performance of the transportation system based on the TPB's regional analysis. This enables the region to set priorities and develop strategies to maintain, improve, and enhance the system.

The organization of the plan generally aligns with the basic steps of the transportation planning process as shown in Figure 1.1.

Figure 1.1: Visualize 2045 Update – Chapters





## The Regional Planning Process

The region works together in an ongoing fashion to plan and implement the multimodal transportation system. As the Metropolitan Planning Organization (MPO) for the region, the TPB's plan implements the federally required 'continuing, cooperative, and comprehensive' transportation process. This plan was developed to communicate about the region's plans for the transportation system and meet all federal requirements for the region's LRTP. The federal requirements are described at the end of this chapter. A summary of the roles and responsibilities of transportation planning in the region is shown in Table 1.1.

## How Can You Use Visualize 2045?

**All:** The Visualize 2045 update provides a unique opportunity to hear quotes from the Voices of the Region that recollect personal experiences and opinions to better understand the needs and concerns of the public.

**TPB:** Members can use this plan as a resource and policy document. Learn more about the federally required long-range transportation planning process and how and why this process is important for local jurisdictions and residents. Consider how and where in each jurisdiction's planning and policy processes the jurisdiction or agency can act toward the goals, strategies, and aspirations shared by the region.

**Technical Staff:** Staff to TPB members can use this plan as a resource to share within their jurisdictions, to learn more about the TPB's federally required processes, or answer questions about regional transportation planning. This plan can be shared at community meetings or local planning meetings to support implementation of the plan's strategies.

**The Public:** This plan provides educational materials including data, maps, historical context, and current conditions for the public to learn more about the region and the role that the TPB plays in the transportation planning process. This plan can be found online through the Visualize 2045 website. It is hoped the Voices of the Region narratives encourage more people to get involved in the TPB's public engagement opportunities.

**Organizations:** The Visualize 2045 update provides both policy and objective technical information such as data, maps, and survey results that local organizations can use to inform research efforts within the region and to promote or support implementation of the plan. This plan also includes the TPB's Aspirational Initiatives, and other strategies that organizations can promote, support, implement, or build upon.

### WHAT IS A LONG-RANGE TRANSPORTATION PLAN?

Federal laws require that the region's long-range transportation plan contains the region's collective long-term plans to fund, operate, maintain, and expand the transportation system within a minimum planning horizon of 20 years. The plan is updated at least once every four years. The plan must demonstrate that the forecasted emissions produced by the future transportation system comply with air quality requirements.

### WHAT IS A TIP?

The federally required Transportation Improvement Program (TIP) provides the schedule for the next four years for distributing federal, state, and local funds for state and local transportation projects. The TIP represents an agency's intent to construct or implement projects and identifies the anticipated flow of federal funds and matching state or local contributions. TIP projects include those that are in the first four years of the plan, plus other project types that use federal funding, such as roadway and transit maintenance projects, and operational programs.

## Developing Visualize 2045

The TPB staff update Visualize 2045 with input from the TPB members, their technical staff, and the public. The TPB staff also coordinate with the Metropolitan Washington Council of Government’s (COG) staff that lead work for community planning, the environment, and security. To address the many technical and planning requirements, staff must begin work on the plan more than two years prior to its federal due date. A new plan must be submitted to the federal government every four years. Figure 1.2 illustrates the timeline and major activities for the Visualize 2045 update. The TPB has integrated the results of the TPB Climate Change Mitigation Study of 2021 into the plan.

Through this plan, the TPB applies an equity lens in all its work and conducts planning activities using an integrated planning approach to work toward shared regional goals, with a renewed emphasis on safety and climate resilience.

## Public Engagement: Voices of The Region

The TPB conducts two comment periods as part of the plan update and receives public input for the TPB’s regular meetings. For the Visualize 2045 update, the TPB conducted public engagement known as Voices of the Region to gather information about public opinions and engage residents in a regional virtual activity about the TPB’s Aspirational Initiatives. Voices of the Region provides a more nuanced understanding of how regional transportation policies affect people in our region and highlights voices that have been underrepresented in the past. As you read each chapter, look for public input in magenta Voices of the Region boxes. Learn more about TPB’s public engagement in Chapter 5. [See the Voices of the Region on Visualize 2045 website](#) or [experience the Story Map to learn more.](#)

Figure 1.2: Visualize 2045 Update – Timeline

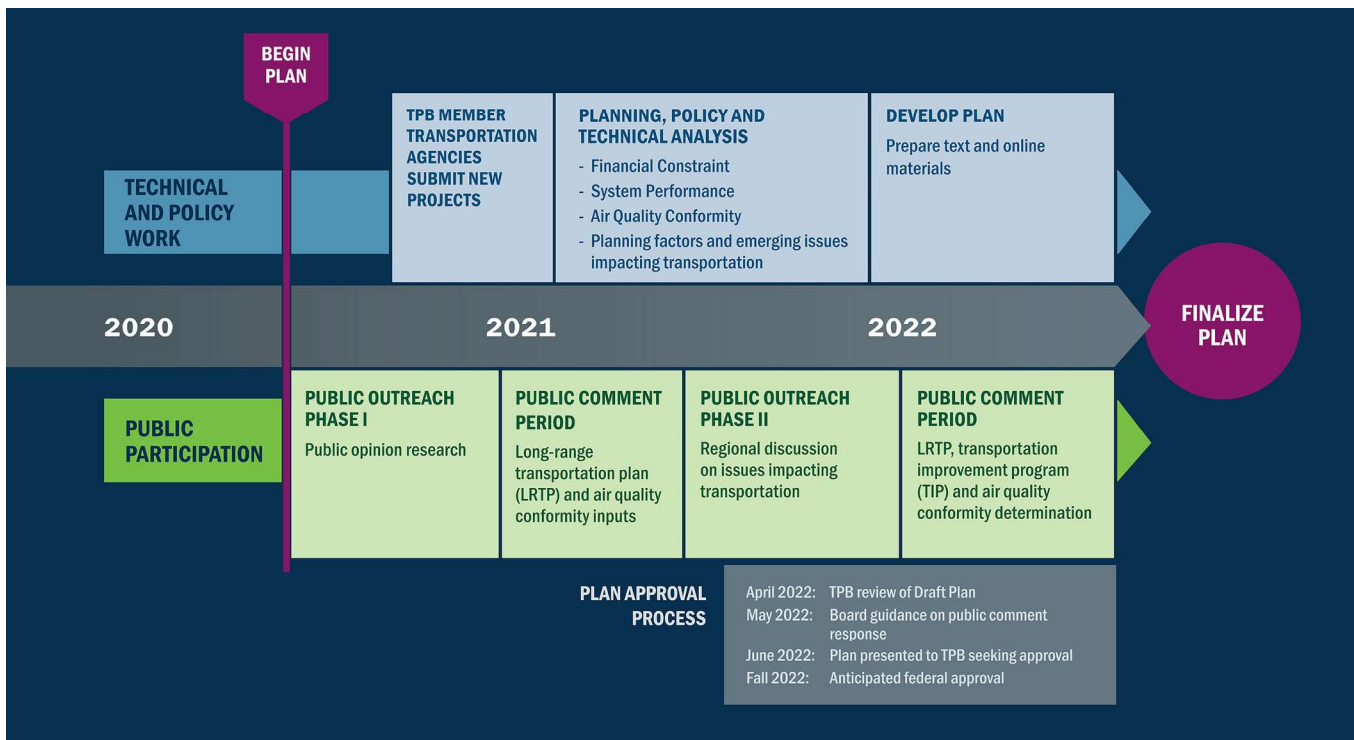


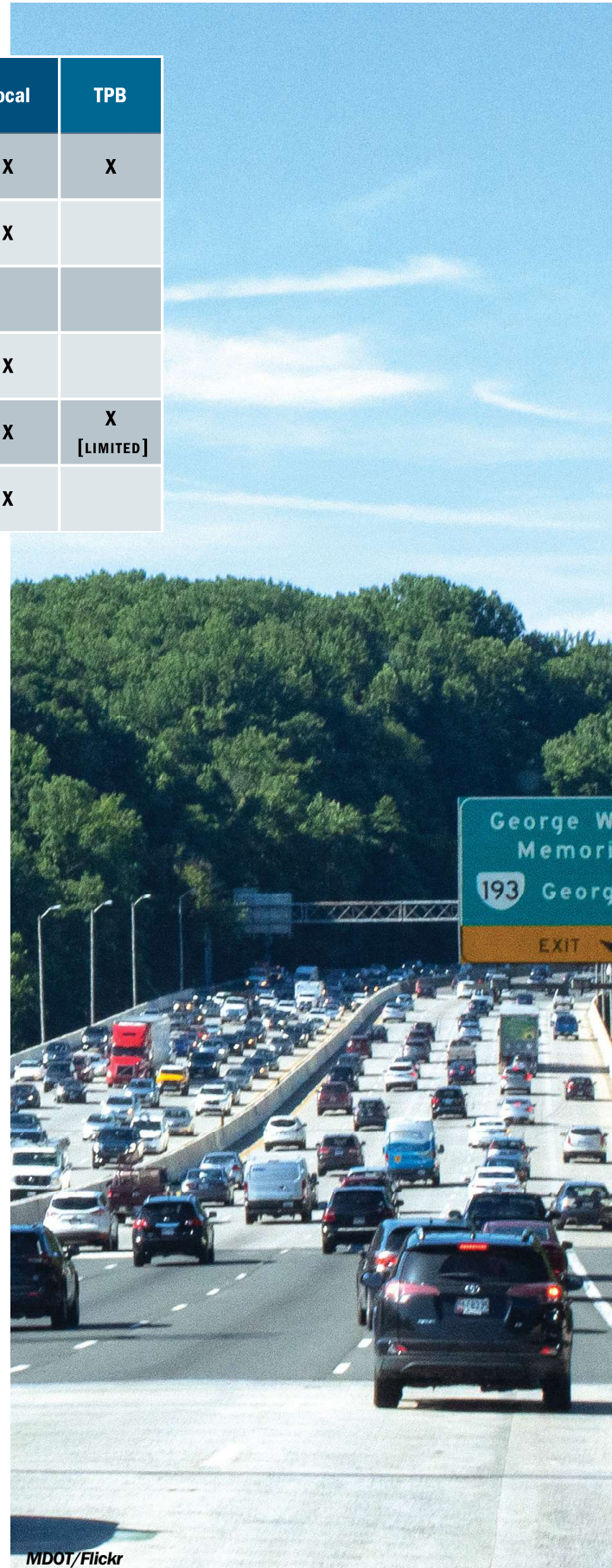
Table 1.1: Planning and Project Development – Typical Transportation Agency Roles

	Federal	State	Local	TPB
Needs Identification	X	X	X	X
Develop Local, State, and Transit Plans for Corridors, Small Areas, TOD		X	X	
Develop, Implement Land-Use Plans				
Project Development, Evaluation of Alternatives	X	X	X	
Project Funding	X	X	X	X [LIMITED]
Project Implementation		X	X	

## Project Development

A lot of planning takes place before a project is included in the region’s plan. Projects can take a long time—sometimes decades—to plan and develop, and the result can be different than the original project concept. Projects evolve based on local and regional priorities, public input, design and funding limitations, and advances in technology.

Projects in Visualize 2045 are typically developed at the state and local levels. Each state, locality, the District of Columbia, and the Washington Metropolitan Area Transit Authority (WMATA) control their own funding stream. Each jurisdiction has its own system for moving projects forward. New major WMATA capital projects such as stations or lines are built by the jurisdictions that the projects are in—in coordination with WMATA. Within each state, projects may be pursued for a variety of reasons and may have multiple sponsors.



## How Does the TPB and the Public Influence the Development of Projects?

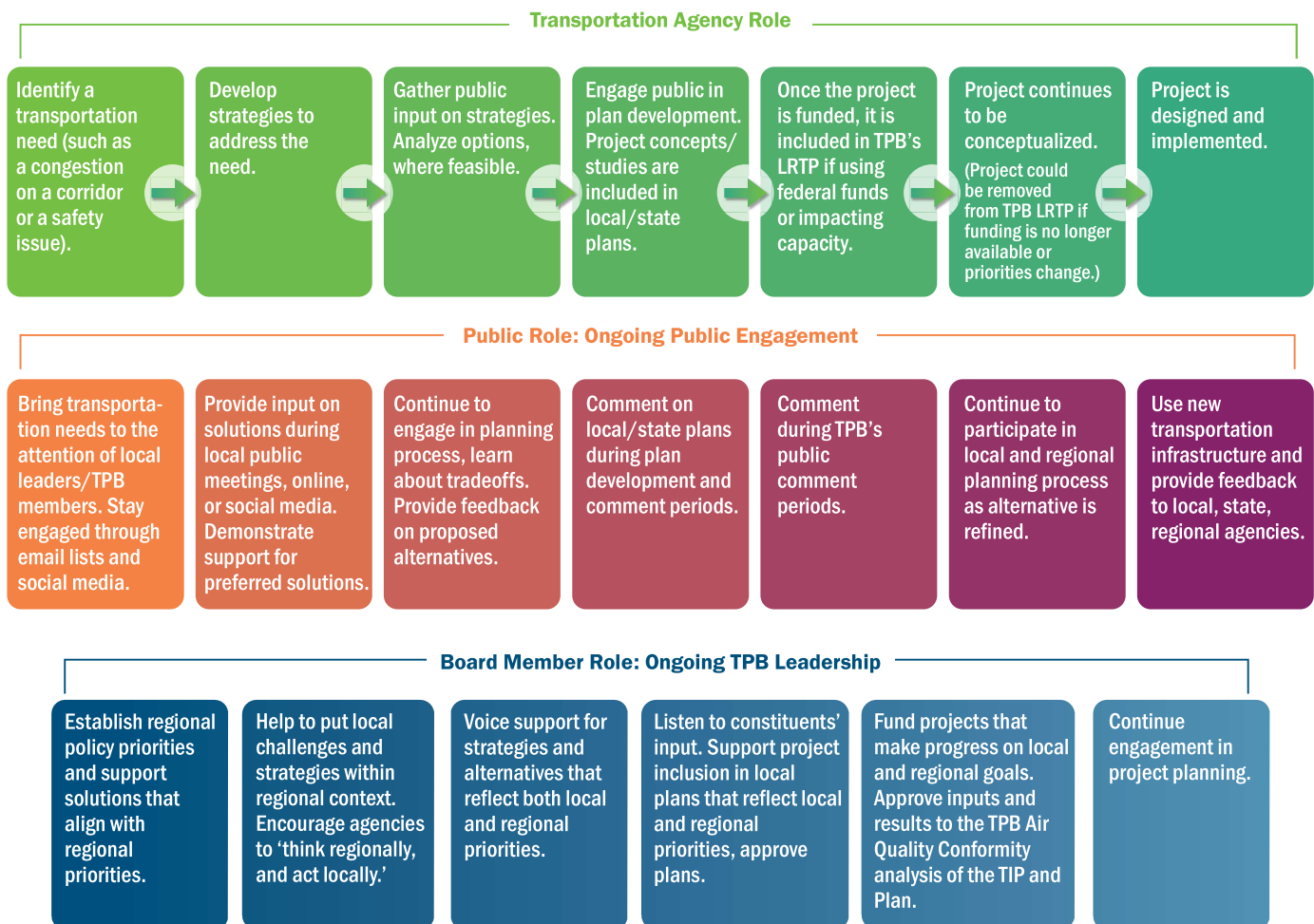
The TPB's goals and the federal metropolitan planning requirements influence the types of projects that transportation agencies develop and submit to the TPB for inclusion in the Visualize 2045 update and the TIP. The TPB performance analysis and planning activities such as congestion management, bicycle, pedestrian, freight, safety, management and operations, equity, safety, and resiliency planning inform project development. When projects are submitted, the TPB asks project sponsors to provide responses about if and how the projects advance the TPB's goals. The responses for the projects included in the constrained element (project list) of this plan are available online and are referenced in chapters 6 and 7. Figure 1.3 and the following illustrative example provide a simplified description of how the TPB

and the public can influence projects as they are planned and developed, long before projects are submitted for inclusion in the plan.

### Illustrative Example

Imagine that a transportation agency is considering how to address congestion on a corridor. The agency would conduct a study to better understand the causes of congestion and the range of options to address the issue. It would then conduct a series of meetings with the public, local businesses, and other stakeholders to get feedback on the challenges, concerns, and possible solutions on the corridor. Discussions might include topics such as environmental health, safety, and improved access and networks for people that bicycle, walk, scoot, and take transit.

Figure 1.3: The TPB and Public's Influence on Project Development



The agency would consider local goals, and regional goals, priorities, and preferred strategies endorsed by the TPB, such as the Aspirational Initiatives. It could review proven and innovative practices as discussed during TPB subcommittees. It would consider the regional analysis that the TPB provides on congestion, and the many strategies documented through the TPB’s Congestion Management Process (CMP), such as Travel Demand Management (TDM) solutions or implementing intelligent transportation system (ITS) solutions that help make traveling in the corridor more efficient.

As the project concept advances, the agency would consider a range of alternatives and there would be additional public meetings where officials and the public could offer feedback. The agency would consider enhancements to the project, such as green infrastructure to manage stormwater, increased transit features, and improved connections for people that walk and bike. The project would be included in a local plan. Once funding is identified, if required, the project would be submitted to the TPB for inclusion in the region’s plan and Air Quality Conformity analysis. The project may still go through a decade or more of additional planning and design. The project might be required to undergo additional required analysis, such as federally required analysis that cannot be conducted unless the project is included in the plan.

## Identifying Needs

The TPB conducts numerous studies and analysis to identify regional transportation needs. Project-specific needs are identified through a variety of mechanisms throughout the region. Here are some basic ways in which projects originate:

- **State-level long-range transportation planning:** Each state has a long-range planning process that brings together project recommendations from different sources. A project does not have to be in a state long-range plan, but priorities established in these plans often determine which projects get implemented. State and WMATA long-range plans usually are not financially constrained and may or may not list individual projects.
- **State-level project identification:** State departments of transportation (DOTs) each have



methods for identifying projects. In accordance with state law, the states give highest priority to maintenance needs or structural deficiencies. States also identify projects as they implement the federally mandated performance-based planning and programming approach (PBPP) (learn more in Chapter 8, Planning for Performance). The states propose other projects that are system “enhancements” including trails or landscaping, or projects to serve air quality improvement goals, such as park-and-ride lots or ridesharing programs. In other cases, the states recommend “new capacity”—new or widened roads, or transit extensions—these projects must be in the TPB’s plan.

- **Regional plans and studies:** WMATA regularly assesses the needs of the Metrorail, Metrobus, and MetroAccess systems, and identifies new service and projects. WMATA places a priority on keeping the system in a state of good performance, including replacement of rail cars and buses, escalator and elevator repair, and track maintenance. WMATA also studies and identifies system enhancements, such as bus service improvements and station access improvements. The Maryland Transit Administration (MDOT-MTA), the Virginia Department of Rail and Public Transportation (DRPT), and local agencies perform their own studies and work with WMATA. The Northern Virginia Transportation Authority (NVTA)

oversees the production of an unconstrained plan, TransAction. During the Six Year Program, projects identified in TransAction are selected for NVTA funds through an evaluation process that results in a consolidated candidate project list for public input. Other agencies, such as the National Capital Planning Commission (NCPC) and The Maryland-National Capital Park and Planning Commission (MNCPPC), also produce plans for parts of the region.

- **Local government plans:** Many transportation projects are often first identified through local planning, which is performed by county or municipal governments. Local comprehensive plans usually include a transportation element identifying specific projects that a local government has determined will be needed over the period of the plan, which is usually 20-25 years.
- **Corridors and sub-area studies:** Federal regulations require corridor or sub-area studies, with public involvement, to be performed when major metropolitan highway or transit investments are being considered. Corridor and sub-area studies typically examine the costs and benefits of various alternatives, and how effectively the different options would “get the job done.” They also measure other social, economic, or environmental impacts.

## What Types of Projects are in the Visualize 2045 Project List?

The TPB has a broad set of transportation goals, and every day a large portfolio of work is underway throughout the region to help make progress on those goals. This work includes moving forward a variety of transportation projects and programs, as well as transportation and land-use policies.

Federal law requires some projects to be included in a specific part of Visualize 2045—what is referred to as the ‘constrained element’ of the plan. This is simply a list of projects that is a subset of all the transportation work in the region, limited by certain requirements. Typically,

the projects in the constrained element are regionally significant road and transit improvements, although these projects often include many other components, such as freight, bicycle, and pedestrian enhancements. To receive federal funding, regionally significant projects must be included in the constrained element project list.

Roughly a year before the full plan is approved, the TPB approves the projects that will be included in the constrained element (CE) as inputs for the regional Air Quality Conformity analysis. This plan references many of these projects, each has an identification number that starts with CE (or T, for TIP projects) followed by four digits. At this point in the process, these projects must show a level of specificity, even if construction is many years away. Sponsors must demonstrate that project funding is reasonably anticipated to be available (this requirement for financial constraint is what gives the constrained element its name). And the details of the projects in the constrained element must be geographically detailed enough to allow them to be coded and modeled as part of the regional air quality analysis, which shows that the plan is forecast to conform to regional air quality improvement budgets.

What types of transportation activities are not included in the constrained element project list? This can include projects that do not yet have funding, that will be required to be in the air quality analysis once they are funded. Other project types and strategies that are not federally required to be in the constrained element include standalone trail projects, small pedestrian projects, or electric vehicle infrastructure.

Projects do not have to be in the constrained element to be important to the region. Regional transportation goals are reflected in an array of projects, programs, and priorities that are implemented by TPB member agencies, but for various reasons are not required to be included in the constrained element. Regional priorities are also emphasized and implemented through a range of TPB policies and programs, such as the TPB-endorsed Aspirational Initiatives and the TPB technical assistance programs. See Table 1.2 for examples of how projects and policies are implemented within and beyond the constrained element project list.

Table 1.2: Implementing the TPB's Vision – Examples of Projects in and Beyond the Constrained Element of Visualize 2045

Project, Program, or Policy Type	Implementation
<b>State of Good Repair</b>	<p><b>In the Constrained Element:</b> Taking care of the region's expansive existing transportation system is fundamental and ongoing. The LRTP must identify the maintenance and operations programs and funding required to keep the highway and transit systems in a state of good repair. An example project (component) is the replacement of the American Legion Bridge (part of T6432).</p>
<b>Bicycle and Pedestrian Projects</b> <ul style="list-style-type: none"> <li>• <b>ASPIRATIONAL INITIATIVES:</b> <ul style="list-style-type: none"> <li>- National Capital Trail Network (NCTN)</li> <li>- Improve Bike/Walk Access to Transit</li> </ul> </li> </ul>	<p><b>In the Constrained Element:</b> Many bicycle and pedestrian projects are integral parts of larger roadway or transit projects that impact the capacity of the transportation system or receive federal funding and therefore are in the constrained element. Examples include the Grant Avenue Road Diet (CE3375) and the side paths that Prince William County includes on the Virginia Route 28 widening project (CE3219). Both projects complete segments of the NCTN.</p> <p><b>Beyond the Constrained Element,</b> transportation agencies in the region implement many bicycle and pedestrian projects, many of which are documented in the TPB Bicycle and Pedestrian plan and in local plans. An example is the pedestrian HAWK signals installed in 2021 on Wisconsin Avenue in Bethesda, MD.</p>
<b>Transit Lines, BRT, Bus-Only Lanes, Bus and Metro Car Fleets, Metro Improvements</b> <ul style="list-style-type: none"> <li>• <b>ASPIRATIONAL INITIATIVES:</b> <ul style="list-style-type: none"> <li>- Expand BRT and Transitways</li> <li>- Move More People on Metrorail</li> </ul> </li> </ul>	<p><b>In the Constrained Element:</b> Examples include new and replacement transit vehicles, fare policies, new transit stations, and system expansion projects that add new lines and service. Converting a vehicular travel lane to a bus only or bus/bike lane would also be in the constrained element, such as the H&amp;I bus lanes (T3212). Illustrative studies may appear in the financial plan but would not be included in the Air Quality Conformity analysis.</p>
<b>Expressways and interstates, State Roads, Ramps</b> <ul style="list-style-type: none"> <li>• <b>ASPIRATIONAL INITIATIVE:</b> <ul style="list-style-type: none"> <li>- Expand the Express Highway Network</li> </ul> </li> </ul>	<p><b>In the Constrained Element:</b> Projects and policies that change the capacity or function of major roadways are reflected in the constrained element. The MDOT I-270 Innovative Congestion Management project (T6444) is an example.</p>
<b>Local Roads and Local Intersection Improvements</b>	<p><b>In the Constrained Element:</b> Local roadway projects that impact the region's roadway capacity such as a new, expanded, or reduced roadways (road diets) must be included even if the project does not use federal funding. An example project is the Loudoun County Route 50 /North Collector Road (CE3739) that is planned as a multimodal road and future transit corridor.</p> <p><b>Beyond the Constrained Element:</b> Most local roadway projects do not impact the region's roadway capacity and do not use federal funding; therefore, they are not reflected in the constrained element.</p>
<b>Land-Use Coordination</b> <ul style="list-style-type: none"> <li>• <b>ASPIRATIONAL INITIATIVE:</b> <ul style="list-style-type: none"> <li>- Bring Jobs and Housing Closer Together</li> </ul> </li> </ul>	<p><b>In the Constrained Element:</b> Many transportation projects in the constrained element are designed to improve connections between housing and job centers. The AQC analysis must use approved population and forecasts for 2045, not aspirational targets.</p> <p><b>Beyond the Constrained Element:</b> The planning and authority for the land-use aspect of the initiative, Bring Jobs and Housing Together, is within the purview of the planning agencies. Land-use projects, programs and policies are not reflected in the constrained element, but the TPB works closely with land-use planning partners as coordination is a critical transportation strategy.</p>
<b>Travel Demand Management</b> <ul style="list-style-type: none"> <li>• <b>ASPIRATIONAL INITIATIVE:</b> <ul style="list-style-type: none"> <li>- Provide More Telecommuting and Other Options for Commuting</li> </ul> </li> </ul>	<p><b>In the Constrained Element:</b> Many travel options represented by TDM, such as transit projects, or carpool lanes on expressways, are represented in the constrained element.</p> <p><b>Beyond the Constrained Element:</b> Telework programs and teleworking amounts in the region impact the demand on the transportation system. These programs are not directly reflected in the constrained element of the LRTP.</p>

## Where Can You Get More Information About Transportation in the Region?

### TPB Planning Activities

The TPB leads many planning efforts that inform the planning process, plan development, and the projects, programs, and policies that its members fund and implement in the region. Chapter 6, Strategies for a Brighter Future, and Chapter 8, Planning for Performance, describe these activities.

[Visit the Visualize 2045 website to learn more about TPB planning activities.](#)

### TPB's Aspirational Initiatives

Learn more about the TPB's Aspirational Initiatives in Chapter 6, Strategies for a Brighter Future. [Visit the Story Map or see the videos and infographics online.](#)

### Safety Planning

To better understand the factors behind the unacceptable numbers of fatalities and serious injuries occurring on the region's roadways each year, the TPB commissioned a Regional Safety Study guided by a regional panel. The TPB adopted a regional roadway safety policy in 2020 and established a new safety program. This policy endorsed a set of shared actions to reduce injuries and fatalities on area roadways and committed to safety strategies that advance equity.

### Transit Planning

The TPB conducts studies and reports to support transit planning in the metropolitan Washington region, such as transit service and fare equity analysis and annual system reports. See the TPB BRT infographic and video.

### Bicycle and Pedestrian Planning

The TPB is updating its Bicycle and Pedestrian Plan in 2022. This plan is an update to the Bicycle and Pedestrian Plan which was adopted in 2015. The plan identifies major bicycle and pedestrian projects to be implemented and incorporates goals and performance indicators for walking and bicycling based on the

TPB Vision. The Vision plan identifies "recommended practices" likely to be effective in achieving those goals, and discusses trends in policy, mode share, and safety.

### Freight Planning

The National Capital Region Freight Plan examines freight movement in the region and summarizes current and forecasted freight conditions. The freight plan includes 17 policies that provide a framework for transportation planning activities conducted by the TPB. The TPB member jurisdictions are also encouraged to consider these freight policies as they conduct their respective transportation planning functions. An update to the 2016 plan approved by the TPB is underway as of 2022.

### Travel Demand Management: Commuter Connections

Many of the strategies in the Visualize 2045 update represent Transportation Demand Management (TDM) approaches, which are intended to help people find and use alternatives to driving alone. TDM uses marketing, incentives, and employer-based programs to reduce congestion and improve air quality. Commuter Connections is the TPB's TDM program. The Commuter Connections regional network provides commuter services and information to area residents and employers in the metropolitan Washington region to reduce traffic congestion and emissions caused by single occupant vehicles (SOVs).

### Environmental Planning

Through Air Quality Conformity analysis, the TPB coordinates with its partners to meet federal planning requirements for established pollutants in the air known to be harmful to people's health. TPB staff forecast emission levels of these pollutants from vehicles to ensure the LRTP and TIP comply with the region's plan to meet national air quality standards. The TPB also partners with COG and its members on issues of environmental mitigation and works to address climate change by identifying and evaluating strategies to reduce roadway greenhouse gas (GHG) emissions and to ensure resiliency of the transportation system.

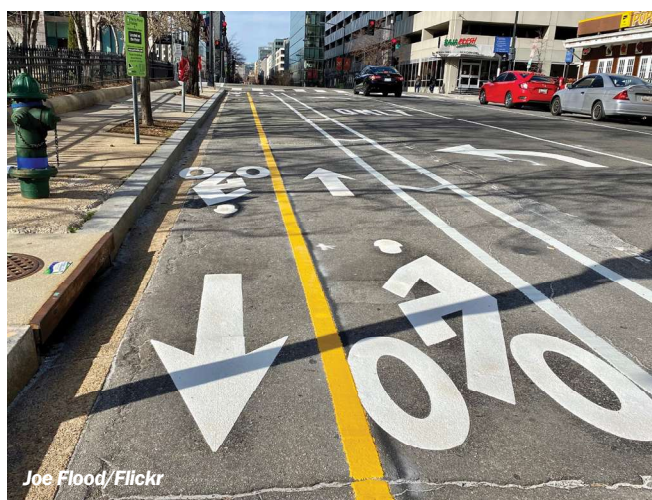


## Other Transportation Planning Activities in the Region

By the time projects are included in TPB's constrained element project list of the plan, they have undergone a significant amount of review through state and local planning and outreach activities. Projects in the first few years of the plan are often under construction. This section provides information on ways to have a voice in transportation planning earlier in the planning process.

### State, Local, and Transit Planning

Each state, local jurisdiction, and transit agency in the TPB's membership conducts transportation planning activities beyond what can be represented in this plan, and each develop their own long-range transportation plan. Localities develop strategic and comprehensive plans that include transportation elements and many produce standalone transportation plans. These all inform the projects, programs, and policies that members implement in the region. A subset of those projects and policies are required to be submitted to the TPB for the constrained element of the LRTP and the TIP per federal requirements related to the Air Quality Conformity analysis. While the TPB's vision is comprehensive and multimodal, it is not possible for the Air Quality Conformity analysis to include all projects, but only those projects required for the analysis.








Joe Flood/Flickr

The number and variety of state and local plans provide opportunities to learn about what is happening in the region beyond the constrained element project list.

### To Learn More About Planning and Projects and How Your Voice Can Be Heard:

**Review** the plans developed by the states, localities, and transit agencies in the region, and provide input when they are updated. A few of these plans include:

-  [State of Maryland Long-Range Transportation Plan](#)
-  [District of Columbia, Long-Range Transportation Plan](#)
-  [Commonwealth of Virginia Long-Range Transportation Plan](#)
-  [Washington Metropolitan Area Transit Authority Initiatives \(including strategic, capital, and service plans\)](#)
-  [Northern Virginia Transportation Authority Long-Range Transportation Plan, TransAction](#)

**Identify** transportation or land-use planning challenges in the region, and participate in the local process to identify and comment on solutions.

**Check out** a local jurisdiction's or agency's website or attend a local public meeting to learn more and provide input on plans, goals, projects, programs, policies, and other priorities. **To see a TPB member listing visit:** [mwcog.org/transportation/about-tpb/jurisdictions](http://mwcog.org/transportation/about-tpb/jurisdictions).

## Federal Requirements

Like plans that came before, federal requirements govern and inform the content and process for development of this update to Visualize 2045. This plan meets all federal requirements. The two main requirements are that the plan must identify all regionally significant projects and programs for which funding is reasonably expected to be available over a 20-year horizon and demonstrate that these projects and programs together comply with regional air quality improvement goals. This Visualize 2045 update must meet an array of federal requirements, including but not limited to: complying with performance-based planning rules, considering the ten federal planning factors, conducting a Congestion Management Process, engaging in public participation, responding to concerns of non-discrimination and equity. **[A summary of requirements follows, and more details are available online. Appendix K contains a full checklist of requirements and how this plan update fulfills them.](#)**

**[Continue reading to learn more about these requirements by visiting the Federal Register website.](#)**

## Financial Constraint

Federal regulations require that the TPB develop an element of the long-range transportation plan that is financially constrained. Each project included in this element must be completed using revenue sources that are already committed, available, or reasonably expected to be available in the future (financial constraint). The forecasted system performance of the projects in the financially constrained element illustrates how the projects work together to affect future travel patterns and conditions. In doing so, this element paints a picture of what can be attained with the existing funding level and mix of projects. This information can be used by elected leaders, regional planners, and the public to better understand decisions needed to realize a more desirable transportation future.

## Air Quality Conformity

The federal government requires the TPB to conduct an in-depth analysis to ensure projected emissions generated by users of the region's future transportation system will not exceed (or "conforms to") the air quality



emissions budgets set forth in the region's air quality plans. This is known as Air Quality Conformity. Based on the results of the analysis, a determination is made to confirm the region is meeting the required targets. The major highway and transit projects in the constrained element can be found in Chapter 7, Funding the Transportation System. Certain types of projects must be included in the Air Quality Conformity analysis and the financial analysis of the plan, which is how the TPB demonstrates there is sufficient funding for the listed projects. These include:

- Projects that add or remove roadway or transit capacity could affect air quality. These include system expansion projects like new or widened roadways, new transit lines or bus only lanes, or expanded transit service on existing lines. Because of that effect, they are required to be in Visualize 2045 and part of the “Air Quality Conformity” test.
- Transit service and fare assumption policies that will affect the operation of the transportation system and could therefore affect travel patterns and air quality. This includes new or updated route, frequency, and fare policy information for the region's rail and bus systems, as well as new or updated lane restrictions and hours of operation for HOV and HOT facilities.

### Land-Use: Cooperative Forecasts

The Visualize 2045 update presents and analyzes land-use considerations, acknowledging that where and how the region grows can be a key transportation strategy. There is a demonstrated link between land-use, economic vitality, and transportation. Many TPB studies have examined that relationship to develop and promote strategies such as Activity Centers and growth around high-capacity transit stations. However, the TPB cannot use visionary or aspirational land-use plans in the required air quality analysis, but rather must rely on the land-use data that is provided to COG from member localities from approved comprehensive plans. Learn more about COG's cooperative forecast in Chapter 2, ‘Where Are We Today?’.

### Performance-Based Planning and Programming (PBPP)

Performance-Based Planning and Programming (PBPP) is a federal requirement that requires states and MPOs to “transition to a performance-driven, outcome-based program that provides for a greater level of transparency and accountability, improved project decision-making, and more efficient investment of federal transportation funds.” To accomplish this, the PBPP process ties the funding of projects and programs to improving measured performance and achieving targets set for future performance.



Kelly Bell/Flickr

#### WHAT IS A REGIONALLY SIGNIFICANT PROJECT?

‘Regionally Significant’ projects in the Air Quality Conformity analysis are defined as capital improvements that add or remove highway or transit capacity and therefore might affect future air quality.

## Congestion Management Process (CMP)

The TPB serves an important role in addressing congestion and providing for safe and effective management and operation of the transportation system in the region. This is done by conducting analyses and providing information for members' awareness of congestion trends and potential management strategies which TPB documents in the federally required Congestion Management Process (CMP).

## Public Participation

The TPB's Participation Plan communicates the TPB's commitment to convey transparent information and engage the public and relevant public agencies to support the regional transportation planning process. This includes the process to update Visualize 2045, and the TIP. Learn about the Participation Plan by clicking below:

 [TPB Participation Plan | Metropolitan Washington Council of Governments \(mwcog.org\)](https://www.mwcog.org)

## Transportation for Persons With Disabilities or Low Income, and Older Adults

As required through Title VI of the Federal Civil Rights Act, and in consideration of best planning practices, the TPB must ensure it enables ongoing participation from low-income and minority communities, persons with disabilities, and those with limited English skills. It must also develop a Coordinated Human Service Transportation Plan for the National Capital Region.

## Federal Planning Factors

Federal law identifies a list of planning factors meant to guide metropolitan planning. Collectively, the projects, programs, and policies in Visualize 2045 must address these factors.

1. Support the economic vitality of the metropolitan area, especially by enabling global competitiveness, productivity, and efficiency.
2. Increase the safety of the transportation system for all motorized and non-motorized users.
3. Increase the ability of the transportation system to support homeland security and to safeguard the personal security of all motorized and nonmotorized users.
4. Increase accessibility and mobility of people and freight.
5. Protect and enhance the environment, promote energy conservation, improve the quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.
6. Enhance the integration and connectivity of the transportation system, across and between modes, for people and freight.
7. Promote efficient system management and operation.
8. Emphasize the preservation of the existing transportation system.
9. Improve resiliency and reliability of the transportation system, and reduce or mitigate stormwater impacts of surface transportation.
10. Enhance travel and tourism.

