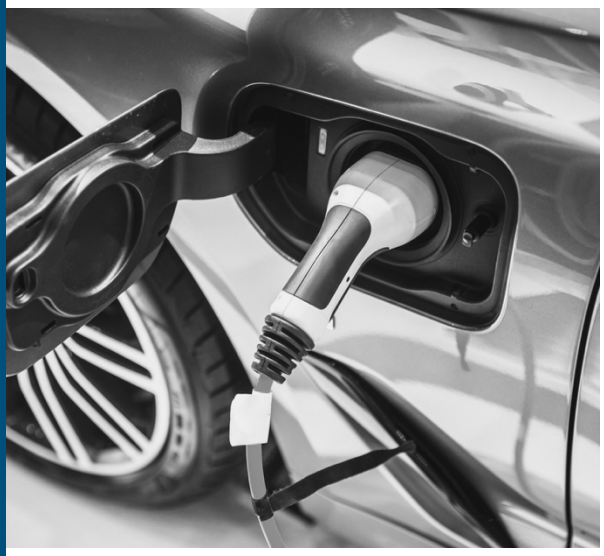
VISUALIZE 2050



Visualize 2050 Planning and Programming Process

Roadway Planning

Part 18 of 27

National Capital Region
Transportation Planning Board

December 2025

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OVERVIEW OF ROADWAY PLANNING

Roadways are the largest physical components of the National Capital Region's transportation system. They have been shaped over time by natural geography, land development decisions, and funding availability. Roadways move the most people throughout the region via the Interstate System (including toll lanes and high-occupany vehicle (HOV) and high-occupancy toll (HOT) lanes), collectors, arterials, and local roads. Many other modes of transportation are often placed adjacent to some types of roadways such as sidewalks or bikeways, and planning for these accommodations is discussed in other parts of this document related to pedestrian or bicycle planning.

In the National Capital Region, responsibility for roadway planning is performed at multiple levels of government. State Departments of Transportation (DOTs) own the largest percentage of roads, tunnels, and bridges in the region. Depending on the jurisdiction, counties and cities have various levels of responsibility for roadway planning based on multiple factors like their size, type of roads, and state laws and regulations. There are also regional agencies like Northern Virginia Transportation Authority (NVTA) that fund roadway projects in Northern Virginia that meet criteria laid out by the authority.

In addition, TPB staff keep abreast of any changes to the Strategic Highway Network (STRAHNET) in the region. The STRAHNET is a national 64,200-mile system that consists of public highways that provide access, continuity, and emergency transportation of personnel and equipment. STRAHNET includes the Interstate and Defense Highway System, 14,000 miles of non-Interstate public highways that are part of the National Highway System, and 1,800 miles of connector routes linking to 200 military installations. FHWA encourages MPOs and State DOTs to coordinate with representatives from the Department of Defense (DOD) on transportation planning and the project programming process on infrastructure and connectivity needs for STRAHNET routes and other public roads that connect to DOD facilities. In the National Capital Region, STRAHNET encompasses all Interstate highways and U.S. Route 301.

TPB'S ROLE AND KEY STAFF

While encouraging a range of multimodal solutions and travel demand management, the TPB is committed to improving conditions for people that travel by vehicle. The TPB has a long history of encouraging strategies that members implement around the region to improve the driving experience. From maintaining roads and bridges in good repair for safety and comfort to managing congestion with strategies that improve travel time and reduce delays, as well as keeping up with emerging technologies that enhance system efficiency, the TPB's efforts are focused on creating a more reliable and effective transportation network.

The TPB generaly does not have a role in roadway planning or operations other than ensuring inclusion of projects when creating regional plans such as the Transportation Improvement Program (TIP) and Regional Air Qualiy plans. As part of the Technical Assistance program some data collection and modeling support has been provided to members on an ad hoc basis.

FIGURE 18.1: KEY STAFF

TPB Staff	Title	Role
Kanti Srikanth	Executive Director	Staff Director for the Transportation Planning Board (TPB)
Andrew Burke	Transportation Engineer	SPOTS Staff
James Li	Transportation Engineer	CMP/VPDUG Staff

Role of TPB Subcommittees

The **Systems Performance, Operations and Technology Subcommittee (SPOTS)** advises the National Capital Region Transportation Planning Board on matters of performance outcomes of the transportation system; transportation operations and management, including considerations of Intelligent Transportation Systems (ITS) technologies in improving those operations; and emerging transportation technologies. SPOTS activities also are coordinated with the regional Congestion Management Process (CMP).

In the past, SPOTS has surveyed members to get a snapshot of certain aspects of the region's transportation systems. SPOTS has conducted traffic signal timing surveys to show how the region updates signal timing over time. After a derecho knocked out many traffic signals in the region, surveys were conducted to find out how many and the types of power backup systems the traffic signal systems in the region employed. SPOTS has also undertaken technology surveys to get an understanding of new and emerging technologies used by members in the region.

The **Congestion Management Process (CMP)** is a systematic process that provides for safe and effective integrated management and operation of the multimodal transportation system. As the region continues to experience dynamic population and job growth, congestion remains a primary focus of the TPB. More about the CMP is provided in part 6 of this document.

The region's **Vehicle Probe Data Users Group (VPDUG)** goal is to enhance regional coordination, consistency, and capabilities in the use of vehicle probe-based traffic data toward performance-based transportation planning and programming.

ROLE OF KEY PLANNING AGENCIES

When it comes to roadway planning in the TPB Region, the key agencies are the three DOT members of the TPB – DDOT, MDOT/SHA, and VDOT. While roadway planning may be done at the county and city level, the majority is undertaken by the state DOTs. Other agencies that play a key role in roadway planning in the National Capital Region are the National Park Service (NPS), the Northern Virginia Transportation Authority (NVTA), and the Metropolitan Area Transportation Operations Coordination (MATOC) program.

While not a transportation agency, the NPS owns and operates multiple roads used not only by commuters, but also by the general population to traverse the region. The George Washington Memorial Parkway is a major north/south thoroughfare that connects two sides of the I-495 Beltway and extends south to Mt. Vernon in Fairfax County. In the District of Columbia, the Clara

Barton and Rock Creek Parkways have travel restrictions during the commuting periods of the day to help move traffic in and out of the city.

Established by the state of Virginia, the NVTA is a regional organization that develops its own long-range transportation plan for Northern Virginia. With its focus on reducing congestion, NVTA uses performance-based criteria to evaluate and fund regionally significant multimodal transportation projects in Northern Virginia.

To improve safety and mobility in the region through information sharing, planning, and coordination, the TPB, the Washington Metropolitan Area Transit Authority, and the District of Columbia, Maryland, and Virginia Departments of Transportation created the Metropolitan Area Transportation Operations Coordination (MATOC) Program. MATOC's mission is to provide situational awareness of transportation operations in the National Capital Region. They do this by operating one of the first regional transportation operations centers in the region. MATOC also brings together experts from regional agencies to coordinate and share information on topics like snow/inclement weather operations, transit operations in the region, and information technology issues that feed the region's operations centers.

FIGURE 18.2: KEY PLANNING AGENCIES

Planning Agency	Role
District Department of Transportation (DDOT)	State DOT
Maryland Department of Transportation/State Highway Administration (MDOT/SHA)	State DOT
Virginia Department of Transportation (VDOT)	State DOT
Northern Virginia Transportation Authority (NVTA)	Regional Funding Agency
Metropolitan Area Transportation Operations Coordination (MATOC)	Regional Operations Coordination
National Park Service (NPS)	Federal Agency

PUBLIC ENGAGEMENT

The public has the opportunity to comment at any TPB meeting or during comment periods for Visualize 2050 development. Roadway planning is a frequent topic at the TPB Community Advisory Committee's monthly meetings, a summary of which is reported to the TPB. State and local agencies also conduct public engagement around roadway planning typically for an area or corridor that is being considered for a road project.

MAPPING OF EXISTING ROADWAY NETWORK

Existing roadway network data used to inform TPB's mapping of the existing roadway network was collected to create a "snapshot" of existing roadway facilities in the region in 2023. For this geospatial work data was collected from the following sources:

Layer	Source
Highway	TPB staff compiled existing roadway network data from known federal and regional sources for the TPB Planning Area: • TPB Commuter Connections Park and Ride Lots • U.S. DOT Federal Highway Administration National Highway System • TPB Managed Lanes