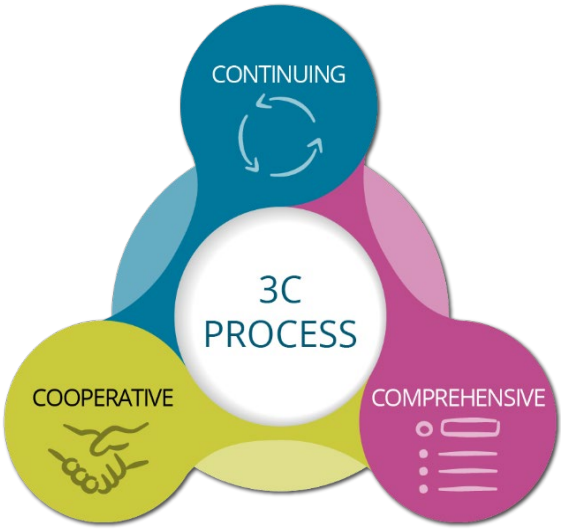
2 HOW TRANSPORTATION PLANNING HAPPENS

2.1 ORGANIZATION AND CONTEXT

Federal legislation requires that any urbanized area (UZA) with a population greater than 50,000 must have an MPO to plan for and make decisions on the use of Federal transportation funding. MPOs ensure that existing and future expenditures for transportation projects and programs are based on a continuing, cooperative, and comprehensive planning process (also known as the 3C Process, seen in Figure 2.1). Among other functions and requirements, MPOs cooperate with state agencies and public transportation operators to program Federal funds for eligible transportation projects.

Figure 2.1 MPO 3C Process



Source: Cambridge Systematics.

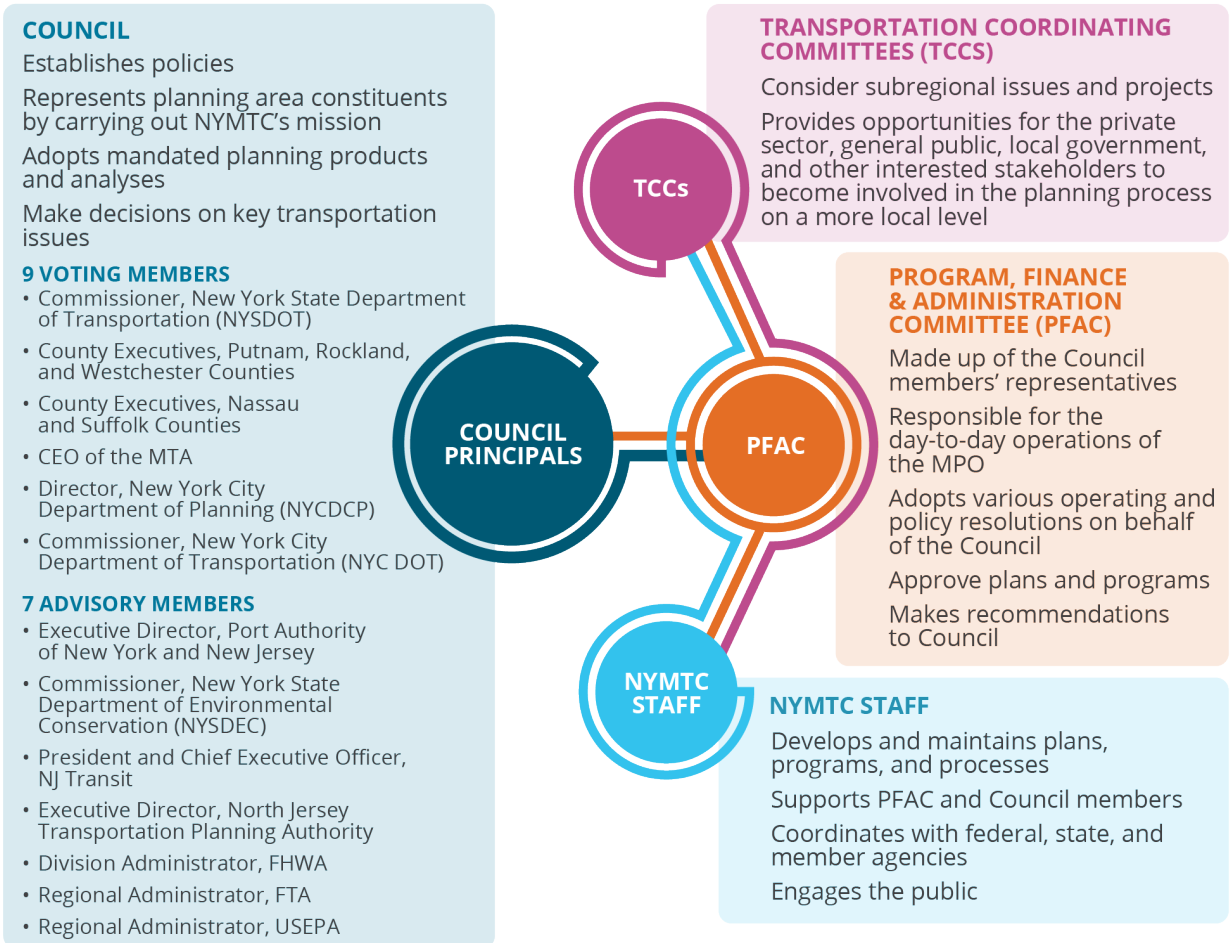
As the MPO for New York City, Long Island, and the Lower Hudson Valley, NYMTC serves as a collaborative planning forum for the five boroughs of New York City; Nassau and Suffolk counties on Long Island; Putnam, Rockland, and Westchester counties in the Lower Hudson Valley; the State of New York; and the Metropolitan Transportation Authority (MTA) to undertake the federally mandated planning process and access Federal funding for transportation projects.

NYMTC's Council is advised by the Port Authority of New York and New Jersey (Port Authority), New Jersey Transit (NJ TRANSIT), and the North Jersey Transportation Planning Authority (NJTPA), as well New York State's Department of Environmental Conservation (NYSDEC), the U.S. Environmental Protection Agency (USEPA), and two modal administrations of the U.S. Department of Transportation (U.S. DOT)—the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA). NYMTC's Shared Vision for Regional Mobility, which guides Moving Forward 2055, is built around these members and advisers' strategic goals; associated objectives; and related projects, programs, and studies.

2.1.1 STRUCTURE

The NYMTC Council is comprised of the chief elected or appointed officials of its member agencies, which include nine voting members and seven non-voting advisory members (see Figure 2.2). NYMTC operates through four standing committees—the Program, Finance, and Administration Committee (PFAC) which oversees the day-to-day operations of the organization, and three geographically based Transportation Coordinating Committees (TCC) that provide subregional planning forums. These committees make recommendations to the Council based on their areas of expertise. NYMTC is supported by professional staff that are responsible for conducting the daily business of the organization.

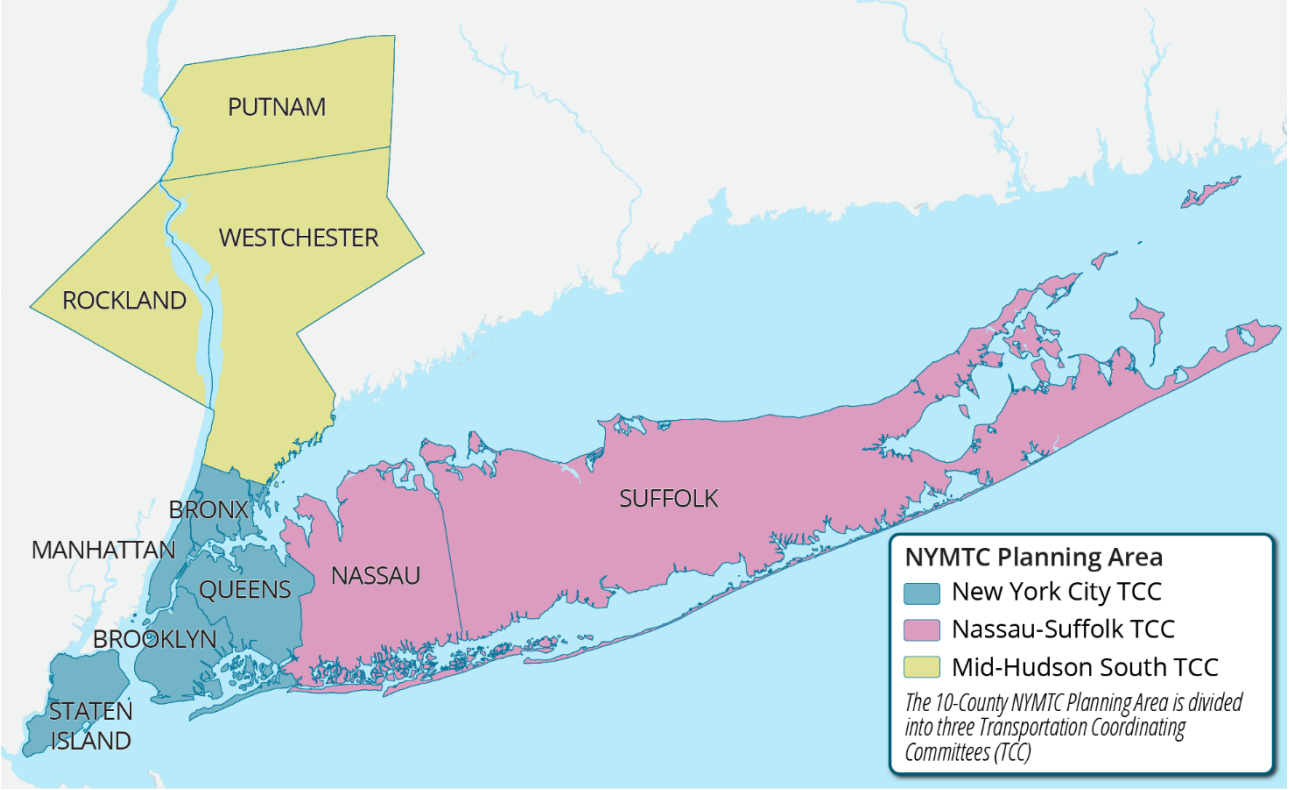
Figure 2.2 NYMTC Organization



Source: NYMTC.

As shown in Figure 2.3, NYMTC's members are also divided into three geographically based TCCs representing New York City, Mid-Hudson South, and Nassau/Suffolk to address subregional transportation needs and issues.

Figure 2.3 NYMTC Planning Areas and TCCs



Source: NYMTC.

ORGANIZATIONAL RESPONSIBILITIES

Federal legislation and related planning regulations require MPOs to produce a 20+ year horizon long-range Regional Transportation Plan (RTP), a five-year Transportation Improvement Program (TIP), and an annual Unified Planning Work Program (UPWP). Moving Forward 2055 is the RTP for fiscal years 2026–2055 for the NYMTC planning area. Moving Forward 2055 includes forecasts of future conditions and needs and potential transportation improvements, as well as a shared strategic vision for transportation and development within the NYMTC planning area.

Thus, Moving Forward 2055 fulfills Federal planning requirements and maintains NYMTC's eligibility for Federal funding for transportation planning and improvement projects. NYMTC acts as a regional forum for collaborative planning and facilitates informed decision-making among its members by providing sound technical analysis and forecasts. This ensures that the region is prepared to receive the maximum Federal funds available to support progress towards mobility goals.

2.1.2 THE METROPOLITAN TRANSPORTATION PLANNING PROCESS

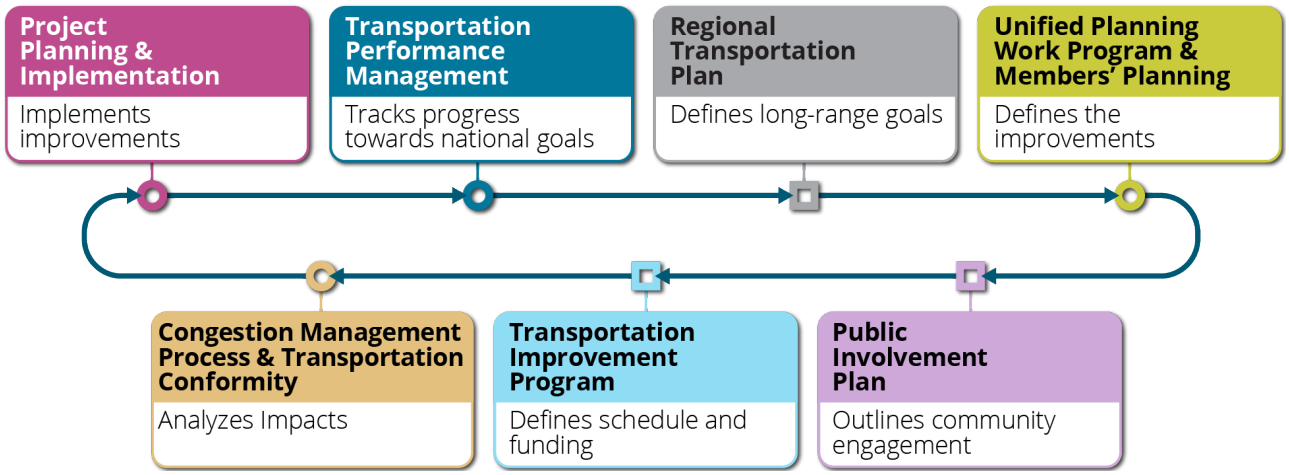
Transportation issues cross the boundaries and responsibilities of individual jurisdictions and organizations, and each member agency of NYMTC brings a unique perspective and jurisdictional responsibilities to the transportation planning process. However, when these members come together as NYMTC, they collectively pursue their Shared Vision for Regional Mobility and its relationship to future growth and development in the NYMTC planning area.

FEDERAL REQUIREMENTS

The U.S. Congress authorizes Federal funding for transportation improvements through multi-year authorization legislation. The Infrastructure Investment and Jobs Act (IIJA) is the current Federal transportation legislation that authorizes funding and establishes the requirements for the metropolitan transportation planning process that governs NYMTC's activities. The IIJA was signed into law in 2021 and carried forward most of the requirements of its predecessor legislation, including the requirement for transportation performance management.

The federally required metropolitan transportation planning process establishes a continuing, comprehensive and cooperative regional framework for multimodal transportation planning. As part of this process, NYMTC is required to produce the following products and analyses. Figure 2.4 depicts the relationships of these products within the overall process.

Figure 2.4 Metropolitan Transportation Planning Products and Process



Source: NYMTC.

FOUR PLANNING PRODUCTS

1. The RTP, (this document) describes long-range goals, objectives, and needs, typically over a 20- to 25-year horizon.
2. The TIP defines Federal funding for specific transportation projects and actions, typically over a five-year period.

3. The UPWP determines how Federal funding for planning activities will be spent over the course of a program year.
4. A Public Involvement Plan describes and guides efforts to include communities, stakeholders, and the public in the ongoing planning process.

THREE PLANNING PROCESSES

1. The Congestion Management Process (CMP) monitors and forecasts traffic congestion, and considers congestion-reduction strategies in federally designated Transportation Management Areas.
2. Transportation Conformity is a quantitative demonstration of how the fiscally constrained RTP and TIP conform to transportation vehicle and equipment (also known as mobile sources) pollution targets set in response to federally mandated air quality standards.
3. Transportation Performance Management is defined as a strategic approach that uses system information to make investment and policy decisions to achieve national performance goals, as seen below.

NATIONAL TRANSPORTATION GOALS AND PLANNING FACTORS

The U.S. Congress established National Transportation Goals in the areas of safety, pavement and bridge infrastructure, congestion reduction, system reliability, freight movement, environmental sustainability, and project delivery. These goals, which appear in Table 2.1, were carried forward into the IIJA, along with related Federal requirements for transportation performance management.

Table 2.1 National Transportation Goals

Goal Area	National Goal
Safety	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
Infrastructure Condition	To maintain the highway infrastructure asset system in a state of good repair.
Congestion Reduction	To achieve a significant reduction in congestion on the National Highway System.
System Reliability	To improve the efficiency of the surface transportation system.
Freight Movement and Economic Vitality	To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
Environmental Sustainability	To enhance the performance of the transportation system while protecting and enhancing the natural environment.
Reduced Project Delivery Delays	To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

Source: 23 United States Code Section 150.

In addition to the National Transportation Goals, 23 Code of Federal Regulations (CFR) 450.306 (B) indicated the following:

The metropolitan transportation planning process shall be continuous, cooperative, and comprehensive, and consider implementation of projects, strategies, and services that address the following 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 motorized and non-motorized users.
3. Increase the security of the transportation system for motorized and non-motorized 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 the resiliency and reliability of the transportation system and reduce or mitigate stormwater impacts of surface transportation.
10. Enhance travel and tourism.

These Federal planning factors are considered in NYMTC's Shared Vision for Regional Mobility and Moving Forward 2055's goals and related objectives shared in Chapter 1 and, consequently, in the strategies and actions guiding NYMTC's activities as detailed throughout this document. Table 2.2 links the Moving Forward 2055 goals to the Federal planning factors, showing overall alignment between regional goals and the Federal planning factors (which represent the Federal goals in Table 2.1).

Table 2.2 *Moving Forward 2055* Strategic Consistency Matrix

Moving Forward 2055 Goals	National Goals & Federal Planning Factors									
	Support Economic Vitality	Increase Safety & Security	Increase Accessibility and Mobility	Improve Efficiency	Improve the National Freight Network	Protect and Enhance the Environment	Enhance Integration & Connectivity	Emphasize System Preservation	Improve Resiliency & Reliability	Enhance Travel & Tourism
1 A transportation system for which safety and security are maximized for people and goods across all uses and modes.	●	●			●					●
2 A transportation system for which infrastructure is maintained and improved in a sustainable manner.	●					●		●		
3 A transportation system for which resiliency is supported through mitigating, adapting to, and responding to chronic and acute stresses and disruptions.		●			●	●		●	●	
4 A transportation system for which congestion is mitigated through investments and technology in support of healthier communities, more seamless travel, improved quality of life, and regional economic competitiveness.	●		●	●	●	●	●		●	
5 A transportation system for which land use decisions are encouraged in support of strategic transportation enhancements and improving modal choices.	●		●		●	●	●			
6 A transportation system for which fairness in transportation is advanced and access to opportunities is improved for all communities.	●	●	●	●			●			●
7 A transportation system for which environmental impacts—including harmful pollution—are significantly reduced through technology applications, increased use of greener travel options, and improved system efficiency.				●		●		●	●	

Source: Cambridge Systematics.

MEASURING PERFORMANCE

Starting with the 2012 Moving Ahead for Progress in the 21st Century Act (MAP-21), and further detailed through subsequent authorizations and rulemakings, state DOTs, MPOs, and transit providers have integrated performance management approaches into surface transportation planning and programming. MPOs are required to include in their plans "a system performance report and subsequent updates evaluating the condition and performance of the transportation system with respect to the performance targets." NYMTC's System Performance Report can be found in Chapter 3 of Moving Forward 2055.

Performance management requirements were further stipulated in the Metropolitan Transportation Planning Final Rule issued May 27, 2016, in Section 23 CFR 450.306(d). The MAP-21 legislation transformed the Federal-aid program by placing greater emphasis on performance-based planning, where performance measures and targets provide an objective means of informing decisions about strategies and investments when making decisions about transportation investments.

U.S. DOT recommended a framework for performance management that should result in a performance-based transportation plan. The framework includes four phases—(1) planning; (2) programming; (3) implementation and; (4) evaluation:

- The planning phase consists of setting a strategic direction ("Where do we want to go?"). It encompasses goals and objectives and performance measures.
- The programming phase includes an analysis of how a region will move forward in achieving identified goals and objectives through investments and policies ("How are we going to get there?").
- The implementation phase tries to answer the question, "What will it take?" through delivery of transportation projects and services and maintenance and operation of the system.
- The evaluation phase seeks to answer the question, "How did we do?" as a means to identify opportunities for new planning and investment.

NYMTC is actively implementing a performance-based approach to address metropolitan transportation planning requirements. Moving Forward 2055's Shared Vision for Regional Mobility augments this federally required framework to measure the Plan's progress toward achieving the resulting strategic framework.

2.2 REGIONAL PLANNING CONTEXT—THE MULTISTATE METROPOLITAN REGION

The multistate metropolitan region surrounding New York City lies at the heart of the Northeast Megaregion, the most densely populated, urbanized land in the country. The Megaregion (also referred to as the Megalopolis), as defined by the U.S. Census Bureau, and presented in Figure 2.5 includes the metropolitan areas of Washington, D.C., Baltimore, Philadelphia, New York City, and Boston. According to the U.S. Census Bureau, the Megaregion is home to approximately 50 million people, more than 15 percent of the nation's total population.[1] The Megaregion is also a major contributor to the U.S. economy, producing one-fifth of the national gross domestic product (GDP) in 2022.[2]

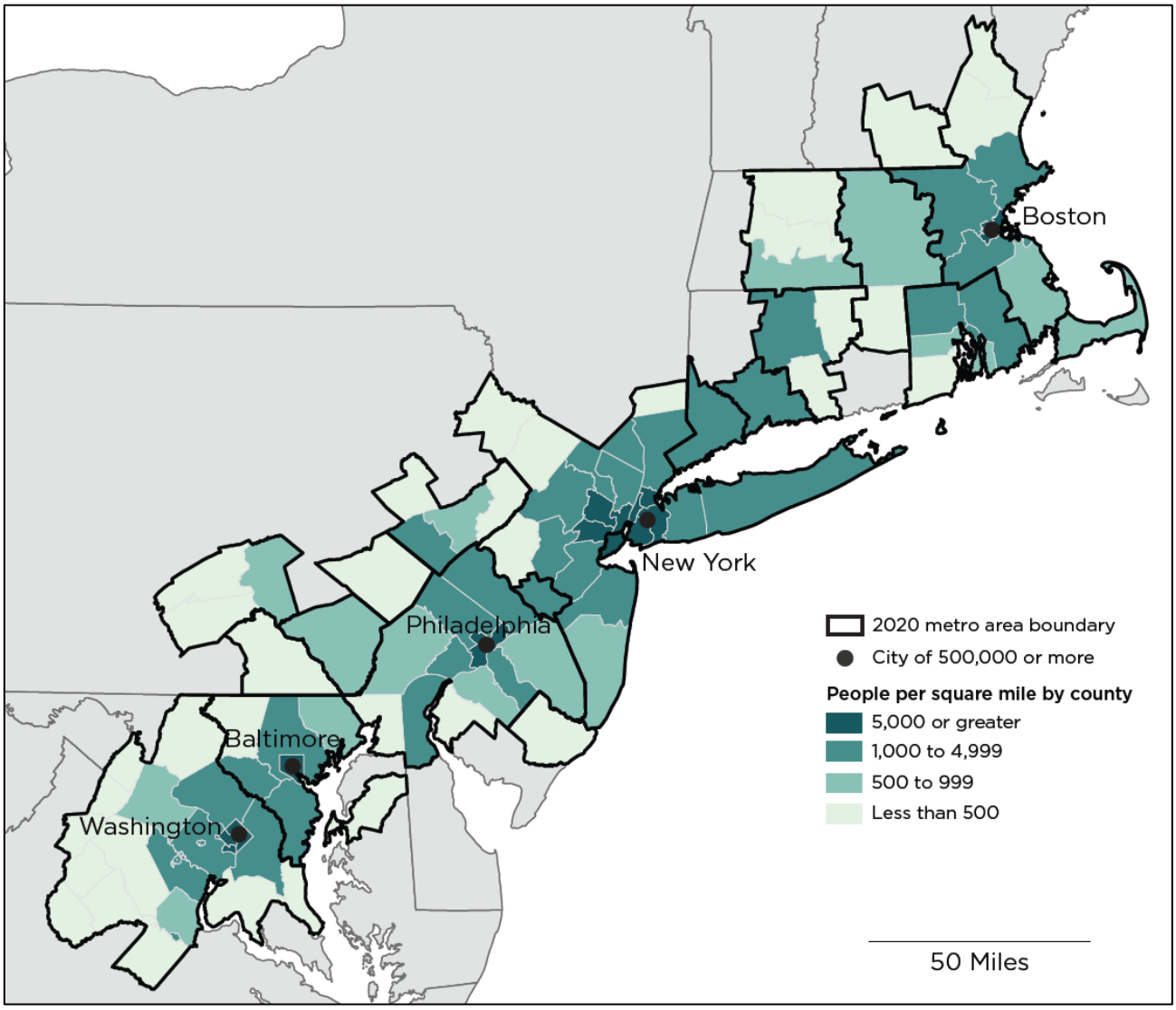
Within the Megaregion, the multistate metropolitan region which includes New York City is approximated by several Metropolitan Statistical Areas (MSA), which are delineated by the Office of Management and Budget. In the multistate metropolitan region, these MSAs include:[1]

- New York-Newark-Jersey City, NY-NJ-PA MSA
- Allentown-Bethlehem-Easton, PA-NJ MSA
- Kiryas Joel-Poughkeepsie-Newburgh, NY MSA
- Bridgeport-Stamford-Danbury, CT MSA
- New Haven, CT MSA
- Waterbury-Shelton, CT
- Hartford-East Hartford-West Hartford, CT MSA

Based on the populations of these MSAs, this multistate metropolitan region is home to 24.5 million people (2022 estimate) and covers 34 counties.[3] In 2022, the GDP of the metropolitan region was $2.5 trillion, which ranked eighth among the world's countries while accounting for roughly 10 percent of the 2022 U.S. GDP of $25.5 trillion.[4]

[1] The MSAs are based on an approximation of the regions defined by the Metropolitan Area Planning (MAP) Forum, a consortium of 10 MPOs—including NYMTC—and councils of government from New York, New Jersey, Connecticut, and Pennsylvania.

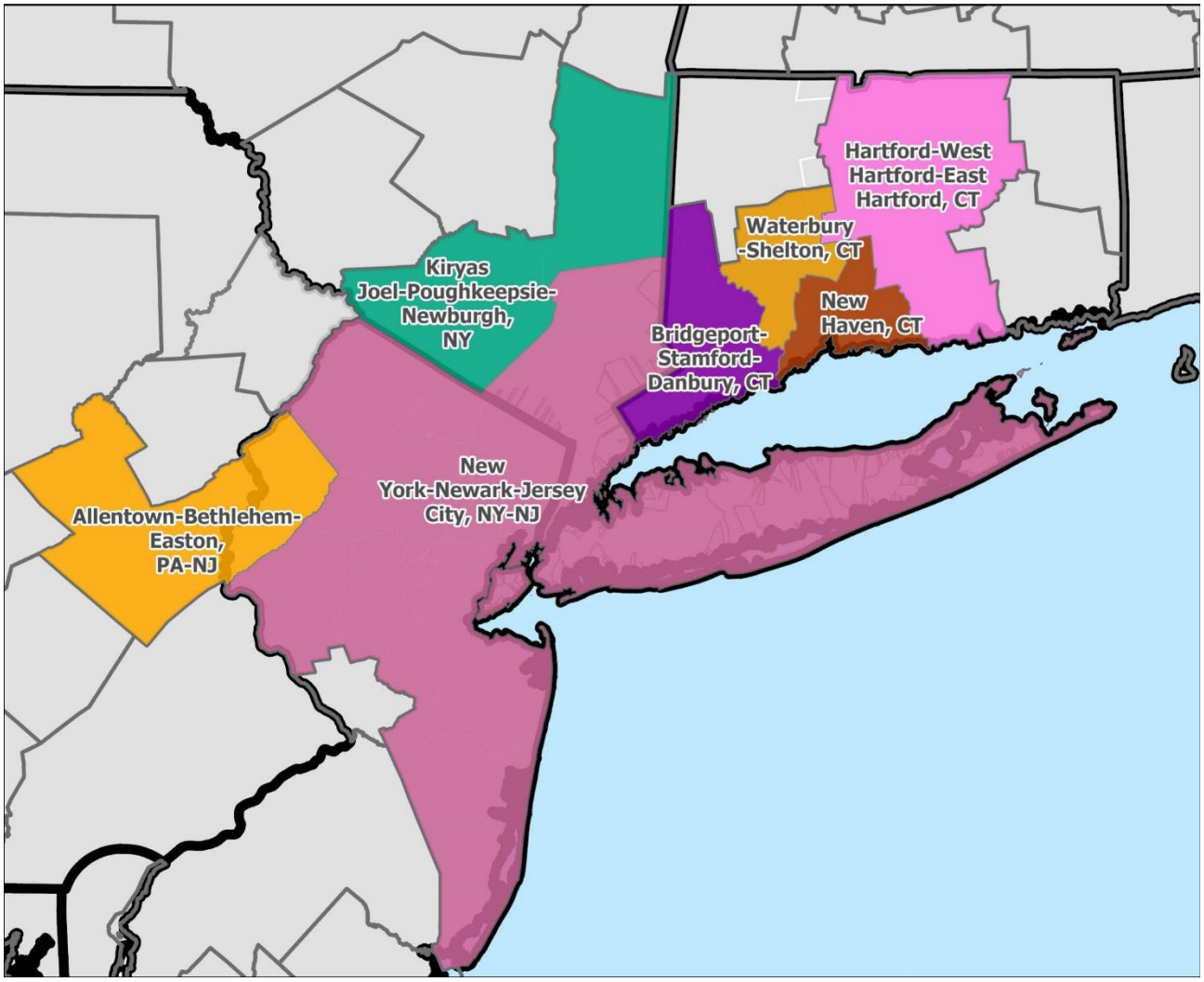
Figure 2.5 The Northeast Megaregion



Source: U.S. Census Bureau, 2021.[5]

While New York City is the largest municipality in the multistate metropolitan region, the region also contains the largest cities in New Jersey (Newark, Jersey City, and Paterson) and Connecticut (Stamford, Bridgeport, New Haven, Waterbury, and Hartford) as well as large suburban municipalities on Long Island (Hempstead, Brookhaven, and Babylon), in the Lower Hudson Valley (Yonkers, Mount Vernon, Newburgh, New Rochelle, Poughkeepsie, and White Plains), and throughout Connecticut and New Jersey.

Figure 2.6 Map of Metropolitan Statistical Areas



Source: U.S. Census Bureau.

The multistate region approximated by the MSAs represented in Figure 2.6 also includes the planning areas of various MPOs and councils of government (COG), including:

- The Orange County Transportation Council in New York State;
- The North Jersey Transportation Planning Authority in New Jersey;
- The Lehigh Valley Planning Commission in eastern Pennsylvania;
- The Western Connecticut, Naugatuck Valley, Connecticut Metropolitan, South Central Regional, Capitol Region, and Lower Connecticut River Valley COGs in southwestern and central Connecticut.

2.2.1 REGIONAL CHARACTERISTICS

GEOGRAPHY AND ENVIRONMENT

At the geographic center of the multistate metropolitan region lies New York City, which is comprised of five boroughs stretched across all or parts of three islands as well as a portion of the mainland. The City shares a natural harbor at the southern end of the Hudson River with northern New Jersey to the west. East of the City lies Nassau and Suffolk counties on Long Island, known for their beach-lined coastline and barrier islands.

To the west of New York City across the Hudson River lies northern New Jersey, an area that contains thirteen counties, several large cities, and many populous suburban communities within the multistate metropolitan region. Further west, the easternmost portion of Pennsylvania lies at the foothills of the Blue Mountains and is characterized by the valleys formed by the Lehigh River and Delaware River—the latter of which creates the border between Pennsylvania and New Jersey. This area, known as the Lehigh Valley, is the third most populated area in Pennsylvania and serves as the Western gateway to the larger metropolitan regions to the east and south.

North of New York City in the metropolitan region is the Lower- and Mid-Hudson Valley, a region comprised of six counties (Westchester, Rockland, Putnam, Orange, Ulster, and Dutchess). This area is dotted with suburban communities of varying size and small urban centers, as well as Federal, state, and local areas for recreation, forest and wildlife including the Delaware Water Gap National Recreation Area and Harriman and Bear Mountain State Parks. Additionally, while Rockland County is bounded by the two state parks, it also is home to over 300,000 people in high-density suburbs. The county has the smallest available land area of any county in New York outside of New York City. To the east of the Hudson Valley counties are the southwestern and central sections of the State of Connecticut. This area of Connecticut includes eight of the largest communities in the state, including the City of Hartford, which is the state capital, as well Bridgeport, New Haven, Stamford, Waterbury, Danbury, Greenwich, and Norwalk.

ECONOMY

Although economic activity in New York City—Manhattan in particular—predominates, Long Island, the Lower Hudson Valley, northern New Jersey, eastern Pennsylvania, and southwestern and central Connecticut all contribute significantly to the multistate region's economy. Agriculture and tourism are important to the Long Island and Hudson Valley economies. Northern New Jersey is home to the busiest port on the United States' East Coast, the Newark-Elizabeth Marine Terminal, which handled over 9 million twenty-foot equivalent units (TEU), which are units of cargo capacity, in 2022.[6] The suburban areas close to New York City also have their own economic ecosystems, often including major corporations. Rockland and Westchester Counties in New York State and the southwestern portion of Connecticut, for example, are home to major business centers that draw commuters who live in New York City and elsewhere in the region.[7] The Route 110 Corridor in Suffolk County on Long Island is a similar suburban business center.

Areas further from the New York City core have varied economic profiles. Eastern Pennsylvania, for example, is a major industrial, business, and natural resource center that has historically been

manufacturing-based and is currently the site of a variety of industrial firms, such as the global headquarters of Air Products and Chemicals, Mack Trucks, Olympus Americas, as well as warehouses and distribution centers.[8] Central New Jersey is home to several major pharmaceutical companies. Orange County has also become a center for warehouse distribution and procurement centers with an emerging film industry, due in part to small urban centers like Newburgh.

DEMOGRAPHICS

The multistate metropolitan region's population is also large and diverse, with a variety of large communities hailing from all over the world. The U.S. Census Bureau estimates that in 2022, the region's population was 24.5 million,[9] with nearly 27 percent born outside of the United States. As many as 800 languages are spoken within the region. A large population provides a large workforce, and in 2022 the total size of the region's workforce was 12.9 million.[10] Of those employed, the largest shares of jobs were in educational, health and social services; professional, scientific, and waste services; retail trade; and finance and real estate.[11]

2.2.2 TRANSPORTATION SYSTEM OVERVIEW

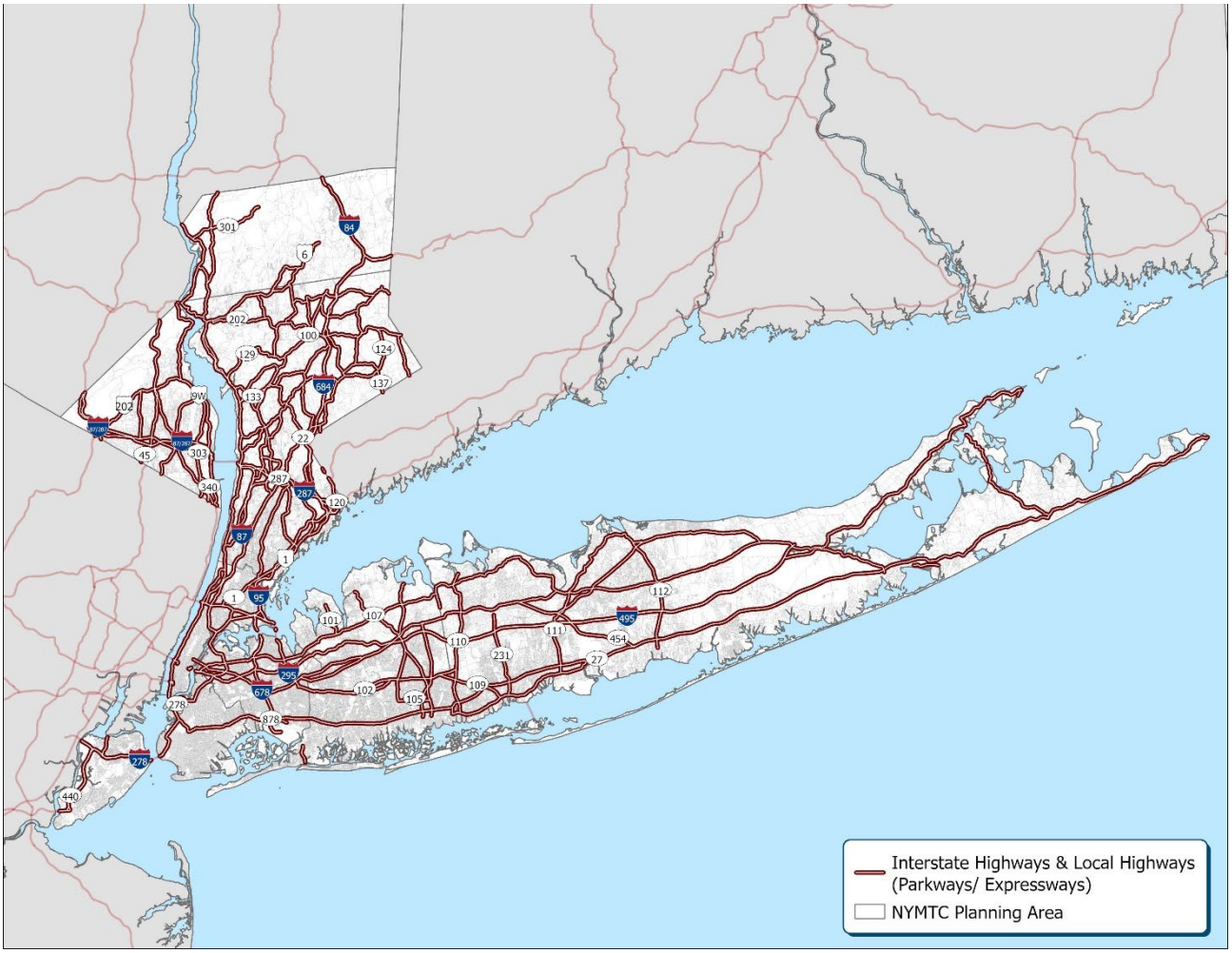
In a region as large, diverse, and economically robust as the multistate region, a transportation system that reliably moves goods and people is vital to supporting economic activity and enhancing quality of life for its residents. The transportation system of the multistate metropolitan region is large, complex, and aging. The system is tied together by a network of highways and rail lines, while its topography and water bodies are crossed by elevated roadways and rail lines, as well as bridges and tunnels. Protected lands in the region are a welcome natural resource, but they often disrupt the continuity of transportation facilities, including trip duration. The region's transportation system is outlined below.

MAJOR ROADWAYS

Major roadways in the NYMTC planning area are presented in Figure 2.7 and include:

- Interstate highways I-78 and I-80, which extend from New York City west into Pennsylvania;
- I-84, which extends from Pennsylvania through both New York and Connecticut;
- I-95, a north-south highway which includes the, the Cross Bronx Expressway and the New England Thruway, as well as the New Jersey Turnpike;
- I-87, which becomes the New York Thruway between New York City and Albany;
- I-278, which connects four of New York City's five boroughs, while forming a partial beltway around Manhattan;
- I-287, which forms a partial belt around New York City through Westchester County, Rockland County and northern New Jersey;
- I-495, known as the Long Island Expressway; and
- I-684, linking Westchester County and Putnam County.

Figure 2.7 Interstates, Highways, and Major Highways (Parkways/Expressways) Within NYMTC Region



Source: NYMTC.

Additional major highways within the multistate metropolitan region include:

- NY Route 17, which is being assessed for conversion to I-86 in the future;
- I-91, a north-south highway between New Haven and the Canada-United States border;
- I-280, which links I-80 to the New Jersey Turnpike;
- U.S. Route 22 which extends from northern New Jersey through the Lehigh Valley in Pennsylvania and connects to I-78 as well as I-80, by way of PA Route 33; and
- The Garden State Parkway, which links northern New Jersey to New York State and I-287 in Rockland County.

BRIDGES AND TUNNELS

Given the multistate region's topography, bridges and tunnels are common, carrying both roadways and rail lines across or under rivers and other water bodies. Major crossings include:

- Four bridges and two tunnels crossing the East River between Manhattan, Brooklyn, and Queens,
- One bridge and two tunnels crossing the Hudson River between Manhattan and northern New Jersey,
- Three bridge crossings between Staten Island and northern New Jersey,
- Three bridge crossings between western New Jersey and the Lehigh Valley in Pennsylvania, part of the Delaware River Joint Toll Bridge Commission system.
- Various significant bridge crossings of water bodies in northern New Jersey and the Hudson Valley, and
- Various rail tunnel crossings part of the MTA, NJ TRANSIT, and Port Authority Trans-Hudson systems.

PASSENGER RAIL FACILITIES

Rail services are provided by:

- NJ TRANSIT, the MTA's Metro-North Railroad (MNR), and MTA Long Island Rail Road (LIRR) commuter rail networks;
- CTrail Hartford Line and Shore Line East commuter rail service;
- MTA New York City Transit's (NYCT) subway network;
- Port Authority Trans-Hudson (PATH) rail rapid transit service;
- NJ TRANSIT's Hudson-Bergen Light Rail and Newark Light Rail systems; and
- The National Railroad Passenger Corporation (Amtrak) provides intercity rail services along the Northeast Corridor.

FREIGHT RAIL FACILITIES

Three Class I railroads operate in the multistate region—CSX, Norfolk Southern, and Canadian Pacific Railway. In addition, Conrail Shared Assets, a switching carrier jointly owned by Norfolk Southern and CSX, operates in much of northern New Jersey and in Staten Island. One major freight terminal in Bethlehem, PA is operated by Lehigh Valley Rail Management. Various short-line railroads also serve the region.

PORT FACILITIES

Maritime freight facilities are located at the Port of New York and New Jersey in Brooklyn, Staten Island and northern New Jersey, and at John F. Kennedy International Airport, as well as at reliever ports in Bridgeport, New Haven, and New London, CT.

FERRY SERVICES

The multistate region is well-served by ferries:

- In New York City, ferries connect various points throughout the City as well as provide intercity service to more distant locations in New Jersey, Connecticut, and Long Island. Major operators include the NYC Department of Transportation (NYC DOT), and operator of the Staten Island Ferry, Hornblower (operator of NYC Ferry), NY Waterway, and Seastreak.
- NY Waterway, under contract to MTA MNR, also has ferry service in the Hudson Valley between Newburgh and Beacon as well as between Haverstraw and Ossining, in both cases, connecting passengers to MNR rail service.
- Long Island Ferry Service operates across the Long Island Sound between Orient Point on Long Island's North Fork to New London as well as from Port Jefferson on the North Shore to Bridgeport. Other Long Island ferries connect Montauk with Block Island, Rhode Island, and New London, Connecticut.

AIRPORTS

The multistate region is served by both commercial service and general aviation airports:

- The multistate region is served by five major commercial airports—John F. Kennedy International Airport and LaGuardia Airport in Queens, NY; Newark Liberty International Airport in Newark, NJ; Bradley International Airport outside Hartford, CT; and Lehigh Valley International Airport in Lehigh County, PA.
- A variety of smaller commercial and general aviation airports also service the area, including Long Island MacArthur Airport and Republic Airport in Suffolk County, NY; Westchester County Airport in Westchester County, NY; Stewart International Airport in Orange County, NY; Teterboro Airport in Bergen County, NJ; and Tweed New Haven Regional Airport in New Haven, CT.

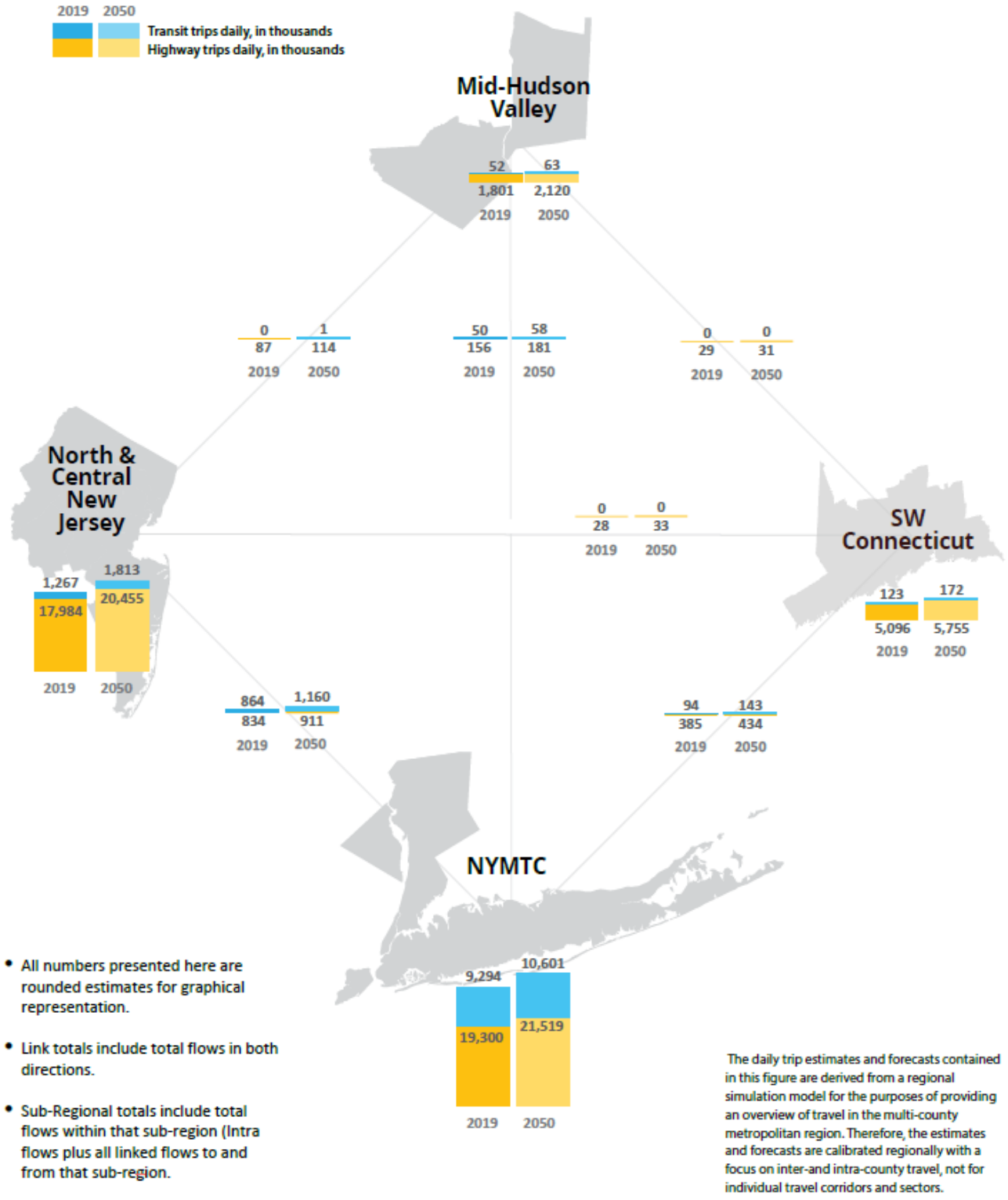
2.2.3 METROPOLITAN TRAVELSHED

Figure 2.8 is a representation of the daily travelshed throughout most of the multistate metropolitan region. The travelshed represents average daily travel patterns between adjacent metropolitan regions. Daily transit and highway trip estimates are shown for 2019 and forecasted to the 2050 horizon year within and between four subregional areas—northern and central New Jersey, southwestern Connecticut, the Mid-Hudson Valley, and the NYMTC Region. These estimates are derived through the New York Best Practice Model (NYBPM), an activity-based transportation demand model that covers 28 metropolitan area counties and is maintained by NYMTC. Figure 2.9 represents the movement of commerce within and between these same subregions and is also forecasted to the 2050 horizon year.

Figure 2.8 demonstrates that in terms of daily trips made between the subareas, the majority of inter-area trips are and will be made between the NYMTC region and northern and central New Jersey, and between southwestern Connecticut and the NYMTC region. These sets of inter-area trips also feature significant proportions of transit trips. While there is significant current and projected travel between the four subareas, most current and future trips are and will be within each subarea, with the greatest volume of daily intra-area trips being made in northern and central New Jersey and within the NYMTC region. By far, the greatest number of daily transit trips made within a subarea are and will be within the NYMTC region.

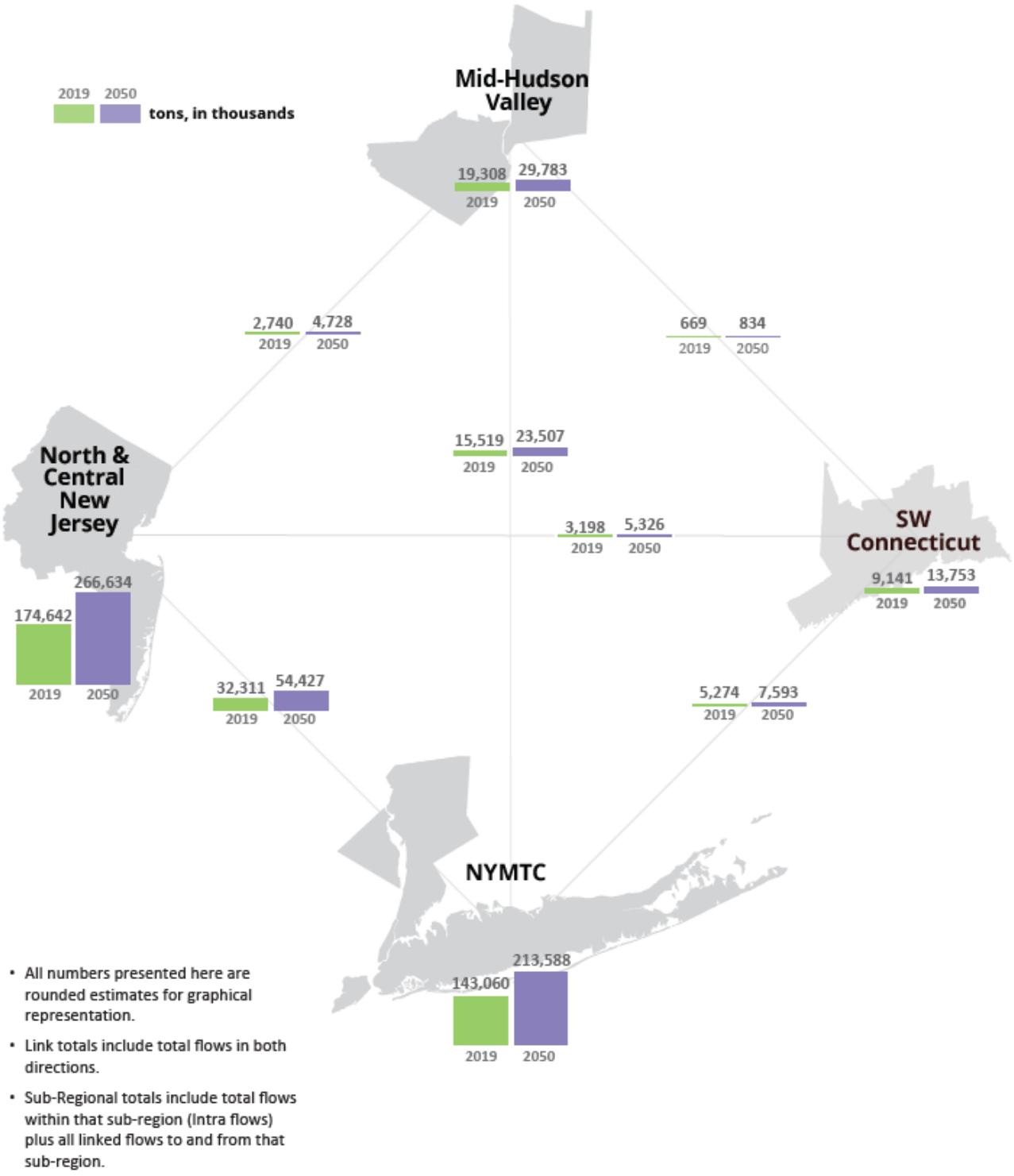
Figure 2.9 shows that regarding inter-regional freight commodity flows, most current and future freight movement, by tons, will occur between the NYMTC region and northern and central New Jersey, and between the Mid-Hudson Valley and the NYMTC region. For intra-regional commodity flows, the greatest tonnage of freight being moved is and will be within northern and central New Jersey, and within the NYMTC region.

Figure 2.8 Multistate Metropolitan Travelshed



Source: NYMTC.

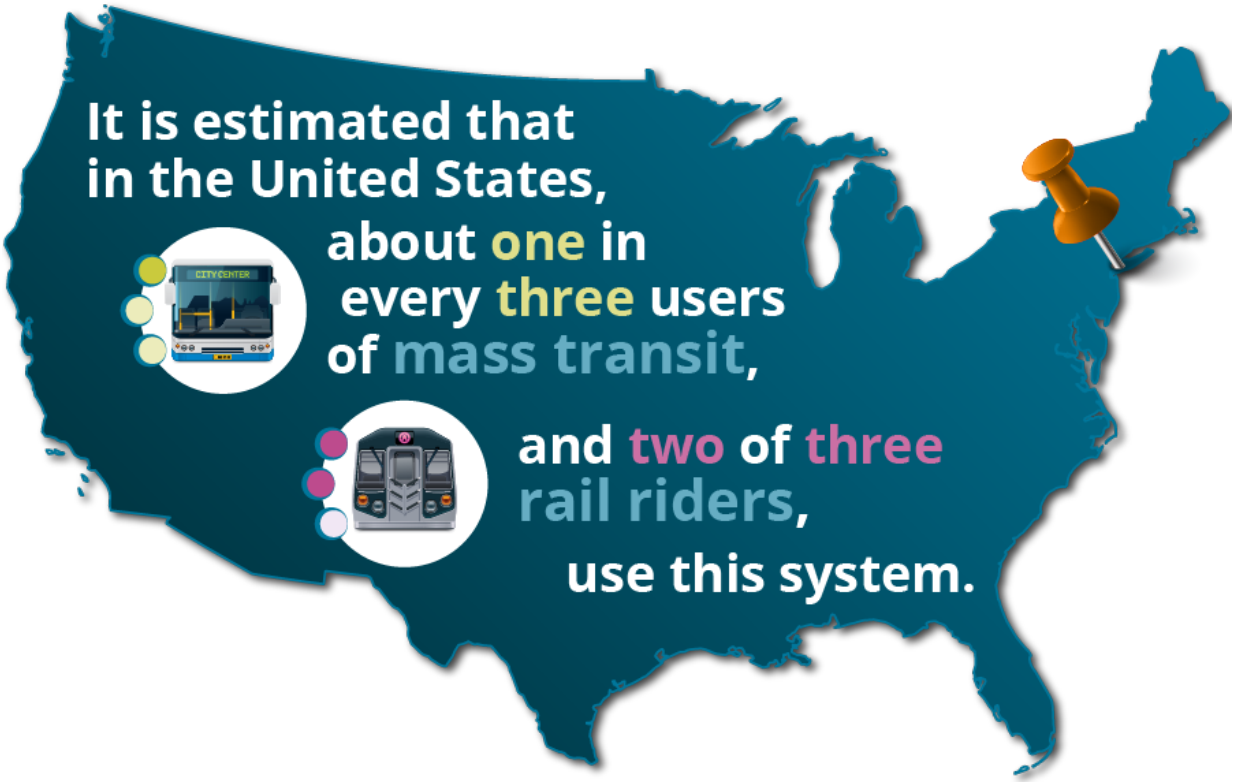
Figure 2.9 Multistate Metropolitan Freight Commodity Flows



Source: NYMTC.

The core of the multistate metropolitan region is notable for its mass transit system. As depicted in Figure 2.10, it is estimated that in the United States, about one in every three users of mass transit, and two of three rail riders, use this system.[12] New York City is served by an extensively used subway and bus system, and its more immediate suburban neighbors are served by commuter rail and local bus systems, including NJ TRANSIT, one of the largest statewide, transit systems in the country. Despite the robust transit system, gaps still exist within the network. For example, there is not a one-seat ride (meaning that the rider does not have to make transfers or connections) via rail to New York City for locations west of the Hudson in the region. Intercity travel is provided by Amtrak, long-haul buses, and air travel facilities. The region is the busiest airspace in the United States, with major airports in the region's core serving more than 130 million passengers annually.[13]

Figure 2.10 Magnitude of Mass Transit Ridership in the Region



Source: Cambridge Systematics.

2.2.4 TRANSPORTATION INVESTMENTS

Due to the continued growth of the region and aging infrastructure that requires renewal, several regionally significant improvements to the transportation infrastructure are either planned or are being implemented in the multistate metropolitan region. Major New York City-focused projects include the second phase of the Second Avenue Subway in Manhattan, the Hudson Tunnel and various other trans-Hudson River rail and vehicular crossing improvements, the Interborough Express in Brooklyn and Queens, and commuter rail improvements involving Penn Station.

While passenger transport is critical, these important projects are not limited to the movement of people. In such a densely populated and economically active region, freight transportation is critical as well, and several major projects are dedicated to freight in the region. For example, the Port Authority's Cross Harbor Freight Program is seeking to address the difficulty of moving freight from one side of New York Harbor to the other by examining a wide range of alternatives, including railcar and truck floats, container barges, and a cross-harbor rail tunnel.

A variety of improvement projects in the multistate metropolitan region, including those mentioned above, are designated as boundary projects whose impacts cut across planning areas and state lines. Critical boundary projects include the following:

NEW HAVEN LINE/I-95 SECTOR

- The Penn Station (New York) Access project will provide direct access for the MTA MNR's New Haven Line in Westchester County, New York and southwestern Connecticut to Manhattan's Penn Station[14] and create four new neighborhood stations in the eastern Bronx.
- The second phase of the Southeast, New York-to-Danbury, Connecticut Link Feasibility/Planning Study that is assessing the feasibility of restoring passenger rail service on the Beacon Line between Connecticut and Putnam County, NY, where it would connect to the MTA MNR Harlem Line.
- I-95 improvement projects in Connecticut from Stamford to Bridgeport and Old Lyme to New London, New Haven Line commuter rail service improvements, and new rolling stock purchases for the Shore Line East Rail Line.
- New Haven Main Line improvements, including a replacement of the Devon moveable bridge carrying the four-track main rail line over the Housatonic River between Stratford and Milford.
- Northeast Corridor Improvements include the replacement of seven power substations along the New Haven Line, track structure modifications, and rail replacements/drainage improvements.
- The Regional Value Capture Feasibility Study analyzing the potential of implementing value capture techniques to fund capital improvements along the Danbury and New Canaan branches of the New Haven Line in Connecticut.
- All six stations along the Waterbury Branch Rail Line are undergoing upgrades or replacements, to ensure stations are accessible for all riders.
- Replacement of Connecticut River Bridge between Old Saybrook and Old Lyme with a modern and resilient movable bridge immediately south of the existing structure.
- New Haven to Providence (Rhode Island) Capacity Planning Study for future infrastructure, speed, and capacity improvement options between the two cities.

EAST LOWER HUDSON VALLEY/CONNECTICUT SECTOR

- Various improvement projects along I-84 in both Connecticut and the Hudson Valley, including a complete replacement of the I-84/Route 8 interchange in Waterbury, CT and improvements to the I-84/I-684 interchange in northern Westchester County, NY.
- U.S. Route 7/Connecticut Route 15 interchange project in Norwalk will reconfigure the on and off ramps and provide new connections to and from both highways, which are of interregional importance.
- The recently completed Charter Oak Bridge project (I-91/Route 15 in Hartford) has addressed the congestion that had caused this location to appear on the American Transportation Research Institute's list of top 100 truck bottlenecks in the country.
- The WALK Bridge Replacement, planned for completion in 2029, will replace the original bridge with a new $925 million bridge with two independent, movable spans that are designed and constructed to be resilient and sustainable for extreme weather events.
- Merritt Parkway (Connecticut Route 15) ramp metering to address congestion and current volumes and speeds.
- The Route 1 Bus Rapid Transit Project in the heavily traveled Route 1 corridor between the New York State line and New Haven.
- The ongoing Greater Hartford Mobility Study will identify significant capital improvement projects related to the I-84 viaduct in Hartford as well as the interchange of I-84 and I-91.
- The Western Connecticut Council of Governments' Regional Transit Study will look at three public bus transportation systems (CTransit, HART, and Norwalk Transit District), two of which also serve Westchester and Putnam destinations.
- The Naugatuck River Greenway Trail, a planned 44-mile multi-use trail connection between the confluence of the Naugatuck and Housatonic Rivers in Derby and Torrington.
- The Pequonnock River Trail, which will provide a 16-mile continuous shared-use trail from Long Island Sound through Trumbull to the Monroe-Newtown town line.

TRANS-HUDSON SECTOR

- West-of-Hudson transit improvements, including improvements to the Port Jervis Line in Orange County, NY.
- The Restore the George Program, a $2 billion, decade-long project to rehabilitate and replace major components of the George Washington Bridge.
- The Lincoln Tunnel Helix Replacement in Weehawken, NJ.
- The Hudson Tunnel Project to create an additional rail tunnel that would preserve the current functionality and strengthen the resiliency of the Northeast Corridor's Hudson River rail crossing between New Jersey and New York. The project is one major component of the Gateway Program.

- The Gateway Program's strategic rail infrastructure improvements designed to improve current services and create new capacity that will double passenger trains running under the Hudson River.
- The Cross Harbor Freight Program for rail freight across New York Harbor.
- The Port Authority Bus Terminal Replacement and the redevelopment of Penn Station on Manhattan's west side.
- The expansion and modification of Secaucus Junction Station in New Jersey.
- Public transit service expansion to Newark Liberty International Airport, to improve airport access.
- Construction of the Bergen Loop track in Secaucus, NJ, which will enable a one-seat commuter rail ride to Manhattan from West of Hudson communities in New York State (Rockland and Orange counties) and New Jersey (Bergen County).

NEW YORK CITY SECTOR

- Phase II of the Second Avenue Subway Project to extend the subway to the Upper East Side and Eastern Harlem sections of Manhattan.
- The Interborough Express Project to develop surface transit along the Bay Ridge Line in Brooklyn and Queens.
- Airport access improvements, including transit and roadway improvement for John F. Kennedy International Airport and bus service improvements to LaGuardia Airport.

NORTHERN NEW JERSEY/EASTERN PENNSYLVANIA SECTOR

- The Port Street Corridor Improvement Project, a projected $176 million rehabilitation and modernization project to improve safety and truck access at the northern end of Port Newark.
- Newark Bay-Hudson County Extension from New Jersey Turnpike Interchange 14 in Newark to Jersey Avenue in Jersey City, NJ.

REGIONAL RAIL CORRIDORS

The following rail corridors are part of the IIJA-created Corridor Identification and Development Program:

- Reading-Philadelphia-New York Corridor connecting Reading, PA with Philadelphia, and New York City with new intermediate stops at Pottstown, Phoenixville, and potentially Norristown, PA, then using the Northeast Corridor between Philadelphia and New York.
- Scranton to New York Penn Station Corridor connecting Scranton, PA, and New York City with intermediate stops at Stroudsburg and Mt. Pocono, Pennsylvania, and Blairstown, Dover, Montclair, Morristown, and Newark, NJ.
- Amtrak to Long Island Corridor connecting Long Island, NY, to the national intercity passenger train network by extending three existing daily round trips between Washington, D.C., and New York City, east to Ronkonkoma, NY.

- Empire Corridor improving existing Amtrak Empire service between New York City and Niagara Falls, NY, via Albany, Utica, Syracuse, Rochester, and Buffalo, NY, by adding frequencies, reducing travel time, and improving reliability.
- Hartford Line Corridor improving existing Amtrak Northeast Regional, Springfield Shuttles, Valley Flyer, and CTrail Hartford Line service as well as the Vermonter and future Inland Route corridors by restoring and constructing new rail infrastructure including track, stations, signal upgrades, and safety enhancements.

2.3 THE TRANSPORTATION SYSTEM IN THE NYMTC PLANNING AREA

The transportation system in the NYMTC planning area is one of the most complex and highly used in the world. It includes critical components of regional and national transportation networks that move both people and cargo. The share of passenger trips using public transportation is much higher in the NYMTC planning area than in other metropolitan regions in the United States. In addition, the planning area is an important hub of air and freight travel with three major international airports and several other reliever airports and aviation facilities. The Ports of New York and New Jersey also serve vital roles in the national and international freight distribution network.

The scale of the transportation system in, and adjacent to, the NYMTC planning area is immense. System components include:

- A total of 1,300 track miles of commuter rail; 665 mainline track miles of subway tracks; thousands of route miles of local, express, commuter, and intercity bus routes; and an aerial tramway.
- An extensive network of passenger hubs, such as bus terminals and subway transfer facilities, ferry landings, and transportation stations where people transfer between modes, including one of the most heavily used rail-to-airport links in the country.
- As of 2022, 1,522 lane miles of bike lanes were installed in New York City, ranging from shared-use bicycle trails to on-road bicycle lanes, in addition to pedestrian sidewalks, trails, and paths.[15] Long Island features 477 miles of bicycling lanes and paths. While the Lower Hudson Valley has over 100 miles of bike lanes.[16,17,18]
- More than 50,000 lane miles of roads and highways, including more than 30 major bridges crossing navigable waterways, four major underwater vehicular tunnels, and special lanes for high-occupancy vehicles and buses.
- Five commercial service airports, major passenger and air cargo operations and supporting infrastructure, and general aviation and heliport facilities.
- Major deep-water seaport facilities owned and operated by a mix of public- and private-sector entities, plus an extensive network of marine cargo support infrastructure and services.
- An extensive network of docking facilities along inland waterways supporting barge and ferry services.

- More than 400 route miles of freight rail, using track miles often shared with commuter rail services.
- A widespread network of freight hubs, including intermodal transfer facilities, rail yards, and truck-oriented warehouse and distribution centers.
- Supporting infrastructure like rail yards and highway maintenance facilities, highway rest areas, parking lots and garages, bus depots and transit storage yards, bicycle parking areas, toll gantries, signage, signals, enforcement cameras, electronics, and other equipment.

NYMTC's Moving Forward 2055 Interactive Map visualizes some of the most important components of the transportation system, including major highways and transit stops.

2.3.1 PUBLIC TRANSPORTATION

Subway service in and around New York City constitutes one of the largest and most complex services of its kind in the world, serving the boroughs of Manhattan, Brooklyn, Queens, and the Bronx, as well as portions of northeastern New Jersey. On Staten Island, a surface rapid rail system links 22 communities.

RAPID RAIL/SUBWAY

Components include:

- The MTA NYCT subway system operates more than 6,553 subway cars on 27 routes, 665 miles of track and serves 472 stations. In 2023, the subway served approximately 3.6 million passengers per weekday and a total of 1.15 billion passengers for the year.[19]
- MTA Staten Island Railway is part of the NYCT system; it offers 24-hour service on a single line of 21 stations from Tottenville at the southern end of the island to St. George Terminal in the north. Its infrastructure includes 29 track miles of mainline track, four track miles of yard and non-revenue track, 54 mainline switches, two support and maintenance shops, 29 bridge structures, and nine power substations. In 2023, the Staten Island Railway served 2.2 million customers. In 2024, Staten Island Railway introduced new trains as part of a fleet modernization program.
- Port Authority, PATH is a rapid rail system comprising four service routes and 13 stations in Manhattan, Hoboken, Jersey City, Harrison, and Newark. The PATH system operates 24 hours a day, seven days a week. In 2023, PATH transported 60 million passengers.[15]

BUS TRANSIT

Bus transit operators in the NYMTC planning area include NYCT, MTA Bus Company (MTA Bus), Nassau Inter-County Express (NICE), Suffolk Transit, the Westchester Bee-Line System, Putnam Area Rapid Transit (PART), Transport of Rockland (TOR), New York State's Department of Transportation (NYSDOT) Hudson Link service between Rockland and Westchester counties, and other service providers.

NEW YORK CITY SERVICES

- The MTA and NYCT provide around-the- clock bus service in New York City via 238 local bus routes, 20 Select Bus Service (SBS) routes, and 75 express routes. In 2023, these two bus divisions served more than 1.4 million customers on an average weekday and 427 million annually. There are 5,800 vehicles in the fleet, which traveled 152 million miles in 2023, all of which are accessible under the Americans with Disabilities Act (ADA).
- The MTA's Access-A-Ride paratransit service provides public transportation for eligible customers with disabilities that prevent them from using the public buses and subways. This service operates within the five boroughs of New York City and within a three-quarter-of-a-mile corridor beyond fixed-route service and to nearby areas of Nassau and Westchester counties. The service is a shared-ride program that operates without closures throughout the year. In 2023, there were a total of 11.3 million customers served and 8 million trips completed.
- SBS is New York City's program to improve bus speed, reliability, and convenience; it was implemented as a partnership between NYC DOT and NYCT. SBS is New York City's brand of bus rapid transit, a system implemented around the world to provide a cost-effective approach to transit improvements. SBS offers an immediate improvement to New York City's bus transit network by improving mobility and reducing congestion and air pollution.

  SBS uses techniques and technologies such as dedicated bus lanes and queue jumps, off-board fare collection, and transit signal priority to improve the quality and performance of bus transit. SBS is also designed to make bus service easier to use, through features like bus bulbs at stop locations, high-quality passenger information, and overall attention to pedestrian and vehicular safety. Twenty SBS routes have been implemented throughout New York City, incorporating various elements of bus rapid transit to serve the different types of bus routes and streets. This includes the 2019 initiation of the M14 SBS on 14th Street in Manhattan, which features a "busway" design that limits vehicles other than buses and trucks to ensure greater transit speeds and reliability.

  In addition to SBS, as part of its Better Buses initiative, NYC DOT is implementing bus priority projects on other key corridors that serve multiple bus lines throughout New York City.

LONG ISLAND SERVICES

- NICE operates 38 fixed-route bus lines throughout Nassau County, western Suffolk County, and eastern Queens. NICE operates a fleet of 278 ADA-accessible, compressed natural gas-powered buses. In 2016, NICE introduced new service models to Nassau County with the addition of both a flexible and community shuttle service. Additionally, routes that were previously underutilized were re-engineered as community shuttles offering more frequent service during peak hours and doubling as paratransit transit vehicles during off-peak hours. In 2023 NICE carried 23.6 million passengers.

  NICE also operates a fleet of 108 paratransit vehicles for its Able-Ride paratransit service, a shared, door-to-door service for those who cannot use the standard bus transit service. Able-Ride provides about 1,200 rides a day throughout most of Nassau County.

- Suffolk County Transit provides bus service throughout Suffolk County with 25 fixed routes and two Microtransit zones, which are located on the South Fork of Long Island. It operates a fleet of 155 transit buses. In 2024, fixed-route and Microtransit served over 3.3 million passengers. Suffolk County Transit provides paratransit service through its Suffolk County Accessible Transportation (SCAT) program, which operates a fleet of 190 buses and serviced over 625,000 passengers in 2024.
- Municipal Systems also serve Long Island. The City of Long Beach in Nassau County operates a five-route bus system (with a seasonal weekend trolley route) that serves the City of Long Beach, with one route operating east to the hamlet of Point Lookout. The Town of Huntington in northwestern Suffolk County also operates its four-route bus system, called Huntington Area Rapid Transit.

LOWER HUDSON VALLEY SERVICES

- PART consists of three fixed-route bus lines that operate in the eastern part of Putnam County. One of the routes serves northern Westchester County and another connects to Housatonic Area Rapid Transit in western Connecticut. Effective May 12, 2025, PART Route 3 was replaced by a microtransit pilot called Putnam on Demand. The new service is operated by VIA and serves all of Patterson, and parts of Carmel and Southeast. PART also operates the Croton Falls Commuter Shuttle during workdays, and the Cold Spring Trolley runs seasonally between Cold Spring and the City of Beacon in Dutchess County to the north. PART is a flag system except for the system's central transfer point at the Putnam Plaza; there are no fixed stops and passengers can flag a bus anywhere along its routes. Some stops are also "on-call," which means that passengers need to call in advance to reserve a pickup. PART Paratransit offers a transportation service for people with disabilities who are unable to use PART. Operation coincides with the hours of the PART fixed-route system.
- TOR is Rockland County's fixed-route bus service comprised of 10 routes with a fleet of 43 buses. A municipal bus service is provided by Clarkstown Mini-Trans, which is operated by the Town of Clarkstown and has five routes operating Mondays through Saturdays. Several private bus operators offer service to and from Rockland County, primarily serving New York City-bound commuters. These include Coach USA's Rockland Coaches, the Coach USA Express, Coach USA/ Shortline, Monsey Trails, and Saddle River Tours/AmeriBus.
- Rockland County's paratransit service, called TRIPS, is a curb-to-curb, shared-ride paratransit service for eligible Rockland residents. TRIPS offers two levels of service. ADA TRIPS service is designed to meet the service criteria established by the Federal Government and serves as Rockland's complementary paratransit bus service to the municipal, fixed routes. Regular TRIPS service is reserved for residents with physical, mental, developmental, or intellectual disabilities or older adults who are aged 60 or older who find it difficult or impossible to use municipal, fixed-route bus service.
- The Bee-Line System operates 60 routes in Westchester County with a service area that extends from the northern and central Bronx through Westchester and into Putnam County with peak-hour express service to Midtown Manhattan. All Bee-Line System routes serving the Bronx connect with NYCT subway and bus terminals. In 2023, the Bee-Line fixed-route system had an annual ridership of 28.7 million. The Bee-Line System operates fixed-route service with 325 buses of varying types

and sizes, including 301 hybrid/electric buses. Westchester County introduced its first six all-electric buses into the fleet in 2021. All Bee-Line buses except those operating express service to Manhattan are fitted with exterior bicycle racks. Westchester County Bee Line ParaTransit provides ADA-accessible vehicles for all eligible ridership throughout the county. ParaTransit provides wheelchair-accessible vehicles along with smaller type vehicles along with a car for hire service in designated areas of the county. ParaTransit operates 100 vehicles for over 6,000 registered riders with approximately 1,200 daily trips.

- Connecticut Transit is a statewide public benefit corporation that operates the I-Bus express service between Stamford and White Plains seven days a week.
- NYSDOT sponsors several Hudson Valley services, including the Hudson Link between Rockland and Westchester counties; the Orange-Westchester Link Express between Orange County and Tarrytown and White Plains in Westchester County, and the Leprechaun Connection between Poughkeepsie in Dutchess County and White Plains.

MAJOR BUS SERVICES

New York City is a central destination for bus services carrying passengers from as close as Hudson County, NJ, and as far as Montauk and western Pennsylvania. Most commuter buses to Manhattan from west of the Hudson River operate to/from the Port Authority Bus Terminal in midtown Manhattan, with a smaller number using the George Washington Bridge Bus Station in northern Manhattan and a few lines that operate into Lower Manhattan or to the east side of Manhattan.

NJ TRANSIT provides commuter bus service to the Port Authority Bus Terminal, the George Washington Bridge Bus Station, and Lower Manhattan from destinations throughout New Jersey, while private bus carriers provide services from areas in New Jersey and New York west of the Hudson River and eastern Pennsylvania. Major private operators between New Jersey and New York include Academy serving the Route 9 corridor, Lakeland serving the I-80 corridor, and Trans-Bridge serving the I-78 corridor. A major bus holding company, Coach USA, operates numerous commuter bus services into New York City from New Jersey, Rockland County, Orange County and points along the NY-17 corridor. Coach USA also operates the Orange-Westchester Link under contract with NYSDOT. The Orange-Westchester Link provides bus service between Monroe and White Plains, NY. Rockland Coaches, which is owned by Coach USA, operates bus routes in Rockland County, NY, and Bergen County, NJ, with service to both the Port Authority Bus Terminal and the George Washington Bus Station.

Other commuter bus services from Rockland County include Monsey Trails, providing service to Midtown Manhattan, Lower Manhattan, and Brooklyn; and Coach USA's Shortline, providing service to midtown Manhattan, Wall Street, and the Port Authority Bus Terminal. Leprechaun Lines provides commuter bus service, partially under contract with NYSDOT, between Newburgh, Stewart Airport, and Beacon Train Station in Orange and Dutchess counties, as well as between Poughkeepsie and White Plains.

Commuters from exurban communities in the multistate metropolitan region also have access to commuter services into New York City. Trans-Bridge Lines operates peak-directional service between Lower

Manhattan and the Bethlehem/Allentown/Easton region of Pennsylvania. Similarly, Martz Trailways provides service between northeastern Pennsylvania communities such as the Poconos, Scranton, and Wilkes-Barre to the Port Authority Bus Terminal, Lower Manhattan, East Midtown, and intermediate points.

To provide additional options for commuters in Danbury, CT, MTA began a shuttle bus between New Fairfield, CT, and the MNR station in Southeast, NY. The service provides four morning trips and 11 evening trips and is operated by Connecticut's Housatonic Area Regional Transit. Housatonic Area Regional Transit provides shuttle service from Danbury, Ridgefield, and New Fairfield to MNR rail stations during peak hours. Connecticut Transit also operates the I-Bus Express service between Stamford and White Plains.

COMMUTER RAIL

Three commuter rail services operate in the NYMTC planning area—LIRR, MNR, and NJ TRANSIT. LIRR and MNR are subsidiaries of MTA. Compared to subway service, commuter rail services offer inter- and intraregional transportation services with longer distances between stations, wider coverage areas, zoned fares, and a greater emphasis on rider comfort due to longer passenger trips:

- MTA LIRR is the oldest continuously operating railroad in the country and the busiest commuter railroad in North America, with an annual ridership of 65.2 million customers in 2023.[20] The LIRR system is comprised of approximately 700 miles of track situated on eleven different branches, serving 126 stations, and stretching 120 miles from Montauk on the eastern tip of Long Island to Penn Station and Grand Central Madison in midtown Manhattan, Atlantic Terminal in Brooklyn, and Long Island City in Queens. In 2023, to coincide with the opening of Grand Central Madison, 275 trains were added to the weekday schedule bringing the total to 943 daily trains. In addition, MNR and LIRR began offering combo tickets allowing passengers to travel on one ticket between any two stations operated by those two railroads with a transfer at Grand Central.
- MTA MNR serves customers throughout New York and Connecticut on the Hudson, Harlem and New Haven lines, and in Orange and Rockland counties on the Port Jervis and Pascack Valley lines. MNR also manages the Hudson Rail Link feeder bus service in the Bronx and the Haverstraw-Ossining and Newburgh-Beacon ferries, all of which connect with the Hudson Line. MNR annual ridership in 2023 was 60.1 million.[21] Services from the Hudson, Harlem and New Haven Lines terminate at Grand Central Terminal in Midtown Manhattan. Services from the Pascack Valley and Port Jervis Lines terminate in Hoboken, NJ where riders can then transfer to PATH trains or ferry services to Lower Manhattan. Passengers on these lines may also connect to Penn Station-bound trains at Secaucus Junction in Secaucus, NJ.
- NJ TRANSIT is a statewide public benefit corporation that operates commuter rail service to and from Manhattan via Penn Station, within New Jersey, and provides service from Rockland and Orange Counties in New York via contract with Metro-North.

FERRY SERVICES

New York City is well-served by ferries that connect to various points throughout the City as well as intercity service to more distant locations in New Jersey, Connecticut, and Long Island. Major operators of ferries in New York City include NYC DOT (operator of the Staten Island Ferry), Hornblower (operator of NYC Ferry), NY Waterway, and Seastreak. Ferries access terminals at St. George Terminal in Staten Island, Whitehall Terminal, Battery Park City, World Financial Center in Lower Manhattan, and various terminals on the East and West sides of Midtown. In 2022, New York City ferries served 24.9 million riders:

- The Staten Island Ferry is the busiest and most frequent water transportation service in the New York City area, with an extensive peak and off-peak schedule connecting St. George Terminal on Staten Island to Whitehall Terminal at the southern tip of Manhattan operating a round-the-clock fare-free service. The ferry carries approximately 16.5 million passengers annually on its 5.2-mile run. A fleet of ten boats make 117 weekday trips between the two terminals, and 96 trips each day on Saturdays and Sundays.[22] In recent years, the Staten Island Ferry has transitioned to burning ultra-low sulfur fuel and embarked upon a fleet-wide pollution reduction program with the installation of various technologies. In 2022, the Staten Island Ferry introduced three new high-capacity ferry boats as part of an ongoing fleet renewal program.
- NYC Ferry operates across New York City's waterways, connecting Manhattan to Brooklyn, Queens, Staten Island, and the Bronx. NYC Ferry has a fleet of 38 vessels, which carry passengers between more than 20 landings along six routes covering over 60 miles of waterway combined. Additionally, a summer weekend shuttle travels between downtown Manhattan and Governor's Island. In 2023, NYC Ferry served approximately 6 million riders.
- Three companies (NY Waterway, Seastreak, and Liberty Landing Ferry) operate the trans-Hudson ferry routes in a public-private partnership, mostly using publicly owned terminals. These three companies currently operate 19 trans-Hudson ferry routes, operating between twelve New Jersey terminals and four Manhattan terminals. Of the 19 routes, 16 carry passengers from landings in Bergen and Hudson counties in New Jersey to Manhattan. Three routes carry passengers between Monmouth County in New Jersey and Manhattan.
- MTA MNR, in collaboration with NYSDOT, operates ferry service between the Village of Haverstraw in Rockland County and the Ossining MTA MNR station in Westchester County, as well as service between the City of Newburgh in Orange County and the Beacon MTA MNR station in Dutchess County. The Haverstraw-Ossining Ferry operates weekdays, with six trips to Ossining between 5 and 9 a.m. and nine trips to Haverstraw between 5 and 10 p.m. As part of a pilot service enhancement program, the Haverstraw-Ossining Ferry also ran three morning trips and nine afternoon and evening trips on weekends through November 10, 2024. The Newburgh-Beacon Ferry operates weekdays, with six trips to Beacon between 5 and 9 a.m. and eight trips to Newburgh between 5 and 9 p.m. Both ferries provide service to and from the MTA MNR Hudson Line. The service is operated by NY Waterway under contract to MTA MNR.
- Long Island Ferry Service operates across the Long Island Sound between Orient Point on Long Island's North Fork, and New London, CT as well as from Port Jefferson on the North Shore to

Bridgeport, CT. Other Long Island ferries connect Shelter Island with Greenport and North Haven, Montauk with Block Island, RI, Fishers Island, NY, to New London, and the South Shore communities of Bay Shore, Sayville and Patchogue to communities on Fire Island including Kismet, Saltaire, Ocean Beach, Seaview, Ocean Bay Park, Cherry Grove, Fire Island Pines, and Davis Park, among others. In 2022, Long Island ferries served 6.8 million riders.

SHARED MOBILITY

Shared mobility can be defined as transportation services and resources that are shared among users, either at the same time or one after another. This includes public transit, taxis and limos, bike sharing, carsharing (round-trip, one-way, and peer-to-peer), ridesharing (i.e., non-commercial services like carpooling and vanpooling), ride-sourcing or ride-hailing, ride-splitting, scooter sharing (now often grouped with bike sharing under the heading of micromobility), shuttle services and microtransit, jitneys and dollar vans, and more.

Shared mobility includes transportation services and resources that are available to travelers on a pay-per-use basis, such as renting a shared scooter for a short trip. As noted by FHWA, the growing availability and use of smartphone and Internet-based platforms facilitates shared mobility and multimodal transportation options more broadly. However, this has given rise to safety-related concerns, particularly in the micromobility devices' areas of operations, namely the speed of scooters and e-bikes on sidewalks and in bicycle lanes. Additional rules and regulations may be necessary to ensure the safety of all travelers.

CitiBike, a dock-based bikeshare program, began operations in May of 2013 and currently covers all of Manhattan, South and West Bronx, Western Queens, and large portions of Brooklyn along with Jersey City and Hoboken, with ridership exceeding 100,000 per day during peak season. NYC DOT conducted a pilot project of dockless e-scooters in East Bronx which averaged over 2,800 trips per day in its first year. Other entities such as, MTA and Port Authority (through a partnership with Oonee) feature secure bike parking at select locations within the region. Other private entities, like Revel offer secure parking for small electric vehicles, among other types of electric vehicles, at selected locations.

Additionally, recent alterations to the zoning laws in New York City facilitate the creation of designated locations for carsharing at parking facilities.

In 2021, Suffolk County Transit replaced its 10A fixed route bus with on-demand Microtransit service. The service area covers parts of the South Fork including Southampton and Sag Harbor. In 2024, fixed routes 10B and 10C, which served the Town of Easthampton, were replaced with on-demand Microtransit service. Total Microtransit ridership for 2024 across both the Southampton and East Hampton zones was 42,248.

2.3.2 ROADWAYS, BRIDGES AND TUNNELS

ROADWAYS

Roadway facilities are grouped into functional classes according to the type and character of service they provide. New York State currently uses seven functional classifications, which are further distinguished as

urban and rural facilities. Apart from three classes—Urban Local, Rural Minor Collector, and Rural Local—all are eligible for Federal funding.

There are 32,173 lane miles of interstates, arterials, collectors, and local roadways serving residents and visitors to the NYMTC planning area. Many of these roadways are heavily used despite their age, contributing to the need for repair and upgrade work throughout the region.

Local roadways—which include city, town, and village streets—make up 80 percent of the NYMTC planning area's public space and are used by all transportation modes—private vehicles, commercial vehicles, buses, cyclists, and pedestrians. Peripheral facilities include parking, bus stops, bicycle racks, and other features to support commerce.

BRIDGES AND TUNNELS

The NYMTC planning area is home to more than 3,200 bridges of all types, including more than 30 major bridges crossing navigable waterways. Among the major bridges connecting various parts of the planning area and other parts of the region are the George Washington Bridge; the Verrazano-Narrows Bridge; the Governor Mario M. Cuomo Bridge; the Robert. F. Kennedy Bridge; the Brooklyn, Manhattan, Williamsburg, and Ed Koch Queensboro bridges across the East River; the Goethals Bridge, the Bayonne Bridge, and Outerbridge Crossing; and the Bronx-Whitestone Bridge, and the Throgs Neck Bridge.

Additionally, four major underwater vehicular tunnels provide intra- and interregional transportation connections—the Lincoln and Holland Tunnels connect New York City with New Jersey, the Queens-Midtown Tunnel connects Queens to Manhattan, and the Hugh L. Carey Tunnel connects Manhattan and Brooklyn.

2.3.3 ACTIVE TRANSPORTATION

PEDESTRIAN AND BICYCLE FACILITIES

Walking and bicycling are integral parts of life in the NYMTC planning area, providing residents with a means for commuting and travel for recreational purposes. According to the U.S. Census Bureau's American Community Survey (ACS) Five-Year Estimates for 2021, 5.8 percent (651,360) of daily commuters in the region either walk or ride a bicycle as a means of travel to work. Of these active transportation commuters, approximately 90 percent walked to work, with the remaining 10 percent biking to work..[23]

The NYMTC planning area has seen significant development of both on and off-street bicycle and shared-use facilities, hiking trails, bike share and scooter rentals. The region is home to more than 500 miles of existing protected on-street bike lanes. While transit ridership declined precipitously during the COVID-19 pandemic, bicycle usage increased dramatically. The East River Crossings are among the busiest bridges for bicycling in North America. Overcrowding on the shared pedestrian and bicycle path on the Brooklyn Bridge led to the opening of a new dedicated bicycle facility on the Brooklyn Bridge in 2022.

In 2019, as part of the Vision Zero Initiative, NYC DOT released Green Wave, a plan aimed at both improving cyclist safety and creating a more convenient enjoyable and fair riding experience.[24] As part of the plan,

NYC DOT committed to increasing the mileage of protected bicycle lanes it installed annually. In 2021, the Department released the NYC Streets Plan, a five-year transportation plan that augmented the GreenWave cycling goals and increased the protected bicycle lane targets from 30 to 50 miles annually. Since 2014, New York City has expanded the bicycle network with approximately 590 lane miles of new and upgraded bicycle facilities, including 189 miles of protected lanes installed in New York City as of January 1, 2023, for a total of 1,525 miles of bike lanes of which 644 miles are protected lanes.

Suffolk County has 825 miles of hiking and walking trails and 99 miles of shared-use paths. There are 2,820 miles of sidewalks across the 10 towns of Suffolk County, and, in most cases, sidewalks are on both sides of the street. Suffolk County has over 350 miles of on-road bicycle routes including 125 miles of on-road bicycle lanes. Additionally, Suffolk County has 88 miles of mountain biking trails.

The NYSDOT Long Island Region (Region 10) has 137 miles of on-road bicycle routes representing more than a third of Long Island's 477 miles of bicycling facilities.

Nassau County has 11 miles of on-road bicycle routes and 90 miles of shared-use paths. Additionally, Nassau County has another 12 miles of bicycle facilities planned or under construction. A compilation of bicycle facilities by ownership is provided in the Active Transportation Plan (Appendix C).

The development of exclusive bikeways in Nassau County has primarily been oriented toward recreational use. Complete Streets projects have been a focus for the county. A bike share system known as Bethpage Ride PedalShare operates isolated bikeshare networks across Long Island. Bikeshare is available in Southampton Village, Bridgehampton, Hampton Bays, Riverhead, Patchogue, Lindenhurst, Babylon, Huntington, Port Washington, and on the campus of SUNY Farmingdale State College with 52 stations.

The City of Long Beach has a high population density (in comparison to other Long Island communities) and limited parking supply. These factors encourage residents and visitors to use public transportation and walk and bicycle to travel around Long Beach.

The existing regional bicycle and pedestrian trailways and pathways in Westchester County consist of off-road paths, road shoulders, and formal bicycle routes along selected roads. Most off-road paths are multi-use, though some are restricted for pedestrians only. Westchester County's bicycling and hiking trail system has been developed along parkways and on former railroad and aqueduct rights-of-way to provide a countywide trail network connecting employment centers, downtowns, schools, and parks.

Putnam County has two built trail systems that now are part of the Empire State Trail. The original Putnam Trailway runs from the Westchester County line into the Village of Brewster. The Maybrook Trailway which follows the former New Haven Railroad bed, connects to the Putnam Trailway in the Village of Brewster and then runs east along Route 6 to Danbury, CT, and north through the Town of Patterson into Dutchess County. The Maybrook Trailway eventually flows through Hopewell Junction southwest to Beacon and northeast to Millerton.

2.3.4 GOODS MOVEMENT

Chapter 4 of Appendix D, the Regional Freight Element, provides a detailed description of goods movement infrastructure in the NYMTC planning area. Information from the Regional Freight Element is excerpted below. A subset of the NYMTC planning area's roadway network, identified as "Strategic Freight Highways," is of particular importance to freight movement. Strategic Freight Highways serve as major freight gateways into and out of the planning area and provide access to major freight-handling facilities such as seaports and rail intermodal terminals in New Jersey and connections between major industrial clusters and the Interstate Highway System. Strategic Freight Highways link to:

- Freight-generating facilities such as manufacturing, resource-extraction facilities, off-shore wind farms, recycling/waste facilities, construction-sites, and other broad freight generators;
- Freight-handling facilities such as JFK Airport, Howland Hook Container Terminal, and other intermodal terminals and warehouses/distribution centers; and
- Routes that can accommodate large and heavy loads to support emergency response.

Most of the rail freight activity within the multistate metropolitan region occurs west of the Hudson River in northern New Jersey. The largest carload freight yards, intermodal terminals, rail-served industries, and distribution centers are in this area. East of the Hudson River, freight rail volumes are lower, yet rail serves an important role in carrying bulk commodities such as stone, sand, solid waste, and liquids. Three Class I railroads operate in the multistate region, along with five short-line railroads. Within the NYMTC planning area, only a handful of carload service freight yards and terminals remain, with most previous facilities either converted to non-rail or non-freight rail uses.

The Port of New York and New Jersey is the largest container port on the East Coast, and the third largest in the United States behind Los Angeles and Long Beach. It comprises public terminals under the management of the Port Authority (which leases property to private terminal operators), as well as privately owned and privately operated freight terminals and docks. In addition to the port facilities noted above, the U.S. Army Corps of Engineers "Master Docks" database reports 132 other marine cargo facility locations in the NYMTC planning area. This count includes facilities with a stated purpose of shipping or receiving waterborne freight and excludes facilities with occasional shipments or receipts, vessel fleeting or storage areas, and maritime support services such as repair, refueling, and drydocking.

Over the past 20 years, several important studies of "marine highway" services for the NYMTC planning area have been conducted. The term "marine highway" is a formal designation by the U.S. DOT Maritime Administration for waterborne services that provide alternatives to trucking along congested highway routes and corridors. Marine highway services can be provided by shallow-draft barges or deeper-draft self-powered vessels; they can operate over short or long distances; and they can handle containers and other unitized non-bulk commodities. The New York Economic Development Corporation (NYCEDC), the Port Authority, and many other partners have come together as the North American Marine Highway Alliance to explore, promote, and implement these services.

Of the larger New York area airports in the NYMTC planning area—John F. Kennedy International Airport, LaGuardia Airport, Westchester County Airport, Long Island MacArthur Airport, and Republic Airport—only JFK has significant air cargo activity, and it is ranked among the top air cargo gateways in the country. LaGuardia Airport, while handling significant domestic passenger traffic, does not handle a significant amount of air cargo. Westchester County Airport is a regional commercial and general aviation airport, and any cargo is incidental to the passenger and charter services operated there. The NYMTC planning area is also served by air cargo through Newark Liberty International Airport and Stewart International Airport, both of which have significant air cargo volumes but are outside the NYMTC planning area.

2.3.5 AVIATION

AIRPORTS

The Port Authority operates the busiest system of airports in the Americas and the second busiest airport system in the world behind only London, serving nearly 128 million passengers and handling more than a million tons of cargo in 2022.

The Port Authority operates five airports:

- John F. Kennedy International Airport (JFK) is one of the world's most iconic aviation facilities and the metropolitan region's busiest airport with more than 55 million annual passengers in 2022. JFK is the number one U.S. gateway for international travelers serving approximately 27 million international passengers and handles the bulk of the region's air cargo handling more than 1.5 million tons of air cargo.
- Newark Liberty International Airport (EWR), which is adjacent to NYMTC's planning area in northern New Jersey, currently ranks twelfth in passenger traffic with more than 44 million annual passengers in 2022. It is also the region's small-package hub handling approximately 750,000 tons of air cargo.
- LaGuardia Airport (LGA) is the region's premier short-haul domestic airport with more than 29 million passengers in 2022. It has the distinction of handling more passengers per square mile per year than any other airport in the world.
- New York Stewart International Airport (SWF) is the gateway to the Hudson Valley, serving 300,000 passengers and handling 25,000 tons of cargo in 2022.[25]
- Teterboro Airport is the busiest general and corporate aviation airport in the country and serves as an important reliever airport for the region. Couriers and small package cargo shippers operate while serving as a receiving point for human organs used in life-saving transplant operations performed at medical centers throughout the region.

Another relevant airport in the NYMTC planning area is Westchester County Airport (HPN), a county-owned airport classified as a small hub airport by the Federal Aviation Administration. In 2022, enplanements at Westchester County Airport numbered 892,000; deplanements totaled 889,000. This airport serves the Lower Hudson Valley and southwestern Connecticut. Additionally, Long Island MacArthur Airport (ISP),

owned and operated by the Town of Islip, is classified as a small hub airport by the Federal Aviation Administration. This airport primarily serves eastern Long Island and is connected to LIRR at its Ronkonkoma station just north of the airport's northern boundary. In 2022, enplanements at MacArthur Airport numbered 610,000; deplanements totaled 614,000. These two airports, along with SWF, have attracted low-cost operators intending to avoid the region's busy major airports. General aviation airports in the planning area include Republic Airport in Farmingdale, Gabreski Airport in Westhampton, and Village of East Hampton Airport in East Hampton. Seasonal commercial seaplane traffic operates out of New York Skyports on the East River to Eastern Long Island and Massachusetts serving approximately 2,400 passengers in 2022.

HELIPORTS

New York City has three main public heliports—Downtown Manhattan/Wall Street, East 34th Street, and West 30th Street—generating more than 55,000 flights per year. Many of these flights were for air tour service, followed by commercial, corporate, itinerant, news gathering, military, and public safety operations. The Downtown Manhattan/Wall Street heliport is capable of handling high-security flights, such as the President of the United States or foreign diplomats during the annual United Nations General Assembly.

2.3.6 OTHER TRANSPORTATION MODES

TAXIS AND FOR-HIRE VEHICLES

In New York City, the New York City Taxi and Limousine Commission licenses more than 110,000 vehicles that collectively transport over 750,000 passengers each day. Several taxi services exist in the counties outside New York City including nine taxi companies in Putnam County and thirty-three in Suffolk County).

App-based, high-volume for-hire vehicles through Uber, Via, and Lyft also provide travelers in the region with mobility options. Uber was launched in New York City in May 2011; Via was launched in September 2013, and Lyft was launched in July 2014.However, these services were not approved to operate in Long Island and the Hudson Valley until 2017. In 2017, New York State legislation began allowing ride-hailing companies to provide services statewide.[26] The rapid growth of Transportation Network Companies (TNC) may be attributable to the numerous advantages and conveniences that TNCs provide over other modes of transportation, including point-to-point service, ease of reserving rides, shorter wait times, lower fares (relative to taxis), ease of payment, and real-time communication with drivers. The availability of this new travel alternative improves mobility for some residents, including those with special needs, workers, and visitors.

LONG-DISTANCE AND INTER-CITY BUSES

New York City is a major hub for long-distance and intercity bus services, with buses traveling to destinations like Washington, D.C.; Boston, MA; and Philadelphia, PA; and more distant locations like Norfolk, VA; Atlanta, GA; Pittsburgh, PA; and Toronto, Canada. Many of the intercity buses travel in and out of the Port Authority Bus Terminal and the George Washington Bridge Bus Station in Manhattan and other locations throughout the NYMTC planning area. Major intercity operators from the Port Authority Bus

Terminal include Greyhound for destinations across the United States and into Eastern Canada, Adirondack Trailways for destinations across New York State, and Peter Pan for service along the Northeast Corridor. Following extensive growth in curbside intercity buses, a significant share of the intercity service now operates from curbside locations in Midtown, Chinatown, and outer borough stops.

Intercity bus travel gained popularity because of discount Chinatown operators, also known as "curbside" operators, which led to other competing services offered by companies like Megabus, although this particular service has ceased all operations across the country. FlixBus, which had previously offered service exclusively on the New York to Boston and Washington corridor has expanded its curbside operation operating from Penn Station. FlixMobility, the parent company of FlixBus, purchased Greyhound in October 2021 and subsequently discontinued Greyhound's BoltBus "curbside" brand in favor of the FlixBus brand.

Megabus, and FlixBus offer discount express city travel between New York and various cities throughout the eastern United States and Canada, including Washington, D.C., Boston, Philadelphia, Albany, and Toronto. Other bus companies such as Vamoose Bus and Go Buses offer less variety in destinations (mostly to the Washington, D.C., and Boston areas) and similar amenities. A number of these discounted services arrive and depart from on-street locations in Midtown Manhattan instead of the Port Authority or George Washington Bridge Bus Station. Flixbus operates from a stop at the corner of 31st Street and 8th Avenue. "Chinatown" buses, which began providing intercity service in the late 1990s, also provide frequent, inexpensive bus services from primarily Manhattan's Chinatown, the West Side of Manhattan, and the outer boroughs to areas along the Eastern Seaboard as far south as Florida. Lucky Star also offers services to Washington, D.C., and Boston.

OurBus is a service planning and ticket sales company that partners with bus carriers to operate routes. It relaunched a direct New York to metropolitan Boston route formerly operated by Coach Company, now one of its partners, serving Worcester, Methuen, and Lowell, MA. In June 2020, it added a New York–Boston Back Bay route, followed by a college-oriented pop-up route between Long Island and Boston and another pop-up, connecting Hyannis, MA; Providence, RI Island; and New York.[27]

INTER-CITY PASSENGER RAIL

Since 1971, Amtrak has been the provider of intercity, long-distance passenger rail service in the NYMTC planning area. Amtrak serves four stations in the NYMTC planning area—Penn Station, New Rochelle, Yonkers, and Croton-Harmon. Penn Station served over 8 million Amtrak passengers beginning or ending their trips in 2022.

Amtrak's services include:

- Acela/Northeast Regional Service between Boston and Washington, D.C., Acela service uses a dedicated fleet of trains to provide high-speed express service along the corridor, while Northeast Regional trains use standard Amtrak equipment and make more stops. Amtrak's Northeast Regional and Acela services carried approximately 9.2 million passengers in 2022.

- Empire Corridor Service between New York City and Albany with daily service to Buffalo and Niagara Falls with over 1 million passengers between New York City and Albany in 2022. This includes the Adirondack to Montreal; the Maple Leaf to Toronto in cooperation with VIA Rail Canada; the Ethan Allen Express to Burlington, VT; and the Berkshire Flyer to Pittsfield, MA. The Berkshire Flyer is funded by Massachusetts and the Ethan Allen Express is funded by Vermont while all other daytime services are funded by New York State.
- Northeast Corridor through Services to, from, or through Penn Station that travels along the Northeast Corridor to access other state corridor routes. These include through trains to the New Haven-Hartford-Springfield corridor; the Vermonter service to St. Albans; numerous Northeast Regional extensions to Virginia points (Norfolk, Roanoke, Richmond, and Newport News); the Carolinian to Raleigh, Greensboro, and Charlotte; the Pennsylvanian to Pittsburgh; and frequent Keystone Service to Lancaster and Harrisburg via Philadelphia.
- Amtrak also operates Long-Distance Services to and from New York. These include the Silver Service (Silver Star and Silver Meteor) from New York to the Carolinas, Savannah, and Florida points; the Crescent to Atlanta, Birmingham, and New Orleans; the Lake Shore Limited to Cleveland, Toledo, and Chicago; the Cardinal to Cincinnati, Indianapolis, and Chicago; and the Palmetto to Savannah. All these trains operate once daily except for the Cardinal, which originates or terminates in New York on Sundays, Wednesdays, and Fridays.

ROOSEVELT ISLAND TRAM

The Roosevelt Island Tram operates between the island and Manhattan and supplements subway service. Originally opened in 1976 pending the completion of a subway station, the Tram, operated by the state-run Roosevelt Island Operating Corporation, now carries 2 million people per year as of 2022.

TOUR BUSES

Tour buses in New York City serve tourists who are either riding in a closed loop or using a system of "hop on-hop off" routes to visit specific attractions or neighborhoods. Although bus tourism has historically been confined to the Manhattan Central Business District with occasional forays into Brooklyn, tour buses are now a more common sight in Upper Manhattan as well. Several companies operate downtown and uptown hop-on-hop-off bus loops. The bus tour industry has also expanded to include topic-specific tours, often centered on popular TV shows, local foods, or specific cultural sites.

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