

# 2

## HOW TRANSPORTATION PLANNING HAPPENS

### 2.1 ORGANIZATIONAL 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. Among other functions/requirements, MPOs cooperate with state agencies and public transportation operators to program federal funds for eligible transportation projects.*

*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.*

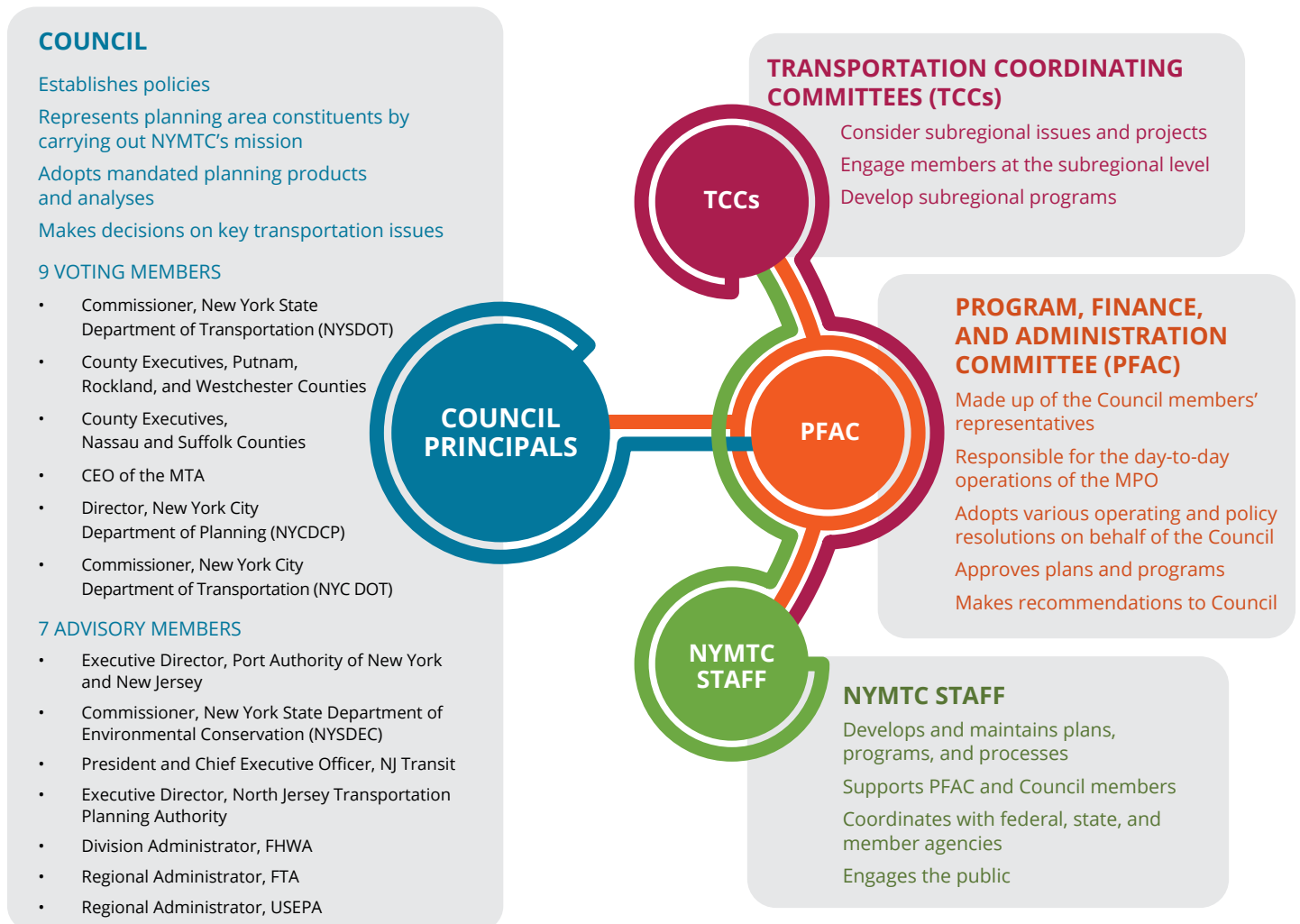
NYMTC's regional council is advised by the Port Authority of New York and New Jersey (Port Authority), New Jersey Transit (NJ Transit), and the North Jersey Transportation Planning Authority, as well New York State's Department of Environmental Conservation, the U.S. Environmental Protection Agency (USEPA), and two modal administrations of the U.S. Department of Transportation (USDOT): the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA).

NYMTC's Shared Vision for Regional Mobility, which guides *Moving Forward*, is built from a framework of these members and advisers' strategic goals; associated objectives; and related projects, programs, and studies.

### 2.1.1 STRUCTURE

NYMTC comprises the chief elected or appointed officials of its member agencies, which include nine voting members and seven non-voting advisory members (see *Figure 2-1*). NYMTC operates through four standing committees: the Program, Finance, and Administration Committee (PFAC) that oversees the day-to-day operations of the organization, and three geographically based Transportation Coordinating Committees (TCCs) that provide subregional planning forums. NYMTC is supported by a professional staff that is responsible for conducting the daily business of the organization.

Figure 2-1  
NYMTC Organization



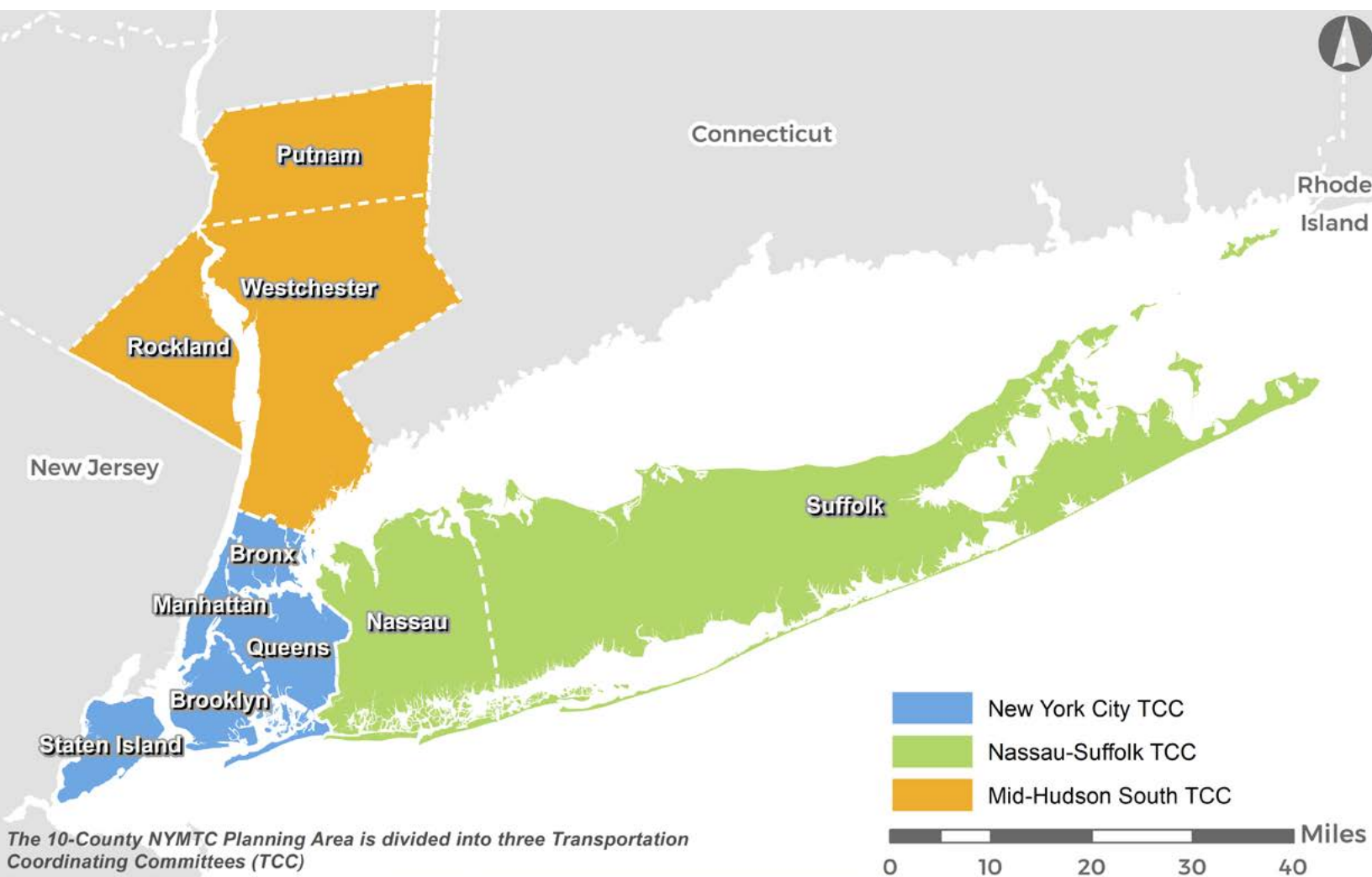
As shown in *Figure 2-2*, NYMTC’s members are also divided into three geographically based TCCs to address subregional transportation needs and issues.

#### ORGANIZATIONAL RESPONSIBILITIES

Federal legislation and related planning regulations require MPOs to produce a long-range regional transportation plan, a five-year transportation improvement program (TIP), and an annual unified planning work program. *Moving Forward* is the regional transportation plan, for fiscal years 2022–2050 for the NYMTC planning area. *Moving Forward* 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, the Plan fulfills federal planning requirements and maintains NYMTC’s eligibility for federal funding for transportation planning and improvement projects. NYMTC acts as a forum for collaborative planning from a regional perspective. It facilitates informed decision-making among its members by providing sound technical analysis and forecasts. NYMTC’s collective efforts help ensure that the region is prepared to obtain the maximum federal funds available to achieve the Shared Regional Goals and to focus the collective planning activities of its members to achieve their Shared Vision for Regional Mobility.

*Figure 2-2*  
**NYMTC Planning Area and TCCs**



## 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 funding for transportation improvements nationally through multi-year authorization legislation. Currently, the Fixing America’s Surface Transportation (FAST) Act is the federal transportation legislation that authorizes funding and establishes the requirements for the metropolitan transportation planning process that governs NYMTC’s activities. The FAST Act was signed into law in 2015 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 2-3* depicts the relationships of these products within the overall process.

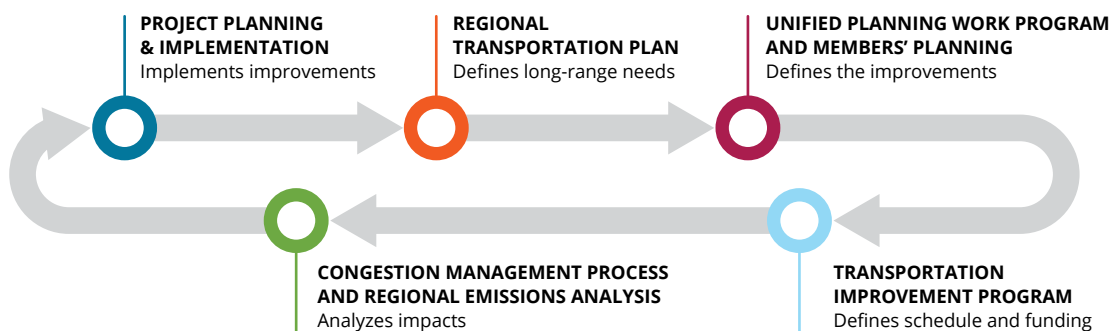
### FOUR PLANNING PRODUCTS

1. The regional transportation plan, (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 unified planning work program 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.

### TWO PLANNING PROCESSES

1. The congestion management process (CMP)—a process to monitor and forecast traffic congestion and consider congestion-reduction strategies in federally designated Transportation Management Areas; and
2. Transportation conformity—a quantitative demonstration of how the fiscally constrained regional transportation plan and TIP conform to future mobile source emissions milestones set in response to federally mandated air quality standards.

*Figure 2-3*  
**Metropolitan Transportation Planning Process**



## NATIONAL GOALS AND PLANNING FACTORS

National Goals have been established in the areas of safety, pavement and bridge infrastructure, congestion reduction, system reliability, freight movement, environmental sustainability, and project delivery. These National Goals, which appear in [Table 2-1](#), were carried forward into the FAST Act, along with related federal requirements for transportation performance management.

*Table 2-1*

### **National Transportation Goals**

*Source: 23 United States Code Section 150*

Goal Area	National Goal
<b>Safety</b>	To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
<b>Infrastructure Condition</b>	To maintain the highway infrastructure asset system in a state of good repair.
<b>Congestion Reduction</b>	To achieve a significant reduction in congestion on the National Highway System.
<b>System Reliability</b>	To improve the efficiency of the surface transportation system.
<b>Freight Movement and Economic Vitality</b>	To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
<b>Environmental Sustainability</b>	To enhance the performance of the transportation system while protecting and enhancing the natural environment.
<b>Reduced Project Delivery Delays</b>	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.



***IN ADDITION TO THE NATIONAL GOALS, 23 CODE OF FEDERAL REGULATIONS (CFR) 450.306 (B) INDICATES THE FOLLOWING:***

The metropolitan transportation planning process shall be continuous, cooperative, and comprehensive, and provide for consideration and implementation of projects, strategies, and services that will 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 Moving Forward's shared strategic goals and related objectives and, by extension, in the strategies and actions that guide NYMTC's activities as described throughout this document. [Table 2-2](#) shows the relationships between Moving Forward's goals and objectives and the national goals and federal planning factors.

Table 2-2

**Moving Forward — Strategic Consistency Assessment Matrix**



Moving Forward Goals & Objectives		National Goals & Federal Planning Factors									
Goal	Objective	Support Economic Vitality	Increase Safety & Security	Increase Accessibility and Mobility	Improve Efficiency	Improve the Nat'l Freight Network	Protect and Enhance the Environment	Enhance Integration & Connectivity	Emphasize System Preservation	Improve Resiliency & Reliability	Enhance Travel & Tourism
 <p><b>1</b></p> <p>A transportation system that ensures the safety and security of people and goods across all uses and modes.</p>	Ensure that investments in existing physical assets protect the safety of, among others, passengers and freight systems.	●	●		●	●	●		●		●
	Promote safe streets and intersections.	●	●	●	●	●	●	●	●		
	Keep transportation systems safe from threats.	●	●				●				
	Coordinate safety management, training, and education across jurisdictional borders.	●	●								
	Improve the safety and security of system operations.	●	●	●	●	●	●	●		●	
 <p><b>2</b></p> <p>A transportation system that is maintained, operated, and coordinated to better enable inclusive, reliable, easy, accessible, and seamless travel across the region while striving to enhance equity in the services provided.</p>	Rebuild/replace and modernize the assets that comprise the region's vast transportation infrastructure for passengers and freight.	●		●	●	●		●	●	●	
	Improve first- and last-mile access to transit.	●		●	●						●
	Provide more frequent and reliable transit service.	●		●	●			●			
	Improve accessibility to the transportation system for users of all abilities.			●	●			●			●
	Invest in improving the integration of the multimodal transit network.	●	●	●	●			●	●		●
	Improve the integration of freight modes and facilities.	●		●	●						
	Invest in collection and sharing of quality transportation data.	●	●	●	●	●	●	●	●	●	●
Promote transportation and workplace access opportunities for all populations, regardless of age, ability, race, ethnicity, or income.			●				●			●	

Table 2-2

Moving Forward — Strategic Consistency Assessment Matrix, cont'd




Moving Forward Goals & Objectives		National Goals & Federal Planning Factors									
Goal	Objective	Support Economic Vitality	Increase Safety & Security	Increase Accessibility and Mobility	Improve Efficiency	Improve the Nat'l Freight Network	Protect and Enhance the Environment	Enhance Integration & Connectivity	Emphasize System Preservation	Improve Resiliency & Reliability	Enhance Travel & Tourism
 <p><b>3</b></p> <p>A transportation system that efficiently serves today's population and plans for the growing number of residents, workers, and increasing amount of goods.</p>	Invest in system capacity to satisfy demand, relieve overcrowding, address bottlenecks, and improve performance for passengers and freight, with an emphasis on core markets and activity centers.	●		●	●			●			●
	Expand the reach of the system to underserved communities and emerging markets, addressing passenger transportation as well as access to goods and freight services.			●	●			●			
	Encourage walking and biking, transit-oriented development, Complete Streets, parking and curb management, and other long-term sustainable land use strategies that support passenger and goods movement.	●	●	●	●		●	●			●
	Modernize local freight networks to efficiently plan for growth in the volume of and change in product deliveries.	●				●					
	Incorporate emerging and innovative transportation services and tools into efficient network design.			●	●	●		●			
	Encourage alternatives to single-occupant vehicle trips.			●	●		●				
 <p><b>4</b></p> <p>A transportation system that minimizes its greenhouse gas emissions and other impacts on the environment, especially the effects of climate change.</p>	Encourage lower-emissions alternatives to trucking.				●	●	●				
	Modernize vehicle fleets to higher-standard and lower-emissions vehicles.						●				
	Efficiently manage limited roadway capacity to mitigate congestion and vehicular emissions.				●		●				
	Promote responsible environmental stewardship in transportation projects.						●			●	
	Address unequal impacts of transportation emissions on communities.			●		●	●				



Table 2-2

**Moving Forward — Strategic Consistency Assessment Matrix, cont'd**

Moving Forward Goals & Objectives		National Goals & Federal Planning Factors									
Goal	Objective	Support Economic Vitality	Increase Safety & Security	Increase Accessibility and Mobility	Improve Efficiency	Improve the Nat'l Freight Network	Protect and Enhance the Environment	Enhance Integration & Connectivity	Emphasize System Preservation	Improve Resiliency & Reliability	Enhance Travel & Tourism
 <p>A transportation system that is resilient and can mitigate, adapt to, and respond to chronic and acute stresses and disruptions.</p>	Protect and fortify major transportation assets.		●				●		●		
	Continue to invest in sea level rise and climate change risk analyses for transportation assets.	●	●		●		●			●	
	Improve regional coordination on emergency and long-term responses to system-wide climate impacts.				●		●			●	
	Enhance the transportation network's resiliency by increasing travel options and redundancies.		●	●			●			●	

Note: There are 6 National Goals and 10 federal planning factors (safety and security are separate planning factors).

### 2.1.3 MEASURING PERFORMANCE

The federal transportation legislation enacted in 2012, entitled the Moving Ahead for Progress in the 21st Century Act (MAP-21), strengthened the growing focus on using performance-based approaches in transportation planning. That law required states and MPOs to establish transportation performance targets for all the national performance measures in areas such as safety, infrastructure condition, system performance, and environmental sustainability. MAP-21 further required MPOs 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.”

The current federal transportation authorization act, the FAST Act, continues the MAP-21 requirements for using performance-based approaches in transportation planning. This requirement was further stipulated in the Metropolitan Transportation Planning Final Rule issued May 27, 2016, in section 23 CFR 450.306(d). The legislation transformed the federal-aid program by placing greater emphasis on transportation decision-making on performance-based planning, where performance measures and targets provide an objective means of informing decisions about strategies and investments.

USDOT 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.

## USDOT Performance Management Framework

- 1 Planning**  
*"Where do we want to go?"*
- 2 Programming**  
*"How are we going to get there?"*
- 3 Implementation**  
*"What will it take?"*
- 4 Evaluation**  
*"How did we do?"*

The planning phase consists of setting a strategic direction ("where do we want to go?"). It encompasses goals and objectives and performance measures, followed by 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?" The last phase of evaluation seeks to answer the question, "How did we do?"

NYMTC is currently undertaking the phases and actions identified in this framework and, as such, undertakes a performance-based approach to its metropolitan transportation planning requirements. *Moving Forward's* Shared Vision augments this federally required framework to measure the Plan's progress toward achieving the resulting strategic framework.



## 2.2 REGIONAL PLANNING CONTEXT: THE MULTI-STATE METROPOLITAN REGION

The multi-state metropolitan region surrounding New York City lies at the heart of the Northeast Megaregion, the most densely populated, urbanized land in the country (see [Figure 2-4](#)). The Megaregion, as defined below by the Regional Plan Association, includes the metropolitan areas of Washington, D.C., Baltimore, Philadelphia, New York City, and Boston. It is home to 49.6 million<sup>1</sup> people (translating to nearly 16 percent of the nation's total population) and is also a major contributor to the U.S. economy, producing one-fifth of the national gross domestic product (GDP) in 2018.

The multi-state metropolitan region is approximated by the U.S. Census Bureau's New York-Newark, NY-NJ-CT-PA Combined Statistical Area, shown in [Figure 2-5](#), the largest such area in the nation in terms of population and one of the largest in the world. The New York-Newark, NY-NJ-CT-PA Combined Statistical Area is home to more than 23 million people (2018 estimate).<sup>2</sup> In 2018, it had a GDP of 2.1 trillion, which would rank 10th among countries and was roughly 10 percent of the 2018 U.S. GDP of \$20.5 trillion.<sup>3</sup>

While the multi-state metropolitan region is centered on New York City, it also contains some of the largest cities in New Jersey (i.e., Newark, Jersey City, and Paterson) and Connecticut (i.e., Stamford, Bridgeport, New Haven, and Hartford) as well as large suburban towns on Long Island (i.e., Hempstead, Brookhaven, and Babylon), the Lower Hudson Valley (i.e., Yonkers, Mount Vernon, Newburgh, New Rochelle, Poughkeepsie, and White Plains), and exurban areas of the Catskill and Pocono mountain areas north and west of New York City.

The multi-state region also includes the planning areas of various MPOs and councils of government (COGs), including:

### **NEW YORK STATE**

NYMTC, the Orange County Transportation Council, the Dutchess Transportation Council, and the Ulster County Transportation Council

### **NEW JERSEY AND PENNSYLVANIA**

The North Jersey Transportation Planning Authority, the Lehigh Valley Planning Commission, and the Northeast Pennsylvania Alliance

### **CONNECTICUT**

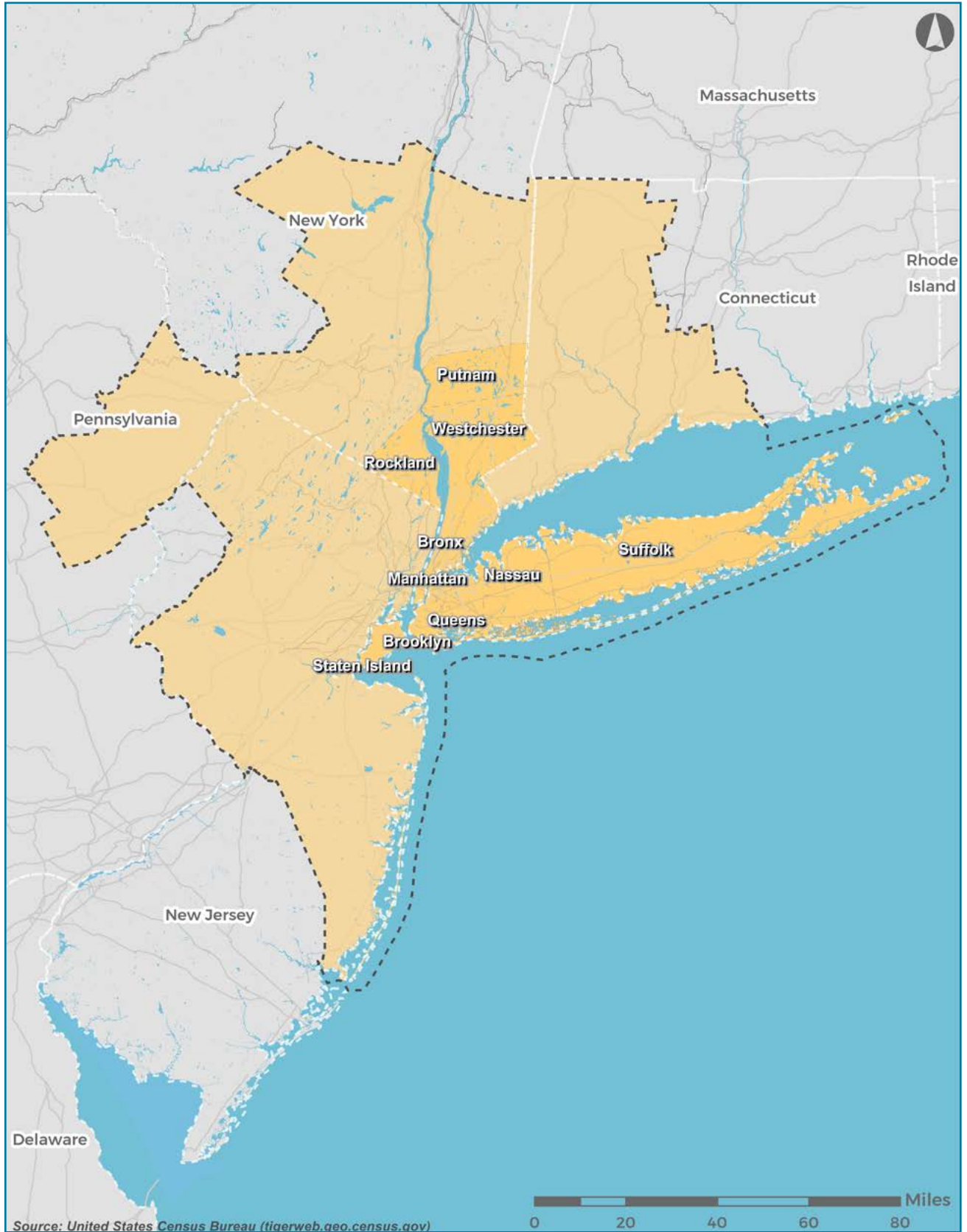
The Western Connecticut COG, the Naugatuck Valley COG, the Connecticut Metropolitan COG, the South-Central Regional COG, the Capitol Region COG, the Lower Connecticut River Valley COG, and the Southeastern Connecticut COG

Figure 2-4  
The Northeast Megaregion



Source: U.S. Geological Survey Gap Analysis Project, 2020, Protected Areas Database of the United States; Multi-Resolution Land Characteristics (MRLC) Consortium; <https://doi.org/10.5066/P92QM3NT>; Northeast Megaregion 2050, Regional Plan Association

Figure 2-5  
**New York-Newark NY-NJ-CT-PA Combined Statistical Area**  
Source: [www.citypopulation.de](http://www.citypopulation.de)



## 2.2.1 KEY CHARACTERISTICS

### GEOGRAPHY AND ENVIRONMENT

New York City comprises Manhattan Island and Staten Island, the western end of Long Island (the boroughs of Queens and Brooklyn), and part of the North American mainland (the Bronx). New York City possesses a well-used natural harbor and sits at the southern end of the Hudson River. East of Queens are Nassau and Suffolk counties in Long Island, known for their beach-lined coastline and barrier islands.

Across the Hudson River to the west of New York City is northern New Jersey, an area that contains 13 individual counties and several major cities. North of the Bronx on the east side of the Hudson River, and north of the New Jersey-New York border on the west side of the river, is the Lower Hudson Valley, a hilly region comprising seven counties (Westchester, Rockland, Putnam, Orange, Ulster, Dutchess, and Sullivan) and dotted with suburban communities of varying size. Rockland County is occupied by large swaths of natural habitat, such as Harriman and Bear Mountain State Parks. East of the Hudson Valley counties lies the southwestern portion of the State of Connecticut, across the Long Island Sound from Queens and Long Island. This area of Connecticut comprises two counties (Fairfield and New Haven), and seven of the largest communities in the state are in the area. It is characterized by a dense, urban landscape, interspersed by several wealthy suburban towns.

The Pennsylvania portion of the multi-state metropolitan region lies at the foothills of the Pocono 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, and the Susquehanna River. The southernmost portion of the multi-state metropolitan region is made up of southern New Jersey in an area southeast of Philadelphia. Southern New Jersey's coastline and barrier islands also are included in this metropolitan region.

### ECONOMY

The multi-state metropolitan region's economy is large, diverse, and international. In 2018, the region produced a gross metropolitan product of \$1.7 trillion,<sup>4</sup> the largest in the country among metropolitan regions. The multi-state gross metropolitan product would rank 11th among the nations of the world, ahead of Canada, Russia, South Korea and Spain.<sup>5</sup> The region's economic output is nearly twice that of the Los Angeles Metropolitan area. In 2018, a report by Oxford Economics projected that it will be the top urban economy in the world in 2035, having a GDP of \$2.5 trillion, with the largest financial and business sector, while Tokyo will come in second with a GDP of \$1.9 trillion and Los Angeles third with a GDP of \$1.5 trillion.<sup>6</sup> The multi-state metropolitan region is home to numerous Fortune 500 companies and foreign corporations, with one in ten private sector jobs at a foreign company.

Although significant numbers of workers who reside in the multi-state metropolitan region commute to New York City—Manhattan in particular—Long Island, the Lower Hudson Valley, northern New Jersey, and southwestern Connecticut are all home to their own industries that contribute to the multi-state region's economy. Agriculture and tourism are important to the Long Island and Lower Hudson Valley economies. Northern New Jersey is home to the busiest port on the U.S. East Coast, the Newark-Elizabeth Marine Terminal, which handled 7,179,788 twenty-foot equivalent units (TEUs), or 4,095,454 cargo containers, in 2018. The suburban areas close to New York City also have their own economic ecosystems, often including major corporations. Westchester County in New York State and Fairfield County in Connecticut, for example, have become major business centers that draw commuters who live in New York City and elsewhere in the region. The southeastern Connecticut economy is dominated by the tourism industry and manufacturing.

Areas farther from the New York City core have varied demographic and economic profiles. Eastern Pennsylvania, for example, has historically been manufacturing-based, and is currently

the site of a variety of industrial-related firms, such as the global headquarters of Air Products and Chemicals. In Trenton, New Jersey, officials are attempting to incentivize more industrial and business development along the Route 1 corridor, using Boston's Back Streets Program and Chicago's Local Industrial Retention Initiative as models. Trenton is also looking to encourage more retail development within city limits to serve the many residents who currently travel outside the city for their shopping needs.

### **DEMOGRAPHICS**

The multi-state metropolitan region is large and diverse. The U.S. Census Bureau estimates its 2018 population at 23.6 million.<sup>7</sup> While New York City is famous for its diversity, the entire region is ethnically and racially diverse, with large communities hailing from all over the world. Nearly 37 percent of the region's population in 2018 was born outside the United States.<sup>8</sup> In 2018, the total size of the region's work force was 9,780,299,<sup>9</sup> with the largest shares of jobs in educational and health services; professional and business services and trade; transportation and utilities; and leisure and hospitality.<sup>10</sup>

## **2.2.2 TRANSPORTATION SYSTEM**

The transportation system of the multi-state metropolitan region is large, complex, and aging, and is tied together by a network of highways, rail lines, bridges, tunnels, and other infrastructure. As the largest metropolitan area in the nation, the multi-state region is traversed by numerous major limited access highways and rail lines that are described below.

### **ROADWAYS**

Major roadways include Interstate highways I-78, I-80, and I-280, which extend from New York City west into Pennsylvania; I-87, which becomes the New York Thruway between New York City and Albany; I-95, a north-south highway of which a portion is the New Jersey Turnpike; and I-495, known as the Long Island Expressway.

### **BRIDGES AND TUNNELS**

Bridges and tunnels are common throughout the multi-state region to carry roadways and rail lines across or under the large numbers of islands, rivers, and other geographic features in the multi-state metropolitan region.

### **RAIL FACILITIES**

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

### **PORT FACILITIES**

Maritime freight facilities at the Port of New York Maritime freight facilities are located at the Port of New York and New Jersey and reliever ports in Bridgeport, New Haven, and New London.

### **AIRPORTS**

The multi-state region is served by four major commercial airports: John F. Kennedy International Airport (JFK Airport) in southern Queens, Newark Liberty International Airport (Newark Airport) in Newark, LaGuardia Airport in northern Queens, and Bradley International Airport outside Hartford. A variety of smaller commercial and general aviation airports also service the area, including Lehigh Valley International Airport in Lehigh County, Pennsylvania; Long Island MacArthur Airport in Suffolk County, New York; Westchester County Airport in Westchester County, New York; Stewart International Airport in Orange County, New York; Trenton-Mercer Airport in Mercer County, New Jersey; and Tweed New Haven Regional Airport in New Haven, Connecticut.



### 2.2.3 METROPOLITAN TRAVELSHED

*Figure 2-6* is a representation of the daily metropolitan travelshed in the multi-state region. Daily transit and highway trips estimates are shown for 2017 and forecasted to the 2045 horizon year within and between six subregional areas: northern and central New Jersey, New York City, Long Island, southwestern Connecticut, the Lower Hudson Valley, and the Mid-Hudson Valley. These estimates are derived from the 28-county New York Best Practice Model (NYBPM), a four-step transportation demand model maintained by NYMTC.

*Figure 2-6* demonstrates that most current and future trips are and will be within these six subareas, with the greatest volume of daily intra-area trips being made in northern and central New Jersey, in New York City, and in Long Island. By far, the greatest number of daily transit trips made within a subarea are and will be in New York City.

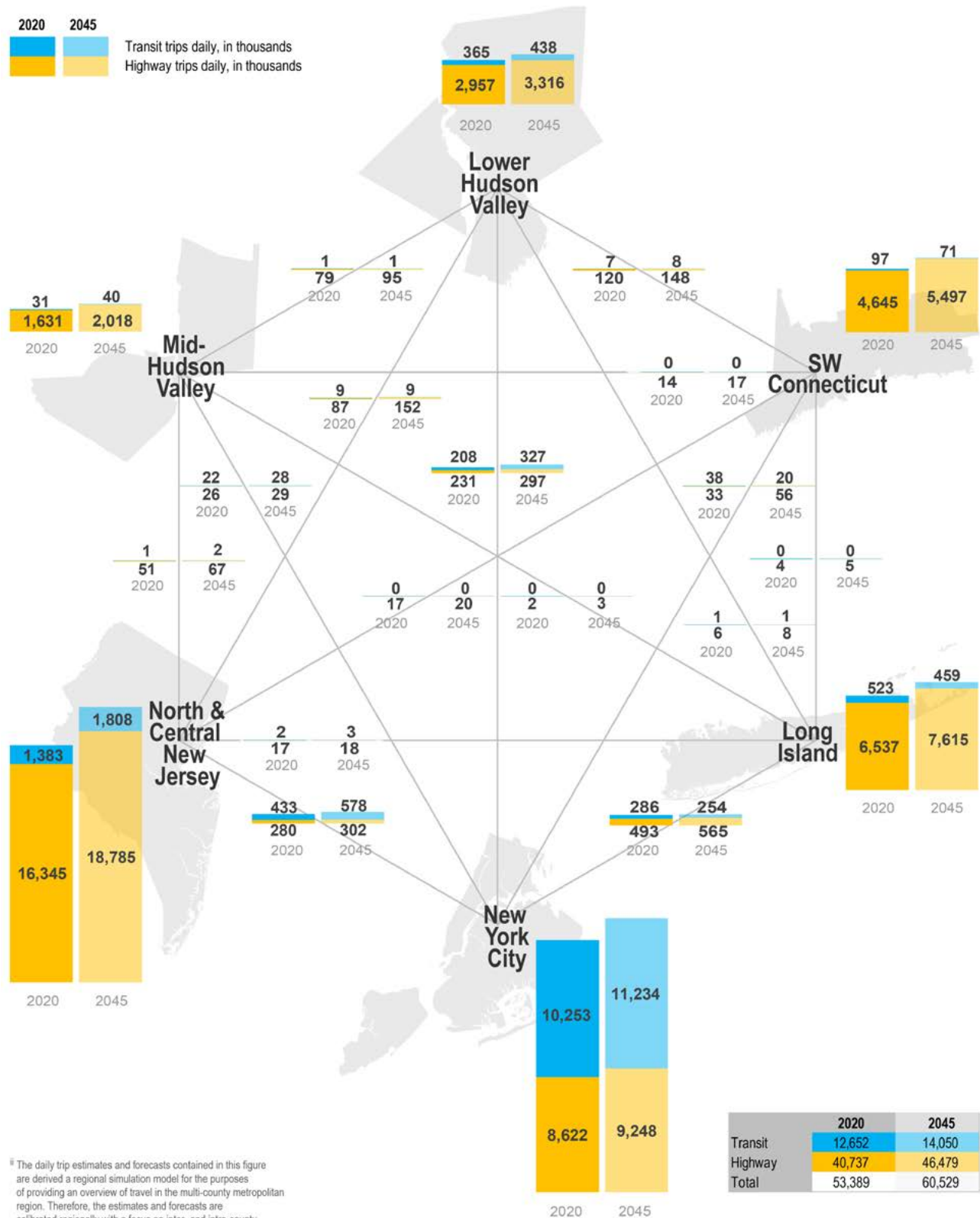
In terms of daily trips made between the subareas, most of these inter-area trips are made between New York City and northern and central New Jersey, between New York City and Long Island, and between New York City and the Lower Hudson Valley. These three sets of inter-area trips also feature significant proportions of transit trips.

The core of the multi-state metropolitan region is notable for its enormous mass transit system. 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. New York City is served by an intensively used subway and bus system, and its more immediate suburban neighbors are served by commuter rail and local bus systems. Intercity travel is provided by Amtrak, long-haul buses, and air travel facilities. The region is the busiest airspace in the United States, serving more than 140.5 million passengers annually.<sup>11</sup>



Figure 2-6  
Multi-State Metropolitan Travelshed

Source:



\* The daily trip estimates and forecasts contained in this figure are derived a regional simulation model for the purposes of providing an overview of travel in the multi-county metropolitan region. Therefore, the estimates and forecasts are calibrated regionally with a focus on inter- and intra-county travel, not for individual travel corridors and sectors.

## 2.2.4 TRANSPORTATION INVESTMENTS

As a result of the continued growth of the region and the aging state of many key pieces of infrastructure that require renewal, several regionally significant improvements to the transportation infrastructure are either planned or moving forward in the multi-state metropolitan region. Major New York City-focused projects include the second phase of the Second Avenue Subway in Manhattan, various trans-Hudson River rail and vehicular crossing improvements, and commuter rail improvements.

A range of projects in the multi-state metropolitan region are designated as “boundary projects” whose impacts cut across planning areas and state lines.

Examples include:

- **The Penn Station (New York) Access project** that would provide direct access for the MTA MNR New Haven Line to Penn Station and create four new neighborhood stations in eastern Bronx.
- **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, New York, where it connects to the MTA MNR Harlem Line.
- **I-95 Improvement Projects** 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.
- **Various improvement projects along I-84** in Connecticut and the Hudson Valley, including a complete replacement of the I-84/Route 8 interchange in Waterbury.
- **The Route 1 Bus Rapid Transit Project** in the heavily traveled Route 1 corridor between the New York State line and New Haven.
- **West-of-Hudson transit improvements**, including improvements to the Port Jervis Line in Orange County, New York.
- **The replacement of the Lincoln Tunnel Helix** in Weehawken, New Jersey.
- **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 Amtrak 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 replacement of the **Port Authority Bus Terminal, the redevelopment of Penn Station, and the completion of Moynihan Station** on Manhattan’s west side.
- **The Cross-Harbor Freight Program** for rail freight across New York Harbor.
- **Airport access improvements**, including the extension of the Port Authority Trans-Hudson rail service to Newark Airport, the extension of Air Train service to LaGuardia Airport, and transit and roadway improvement for JFK Airport.

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, and several major projects are dedicated to freight in the region. For example, the Port Authority’s Cross Harbor Freight Program is working 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. After review, the enhanced railcar float and double-track rail tunnel emerged as the preferred alternatives.

## 2.2.5 THE TRANSPORTATION SYSTEM IN THE NYMTC PLANNING AREA

The transportation system in the NYMTC planning area includes critical components of regional and national transportation networks. The system is one of the oldest, most complex, and highly used in the world, for both people and goods. On a typical weekday, the system accommodates millions of passenger trips and thousands of tons of freight shipments. 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. Additionally, the Port of New York and New Jersey serves a vital role 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; hundreds 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 successful rail-to-airport links in the country
- As of 2019, 1,301 lane miles of bike lanes installed in New York City, ranging from shared-use bicycle trails to on-road bicycle lanes, in addition to pedestrian sidewalks, trails, and paths<sup>12</sup>
- More than 50,000 lane miles of roads and highways, including more than 30 major bridges crossing navigable waterways, 4 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 plazas, signage, signals, electronics, and other equipment

## 2.2.6 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.<sup>13</sup>

### RAPID RAIL/SUBWAY

Components include:

- **The MTA NYCT subway system** operates more than 6,684 subway cars on 27 routes, spanning 665 mainline track miles and 472 stations. In 2019, annual subway ridership increased to 1.698 billion, and average weekday ridership was 5.5 million.<sup>14</sup>
- **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, 4 track miles of yard and non-revenue track, 54 mainline switches, 2 support and maintenance shops, 29 bridge structures, and 9 power substations. In 2019, the Staten Island Railway served 4.6 million customers.
- **Port Authority, PATH** is a rapid rail system comprising 4 service routes and 13 stations in Manhattan, Hoboken, Jersey City, Harrison, and Newark. The PATH system operates 24 hours a day, 7 days a week; since 2019, it has transported more than 82.2 million passengers a year.<sup>15</sup>



## 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 round-the-clock bus service in New York City via 234 local, 20 Select Bus Service (SBS), and 73 express routes. In 2019, these two bus divisions served more than 2.2 million customers on an average weekday and 678 million over the course of the year.<sup>16</sup> All MTA and NYCT bus fleets 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 24 hours a day, 7 days a week, 365 days a year. In 2019, the paratransit service completed 679,000 trips, and with a total ridership of 929,000.
- **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 greenhouse gas emissions.

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. Seventeen 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, NYC DOT, as part of its Better Buses initiative, 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 reengineered as community shuttles offering better, more frequent service during peak hours and doubling as paratransit transit vehicles during off-peak hours.

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 and into southeastern Nassau County. It operates a fleet of 113 buses and 235 cutaway buses, serving nearly 4.28 million passengers on fixed-route transit.<sup>17</sup> Suffolk County Transit also provides Suffolk County Accessible Transportation (SCAT), a curb-to-curb paratransit service of 180 gasoline and diesel-powered wheelchair lift-equipped buses servicing 700,000 passengers per year.
- **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 own four-route bus system, called Huntington Area Rapid Transit.



## LOWER HUDSON VALLEY SERVICES

- **PART** consists of four 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. 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 transportation system.
- **TOR** is Rockland County's fixed-route bus service comprising 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, CoachUSA/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. All Bee-Line System routes serving the Bronx connect with NYCT subway and bus terminals. In 2019, the Bee-Line fixed-route system had annual ridership of 26.4 million or approximately 100,000 trips each weekday. The Bee-Line System operates fixed-route service with 325 buses of varying types and sizes, including 78 hybrid electric buses. Westchester County also has plans to introduce all-electric vehicles into the fleet. All Bee-Line buses are fitted with exterior bicycle racks. Bee-Line ParaTransit provides ADA-accessible vehicles for eligible riders. Westchester County provides paratransit service county-wide, and Bee-Line ParaTransit also provides a car-for-hire service for certain trips. Paratransit service operates with approximately 100 vehicles for 7,200 registered eligible passengers making approximately 1,400 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.
- **NYS DOT** 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.

## COMMUTER BUS

New York City is a central destination for commuter bus services carrying passengers from as close as Hudson County, New Jersey, 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.

NJ Transit provides commuter bus service to the Port Authority Bus Terminal and the George Washington Bus Station 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. A major bus holding company, Coach USA, operates numerous commuter bus services into New York City. Coach USA also operates the Orange-Westchester Link under contract with NYSDOT. The Orange-Westchester Link provides bus service between Monroe and White Plains, New York. Rockland Coaches, which is owned by Coach USA, operates bus routes in Rockland County, New York, and Bergen County, New Jersey, 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 the Port Authority Bus Terminal, Lower Manhattan, and Brooklyn; Saddle River Tours/AmeriBus, providing service to the George Washington Bus Station; 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 in Orange and Dutchess counties, as well as between Poughkeepsie and White Plains.

Commuters from exurban communities in the multi-state 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, Connecticut, MTA began a shuttle bus between New Fairfield, Connecticut, and the MNR station in Southeast, New York. The service provides 5 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: MTA LIRR, MTA MNR, and NJ Transit. MTA LIRR and MNR are subsidiaries of MTA. Compared to subway service, commuter rail services offer inter- and intra-regional 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 busiest commuter railroad in North America, with an annual ridership of 91.1 million customers in 2019. The MTA LIRR system comprises approximately 700 miles of track situated on 11 different branches, stretching 120 miles from Montauk on the eastern tip of Long Island to Penn Station in midtown Manhattan, Atlantic Terminal in Brooklyn, and Hunterspoint Avenue in Queens.
- **MTA MNR** services 124 stations distributed across five lines in seven counties in New York State—Dutchess, Orange, Putnam, Rockland and Westchester counties in the Hudson Valley and the Bronx and Manhattan in New York City—as well as two counties in Connecticut: New Haven and Fairfield. MTA 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. Total MTA MNR annual rail ridership in 2019 was 86.6 million, which was slightly above the 2018 total of 86.5 million. Service in Rockland and Orange counties—the Pascack Valley Line and the Port Jervis Line—are operated by NJ Transit under contract to MNR.
- **NJ Transit** is a statewide public benefit corporation that operates commuter rail service to/from Manhattan via Penn Station.



## 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, NY Waterway, BillyBey, NY Water Taxi, and Seastreak. Ferries access terminals at St. George Terminal in Staten Island, Whitehall Terminal, Battery Park City, and World Financial Center in Lower Manhattan, and various terminals on the East and West sides of Midtown. In 2019, New York City ferries served 6.3 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. The ferry carries approximately 25 million passengers annually on its 5.2-mile run. Nine boats make 117 weekday trips between the 2 terminals, and 96 trips each day on Saturdays and Sundays.<sup>18</sup> In recent years, the Staten Island Ferry has transitioned to burning ultra-low sulfur fuel and embarked upon a fleet-wide emissions reductions program with the installation of various technologies.
- **Three companies (NY Waterway, Seastreak, and Liberty Landing Ferry)** operate the trans-Hudson ferry routes in public-private partnership, mostly using publicly owned terminals. These three companies currently operate 19 trans-Hudson ferry routes, operating between 12 New Jersey terminals and 4 Manhattan terminals. Of the 19 routes, 16 routes 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 the Lower Hudson Valley Ferry Service between the Village of Haverstraw in Rockland County and the MTA MNR station in the Village of Ossining in Westchester County. The Haverstraw-Ossining Ferry operates 14 weekday trips during morning and evening peak hours, providing 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 as well as from Port Jefferson on the North Shore to Bridgeport. Other Long Island ferries connect Shelter Island with Greenport and North Haven, and Montauk with Block Island, Rhode Island, and New London. An additional ferry connects Fishers Island, New York, to New London. Improvements will be made at the Bay Shore Terminal and the Ocean Beach Terminal on Fire Island.

## SHARED MOBILITY

Shared mobility can be defined as transportation services and resources that are shared among users, either concurrently 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 represents a conjunction of transportation services and resources available to travelers on a pay-per-use basis. As noted by FHWA, the growing ubiquity and use of smartphone and internet-based platforms facilitates shared mobility and multimodal transportation options more broadly.

## 2.2.7 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, the Bronx-Whitestone Bridge, and the Throgs Neck Bridge.

Additionally, four major underwater vehicular tunnels provide intra- and inter-regional 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.





## 2.2.8 NON-MOTORIZED 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 2014–2018, 4.07 percent (245,098) of daily commuters in the region either walk or ride a bicycle as a means of travel to work. Most of these trips, 3.2 percent (192,644) of commuting trips, were walking trips while bicycle trips represented 0.87 percent (52,454) of all commuting trips in the region.<sup>19</sup>

The NYMTC planning area has seen the development of more than 70 miles of shared-use paths and greenways, 175 miles of on-street bike lanes, many miles of sidewalks and hiking trails, and bike share and electric scooter rentals. The region is home to more than 500 miles of existing protected on-street bike lanes. Between 2013 and 2018, the number of people who bicycled to work in New York City grew nearly two times faster than other major cities; daily bicycle trips now exceed 510,000, which is an increase of 35 percent over the last five years.

In 2019, NYC DOT as part of the Vision Zero Initiative released a new long-term citywide vision, Green Wave, a plan aimed at both improving cyclist safety and creating a more convenient and enjoyable and equitable riding experience.<sup>20</sup> As part of the plan, NYC DOT has committed to increasing the mileage of protected bicycle lanes it installs annually, from approximately 20 miles to 30 miles. Since 2014, New York City has increased the miles of bicycle lanes by more than a quarter from 911 to 1,301, including 501 lane miles of protected lanes installed in New York City as of 2019.<sup>21</sup>

Suffolk County has 571 miles of hiking and walking trails, and 47 miles of shared-use paths.<sup>22</sup> Sidewalks exist in each of the 10 towns in Suffolk County and are primarily located in more densely populated areas close to downtowns and central business districts. Suffolk County has 358 miles of on-road bicycle routes including 109 miles of on-road bicycle lanes. Additionally, Suffolk County has 60 miles of mountain biking trails.

The NYSDOT Long Island Region (Region 10) has 128 miles of on-road bicycle routes and 40 miles of off-road shared use paths 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 nearly 73 miles of shared-use paths. Additionally, Nassau County has nearly 20 miles of significant hiking trails. A compilation of bicycle facilities by ownership is provided in the [Pedestrian-Bicycle Element \(Appendix B\)](#).

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. Nassau County is also planning for the launch of a regional bike share program that aims to expand mobility and first-last mile connectivity between various destinations, including transit stops, jobs, schools, health care, restaurants, retail, parks, museums, and cultural facilities.

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 county-wide trail network connecting employment centers, downtowns, schools, and parks.

Putnam County has an 11.85-mile-long paved bicycle and pedestrian path known as the Putnam Trailways. This facility is located primarily within the right-of-way of the former Putnam Division of the New York Central Railroad. The Trailways begins at the Westchester County border and is an extension of the North County Trailways, which is 22 miles long.

## 2.2.9 GOODS MOVEMENT

[Chapter 4 of Appendix H, 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 therefore link to:

1. Freight-generating facilities such as manufacturing and resource-extraction facilities;
2. Freight-handling facilities such as JFK Airport and other intermodal terminals and warehouses/distribution centers; and
3. Routes that can accommodate large and heavy loads to support emergency response.

Most of the rail freight activity within the multi-state 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, and liquids. Three Class I railroads operate in the multi-state 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 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/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 fleetings or storage areas, and maritime support services such as repair, refueling, and drydocking.

Of the larger New York area airports in the NYMTC planning area—JFK 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 one of the top air cargo gateways in the country. LaGuardia Airport, while handling significant domestic passenger traffic, does not handle any 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 Airport and Stewart International Airport, both of which have significant air cargo volumes but are outside the NYMTC planning area.



## 2.2.10 AVIATION

### AIRPORTS

The Port Authority operates the busiest airport system in the Americas, serving nearly 139 million passengers and handling more than 2.3 million tons of cargo in 2019.

The Port Authority operates five airports:

- **JFK Airport** is one of the world's most iconic aviation facilities and the metropolitan region's busiest airport with more than 62 million annual passengers. JFK is the number one U.S. gateway for international travelers and handles the bulk of the region's air cargo.
- **Newark Airport**, which is adjacent to NYMTC's planning area in northern New Jersey, currently ranks 12th in passenger traffic with more than 46 million annual passengers in 2019. It is also the region's small-package hub.
- **LaGuardia Airport** is the region's premier short-haul domestic airport with more than 30.1 million passengers in 2019. 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** is the gateway to the Hudson Valley, serving 0.69 million passengers in 2018.<sup>23</sup>
- **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 hearts and other human organs used for life-saving transplant operations performed at medical centers throughout the region.

Another relevant airport in the NYMTC planning area is Westchester County Airport, a county-owned airport classified as a small hub airport by the Federal Aviation Administration. In 2018, enplanements at Westchester County Airport numbered 789,283; deplanements totaled 771,398. This airport serves the Lower Hudson Valley and southwestern Connecticut.

### 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, and public safety operations.



## 2.2.11 OTHER TRANSPORTATION MODES

### TAXIS AND FOR-HIRE VEHICLES

In New York City, the New York City Taxi and Limousine Commission licenses more than 130,000 vehicles that collectively transport over a million passengers each day. Several taxi services exist in the counties outside New York City (e.g., 9 taxi companies in Putnam County and 33 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. On June 29, 2017, New York State legislation took effect allowing ride-hailing companies to provide services statewide.<sup>24</sup> The rapid growth of Transportation Network Companies (TNCs) 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, Massachusetts; and Lancaster, Pennsylvania; and more distant locations like Arlington and Norfolk, Virginia; Atlanta, Georgia; 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. 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, a Coach USA brand started in 2006, and BoltBus, owned by Greyhound Lines. Megabus and BoltBus 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. Both Megabus and BoltBus depart from locations near the Jacob K. Javits Center. “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 outside boroughs to the Washington, D.C., and the Boston area. Lucky Star and FlixBus also offer services to Washington, D.C., and Boston at a lower rate.

OurBus relaunched a direct New York–metropolitan Boston route formerly operated by Coach Company, now one of its partners, serving Worcester, Methuen, and Lowell, Massachusetts. 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, Massachusetts; Providence, Rhode Island; and New York.<sup>25</sup>

### 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 nearly 10 million Amtrak passengers beginning or ending their trips in 2018.



Amtrak's services include:

- **Acela/Northeast Regional Service** between Boston and Washington, D.C., Acela service uses a dedicated fleet of trains to provide higher-speed express service along the corridor, while Northeast Regional trains use standard Amtrak equipment and generally make more stops. Amtrak's Northeast Regional and Acela services carried approximately 12.1 million passengers in 2018.
- **Empire Corridor Service** between New York City and Albany with daily service to Buffalo and Niagara Falls.
- **Northeast Corridor through Services** to, from, or through Penn Station that travel 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 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 more than 6,000 people per day between two stations, ending fiscal year March 2020 (March) with a total ridership of more than 2.3 million, an increase from the prior fiscal year (March 2019) ridership of 2.25 million.

### 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, Brooklyn and the Bronx. Both Gray Line and City Sights tours' uptown loops now include the Bronx, Harlem, and Brooklyn. The bus tour industry has also expanded to include topic-specific tours, often centered on popular TV shows, local foods, or specific cultural sites.



# ENDNOTES

- 1 U.S. Census Bureau. 2018. American Community Survey, 2018 American Community Survey. Table ID: S0101 Product: 2018: ACS 5-Year Estimates. [data.census.gov](https://data.census.gov).
- 2 U.S. Census Bureau. 2018. American Community Survey, 2018 American Community Survey. Table ID: S0501 Product: 2018: ACS 5-Year Estimates. [data.census.gov](https://data.census.gov).
- 3 U.S. Bureau of Economic Analysis. 2018. [www.bea.gov/data/gdp](https://www.bea.gov/data/gdp).
- 4 U.S. Bureau of Economic Analysis. 2018. CAGDP2 Gross domestic product (GDP) by county and metropolitan area. <https://apps.bea.gov>.
- 5 American Enterprise Institute. Perry, J. Mark. February 28, 2019. Putting America's huge \$20.5T economy into perspective by comparing US state GDPs to entire countries. <https://www.aei.org/carpe-diem/putting-america-enormous-20-5t-economy-into-perspective-by-comparing-us-state-gdps-to-entire-countries-2/>.
- 6 Oxford Economics. 2018. *Which cities will be leading the global economy in 2035?* <https://resources.oxfordeconomics.com/global-cities-2035>.
- 7 U.S. Census Bureau. 2018. American Community Survey, 2018 American Community Survey: Table ID: S0101 Product: 2018: ACS 5-Year Estimates. [data.census.gov](https://data.census.gov).
- 8 U.S. Census Bureau. 2018. American Community Survey, 2018 American Community Survey: Table ID: S0101 Product: 2018: ACS 5-Year Estimates. [data.census.gov](https://data.census.gov).
- 9 U.S. Census Bureau. 2018. American Community Survey, 2018 American Community Survey Table ID: S0101.
- 10 Office of the New York City Comptroller Scott M. Stringer. March 6, 2020. NYC quarterly economic update. <https://comptroller.nyc.gov/reports/new-york-city-quarterly-economic-update/>.
- 11 Port Authority New York and New Jersey. 2019. *2019 Airport Traffic Report*. <https://www.panynj.gov/content/dam/airports/statistics/statistics-general-info/annual-atr/ATR2019.pdf>.
- 12 City of New York Department of Transportation. 2019. *Cycling in the city*. <https://www1.nyc.gov/html/dot/html/bicyclists/cyclinginthecity>.
- 13 MTA New York City Transit. <http://web.mta.info/mta/network.htm>.
- 14 MTA New York City Transit. *Subway and bus facts 2019*. <https://new.mta.info/agency/new-york-city-transit/subway-bus-facts-2019>.
- 15 Port Authority of New York and New Jersey. 2018. <https://www.panynj.gov/path/en/about.html>.
- 16 MTA. *Subway and Bus Facts*. April 14, 2020. <https://new.mta.info/agency/new-york-city-transit/subway-bus-facts-2019>.
- 17 Suffolk County Government. June 2018. *Mobility study. Strategies for Suburban Transportation*. [https://www.suffolkcountyny.gov/Portals/0/formsdocs/ecodev/Suffolk%20County%20Mobility%20Study\\_Final%2020180702\\_optimized\\_TIFF%20cover.pdf?ver=2018-10-20-112215-423](https://www.suffolkcountyny.gov/Portals/0/formsdocs/ecodev/Suffolk%20County%20Mobility%20Study_Final%2020180702_optimized_TIFF%20cover.pdf?ver=2018-10-20-112215-423).
- 18 City of New York Department of Transportation. 2020. *Staten Island ferry facts*. <https://www1.nyc.gov/html/dot/html/ferrybus/ferry-facts.shtml>.
- 19 U.S. Census Bureau. 2018. American Community Survey Journey to Work 2018.
- 20 NYC DOT. July 2019. *Green Wave: A Plan for Cycling in NYC*. New York. <https://www1.nyc.gov/html/dot/downloads/pdf/bike-safety-plan.pdf>.
- 21 NYC DOT. July 2020. *Cycling in the City. Cycling Trends in NYC July 2020* [PowerPoint slides]. <https://www1.nyc.gov/html/dot/downloads/pdf/cycling-in-the-city-2020.pdf>.
- 22 Suffolk County. 2020. *Hike and Bike Plan, 2020*. [https://www.connectli.org/docs/Suffolk%20County%20Hike%20Bike%20Master%20Plan\\_FinalReport.optimized.pdf](https://www.connectli.org/docs/Suffolk%20County%20Hike%20Bike%20Master%20Plan_FinalReport.optimized.pdf).
- 23 Port Authority of New York and New Jersey. 2018. <https://www.panynj.gov/content/dam/airports/statistics/statistics-general-info/annual-atr/ATR2018.pdf>.
- 24 New York State Department of Motor Vehicles. June 27, 2017. DMV announces approval for Lyft and Uber to offer ride sharing services in Upstate New York and on Long Island. *More than 20,000 Drivers to Take Part in the Initial Launch on Thursday*. [Press release] <https://dmv.ny.gov/press-release/press-release-06-28-2017-0>.
- 25 Schwieterman, J. P., & Antol, B. 2020. *MAKING CONNECTIONS 2020 Outlook for the Intercity Bus Industry in the United States*. The Chaddick Institute. [https://las.depaul.edu/centers-and-institutes/chaddick-institute-for-metropolitan-development/programs/Documents/Bus%20Study%202020\\_official.pdf](https://las.depaul.edu/centers-and-institutes/chaddick-institute-for-metropolitan-development/programs/Documents/Bus%20Study%202020_official.pdf).