

1. Introduction

1.1 OVERVIEW

Traffic congestion has been a problem in the Manhattan Central Business District (Manhattan CBD) for many years.¹ While traffic in the Manhattan CBD decreased during the height of the COVID-19 pandemic, volumes have nearly reached pre-pandemic levels and congestion has returned to Manhattan's streets.² Indeed, in 2020 and 2021, New York City's traffic congestion ranked worst among United States cities, with last-mile speeds in the Manhattan CBD of only 12 mph (Figure 1-1).^{3, 4} At the same time, and as a way to further reduce congestion, the modernization of the Metropolitan Transportation Authority's (MTA's) commuter rail, subway, and bus network is necessary to create a faster, more accessible, and more reliable transportation network for the New York City region's residents, commuters, and visitors.

State and City of New York officials and stakeholder and advocacy groups have conducted multiple studies over the past 45 years to determine the most effective way to address congestion in the Manhattan CBD. These studies overwhelmingly pointed to congestion pricing, or introduction of tolls or fees for drivers, as the most effective tool.⁵ Many studies also identified congestion pricing as a means to generate funds for transit investments in MTA's network. A study by the Lund University Center for Sustainability Studies in Sweden confirms these conclusions, finding that a congestion charge is a highly effective means to reduce vehicular congestion, especially in combination with strategies for parking and traffic control; car sharing; and programs to discount transit for work, school, or personal trips.⁶

The New York City Department of Transportation (NYCDOT), MTA, and other transportation agencies have implemented programs to increase mobility and improve accessibility in the Manhattan CBD by nonvehicular modes and to reduce vehicular congestion. Private companies have collaborated with NYCDOT to establish car-share, scooter-share, and bicycle-share programs. NYCDOT has repurposed

Figure 1-1. Most Congested Urban Areas (2021)

| United States |
|------------------------|
| 1. New York, NY |
| 2. Chicago, IL |
| 3. Philadelphia, PA |
| 4. Boston, MA |
| 5. Miami, FL |

Source: INRIX, 2021

¹ As defined by the MTA Reform and Traffic Mobility Act ("Traffic Mobility Act"), the Manhattan CBD consists of the geographic area of Manhattan south of and inclusive of 60th Street to the extent practicable but does not include the Franklin D. Roosevelt (FDR) Drive and the West Side Highway/Route 9A, including the Battery Park Underpass and any surface roadway portion of the Hugh L. Carey Tunnel that connects to West Street (the West Side Highway/Route 9A).

² Metropolitan Transportation Authority Day-by-Day Ridership Numbers. <https://new.mta.info/coronavirus/ridership>.

³ INRIX 2020 Global Traffic Scorecard. <https://inrix.com/press-releases/2020-traffic-scorecard-us/>.

⁴ INRIX 2021 Global Traffic Scorecard. <https://inrix.com/scorecard-city/?city>New%20York%20City%20NY&index=5>.

⁵ Refer to Appendix 2A, "Project Alternatives: Previous Studies and Concepts Considered," for a description of studies and congestion pricing proposals prepared since 1973.

⁶ Von Arnold, Cecilia. April 26, 2022. "The most effective ways of reducing car traffic," Lund University Center for Sustainability Studies. <https://www.lucus.lu.se/article/most-effective-ways-reducing-car-traffic>.

curbside parking to establish bicycle lanes and to increase pedestrian space with sidewalk and corner bump outs. It has also converted curbside lanes and general-purpose traffic lanes to dedicated bus lanes on certain Manhattan avenues and east–west, crosstown streets. Additionally, MTA and other transit agencies offer reduced transit fares for the elderly, disabled, and school-aged children, and in early 2022, MTA implemented Fare Capping as part of its new fare system roll out (OMNY), which allows free, unlimited rides to customers the rest of the week once they have spent \$33 (the same as taking 12 trips). Many employers participate in a Federal program that allows employees a tax-free deduction for money used to purchase transit fares, and many companies have adopted flexible work schedules, including options to work remotely. Despite these various initiatives that should reduce vehicular traffic in the Manhattan CBD, and despite the existence in this region of the three largest commuter railroads in the United States, the largest bus system, and the largest subway system (the latter two of which operate 24 hours a day, 7 days a week, every day of the year), congestion persists.

Therefore, the Triborough Bridge and Tunnel Authority (TBTA), an affiliate of MTA; the New York State Department of Transportation (NYSDOT); and NYCDOT (collectively, the Project Sponsors) are proposing a program, known as the Central Business District Tolling Program (CBD Tolling Program or the Project), to address congestion.⁷ The Project purpose is to reduce traffic congestion in the Manhattan CBD in a manner that will generate revenue for future transportation improvements, pursuant to acceptance into the Federal Highway Administration’s (FHWA’s) Value Pricing Pilot Program (VPPP). The Project would address the need to reduce vehicle congestion in the Manhattan CBD and create a new local, recurring funding source for MTA’s capital projects.

The Project Sponsors are seeking approval of the Project from FHWA under its VPPP, which is a program “intended to demonstrate whether and to what extent roadway congestion may be reduced through application of congestion pricing strategies, and the magnitude of the impact of such strategies on driver behavior, traffic volumes, transit ridership, air quality and availability of funds for transportation programs.”⁸ Through this program, FHWA can provide tolling authority to state, regional, or local governments to implement congestion pricing.⁹ Such approval is sought because certain streets within the Manhattan CBD are part of the National Highway System (**Figure 1-2**) and, in some instances, have been improved with Federal funding through FHWA. When FHWA reviews a Project Sponsor’s application to the VPPP, it must evaluate the potential effects of the proposed action in accordance with the National Environmental Policy Act (NEPA).

⁷ In April 2019, New York State enacted the Traffic Mobility Act, authorizing TBTA to establish the CBD Tolling Program. For more information see **Appendix 2B, “Project Alternatives: MTA Reform and Traffic Mobility Act.”**

⁸ Federal Highway Administration (FHWA). “Value Pricing Pilot Program.” https://ops.fhwa.dot.gov/congestionpricing/value_pricing/index.htm.

⁹ Ibid.

Figure 1-2. Manhattan CBD, National Highway System Arterials, and Routes into the Manhattan CBD



Source: ArcGIS Online, <https://www.arcgis.com/index.html>.

FHWA, in consultation with the Project Sponsors, has prepared this Environmental Assessment (EA) in accordance with NEPA and the NEPA implementing regulations promulgated by the Council on Environmental Quality (40 Code of Federal Regulations [CFR] Parts 1500 through 1508 and 1515 through 1518) and FHWA (23 CFR Part 771). FHWA is serving as the lead Federal agency for the NEPA review. The Project is being progressed as a NEPA Class III (EA) action under 23 CFR Part 771. NEPA Class III actions are those in which the significance of the environmental impact is not clearly established. This EA has been prepared to determine if the Project is likely to have a significant impact on the built and natural environment, thereby requiring the preparation of an Environmental Impact Statement.

1.2 PROJECT SETTING

New York City is the center of a large metropolitan region that includes portions of three states: New York, New Jersey, and Connecticut. The metropolitan region is the largest in the United States, with 22.2 million people and more than 10.7 million jobs. Within this region, New York City is the economic hub, with roughly 4.6 million (43 percent) of the region's jobs and 8.4 million (38 percent) of the region's population.^{10, 11} For this study, the New York region comprises 28 counties, consisting of 12 counties in New York State (including the 5 counties that form New York City), 14 counties in New Jersey, and 2 counties in Connecticut.¹² **Figure 1-3** shows the regional study area.

Although New York City and the metropolitan region are home to multiple commercial districts, the traditional center for economic activity has been and continues to be Manhattan, particularly the commercial districts in Midtown (generally the area between 14th and 59th Streets) and Lower Manhattan (generally the area south of Canal Street). As defined for this Project, the Manhattan CBD consists of the geographic area of Manhattan south of and inclusive of 60th Street to the extent practicable but does not include the Franklin D. Roosevelt (FDR) Drive and the West Side Highway/Route 9A, including the Battery Park Underpass and any surface roadway portion of the Hugh L. Carey Tunnel that connects to West Street (the West Side Highway/Route 9A) (see **Figure 1-2**).

¹⁰ U.S. Census Bureau. American Community Survey, 2015–2019.

¹¹ U.S. Census Bureau, 2012–2016 Census Transportation Planning Package.

¹² The 28-county regional study area consists of Bronx, Dutchess, Kings (Brooklyn), Nassau, New York (Manhattan), Orange, Putnam, Queens, Richmond (Staten Island), Rockland, Suffolk, and Westchester Counties in New York; Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren Counties in New Jersey; and Fairfield and New Haven Counties in Connecticut.

Figure 1-3. Regional Study Area

Source: ArcGIS Online, <https://www.arcgis.com/index.html>.

1.2.1 Regional Development Patterns

An island, Manhattan is separated from New Jersey by the Hudson River, from Brooklyn and Queens by the East River, from the Bronx by the Harlem River, and from Staten Island by New York Harbor. The Manhattan CBD is characterized by the following:

- Its skyline
- Cultural destinations (e.g., Theater District, World Trade Center Memorial and Museum, and Museum of Modern Art)
- Financial institutions (e.g., Wall Street and Midtown's business districts)
- Shopping districts (e.g., Fifth Avenue and Herald Square)
- Colleges and universities (e.g., New York University, The New School, the Fashion Institute of Technology)

The Manhattan CBD is not only a destination for business and commerce, but also home to about 617,000 residents.¹³ Many residents of the Manhattan CBD live in mid-rise and high-rise apartment buildings; there are also several neighborhoods with lower density loft buildings, townhouses, rowhouses, and tenement housing such as Soho, Greenwich Village, the East Village, Chelsea, and Hell's Kitchen.

Upper Manhattan is more residential in character than the Manhattan CBD. The Upper West Side and Upper East Side neighborhoods border the Manhattan CBD as does Central Park. Like the Manhattan CBD, Upper Manhattan is characterized by a mix of land uses, although more residential and institutional uses are present in Upper Manhattan than the Manhattan CBD. Upper Manhattan also contains large public parks of a scale not found in the Manhattan CBD, including Central Park, Riverside Park, Morningside Park, and Highbridge Park.

Queens and Brooklyn, part of New York City and the largest boroughs in terms of land mass, are across the East River. While the neighborhoods in these boroughs are generally not as dense as Manhattan, some areas include substantial high-rise development (e.g., Long Island City, Downtown Brooklyn), and most neighborhoods are urban in character with mid-rise apartment buildings, brownstones, townhouses, and single-family houses on small lots. These boroughs are home to important transportation and entertainment destinations for the region (e.g., John F. Kennedy and LaGuardia Airports, Barclays Center, Citi Field, U.S. Tennis Center, Belmont Park, Coney Island). Nassau and Suffolk Counties, which are typically referred to as Long Island, lie east of Queens.

Toward the north, the Bronx is one of the most densely populated and poorest counties in the United States. Neighborhoods nearest Manhattan tend to have mid-rise to high-rise apartment buildings, and areas more distant from Manhattan and along the Hudson River tend to have single-family housing. Entertainment, educational, and cultural institutions in the Bronx include Yankee Stadium, the New York

¹³ U.S. Census Bureau. American Community Survey, 2015–2019.

Botanical Garden, Bronx Zoo, and Fordham University. The Bronx has several large industrial and warehousing areas, and it is crossed by many interstate highways and arterial roadways that carry heavy volumes of traffic, including trucks. Westchester County borders the Bronx to its north.

Geographically isolated from the rest of New York City, Staten Island is the smallest borough in terms of population. It has much lower population density than the other boroughs of New York City, and its residential and commercial development patterns are characteristic of the suburbs. No roadway connects Staten Island and the Manhattan CBD so drivers from Staten Island must travel through Brooklyn or New Jersey to reach Manhattan.

Hudson County, New Jersey, contains multiple cities, such as Hoboken, Jersey City, and West New York. These cities have development patterns similar to the Bronx, Brooklyn, and Queens with a mix of high-rise and mid-rise housing, including apartment towers, townhouses, brownstones, and rowhouses. Jersey City has a large business district that includes several office towers along its Hudson River waterfront.

The New York City metropolitan region has a long development history and has diverse settlement patterns and housing stock. The counties that lie beyond the five boroughs of New York City and Hudson County, New Jersey, have small, long-established towns with urbanized town centers that have grown to include suburban subdivision developments. There are smaller cities with densely developed downtown areas, high- and mid-rise multifamily housing, and single-family houses on small lots (e.g., Bridgeport, Connecticut; Great Neck, Long Island; Newark, New Jersey; and White Plains, New York) and waterfront communities that were established as recreational retreats but have become year-round communities. Farms and small rural communities are near the farther extents of the regional study area.

1.2.2 Traveling to the Manhattan CBD

The New York metropolitan region has a robust transit network, with the largest subway and bus systems and the three largest commuter rail systems in the United States.¹⁴ Indeed, the transit network is unparalleled in many cities with respect to the number of routes and types and frequency of service. The Manhattan CBD is the hub for much of this network and people can arrive via the following options:¹⁵

- The New York metropolitan area's three commuter rail systems:
 - Long Island Rail Road (LIRR) provides service connecting Brooklyn, Queens, Nassau, Suffolk, and Penn Station New York. LIRR will also soon provide service to the new Grand Central Madison terminal.
 - Metro-North Railroad (Metro-North) provides service connecting Grand Central Terminal and Manhattan north of 125th Street, the Bronx, Westchester, Putnam, and Dutchess Counties in New York State (east of Hudson), and southwestern Connecticut. Through agreement with NJ TRANSIT,

¹⁴ American Public Transit Association (APTA). "Public Transportation Ridership Report: Fourth Quarter 2021." <https://www.apta.com/wp-content/uploads/2021-Q4-Ridership-APTA.pdf>.

¹⁵ A limited number of people also arrive by helicopter at one of three heliports in Manhattan and by seaplane using the Midtown Skyport on the East River.

Metro-North also provides service connecting Orange and Rockland Counties (west of Hudson) with Penn Station New York.

- NJ TRANSIT connects the New Jersey counties and Penn Station New York or Hoboken Terminal in New Jersey, from which passengers can take the Port Authority Trans-Hudson (PATH) train to multiple stations in Manhattan CBD.
- The New York City subway consists of 28 routes that operate in Bronx, Brooklyn, Manhattan, and Queens in New York City. Twenty-five subway routes traverse or terminate in the Manhattan CBD. Most routes that traverse the Manhattan CBD have multiple stations in the area, serving commuters to the Manhattan CBD and local trips for its residents. Several subway stations in the Manhattan CBD are interchange points between subway routes.
- The New York region has a vast bus network. The Manhattan CBD is served by commuter buses operated by transit agencies and private companies, providing service between neighborhoods in the New York City boroughs and suburban counties and the Manhattan CBD. Many bus routes terminate at the Port Authority Bus Terminal in Midtown Manhattan. Multiple express/Select Bus Service and local bus routes operate along the north–south avenues and east–west streets within the Manhattan CBD.
- A tram operates between Roosevelt Island and Manhattan.
- The City of New York and private companies operate ferry service to the Manhattan CBD. Ferry routes to Manhattan operate from the Bronx, Brooklyn, Queens, and Staten Island in New York City and Bergen, Hudson, and Monmouth Counties in New Jersey. The primary ferry terminals in Manhattan are located at West 39th Street and East 34th Street in Midtown Manhattan and Battery Park City and Wall Street/Pier 11 in Lower Manhattan.
- MTA provides on-demand, point-to-point paratransit service for qualifying individuals.

Refer to **Subchapter 4C, “Transportation: Transit,”** for more detailed information about the region’s transit systems.

People may also reach the Manhattan CBD on foot or by bicycle. The north–south avenues that cross 60th Street have sidewalks, and bicycle lanes are available on Amsterdam Avenue, Columbus Avenue, Central Park West, Second Avenue, and First Avenue. Shared-use bicycle and pedestrian paths also run along the Hudson and East Rivers. From Brooklyn and Queens, people may cross the Ed Koch Queensboro, Williamsburg, Manhattan, and Brooklyn Bridges by bicycle or on foot. There is no direct bicycle or pedestrian access between New Jersey and the Manhattan CBD since pedestrians are prohibited from the tunnel crossings.¹⁶

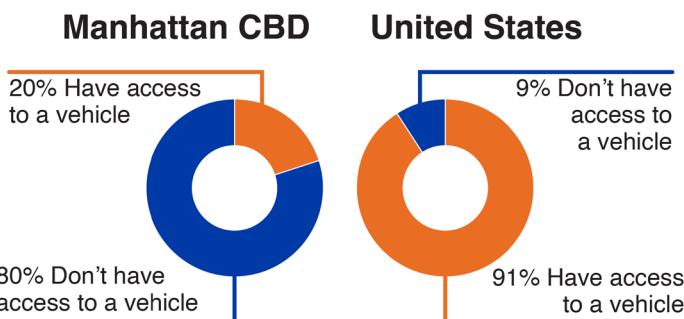
¹⁶ Pedestrians and bicyclists are permitted to cross the George Washington Bridge and can reach the Manhattan CBD using the Hudson River Greenway or one of Manhattan’s north–south avenues.

1.2.3 Traveling within the Manhattan CBD

The Manhattan CBD has a long development history, beginning before the advent of the automobile and rapidly expanding before the predominance of the automobile. Thus, options other than private automobiles are available to travel around the Manhattan CBD. As noted previously, numerous subway and bus routes serve the Manhattan CBD, and there is a network of bicycle lanes and a widely available bicycle-share program. The Manhattan CBD is very walkable with sidewalks on both sides of most streets, with mostly signalized intersections that have crosswalks and pedestrian signals, and with many destinations near each other that are easily accessible by foot.

Because most businesses do not offer on-site, free parking and it can be difficult to find curbside parking, driving within the Manhattan CBD is not typical except for commercial deliveries. Indeed, 80 percent of Manhattan CBD residents do not own or have ready access to a vehicle (Figure 1-4).¹⁷ Taxis and for-hire vehicles (FHV)s provide point-to-point service within the Manhattan CBD and are convenient for trips that would otherwise involve multiple transit routes and modes or a long walk (e.g., crosstown trips between the east and west sides of Manhattan).¹⁸ However, trips by taxi or FHVs (a category that includes taxis and app-based services) may be costly. Therefore, many people use the subway, buses, or bicycles to make their longer local trips within the Manhattan CBD. Walking is the typical choice for shorter trips or even longer trips that would otherwise involve multiple transit modes or transfers.

Figure 1-4. Vehicle Access (Manhattan CBD compared to United States)



Sources: Census Transportation Planning Package, American Community Survey 2012-2016

1.2.4 Commuting to the Manhattan CBD

According to 2012–2016 Census Transportation Planning Package (CTPP) data, nearly 10.7 million people have their place of employment in the regional study area. While the Manhattan CBD is the traditional economic hub of the region, many residents of the region do not work in or regularly travel to the Manhattan CBD. In total, approximately 1.5 million people work in the Manhattan CBD, and approximately 1,262,400 of those workers commute to the Manhattan CBD from outside the CBD. Approximately 65 percent of those commuters are from New York City, 8 percent are from Long Island, 7 percent are from

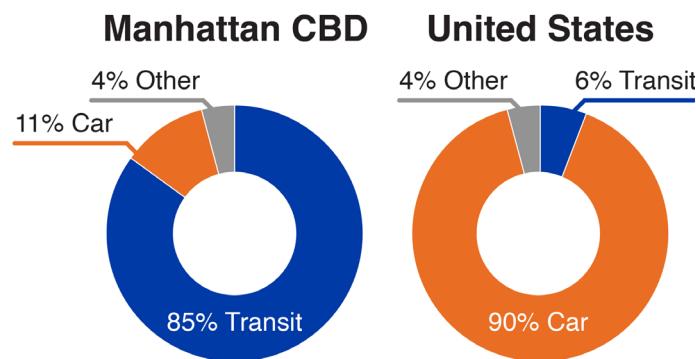
¹⁷ These data are from the CTPP data product based on the 2012–2016 American Community Survey. The CTPP provides custom tables describing residence, workplace, and trips from home to work. The U.S. Census Bureau has not updated the CTPP to reflect more recent American Community Survey data.

¹⁸ While taxis are sometimes considered a type of for-hire vehicle, for the purposes of this EA, they are treated separately.

New York counties north of New York City, 18 percent are from New Jersey, and 2 percent are from Connecticut (see **Figure 1-6** on the following page).

According to 2012–2016 CTPP data, 85 percent of workers who commute to the Manhattan CBD take public transportation to travel to work and 11 percent (approximately 142,500 workers) drive to work. The remaining 4 percent travel by bicycle, walking, motorcycle, and taxi and FHV. This level of commuting by public transportation is much higher than in the United States overall, where most people commute to work by car (**Figure 1-5**).

Figure 1-5. Travel Modes to Work (Manhattan CBD compared to United States)



Sources: Census Transportation Planning Package, American Community Survey 2012-2016

1.3 PROJECT PURPOSE

The Project purpose is to reduce traffic congestion in the Manhattan CBD in a manner that will generate revenue for future transportation improvements, pursuant to acceptance into FHWA's VPPP.

1.4 PROJECT NEEDS

1.4.1 The Need to Reduce Vehicle Congestion in the Manhattan CBD

The Manhattan CBD is the commercial center of a 28-county region that surrounds and includes New York City. Within nine square miles, the Manhattan CBD houses 1.5 million jobs, 450 million square feet of office space, and more than 617,000 residents.^{19, 20, 21} It is also a regional and national destination for commerce, entertainment, and tourism, and the economic hub of the New York City region. The New York City region's population has grown by 5 percent since 2000 and is expected to continue to grow, with the population projected to exceed 25 million by 2045. New York City's population is projected to surpass 9 million by 2045.²²

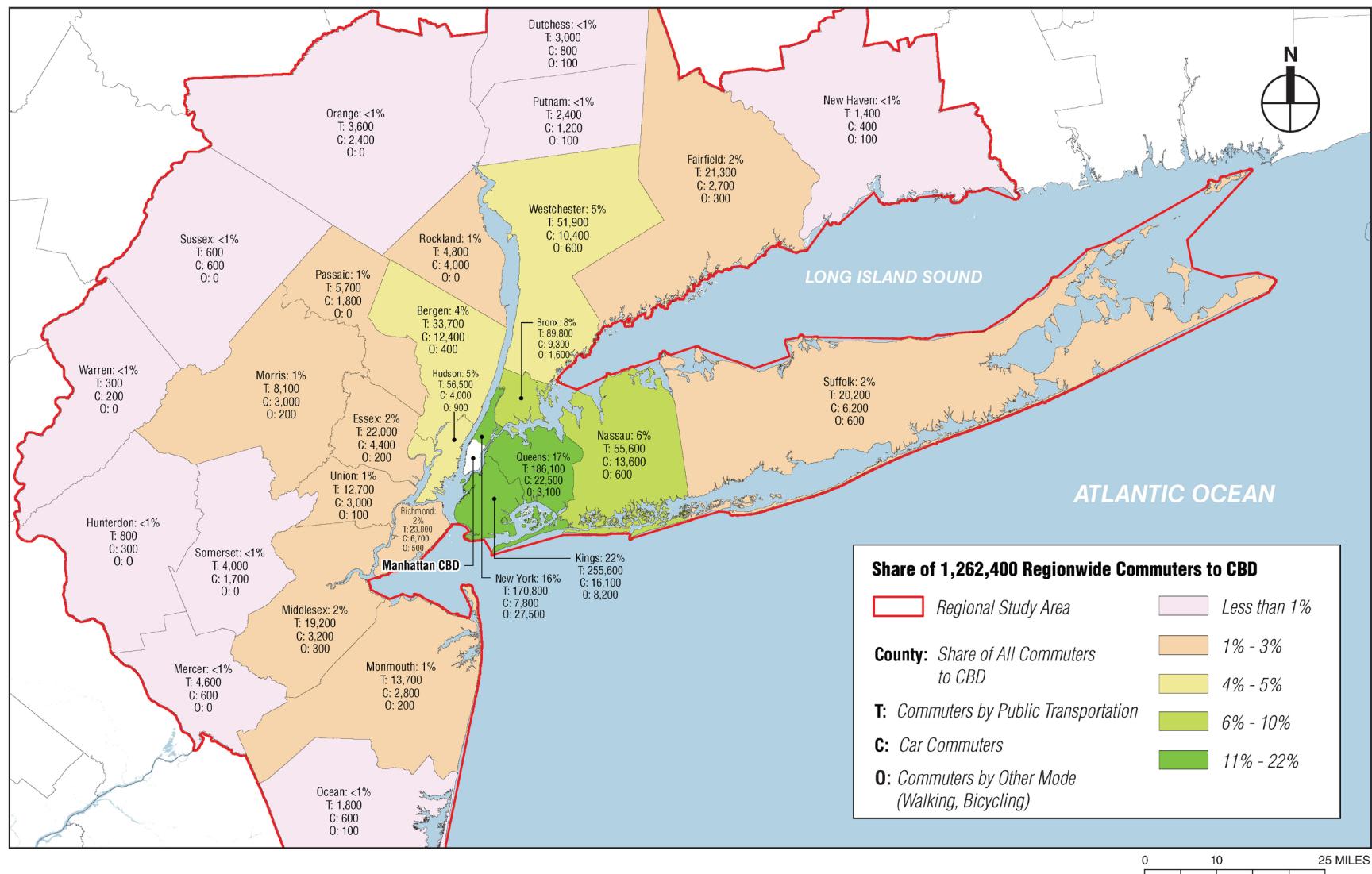
¹⁹ U.S. Census Bureau, 2012–2016 Census Transportation Planning Package.

²⁰ New York State Comptroller. 2017. New York City's Office Market report.

²¹ U.S. Census Bureau. American Community Survey, 2015–2019 Estimates.

²² New York Metropolitan Transportation Council (NYMTC). 2015. 2050 Socioeconomic and Demographic Forecasts. <https://www.nymtc.org/DATA-AND-MODELING/SED-Forecasts/2050-Forecasts>.

Figure 1-6. Manhattan CBD Work Commuters: Origin



Source: U.S. Census Bureau. Census Transportation Planning Package, 2012–2016 Estimate.

The growth in New York City's population and employment, particularly within the Manhattan CBD, has increased traffic congestion and delays, slowing travel and jeopardizing the vitality of the area. A 2018 study by the Partnership for New York City (a local business group) stated that "traffic congestion will be a \$100 billion drag on the New York metro area economy over the next five years." It cited the Manhattan CBD as the primary source of traffic congestion in the region and reported that excess congestion had increased by 53 percent since it began studying the issue in 2006.²³

This congestion makes travel a challenge as well. NYCDOT's *New York City Mobility Report* found that the Manhattan CBD had the highest concentration of slow-moving buses in the entire city during the average weekday PM peak period (4 p.m. to 6 p.m.), with speeds between 5 mph and 6 mph.²⁴ This is substantially slower than the average citywide bus speed of 7.58 mph.²⁵

According to FHWA, "congestion usually relates to an excess of vehicles on a portion of roadway at a particular time resulting in speeds that are slower—sometimes much slower—than normal or 'free-flow' speeds. Congestion often means stopped or stop-and-go traffic."²⁶ FHWA identifies several typical causes of traffic congestion: physical bottlenecks; construction work zones; traffic incidents, such as crashes and disabled vehicles; inclement weather; special events that create a surge in traffic or create detours; day-to-day variability in traffic flows; and insufficient intersection capacity, sometimes related to nonoptimized traffic signals. Of these, FHWA cites bottlenecks as the greatest source of congestion.²⁷ Given that Manhattan is an island, with limited opportunity to increase the roadway capacity within or leading to and from it, the principal means to address congestion caused by bottlenecks is to reduce demand or the number of vehicles that drive into and out of Manhattan.

Congestion by the Numbers

Cost of Congestion: 102 hours of lost time; nearly \$1,595 per year per driver in the New York City region.*

Travel Speeds: Decreased 22 percent in the Manhattan CBD, from 9.1 miles per hour (mph) to 7.1 mph between 2010 and 2019.**

FHV Registrations: Tripled in New York City, from fewer than 40,000 to more than 120,000 between 2010 and 2019. Due to the effects of the COVID-19 pandemic and the city's continued cap on FHV registrations, the number of FHVs making trips fell to 70,000 by April 2022.†

Local Bus Speeds: Declined 28 percent in the Manhattan CBD since 2010. The average speed of Select Bus Service (New York City Transit's bus rapid transit service) routes in Manhattan are 19 percent slower than Select Bus Service routes in other boroughs.††

Sources

- * INRIX 2021 Global Traffic Scorecard. <https://inrix.com/scorecard-city/?city=New%20York%20City%20NY&index=5>.
- ** NYCDOT. August 2019. New York City Mobility Report. <https://www1.nyc.gov/html/dot/downloads/pdf/mobility-report-print-2019.pdf>.
- † New York City Taxi and Limousine Commission and NYCDOT. June 2019. *Improving Efficiency and Managing Growth in New York's For-Hire Vehicle Sector*, NYC TLC FHV trip data.
- †† NYCDOT. August 2019. New York City Mobility Report. <https://www1.nyc.gov/html/dot/downloads/pdf/mobility-report-print-2019.pdf>. New York City Transit analysis.

²³ Partnership for New York City. January 2018. "\$100 Billion Cost of Traffic Congestion in Metro New York". <https://pfny.org/wp-content/uploads/2020/01/2018-01-Congestion-Pricing.pdf>.

²⁴ New York City Department of Transportation (NYCDOT). August 2019. *New York City Mobility Report*. <https://www1.nyc.gov/html/dot/downloads/pdf/mobility-report-print-2019.pdf>.

²⁵ Ibid.

²⁶ FHWA. 2020. *Traffic Congestion and Reliability: Trends and Advanced Strategies for Congestion Mitigation*. https://ops.fhwa.dot.gov/congestion_report/executive_summary.htm.

²⁷ Ibid.

The Impact of the COVID-19 Pandemic

In March 2020, in response to the COVID-19 pandemic public health emergency, then New York State Governor Andrew Cuomo issued executive orders that required most nonessential businesses to close, suspended in-person instruction at public schools and universities, and required residents of New York State to remain home except for essential activities. The governors of New Jersey and Connecticut imposed similar restrictions and consequently, the volume of trips to the Manhattan CBD by all travel modes dropped precipitously.

By summer 2021, emergency restrictions were suspended or expired, and many businesses and attractions in the Manhattan CBD reopened. While many office workers continue to work remotely, others have returned to offices or work locations on part-time or full-time schedules.

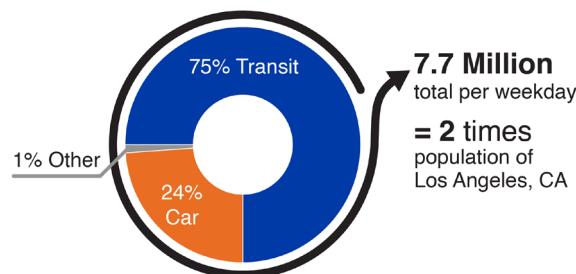
Weekday MTA subway, bus, and rail ridership remains roughly 35 to 45 percent lower than pre-COVID-19 pandemic levels. However, vehicle crossings at TBTA bridges and tunnels are only about 2 to 3 percent lower than in 2019. As activity is returning to pre-COVID-19 pandemic conditions, so is traffic congestion.

Source

Metropolitan Transportation Authority Day-by-Day Ridership Numbers. <https://new.mta.info/coronavirus/ridership>

The New York Metropolitan Transportation Council (NYMTC) prepares an annual report on commuting statistics into the Manhattan CBD, known as the *Hub Bound Travel Data Report*. The *Hub Bound Travel Data Report 2019* shows that approximately 7,665,000 people entered and exited the Manhattan CBD on an average weekday, which is about twice the population of Los Angeles, California (Figure 1-7).²⁸ Most (75 percent) of those people entered and exited via transit, but an estimated 1,856,000 (24 percent) people entered and exited by vehicle (auto, taxi, van, and truck). NYMTC notes that the daily vehicle trips increased in 2019 compared to 2018.²⁹ This translates to more vehicles entering and exiting the Manhattan CBD each day than the entire population of Phoenix, Arizona.³⁰

Figure 1-7. People Entering Manhattan CBD (by mode)



Source: NYMTC Hub Bound Travel Data Report, 2019

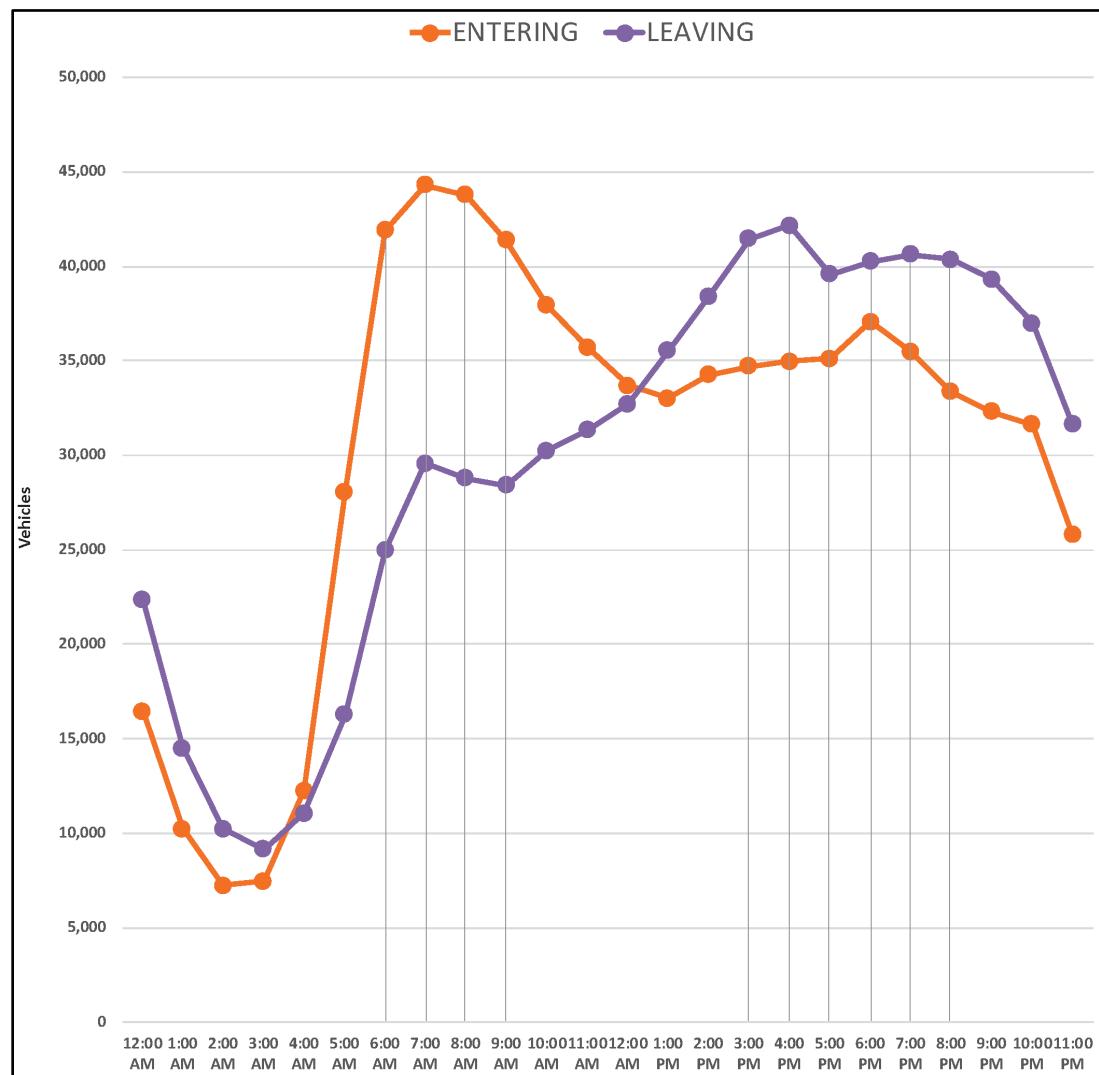
The number of vehicles within the Manhattan CBD builds throughout the day and evening, peaking in the middle of the day and ending in the late-night hours. Between 6:00 a.m. and 10:00 a.m., approximately 40,000 or more private vehicles enter the Manhattan CBD each hour (Figure 1-8). While some vehicles leave the Manhattan CBD during that time, they do not offset the accumulation of inbound vehicles. The trend does not reverse until around 12:00 p.m., when the number of outbound vehicles starts to exceed the number of inbound vehicles, though the variation is much smaller than in the morning.

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²⁸ As of July 1, 2021, the estimated population of Los Angeles was 3,849,297. U.S. Census Bureau. Quickfacts. <https://www.census.gov/quickfacts/fact/table/losangelescitycalifornia,losangelescountycalifornia,CA/PST045221>.

²⁹ NYMTC. January 2021. *Hub Bound Travel Data Report 2019*. Transit includes subway, commuter rail, bus, ferry, and tram. NYMTC relies on passenger, vehicle, and bicycle counts to prepare the hub bound data, and these counts include work and nonwork trips. Therefore, percentages of travel by mode vary from census data. https://www.nymtc.org/Portals/0/Pdf/Hub%20Bound/2019%20Hub%20Bound/DM_TDS_Hub_Bound_Travel_2019.pdf?ver=GS5smEoyHSsHsyX_t_Zriw%3d%3d.

³⁰ As of July 1, 2021, the estimated population of Phoenix was 1,624,589. U.S. Census Bureau. Quickfacts. <https://www.census.gov/quickfacts/phoenixarizona>.

Figure 1-8. Private Vehicles Entering and Exiting the Manhattan CBD on an Average Weekday

Source: New York Metropolitan Transportation Council. January 2020. *Hub Bound Travel Data Report 2019*.

1.4.1.1 Evidence of Congestion

NYMTC's *Congestion Management Process Status Report* is an annual study of congestion in the New York metropolitan region that reports on the extent of congestion and its effects. The data come from national and local sources and reveal that New York City, and Manhattan in particular, is prone to higher congestion than most urbanized areas in the United States.

One of the well-known ways to demonstrate congestion, used in this report and measured across the country by the Texas A&M Transportation Institute, is the Travel Time Index, which represents the average additional time required during peak times compared to times of light traffic. If the time required during free-flow travel and peak times is the same, the Travel Time Index value is 1.0. The New York metropolitan

region has a Travel Time Index value of 1.35; in essence, it takes 35 percent longer on average to make a trip in the region during peak period than in free-flow conditions.³¹

Despite the reliance on transit, Manhattan still has a much higher Travel Time Index value than the overall metropolitan region: 1.84 in the morning peak period and 2.07 in the evening peak period.^{32, 33} For a 20-minute trip in Manhattan, this translates to drivers having to assume it could take more than twice that time on average during the evening hours—this is time wasted on a regular basis because of congestion.

The Travel Time Index helps explain the average changes in travel time resulting from congestion. In the New York metropolitan region, not only is there ongoing, recurrent congestion, but there is also a wide range of variability, especially in congested periods.

Another way to look at congestion is through NYMTC's Travel-Time Reliability indicator. Again, a ratio that is close to 1.0 demonstrates little variability throughout the day and from day to day. A higher number means travel time is more unpredictable, while a lower number means it is more predictable. In Manhattan, the daily level of travel-time reliability for all vehicle modes is 1.65 and for trucks it is 2.67, reflecting widely variable, and therefore unpredictable, travel times.³⁴

Finally, NYMTC also uses a Planning Time Index that represents the additional amount of time that drivers need to allow to reach their destination under most conditions. In Manhattan, to arrive at a destination on time, drivers regularly need to assume that their trip could take more than four times what it would during free-flow periods.³⁵

NYCDOT, MTA, and other transportation agencies have implemented programs to increase mobility and improve accessibility in the Manhattan CBD by nonvehicular modes and to reduce vehicular congestion

How Long Will My Trip Take?

When an area is prone to traffic congestion, travelers must add travel time or they risk being late to their destination.

This added time is compounded if the congestion is not just recurring, but also unreliable, with wide variability during the day, and from day to day. Drivers must plan for both regular congestion due to traffic volumes, and for the likelihood that there could be even more congestion as a result of weather, construction, or an incident. This additional time for the trip adds up significantly, especially in Manhattan.

Every day, drivers in Manhattan need to assume that the time they need for what should be a 20-minute trip could take them up to 87.2 minutes.

Source:

New York Metropolitan Transportation Council. September 2021. 2021 Congestion Management Process Status Report. https://www.nymtc.org/Portals/0/Pdf/CMP%20Status%20Report/2021%20CMP/NYMTC_CMP_Adopted_Report.pdf?ver=gfVbMzvLLqXENvn1jNkOhg%3d%3d

³¹ NYMTC. 2021. *Congestion Management Process Status Report*. September 9, 2021. https://www.nymtc.org/Portals/0/Pdf/CMP%20Status%20Report/2021%20CMP/NYMTC_CMP_Adopted_Report.pdf?ver=gfVbMzvLLqXENvn1jNkOhg%3d%3d.

³² Ibid.

³³ The Manhattan CBD generates a substantial number of trips to the island and contributes greatly to the overall indicator; thus, it is a useful, if understated, indicator for the Manhattan CBD.

³⁴ NYMTC. September 2021. *2021 Congestion Management Process Status Report*. https://www.nymtc.org/Portals/0/Pdf/CMP%20Status%20Report/2021%20CMP/NYMTC_CMP_Adopted_Report.pdf?ver=gfVbMzvLLqXENvn1jNkOhg%3d%3d.

³⁵ Ibid.

(see **Section 1.1**). Despite these various initiatives that should reduce vehicular traffic in the Manhattan CBD, congestion persists.

The low travel speeds and unreliable travel times to, from, and within the Manhattan CBD increase auto commute times, erode worker productivity, reduce bus and paratransit service quality, raise the cost of deliveries and the overall cost of doing business, and delay emergency vehicles (**Figure 1-9**).

1.4.2 The Need to Create a New Local, Recurring Funding Source for MTA's Capital Projects

In the past five decades, state and city officials along with other stakeholder groups have studied various concepts for addressing traffic congestion in the Manhattan CBD. Sustained investment in public transportation is one strategy consistently identified in those studies.

The importance of transit to New York City's overall economy cannot be overstated. As the primary mode of travel to the Manhattan CBD, continued investment in transit is critical to mobility and accessibility of the Manhattan CBD and the region. More than 75 percent of all trips, and 85 percent of commuter trips, into the Manhattan CBD are made by bus, subway, commuter rail, or ferry.^{36, 37} MTA subways served 1.7 billion passengers in 2019, and MTA buses carried 677.6 million passengers, providing access to employment, healthcare, education and the full range of services and entertainment options available throughout New York. The 10 busiest subway stations in the MTA system are in the Manhattan CBD, and two of the 10 busiest MTA bus routes are in or serve the Manhattan CBD.³⁸ LIRR and Metro-North were the busiest commuter rail systems in the United States in terms of average weekday ridership in 2021.³⁹ MTA alone employs approximately 70,000 people (making it one of the largest individual employers in New York State, and larger than the population of many small cities). Through its capital spending, MTA annually

Figure 1-9. Typically Congested Streets in Lower Manhattan During the Evening Rush (Summer 2022)



Source: MTA

³⁶ NYMTC. January 2021. *Hub Bound Travel Data Report 2019*.

https://www.nymtc.org/Portals/0/Pdf/Hub%20Bound/2019%20Hub%20Bound/DM_TDS_Hub_Bound_Travel_2019.pdf?ver=GS5smEoyHSsHsyX_t_Zriw%3d%3d.

³⁷ U.S. Census Bureau, 2012–2016 Census Transportation Planning Package.

³⁸ Metropolitan Transportation Authority Subway and Bus Ridership for 2019. <https://new.mta.info/coronavirus/ridership>. Bus ridership reflects the total annual reported numbers for New York City Transit and MTA Bus Company.

³⁹ APTA. "Public Transportation Ridership Report: Fourth Quarter 2021." <https://www.apta.com/wp-content/uploads/2021-Q4-Ridership-APTA.pdf>.

injects billions of dollars into the local economy both through major infrastructure projects and day-to-day operations and maintenance programs, indirectly supporting thousands of additional jobs.

Although there was high demand for service, the reliability of MTA's commuter rail, subway, and bus system declined beginning in 2010.⁴⁰ MTA documented commuter rail, subway, and bus service delays, which received much public attention.⁴¹ Beginning in 2017, MTA's operating agencies engaged in projects to address some root causes of declining service and implemented improvements to commuter rail and subway infrastructure. As documented in MTA's 2020–2024 Capital Program, these projects resulted in substantial reductions in delay and improvements in on-time performance.⁴²

Notwithstanding these improvements, elements of MTA's commuter rail and subway system are more than 100 years old, and essential capital needs remain to ensure a state of good repair and to bring MTA's transit and rail assets into the 21st century. The 2020–2024 Capital Program is intended to "build on these achievements, ensuring that the improvements put in place will be sustainable for years to come."⁴³ The program identifies \$52.0 billion of investments⁴⁴ in the region's subways, buses, and commuter railroads. Key tenets of the 2020–2024 Capital Program include the following:

- Investing to improve reliability
- Committing to environmental sustainability
- Building an accessible transit system for all New Yorkers
- Easing congestion and creating growth
- Improving safety and customer service through technology⁴⁵

The continued modernization of MTA's commuter rail, subway, and bus network is necessary to create a faster, more accessible, and more reliable transportation network for the New York City region's residents, commuters, and visitors. The MTA 2020–2024 Capital Program calls for extensive improvements throughout the MTA integrated transportation network. While some capital projects will expand the system, many others will ensure the long-term viability of current assets to address the deficiencies described previously.

⁴⁰ MTA New York City Transit. September 23, 2011. *Evaluation of 2010 Service Reductions*. http://web.mta.info/mta/news/books/docs/NYCT_2010_Service_Reduction_Evaluation.pdf.

⁴¹ Adrienne LaFrance. July 13, 2017. *The Atlantic*, "The Awful Decline of the New York City Subway System." <https://www.theatlantic.com/technology/archive/2017/07/when-did-new-york-citys-subway-get-so-bad/533502/>.

⁴² Metropolitan Transportation Authority (MTA). October 1, 2019. *2020–2024 Capital Program: Executive Summary*. <https://new.mta.info/sites/default/files/2019-09/MTA%202020-2024%20Capital%20Program%20-%20Executive%20Summary.pdf>.

⁴³ Ibid.

⁴⁴ This reflects the portion of the capital program that will fund transit improvements; it includes an additional \$254 million for other transit projects not identified here, as well as a December 2021 amendment that increased the transit- and rail-related portion of the program by \$535 million. The full capital program, including non-transit improvements, includes \$55.3 billion in projects.

⁴⁵ Metropolitan Transportation Authority. October 1, 2019. *2020–2024 Capital Program: Executive Summary*. <https://new.mta.info/sites/default/files/2019-09/MTA%202020-2024%20Capital%20Program%20-%20Executive%20Summary.pdf>.

MTA draws funding from several sources. MTA-controlled revenues include commuter rail, subway, and bus fares, and tolls at TBTA crossings; state and local subsidies that include dedicated state taxes (e.g., petroleum business taxes, sales tax, payroll mobility tax, motor vehicle registration and license fees, taxi and FHV fees, real estate transaction taxes on both residential and commercial properties); and station maintenance payments. The Federal government supports MTA transit and commuter capital projects through formula grants, full-funding grant agreements, and other funding programs, primarily through the Federal Transit Administration and the Federal Railroad Administration.

MTA uses these funds to make long-range capital improvements to the system's infrastructure, to expand the system, and to operate its integrated transportation network. However, there is a history of gaps in funding when economic conditions reduce the tax base; when the Federal, state, or local governments reduce subsidies; and when the cost of needed transit improvements exceeds the available funding.

Existing funding sources are insufficient to pay for the transit improvement and modernization projects identified in the MTA 2020–2024 Capital Program and subsequent capital programs that are needed for subway, bus, and commuter rail services. The New York State Legislature passed the MTA Reform and Traffic Mobility Act to provide stable and reliable funding to repair and revitalize the regional transit system.⁴⁶

1.5 PROJECT OBJECTIVES

FHWA and the Project Sponsors have established the following objectives to further refine the Project purpose and address the needs described above:

- Reduce daily vehicle-miles traveled (VMT) within the Manhattan CBD.
- Reduce the number of vehicles entering the Manhattan CBD daily.
- Create a funding source for capital improvements and generate sufficient annual net revenues to fund \$15 billion for capital projects for the MTA Capital Program.
- Establish a tolling program consistent with the purposes underlying the New York State legislation entitled the "MTA Reform and Traffic Mobility Act."⁴⁷

⁴⁶ Consolidated Laws of the State of New York, Vehicle and Traffic, Title 8, Article 44-C Sections 1701 through 1706.

⁴⁷ Refer to **Appendix 2B, "Project Alternatives: MTA Reform and Traffic Mobility Act."**

1.6 PROJECT SCHEDULE

Table 1-1 shows anticipated milestone dates for Project implementation.

Table 1-1. Project Schedule

| ACTIVITY/MILESTONE | ANTICIPATED DATE |
|---|-----------------------|
| Early public engagement* | Fall 2021 |
| Publication of Environmental Assessment (EA) | August 2022 |
| Public review of EA, including public hearing and acceptance of public comments on the EA | August–September 2022 |
| Federal Highway Administration decision | January 2023 |
| Project Implementation (“Go Live”) | November 2023 |

* Refer to Chapter 18, “Agency Coordination and Public Participation.”

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