APPENDIX E

History and Projection of Traffic, Toll Revenues and Expenses and Review of Physical Conditions of the Facilities of Triborough Bridge and Tunnel Authority

Stantec

Prepared for:
Triborough Bridge and Tunnel Authority

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April 29, 2025

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April 29, 2025

To the Triborough Bridge and Tunnel Authority:

In accordance with your request, Stantec Consulting Services Inc. ("Stantec") conducted this annual study to develop projections of traffic, toll revenues, and expenses for the toll bridge and tunnel facilities operated by the Triborough Bridge and Tunnel Authority ("TBTA"), and to provide an overview of the physical conditions of each facility. We have reviewed the bridge and tunnel inspection reports provided by TBTA and discussed TBTA's ongoing maintenance and capital programs with TBTA's Business Unit engineering staff responsible for those programs.

This report provides a summary of past traffic and revenue performance of TBTA facilities (which includes the nine bridges and tunnels operated by TBTA) and information related to potential future traffic and revenue for a ten-year period. The projections presented in this report have taken into account: (1) the general physical condition of TBTA's toll facilities; (2) traffic and toll revenue data, reflecting the twenty-one (21) toll increases since 1972, including the most recent toll increase effective August 6, 2023; (3) the impact of the E-ZPass electronic toll collection system; (4) the impact of systemwide Cashless Tolling implementation; (5) the toll structure; (6) planned and possible future toll increases; (7) economic, population, employment, and other demographic forecasts in the New York Metropolitan Area; (8) current fuel availability and prices; (9) the traffic capacities of the bridges, tunnels and the existing roadway network that feeds the facilities in terms of the potential for future growth of peak versus non-peak period traffic; (10) current and programmed construction activities on TBTA's facilities and the arterial highway network serving the New York Metropolitan Area, including the toll-free Harlem and East River bridges; (11) mass transit network projects; (12) the implementation of split tolling at the -Verrazzano-Narrows Bridge on December 1, 2020; (13) the short- and long-term travel behavior changes associated with the COVID-19 pandemic ("pandemic"); and (14) the Central Business District ("CBD") Tolling Program. It should be noted that traffic levels are considered to have recovered from pandemic impacts, and recovery is no longer an element in the forecast.

As of the date of this report, preliminary traffic and revenue data, subject to final audit, are available for the period through February 2025, as well as unaudited traffic volumes through April 16, 2025.

The effects of the CBD Tolling Program (described later in this report) have been included in the analysis prepared by Stantec for this report. Tolling began on January 5, 2025, and roughly three months of preliminary data are available for analysis to determine the effects on the TBTA facilities.

Stantec wrote the previous Independent Engineer Report entitled "History and Projection of Traffic, Toll Revenues and Expenses and Review of Physical Conditions of the Facilities of Triborough Bridge and Tunnel Authority" ("2024 Report"), dated April 29, 2024. In 2024, actual total toll revenues for TBTA facilities were $2.584 billion, or 3.1 percent higher than our 2024 forecast of $2.506 billion and 6.9 percent higher than actual 2023 toll revenue. The variance from the 2024 forecast is mainly

caused by accounting adjustments throughout several months. While individual monthly accruals may go up and down, it is normalized by the year end.

Total revenue traffic in 2024 was 337.3 million vehicles, which was 0.4 percent lower than our 2024 forecast of 338.7 million vehicles and 0.7 percent higher than actual 2023 traffic.

The full set of comprehensive data provided through February 2025 was used in preparing our analysis through 2035. Stantec receives daily preliminary unaudited traffic data from TBTA. Although the preliminary unaudited data from February 1, 2024 through April 16, 2025, were reviewed for background growth and CBD Tolling Program related trends, these data were not directly used in the future analysis due to an insufficient level of available detail and because preliminary unaudited data are still subject to change.

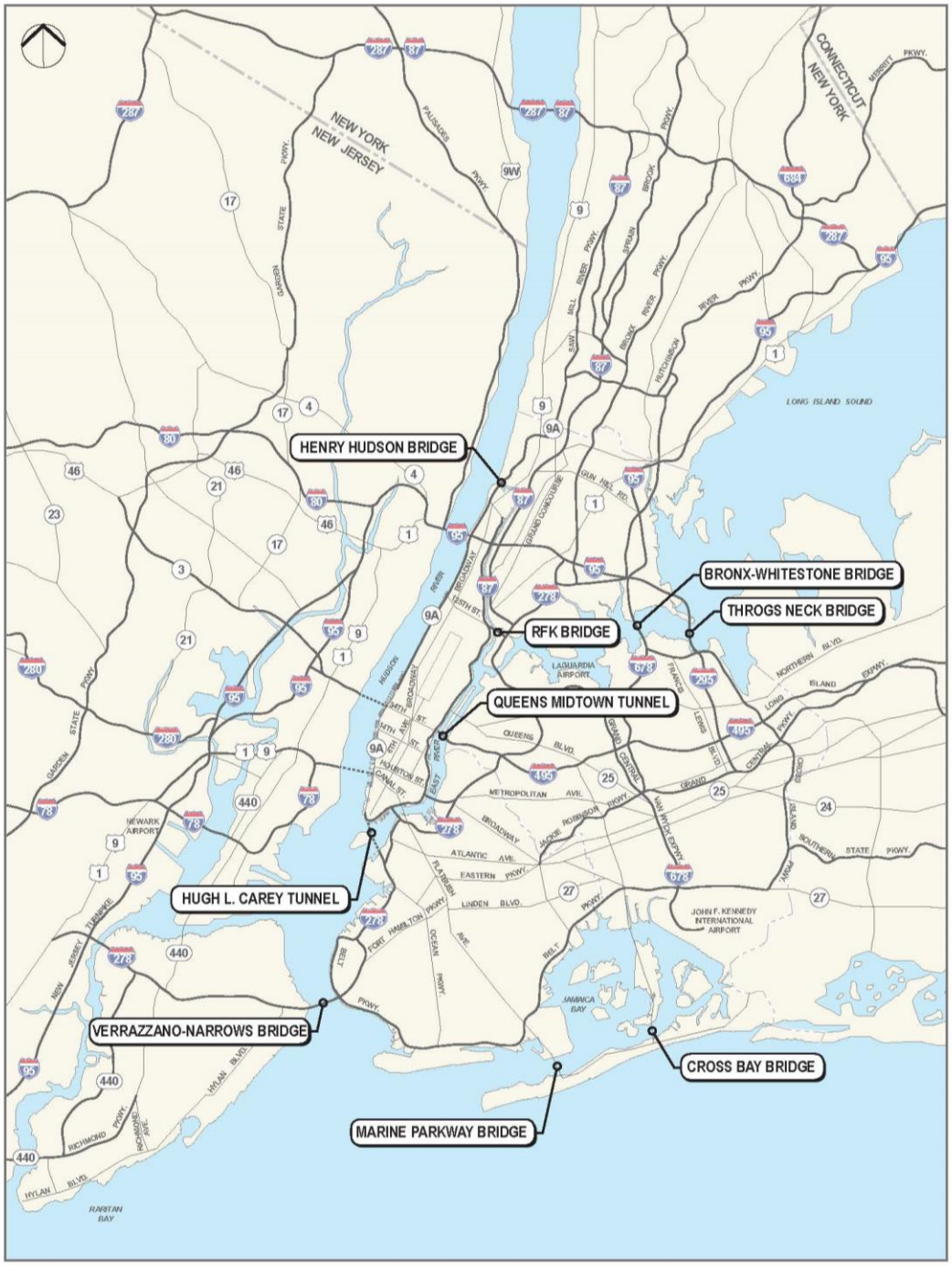
TRANSPORTATION INFRASTRUCTURE

The New York Metropolitan Area's transportation infrastructure consists of an extensive network of highways, tunnels, and bridges (both tolled and toll-free), regional bus and commuter rail, and the transit system in The City of New York ("New York City" or the "City").

TBTA Facilities

TBTA operates nine toll facilities within New York City, consisting of seven (7) bridges and two (2) tunnels that provide vital links across and under New York City's rivers and bays. In 2024, these facilities carried 337.3 million total toll-paying vehicles and generated $2.6 billion in total toll revenue. The locations of the facilities are shown in the context of the regional highway network on the following map (Figure 1).

Figure 1 TBTA Toll Facilities Location Map



HISTORY AND PROJECTION OF TRAFFIC, TOLL REVENUES AND EXPENSES AND REVIEW OF PHYSICAL CONDITIONS OF THE FACILITIES OF TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY

The facilities are briefly described as follows:

Verrazzano-Narrows Bridge ("VNB") - a two-level suspension bridge that crosses the entrance to New York Harbor and connects Brooklyn and Staten Island, with seven travel lanes on the upper level, including a reversible high occupancy vehicle lane, and six (6) travel lanes on the lower level. Split tolling on this bridge was implemented on December 1, 2020.

Robert F. Kennedy ("RFK") Bridge (formerly the *Triborough Bridge*) - a three-bridge structure with connecting viaducts or elevated expressways, which crosses the East River, the Harlem River, and Bronx Kill connecting the boroughs of Queens, Manhattan, and the Bronx. Opened to traffic in 1936, it generally carries eight (8) travel lanes between Queens and the Bronx crossing Astoria Park, Wards Island and Randall's Island. The bridge widens out to nine (9) lanes over Astoria Park and Wards Island to provide dedicated exit lanes for Hoyt Avenue and Wards Island from the Queens bound roadway. The bridge also generally carries six (6) travel lanes between Randall's Island and Manhattan. These three (3) major crossings are interconnected by viaducts and the Randall's Island Interchange, which facilitates traffic flow in two directions. A new ramp was opened to traffic on November 23, 2020, providing an alternate direct connection from the RFK Bridge to the northbound Harlem River Drive.

Bronx-Whitestone Bridge ("BWB") - a suspension bridge, with three travel lanes in each direction, which crosses the East River connecting the boroughs of Queens and the Bronx.

Throgs Neck Bridge ("TNB") - a suspension bridge with three travel lanes in each direction, which crosses the upper East River connecting the boroughs of Queens and the Bronx.

Queens Midtown Tunnel ("QMT") - a twin-tube tunnel with each tube carrying two travel lanes under the East River between the boroughs of Queens and Manhattan. During normal morning commuting hours, three lanes operate inbound into Manhattan. The Queens Midtown Tunnel connects directly into the CBD.

Hugh L. Carey Tunnel ("HCT") (formerly the *Brooklyn-Battery Tunnel*) - a twin-tube tunnel with each tube carrying two travel lanes under the East River connecting the southern tip of Manhattan with Brooklyn. During normal commuting hours, three lanes operate in the peak traffic direction. The Hugh L. Carey Tunnel connects directly into the CBD.

Henry Hudson Bridge ("HHB") - a two-level steel arch bridge with three southbound travel lanes on its lower deck and three northbound travel lanes on its upper deck, which crosses the Harlem River to connect the northern tip of Manhattan with the Spuyten Duyvil section of the Bronx.

Marine Parkway-Gil Hodges Memorial Bridge ("MPB" or "*Marine Parkway Bridge*") - a four-lane bridge with two travel lanes in each direction, which crosses the Rockaway Inlet that connects the Rockaway peninsula in Queens with Brooklyn.

Cross Bay Veterans Memorial Bridge ("CBB" or "*Cross Bay Bridge"*) - a precast post-tensioned concrete T-girder bridge connecting the Rockaway peninsula in Queens with the Queens mainland, via Broad Channel. The bridge has three travel lanes in each direction crossing Beach Channel in Jamaica Bay, dropping to two lanes to align with the Cashless Tolling gantries and Cross Bay Boulevard.

Metropolitan Area Arterial Network

The New York Metropolitan Area is served by an extensive network of highway facilities. Many of the bridges and tunnels operated by TBTA are links in the Interstate highway network, as these limited-access expressways pass through New York City to serve both local and long-distance traffic. These regional facilities are also shown in Figure 1.

The Verrazzano-Narrows Bridge is adjacent to I-278 (Staten Island, Gowanus, and Brooklyn-Queens Expressways), which connects with the Hugh L. Carey Tunnel and the RFK Bridge. The Queens Midtown Tunnel joins I-495 (Long Island Expressway) with Manhattan. The RFK Bridge joins I-87 (Major Deegan Expressway) and I-278 (Bruckner Expressway) with I-278/Grand Central Parkway in Queens and the FDR and Harlem River Drives in Manhattan. The Bronx-Whitestone Bridge carries traffic between the Hutchinson River and Merritt Parkways and Long Island via I-678 (Whitestone and Van Wyck Expressways) and the Cross Island Parkway. The Throgs Neck Bridge carries traffic between I-95 (New England Thruway and George Washington Bridge) and Long Island via I-295. The Henry Hudson Bridge is part of the Henry Hudson Parkway (Route 9A), a major commuter route into Manhattan from the extensive parkway network in western Westchester County and beyond.

In addition to TBTA facilities and their expressway/parkway connections, New York City's toll-free East River bridges — Brooklyn, Manhattan, Williamsburg, and Ed Koch Queensboro — also connect Manhattan with Brooklyn and Queens; and nine toll-free bridges over the Harlem River connect Manhattan with the Bronx. Unlike TBTA facilities, the approaches to these bridges are mostly surface arterials, such as Flatbush Avenue and Queens Boulevard. Only a few have expressway ramp connections (such as the Brooklyn-Queens Expressway connections to the Brooklyn, Manhattan, and Williamsburg Bridges). The Alexander Hamilton Bridge, as part of I-95, connects the Trans-Manhattan Expressway and the Cross Bronx Expressway.

Other Regional Toll Facilities

TBTA is one of a number of toll authorities that operate bridge, tunnel, and highway facilities in the New York Metropolitan Area. The agency whose facilities are geographically closest to TBTA's bridges and tunnels is the Port Authority of New York and New Jersey (the "Port Authority"). The Port Authority's George Washington Bridge is linked to the RFK, Bronx-Whitestone, and Throgs Neck Bridges via the expressway system in the Bronx, to the RFK Bridge via the Harlem River Drive in Manhattan, and to the Henry Hudson Bridge via the Henry Hudson Parkway in Manhattan, while the Bayonne Bridge, Goethals Bridge, and Outerbridge Crossing are linked to the Verrazzano-Narrows Bridge via the expressway system in Staten Island. Motorists using the Port Authority's two tunnels — Holland and Lincoln — must traverse surface streets, in Manhattan, to

reach TBTA's and New York City's East River crossings. The other toll authorities in the region and the toll facilities they operate are the New York State Thruway Authority's (the "Thruway") Governor Mario M. Cuomo Bridge (formerly Tappan Zee Bridge) and several New York State Thruway System sections, New York State Bridge Authority (five upstate Hudson River bridges), and the New Jersey Turnpike Authority (Garden State Parkway and New Jersey Turnpike).

The E-ZPass System

All of the regional toll authorities, together with many others outside of the New York Metropolitan Area, are linked through the E-ZPass Interagency Group ("E-ZPass Group") originally designed to better serve the regional traveler through a common electronic toll collection tag. To further expand its footprint, the E-ZPass Group streamlined its membership categories and developed an interface control document to align with the future needs of national interoperability. Since March 8, 2018, a "Sponsored Affiliate" membership category was added, permitting public and private toll road operators to become interoperable with E-ZPass Group members by using equipment that is compatible with the E-ZPass system and allowing them to use a sponsoring Full Member's customer service center for transaction processing. The E-ZPass Group is developing an E-ZPass Hub whereby each E-ZPass agency will exchange files with the Southeast US, Central US, and Western US Region Hubs in supporting national interoperability. E-ZPass and its impact on TBTA facilities are discussed further in this report.

Cashless Tolling in the Region

All nine of TBTA's bridges and tunnels are exclusively "Cashless Tolling" crossings as described below. The Port Authority's Staten Island crossings (Bayonne Bridge, Goethals Bridge, and Outerbridge Crossing), as well as the Holland Tunnel and portions of the George Washington Bridge (Palisades Interstate Parkway and lower-level toll lanes) are also cashless. As of April 2022, the cash collection of tolls was temporarily restored at the Lincoln Tunnel and upper level of the George Washington Bridge. Cash collection continued at the George Washington Bridge until July 10, 2022 and at the Lincoln Tunnel until December 11, 2022 when the cashless system was fully installed. Additionally, the entire New York State Thruway System became fully cashless in November 2020. Under Cashless Tolling, toll equipment is mounted on gantries, traditional toll plazas are demolished, and roadways are reconfigured so that traffic flows freely across the facilities. Tolls continue to be paid using E-ZPass tags which are mounted on vehicles (typically windshields) and associated with E-ZPass accounts; the gantry-based E-ZPass antennas read the on-board tags and tolls are electronically debited from the associated E-ZPass accounts. For vehicles without E-ZPass tags, license plate images are taken and matched with information from the applicable Department of Motor Vehicles ("DMV") so that toll bills can be sent to registered owners under the authorities' Tolls by Mail Program.

Regional Public Transportation

In addition to TBTA facilities, most of the public transportation facilities within New York City and the suburban counties north and east of New York City are part of the Metropolitan Transportation

Authority ("MTA") system. These include the New York City Transit Authority and the Manhattan and Bronx Surface Transit Operating Authority (its subsidiary), the MTA Bus Company, Staten Island Rapid Transit Operating Authority, Metro-North Commuter Railroad Company, and the Long Island Rail Road Company.

For those TBTA facilities directly serving Manhattan — Henry Hudson Bridge, RFK Bridge, Queens Midtown Tunnel, and Hugh L. Carey Tunnel — motorists can, for the most part, choose to use public transit as an alternative. For the outlying bridges, however, the choice is more difficult due to more limited availability of public transportation options or different trip characteristics (e.g., trip purpose, trip origin and destination).

The Central Business District Tolling Program

The CBD Tolling Program or the "CBDTP" was established pursuant to legislation, known as the MTA Reform and Traffic Mobility Act (the "Traffic Mobility Act"), as part of the State budget for Fiscal Year 2019-2020, adopted on April 1, 2019. The CBD Tolling Program charges a toll for vehicles entering the Central Business District ("CBD"), defined as south and inclusive of 60th Street in Manhattan, but excluding the FDR Drive, Route 9A (the "West Side Highway"), the Battery Park underpass, and any surface roadway portion of the Hugh L. Carey Tunnel connecting to West Street.

In accordance with the National Environmental Policy Act, on August 10, 2022, the Federal Highway Administration ("FHWA") and MTA Bridges and Tunnels, New York State Department of Transportation ("NYSDOT"), and New York City Department of Transportation (the latter three collectively, the "Project Sponsors") issued a Draft Environmental Assessment ("Draft EA"). The Draft EA examined numerous categories of potential environmental effects. Because the tolling structure was not yet established when the Draft EA was issued, and in order to allow FHWA and the Project Sponsors to better assess the range of potential impacts from the CBD Tolling Program, the Draft EA analyzed seven tolling scenarios, each with different variables, using EPA-approved traffic and air quality models.

Between August 2022 and April 2023, a final Environmental Assessment ("Final EA") was prepared by FHWA and the Project Sponsors incorporating public input. The Final EA, released on May 11, 2023, determined that the CBD Tolling Program would not have adverse effects on air quality because it would not cause exceedances of health-based National Ambient Air Quality Standards. Nevertheless, the Project Sponsors committed to a robust, $155 million mitigation package over five years to improve air quality and public health in Environmental Justice ("EJ") communities with preexisting pollution and health burdens throughout the region, with particular investments directed to EJ communities in which the CBD Tolling Program could cause any increase in truck traffic. The Final EA also predicted many beneficial environmental effects of the CBD Tolling Program, including but not limited to:

a. reducing emissions of harmful air pollutants including volatile organic compounds, nitrogen oxides, carbon monoxide, particulate matter, carbon dioxide equivalent (i.e.,

greenhouse gases), and Mobile Source Air Toxics, both within the CBD and region-wide, through an overall reduction in VMT region-wide;

b. reducing localized emissions for most EJ communities in the CBD and others outside of the CBD;
c. reducing the number of vehicles entering the CBD;
d. reducing delays at many intersections and highway segments, thereby improving travel times, reducing vehicle operating costs, and improving safety;
e. increasing transit ridership;
f. reducing travel times for bus operations and thereby facilitating faster, more reliable bus trips;
g. reducing parking demand within the CBD;
h. reducing regional energy consumption and greenhouse gas emissions, helping to meet carbon reduction goals;
i. improving air quality and health in EJ communities through implementation of a $155 million mitigation program; and
j. creating a dedicated revenue source for investments in public transit, which will further reduce congestion and improve air quality over time.

In May 2023, FHWA approved the Final EA. After a public review period, on June 22, 2023, FHWA issued a Finding Of No Significant Impact ("FONSI") determining that the CBD Tolling Program, including mitigation, would not have a significant adverse impact on the environment and would not have a disproportionately high and adverse impact on EJ communities or populations.

On March 27, 2024, the MTA Bridges and Tunnels Board approved a toll rate schedule. In June 2024, the Project Sponsors, in consultation with FHWA, completed a reevaluation under NEPA ("Reevaluation 1"), which assessed the effects of the approved toll structure. On June 14, 2024, FHWA concluded that the approved toll structure and associated impacts were analyzed and mitigated appropriately under NEPA, that no additional environmental analysis was warranted, and that the conclusions in the Final EA and FONSI remained valid. Reevaluation 1 also concluded that the approved toll structure would meet the congestion-reduction and revenue goals for the CBD Tolling Program and achieve similar environmental benefits to those described in the Final EA.

On November 14, 2024, following a pause in implementation of the CBD Tolling Program, Governor Hochul announced a proposal to proceed with the CBD Tolling Program, but with the toll structure and rates that had been approved by the MTA Bridges and Tunnels Board on March 27, 2024 being phased-in gradually over several years with proportionally lower toll rates for all vehicle classes in the first six-years of the program (the "Phase-In Approach").

In response, the MTA Bridges and Tunnels Board, at its November 18, 2024 meeting, adopted the phase-in approach to the toll rate schedule that it had approved on March 27, 2024. The adopted CBD toll rate schedule is presented in Table 1. Also in November 2024, the Project Sponsors completed a second reevaluation under NEPA ("Reevaluation 2") to assess the Phase-In

Approach. Reevaluation 2 confirmed that under the Phase-In Approach, the CBD Tolling Program would still meet its purpose and need, and all of its objectives. Reevaluation 2 also confirmed that the Project Sponsors would still implement all mitigation commitments, including for EJ communities, within the same timeframes as contemplated in the Final EA and FONSI. On November 21, 2024, the FHWA approved Reevaluation 2 and conferred tolling authority through an agreement pursuant to its Value Pricing Pilot Program. The CBD Tolling Program went into effect and tolling commenced on January 5, 2025. The adopted CBD toll rate schedule is presented in Table 1.

Subsequent CBD Tolling Program Developments

In a letter dated February 19, 2025, US Secretary of Transportation Duffy notified Governor Hochul that, among other things, he had concluded that the CBD Tolling Program is not an eligible project under the Value Pricing Pilot Program. Later that same day, MTA and MTA Bridges and Tunnels filed a complaint in the District Court for the Southern District of New York against Sean Duffy, as Secretary of the United States Department of Transportation, Gloria Shepherd, as Executive Director of the FHWA, the United States Department of Transportation, and the FHWA ("MTA v. Duffy") seeking a declaratory judgment that Secretary Duffy's purported termination of the November 21, 2024 VPPP agreement is null and void. On February 20, 2025, FHWA Executive Director Shepherd notified MTA Bridges and Tunnels that toll collection must cease effective March 21, 2025. On March 20, 2025, Executive Director Shepherd sent a letter extending that date to April 20, 2025. The Court conducted an initial conference on April 9, 2025, during which the Court set a case management schedule for amended complaints, answers and filing of the administrative record, possible motions to compel discovery, and dispositive motions that extend through the summer into the fall or possibly longer. MTA and MTA Bridges and Tunnels, joined by NYSDOT and NYCDOT as Intervenor-Plaintiffs, filed a consolidated amended complaint on April 18, 2025. On April 21, 2025, Secretary Duffy sent a letter to Governor Hochul "direct[ing] the [NYSDOT]to show cause, no later than May 21, 2025, why FHWA should not take appropriate steps under 23 CFR § 1.36 to remedy New York's noncompliance with 23 U.S.C. § 301 in connection with the CBDTP." Secretary Duffy goes on to list broad categories of measures FHWA may impose if New York's "noncompliance continues," including no further advance construction authorizations and no further approval of projects. MTA and MTA Bridges and Tunnels have no intention of halting the CBDTP absent a court order, notwithstanding the letter. Accordingly, MTA Bridges and Tunnels plans to keep collecting tolls unless a court orders MTA Bridges and Tunnels to cease collecting tolls.

Table 1 Adopted CBD Toll Rate Schedule

TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY CENTRAL BUSINESS DISTRICT (CBD) CHARGES							
		PHASE 1 2025-2027		PHASE 2 2028-2030		PHASE 3 starting 2031	
a	E-ZPass Customers	CBD ENTRY CHARGE	TUNNEL CROSSING CREDIT	CBD ENTRY CHARGE	TUNNEL CROSSING CREDIT	CBD ENTRY CHARGE	TUNNEL CROSSING CREDIT
	VEHICLE CLASSIFICATION						
1	Passenger and other vehicles, including sedans, sport utility vehicles, station wagons, hearses, limousines, pickup trucks with factory beds, pickup trucks with caps below the roofline and not extending over the sides, and vans without an extended roof above the windshield						
	Peak period (5am-9pm weekdays, 9am-9pm weekends)	$9.00		$12.00		$15.00	
	Peak period for registered Low-Income Discount Plan participants using an eligible vehicle, 11th trip and trips thereafter in a calendar month (5am-9pm weekdays, 9am-9pm weekends)	$4.50		$6.00		$7.50	
	Peak period per-trip credit (maximum daily credit $5.00)						
	If entering the CBD via the Lincoln Tunnel or Holland Tunnel		$3.00		$4.00		$5.00
	If entering or exiting the CBD via the Queens-Midtown Tunnel or Hugh L. Carey Tunnel		$1.50		$2.00		$2.50
	Overnight period (9pm-5am weekdays, 9pm-9am weekends)	$2.25		$3.00		$3.75	
2	Single-unit trucks, including non-articulated trucks, pickup trucks with modified beds, vans with modified body behind the drivers cab, pickup trucks with caps above the roofline or extending over the sides, and vans with an extended roof above the windshield						
	Peak period (5am-9pm weekdays, 9am-9pm weekends)	$14.40		$19.20		$24.00	
	Peak period per-trip credit						
	If entering the CBD via the Lincoln Tunnel or Holland Tunnel		$7.20		$9.60		$12.00
	If entering or exiting the CBD via the Queens-Midtown Tunnel or Hugh L. Carey Tunnel		$3.60		$4.80		$6.00
	Overnight period (9pm-5am weekdays, 9pm-9am weekends)	$3.60		$4.80		$6.00	
3	Multi-unit trucks, including articulated trucks where a power unit is carrying one or more trailers						
	Peak period (5am-9pm weekdays, 9am-9pm weekends)	$21.60		$28.80		$36.00	
	Peak period per-trip credit						
	If entering the CBD via the Lincoln Tunnel or Holland Tunnel		$12.00		$16.00		$20.00
	If entering or exiting the CBD via the Queens-Midtown Tunnel or Hugh L. Carey Tunnel		$6.00		$8.00		$10.00
	Overnight period (9pm-5am weekdays, 9pm-9am weekends)	$5.40		$7.20		$9.00	
4	Buses, including vehicles registered with the DMV and plated as a bus, omnibus, or have other designated official plates						
	Peak period (5am-9pm weekdays, 9am-9pm weekends)	$14.40		$19.20		$24.00	
	Peak period per-trip credit						
	If entering the CBD via the Lincoln Tunnel or Holland Tunnel		$7.20		$9.60		$12.00
	If entering or exiting the CBD via the Queens-Midtown Tunnel or Hugh L. Carey Tunnel		$3.60		$4.80		$6.00
	Overnight period (9pm-5am weekdays, 9pm-9am weekends)	$3.60		$4.80		$6.00	
	Licensed sightseeing buses						
	Peak period (5am-9pm weekdays, 9am-9pm weekends)	$21.60		$28.80		$36.00	
	Peak period per-trip credit						
	If entering the CBD via the Lincoln Tunnel or Holland Tunnel		$12.00		$16.00		$20.00
	If entering or exiting the CBD via the Queens-Midtown Tunnel or Hugh L. Carey Tunnel		$6.00		$8.00		$10.00
	Overnight period (9pm-5am weekdays, 9pm-9am weekends)	$5.40		$7.20		$9.00	
5	Motorcycles						
	Peak period (5am-9pm weekdays, 9am-9pm weekends)	$4.50		$6.00		$7.50	
	Peak period per-trip credit						
	If entering the CBD via the Lincoln Tunnel or Holland Tunnel		$1.50		$2.00		$2.50
	If entering or exiting the CBD via the Queens-Midtown Tunnel or Hugh L. Carey Tunnel		$0.75		$1.00		$1.25
	Overnight period (9pm-5am weekdays, 9pm-9am weekends)	$1.05		$1.40		$1.75	

E-ZPass CBD entry charges are available subject to terms, conditions, and agreements established by the Authority.

The Authority reserves the right to determine whether any vehicle is of unusual or unconventional design, weight, or construction and therefore not within any of the listed categories. The Authority also reserves the right to determine the CBD charge for any such vehicle of unusual or unconventional design, weight, or construction. Any single unit vehicle identified as belonging to Classes 1, 2, or 5 will be up-classed to the next toll class when towing a trailer or another vehicle.

Daily toll cap of once per day for Class 1 and Class 5 vehicles. Caps for other vehicles are subject to change pursuant to the adaptive management approach to mitigating project effects, as committed to in the Final Environmental Assessment.

CBD entry charges and tunnel credits are subject to a variable percentage increase/decrease of up to 10% for up to one year after implementation pursuant to the adaptive management approach to mitigating project effects, as committed to in the Final Environmental Assessment.

The Low-Income Discount Plan shall continue for five years as committed to in the Final Environmental Assessment.

The Authority reserves the right to charge a 25% higher CBD charge during Gridlock Alert Days. Each year, the NYCDOT identifies Gridlock Alert Days during the UN General Assembly and throughout the holiday season when heavy traffic is expected in Manhattan. On Gridlock Alert Days, consider walking, biking, or taking mass transit for any trips in Manhattan.

Qualifying authorized emergency vehicles and qualifying vehicles transporting persons with disabilities are exempt pursuant to Vehicle and Traffic Law § 1704-a (2).

Qualifying authorized commuter buses and specialized government vehicles, as determined by the Authority, are exempt.

Table 1 Adopted CBD Toll Rate Schedule (continued)

TRIBOROUGH BRIDGE AND TUNNEL AUTHORITY CENTRAL BUSINESS DISTRICT (CBD) CHARGES							
		PHASE 1 2025-2027		PHASE 2 2028-2030		PHASE 3 starting 2031	
b	Customers Using Fare Media Other Than E-ZPass	CBD ENTRY CHARGE	PER TRIP CHARGE PLAN* (TO/FROM/ WITHIN/ THROUGH CBD)	CBD ENTRY CHARGE	PER TRIP CHARGE PLAN* (TO/FROM/ WITHIN/ THROUGH CBD)	CBD ENTRY CHARGE	PER TRIP CHARGE PLAN* (TO/FROM/ WITHIN/ THROUGH CBD)
	VEHICLE CLASSIFICATION						
1	Passenger and other vehicles, including sedans, sport utility vehicles, station wagons, hearses, limousines, pickup trucks with factory beds, pickup trucks with caps below the roofline and not extending over the sides, and vans without an extended roof above the windshield						
	Peak period (5am-9pm weekdays, 9am-9pm weekends)	$13.50		$18.00		$22.50	
	Overnight period (9pm-5am weekdays, 9pm-9am weekends)	$3.30		$4.40		$5.50	
2	Single-unit trucks, including non-articulated trucks, pickup trucks with modified beds, vans with modified body behind the drivers cab, pickup trucks with caps above the roofline or extending over the sides, and vans with an extended roof above the windshield						
	Peak period (5am-9pm weekdays, 9am-9pm weekends)	$21.60		$28.80		$36.00	
	Overnight period (9pm-5am weekdays, 9pm-9am weekends)	$5.40		$7.20		$9.00	
3	Multi-unit trucks, including articulated trucks where a power unit is carrying one or more trailers						
	Peak period (5am-9pm weekdays, 9am-9pm weekends)	$32.40		$43.20		$54.00	
	Overnight period (9pm-5am weekdays, 9pm-9am weekends)	$8.10		$10.80		$13.50	
4	Buses, including vehicles registered with the DMV and plated as a bus, omnibus, or have other designated official plates						
	Peak period (5am-9pm weekdays, 9am-9pm weekends)	$21.60		$28.80		$36.00	
	Overnight period (9pm-5am weekdays, 9pm-9am weekends)	$5.40		$7.20		$9.00	
	Licensed sightseeing buses						
	Peak period (5am-9pm weekdays, 9am-9pm weekends)	$32.40		$43.20		$54.00	
	Overnight period (9pm-5am weekdays, 9pm-9am weekends)	$8.10		$10.80		$13.50	
5	Motorcycles						
	Peak period (5am-9pm weekdays, 9am-9pm weekends)	$6.75		$9.00		$11.25	
	Overnight period (9pm-5am weekdays, 9pm-9am weekends)	$1.65		$2.20		$2.75	
	NYC TLC taxis, green cabs, for-hire vehicles (FHVs)						
	Taxis, green cabs, and FHVs on trips		$0.75		$1.00		$1.25
	FHVs on trips dispatched by high-volume for-hire services (HVFHSs)		$1.50		$2.00		$2.50

The Authority reserves the right to determine whether any vehicle is of unusual or unconventional design, weight, or construction and therefore not within any of the listed categories. The Authority also reserves the right to determine the CBD charge for any such vehicle of unusual or unconventional design, weight, or construction. Any single unit vehicle identified as belonging to Classes 1, 2, or 5 will be up-classed to the next toll class when towing a trailer or another vehicle.

Daily toll cap of once per day for Class 1 and Class 5 vehicles. Caps for non-passenger vehicles are subject to change pursuant to the adaptive management approach to mitigating project effects, as committed to in the Final Environmental Assessment.

NYC TLC taxi, green cab, and FHV tolls are to be paid by the passenger pursuant to Rules of City of NY Taxi & Limousine Comm (35 RCNY) §§ 58-26 (f), 59A-23 (b), 59D-17 (c).

CBD entry charges and per trip charges are subject to a variable percentage increase/decrease of up to 10% for up to one year after implementation pursuant to the adaptive management approach to mitigating project effects, as committed to in the Final Environmental Assessment.

The Authority reserves the right to charge a 25% higher CBD charge during Gridlock Alert Days. Each year, the NYCDOT identifies Gridlock Alert Days during the UN General Assembly and throughout the holiday season when heavy traffic is expected in Manhattan. On Gridlock Alert Days, consider walking, biking, or taking mass transit for any trips in Manhattan.

Qualifying authorized emergency vehicles and qualifying vehicles transporting persons with disabilities are exempt pursuant to Vehicle and Traffic Law § 1704-a (2).

Qualifying authorized commuter buses and specialized government vehicles, as determined by the Authority, are exempt.

**Subject to full execution of and in compliance with plan agreement by FHV bases and taxi technology system providers.*

TOLL COLLECTION ON TBTA FACILITIES

The nine (9) TBTA toll facilities are divided into three toll pricing structures: major crossings, minor crossings, and the Henry Hudson Bridge. The major crossings for this purpose include the RFK Bridge, Bronx-Whitestone Bridge, Throgs Neck Bridge, Queens Midtown Tunnel, Hugh L. Carey Tunnel, and the Verrazzano-Narrows Bridge. As of December 1, 2020, the Verrazzano-Narrows Bridge implemented split tolling, with one-way and round-trip toll rates matching those at other major crossings. Previously, tolls at the Verrazzano-Narrows Bridge were only collected in the westbound direction. The minor crossings are the Marine Parkway Bridge and Cross Bay Bridge. The Henry Hudson Bridge is the only facility limited to vehicles that are authorized to use parkways.

Toll Structures and Operation

The current toll structure, in place since the August 6, 2023 toll increase, is shown in Table 2. Toll rates are determined using a basic rate as modified by variables specific to a number of factors, including:

- crossing used,
- vehicle classification,
- toll payment method, and
- place of residence.

This study uses the phrase "Tolls by Mail" ("TBM") to refer to method of payment for the use of fare media other than E-ZPass by the New York E-ZPass Customer Service Center ("NYCSC") customers and current TBM customers based on license plate imaging. (See 21 NYCRR §1021.1). As presented in Table 2, E-ZPass toll rates apply only to properly mounted customer tags issued by the NYCSC (this includes TBTA, the Port Authority, the Thruway, the Buffalo and Fort Erie Public Bridge Authority Peace Bridge, and New York State Bridge Authority).

Effective April 11, 2021, a "NYCSC Mid-Tier" ("Mid-Tier") toll rate was introduced, in order to offset the additional costs incurred by TBTA to process these tolls. The Mid-Tier toll rate is charged to NYCSC E-ZPass customers when their E-ZPass tag is not properly mounted while crossing TBTA toll facilities and are therefore identified through a license plate match to their E-ZPass account. The Mid-Tier toll rate is higher than the E-ZPass toll rate that is charged to E-ZPass NYCSC customers when their E-ZPass tag is properly mounted, but lower than the full toll charged to TBM customers. The goal of the new Mid-Tier toll rate is to incentivize NYCSC E-ZPass customers to properly mount their E-ZPass tag. NYCSC E-ZPass customers subject to the Mid-Tier toll rate that subsequently properly mount their E-ZPass tag will resume paying the lowest E-ZPass toll rate.

TBM toll rates are charged to non-NYCSC E-ZPass customers (effective July 12, 2009), as well as to TBM customers at all nine (9) TBTA facilities, reflecting the systemwide implementation of Cashless Tolling completed in 2017. Under the TBM Program, license plate images for vehicles without E-ZPass tags are matched with information from the applicable DMV and a toll bill is mailed to the

vehicle's owner. Only NYCSC E-ZPass commercial and passenger customers are eligible for the lower E-ZPass toll rates. Any motorist, regardless of residence, can obtain a NYCSC transponder.

Table 2 Current Toll Rates at TBTA Facilities, Effective Since August 6, 2023

Classification	RFK Bridge, Bronx-Whitestone Bridge, Throgs Neck Bridge, Queens Midtown Tunnel, Hugh L. Carey Tunnel, Verrazzano-Narrows Bridge[a]			Henry Hudson Bridge			Marine Parkway-Gil Hodges Memorial Bridge, Cross Bay Veterans Memorial Bridge		
	TBM/ Non-NYCSC E-ZPass	Mid-Tier (NYCSC)[c]	E-ZPass (NYCSC)[b]	TBM/ Non-NYCSC E-ZPass	Mid-Tier (NYCSC)[c]	E-ZPass (NYCSC)[b]	TBM/ Non-NYCSC E-ZPass	Mid-Tier (NYCSC)[c]	E-ZPass (NYCSC)[b]
Two-axle vehicles, including: Passenger vehicles, SUVs, station wagons, self-propelled mobile homes, ambulances, hearses, vehicles with seating capacity of not more than 15 adult persons (including the driver) and trucks with maximum gross weight of 7,000 lbs. and under	$11.19	$9.11	$6.94	$8.25	$5.04	$3.18	$5.60	$4.11	$2.60
Each additional axle costs	4.71	4.67	4.54	3.53	3.50	3.40	3.53	3.50	3.40
The following reduced rate prepaid charges are presently available for the two-axle vehicles referenced above:									
Charge per crossing for E-Tokens							3.59[d]		
Charge per crossing for E-Tokens for registered Rockaway Peninsula/Broad Channel Residents using an eligible vehicle							2.33[d]		
Registered Rockaway Residents using an eligible vehicle									1.70[e]
Charge per crossing for registered Staten Island Residents using an eligible vehicle			3.90[d]						
Charge per crossing for VNB for registered Staten Island Residents using an eligible vehicle through paying with E-Tokens --	5.55[d]								
All two-axle vehicles greater than 7,000 lbs. and buses (other than franchise buses and motor homes)	22.39	17.55	12.55				11.19	8.77	6.28
3 Axle	36.86	28.84	20.56				18.44	14.42	10.28
4 Axle	46.08	36.35	26.29	(f)	(f)	(f)	23.03	18.17	13.14
5 Axle	60.56	47.62	34.27				30.28	23.82	17.14
6 Axles or greater	69.77	55.13	39.98				34.89	27.57	20.00
Two or three-axle franchise buses	12.08	9.06	5.97				6.18	4.69	3.15
Motorcycles	4.71	3.89	3.02	4.71	3.46	2.17	4.71	3.46	2.17

Notes:

(a) Split tolling was implemented at the Verrazzano-Narrows Bridge on December 1, 2020.

(b) E-ZPass crossing charges apply to NYCSC E-ZPass customers only when using their properly mounted NYCSC E-ZPass tag; customers of other E-ZPass CSCs are charged the TBM toll. Any motorist, regardless of residence, can obtain a NYCSC transponder.

(c) Mid-Tier crossing charges apply to NYCSC E-ZPass customers only when not using their properly Mounted NYCSC E-ZPass tag; For crossing charges posted to NYCSC E-ZPass accounts based on license plates; and for NYCSC third-party account providers.

(d) Tolls are charged per transaction for E-Tokens using a registered E-ZPass tag.

(e) Effective April 1, 2012, eligible Rockaway Peninsula and Broad Channel residents ("Rockaway Residents") using E-ZPass at the Cross Bay Bridge receive a full rebate of the Rockaway Resident E-ZPass toll from MTA. It is likely that MTA will continue the CBB rebate program at its current level only if there is sufficient funding to do so. Should there not be sufficient funding to continue the CBB rebate program at its current level, the rebate program would likely revert to the level that existed prior to April 1, 2012, where Rockaway Residents paid the Rockaway Resident E-ZPass toll for the first two trips and received the rebate only for subsequent trips taken during a calendar day using the same E-ZPass tag.

(f) Passage prohibited except with NYCDOT permit.

Passenger Car Tolls

As mentioned earlier, TBTA crossings are separated into three categories for toll pricing structure purposes: major crossings, minor crossings, and the Henry Hudson Bridge. The single trip passenger car TBM toll is $11.19 for the major crossings. The minor crossing passenger car TBM toll is $5.60 on the Marine Parkway and Cross Bay Bridges, which is roughly half the amount of those on the major crossings. On the Henry Hudson Bridge, the passenger car toll is $8.25 for TBM customers. All tolls are collected in each direction. As of December 1, 2020, as authorized by federal law, the Verrazzano-Narrows Bridge implemented split tolling, with one-way and round-trip toll rates matching those at other major crossings; it had previously operated with tolls in the westbound direction only.

On April 11, 2021, TBTA implemented a Mid-Tier toll rate for NYCSC E-ZPass customers with improperly mounted E-ZPass tags. The single trip passenger car NYCSC Mid-Tier toll is $9.11 for the major crossings. The minor crossing passenger car NYCSC Mid-Tier toll is $4.11 on the Marine Parkway and Cross Bay Bridges. On the Henry Hudson Bridge, the passenger car NYCSC Mid-Tier toll is $5.04.

Tolls for passenger cars are reduced by TBTA under the following programs: (1) NYCSC E-ZPass; (2) E-Tokens required by Sections 553-f, 553-h, and 553-i of the New York Public Authorities Law; (3) crossing used; (4) place of residence; and (5) some combination of the foregoing. MTA also has toll rebate programs for certain eligible residents using NYCSC E-ZPass at the Cross Bay and Verrazzano-Narrows Bridges. MTA reimburses TBTA in full for these rebates with a combination of its own funds, New York State appropriated funds, and the Outer Borough Transportation Account ("OBTA") created in 2018 under New York Public Authorities Law Section 1270-i. Beginning in 2020, the OBTA provides rebates to Queens residents using the Cross Bay Bridge and Bronx residents crossing the Henry Hudson Bridge, and partly funds the Staten Island Resident rebate at the Verrazzano-Narrows Bridge as described in greater detail below under the heading "Outer Borough Transportation Account Rebates."

Under the current toll schedule, passenger cars equipped with a properly mounted NYCSC E-ZPass tag receive a $4.25 reduction per trip at all major crossings, a $3.00 reduction at the Cross Bay and Marine Parkway Bridges, and a $5.07 reduction at the Henry Hudson Bridge when compared to the standard, undiscounted rate. Passenger cars with NYCSC E-ZPass accounts but improperly mounted or missing tags are subject to the Mid-Tier toll rate and receive a lower toll rate reduction: a $2.08 reduction per trip at major crossings, a $1.49 reduction at the Cross Bay and Marine Parkway Bridges, and a $3.21 reduction at the Henry Hudson Bridge. Passenger cars equipped with a transponder not issued by the NYCSC pay the same standard, undiscounted toll rate as TBM customers.

Resident Toll Discounts for Passenger Cars

TBTA provides toll discounts to Rockaway Residents on the Cross Bay and Marine Parkway Bridges and registered residents of Staten Island on the Verrazzano-Narrows Bridge by means of resident E-Tokens and NYCSC E-ZPass. Under the current toll schedule, eligible Rockaway Residents paying

with an E-Token using a registered E-ZPass tag receive a $3.27 reduction per trip at the Cross Bay and Marine Parkway Bridges. Rockaway Residents using a registered Rockaway Resident E-ZPass tag receive a $3.90 reduction per trip at the Cross Bay and Marine Parkway Bridges. Eligible Staten Island Residents paying with an E-Token using a registered E-ZPass tag receive a $5.64 reduction per trip at the Verrazzano-Narrows Bridge.

Tolls for Vehicles over 7,000 Pounds

The toll charges for vehicles over 7,000 pounds are a function of the number of axles as well as the crossing used. For the major crossings, the present TBM rate for these vehicles is $22.39 for two axles, increasing to $69.77 for a six axle or greater vehicle. These vehicles receive a reduction of approximately 43 percent with a properly mounted NYCSC E-ZPass and an approximately 21 percent reduction in the Mid-Tier category. Vehicles with three to six axles or greater pay varying rates which increase with the number of axles as shown in Table 2.

For the minor crossings, the two-axle TBM rate for vehicles over 7,000 pounds is $11.19, increasing to $34.89 for a six axle or greater vehicle. These vehicles presently receive a reduction of approximately 43 percent with a properly mounted NYCSC E-ZPass tag and a 21 percent reduction in the Mid-Tier category. Vehicles with three to six axles or greater pay varying rates which increase with the number of axles as shown in Table 2. Commercial vehicles are not permitted on the Henry Hudson Bridge without a NYCDOT permit.

MTA also has a partial toll rebate program for NYCSC E-ZPass business and commercial customers using eligible vehicles at the Verrazzano-Narrows Bridge. As of April 11, 2021, this partial rebate is 15 percent of tolls transacted on eligible vehicles.

MTA's Toll Rebate Programs

Toll rebate programs have been and remain available for: (1) registered Rockaway Residents for use of the Cross Bay Bridge; (2) Staten Island Residents participating in the Staten Island Resident ("SIR") E-ZPass discount program (the "SIR Rebate Program") for use of the Verrazzano-Narrows Bridge; (3) commercial vehicles participating in the Verrazzano-Narrows Bridge Commercial Rebate Program ("VNB Commercial Rebate Program" and, together with the SIR Rebate Program, the "VNB Rebate Programs"); (4) Bronx Residents for the use of the Henry Hudson Bridge; and (5) Queens Residents for the use of the Cross Bay Bridge. The MTA toll rebate programs are available only to residents with registered NYCSC E-ZPass tags, and to commercial vehicles with more than 20 trips per month across the Verrazzano-Narrows Bridge using the same NYCSC E-ZPass account. These rebate programs do not affect TBTA revenues since TBTA collects the full toll, with a portion paid by the motorist and the remainder paid by MTA with a combination of its own funds and New York State funds.

<u>Cross Bay Bridge Rebate Program</u>

A toll rebate program for the benefit of E-ZPass customers who are Rockaway Residents was implemented by MTA on January 1, 1998, for use on the Cross Bay Bridge. This program was temporarily modified from July 23, 2010 to March 31, 2012, however, the full rebate was restored

on April 1, 2012. MTA reimburses TBTA for toll rebates relating to the Cross Bay Bridge rebate program for that calendar year, with the amount varying to reflect usage. MTA reimbursed TBTA approximately $4.0 million in 2022 and has reimbursed approximately $5.0 million since 2023.

Verrazzano-Narrows Bridge Rebate Programs

Since 2014, MTA has had two toll rebate programs at the Verrazzano-Narrows Bridge: the SIR Rebate Program, available for residents of Staten Island participating in the SIR E-ZPass toll discount plan, and the VNB Commercial Rebate Program, available for commercial vehicles meeting a minimum number of trips per month using the same NYCSC E-ZPass tag. Since they are partially funded by the State, the VNB Rebate Programs follow the State fiscal year.

In December 2019, federal law eliminated the one-way tolling requirement at the Verrazzano-Narrows Bridge and restoring split tolling so that tolls could be collected in both the Staten Island-bound and Brooklyn-bound directions. This change was implemented on December 1, 2020. In March 2020, the MTA Board approved changing the method of toll collection at the Verrazzano-Narrows Bridge to split tolling and authorized TBTA to make the required revisions to the toll schedule regulation under the New York State Administrative Procedure Act. As a result, the SIR Rebate Program was changed so that the effective, post-rebate toll for Staten Island residents was $2.75 in each direction (from $5.50 in the Staten Island-bound direction) and the VNB Commercial Rebate Program's eligibility threshold was changed to more than 20 trips per month in either direction for trucks and other commercial vehicles using the same NYCSC E-ZPass tag (from ten trips a month, collected Staten-Island bound). In February 2021, the TBTA Board eliminated the minimum trip threshold and adopted toll increases effective April 11, 2021.

As a result of the change to the SIR resident toll and the MTA rebate program, the annualized cost of the 2021-2022 VNB Rebate Program was approximately $28.3 million with $6.3 million for the 2021-2022 VNB Commercial Rebate Program and $22.0 million for the 2021-2022 SIR Rebate Program. The annualized cost of the 2022-2023 VNB Rebate Program was approximately $32 million with $8.8 million for the 2022-2023 VNB Commercial Rebate Program and $23.2 million for the 2022-2023 SIR Rebate Program. The annualized cost of the 2023-2024 VNB Rebate Program was approximately $33.3 million with $7.2 million for the 2023-2024 VNB Commercial Rebate Program and $26.1 million for the 2023-2024 SIR Rebate Program. The projected annualized cost of the 2024-2025 VNB Rebate Program is approximately $35.9 million with $7.6 million for the 2024-2025 VNB Commercial Rebate Program and $28.3 million for the SIR Rebate Program. The projected annualized cost of the 2025-2026 VNB Rebate Program is approximately $37.5 million with $8.0 million for the 2024-2025 VNB Commercial Rebate Program and $29.5 million for the SIR Rebate Program. MTA's annual contribution is $7.0 million ($3.5 million for the resident rebate and $3.5 million for the commercial rebate), with the balance provided by the State's contribution via appropriations to the MTA. OBTA funds can also be used to fund the SIR Rebate Program. $6.4 million was allocated from the OBTA to fund the SIR Rebate Program in December 2023, which was carried through the 2024-2025 period.

The money to fund a year's estimated costs for the VNB Rebate Programs is transferred by MTA to TBTA during the State fiscal year. The 2025-2026 VNB Rebate Programs will be implemented as

specified herein only for such periods during which both (a) MTA's total financial responsibility, net of New York State actions or available offsets, does not exceed $7 million for the 2025-2026 SIR Rebate and VNB Commercial Rebate Programs and (b) New York State provides (i) at least $7 million for the 2025-2026 SIR Rebate Program and VNB Commercial Rebate Program and (ii) New York State provides such additional funds as are necessary to keep the effective post-rebate SIR E-ZPass toll at $2.75 under the 2025-2026 SIR Rebate Program. If, as a result of unexpected toll transaction activity, TBTA estimates that such MTA and State funds allocated to MTA for the 2025-2026 VNB Rebate Programs, net of offsets, will be insufficient to fund the 2024-2025 VNB Commercial Rebate Program for the full program year, TBTA may reduce the rebate amount under such program to a percentage that is forecast to be payable in full for the remainder of the program year with the available funds, as allowed by the February 2021 MTA Board resolution. However, in the event that such MTA and State funds allocated to MTA for the 2025-2026 VNB Rebate Programs are fully depleted at any time during the 2024-2025 VNB Rebate Programs annual period, the 2025-2026 VNB Rebate Programs will cease, and Staten Island residents will be charged the applicable resident discount toll, and trucks and other commercial vehicles will be charged the applicable NYCSC E-ZPass toll for the Verrazzano-Narrows Bridge.

The VNB Rebate Programs will continue into future years provided that (a) MTA's annual period contribution does not exceed $7 million, (b) the MTA Board approves a budget that includes MTA's contribution to such program, and (c) New York State provides to MTA funds sufficient for at least half the expenses of each continuing annual period.

Staten Island Residents crossing the Verrazzano-Narrows Bridge received a rebate of $0.93 on the $3.68 SIR E-ZPass toll paid in each direction. As a result of these MTA toll rebates and due to appropriations in each enacted New York State Fiscal Year budget, Staten Island residents have paid an effective post-rebate toll of $2.75 per trip under the current SIR toll rates collected at the VNB since April 11, 2021. On August 06, 2023, the rebate increased to $1.15 after the SIR E-ZPass rate increased to $3.90.

Since April 2020, the VNB Commercial Rebate Program has remained at 15 percent of the E-ZPass toll for trucks and other commercial vehicles with more than twenty trips per month (after implementation of split tolling) across the Verrazzano-Narrows Bridge, using the same NYCSC E-ZPass Tag. An estimated $8 million allocation is estimated for the 2025-2026 VNB Commercial Rebate Program, which is sufficient to provide funding from April 1, 2025 through March 31, 2026.

Outer Borough Transportation Account Rebates

Henry Hudson Bridge Bronx Resident Rebate Program and Cross Bay Bridge Queens Resident Rebate Program

The MTA Board approved two MTA toll rebate programs in December 2019. They are (i) a Bronx resident rebate for passenger vehicles with E-ZPass tags using the Henry Hudson Bridge, and (ii) a Queens resident rebate for passenger vehicles with E-ZPass tags using the Cross Bay Bridge. In each case, the E-ZPass toll will be charged to the customer's NYCSC resident E-ZPass account, and then an immediate credit will be issued by MTA for the amount of the toll using funds in the OBTA established under Section 1270-i (3) of the New York Public Authorities Law. Due to the

impacts of the pandemic on traffic, the funding for these rebate programs was not available until late 2023, when MTA was authorized by the Capital Program Review Board to use funds not exceeding $22.2 annually to fund the Queens and Bronx–Resident MTA Rebate Programs and maintain the effective toll of $2.75 for the SIR Rebate Program. The Queens and Bronx resident programs launched in February 2024, and the year-end cost for the combined programs was $8.7 million

Cashless Tolling System

The E-ZPass Electronic Toll Collection ("ETC") system has been fully installed at all TBTA bridges and tunnels since December 1996. When a vehicle with an E-ZPass tag enters the toll payment area, an electronic reader identifies the tag code at the toll facility and the toll is deducted from the customer's account. TBTA had over 7.006 million E-ZPass tags in use in 2024. As of December 2024, E-ZPass participation rates were 92.3 percent of toll-paying traffic TBTA-wide. The total number of active E-ZPass Group tags in use for all participating agencies as of December 31, 2023, was over 59 million.

Table 3 lists the year-end TBTA-wide E-ZPass participation rates starting in 2015. Implementation of E-ZPass started in October 1995 on the Verrazzano-Narrows Bridge and was phased in gradually on the remaining crossings through December 1996. Also shown are the participation rates for each of the facilities for December 2024.

As Cashless Tolling was fully implemented by the end of 2017, E-ZPass participation rates increased considerably, with the year-end TBTA-wide E-ZPass participation rate increasing from 86.2 to 93.6 percent between 2016 and 2017, an increase of 7.4 percent. In 2023, there was a 2.1 percent decrease in year-end (December) TBTA-wide E-ZPass participation rates compared to 2022. Some of the E-ZPass decrease could be attributed to a change in the categorization of E-ZPass violation notices. As of April 1, 2023, customers receiving E-ZPass violation notices began receiving Tolls by Mail notices; previously these customers were included in the E-ZPass market share. E-ZPass participation rates continue to be above 90 percent at each facility. The year-end 2024 E-ZPass participation rate was comparable to 2023.

Table 3 Year-End E-ZPass Participation Rates

Year	Year-End E-ZPass Participation Rates for all TBTA Facilities									
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Percent Participation (All TBTA Facilities)	85.6%	86.2%	93.6%	94.6%	95.5%	94.7%	95.2%	94.2%	92.1%	92.3%
TBTA Facility	Year-End TBTA E-ZPass Participation Rate by Facility (December 2024)									
	Throgs Neck	Bronx-Whitestone	Robert F. Kennedy	Queens Midtown	Hugh L. Carey	Verrazzano-Narrows	Henry Hudson	Marine Parkway	Cross Bay	
Percent Participation	90.9%	90.2%	91.3%	93.9%	94.4%	93.6%	93.0%	94.8%	93.4%	

Source: TBTA data.

TBTA's Role in E-ZPass

TBTA was a founding member of the E-ZPass Group. Originally comprised of toll authorities in Delaware, Pennsylvania, New Jersey, and New York, the E-ZPass Group now encompasses 38 toll agencies in 20 states, including five international border crossings. Since the inception of the E-ZPass Group more than 25 years ago, customers of the member E-ZPass Group agencies have been able to use their E-ZPass tags on any E-ZPass-equipped facility operated by another E-ZPass Group member. In 2023, the E-ZPass Group processed over 4.1 billion toll transactions. As the E-ZPass Group has grown, the E-ZPass customer base has increased, helping to increase usage of E-ZPass on TBTA facilities.

The E-ZPass transportation network includes, in addition to TBTA, the following agencies and bridges:

- The six (6) interstate crossings of the Port Authority;
- New Jersey Turnpike and Garden State Parkway operated by the New Jersey Turnpike Authority;
- New York State Thruway including the Governor Mario M. Cuomo Bridge (formerly the Tappan Zee Bridge);
- The five (5) bridges of the New York State Bridge Authority (from Bear Mountain northward);
- The Buffalo and Fort Erie Public Bridge Authority's Peace Bridge;
- The Thousand Island Bridges of the Thousand Island Bridge Authority;
- The three (3) bridges of the Niagara Falls Bridge Commission;
- The Atlantic City Expressway (operated by the South Jersey Transportation Authority);
- The four (4) toll bridges between New Jersey and Pennsylvania operated by the Delaware River Port Authority;
- The seven (7) toll bridges between New Jersey and Pennsylvania operated by the Delaware River Joint Toll Bridge Commission;
- The Delaware Memorial Bridge between New Jersey and Delaware operated by the Delaware River and Bay Authority; and
- The two (2) toll bridges between New Jersey and Pennsylvania operated by the Burlington County Bridge Commission.

Also included are the toll facilities operated by the following agencies and companies across the United States:

- Cape May County Bridge Commission (New Jersey)
- Central Florida Expressway Authority
- Cline Avenue Bridge (Indiana)
- Delaware Department of Transportation
- Florida Department of Transportation
- Houbolt Road (Illinois)
- Illinois State Toll Highway Authority
- Indiana Toll Road Concession Company, LLC
- North Carolina Turnpike

- Kentucky Public Transportation Infrastructure Authority
- Lee County (Florida)
- Maine Turnpike Authority
- Massachusetts Department of Transportation
- Maryland Transportation Authority
- Minnesota Department of Transportation
- New Hampshire Department of Transportation
- North Carolina Turnpike Authority
- Ohio Turnpike and Infrastructure Commission
- The Pennsylvania Turnpike Commission
- Rhode Island Turnpike and Bridge Authority
- State Roads and Toll Authority (Georgia)
- Skyway Concession Company (Illinois)
- UBP Bay City (Michigan)
- Virginia Department of Transportation
- West Virginia Parkways Authority

With the exception of TBTA customers enrolled in the E-ZPass Pay Per Trip plan[1], all TBTA E-ZPass customers must pre-pay their E-ZPass accounts. These pre-payments are based on a customer's E-ZPass usage at both TBTA and other E-ZPass Group member toll facilities. Through the E-ZPass Group inter-operability agreements, TBTA and other member agencies transfer E-ZPass payments to each other on a routine basis. In 2024, TBTA transferred $1.44 billion to, and received $807.9 million from, other members within the E-ZPass Group.

Cashless, Open Road Tolling ("Cashless Tolling")

TBTA completed full implementation of Cashless Tolling on September 30, 2017. The Cashless Tolling system utilizes tolling equipment mounted on overhead gantries to capture E-ZPass tag-reads and license plate images in an environment without traditional toll plazas, enabling customers to traverse tolling areas at free-flow speeds. Drivers without E-ZPass receive a TBM invoice mailed to the vehicle's registered owner.

In spring 2016, TBTA began asking the New York State DMV to suspend the vehicle registrations of violators who fail to pay their tolls and violation fees or have them dismissed or transferred in response to violation notices for five toll violations within 18 months, in accordance with the initial New York State DMV regulation for persistent or habitual toll violators. In January 2017, the New York State DMV changed its regulation for persistent or habitual violators so that vehicle registrations can be suspended for three toll violations within five years and commercial vehicle registrations can be suspended for $200.00 or more in unpaid tolls within five years.

TBTA employs and develops measures to enhance collection and enforcement of tolls under the Cashless Tolling system. License plate recognition technology on gantries and in patrol vehicles is used for the detection of persistent toll violators and toll violation enforcement. Additionally, TBTA continues to issue exclusion orders barring the vehicles of out-of-state toll violation scofflaws from

[1] This plan enables customers to set up an E-ZPass account without a pre-paid balance. Those interested in the program pay for their tolls each day through Automated Clearing House deductions from their checking accounts.

TBTA facilities and for those persistent violators, engages in summonsing vehicle operators and towing those vehicles from TBTA facilities.

In April 2017, the New York State DMV received legislative authorization to enter into reciprocal compacts or agreements with other states to suspend or place holds on the vehicle registrations of persistent toll violators who reside in such other states. TBTA entered into such an agreement with Massachusetts and began submitting registration hold packages to the Massachusetts Registry of Motor Vehicles in February 2020 to place holds on the registrations of toll-evading Massachusetts owners. In time, TBTA anticipates being able to discontinue issuing exclusion orders to out-of-state toll violators barring their vehicles from TBTA facilities.

In April 2024, the New York State legislature passed into law a new section of the Public Authorities Law ("PAL") effective September 1, 2024 that gives TBTA the power to enter and enforce judgments for unpaid tolls, fees or other charges for customers that have received three or more violation notices within a five-year period without court proceedings. TBTA sends judgment letters alerting violators that they have 30 days to reconcile their account before their account is sent to the sheriffs' department for collection. The PAL sets forth the specific thresholds for which an account would qualify for judgment. The PAL also provides that entry of a judgment requires a 30-day warning notice to the violator. Based on the express language of the statute, the judgments are to be enforced in the same manner as the enforcement of money judgments in civil actions in any court.

TBTA has continually undertaken efforts to increase E-ZPass market share and to assist customers in managing toll bill payments and E-ZPass accounts. "Tolls NY" is a smartphone application, which had a soft launch in mid-June 2020 and was officially launched in December 2020 through a TBTA press release, highlighting the functionality available to E-ZPass and TBM customers for managing their accounts. As of the end of 2024, there were more than 5.0 million installations of Tolls NY.

Passenger Car Toll Rate Trends and Inflation

Since 1971, toll rates have increased periodically on TBTA facilities. Table 4 displays passenger car toll rates for the nine (9) TBTA facilities over the past 50 years. Tolls are shown for cash passenger car transactions from 1971 to implementation of Cashless Tolling at each facility and TBM transactions thereafter, and for all E-ZPass transactions from 1996, when E-ZPass was introduced on the TBTA system, until July 12, 2009. Effective July 12, 2009, only NYCSC E-ZPass customers were eligible for the lower E-ZPass rate and non-NYCSC E-ZPass customers were charged the TBM toll rate. From 2009 through 2020, Table 4 shows the cash or TBM rate and the NYCSC E-ZPass rate on each of TBTA's facilities. The Mid-Tier toll rate was added in 2021; Table 4 shows the cash or TBM rates, the NYCSC E-ZPass rates, and the Mid-Tier toll rates on each of TBTA facilities for 2021 through today.

Passenger Car Toll Rate Trends

Since 1982, passenger car toll rates have been separated into three categories, as follows:

- Major crossings – RFK, Bronx-Whitestone, and Throgs Neck Bridges, and the Queens Midtown and Hugh L. Carey Tunnels. The Verrazzano-Narrows Bridge is also a major crossing; as noted in the table, it formerly operated with one-way toll collection between 1986 and November 30, 2020.
- Minor crossings – Marine Parkway and Cross Bay Bridges.
- Henry Hudson Bridge (treated as a minor crossing prior to the 2008 toll increase) – a crossing restricted to passenger vehicles.

In general, tolls for vehicles over 7,000 pounds have also been adjusted upward when passenger car toll rates were increased. Notable exceptions occurred in 1987 and 1989 when these toll rates were not raised while there was a general increase for passenger cars.

Over the years, TBTA has implemented various resident toll discount programs at the Cross Bay, Marine Parkway, and Verrazzano-Narrows Bridges. MTA also has toll rebate programs for certain eligible residents using NYCSC E-ZPass at the Cross Bay and Verrazzano-Narrows Bridges, as well as a toll rebate program for eligible NYCSC E-ZPass commercial customers at the Verrazzano-Narrows Bridge. While the rebate programs do not have an effect on revenues, due to MTA reimbursements as noted above, the toll discount programs have a negative effect on revenues, in part offset by a positive effect on traffic by attracting additional traffic to the facilities.

Table 4 Historical Trends in Cash, TBM and E-ZPass Passenger Car Toll Rates

Year	Major Crossings		Henry Hudson Bridge	Minor Crossings
	Verrazzano-Narrows Bridge	RFK, Bronx-Whitestone and Throgs Neck Bridges, and Queens Midtown and Hugh L. Carey Tunnels[a]		Marine Parkway-Gil Hodges Memorial and Cross Bay Veterans Memorial Bridges
1971	$0.50	$0.25	$0.10	$0.10
1972 – 1975	$0.75	$0.50	$0.25	$0.25
1975 – 1980	$1.00	$0.75	$0.50	$0.50
1980 – 1982	$1.00	$1.00	$0.60	$0.75
1982 – 1984	$1.25	$1.25	$0.90	$0.90
1984 – 1986	$1.50	$1.50	$0.90	$0.90
1986 – 1987	$1.75[b]	$1.75	$1.00	$1.00
1987 – 1989	$2.00[b]	$2.00	$1.00	$1.00
1989 – 1993	$2.50[b]	$2.50	$1.25	$1.25
1993 – 1996	$3.00[b]	$3.00	$1.50	$1.50
1996 – 2003[c]	$3.50 / $3.00[b]	$3.50 / $3.00	$1.75 / $1.25	$1.75 / $1.25
2003 – 2005	$4.00 / $3.50[b]	$4.00 / $3.50	$2.00 / $1.50	$2.00 / $1.50
2005 – 2008	$4.50 / $4.00[b]	$4.50 / $4.00	$2.25 / $1.75	$2.25 / $1.50
2008	$5.00 / $4.15[b]	$5.00 / $4.15	$2.75 / $1.90	$2.50 / $1.55
2009[d]	$5.50 / $4.57[b]	$5.50 / $4.57	$3.00 / $2.09	$2.75 / $1.71
2010 – 2013[f]	$6.50 / $4.80[b]	$6.50 / $4.80	$4.00 / $2.20[e]	$3.25 / $1.80
2013-2014[g]	$7.50 / $5.33[b]	$7.50 / $5.33	$5.00 / $2.44	$3.75 / $2.00
2015-2016[h]	$8.00 / $5.54[b]	$8.00 / $5.54	$5.50 / $2.54	$4.00 / $2.08
2017-2018[i]	$8.50 / $5.76[b][l]	$8.50 / $5.76[l]	$6.00 / $2.64[l]	$4.25 / $2.16[l]
2019-2020[j]	$9.50 / $6.12[b]	$9.50 / $6.12	$7.00 / $2.80	$4.75 / $2.29
2021-2023[k]	$10.17 / $8.36 / $6.55[m]	$10.17 / $8.36 / $6.55	$7.50 / $4.62 / $3.00	$5.09 / $3.77 / $2.45
2023-2025[n]	$11.19 / $9.11 / $6.94	$11.19 / $9.11 / $6.94	$8.25 / $5.04 / $3.18	$5.60 / $4.11 / $2.60

Notes:
(a) At the Hugh L. Carey Tunnel, the cash passenger car toll rates were $0.35 in 1971 and $0.70 in 1972.
(b) From March 20, 1986, through November 30, 2020, round-trip tolls (twice the amount shown) were collected on the Verrazzano-Narrows Bridge in only the westbound direction. During this period, eastbound traffic used the bridge toll-free. Amounts shown were the equivalents of collecting tolls in each direction. Split tolling began at the Verrazzano-Narrows Bridge on December 1, 2020. The toll is no longer doubled in the westbound direction and tolls are collected in each direction of travel.
(c) E-ZPass introduced to all TBTA facilities in December 1996. For the periods 1996-2003 through 2020, the cash/TBM toll rate is shown first, followed by the E-ZPass rate.
(d) Effective July 12, 2009, when the lower E-ZPass rate became available only to NYCSC E-ZPass customers.
(e) Beginning November 10, 2012, customers without E-ZPass tags at the Henry Hudson Bridge paid via the TBM program. Full Cashless Tolling began at the Henry Hudson Bridge in November 2016.
(f) Toll increase effective December 30, 2010.
(g) Toll increase effective March 3, 2013.
(h) Toll increase effective March 22, 2015.
(i) Toll increase effective March 19, 2017.
(j) Toll increase effective March 31, 2019.
(k) Toll increase effective April 11, 2021, with Mid-Tier toll introduced. The TBM/non-NYSCS E-ZPass toll rate is shown first, followed by the Mid-Tier rate, and then E-ZPass NYCSC rate.
(l) Customers without E-ZPass tags receive toll bills under the TBM program. Cash collection was eliminated when Cashless Tolling was implemented in 2017 at the Queens Midtown and Hugh L. Carey Tunnels in January, at the Cross Bay and Marine Parkway Bridges in April, at the RFK Bridge in June, at the Verrazzano-Narrows Bridge in July and at the Bronx-Whitestone and Throgs Neck Bridges in September.
(m) Split tolling was implemented on the Verrazzano-Narrows Bridge on December 1, 2020.
(n) Toll increase effective August 6, 2023.

Inflation

Since the value of a dollar decreases over time with inflation, the Consumer Price Index for All Urban Consumers ("CPI-U"), compiled by the US Department of Labor, Bureau of Labor Statistics ("BLS") for United States Cities, is often used as a means to assess toll rate increases. Since most of the transactions on TBTA facilities are made by customers using an E-ZPass tag registered with the NYCSC, we have compared cumulative CPI-U alongside TBTA major crossing passenger car NYCSC E-ZPass toll rates. The comparison starts in 1996 when E-ZPass was instituted on TBTA facilities. As indicated in Table 5, TBTA E-ZPass tolls in August 2023 (after the August 6th toll increase) are 2.3 times higher than the 1996 E-ZPass toll rate while the CPI-U is 1.9 times higher than the 1996 level. If adjusted for changes in the CPI-U, current tolls are 1.2 times the 1996 rate.

Beginning in 2021, inflation was consistently higher than it has been in several decades. In 2022, inflation exceeded 5 percent every month. This trend continued through February 2023. This was caused by several factors including supply chain constraints, labor shortages, and higher gas prices. Although inflation is still higher than it was prior to the onset of the pandemic, it has slowed down a bit. In February 2025 the CPI-U was 342.3, a 3.0 percent increase over the annual 2024 CPI-U of 332.21.

Table 5 E-ZPass Passenger Toll Rates versus Consumer Price Index

Year	Consumer Price Index [a]	RFK, Bronx-Whitestone, Throgs Neck, and Verrazzano- Narrows [j] Bridges and Queens Midtown and Hugh L. Carey Tunnels	Tolls Adjusted to 1982 - 1984 dollars [b]
1996[c]	166.9	3.00	1.80
2003	197.8	3.50	1.77
2005	212.7	4.00	1.88
2008	235.8	4.15	1.76
2009[d]	236.8	4.57	1.93
2010[e]	240.9	4.80	1.99
2013[f]	256.8	5.33	2.08
2015[g]	260.6	5.54	2.13
2017[h]	268.5	5.76	2.15
2019[i]	278.2	6.12	2.20
2021[k]	292.3	6.55	2.29
2023[l]	322.00	6.94	2.16
Ratio 2023/1996	1.93	2.31	1.20

Notes:
(a) New York Metropolitan Statistical Area: New York–Northern New Jersey-Long Island, NY-NJ-CT-PA, All Urban Consumers, All Items. Base period: 1982-1984 = 100.0. Not seasonally adjusted. Source: BLS.
(b) The current toll divided by the CPI and expressed in dollars.
(c) E-ZPass introduced to all TBTA facilities in December 1996.
(d) Effective July 12, 2009, when the lower E-ZPass rate became available only to NYCSC E-ZPass customers.
(e) Effective December 30, 2010.
(f) Effective March 3, 2013.
(g) Effective March 22, 2015.
(h) Effective March 19, 2017.
(i) Effective March 31, 2019.
(j) Split tolling was implemented on December 1, 2020.
(k) Effective April 11, 2021.
(l) Effective August 6, 2023.

HISTORICAL TRAFFIC, REVENUES AND EXPENSES AND ESTIMATED/BUDGETED NUMBERS FOR 2024

Historical traffic, toll revenues, and expenses were reviewed for the nine TBTA bridges and tunnels. Over the last 54 years from 1970 through 2024, paid traffic volumes on the crossings have ranged from a low of 218 million in 1976 to a high of 337 million in 2024. As displayed in Figure 2A/2B, the growth of traffic and revenue has been affected by the region's overall growth in population and employment, offset by the impact of 21 periodic toll increases (through the end of 2024 and represented by the boxes in the graph). By 2000, after 10 toll increases and 18 percent higher transactions, toll revenues had increased more than 13-fold, from $72 million in 1970 to $941 million in 2000. Revenues declined to $915 million in 2001 primarily due to the closures and restrictions on TBTA facilities following the September 11th terrorist attack on the World Trade Center and the regional decline in employment.

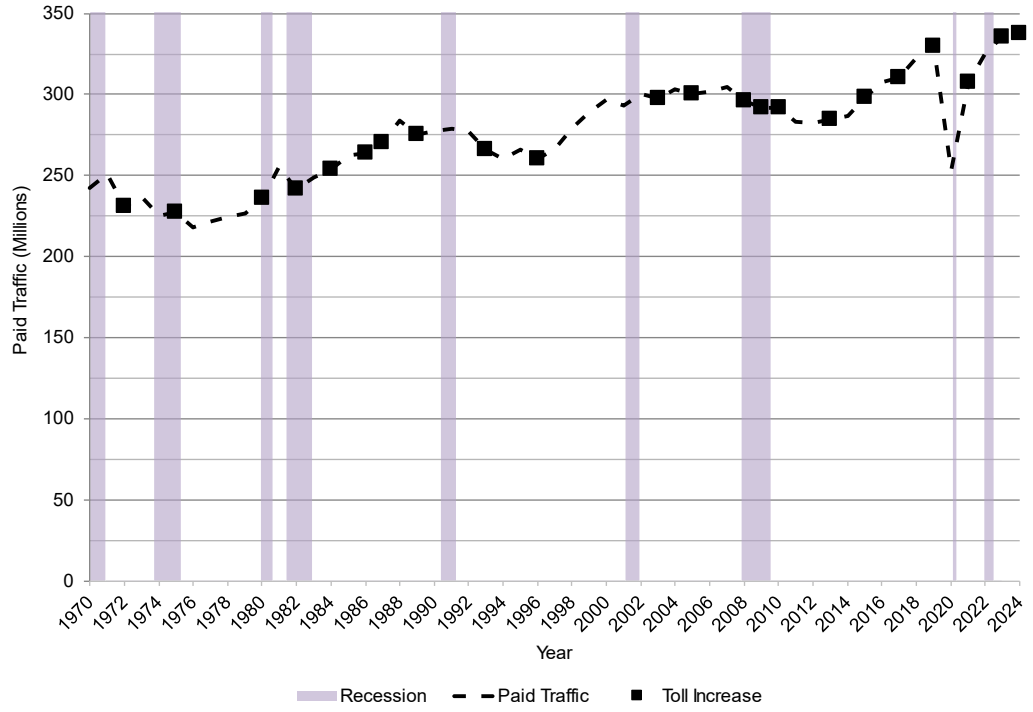
Since the 2008-2009 recession, toll revenues have increased each year with the exception of 2012, when there were temporary closures caused by Superstorm Sandy, and 2020, when the pandemic resulted in significant reductions in traffic. In 2020, traffic dropped to 253 million vehicles, a 23.1 percent decrease from the previous year. Toll revenues in 2020 were $1.640 billion, 20.8 percent lower than 2019 toll revenues. Major regional toll facilities such as those operated by the Port Authority and Thruway experienced similar trends in traffic reduction and recovery throughout the duration of the pandemic.

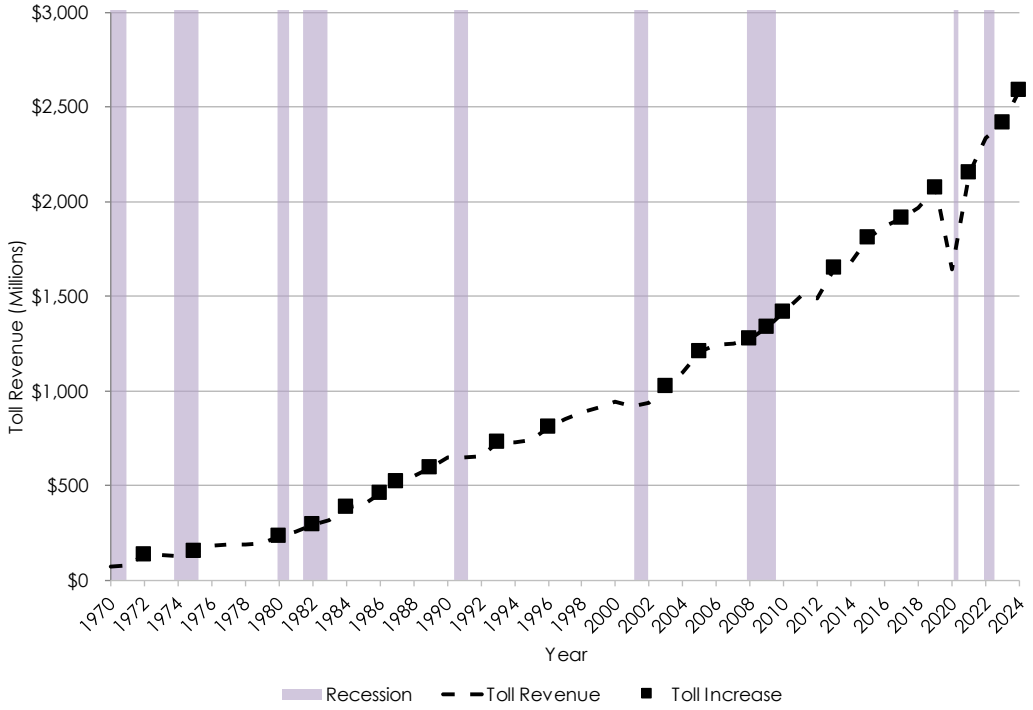
In 2021, significant pandemic related traffic recovery occurred resulting in 307 million vehicles, a 21.4 percent increase from the previous year (6.7 percent below pre-pandemic 2019 traffic). Toll revenues in 2021 were $2.150 billion, 31.1 percent higher than 2020 toll revenue (3.8 percent above pre-pandemic 2019 toll revenues). The April 2021 toll increase contributed to this increase in toll revenue. Toll revenues in 2022 were $2.332 billion, 8.5 percent higher than 2021 toll revenue (12.6 percent above pre-pandemic 2019 toll revenues). In 2023, traffic grew to 335 million vehicles, a 2.7 percent increase over the previous year. Toll revenue in 2023 was $2.416 billion, a 3.6 percent increase over the previous year. The August 2023 toll increase contributed to this increase in toll revenue. In 2024, traffic grew to 337 million vehicles, a record high for TBTA, and a 0.7 percent increase over the previous year. Toll revenue in 2024 was $2.584 billion, a 6.9 percent increase over the previous year.

Also note in Figure 2A/2B that, prior to the onset of the pandemic, despite the periodic toll increases, the traffic trend through 2019 was generally upward. Tepid economic conditions (related to the 2008-2009 recession) led to modest declines in total transactions in the years through 2012. After 2012, even with the lingering effects of the 2008-2009 recession, the economy began to show positive signs of growth with increasing employment levels and decreases in gasoline prices, resulting in a return to transaction growth. Overall traffic at TBTA facilities continued to increase to historically high levels despite the periodic toll increases implemented in March 2013, March 2015, March 2017, and March 2019. Beginning in March 2020, the impact of the pandemic and associated government-imposed closures along with other actions caused significant decreases in traffic on all TBTA facilities. After several years of recovery, overall 2023 traffic at TBTA facilities reached its first historic high since 2019, with a further increase in traffic in 2024. Traffic reached record levels at TBTA facilities in 2024 despite the August 2023 toll increase.

Other noticeable declines in traffic have occurred during the fuel crises of the 1970s and during the economic recessions in the late 1980s, early 1990s, all periods of difficult and prolonged economic downturns.

Figure 2A/2B Aggregated TBTA Facilities Paid Traffic and Toll Revenue, 1970 to 2024





Source: TBTA data.

Traffic and Toll Revenue, 2014 to 2024

Table 6 lists the toll-paying traffic and toll revenue recorded for each of the nine TBTA crossings for the most recent 11-year time period, 2014-2024. Total TBTA traffic and toll revenue are shown in Table 7. Within this 11-year period toll-paying traffic reached historic peaks four (4) times, first in 2017 with 310 million crossings, in 2018 with 322 million crossings, in 2019 with 329 million crossings, again in 2023 with 335 million crossings (the first historic peak since before the pandemic), and most recently in 2024 with 337 million crossings. Due to the pandemic, toll-paying traffic had decreased to 253 million crossings in 2020, followed by significant recovery to 307 million vehicles in 2021, 326 million vehicles in 2022, 335 million vehicles in 2023, and 337 million vehicles in 2024, an all-time high that exceeded the pre-pandemic (2019) peak by 2.4 percent.

The first toll increase within this most recent 11-year time period occurred on March 22, 2015. When toll rates are increased on toll facilities, traffic typically declines slightly and then grows until the next rate increase. However, TBTA traffic did not decrease following the March 2015, March 2017, March 2019, April 2021, or August 2023 toll increases. Lower gasoline prices, among other factors, resulted in a 4.0 percent increase in traffic following the March 2015 toll increase, a 0.9 percent increase in traffic following the March 2017 toll increase, a 2.2 percent increase in traffic following the March 2019 toll increase, a 21.4 percent increase in traffic following the April 2021 toll increase (which also included significant traffic recovery from the first year of the pandemic), and a 2.7 percent increase following the August 2023 toll increase. The five toll increases reflected in Table 6 and Table 7 in 2015, 2017, 2019, 2021, 2023 are evident in the jump in average tolls in the years following the increase. The historical relationship between toll increases and their effects on TBTA traffic volumes is further discussed in the Toll Impacts and Elasticity section of this report.

Table 6 Annual Toll-Paying Traffic and Toll Revenue by Facility, 2014 to 2024

Year	Verrazzano-Narrows Bridge				RFK Bridge				Bronx-Whitestone Bridge			
	Traffic		Revenue ($000s)	Average Toll[c]	Traffic		Revenue ($000s)	Average Toll	Traffic		Revenue ($000s)	Average Toll
	Volume (000s)[b]	Percent Change			Volume (000s)	Percent Change			Volume (000s)	Percent Change		
2014	64,007	-1.6%	$345,466	5.40	59,902	2.9%	$393,622	6.57	38,488	-2.7%	$260,756	6.77
2015[a]	66,215	3.5%	$372,347	5.62	62,227	3.9%	$422,756	6.79	42,062	9.3%	$294,022	6.99
2016	69,756	5.3%	$393,017	5.63	62,921	1.1%	$428,083	6.80	45,816	8.9%	$320,486	7.00
2017[a]	71,922	3.1%	$416,459	5.79	63,810	1.4%	$437,335	6.85	46,023	0.5%	$327,320	7.11
2018	74,809	4.0%	$433,121	5.79	66,398	4.1%	$448,600	6.76	47,958	4.2%	$332,715	6.94
2019[a]	76,102	1.7%	$454,303	5.97	66,880	0.7%	$461,797	6.90	49,561	3.3%	$350,778	7.08
2020	62,789	-17.5%	$386,978	6.16	50,416	-24.6%	$355,004	7.04	38,958	-21.4%	$282,204	7.24
2021[a]	75,255	19.9%	$511,298	6.79	61,178	21.3%	$462,395	7.56	48,459	24.4%	$375,583	7.75
2022	78,237	4.0%	$544,498	6.96	65,216	6.6%	$503,558	7.72	50,880	5.0%	$401,886	7.90
2023[a,d]	80,298	2.6%	$569,837	7.10	67,824	4.0%	$525,434	7.75	50,054	-1.6%	$399,387	7.98
2024	80,470	0.2%	$604,840	7.52	69,114	1.9%	$567,388	8.21	49,600	-0.9%	$422,865	8.53

Year	Throgs Neck Bridge				Hugh L. Carey Tunnel				Queens Midtown Tunnel			
	Traffic		Revenue ($000s)	Average Toll	Traffic		Revenue ($000s)	Average Toll	Traffic		Revenue ($000s)	Average Toll
	Volume (000s)	Percent Change			Volume (000s)	Percent Change			Volume (000s)	Percent Change		
2014	40,840	2.2%	$302,110	7.40	16,940	2.4%	$99,135	5.85	28,998	4.1%	$178,631	6.16
2015[a]	42,189	3.3%	$324,702	7.70	17,655	4.2%	$106,881	6.05	28,697	-1.0%	$182,382	6.36
2016	43,245	2.5%	$335,732	7.76	17,961	1.7%	$109,250	6.08	26,824	-6.5%	$171,121	6.38
2017[a]	43,694	1.0%	$344,882	7.89	17,510	-2.5%	$105,649	6.03	25,065	-6.6%	$158,683	6.33
2018	44,347	1.5%	$344,565	7.77	18,799	7.4%	$113,395	6.03	27,552	9.9%	$173,021	6.28
2019[a]	44,182	-0.4%	$356,533	8.07	19,421	3.3%	$121,645	6.26	30,344	10.1%	$199,624	6.58
2020	34,277	-22.4%	$293,274	8.56	14,786	-23.9%	$93,783	6.34	19,875	-34.5%	$134,251	6.75
2021[a]	37,556	9.6%	$345,622	9.20	19,308	30.6%	$132,409	6.86	26,006	30.8%	$190,332	7.32
2022	39,604	5.5%	$368,095	9.29	21,870	13.3%	$152,407	6.97	29,826	14.7%	$221,528	7.43
2023[a,d]	43,269	9.3%	$394,072	9.11	22,579	3.2%	$158,068	7.00	30,277	1.5%	$226,730	7.49
2024	44,850	3.7%	$431,683	9.63	22,392	-0.8%	$165,776	7.40	30,124	-0.5%	$238,763	7.93

Year	Henry Hudson Bridge				Marine Parkway-Gil Hodges Memorial Bridge				Cross Bay Veterans Memorial Bridge			
	Traffic		Revenue ($000s)	Average Toll	Traffic		Revenue ($000s)	Average Toll	Traffic		Revenue ($000s)	Average Toll
	Volume (000s)	Percent Change			Volume (000s)	Percent Change			Volume (000s)	Percent Change		
2014	22,235	1.9%	$64,879	2.92	7,399	-5.3%	$15,578	2.11	7,553	-2.1%	$16,269	2.15
2015[a]	23,194	4.3%	$71,388	3.08	7,753	4.8%	$16,906	2.18	7,954	5.3%	$17,517	2.20
2016	24,620	6.2%	$76,309	3.10	7,902	1.9%	$17,263	2.18	8,300	4.3%	$18,431	2.22
2017[a]	25,555	3.8%	$85,424	3.34	7,977	1.0%	$17,451	2.19	8,441	1.7%	$18,655	2.21
2018	25,831	1.1%	$83,836	3.25	8,072	1.2%	$17,396	2.15	8,522	1.0%	$18,575	2.18
2019[a]	26,050	0.8%	$88,947	3.41	8,259	2.3%	$18,421	2.23	8,598	0.9%	$19,361	2.25
2020	17,726	-32.0%	$59,958	3.38	6,968	-15.6%	$16,560	2.38	7,389	-14.1%	$17,741	2.40
2021[a]	23,861	34.6%	$90,857	3.81	7,655	9.9%	$20,189	2.64	8,016	8.5%	$21,185	2.64
2022	24,878	4.3%	$97,575	3.92	7,900	3.2%	$21,210	2.68	7,893	-1.5%	$21,627	2.74
2023[a,d]	25,162	1.1%	$100,846	4.01	7,889	-0.1%	$21,192	2.69	7,735	-2.0%	$21,292	2.75
2024[e]	25,114	-0.2%	$107,448	4.28	7,941	0.7%	$22,384	2.82	7,728	-0.1%	$22,611	2.93

Source: TBTA data.

Notes:

(a) Toll rate increases occurred on March 22, 2015, March 19, 2017, March 31, 2019, April 11, 2021, and August 6, 2023.

(b) Split tolling was implemented on December 1, 2020. Previously, westbound toll traffic volume was doubled since traffic was not registered in the eastbound direction.

(c) Prior to December 2020, the average toll was calculated on the basis of revenues divided by doubled westbound volume.

(d) November 2023 revenue was revised down due to an accounting adjustment for uncollected tolls.

(e) Accounting adjustments were made throughout several months in 2024.

Table 7 Summary of Annual Paid Traffic and Toll Revenue, 2014 to 2024

Year	Total Paying Traffic Volume (000s)	Percent Change	Total Toll Revenue ($000s)	Percent Change	Average Toll
2014	286,361	0.6%	1,676,445	1.9%	5.85
2015[a]	297,946	4.0%	1,808,901	7.9%	6.07
2016	307,346	3.2%	1,869,693	3.4%	6.08
2017[a]	309,997	0.9%	1,911,857	2.3%	6.17
2018	322,290	4.0%	1,965,223	2.8%	6.10
2019[a]	329,397	2.2%	2,071,411	5.4%	6.29
2020	253,184	-23.1%	1,639,753	-20.8%	6.48
2021[a]	307,296	21.4%	2,149,869	31.1%	7.00
2022	326,304	6.2%	2,332,384	8.5%	7.15
2023[a,b]	335,087	2.7%	2,416,860	3.6%	7.21
2024[c]	337,333	0.7%	2,583,758	6.9%	7.66

Source: TBTA data.
Notes:
(a) Toll rate increases occurred on March 22, 2015, March 19, 2017, March 31, 2019, April 11, 2021, and August 6, 2023.
(b) November 2023 revenue was revised down due to an accounting adjustment for uncollected tolls.
(c) Accounting adjustments, discussed on page 102, were made throughout 2024.

Note that the Bronx-Whitestone and Throgs Neck Bridges generally serve similar areas in the Bronx and Queens, and historically traffic has shifted back and forth to the crossing providing the better level of service, at times based on lane restrictions due to construction activity. In 2013 and 2014, during the Queens approach structure replacement project on the Bronx-Whitestone Bridge, a reduction in travel lanes on the bridge resulted in motorists diverting to the Throgs Neck Bridge to avoid congestion. This trend continued in the opposite direction when construction began on the Throgs Neck Bridge in 2020 and continued through 2023, when motorists diverted to the Bronx-Whitestone to avoid construction activity.

The March 22, 2015 toll increase resulted in an overall increase in toll revenue from $1.676 billion in 2014 to $1.809 billion, an increase of 7.9 percent. The increase in traffic is attributed to a continuing modest economic recovery, generally overall favorable weather conditions, and relatively low gas prices, all of which appeared to offset the impacts associated with the toll increase.

In 2016, traffic volumes increased by 3.2 percent to 307.3 million vehicles. The increase in traffic is attributed to a continued modest recovery of the economy, favorable gas prices, and generally overall favorable weather conditions throughout the year. Another possible factor for the increase in year over year traffic is the substantial increase in housing construction activity throughout New York City as developers were motivated to secure 421-a property tax exemptions before the program's expiration in January 2016.

The March 19, 2017 toll increase resulted in an overall increase in toll revenue of 2.3 percent from $1.870 billion in 2016 to $1.912 billion in 2017. Traffic volumes increased by 0.9 percent to a new historical high of 310.0 million vehicles. The increase in traffic is attributed to continued growth of the economy and sustained favorable gasoline prices.

In 2018, traffic volumes increased by 4.0 percent to a new historical high of 322.3 million vehicles. Revenue grew by 2.8 percent from $1.912 billion in 2017 to $1.965 billion in 2018. The increase in traffic is attributed to continued growth of the economy and sustained favorable gasoline prices.

The March 31, 2019 toll increase resulted in an overall increase in toll revenue of 5.4 percent from $1.965 billion in 2018 to $2.071 billion in 2019. Traffic volumes increased by 2.2 percent to a new historical high of 329.4 million vehicles. The increase in traffic is attributed to continued growth of the economy and sustained favorable gasoline prices.

In 2020, traffic volumes decreased by 23.1 percent to 253.2 million vehicles. In 2020, toll revenue decreased by 20.8 percent from $2.071 billion in 2019 to $1.640 billion. The decrease in both traffic and revenue was caused by the pandemic and related government actions.

The April 11, 2021 toll increase, combined with significant pandemic related recovery, resulted in an overall increase in toll revenue of 31.1 percent from $1.640 billion in 2020 to $2.150 billion in 2021. 2021 annual traffic volumes increased by 21.4 percent to 307.3 million vehicles. The increase in traffic is predominantly attributed to pandemic recovery and related changes in commuting behavior.

In 2022, traffic volumes increased by 6.2 percent to 326.3 million vehicles. In 2022, toll revenue increased by 8.5 percent from $2.150 billion in 2021 to $2.332 billion. The increase in traffic and revenue is predominantly attributed to pandemic recovery during the first half of the year followed by modest growth during the second half of the year as drivers settled into their 'new normal' travel behaviors.

In 2023, traffic volumes increased by 2.7 percent to 335.1 million vehicles. Toll revenue increased by 3.6 percent from $2.332 billion in 2022 to $2.417 billion. The increase in traffic occurred despite a toll increase in August 2023.

In 2024, traffic volumes increased by 0.7 percent to a record high of 337.3 million vehicles. Toll revenue increased by 6.9 percent from $2.417 billion to $2.584 billion. Traffic in 2024 was also 2.4 percent higher than the 2019 traffic volume of 329.3 million vehicles, which was prior to the onset of the pandemic and the previous record high.

Preliminary audited data for January through February 2025 indicate that traffic on TBTA facilities decreased by 2.3 percent over the same period in 2024. It is notable that 2024 was a leap year and February 2024 had one more weekday than February 2025. This contributed to a larger loss in February 2025 when compared to the same month in the previous year. Changes by facility are shown below in Table 8, with lows of -7.8 and -8.1 percent on the Hugh L. Carey and Queens

Midtown Tunnels, respectively, mainly due to the effects of the CBD Tolling Program, and a high of 2.5 percent on the Cross Bay Veterans Memorial Bridge.

Table 8 Estimated Changes in January and February Traffic, 2024 to 2025

Facility	Percent Change January - February 2024 to 2025[a, b,c]
Throgs Neck Bridge	-0.1%
Bronx-Whitestone Bridge	-2.1%
RFK Bridge	-0.9%
Queens Midtown Tunnel	-8.1%
Hugh L. Carey Tunnel	-7.8%
Verrazzano-Narrows Bridge	-1.4%
Henry Hudson Bridge	-3.7%
Marine Parkway-Gil Hodges Memorial Bridge	0.8%
Cross Bay Veterans Memorial Bridge	2.5%
Total	-2.3%

Notes:
(a) Based on preliminary audited traffic data for January and February 2025 (subject to final audit).
(b) Toll collection for the CBD Tolling Program began on January 5, 2025.
(c) February 2025 has one less day than February 2024.

Traffic by Facility and Vehicle Class, 2024

TBTA maintains traffic counts for each crossing in 10 categories, ranging from passenger cars to trucks with six or more axles. TBTA consolidated several vehicle classes at the time of the August 6, 2023 toll increase; previously, there were 14 categories. The higher number of classes was a legacy of the manual toll collection era and is not necessary in an open road tolling environment. Displayed in Table 9 are the 2024 traffic volumes by facility. Passenger cars totaled 314.4 million crossings and represented 93.2 percent of the total toll-paying vehicles (that percentage has remained relatively constant over time). Of the TBTA facilities, the Verrazzano-Narrows Bridge registered the highest toll-paying traffic volume of 80.5 million vehicles. The lowest toll-paying volume, 7.7 million vehicles, was recorded at the Cross Bay Bridge.

Table 9 Traffic by Facility and Vehicle Classification, 2024

(000s)[a, b, c]

Facility	31 2 axle passenger vehicle	32 2 axle commercial vehicle	33 3 axle commercial vehicle	34 4 axle commercial vehicle	35 5 axle commercial vehicle	36 6 axle or greater commercial vehicle
Throgs Neck Bridge	40,131,405	1,721,381	370,663	360,971	1,931,831	117,764
Bronx-Whitestone Bridge	46,417,589	1,613,131	397,931	179,435	781,833	23,160
RFK Bridge	64,238,717	3,023,622	654,660	185,556	519,306	21,663
Queens Midtown Tunnel	28,197,325	1,262,222	334,943	37,025	9,859	1,940
Hugh L. Carey Tunnel	21,084,692	566,075	215,535	11,046	2,978	976
Verrazzano-Narrows Bridge	74,875,300	2,700,909	669,126	326,773	1,231,921	58,064
Henry Hudson Bridge[d]	24,755,260	295,269	5,435	2,759	554	34
Marine Parkway Bridge	7,606,876	215,577	25,897	7,367	19,276	590
Cross Bay Bridge	7,114,409	316,637	101,870	10,911	17,471	1,099
Total	314,421,573	11,714,823	2,776,060	1,121,843	4,515,029	225,290
Percent of Paid Vehicles	93.2%	3.5%	0.8%	0.3%	1.3%	0.1%

Facility	37 2 and 3 axle NYC Franchise Bus	38 Passenger car with 1, 2, 3, or 4 additional axles	39 Motorcycle, Motorcycle with additional axles	Total Toll-Paying Vehicles	10 Non-Revenue Vehicles[e]	Total Vehicles
Throgs Neck Bridge	3,013	151,747	61,257	44,850,032	98,295	44,948,327
Bronx-Whitestone Bridge	76,152	43,290	67,653	49,600,174	83,449	49,683,623
RFK Bridge	222,278	60,299	187,918	69,114,019	215,281	69,329,300
Queens Midtown Tunnel	177,601	23,612	79,773	30,124,300	114,924	30,239,224
Hugh L. Carey Tunnel	419,093	6,309	85,304	22,392,008	123,965	22,515,973
Verrazzano-Narrows Bridge	386,768	98,933	122,332	80,470,126	190,567	80,660,693
Henry Hudson Bridge[d]	2,558	11,336	40,516	25,113,721	34,808	25,148,529
Marine Parkway Bridge	42,477	6,267	16,742	7,941,069	27,265	7,968,334
Cross Bay Bridge	131,078	9,484	24,830	7,727,789	20,992	7,748,781
Total	1,461,018	411,277	686,325	337,333,238	909,546	338,242,784
Percent of Paid Vehicles	0.4%	0.1%	0.2%	100.0%		

Source: TBTA

Notes:

(a) Totals may not add due to rounding.
(b) Based on preliminary actual data, subject to final audit.
(c) TBTA consolidated several vehicle classes at the time of the August 6, 2023 toll increase.
(d) Truck passage prohibited except with NYCDOT permit.
(e) Includes police, fire, and other emergency vehicles and TBTA vehicles.

Monthly Traffic, 2024

Monthly variations in traffic volumes on the nine crossings have been attributed to several factors historically, including severe weather - either winter or tropical storms - which result in lower volumes. Conversely, traffic reaches its highest levels during the summer months when recreational travel peaks. Generally, traffic volumes on a toll facility are expected to decline, or traffic growth to slow in the aftermath of a toll increase. TBTA, however, has had a record year for total traffic in 2024 despite the August 6, 2023 toll increase. Furthermore, individual facilities can be affected by construction projects on the facility itself or its approaches, and on adjacent arterials or competing bridges. The limited number of crossings in the region, however, largely sustains the overall demand for TBTA's bridges and tunnels. In addition to these normal impacts, there have been extraordinary events such as the effects of the September 11, 2001 attack on the World Trade Center, Superstorm Sandy, and the pandemic.

The data in Table 10 indicate that total traffic on the nine crossings in 2024 peaked in June. May was the second highest month in 2024. The monthly variations on the nine crossings in 2024 ranged from 11 percent below the annual average daily traffic in January to 6 percent above in June.

Table 10 Monthly Traffic Variations, 2024

Month	Average Daily Toll-Paying Traffic[a]										Ratio to AADT[b], [c]
	Throgs Neck Bridge	Bronx-Whitestone Bridge	RFK Bridge	Queens Midtown Tunnel	Hugh L. Carey Tunnel	Verrazzano-Narrows Bridge	Henry Hudson Bridge	Marine Pkwy Bridge	Cross Bay Bridge	Total	
January	106,452	120,125	168,053	74,575	55,956	199,727	56,940	18,038	18,447	818,314	0.89
February	112,113	126,360	177,423	79,474	59,228	208,697	63,719	17,976	18,911	863,901	0.94
March	118,345	133,082	185,411	82,462	62,456	215,760	67,716	19,843	19,977	905,051	0.98
April	120,158	136,121	189,575	83,237	61,149	217,916	71,525	19,811	20,023	919,514	1.00
May	126,150	137,833	196,862	86,543	64,835	225,929	73,823	22,976	22,324	957,276	1.04
June	130,680	143,034	200,179	86,530	63,044	232,766	73,097	26,298	25,015	980,643	1.06
July	128,947	141,505	192,375	81,243	59,113	224,611	66,981	26,159	23,998	944,932	1.03
August	129,399	143,915	194,951	81,746	59,809	226,030	67,836	24,812	22,653	951,152	1.03
September	126,920	139,507	194,384	83,817	63,016	224,335	72,116	22,866	21,756	948,716	1.03
October	125,953	140,394	193,578	86,429	63,156	221,163	73,435	21,201	21,075	946,384	1.03
November	123,197	133,723	187,776	81,872	60,955	218,918	69,651	20,450	19,764	916,306	0.99
December	121,854	130,378	185,265	79,772	61,433	222,259	66,632	19,778	19,353	906,723	0.98
AADT[c]	122,541	135,520	188,836	82,307	61,180	219,864	68,617	21,697	21,114	921,676	1.00

Notes:
(a) Totals may not add due to rounding.
(b) Annual Average Daily Traffic (AADT).
(c) For total traffic on the nine crossings. The ratio to AADT is the quotient of a month's AADT and the annual average for the year; e.g., a ratio to AADT of 0.89 signifies that the monthly traffic is 11 percent below the AADT for 2024.

Changes in Monthly Traffic, 2023 to 2024

Table 11 lists the monthly average daily traffic changes that have occurred between 2023 and 2024. Although 2024 was a record year for traffic on TBTA facilities as a whole, construction had impacts on specific facilities – Throgs Neck Bridge traffic had shifted to the Bronx–Whitestone Bridge from 2020 through 2022 due to construction and returned after construction had concluded in early 2023. Additional rehabilitation on the Bronx Whitestone Bridge continues to cause a shift toward the Throgs Neck Bridge. George Washington Bridge rehabilitation, including various ramp closures, continues to have adverse effects on Henry Hudson Bridge traffic.

Table 11 Changes in Monthly Average Daily Traffic, 2023 to 2024

Month	Percent Change Comparing 2024 Monthly Average Daily Traffic to 2023								
	Throgs Neck Bridge	Bronx-Whitestone Bridge	RFK Bridge	Queens Midtown Tunnel	Hugh L. Carey Tunnel	Verrazzano-Narrows Bridge	Henry Hudson Bridge	Marine Pkwy Bridge	Cross Bay Bridge
January	2.5%	-5.4%	1.3%	-0.8%	-0.5%	-2.0%	-6.6%	-2.0%	-3.2%
February	4.2%	-2.0%	3.5%	0.5%	-0.1%	0.6%	0.5%	-2.1%	-0.4%
March	5.6%	-1.1%	1.8%	-0.6%	-0.1%	-0.4%	-0.6%	-1.2%	-3.2%
April	1.6%	-0.8%	2.4%	0.2%	0.2%	-0.5%	2.0%	1.9%	-0.4%
May	1.3%	-2.0%	0.2%	1.3%	2.0%	-0.7%	-1.7%	-0.9%	-2.0%
June	2.1%	-0.5%	1.3%	-0.1%	-2.7%	-0.9%	-2.2%	7.1%	7.0%
July	1.9%	-0.9%	1.9%	-1.2%	-0.6%	-0.5%	-1.0%	-2.2%	-3.5%
August	2.5%	-0.8%	0.7%	-3.1%	-4.8%	-0.5%	-2.3%	-1.6%	-0.5%
September	5.8%	0.4%	3.4%	-1.4%	0.1%	2.5%	5.3%	2.7%	0.9%
October	5.0%	1.8%	1.6%	-1.3%	-3.3%	0.4%	2.0%	1.2%	1.4%
November	2.8%	-2.3%	-0.5%	-2.3%	-3.2%	0.1%	-2.1%	0.8%	-0.7%
December	5.8%	-0.7%	2.6%	-0.1%	0.2%	1.4%	1.1%	1.1%	0.3%
Annual	3.4%	-1.2%	1.6%	-0.8%	-1.1%	-0.1%	-0.5%	0.4%	-0.4%

Operating Expenses, 2014 to 2024

Table 12 displays the historical operating expenses for TBTA facilities from 2014 through 2024. TBTA divides operating expenses into two major categories: labor and non-labor. Labor includes salaries, overtime and fringe benefits, net of capital reimbursements. Major maintenance, some bridge painting, outside services, insurance, TBTA's share of the NYCSC, and other non-personnel expenses are included in non-labor.

TBTA labor expenses increased from $238.5 million in 2014 to $247.3 million in 2024, an increase of $8.8 million. The increase was due to increases in net costs for health and welfare benefits for current employees and retirees ($18.9 million), overtime pay ($9.6 million), which were partially offset by lower payroll costs ($17.7 million) over this period due to lower headcount levels. There were also higher actuarial assessments of pension commitments ($2.8 million), and lower other fringe benefits ($7.5 million) associated with the lower headcount. Year-end headcount in 2014 was 1,421, and it fell to 963 at year-end 2024. This was the result, over the eleven-year period

shown, of numerous managerial initiatives aimed at achieving operational efficiencies, several MTA-wide workforce consolidation efforts, and headcount reductions achieved solely through efficiencies that were realized through the transition to Open Road Tolling.

Table 12 Historical Operating Expenses, 2014 to 2024

Year	Operating Expenses ($000s)[a]			Percent Change
	Labor[b]	Non-Labor[c]	Total	
2014	238,528	205,224	443,752	8.4%
2015	235,099	217,660	452,759	2.0%
2016	243,436	221,418	464,854	2.7%
2017	248,347	241,838	490,185	5.4%
2018	243,115	258,150	501,265	2.3%
2019	252,269	259,158	511,427	2.0%
2020	228,768	214,389	443,157	-13.3%
2021	223,095	227,651	450,746	1.7%
2022	223,124	251,960	475,085	5.4%
2023	226,794	256,793	483,587	1.8%
2024[d]	247,329	267,570	514,899	6.5%

Source: TBTA
Notes:
(a) Totals may not add due to rounding.
(b) Labor includes salaries, overtime and fringe benefits, net of capital reimbursements.
(c) Non-labor includes the following categories: major maintenance and supplies, bridge painting, outside services, insurance, power, leases and rentals and other expenses.
(d) Based on preliminary unaudited financial data for 2024 (subject to final audit).

Non-labor includes the following categories: major maintenance and supplies, bridge painting, outside services, insurance, power, leases and rentals and other expenses. Non-labor expenses increased from $205.2 million in 2014 to $267.6 million in 2024. A large part of this growth is attributable to major maintenance and bridge painting, maintaining E-ZPass equipment, and operating the NYCSC, which includes back-office costs for administering E-ZPass toll collection, along with the introduction of TBM at the Henry Hudson Bridge in 2012 and the expansion of TBM to all facilities in 2017. Over this eleven-year period, TBTA has been successful in negotiating lower unit costs for E-ZPass tags and has achieved some contracted efficiency savings associated with running the NYCSC, which also administers the TBM program. However, the growth in overall transactions have driven up NYCSC expenses, credit/debit card transaction fees (which have also been impacted by higher E-ZPass and TBM tolls) and the costs of maintaining toll collection equipment. Expenses in other areas have generally grown at rates approximating CPI-U inflation.

The following is a brief discussion of the major year-to-year shifts in operating expenses.

Total operating expenses for 2014 increased $34.3 million, or 8.4 percent above 2013 primarily resulting from: $13.3 million in additional wage and associated fringe benefit costs primarily stemming from payments and provisions for actual and projected union contract settlements retroactive to 2009; an actuarial adjustment of $3.8 million for Workers' Compensation; $9.5 million

to fund additional major maintenance and bridge painting projects; and a total increase of $6.5 million in property and general liability insurance premiums.

In 2015, total operating expenses were $452.8 million, which was $9.0 million, or 2.0 percent above 2014 expenses. Labor expenses declined by $3.4 million, or 1.4 percent, primarily due to unfilled vacancies throughout the year and the transfer of 53 technology positions to MTA as part of an agency-wide IT consolidation effort. Non-labor expenses grew by $12.4 million, or 6.1 percent, primarily due to additional major maintenance and bridge painting projects and higher credit card fees associated with the toll increase implemented on March 22, 2015.

In 2016, total operating expenses were $464.9 million, which was $12.1 million, or 2.7 percent above 2015 expenses. Labor expenses increased by $8.3 million, or 3.5 percent, primarily due to wage inflation and actuarial adjustments to pension expenses. Non-labor expenses grew by $3.8 million, or 1.7 percent, which was slightly above the national inflation rate of 1.3 percent. Growth exceeded inflation primarily due to additional major maintenance projects and higher bond issuance costs.

In 2017, total operating expenses were $490.2 million, which was $25.3 million, or 5.4 percent above 2016 operating expenses. Labor expenses increased by $4.9 million, or 2.0 percent, primarily due to wage inflation. Non-labor expenses grew by $20.4 million, or 9.2 percent, primarily due to implementation costs for Cashless Tolling and back-office costs for administering the TBM program.

Total operating expenses in 2018 were $501.3 million, which was 2.3 percent above costs in 2017. Labor expenses declined by 2.1 percent primarily due to vacant positions and headcount reductions achieved solely through attrition that were realized through the move to Cashless Tolling. Non-labor costs increased by 6.7 percent primarily due to a full year's facility-wide impact on back-office and other non-labor costs related to Cashless Tolling operations.

Total operating expenses peaked in 2019 at $511.4 million, which was 2.0 percent above costs in 2018. Labor expenses grew by 3.8 percent primarily due to revised actuarial assessments of pension costs and higher healthcare costs. Non-labor costs increased by only 0.4 percent. Higher tolling operations and collections costs due to increased traffic and the toll increase implemented in March 2019 were almost entirely offset by efficiencies achieved across a variety of maintenance projects and other operating contracts.

Total operating expenses in 2020 were $443.2 million, which was 13.3 percent below costs in 2019. Labor expenses decreased by 9.3 percent primarily due to restricted hiring and attrition. Non-labor costs decreased by 17.3 percent. Most of the non-labor savings are due to a program of significant additional savings actions that reduced reliance on outside consultants and contractors, and non-service-related expenses. In addition, fewer toll transactions due to the pandemic led to reduced toll processing costs. Although total year-over-year operating expenses decreased in 2020, TBTA incurred some new operating expenses because of the pandemic. This includes $1.4 million for Personal Protective Equipment ("PPE"), cleaning and sanitizing contracts, and janitorial supplies for buildings and vehicles to comply with Centers of Disease Control and Prevention guidelines.

Total operating expenses in 2021 were $450.7 million, which was 1.7 percent above costs in 2020. Labor expenses decreased by 2.5 percent primarily through lower payroll, overtime, and associated fringe benefits costs associated with vacancies. Non-labor costs increased by 6.2 percent primarily due to increased professional service contract commitments and other business expenses including credit card processing fees, partially offset by lower costs related to maintenance and other operating contracts (lower E-ZPass Customer Service Center costs and lower major maintenance and painting expenses).

Total operating expenses in 2022 were $475.1 million, which was 5.4 percent above costs in 2021. Labor expenses were generally unchanged from the year prior. There were higher overtime expenses due to several factors including increased vacancy and absentee coverage resulting from additional vacancies created by attrition, employee use of personal leave balances, absentee coverage due to the Omicron variant at the start of 2022, weather-related overtime, security enhancements, and maintenance requirements. Higher overtime costs were partially offset through lower payroll and associated fringe benefits costs associated with vacancies. Non-labor costs increased by 10.7 percent primarily due to increased maintenance, other operating contracts (higher major maintenance and painting and facilities expenses), and other business expenses including credit card processing fees. These increased non-labor costs were partially offset by lower costs related to professional service contract commitments.

Total operating expenses in 2023 were $483.6 million, which were 1.8 percent above costs in 2022. Labor expenses increased by 1.6 percent primarily due to increases in health and welfare for current employees and retirees, and an increase in overtime costs due to absentee coverage caused by attrition, as well as an unfavorable arbitration decision within Operations. These expenses were slightly offset by lower pension contributions due to a revised NYCERS actuarial assessment and vacancies and fringe benefit costs. Non-labor costs decreased by 1.9 percent primarily due to lower energy costs and lower materials expenses.

Total operating expenses in 2024 were $514.9 million, which were 6.5 percent above costs in 2023. Labor expenses increased by 9.1 percent primarily due to the expected filling of vacancies and revised wage assumptions. Overtime expenses continued to increase due to absentee coverage caused by attrition, as well as an unfavorable arbitration decision within Operations. Non-labor costs increased by 4.2 percent primarily due to increased maintenance, other operating contracts (higher major maintenance and painting and facilities expenses), and other business expenses including credit card processing fees. These increased non-labor costs were partially offset by lower costs related to professional service contract commitments.

FACTORS AFFECTING TRAFFIC GROWTH

A previous section of this report identified the historical trends in traffic, revenue, and expenses of the nine TBTA bridges and tunnels. Before developing the analyses, past practice has been used to consider factors affecting future traffic, including the projected trends in employment and

population, fuel availability and prices, TBTA and regional construction impacts, the capacity constraints in the regional highway network, and toll and elasticity impacts.

Urbanomics, Inc. ("Urbanomics") was contracted as a subconsultant to Stantec to prepare short- and long-term employment and population forecasts in the New York Metropolitan Area. Additionally, Urbanomics researched other factors affecting future traffic, including labor force conditions, housing construction conditions, Manhattan office market conditions, motor vehicle registrations, and fuel availability and prices. The information provided by Urbanomics was incorporated into Stantec's traffic and toll revenue analyses.

This section of the report concludes with a summary of the assumptions and conditions upon which the traffic and toll revenue analyses were based.

Employment, Population, and Motor Vehicle Registrations

In keeping with federal requirements mandating the preparation of long-term demographic and socioeconomic forecasts for travel demand modeling purposes, the New York Metropolitan Transportation Council ("NYMTC") prepares and periodically updates employment and population forecasts for the 10-county NYMTC territory[2] and 21 surrounding counties and equivalents in New York, New Jersey, and Connecticut that make up the majority of the metro commuter area. The latest forecasts, adopted in June 2024 and benchmarked to 2020 and 2022 historic conditions, are presented in the following tables. They include projections from 2025 to 2055 at five-year intervals.

NYMTC's latest Socioeconomic and Demographic ("SED") Forecasts are long-term in scope to provide reliable projections of future socioeconomic conditions through 2055. Due to the structure of forecasts, which are projected in 5-year intervals, NYMTC does not attempt to reliably forecast cyclical trends in the economy as related to business cycles and natural disasters. Forecast development began in 2018, was finalized in late 2020 during the early recovery from the pandemic and was re-benchmarked in 2024 to account for shifts in jobs and population. These shifts include a return to urban areas following peak pandemic migrations, a robust stimulus-driven economic recovery, and the decentralization of employment patterns away from the region's urban core through 2022.

The NYMTC forecasting approach begins with modeling of regional employment growth relative to national trends and forecasts prepared by S&P Global (formerly IHS Markit), Moody's, and the Bureau of Labor Statistics ("BLS"), calibrated at the county level on an industry-specific basis (S&P Global and Moody's are major vendors of economic and financial analysis, forecasts, and market intelligence worldwide). Employment then drives population growth which is forecasted at the sub-regional and county levels by a model that includes fertility, mortality, and recent past trends in net migration as well as induced labor force growth.

[2] The 10-County NYMTC Territory includes the five boroughs of New York City as well as Nassau, Suffolk, Rockland, Westchester, and Putnam Counties.

Typically, traffic volumes in the region are affected by changes in employment and population. The demand for TBTA facilities normally tends to be influenced less by regional employment and population trends than other toll facilities because available water crossings are limited. Motor vehicle registrations are another indicator of trends in traffic volumes. To better understand how these indicators may influence traffic volumes on TBTA crossings over the long term, Stantec first reviewed historical trends and forecasts by NYMTC and others, then adjusted traffic analyses in the short term to account for current economic conditions.

Employment Trends and Projections

Traditionally, job growth has had an impact on traffic generation. Generally, when the economy is robust and jobs are growing, there is an increase in traffic. Conversely, when employment trends downward, traffic volumes decline. However, the rate of decline depends upon the severity of employment losses.

Table 13 depicts the long-term trend in total employment in the region since 1990. The region is defined as consisting of 33 counties and equivalents that comprised the commuter-shed: the five boroughs of New York City; nine suburban counties of New York State in Long Island and the Mid-Hudson; 14 counties of northern and central New Jersey; and five planning regions in Connecticut.[3] New York City has shown consistent employment growth in each decade, having recovered from the mid-1970s losses during the 1990s and reaching a long-term high of 6.4 million jobs in 2024 (+62.1 percent) following a swift post-pandemic rebound. The Long Island and Mid-Hudson suburbs have reflected continuous growth since 1990, expanding from 2.3 million in 1990 to 3.4 million in 2024 (+43.1 percent). Similar rates of suburban growth occurred in New Jersey (+44.8 percent) while job growth in Connecticut was significantly slower paced during those years (+29.3 percent). Between 1990 and 2024, New Jersey added 1.5 million jobs while Connecticut gained 301,600 jobs, and the New York suburbs grew by 1.0 million jobs.

Annual employment growth across the region from 2015 to 2024 has been moderately higher (+1.5 percent) than the long-term average since 1990 (+1.2 percent) with all sub-regions surpassing the long-term historic average. Growth in the New York suburbs in Long Island and Mid-Hudson as well as the New Jersey suburbs has outpaced other sub-regions in recent years driven by the shift of office workers from urban centers to suburban satellite campuses. Within New York City, borough-level annual growth rates since 2015 were led by Brooklyn, (+3.4 percent), Queens (+2.3 percent), Staten Island (+2.2 percent), the Bronx (+1.0 percent), and lastly, Manhattan (+0.6 percent). Among the sub-regions, recent growth rates were led by the New York suburbs (+1.8 percent), followed by New York City (+1.6 percent), New Jersey (+1.5 percent), and Connecticut (+0.9 percent).

New York City had the largest employment base of the four sub-regions in 2024 with 40.3 percent of 16.0 million regional jobs, followed by New Jersey with 30.5 percent, the New York suburbs with 21.0 percent, and Connecticut with 8.3 percent. New York City's share of regional jobs dropped

[3] In 2022, Connecticut replaced counties with planning regions for most administrative and statistical purposes. As of February 24, 2025, key data sources have largely discontinued county geography. This study replaces historic county-level data with planning region data where available, including Fairfield, New Haven, and Litchfield Counties, now represented by their corresponding planning regions.

to 39.4 percent in 2021 due to pandemic-induced workplace shifts but has been increasing yearly since then. Manhattan's share of jobs has trended downward from 20.0 percent of jobs in 2022 to 19.8 percent in 2024.

Due to travel and work restrictions associated with the pandemic, from February to April 2020, New York City lost 958,000 wage/salary jobs (-20.3 percent) according to the BLS Current Employment Statistics ("CES") Program and New York State Department of Labor ("NYDOL"). As of December 2024, the city had fully recovered from its post-January 2020 decline with job levels up 1.5 percent (+70,300 jobs).

National survey data from the BLS indicates that the share of workers working from home has significantly declined. In May 2020, at the height of the pandemic, 35.4 percent of US workers aged 16 or older reported teleworking due to the pandemic. However, as of January 2025, just 11.1 percent of workers reported teleworking full-time for any purpose. Instead, a sizeable share of workers, (23.6 percent) are maintaining a hybrid approach, balancing in-person and remote work. This trend suggests that hybrid working arrangements are likely to persist in the long run. Presently, Information, finance, and insurance, as well as professional and business services sector workers have the highest shares of workers teleworking all hours, at more than 25 percent nationally. Other non-government surveys confirmed the continuation of the nationwide return to work trend. The Real Estate Board of New York's Analysis of Location Data, a dataset generated by anonymized location intelligence data from 350 towers in Manhattan, reported that office visits in December 2024 remained at 72 percent of pre-pandemic 2019 levels. This is up three percentage points over December 2023,[4] and 13 percentage points higher than December 2022 levels.[5]

[4] REBNY Press. (2024 December). Monthly Manhattan Office Visitation Report.

[5] REBNY Press. (2023 December). Manhattan Office Building Average Visitation Rate Reaches 70% of Pre-Pandemic Levels.

Table 13 Employment Trends

Number of Jobs (000s)[a]

Year	New York City	New York Region[b]	New Jersey Region[c]	Connecticut Region[d]	NYC and All Regions[e]
1990	3,974.5	2,343.6	3,367.0	1,029.4	10,714.5
2000	4,319.8	2,356.9	3,748.3	1,110.7	11,535.7
2010	4,791.7	2,643.7	3,940.6	1,145.4	12,521.5
2015[f]	5,605.9	2,860.8	4,260.7	1,227.5	13,954.8
2020	5,569.3	2,964.3	4,278.7	1,196.3	14,008.6
2021	5,705.1	3,083.3	4,445.0	1,234.5	14,467.9
2022	6,134.4	3,251.7	4,745.1	1,301.1	15,432.2
2023	6,297.4	3,314.2	4,831.8	1,318.5	15,762.0
2024	6,443.8	3,352.9	4,874.7	1,331.0	16,002.3
Average Annual Percent Change					
1990 to 2000	0.8%	0.1%	1.1%	0.8%	0.7%
2000 to 2010	1.0%	1.1%	0.5%	0.3%	0.8%
2010 to 2015	3.2%	1.6%	1.6%	1.4%	2.2%
2020 to 2021	2.4%	4.0%	3.9%	3.2%	3.3%
2021 to 2022	7.5%	5.5%	6.7%	5.4%	6.7%
2022 to 2023	2.7%	1.9%	1.8%	1.3%	2.1%
2023 to 2024	2.3%	1.2%	0.9%	0.9%	1.5%

Source: New York Metropolitan Transportation Council, New York State Department of Labor, Connecticut Department of Labor, New Jersey Department of Labor and Workforce Development, BLS, and United States Bureau of Economic Analysis.

Notes:

(a) Historic employment estimates are modeled using data inputs from the BLS Current Employment Statistics Program (CES), Quarterly Census of Employment and Wages (QCEW) program, US Census Bureau American Community Survey Workplace estimates, as well as the Bureau of Economic Analysis' Table 25N Proprietors statistics. Final revisions to statewide and local area CES data, called a "Benchmark," are made each March for the previous five years based on payroll tax reports submitted by employers covered by the Unemployment Insurance program to individual states. In March 2025, the BLS released its 2025 re-benchmarked CES data with revisions to employment of specific industries going back as far as 1990.

(b) Consists of the following counties: Dutchess, Nassau, Orange, Putnam, Rockland, Suffolk, Sullivan, Ulster, and Westchester.

(c) Consists of the following counties: The 13 counties of the North Jersey Transportation Planning Authority (Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, Warren) plus Mercer County of the Delaware Valley Regional Planning Commission.

(d) Consists of the following planning regions: Greater Bridgeport, Naugatuck Valley, Northwest Hills, South Central Connecticut, and Western Connecticut.

(e) Totals may not add due to rounding.

(f) In 2015, New York City changed its methodology of reporting local government workers to reflect the geographic distribution of the workforce more accurately.

NYMTC prepared a series of long-term employment forecasts, released in final form in October 2020 and re-benchmarked to 2022 conditions in June 2024. This is the latest available forecast from NYMTC. Forecasted trends are compressed to 5-year intervals, which masks cyclical trends between these years, a common practice in long-term forecasting. NYMTC projects regional employment growth will increase at an average annual rate of 0.41 percent between 2025 and 2055. From 2025 to 2030, annual employment growth of 0.55 percent is anticipated, moderating to 0.45 percent from 2030 to 2035, and between 0.35 and 0.39 percent from 2035 to 2055.

Based on spring 2020 employment trends prior to the job recovery that ensued in the following months, NYMTC forecasted a full recovery to pre-pandemic levels at some point over the five-year period from 2020 to 2025 with a return to the long-term growth trendline expected in 2030. While NYMTC only projects in five-year increments, Moody's forecasts provide more detailed year-

to-year projections. According to Moody's latest forecasts, the same source for one of several drivers used in the NYMTC employment model, New York City's employment growth is expected to wane in the years ahead, increasing by 0.35 percent in 2025, then declining by 0.27 percent in 2026 and 0.43 percent in 2027.

NYMTC's employment projections from its current employment forecast are presented in Table 14.

Table 14 NYMTC Employment Growth Projections

Year	New York City	New York Region [b]	New Jersey Region [c]	Connecticut Region [d]	NYC and All Regions
Average Annual Percent Change[a]					
2025 to 2030	0.59%	0.48%	0.56%	0.49%	0.55%
2030 to 2035	0.47%	0.40%	0.45%	0.42%	0.45%
2035 to 2040	0.45%	0.27%	0.31%	0.29%	0.36%
2040 to 2045	0.40%	0.29%	0.34%	0.31%	0.35%
2045 to 2050	0.49%	0.26%	0.36%	0.32%	0.39%
2050 to 2055	0.48%	0.25%	0.35%	0.32%	0.38%
2025 to 2055	**0.48%**	**0.33%**	**0.40%**	**0.36%**	**0.41%**

Source: New York Metropolitan Transportation Council

Notes:

(a) Future employment projections are modeled using an amalgam of data inputs from IHS Global Insight, Moody's, State DOLs, US BLS's Current Employment Statistics Program (CES) Quarterly Census of Employment and Wages (QCEW) program, and the US Census Bureau's American Community Survey.

(b) Consists of the following counties: Dutchess, Nassau, Orange, Putnam, Rockland, Suffolk, Sullivan, Ulster, and Westchester.

(c) Consists of the following counties: The 13 counties of the North Jersey Transportation Planning Authority (Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, Warren) plus Mercer County of the Delaware Valley Regional Planning Commission.

(d) Consists of the following counties: Fairfield, Litchfield, and New Haven.

Based on national and regional long-term forecasts combined with pandemic recovery expectations, the existing regional outlook suggested that jobs would expand by 0.41 percent annually over the period from 2025 to 2055, as mentioned above, roughly one-third of the annual average growth rate of 1.2 percent that occurred between 1990 and 2024. Employment in New York City is expected to expand at an annual rate of 0.48 percent, slightly greater than the 0.37 percent annual average gain projected in the suburban sub-regions of New Jersey, Connecticut, and New York.

Labor Force Conditions

In the late 2010s, the region had nearly recovered from the 2007-2009 recession in terms of unemployment and wages with unemployment rates below 2007 pre-recession levels and rising inflation-adjusted wages nearing 2007 levels. Sharp monthly job losses in 2020 contributed to among the worst short-term unemployment levels the region has seen since the Great Depression. Recent monthly trends show that the region has largely experienced a full employment recovery (see Figure 3).

The BLS reported that New York City's annual average unemployment rate had increased from 3.9 percent in 2019 to 12.2 percent in 2020 and has since fallen to 4.6 percent in 2024 (see Table

15). In 2024, an average of 216,700 New York City workers were unemployed in a labor force of 4.2 million. While New York City's unemployment rate has historically remained higher than that of the three suburban sub-regions, it fell below the rates in the New Jersey and Connecticut sub-regions in 2024. The New York suburban sub-region had the lowest unemployment rate at 3.8 percent, followed by the New York City sub-region (4.7 percent), the New Jersey suburban sub-region (5.0 percent), and the Connecticut suburban sub-region (5.1 percent).

Table 15 Labor Force Conditions, Annual Average 2019 to 2024

Year	New York City	New York Suburban Sub-Region[b]	New Jersey Suburban Sub-Region[c]	Connecticut Suburban Sub-Region[d]
Labor Force				
2019	4,261,000	2,531,300	3,756,200	1,057,300
2020	4,075,600	2,476,100	3,712,100	1,026,100
2021	4,090,300	2,471,800	3,718,200	1,013,500
2022	4,096,500	2,520,700	3,790,000	1,055,800
2023	4,151,900	2,557,000	3,862,800	1,046,200
2024	4,185,400	2,528,600	3,856,200	1,054,900
Employed				
2019	4,098,000	2,443,400	3,632,200	1,019,100
2020	3,576,800	2,278,600	3,370,600	944,800
2021	3,676,400	2,357,500	3,474,100	949,000
2022	3,861,700	2,442,600	3,647,400	1,012,300
2023	3,935,400	2,473,100	3,696,500	1,006,000
2024	3,968,700	2,441,600	3,681,100	1,016,900
Unemployed				
2019	168,700	87,900	124,000	38,200
2020	498,900	197,600	341,600	81,300
2021	413,900	114,300	244,000	64,500
2022	234,700	78,100	142,500	43,500
2023	216,500	84,000	166,300	40,200
2024	216,700	87,000	175,100	37,900
Unemployment Rate				
2019	3.9%	3.4%	3.3%	3.6%
2020	12.2%	8.0%	9.2%	7.9%
2021	10.0%	4.5%	6.5%	6.3%
2022	5.7%	3.0%	3.6%	4.2%
2023	5.4%	3.1%	4.1%	3.8%
2024	4.6%	3.8%	5.0%	5.1%

Source: BLS, Local Area Unemployment Statistics (LAUS) Program.

Notes:

(a) This table includes the jobs of self-employed (i.e., non-payroll) workers, some of which are part-time jobs, as reported by the US Department of Commerce and BLS. These non-payroll jobs are added to the payroll employment.

(b) Consists of the following counties: Dutchess, Nassau, Orange, Putnam, Rockland, Suffolk, Sullivan, Ulster, and Westchester.

(c) Consists of the following counties: The 13 counties of the North Jersey Transportation Planning Authority (Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, Warren) plus Mercer County of the Delaware Valley Regional Planning Commission.

(d) Consists of the following counties: Fairfield, Litchfield, and New Haven.

Over the 12 months from December 2023 to December 2024, New York City added 83,800 Non-farm jobs (a measure of the number of U.S. workers in the economy that excludes proprietors, private household employees, unpaid volunteers, farm employees, and the unincorporated self-employed) with 77,700 jobs gained in the private sector. Given the massive losses incurred in 2020, job gains over the five-year period from December 2019 to December 2024 largely reflected a recovery from those losses, while also indicating long-term growth trends in a few key sectors: Health Care & Social Assistance (+217,800); Finance & Insurance (+18,400); and Professional, Scientific, & Technical Services (+14,500).

Nine of New York City's major industry sectors added jobs over the past twelve months, led by Health Care and Social Assistance (+82,300), Accommodation and Food Services (+15,600), Transportation and Warehousing (+6,200), Government (+6,100), Arts, Entertainment, and Recreation (+3,200), Educational Services (+1,700), Wholesale Trade (+1,400), Management of Companies and Enterprises (+1,300), and Other Services (+1,100). Nine industry sectors lost workers over the past year, including Information (-11,000), Natural Resources, Mining, and Construction (-9,700), Retail Trade (-4,400), Professional, Scientific, and Technical Services (-3,300), Administrative and Support and Waste Management and Remediation Services (-2,100), Finance and Insurance (-1,800), Manufacturing (-1,400), Real Estate and Rental and Leasing (-1,100), and Utilities (-300).

Housing Construction

Between 2019 and 2024, New York City permitted nearly 175,400 housing units in new buildings (shown in Table 16). The trend in annual permits has displayed a cyclical pattern. In 2022, the tax benefit from the Affordable Housing New York Program (421-a) was about to expire, so developers pushed to file for permits that would benefit from the subsidy. Issued permits for that year totaled 69,300, nearly equal to the number issued over the prior three years combined. This was followed by a sharp decline in permits in the following two years. In 2024, only 15,600 permits were issued, marking the lowest figure since 2012, when the City was recovering from the 2007-2009 housing crisis. Annual average growth in housing permits has decreased over the period from 2019 to 2024 by 11.6 percent. The largest number of permits issued in the period occurred in Brooklyn (+69,700 units), followed by Queens (+38,500 units), the Bronx (+36,600 units), Manhattan (+27,500), and Staten Island (+3,100).

Annual housing unit completions, which reflect actual supply rather than construction activity, have steadily increased since the early pandemic low in 2020. Completions rose from 21,400 units in 2020 to 37,700 in 2024, averaging 7.1% growth per year since 2019 and totaling 171,700 new units over the past five years.

Table 16 Residential Building Permits Issued within New York City, 2019 – 2024

Borough	2019	2020	2021	2022	2023	2024	Total, 2019-2024	Average Annual Growth (2019-2024)	Annual Growth (2023-2024)
Bronx	6,149	5,717	5,967	10,904	4,720	3,125	36,582	-12.7%	-33.8%
Brooklyn	10,216	7,337	8,758	31,522	5,252	6,592	69,677	-8.4%	+25.5%
Manhattan	5,060	3,049	2,978	12,089	2,016	2,347	27,539	-14.2%	+16.4%
Queens	6,940	5,258	5,367	13,921	3,744	3,240	38,470	-14.1%	-13.5%
Staten Island	598	504	439	827	396	328	3,092	-11.3%	-17.2%
Total	28,963	21,865	23,509	69,263	16,128	15,632	175,360	-11.6%	-3.1%

Source: New York City Department of City Planning, NYC Housing Production Snapshot, 2024.[6]

Office Market

In the office property market, Cushman & Wakefield reports that leasing activity continues to recover from an all-time low of 12.8 million square feet in 2020, rising to 24.3 million square feet in 2022, and 23.4 million square feet in 2024 (nearly the 10-year average of 26.2 million square feet). Despite the recent recovery, leasing volume remains well below the 34.7 million square feet recorded in 2019.

Recovering from a historical high in Manhattan unemployment, New York City office-using employment surpassed 2019 levels in 2022 and has since remained stable at 1.4 million workers. Given the continuation of hybrid work models, demand for office space for these workers is not equivalent to 2019 levels.

In Q4 2024, the supply of vacant office space reached a high of 97.8 million square feet, increasing by 2.2 percent over the past year. The overall vacancy rate, including both direct and sublet vacancies, climbed from 11.1 percent in Q4 2019, to 15.2 percent in Q4 2020 and 23.3 percent in Q4 2024 (see Table 17). As Manhattan's office vacancy rate more than doubled in recent years, several high-demand submarkets far out-performed the others. Submarkets including City Hall, Sixth Avenue/Rockefeller Center, Park Avenue, and TriBeCa have all maintained vacancy rates below 18 percent since 2020. Among these, only Park Avenue and TriBeCa saw declines in vacancies over the past year.

[6] Census Bureau building permit reporting for New York City from 2022 to 2024 was highly inaccurate, therefore data was collected directly from the NYC DCP. Previous to 2022, Census and DCP permit reporting was quite similar.

Table 17 Manhattan Office Market Overall Vacancy Rates, Q4 2019- Q4 2024

SUBMARKET	Q4 2019	Q4 2023	Q4 2024	2019-2024 Percentage Point Change	2023-2024 Percentage Point Change
East Side/UN	12.2%	21.6%	21.3%	+9.1%	-0.3%
Grand Central	13.1%	22.3%	21.8%	+8.7%	-0.5%
Madison/Fifth	16.0%	25.2%	24.3%	+8.3%	-0.9%
Murray Hill	10.2%	23.9%	24.5%	+14.3%	+0.6%
Park Avenue	11.0%	15.3%	12.2%	+1.2%	-3.1%
Penn Station	8.3%	26.3%	23.5%	+15.2%	-2.8%
Sixth Avenue/Rock Center	8.7%	17.0%	17.9%	+9.2%	+0.9%
Times Square South	11.3%	24.9%	24.9%	+13.6%	+0.0%
West Side	13.2%	25.3%	29.9%	+16.7%	+4.6%
MIDTOWN TOTALS	**11.6%**	**22.4%**	**22.3%**	**+10.7%**	**-0.1%**
Chelsea	9.3%	22.8%	22.8%	+13.5%	+0.0%
Greenwich/NoHo	6.2%	19.9%	23.9%	+17.7%	+4.0%
Hudson Square/West Village	6.5%	22.1%	24.2%	+17.7%	+2.1%
Madison/Union Square	8.4%	25.2%	27.4%	+19.0%	+2.2%
SoHo	13.1%	22.2%	33.6%	+20.5%	+11.4%
MIDTOWN SOUTH TOTALS	**8.5%**	**22.4%**	**25.8%**	**+17.3%**	**+3.4%**
City Hall	8.9%	11.0%	13.2%	+4.3%	+2.2%
Financial East	12.9%	24.1%	26.5%	+13.6%	+2.4%
Financial West	19.9%	24.6%	32.3%	+12.4%	+7.7%
Insurance	9.2%	35.4%	32.5%	+23.3%	-2.9%
TriBeCa	3.0%	17.7%	17.2%	+14.2%	-0.5%
World Trade	11.9%	19.5%	20.4%	+8.5%	+0.9%
DOWNTOWN TOTALS	**11.7%**	**22.1%**	**24.3%**	**+12.6%**	**+2.3%**
MANHATTAN TOTALS	**11.1%**	**22.8%**	**23.3%**	**+12.2%**	**+0.5%**

Note: Overall vacancies include both direct and sublet vacancies.
Source: Cushman & Wakefield, Office Marketbeat, Q4 2019 - Q4 2024.

Despite weak demand, Cushman & Wakefield reported that Class A rental rates rose above 2019 levels from $79.82 in 2019 to $81.19 per square foot in 2024 (+1.7 percent) and up 0.3 percent over the previous year. Average rental rates for all classes remained just below 2019 levels at $72.73 in 2023 and were down 0.8 percent over the past 12 months.

Net absorption in Manhattan's office market remained below the post-2019 average, with a loss of 6.2 million square feet, roughly 1.5 percent of total inventory, indicating that more office space is being vacated than leased. Manhattan's inventory of office space increased from 419.0 million square feet in 2023 to 419.3 million square feet in 2023, a net gain of 0.3 million square feet due to new construction completions.

Since August 2023, New York City's Office Conversion Accelerator program has facilitated the transformation of outdated office space into residential housing. The program permits office buildings in Manhattan built in 1990 or earlier to be converted into housing, provided the project includes at least 50 residential units. As of January 2025, 83 buildings were enrolled in the program. Among them, the largest office-to-residential conversion in U.S. history, SoMA, is nearing completion, adding 1,320 apartments to the city's housing market.[7] Several hundred million square feet of office space is expected to be eligible for conversion.

During the fourth quarter of 2024, Cushman & Wakefield reported that 3.4 million square feet of office space was under construction or proposed to start construction in Manhattan. This is considered a relatively small pipeline given that more than 52 million square feet of office space have been added annually in Manhattan since 2000 according to CBRE data.[8]

Table 18 identifies 16 office buildings over 200,000 square feet currently under construction, proposed, or planned, with expected completions between 2025 and 2032. If all are completed as planned, these projects will add 16.0 million gross square feet of office space to the New York City market. An additional 22.8 million square feet has been proposed but remains unapproved without known completion dates. Among projects currently under construction, 6.6 million square feet is planned through 2028, while another 9.0 million square feet is planned or proposed with expected completions through 2032. In 2025, three buildings are expected to deliver 2.4 million square feet, followed by 2.8 million square feet in 2026. Several major towers exceeding 900,000 square feet are expected to be completed over the next four years including 270 Park Ave, 360 10th Ave, 570 5th Ave, and 200 Greenwich Street. This data is current as of March 2025.

[7] John Caulfield. Jan. 31, 2025. "America's largest office-to-res conversion poised to open in New York City." *Building Design + Construction.* Retrieved from: https://www.bdcnetwork.com/home/news/55264926/americas-largest-office-to-res-conversion-poised-to-open-in-new-york-city.

[8] Matthew Haag, Dec. 28, 2023. "The Building Spree That Reshaped Manhattan's Skyline? It's Over." *New York Times.* Retrieved from: https://www.nytimes.com/2023/12/28/nyregion/manhattan-construction-drought-nyc.html.

Table 18 Major New York City Office Buildings Proposed for Completion

Expected Completion	Address	Borough	Developer/Occupant	Office SF	Project Status
2025	1508 Coney Island	Brooklyn	Totem Group LLC	215,280	Under Construction
2025	125 W 57th St	Manhattan	Alchemy & Cain	260,000	Under Construction
2025	270 Park Ave	Manhattan	JP Morgan Chase	1,900,000	Under Construction
2026	500 Kent Ave	Brooklyn	Tishman Speyer	613,911	Planned
2026	514 W 36th St	Manhattan	AEW Capital	749,447	Proposed
2026	1160 Flushing Ave	Brooklyn	Extell Development	238,000	Under Construction
2026	415 9th Ave	Manhattan	Cove Property Group	285,796	Under Construction
2026	500 W 33rd St	Manhattan	Silverstein Properties	445,000	Under Construction
2026	20 Hudson Yards	Manhattan	Related Companies	450,000	Under Renovation
2027	360 10th Ave	Manhattan	McCourt Global	1,000,000	Under Construction
2028	570 5th Ave	Manhattan	Extell Development	920,000	Proposed
2028	415 Madison Ave	Manhattan	Rudin Management	343,100	Under Construction
2029	200 Greenwich St	Manhattan	Silverstein Properties	2,800,000	Planned
2030	175 Park Ave	Manhattan	RXR	2,118,820	Proposed
2032	350 Park Ave	Manhattan	Vornado/Rudin Mgmt	1,800,000	Proposed
Stalled	3 Hudson Blvd	Manhattan	The Moinian Group, BXP	1,900,000	Under Construction

Source: New York Building Congress, JLL, Dodge Construction, Colliers, & Moody's.

Population Trends and Projections

Since 1990, US Census data indicate that New York City's population has increased by 1.2 million persons to a total of 8.5 million residents in 2024 (see Table 19). While New York City's population has recorded historical periods of contraction, the commuter suburbs of New York, New Jersey, and Connecticut have grown largely continuously over the past three decades. Compared to 8.5 million residents in New York City, northern and central New Jersey now houses 7.6 million residents while the nine counties of Long Island and the Mid-Hudson are home to 5.4 million residents.

Over the period from 1990 to 2024, the New Jersey region saw an increase of 1.5 million residents and the New York region added 721,300. The Connecticut region, with 2.1 million residents, has added 250,200 residents. All sub-regions experienced modest population losses from a peak year in 2017 to 2019 according to annual estimates benchmarked to the 2010 Census. While the 2020 Census showed strong growth across the region from 2010 to 2020, a subsequent review in 2022 found that New York State had been overcounted by approximately 700,000 residents, suggesting that some of the reported growth was overcounted.

The most recent annual population estimates from 2024, which factor in the 2020 over-count, estimate that the 31-county metropolitan area lost 71,000 residents since 2020, due to early pandemic migration patterns led by losses in New York City (-326,100). From 2022 to 2024, the region experienced a reduction in population losses, with positive growth recorded in all sub-regions with gains led by the New Jersey subregion (+177,200), New York City (+121,900), the New York suburbs (+40,600), and the Connecticut suburbs (+35,100). This suggests a potential shift or

stabilization in migration patterns within the metropolitan area following the initial impacts of the pandemic.

Estimated population loss over the past decade in the New York City metropolitan area follow national trends for major urban areas where residents have emigrated elsewhere due to increased living costs and slow salary growth. As public spaces and services closed and white-collar employment relocated from central business districts to home-based locations during 2020, outward migration accelerated from the New York metropolitan area, especially among young adults. At that time, realtors reported increased suburban home purchases and rental lease signings in the outer suburban areas of the region as apartment vacancies in Manhattan climbed upward.

According to Moody's, a leading real estate analytics data provider, the lowest recent point in apartment rental demand occurred in March 2021, with 20,700 vacant units and a 4.4 percent vacancy rate in New York City. The market swiftly recovered across both urban and suburban areas leading to a region-wide housing shortage. Elevated levels of New York City apartment completions over the past five years have started to put downward pressure on rent prices according to Moody's, which may attract renters recently priced out of the housing market and prevent further out-migration among middle- and lower-income workers. The vacancy rate for multi-family market-rate housing is currently estimated at 3.1 percent as of January 2025, indicating a balanced market where new supply is being effectively absorbed according to Moody's.

Table 19 Population Trends 1990 to 2024

(000s)

Year	New York City	New York Region [a]	New Jersey Region [b]	Connecticut Region [c]	NYC and All Regions
1990	7,322.6	4,635.2	6,079.5	1,875.5	19,912.7
2000	8,008.3	4,933.1	6,661.8	1,959.0	21,562.2
2010	8,175.1	5,123.7	6,946.4	2,041.1	22,286.4
2020	8,804.2	5,319.8	7,412.6	2,079.7	23,616.3
2021	8,453.8	5,331.5	7,389.3	2,084.7	23,259.3
2022	8,356.2	5,315.9	7,407.8	2,090.6	23,170.5
2023	8,390.9	5,323.1	7,480.3	2,105.6	23,299.8
2024	8,478.1	5,356.5	7,585.0	2,125.7	23,545.3
Average Annual Percent Change					
1990 to 2000	0.9%	0.6%	0.9%	0.4%	0.8%
2000 to 2010	0.2%	0.4%	0.4%	0.4%	0.3%
2010 to 2020	0.7%	0.4%	0.7%	0.2%	0.6%
2020 to 2021	-4.0%	0.2%	-0.3%	0.2%	-1.5%
2021 to 2022	-1.2%	-0.3%	0.3%	0.3%	-0.4%
2022 to 2023	0.4%	0.1%	1.0%	0.7%	0.6%
2023 to 2024	1.0%	0.6%	1.4%	1.0%	1.1%

Source: US Census Bureau, 1980 to 2020 Decennial Census, 2021-2024 Annual Population Estimates

Notes:

(a) Consists of the following counties: Dutchess, Nassau, Orange, Putnam, Rockland, Suffolk, Sullivan, Ulster, and Westchester.

(b) Consists of the following counties: The 13 counties of the North Jersey Transportation Planning Authority (Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, Warren) plus Mercer County of the Delaware Valley Regional Planning Commission.

(c) Consists of the following planning regions: Greater Bridgeport, Naugatuck Valley, Northwest Hills, South Central Connecticut, and Western Connecticut.

NYMTC prepared a series of long-term population forecasts, released in final form in October 2020 and re-benchmarked to 2022 conditions in June 2024, presented in Table 20. Between 2025 and 2055, NYMTC projects a 0.39 percent annual rate of growth, compared to the region's annual average historic growth of 0.49 percent from 1990 to 2024. New York City is expected to account for an estimated 36 percent of future regional annual growth. The New Jersey suburbs are anticipated to have 37 percent of the increase, while Long Island and the Mid-Hudson are expected to account for 22 percent of the total. The Connecticut region, by contrast, will likely account for only 5 percent of regional growth.

Population growth traditionally increases traffic demand on crossings, although employment trends have had a more noticeable effect on traffic volumes at TBTA facilities. However, TBTA traffic variations do not always correlate year by year with regional demographic trends, as in this instance where pandemic impacts on behavior as well as reduced transit service have increased TBTA crossings. As evident, demand for TBTA facilities has been strong overall and NYMTC's long-term regional population projections indicate a trend for such demand to increase over the projected period. Any losses due to short-term fluctuations in employment due to the pandemic were projected to be offset by other years that will be characterized by growth. In general, an

upward trend is expected over the long term through the end of NYMTC's current forecast period in 2055.

Table 20 Population Projections

(a)

Year	New York City	New York Region (b)	New Jersey Region (c)	Connecticut Region (d)	NYC and All Regions
Average Annual Percent Change					
2025 to 2030	0.78%	0.31%	0.34%	0.23%	0.48%
2030 to 2035	0.45%	0.68%	0.65%	0.51%	0.57%
2035 to 2040	0.38%	0.47%	0.51%	0.32%	0.44%
2040 to 2045	0.34%	0.23%	0.40%	0.16%	0.32%
2045 to 2050	0.26%	0.26%	0.38%	0.12%	0.29%
2050 to 2055	0.11%	0.26%	0.37%	0.12%	0.23%
2025 to 2055	**0.39%**	**0.37%**	**0.44%**	**0.24%**	**0.39%**

Source: New York Metropolitan Transportation Council.

Notes:

(a) The forecast is the most recent available, unchanged from the previous year.

(b) Consists of the following counties: Dutchess, Nassau, Orange, Putnam, Rockland, Suffolk, Sullivan, Ulster, and Westchester.

(c) Consists of the following counties: The 13 counties of the North Jersey Transportation Planning Authority (Bergen, Essex, Hudson, Hunterdon, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, Warren) plus Mercer County of the Delaware Valley Regional Planning Commission.

(d) Consists of the following counties: Fairfield, Litchfield, and New Haven.

Motor Vehicle Registrations

The trend in motor vehicle registrations in an area has been a predictor of vehicular traffic. Motor vehicle registrations in the tri-state area of New York, New Jersey, and Connecticut have remained largely stable in number over the past two decades with variations due to changing economic conditions and preferences for public transit. Total registrations peaked in 2005 and dropped sharply following the financial crisis. By 2011, Tri-State registrations returned to near-2005 levels before declining to a near-term low in 2015 (see Table 21). Since then, registrations have remained relatively stable.

Increased personal vehicle travel in urban areas is considered one among many near-term impacts of the pandemic as commuters sought to avoid close contact with others during travel. Registrations in the tri-state area increased by 1.9 percent from 2019 to 2021, led by growth in New Jersey (+3.6 percent) and New York State (+2.6 percent), while Connecticut registrations dropped by 4.2 percent. In the past year, registrations decreased in number in New York City (-1.2 percent). In 2023, the number of registrations was estimated at 20.0 million, below the 20-year annual average (20.6 million) for the tri-state area.

Although motor vehicle registrations are not projected for future years, auto sales increased nationally following the 2007-2009 recession due to pent-up demand with a record number of

sales in 2015 and 2016. Sales dropped sharply in the early 2020s due to pandemic-related plant shutdowns and a semiconductor chip shortage that constrained new vehicle availability through 2023. By the end of 2024, vehicle sales had reached 195,400, exceeding recent years but still falling short of the ten-year average of 198,700. The outlook for future motor vehicle registration growth will depend on stable consumer confidence levels as demand for vehicles remains relatively strong in the near term but is held back by high vehicle prices and mortgage rates.

As of February 25, 2025, the Conference Board, a nonprofit research organization, reported consumer confidence levels had fallen by 7.0 points in February to 98.3. This marked the largest monthly decline since August 2021 and the lowest level since 2022, driven by weakening labor market conditions and increasing consumer pessimism about future business conditions and personal income levels. Higher inflation expectations contributed to lower confidence levels driven by the rising prices associated with planned tariffs.

Table 21 Motor Vehicle Registrations

(000s)[a]

Year	New York City	New York State[b]	New Jersey	Connecticut
2013	2,016	10,674	7,061	2,856
2014	2,057	10,904	6,874	2,866
2015	2,107	10,639	5,939	2,842
2016	2,162	11,122	5,941	2,842
2017	2,189	10,857	6,058	2,826
2018	2,186	11,482	6,055	2,880
2019	2,182	11,389	6,033	2,879
2020	2,175	11,325	6,006	2,868
2021	2,242	11,689	6,250	2,756
2022	2,238	11,029	6,000	2,789
2023 (c)	2,228	11,041	6,147	2,784
2024	2,200	N/A	N/A	N/A
Average Annual Growth				
2013-2023	1.0%	0.3%	-1.4%	-0.3%
2023-2024	-1.2%	N/A	N/A	N/A

Source: United States Federal Highway Administration, United States Department of Energy, and New York State Department of Motor Vehicles

Notes:
(a) This represents the most recent available data for New Jersey and Connecticut. [9]
(b) Including New York City.
(c) Estimated for New York, New Jersey, and Connecticut based on annual data from the US Department of Energy.[10]

Annual year-end motor vehicle registrations for the period from 2019 through 2024 are shown for each of New York City's five boroughs in Table 22. All five boroughs added motor vehicle registrations in the years from 2019 to 2021, with the citywide total increasing by 2.7 percent as health and transit safety concerns drove commuters away from public transit towards personal vehicles. As transit ridership levels recovered, vehicle registrations decreased in number, falling by 41,700 registrations or 1.9 percent from 2021 to 2024.

Over the 5-year period from 2019 to 2024, New York City gained 18,300 registrations; Staten Island saw the largest gain in new registrations (+11,100), followed by Queens (+10,800), and Brooklyn (+3,300). A reduction in registrations was reported in the Bronx (-5,400) and Manhattan (-1,600). The CBD Tolling Program, which began on January 5, 2025, may contribute to further reductions

[9] In a conversation with David Winter, Director of the FHWA Office of Highway Policy Information on 2/24/2025, he explained that the year 2024 Highway Statistics Series has not been finalized at this time but plans are in place to publicly release this information this year
[10] Requests for local DMV data from New Jersey and Connecticut were submitted on March 5, 2025, but no information has been received. Historically, this data has not been comparable to FHA figures. Similarly, statewide vehicle registration counts for 2025 from the NYS Open Data Portal are not comparable to FHA data.

in vehicle registrations in the city in the coming years as rising travel costs encourage some drivers to choose alternative modes of transportation.

It is worth noting that the availability and usage levels of for-hire and other yellow and green taxi services have had sizable impacts on traffic and contributed to a portion of the increase in vehicular travel in recent years. For example, the number of daily trips from yellow taxi and ride hailing apps is now approaching pre-pandemic record levels, totaling 769,100 daily trips in January 2025 compared with 870,100 daily trips in January 2020.

Table 22 New York City Motor Vehicle Registrations, 2019 to 2024

Borough	2019	2020	2021	2022	2023	2024	2023 – 2024 Change	2019-2024 Annual Average Change
Bronx	288,754	287,166	294,792	293,292	289,278	283,342	-2.1%	-0.38%
Brooklyn	535,265	544,623	563,485	555,700	548,892	538,619	-1.9%	+0.13%
Manhattan	248,322	251,147	255,005	255,968	252,214	246,696	-2.2%	-0.13%
Queens	831,600	817,102	839,323	846,976	850,422	842,447	-0.9%	+0.26%
Staten Island	277,617	275,154	288,928	286,063	286,779	288,720	0.7%	+0.79%
Total	2,181,558	2,175,192	2,241,533	2,237,999	2,227,585	2,199,824	-1.2%	+0.17%

Source: New York State Department of Motor Vehicles

Fuel Availability and Prices

Traffic and revenue at TBTA crossings have been affected in varying degrees by the availability and price of gasoline since 1970. Volatility driven by major events including trade embargos, wars, economic recessions, shifts in energy policy, and environmental disasters affecting energy infrastructure have contributed to fuel shortages and increases in gasoline prices. Figure 3A/3B illustrate the trend in rolling average[11] monthly Vehicle Miles Traveled ("VMT") and gas prices since 2015.

Major events affecting gas prices over the past decade include:

- the 2014-16 collapse in oil prices due to booming U.S. shale oil production and the aggressive regional economic recovery from the Great Recession;
- the short-term decline in global travel activity in 2020 and the following shifts in consumption patterns associated with the pandemic where oil producers and refineries were unable to keep up pace with increasing demand;

[11] 12-month rolling averages (using average values of the past 12 months instead of single months of data) were utilized in Figures 3A/3B to smooth out cyclical and seasonal month-to-month trends.

- short-term energy spikes due to refinery shutdowns from extreme weather events, including Winter Storm Uri in Texas (February 2021) and Hurricane Ida in Louisiana (August 2021);

- the Russian invasion of Ukraine and subsequent sanctions on Russia which led to price instability in 2022 and 2023 due to shifts in supplies; and,

- Houthi attacks on shipping vessels in the Red Sea during the fall of 2023 forced the rerouting of some oil tankers to the south of Africa, further tightening energy supplies in Atlantic markets.

During the second week of July 2008, the average price of regular-grade gasoline reached a historic peak at that time of $4.114 per gallon in the U.S. and $4.179 in New York City. Prices then dropped in the second half of 2008, remaining steady through 2009 and increasing through 2010. The next peak, during the second week of May 2011, saw prices at $3.965 per gallon in the U.S. and $4.069 in New York City. After falling to the lowest prices in a decade in April 2020 due to a near-halt in travel activity and sharply reduced consumer demand, energy prices aggressively increased over the following 23 months as oil producers and refineries were unable to ramp up production to meet rising demand amid geopolitical tensions in the Middle East and Europe. As of March 10, 2025, the U.S. Energy Information Administration ("EIA") stated that the price of regular-grade gasoline averaged $3.069 per gallon nationally, and $2.913 in New York City, down considerably from all-time highs of $4.844 per gallon recorded during the week of June 13, 2022.

Data from the FHWA indicates that from 2014 to 2019 national travel demand continued to increase as the nation recovered from the 2007-2009 recession by an average annual rate of 1.5 percent as statewide levels decreased by 1.4 percent. At the national level, low gas prices contributed to increased travel, while VMT declined in New York State as average transit ridership increased and new travel options including car shares, bike shares, and taxi-booking services emerged. In 2020, pandemic-related travel restrictions contributed to a sharp drop in travel across the nation with an annual decline in VMT of 13.2 percent nationally and 16.6 percent in New York State where travel restrictions were longer and more intense than in other areas of the country. As of November 2024, the 12-month total VMT nationwide had fully recovered, surpassing the 2019 total by 0.9%. In New York State, the 12-month total VMT remained 3.2 percent below 2019 levels. TBTA total transactions in New York City declined by 23.1 percent from 2019 to 2020 following annual average gains of 2.9 percent over the period from 2014 to 2019. In 2024, TBTA transactions increased by 0.7 percent over the previous year and by 2.4 percent over the years from 2019 to 2024.

Factors contributing to changes in the price and availability of gasoline are both upward and downward and each has an unknown element that contributes to uncertainty. These factors include:

- Dependence on imported crude oil – generally, the United States' dependence on imported fuel has continued to fall as the country increases its reliance on domestic resources. Domestic production is projected to reach an expected high by 2027 then level off at the end of the decade according to the EIA.

- To maintain long-term output levels, the Biden administration approved new domestic energy ventures such as the recently approved Willow oil drilling project in Alaska, a project expected to produce more than 600 million barrels of oil over 30 years. In February 2025, Interior Secretary Doug Burgum signed several orders to support the expansion of energy production in Alaska and on public lands. The EIA reported that U.S. crude oil and natural gas outputs reached record high production levels in December 2025 according to its Petroleum Supply Monthly report. The EIA, in its March 2025 Short-Term Energy Outlook ("STEO"), estimated that daily domestic crude oil production averaged 13.2 million barrels per day in 2024 and will reach 13.6 million barrels per day in 2025 and increase even further in 2026, exceeding all prior production records.

- Use of substitute fuels – U.S. biofuel production has expanded since 2010, driven by reduced imports and the Renewable Fuel Standard ("RFS") program, which sets biofuel production targets. In March 2025, the EIA reported that renewables and oxygenates production, including both biodiesel and fuel ethanol, are expected to reach record high levels, increasing 3.0 percent over 2024. The EPA's RFS targets were increased over the 2023-2025 period and now include renewable electricity targets. New RFS targets will be approved later in 2025. Fluctuations in biofuel imports have an impact on the need for gasoline.

- Motor vehicle fuel efficiency – The rising fuel economy and increasing adoption of electric vehicles ("EVs") are reducing the impact of gasoline prices on vehicle travel. The projected real-world model year 2024 fuel economy of 28.0 miles per gallon ("mpg"), will be 3.3 percent higher than the 2023 model year fuel economy of 27.1 mpg. If achieved, it will be the highest-level year of fuel efficiency since the EPA began its analysis of light-duty automotive vehicles in 1975. In 2021, the EPA raised its real-world fuel economy standards with a goal of 40 mpg by 2026. The EPA's heavy-duty truck standards were revised in 2022 with stricter standards for year 2027, which would reduce nitrogen oxide emissions from trucks by up to 60 percent by 2045. In March 2022, the EPA reinstated California's authority under the Clean Air Act to implement its own greenhouse gas emission standards and zero-emission vehicle sales mandate, thereby continuing the practice of generating regulatory credits for the sales of EVs now followed by 17 states, including New York, New Jersey, and Connecticut. In February 2024, the U.S. government eased proposed yearly requirements through 2030 of its sweeping plan to cut tailpipe emissions and increase EV sales in order to allow automakers more time to develop lower-cost vehicles and further build the nation's charging infrastructure.

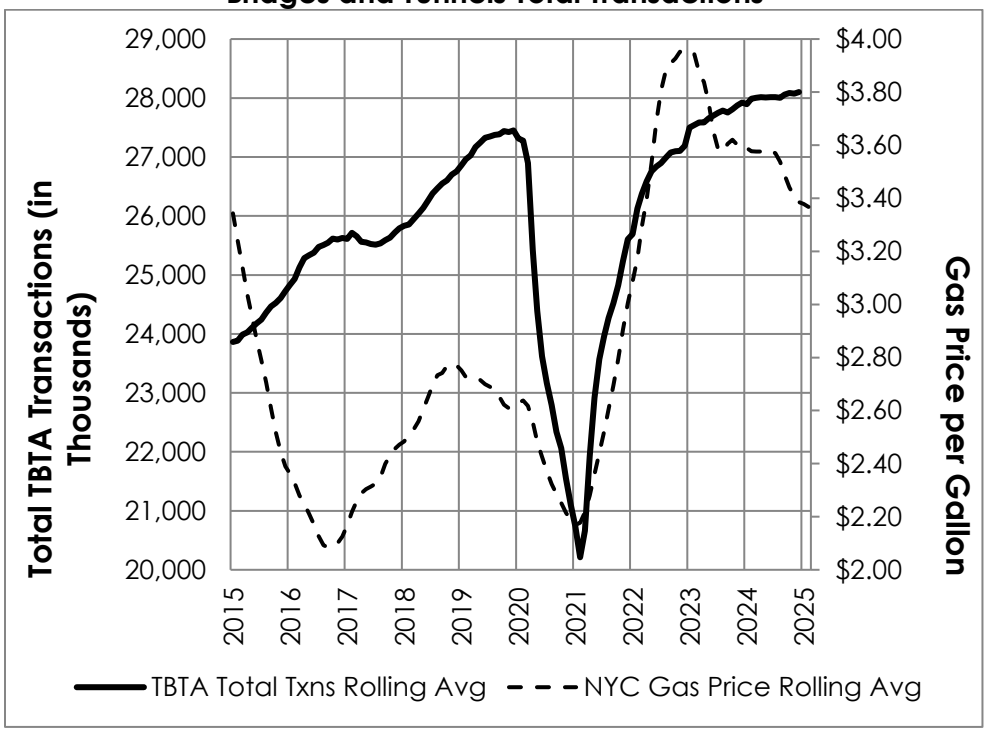
- EV Fleet Growth – In recent years, EVs have increased in popularity. Combined sales of hybrids, plug-in hybrids, and battery electric vehicles rose from 2.1 percent of total US light-vehicle deliveries in 2018 to 21 percent in Q3 2024. As of February 2025, Atlas Public Policy estimates that electric and Plug-in Hybrid Electric Vehicles ("PHEVs") make up 2.1 percent of the market in New York State, with 276,000 EVs on the road. With an average car lifespan of approximately 16 years, it will take a number of years before EVs make up a significant share of light-duty vehicles on the road.

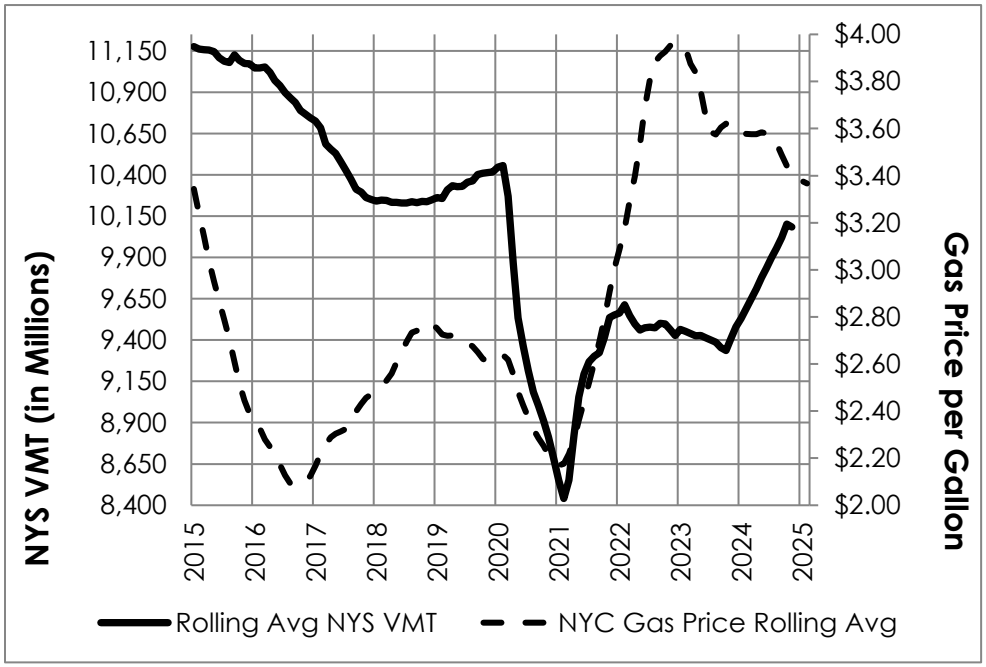
- In its March 2025 STEO, the EIA forecasted the national price of regular-grade retail gasoline to average $3.22 per gallon in 2025, down 2.6 percent from 2024. Although average gasoline prices were $3.07 per gallon in mid-March, the EIA forecasts a moderate price increase through the third quarter of 2025 due to declining crude oil production in Iran and Venezuela. Oil prices are expected to decline by the end of 2025 and into 2026 as inventories grow, driven by the unwinding of OPEC+ production cuts and expanded non-OPEC production.

- The EIA's forecast for the Brent Crude Oil Spot Price, one of the major benchmarks used in pricing oil, reached a recent peak in the second quarter of 2022 at $113.84 per barrel and has since followed a sharp downward trend that reached a recent low in Q4 2024 of $74.65. The EIA forecasts price declines through 2025 and 2026, ultimately falling to $66.00 by Q4 2026. The EIA forecasts an average price of $74.22 per barrel in 2025, down 7.9 percent from 2024. Various investment banks and consultancies have forecasted a range of prices. A poll of 41 economists and analysts by Reuters in February 2025 predicted Brent crude would average $74.63 per barrel in 2025. Goldman Sachs forecasted $78 per barrel, $67 by Citi, and $75 by Bank of America.

Depicted on the following page is Figure 3A/3B, which illustrates the historical relationship between gas prices and travel. As shown with both New York State VMT and TBTA Total Transactions, a reduction in the price of gas has historically been correlated with a rise in vehicular travel demand. Similarly, a rise in the price of gas generally has correlated with a reduction in vehicular travel demand. However, Figure 3B shows that monthly transactions began rising before gas prices declined in 2016–2017, while the increase in transactions from 2021 to 2022 coincided with rising gas prices and a sharp rise in workers returning to work in offices during the pandemic recovery. This suggests that although gas prices can influence travel, the recent increase in transactions cannot be entirely attributed to gas price fluctuations and may reflect strength in employment growth or shifts in commutation trends.

Figure 3A/3B New York City Gas Prices Compared to New York State VMT and TBTA Bridges and Tunnels Total Transactions





Source: United States Energy Information Administration, United States Federal Highway Administration, and Metropolitan Transportation Authority

Toll Increase Impacts, Collection Methods, and Elasticity

Tolls that are increased periodically can affect traffic usage, especially if they outpace the rate of inflation and in those instances where competing facilities provide a good alternative. Elasticity, as used herein, is the relationship between the change in traffic volume and the toll rate change. It represents the relative decrease in traffic in response to a given increase in toll. Elasticity is expressed as a negative value and the higher the absolute value, the more apt a facility is to lose traffic, which can be attributable to diversions to competing facilities, switches in travel modes, consolidation of trips, and elimination of trips. Elasticity, in this sense, is used to analyze the relationship between tolls and use, i.e., when tolls are increased, motorists react, and travel patterns may change.

Elasticity factors vary, demonstrating that users react differently to toll increases depending on influencing conditions. On TBTA crossings, elasticity tends to be influenced by the proximity of the toll-free New York City bridges and other considerations. On the East River at the RFK Bridge and at the Queens Midtown and Hugh L. Carey Tunnels, elasticity increases as the degree of toll-free competition increases. TBTA bridges and tunnels tend to lose traffic particularly when the competing crossings are operating under reasonable levels of traffic service and providing motorists with viable toll-free alternatives during non-peak periods. In addition, trip purpose influences demand; i.e. peak-period, work-related trips are less elastic than off-peak or discretionary trips that have fewer travel-time constraints. The effects of construction on main thoroughfares and feeder routes also affect drivers' choices of toll facilities.

Two sets of forecasts were developed for this report: one with constant (current) tolls and the second factoring in toll increases in August 2025 and March 2027 as included in the MTA 2025-2028 Financial Plan adopted by the MTA Board in February 2025. Elasticity factors used for the analyses in this report were developed in cooperation with TBTA and are based on factors developed initially from analyzing the elasticity exhibited following the March 2017 toll increase and continuously adjusted with each subsequent toll increase, most recently the August 6, 2023 toll increase, while also factoring in the available capacity on each facility.

To evaluate the impact of any toll increase on transactions, transactional data at each of the TBTA facilities are split into four groups by payment type: NYCSC E-ZPass customers, non-NYCSC E-ZPass customers, NYCSC Mid-Tier E-ZPass customers (effective with the April 11, 2021 toll increase), and TBM customers. Stantec then estimated the revenue split by payment type; this enabled the tracking of the average toll rate throughout the months following the toll increase. The conversion to Cashless Tolling also occurred throughout 2017 at eight of the nine facilities and greatly induced cash customers to switch to E-ZPass. Overall E-ZPass usage increased by a range of 3.4 percent (Throgs Neck Bridge) to 6.6 percent (RFK Bridge) in 2017 with the conversion to Cashless Tolling, which is a combination of background growth and payment method shifts, which vary by facility. Background growth rates were studied using historical and projected population growth, fuel prices, VMT, ongoing and future construction projects, and the current and projected economic climate. Incorporating these various factors, seasonal trends in the data were also

reviewed to determine the patterns and length of the toll increase impact. This process generally isolated the background growth effects from the toll increase elasticities.

When reviewing changes in usage exhibited after the March 2017 toll increase, Stantec recognizes that it was unlike most prior toll increases in that, generally, total transactions at TBTA facilities continued to increase. In Stantec's opinion, this indicated that the sensitivity to toll increases was diminishing and the background growth was increasing. Our analysis of the previous toll increases, prior to the existence of Cashless Tolling, found that cash motorists are more sensitive to toll rates when compared to E-ZPass users, indicating a significantly higher elasticity for cash customers than for E-ZPass customers. With regard to tolling elasticities, TBM customers are expected to behave more like E-ZPass customers than traditional cash customers, as there is no direct cash transaction at the toll gantry for either customer. Stantec made separate analyses for both the E-ZPass customers and for the TBM customers. As a result, Stantec has seen that based on historical data, elasticity rates for TBM customers may continue to be closer to those found for E-ZPass customers as behavior stabilizes between the two collection methods. Elasticity factors used to develop Stantec's analyses of toll revenue including the future August 2025 toll increase and the future March 2027 toll increase are shown in Table 23.

As discussed earlier, there was a significant shift from cash to E-ZPass in response to the implementation of Cashless Tolling. In 2018, the unprecedented shift to E-ZPass continued with total E-ZPass market share reaching 94.6 percent by December 2018. In December 2019, E-ZPass market share remained at 95.5 percent. In December 2020, E-ZPass market share was 94.7 percent. As of December 2023, E-ZPass market share was 92.1 percent. As stated earlier, some of the E-ZPass decrease could be attributed to a change in the categorization of E-ZPass violation notices. As of April 1, 2023, customers receiving E-ZPass violation notices began receiving Tolls by Mail notices. Previously these customers were included in E-ZPass market share. Stantec estimates that a tiny shift towards E-ZPass will continue throughout the duration of the forecast, however at these higher participation levels, the incremental changes will be smaller.

Any toll increases or other adjustments are subject to future action by the TBTA Board. However, for purposes of the calculations provided, we have assumed toll increases in accordance with the 2025-2028 MTA Financial Plan. This plan includes projected toll increases on August 1, 2025 and March 1, 2027. Accordingly, Stantec assumes at least a 5.0 percent toll increase on August 1, 2025 is needed to achieve a 4 percent revenue yield from August through December 2025 and an additional 5.8 percent toll increase on March 1, 2027 to achieve a 4 percent revenue yield for the full year 2027. Further, it was assumed that truck tolls would be increased proportionately, and that the relationships between TBM and NYCSC E-ZPass tolls for passenger cars would remain the same as those implemented for the toll increase on August 6, 2023.

As previously noted, the NYCSC Mid-Tier toll is a new toll rate effective with the April 11, 2021 toll increase and is charged to NYCSC E-ZPass customers who do not properly mount their E-ZPass tag when crossing TBTA facilities. It was assumed that these customers will behave similarly to E-ZPass customers since they often do not realize their improperly mounted E-ZPass was not read and therefore have the same elasticity. It is also assumed that a small portion of NYCSC customers

subject to the higher Mid-Tier toll rate will properly mount their E-ZPass tag in order to pay the lowest E-ZPass toll rate.

Table 23 Elasticity Factors

Facility	Elasticity Factors[a]		
	TBM	E-ZPass	Mid-Tier
Throgs Neck Bridge	-0.130	-0.100	-0.100
Bronx-Whitestone Bridge	-0.130	-0.100	-0.100
RFK Bridge	-0.150	-0.110	-0.110
Queens-Midtown Tunnel	-0.220	-0.170	-0.170
Hugh L. Carey Tunnel	-0.210	-0.160	-0.160
Verrazzano-Narrows Bridge	-0.150	-0.120	-0.120
Henry Hudson Bridge	-0.160	-0.130	-0.130
Marine Parkway Bridge	-0.120	-0.090	-0.090
Cross Bay Bridge	-0.160	-0.120	-0.120

Notes:
(a) For each 1% increase in toll, the volume is expected to decrease by the elasticity factor, e.g., for each 1% increase in the TBM toll at the Queens Midtown Tunnel, TBM traffic would decrease by 0.220%.

The elasticity factors in Table 23 were used by Stantec to calculate changes in traffic as shown in Table 24. These traffic impacts represent the reduction in volume from the corresponding annual traffic levels that would be expected in a scenario without a toll increase. Future transactions are calculated by applying background growth to existing transactions, and, when there is a toll increase, factoring in traffic loss due to toll elasticity.

Table 24 Estimated Percent Change in Average Toll Rates and Traffic in 2025 and 2027

Facility	Elasticity Factors			Estimated Percent Change with Assumed 2025 Toll Increase						Estimated Percent Change with Assumed 2027 Toll Increase					
				Average Toll Rate			Traffic			Average Toll Rate			Traffic		
	TBM	E-ZPass	Mid-Tier	TBM	E-ZPass	Mid-Tier	TBM	E-ZPass	Mid-Tier	TBM	E-ZPass	Mid-Tier	TBM	E-ZPass	Mid-Tier
Throgs Neck Bridge	-0.130	-0.100	-0.100	5.0%	5.0%	5.0%	-0.6%	-0.5%	-0.5%	5.8%	5.8%	5.8%	-0.7%	-0.6%	-0.6%
Bronx-Whitestone Bridge	-0.130	-0.100	-0.100	5.0%	5.0%	5.0%	-0.6%	-0.5%	-0.5%	5.8%	5.8%	5.8%	-0.7%	-0.6%	-0.6%
RFK Bridge	-0.150	-0.110	-0.110	5.0%	5.0%	5.0%	-0.7%	-0.5%	-0.5%	5.8%	5.8%	5.8%	-0.9%	-0.6%	-0.6%
Queens-Midtown Tunnel	-0.220	-0.170	-0.170	5.0%	5.0%	5.0%	-1.1%	-0.8%	-0.8%	5.8%	5.8%	5.8%	-1.3%	-1.0%	-1.0%
Hugh L. Carey Tunnel	-0.210	-0.160	-0.160	5.0%	5.0%	5.0%	-1.0%	-0.8%	-0.8%	5.8%	5.8%	5.8%	-1.2%	-0.9%	-0.9%
Verrazzano-Narrows Bridge	-0.150	-0.120	-0.120	5.0%	5.0%	5.0%	-0.7%	-0.6%	-0.6%	5.8%	5.8%	5.8%	-0.9%	-0.7%	-0.7%
Henry Hudson Bridge	-0.160	-0.130	-0.130	5.0%	5.0%	5.0%	-0.8%	-0.6%	-0.6%	5.8%	5.8%	5.8%	-0.9%	-0.7%	-0.7%
Marine Parkway Bridge	-0.120	-0.090	-0.090	5.0%	5.0%	5.0%	-0.6%	-0.4%	-0.4%	5.8%	5.8%	5.8%	-0.7%	-0.5%	-0.5%
Cross Bay Bridge	-0.160	-0.120	-0.120	5.0%	5.0%	5.0%	-0.8%	-0.6%	-0.6%	5.8%	5.8%	5.8%	-0.9%	-0.7%	-0.7%

Availability of Capacity on TBTA Facilities

Stantec's assessment of TBTA's bridges and tunnels indicates that historically during most, if not all hours of the day, most facilities are operating below carrying capacity and more growth can be accommodated. The exception is the Queens Midtown Tunnel where historical data show the capacity is somewhat constrained during specific hours within peak periods. This may limit potential traffic growth during these specific times, but the great majority of the hours have sufficient available capacity to absorb any volume growth that may occur. Overall, wherever capacity constraints are observed, TBTA alleviates those constraints through targeted investments wherever feasible.

As discussed in an earlier section, TBTA completed the implementation of Cashless Tolling at all of its facilities by fall 2017. Actual traffic observed after the conversion to Cashless Tolling and subsequent removal of traditional toll plazas showed that the removal of the toll booths eliminated any localized queuing and congestion associated with cash collection and E-ZPass interventions. The conversion to Cashless Tolling, however, does not address any recurring upstream or downstream congestion issues that exist at some facilities. These capacity constraints are typically located outside TBTA's jurisdictional boundaries but can impact traffic flow within the tolling areas during peak commuter and recreational periods. Flow through the former plaza areas continues to be affected by these off-site conditions even with the facilities operating in a Cashless Tolling environment. TBTA completed a study to identify post-Cashless Tolling traffic improvements to mitigate these off-site constraints to the extent feasible and in coordination with NYCDOT and New York State Department of Transportation ("NYSDOT"), with projects implemented in the 2015-19 and 2020-2024 Capital Programs.

The MTA's 2025-2029 Capital Program along with the Bridge and Tunnel 2025-2029 Capital Plan was submitted to the MTA Board and approved in October 2024. The larger MTA Capital Plan was submitted to the Capital Program Review Board for approval but was vetoed in December 2024. Re-submission of the MTA's 2025-2029 Capital Program is anticipated in the near future. The launch of the Bridge and Tunnel 2025-2029 Capital Plan is being coordinated with the approval and the launch of the larger MTA 2025-2029 Capital Plan.

Effects of CBD Tolling Program on TBTA Facilities

Toll collection for entry into the CBD commenced on January 5, 2025. Roughly three months of preliminary data is available to assess the effects of the CBD Tolling Program on the TBTA bridges and tunnels. The Queens Midtown Tunnel and Hugh L. Carey Tunnel connect directly to the CBD. While E-ZPass customers utilizing these tunnels receive a round-trip trip credit of $3.00 on the $9.00 CBD entry charge, the tolling program has created an added expense for customers on these facilities. Additionally, the Henry Hudson Bridge has also had a reduction in traffic related to the CBD Tolling Program caused by behavioral changes of customers north of Manhattan. Of the four TBTA Manhattan facilities, only the RFK has seen increased traffic since the implementation of CBD tolling.

TBTA and Regional Operational and Construction Impacts

Traffic volumes on TBTA facilities are in some instances influenced by construction and rehabilitation projects involving roadways and bridges in the New York City area.

Major projects that result in long-term closures on the competing bridges may increase volumes on TBTA's facilities. Similarly, long-term lane closures on the roadway network serving TBTA crossings or on TBTA crossings themselves may affect TBTA traffic volumes or cause traffic to shift to another TBTA facility or to one of New York City's toll-free bridges. For example, in 2011, the replacement of the Queens Approach structure on the Bronx-Whitestone Bridge caused delays, resulting in a shift in traffic from the Bronx-Whitestone Bridge to the Throgs Neck Bridge that run parallel to each other. Several roadway construction/rehabilitation projects over the past few years have influenced traffic volumes on TBTA facilities, and future construction will continue to affect traffic. The following section highlights ongoing construction activities and planned projects that may impact traffic during the forecast period. Information on future non TBTA construction activity was obtained from MTA, NYSDOT, NYCDOT, NYMTC, and the Port Authority.

Construction on TBTA Facilities

TBTA maintains an active program of regional transportation planning and coordinates closely with regional partners on all projects in common corridors. As part of a regional Interagency Program Coordination group, the TBTA meets regularly to discuss ongoing and future projects to minimize adverse regional traffic impacts from construction by different agencies.

In general, most construction activities on TBTA facilities are scheduled during off-peak hours, including nighttime and weekend lane closures in the tunnels, to minimize impacts on daily bridge and tunnel traffic.

Ongoing construction projects at each TBTA facility include:

- The **Verrazzano-Narrows Bridge** rehabilitation of the lower-level suspended span deck is under construction with completion on schedule for the end of 2025. Improvements to the Verrazzano-Narrows Bridge/Belt Parkway merge were completed in December 2024, improving traffic flow and safety by eliminating the downstream Belt Parkway bottleneck that backs traffic up on to the main span of the bridge. Electrical resiliency upgrades on the bridge, including upgrades to the anchorage substations and SCADA systems, are progressing on schedule for completion in mid-2025. A contract to paint the towers and perform electrical upgrades and lighting replacement at the towers was awarded in late 2023 and is planned for completion in late 2026; this contract also includes railing upgrades on top of the towers and seismic upgrades of the cable saddles. In addition, there is an ongoing bridge preservation program which includes bridge washing, cleaning of drainage systems, joint repairs, roadway striping, and other miscellaneous as needed maintenance items.

- The **Cross Bay Bridge** rehabilitation of its main spans, structural repairs to the approach spans, and the replacement of the existing pedestrian ramp with an ADA-compliant shared-use ramp

were completed in November 2024. This has resulted in an ADA-compliant pedestrian/bicycle path across the Cross Bay Bridge improving accessibility. In addition, there is an ongoing bridge preservation program which includes bridge washing, cleaning of drainage systems, joint repairs, roadway striping, lighting improvements, and other miscellaneous as needed maintenance items.

- The **Marine Parkway Bridge** - A contract to address structural repairs identified through facility or biennial inspections and maintain the bridge in a state of good repair (bundled with the rehabilitation of the Cross Bay Bridge) was completed in November 2024. In addition, there is an ongoing bridge preservation program which includes bridge washing, cleaning of drainage systems, joint repairs, roadway striping, and other miscellaneous as needed maintenance items.

- The **Bronx-Whitestone Bridge** completed facility-wide painting and miscellaneous structural rehabilitation in July 2024, ahead of schedule. Electrical resiliency upgrades and installation of flood mitigation measures are ongoing, with completion planned for mid-2026. In addition, there is an ongoing bridge preservation program which includes bridge washing, cleaning of drainage systems, joint repairs, roadway striping, and other miscellaneous as needed maintenance items. As noted below, the Bronx-Whitestone Bridge and the Throgs Neck Bridge serve similar traffic corridors and some of the same traffic, and a delay on one of the bridges results in a shift to the other crossing.

- The **Throgs Neck Bridge** - A contract to replace the tower pedestal fender protection system, paint the towers, rehabilitate the tower elevators, and inspect the main cables and perform repairs, including a number of suspender rope replacements, is ongoing, with completion planned in the spring of 2027. Lighting upgrades to the Queens approach are scheduled for completion in 2026. As noted above, the Bronx-Whitestone Bridge and the Throgs Neck Bridge run parallel serving similar traffic corridors, where a delay on one of the bridges results in a possible shift to the other crossing.

- The **Henry Hudson Bridge** completed upgrades at the Dyckman Street and Kappock Street electrical substations in April 2024. A project to retrofit the north abutment, widen the lower-level sidewalk, and construct new ramps connecting the sidewalk on the bridge to the at-grade walkways was completed in December 2024. This has resulted in an ADA-compliant pedestrian/bicycle path across the Henry Hudson Bridge. In addition, there is an ongoing bridge preservation program which includes bridge washing, cleaning of drainage systems, joint repairs, roadway striping, and other miscellaneous as needed maintenance items.

- The **RFK Bridge** Completed construction of two new vehicular ramps to improve traffic flow on the Manhattan Plaza Interchange and three new ADA-compliant bicycle/pedestrian ramps connecting the Harlem River Lift Span and the Bronx Kills Crossing to Randall's Island in late 2024. A major contract for the rehabilitation of the East River Suspended Spans ("ERSS") is ongoing, with completion planned for 2027. This includes rehabilitating/strengthening the roadway stringers, replacing existing solid side barriers with open steel railing systems,

relocating and widening the walkways on both sides of the ERSS. The open rail system will improve the bridge's aerodynamic performance thereby reducing vibrations and extending the service life of the bridge. A new ADA compliant ramp will be constructed on the Queens Approach which, along with the new widened walkway on the ERSS and the Queens Viaduct, will result in an ADA compliant bicycle/pedestrian path connecting Queens to Randall's Island. In addition, this project includes repairs to and waterproofing of the anchorages. Also, localized repairs of the main cable will be performed in conjunction with the installation of a dehumidification system on the main cables. A contract to improve the merge of the RFK with the southbound FDR is planned for award in 2025, with completion anticipated in 2027. In addition, there is an ongoing bridge preservation program which includes bridge washing, cleaning of drainage systems, joint repairs, roadway striping, and other miscellaneous as needed maintenance items.

- The **Queens Midtown Tunnel** is undergoing the relocation of the refueling station from within the service building to an outside location and the relocation of service build switchgear to a new location above 500-year flood levels was completed in April 2025, slightly behind schedule due to electrical supply chain issues. A contract to upgrade the integrated electronic monitoring and detection systems at the Queens Midtown Tunnel (bundled with the Hugh L. Carey Tunnel work under one contract) is ongoing with completion anticipated in 2027.

- The **Hugh L. Carey Tunnel** has an ongoing contract to expand and upgrade the integrated electronic monitoring and detection systems (bundled with the Queens Midtown Tunnel work under one contract), with completion anticipated in 2027.

Competing East River Crossings Construction

Programmed construction along competing East River crossings include:

- **Ed Koch Queensboro Bridge** – The project to replace the upper-level roadway deck started in 2018 and is expected to be completed by summer 2025. Permanent lane closures began on the Manhattan-bound upper roadway in February 2022, with the right lane closed at all times and left lane closed during off-peak periods. Permanent lane closure began on the Queens-bound upper roadway in late spring 2023, with the single lane Queens-bound south upper roadway closed at all times and double lane closed during off-peak periods. This project has resulted in a slight increase in traffic volumes at the Queens Midtown Tunnel.

Other Major Bridge and Roadway Construction

During the forecast period, several major roadway and bridge projects, which are part of NYMTC's current Transportation Improvement Program ("TIP") for federal fiscal years 2020-2024, will potentially have traffic implications for TBTA facilities.

Other bridges, roads, and overpasses programmed for construction include:

- **Madison Avenue Bridge** – Rehabilitation of the Madison Avenue Bridge over the Harlem River began at the end of 2018 and is expected to end in summer 2025. The project includes electrical, mechanical, and miscellaneous operating system-related work. Minimal diversions to the RFK Bridge are anticipated.

- **Broadway Bridge** – Reconstruction of the bridge was scheduled to start in early 2019, however, problems with the operating system of the bridge delayed the start of the project. The installation of shielding in preparation for demolition work began in late 2019 and was completed in 2021. The project is scheduled to be completed in April 2028. The project's scope of work includes a major rehabilitation of the roadway deck, superstructure steel and substructure elements of the vertical lift span, as well as the approach spans. It will also include the replacement and rehabilitation of electrical and mechanical components of the vertical lift span, as well as the replacement of the existing fender system with a new, larger and stronger system. The project will involve single lane closures from 7am-3pm every day. A second lane will be closed during off-peak periods. Minimal diversions to the Henry Hudson Bridge are anticipated.

- **I-87/Major Deegan Expressway** –Construction of the 138th Street Bridge began in summer 2021 and is anticipated to be completed in late 2025.

  Rehabilitation of West Tremont Avenue Bridges over the Major Deegan Expressway and Metro North Railroad is currently under development and is anticipated to be completed in summer 2028.

  These projects are anticipated to have minimal impacts on TBTA facilities.

- **I-95/Cross Bronx Expressway** – Several rehabilitation projects are in development for the Cross Bronx Expressway.

  The rehabilitation of the six Cross Bronx Expressway bridges (replacement of deck and superstructure) over the Sheridan Expressway and Amtrak right-of-way from Boston Road to the Bronx River Parkway is a potential design-build project with construction currently scheduled to begin in early 2026 and to be completed in summer 2030.

  The rehabilitation of the E.L. Grant Highway, Nelson Avenue, and Jesup Avenue bridges over the Cross Bronx Expressway is currently under development. The project, which includes deck and bearings replacement and steel repairs to address structural deficiencies and extend the service life of the structures, is scheduled to begin in spring 2029 and be completed in summer 2031.

  The rehabilitation of Jerome Avenue and East 174th Street Bridges over the Cross Bronx Expressway (to extend the service life of the two bridges) is scheduled to begin in early 2031 and end in fall 2034. The scope of work will include replacement of the bridge decks/slabs,

the repair of superstructures, the repair of concrete substructures, the replacement of bearings, and the repair of other deteriorated elements to ensure continued safe operations.

The rehabilitation of the Cross Bronx Expressway over Webster Avenue, Third Avenue, and the Metro-North Railroad is scheduled to begin in late 2030 and end in early spring 2035. The scope will include replacing the concrete deck and replacing/repairing other deteriorated bridge elements to ensure continued safe operations.

Active Traffic Demand Management strategies are to be implemented along the Cross Bronx Expressway corridor to enhance safety, mobility, and reliability. Construction began in fall 2024 and is expected to be completed in fall 2026.

These projects may result in minimal traffic impacts to the RFK, Bronx-Whitestone, and/or the Throgs Neck Bridges.

- **I-278/Bruckner Expressway** – The Bruckner Expressway/Sheridan Boulevard Interchange project consists of reconstruction of the Bruckner Expressway viaduct and the related ramps to address the poorly rated deck, deteriorated concrete columns, repair/replacement of the bearings, pedestals and other minor work elements. The project consists of three contracts.

  Contract 1 was completed in late October 2022. It involved improvements to the Bruckner Expressway/Sheridan Boulevard Interchange and Hunts Point truck access improvements.

  Contract 2 was completed in fall 2023. It involved deck replacement of the Bruckner Expressway from East 141st Street to Barretto Street, widening of the Bruckner Expressway from East 149th Street to Barretto Street to maintain three lanes in both directions, removal of the westbound Bruckner Expressway off-ramp to East 138th Street, and a new westbound Bruckner Expressway interchange at Leggett Avenue, including new on- and off-ramps for improved access to Hunts Point. Other improvements to Bruckner Boulevard below the viaduct were also included in this contract.

  Contract 3 includes deck replacement of the Bruckner Expressway between Barretto Street and the Sheridan Boulevard interchange. A third lane will be added along both directions of the Bruckner Expressway between these segments, which will provide a continuous third lane along both directions of the Bruckner Expressway between the Bronx River and East 149th Street. A pedestrian bridge at Bryant Avenue will also be replaced. Construction on this contract began in summer 2022 and is expected to be completed in fall 2025.

  These projects may impact traffic at the RFK, Bronx-Whitestone, and Throgs Neck Bridges.

- **I-95/Bruckner Expressway** – The Unionport Bridge, which carries the northbound and southbound Bruckner Expressway service roads over the Westchester Creek, is under construction and undergoing a complete replacement. The new bridge would be expanded from four (4) to six (6) lanes and all of the approaches will be completely rebuilt. Traffic flow

has been maintained on two temporary vertical lift bridges and is expected to continue uninterrupted through the estimated four-year construction period, which is anticipated to be completed fall 2025.

The rehabilitation of the Logan Avenue Bridge over the Bruckner Expressway will extend the service life of the bridge and ensure safety of the traveling public. Construction is expected to begin in early 2027 and be completed in early 2029.

The Southbound Bruckner Expressway Mobility Improvements project will extend the southbound I-95 lanes from Hutchinson River Parkway ("HRP")/Gun Hill Road ("GHR") entry ramp to Westchester Avenue. The entry ramp from HRP and GHR to southbound I-95 will be reconfigured for alternating merge. Southbound I-95 entrance ramp at Erskine Place (from Co-Op City) will be maintained and reconfigured to a larger radius. The exit ramp connector from southbound I-95 to northbound HRP to Erskine Place (serving Co-Op City) will be eliminated. A new entry ramp to southbound HRP from Bartow Avenue will be constructed and bikeway/walkway system will be upgraded. The project also includes new pavement construction, wetland mitigation, installation/replacement of concrete barriers and guiderails. Construction is expected to begin in early 2027 and be completed in fall 2029.

These projects may result in minimal diversions to the RFK, Bronx-Whitestone, and/or the Throgs Neck Bridges.

- **Bronx River Parkway** – The existing two span Bronx River Parkway bridge over Amtrak/CSX will be replaced with a single span bridge carrying six lanes of Bronx River Parkway traffic, and a new single span bridge carrying one lane of exiting traffic from southbound Bronx River Parkway to East 177th Street will be constructed. The project also includes the associated construction of wider, standard lanes and shoulders, and new stormwater drainage facilities. Minor construction activity such as clearing and grubbing began in March 2023. The project is scheduled to end in fall 2027.

  The two existing Bronx River Parkway bridges over East Tremont Avenue and East 180th Street/Morris Park Avenue/NYCTA Rail Yard will be replaced, and a new bridge carrying one lane of exiting traffic from southbound Bronx River Parkway to East 177th Street will be constructed. This project also includes the associated final design and construction of standard lanes and shoulders, improvements to vertical and horizontal geometry, queuing storage space for exiting traffic, new stormwater drainage facilities, safety enhancements to the NYCDPR's Bronx River Greenway ("BRG"), improvements to the site drainage at the Ranaqua Facility, and a shared use path from Bronx River Avenue to the BRG in Bronx Park. Construction began in spring 2024 and is anticipated to be completed spring 2028.

  These projects may result in minimal diversions to the RFK, Bronx-Whitestone, and/or the Throgs Neck Bridges.

- **I-278/Gowanus Expressway** – The rehabilitation of the bridge carrying Fort Hamilton Parkway over the Gowanus Expressway will correct structural deficiencies, extend service of the structure and ensure safety. The project is currently under construction and is anticipated to be completed in early 2028.

  Minimal impact to traffic at the Verrazzano-Narrows Bridge and Hugh L. Carey Tunnel may occur.

- **Hutchinson River Parkway** – The Northbound Bruckner Expressway Mobility Improvements project will extend the northbound I-95 lane from Exit 9 (Hutchinson River Parkway) to Exit 11 (Bartow Avenue). The northbound I-95 stone-faced bridge over Hutchinson River Parkway will also be widened. The project also includes widening of pavement, profile correction, resurfacing, stripping, relocation of drainage structures and reconstruction of retaining wall of the east of the highway. Construction is expected to begin in fall 2028 and be completed in fall 2031.

  Minimal impact to traffic at the Bronx-Whitestone Bridge may occur.

- **I-278/Brooklyn-Queens Expressway (BQE)** – The project to replace the existing concrete deck with a new concrete deck over the BQE at 47th Street (Queens) will repair or replace the existing steel supports to extend the service life of this section of the BQE. Construction is anticipated to begin in summer 2025 and to be completed in summer 2028.

  The project to provide drainage improvements on the northbound and southbound BQE between the Long Island Expressway ("LIE") and Grand Central Parkway ("GCP") is currently in development. These improvements are expected to improve safety and delays by reducing flooding and ponding during storms and heavy rains. The project is expected to begin in spring 2027 and be completed in early 2030.

- **BQE Triple Cantilever Project** – The long-term plan for the BQE is being redeveloped following the release of the Expert Panel Report. NYCDOT continues structural monitoring and evaluation of the BQE and is conducting repairs on an ongoing basis.

  The project to rehabilitate the BQE from Atlantic Avenue to Sands Street in the Borough of Brooklyn implements some of the recommendations of the Expert Panel Report. It will extend the service life of the structures by preventing further water infiltration. The project will address conditions at joints, soffits, substructure, and deck. Construction began in summer 2022 and is anticipated to be completed in 2025. In addition, the NYCDOT has completed installation of "weigh-in-motion" technology to automatically fine overweight trucks, which put undue strain on the structure. Ticketing of overweight trucks began in November 2023. In order to reduce loads on the structure, operational changes were implemented in late August 2021 that reduced lanes down from three to two lanes in each direction between Atlantic Avenue and the Brooklyn Bridge. The lane reductions resulted in traffic back-ups on the Gowanus Expressway which have resulted in some diversions to the Hugh L. Carey Tunnel. There is an

interim repair project identified for the cantilevered section (span 4 & 34) over Grace Court and Clark Street, which required three full weekend closures between Atlantic Avenue and Sands Street. The first weekend closure occurred in October 2023 followed by additional weekend closures in April 2024 and June 2024 which caused significant traffic impacts. There will be another BQE interim repair coming up summer 2025. NYCDOT is currently evaluating the condition of the existing BQE substructure along the BQE to determine if further repairs are needed.

- **Belt Parkway** – The rehabilitation of four Belt/Shore Parkway bridges over Sheepshead Bay Road, Ocean Avenue, Bedford Avenue and Nostrand Avenue to bring them to state of good repair. This is a design build project, schedule to be determined.

  Reconstruction of the 17th Avenue Pedestrian Bridge and 27th Avenue Pedestrian Bridge over the Belt Parkway started in fall 2021. The 17th Avenue Pedestrian Bridge was closed in November 2021 and was demolished in fall 2022; it will be replaced on the same alignment as the old bridge and is anticipated to be in-place in summer 2026. The 27th Avenue Bridge will be built on a new alignment, allowing the existing bridge to remain open during construction and is anticipated to be completed in winter/spring 2026.

  The rehabilitation of the Owls head viaduct, which carries 907C Belt Parkway from 61st street to Belt Parkway Exit 1 is scheduled to begin in fall 2026 and be completed in fall 2029.

  These projects may result in minimal impacts to traffic at the Verrazzano-Narrows Bridge, Cross Bay Bridge, and Marine Parkway Bridge.

- **BQE/Grand Central Parkway Interchange** – The reconstruction of the BQE and GCP (west leg) interchange at Astoria Boulevard is currently in design. The project is currently delayed due to budget constraints. Construction is now anticipated to begin in spring 2026 and be completed in winter 2029.

  This project may result in minimal impacts to traffic on the RFK Bridge and Queensboro Bridge.

- **GCP** – The rehabilitation of seven GCP bridges (GCP bridge over Winchester Boulevard and Cross Island Parkway ("CIP"); Ramp H – from northbound CIP to westbound GCP; Bridge over Vanderbilt Parkway shared use path; GCP bridge over Union Turnpike; Ramp G – ramp from southbound CIP to eastbound GCP; westbound GCP service road bridge over southbound and northbound CIP) and will extend their service lives. The project is currently under construction and is expected to be completed in end of 2025.

  The safety and mobility improvements project on the eastbound GCP at the LIE interchange involves construction of an auxiliary lane between the entrance ramp from Eastbound LIE (I-495) and 69th Road/Jewel Avenue ramp (Exit 11) on the Eastbound GCP. In addition, pavement will be resurfaced and guiderails, pavement markings, and sign panels will be

upgraded. Construction began in summer 2024 and is expected to be completed in early 2026.

These projects may result in minimal impacts to traffic at the RFK Bridge and Queens-Midtown Tunnel.

- **I-678/Van Wyck Expressway** – The rehabilitation of the Roosevelt Avenue Bridge began in January 2016 and is expected to be completed in summer 2027. Major reconstruction plans include installation of new girders, a new deck, new lighting, and an approximate two-foot widening of the sidewalk to allow for a bike lane. One lane in each direction will remain available to traffic.

  A flood mitigation project will address flooding that is occurring on the Van Wyck Expressway mainline southbound and C-D roadway between the Long Island Expressway and Kew Gardens Interchange by adjusting the profile of the roadway, cleaning of drainage structures and pipes, and replacing undersized pipes. Construction is expected to begin in spring 2027 and be completed in early 2030.

  These projects may result in minimal impacts to traffic at the Bronx-Whitestone Bridge and RFK Bridge.

  - **Van Wyck Expressway/John F. Kennedy ("JFK") Airport Access Improvements** – This project will widen Van Wyck Expressway ("VWE") from three to four lanes (five lanes at some locations) in each direction from Queens Boulevard to 133rd Avenue in the vicinity of JFK Airport located in Queens County, New York City. This project will replace overpass bridges and Long Island Rail Road ("LIRR") bridges; install new pavement, noise and retaining walls and other associated elements as part of the contract. The project consists of 3 contracts:
    - Contract 2 - Retrofit and replace three LIRR bridges over the VWE north of Atlantic Avenue and replace the Atlantic Avenue roadway bridge over the VWE. Reconstruction of the bridges will accommodate an additional future lane. Construction began in January 2021 and was expected to end summer 2024 but the project is currently delayed and is now expected to be completed in summer 2025.
    - Contract 3 - Widen the VWE between Federal Circle at JFK and Hoover Avenue to add one managed use lane, replace VWE mainline bridges below 133rd Avenue, and construct retaining walls, build new ramps and reconstruct existing ramps. Construction began in spring 2022 and is expected to be completed in summer 2025.

  These projects may result in minimal impacts to traffic at the Bronx-Whitestone Bridge, Throgs Neck Bridge, the Queens-Midtown Tunnel, and the RFK Bridge.

- **I-495/Long Island Expressway** – A project will construct an auxiliary lane on the eastbound Long Island Expressway to connect the entrance ramp from the Clearview Expressway with

the exit ramp to Springfield Boulevard. The provision of a continuous lane for entering and exiting traffic will alleviate congestion and reduce delays. This project will also include the replacement of the Oceania Street Bridge over the Long Island Expressway. Construction began in spring 2022 and was expected to be completed in fall 2024; however, an amendment extended construction to fall 2025.

An active traffic management system on the Eastbound and Westbound LIE, between the Queens-Midtown Tunnel and Main Street, Queens is currently under development. The system will result in improved safety, reduced congestion and delays, and improved route choices. Construction began in spring 2023 and is expected to be completed in early 2026.

The rehabilitation of the bridge carrying Van Wyck Expressway over the LIE and nine ramps located in Queens County, New York City. This project will also correct bridge structural deficiencies, replace bridge barriers and armed joints. Construction is expected to begin in summer 2029 and be completed in fall 2032.

A flood mitigation project will address flooding that is occurring on the LIE between Van Wyck Expressway and GCP, and Eastbound GCP (907M) under the 49th Street over pass in Queens County by adjusting the profile of the roadway, cleaning of drainage structures and pipes, replacing undersized pipes. Construction is expected to begin in early spring 2027 and be completed in early 2030.

These projects may result in minimal impacts to traffic at the Queens-Midtown Tunnel and Bronx-Whitestone Bridge.

- **Cross Island Parkway** – Rehabilitation of the Hempstead Avenue Bridges over the Cross Island Parkway and NB Ramp is currently under development and construction is anticipated to be completed in summer 2030.

  Rehabilitation of the northbound Whitestone Expressway Bridge over the Cross Island Parkway is anticipated to start in 2026.

  These projects may result in minimal impacts to traffic at the Bronx-Whitestone Bridge and Throgs Neck Bridge.

- **Harlem River/FDR Drive** – Rehabilitation of three (3) bridges on the Harlem River Drive between 135th and 139th streets is anticipated to begin summer 2028 and summer 2030.

  Replacement of the deck on the Trans-Manhattan Expressway Connector ramp is currently in design. Construction is expected to begin in 2030 and is projected to be completed in 2034.

  FDR Drive northbound from East 42nd to 49th Street is scheduled for rehabilitation. Currently under design, construction was expected to begin in 2024 and was projected to be

completed in 2029, however the project is currently delayed due to pending approval of necessary permits.

The Eastside Coastal Resiliency projects from Montgomery Street to 25th Street involve construction of flood walls, floodgates and tide gates along the FDR, raising East River Park, enhancing the capacity of the sewer system, and replacement of three pedestrian bridges (Delancey Street, Corlears Hook, and E. 10th Street bridges) over the FDR. Twelve of the eighteen planned floodgates have been installed with the six remaining planned for installation by the end of the project. The Delancey Street and Corlears Hook bridges were removed in 2022 and replaced by ADA compliant bridges in 2024. The work from E. 15th to E. 25th streets was substantially completed in August 2024. The ESCR project from Montgomery Street to the Brooklyn Bridge involves flood protection measures along the East River Waterfront and South Street. Construction is scheduled to be completed in fall 2026.

These projects may result in minimal impacts on traffic at the RFK Bridge, the Queens-Midtown Tunnel and Hugh L. Carey Tunnel.

- **Holland Tunnel** – In February 2018, the Port Authority authorized $364.2 million for a rehabilitation and resiliency project for the Holland Tunnel to repair and restore critical mechanical, electrical and plumbing systems damaged by Superstorm Sandy, and to install protective measures to mitigate future flooding in the facility. Construction began in April 2020. One tube at a time will be closed for two years overnight (11pm – 5:30am) on all nights except Saturday, which started with the eastbound tunnel. Work on the eastbound tunnel has been completed, and closures of the New Jersey bound tunnel began in February 2023 and is anticipated to continue until late 2025. During the closures traffic is diverted to the Lincoln Tunnel.

  Lane closures may result in minimal impacts to the traffic at the Hugh L. Carey Tunnel and the Verrazzano-Narrows Bridge.

- **Lincoln Tunnel Helix Replacement** – In 2015, the Lincoln Tunnel Helix went through a three-year rehabilitation program which has extended its estimated service life to 2025. Currently in the design stage, the Lincoln Tunnel Helix Replacement program is going through the Port Authority Capital Planning review process.

  This project may result in a minimal increase in traffic at the Hugh L. Carey Tunnel and the Verrazzano-Narrows Bridge.

- **George Washington Bridge Rehabilitation** – Of the eleven Restore the George projects, four have been completed. The remaining projects include suspender ropes replacement and rehabilitation of the main cables (2017-2027), rehabilitation of 178th Street and 179th Street ramps and bus ramps (2017-2026), main span upper level structural steel rehabilitation (2019-2025), rehabilitation of six TME overpass bridges in Manhattan (currently forecasted to start in 2026), rehabilitation of structural steel lead paint removal and recoating underside lower level

(2019-2025 – three contracts of which one was completed, the second started in 2022 and is expected to be completed in 2025, and the third started in June 2024 and is expected to be completed in 2029, rehabilitation of Center and Lemoine Bridges (original contract was cancelled and reissued in 2023)(2023-2027).

These remaining projects may result in minimal traffic impacts to the RFK Bridge and Henry Hudson Bridge.

- **Gowanus Canal Superfund Site** – In 2010, Gowanus Canal, an EPA Superfund site was added to the National Priorities List as a hazardous waste site requiring clean up. In September 2013, the EPA issued its Record of Decision, which explained the remediation plan for the Gowanus Canal. The project involves removing contaminated sediment from the canal via dredging, installing a cap, and restoring the 5th Street basin. It is anticipated that active construction will occur over a six to ten-year period. Dredging of the canal began in late 2020 just south of the Carroll Street Bridge and continued to north of the Union Street bridge followed by dredging between the Carroll and 3rd Street Bridges, followed by bulkhead installation and capping operations. Construction in the area north of the 3rd Street bridge, remedial target area 1 (RTA1), was completed in summer 2024. Construction in remedial target area 2 (RTA2), which is between the 3rd Street and Hamilton Avenue Bridges, began in 2024 and will take four to five years to complete. At the 4th St. and 7th St. Turing basins and at 9th St., dredging has been completed, and bulkhead installation operations are in progress. Frequent closures of the 9th Street Bridge will continue until RTA2 construction is complete, as well as limited closures of the Hamilton Ave Bridge which may have minimal impacts to traffic at the Hugh L. Carey Tunnel.

Transit Improvements

Significant transit improvements, when completed, are expected to affect TBTA traffic levels during the forecast period through the year 2032.

- **MTA Second Avenue Subway** – Construction of Phase 1 started in April 2007 and service opened to the public on January 1, 2017. Service from new stations at East 96th, East 86th, and East 72nd Streets along Second Avenue now connects to the 63rd Street station at Lexington Avenue. The 2015-2019 Capital Program included funding to complete design and begin initial construction of Phase 2 (125th Street to 96th Street). The 2020-2024 Capital Program includes funding, which together with an approved federal Full Funding Grant Agreement, is expected to construct Phase 2 of the Second Avenue Subway. As of March 2024, Phase 2 construction has commenced under the first contract, addressing initial utility relocation and building stabilization.

  Work is being coordinated with ongoing work at the RFK Bridge and will have minimal traffic impacts at the RFK Bridge.

- **Penn Station Access** – The Penn Station Access project would take Metro-North Railroad's New Haven Line directly to Penn Station using Amtrak's Hell Gate line and will add four new stations

in the East Bronx (Co-Op City (near I-95), Morris Park (near Jacobi Hospital), Parkchester/Van Nest and Hunts Point). A design-build contract was awarded in December 2021. Construction began in winter 2022 and is expected to be completed at end of 2027.

This project may result in some travelers between Manhattan and the Bronx shifting to Metro-North Railroad from other modes and may result in a decrease in traffic to the RFK Bridge.

- **The Gateway Program (Amtrak)** – This is a comprehensive program of strategic rail infrastructure improvements designed to improve current services and ultimately create new capacity that will allow the doubling of passenger trains running under the Hudson River. The program will improve reliability, redundancy, and resiliency and ultimately increase track, tunnel, bridge, and station capacity, eventually creating four mainline tracks between Newark, New Jersey and Penn Station, New York.

  The Hudson Tunnel Component of the Gateway Program includes the design and construction of a new Hudson River rail tunnel serving Penn Station, New York, and the rehabilitation and modernization of the existing North River Tunnel which incurred serious and ongoing damage during Superstorm Sandy. Due to the high level of traffic in the existing North River Tunnel (450 trains per weekday, 200,000 riders), taking one of its two tubes out of service for necessary repairs would reduce total capacity for Amtrak and NJ TRANSIT from 24 trains per hour to approximately six trains per hour in the peak direction. This very significant reduction in capacity would impact New York and New Jersey commuters who cross the Hudson River on a daily basis along with Amtrak passengers. This project will allow NJ TRANSIT and Amtrak to continue to operate and maintain existing levels of passenger rail service in the new tunnel and fully rehabilitate the North River Tunnel one tube at a time.

  The HTP is fully funded and currently in construction. In 2022, the Final Environmental Impact Statement was approved, and the Gateway Development Commission ("GDC") assumed the role of Project Sponsor. In 2023, GDC launched HTP construction in both New York and New Jersey, with work starting on the Hudson Yards Concrete Casing – Section 3 on Manhattan's west side and on the Tonnelle Avenue Bridge and Utility Relocation Project in North Bergen, NJ. As of 2025, five out of the ten construction contracts that comprise the HTP are in construction, with additional packages underway on the Hudson River Ground Stabilization Project, the Palisades Tunnel Project, and the Manhattan Tunnel Project. The HTP is supported through $12 billion in federal funding and $4 billion in loans for the local share of project costs, which are split between the States of New York and New Jersey and the Port Authority. GDC's cost and schedule estimate are unchanged from the previous year at $16 billion with a 2035 completion date for the new Hudson Tunnel and 2038 completion date for NRT rehabilitation.

  TBTA facilities may experience a sporadic increase in usage with commuters choosing to travel to/from New York City via any of the tolled Hudson River bridges and tunnel facilities or the Verrazzano-Narrows Bridge.

- **JFK Terminal Redevelopment** – This is a suite of terminal redevelopments for Terminals 4, 6, 8, and the "New Terminal One" at JFK Airport in Queens, New York.

  Terminal 4 interior improvements were completed in 2024. This included new aircraft parking positions, gate areas, and seating space. Additional terminal frontage improvements are being considered for implementation in the near future.

  Terminal 6 is expected to be completed by 2028, with the first gates opening in 2026. The redevelopment includes improvements to the terminal complex, adjacent roadways, utilities, tarmac, and ground transportation center.

  Terminal 8 was completed in December 2022. The redevelopment included new aircraft gates and aircraft parking spaces, along with a new baggage handling system.

  The New Terminal One started construction in September 2022, with the first gates expected to be open in 2026. The terminal redevelopment includes an overhaul of the dining, retail, lounges, and recreational space for travelers.

All of the information presented herein for planned construction dates are based on the best available data.

Summary of Assumptions and Conditions

TBTA traffic, toll revenues and expenses have been analyzed by Stantec on the basis of the historical record of traffic, toll revenues and expenses, the capacities of TBTA facilities, traffic growth forecasts, the historic traffic elasticity due to toll variations, impacts of construction projects and the following assumptions and conditions, which we believe are reasonable. Stantec accepts the findings of Urbanomics, KC Engineering, and Dinmore and remains responsible for the incorporation of their analyses into this study. It is noted, the following presents information related to potential future traffic and revenue for a ten-year period.

Notwithstanding the above, the forecast analyses assume:

- All TBTA facilities will be operated efficiently and maintained in a state of good repair in order to attract customers and to sustain traffic demand levels.
- The TBTA 2025-2029 Capital Program that was approved by the MTA Board on October 30, 2024 will be carried out throughout the analysis period. Future capital programs sufficient to maintain the structural integrity of bridges and tunnels will be adopted and implemented throughout the forecast period.
- Electronic toll payment by E-ZPass will continue to be available on all TBTA crossings, and the payment of revenue in full to TBTA will continue to be in accordance with current interagency agreements. In 2024, 92.3 percent of all tolls paid on TBTA facilities were E-ZPass transactions. As a result of the E-ZPass participation rate increases that have been experienced at TBTA

facilities, future growth in E-ZPass market share is planned to be limited. However, a small number of customers are expected to shift to NYCSC accounts so that the toll discounts can be captured. It is projected that E-ZPass participation rates will experience small annual growth until a maximum of 96 percent is reached.

- Stantec assumes that the CBD Tolling program will remain active throughout the forecast period with the tolling schedule presented in Table 1.
- Competing East River crossings will continue to operate toll-free and be maintained in efficient operating condition. At this time, it is too uncertain for Stantec to draw any meaningful conclusions about the potential impacts of tolling the competing East River crossings on TBTA facilities.
- For the forecast with current tolls, the present toll schedule that began on August 6, 2023 will be in effect during the remainder of the analysis period through 2035. For the analysis with toll increases, tolls on TBTA facilities are assumed to be increased on August 1, 2025 and March 1, 2027, in accordance with the 2025-2028 MTA Financial Plan. Stantec assumes that at least a 5.0 percent toll increase on August 1, 2025 is needed to achieve a 4 percent revenue yield for the August through December 2025 period and an additional 5.8 percent toll increase on March 1, 2027 is needed to achieve a 4 percent revenue yield.
- Capacity constraints on the local and arterial highway networks will continue to limit traffic growth on the nine TBTA crossings. This is reflected in conservative growth rates used for TBTA traffic.
- Highway/crossing improvements for the competing bridges and highway network will be made in accordance with the plans and schedules described herein.
- Major TBTA roadway and structural improvements will continue to be performed during nighttime and non-peak hours, and/or in the off-peak direction, and approaches to the nine TBTA crossings will not be significantly impaired by construction work.
- Normal background growth assumptions are based on trends in regional employment and population, forecast by NYMTC through 2055. This forecast assumes they will be realized in the long term for the Tri-State area and in New York City.
- Current TBTA reduced rate toll programs and the MTA rebate programs remain in effect at current projected levels, including reduced rates for NYCSC E-ZPass and E-Token customers and for Staten Island residents at the Verrazzano-Narrows Bridge and for Rockaway residents at the Cross Bay and Marine Parkway Bridges. TBTA's reduced rate programs provide, by statute, a toll rate lower than the TBM rate for Staten Island residents using resident E-Tokens to cross the Verrazzano-Narrows Bridge and for Rockaway residents using resident E-Tokens and non-residents using minor E-Tokens to cross the Cross Bay and Marine Parkway Bridges. The reduced rate programs provide, by the MTA Board policy, a toll rate lower than the TBM rate to non-resident NYCSC E-ZPass customers. TBTA's reduced rate programs also provide, by the MTA Board Policy, a toll rate lower than the NYCSC E-ZPass rate to Staten Island residents crossing the Verrazzano-Narrows Bridge, to Queens residents crossing the Cross Bay Bridge, and to Bronx residents crossing the Henry Hudson Bridge. MTA's rebate programs lower the

effective toll rates below the reduced rates discussed above for Rockaway residents at the Cross Bay Bridge and Staten Island residents and certain commercial vehicles with NYCSC commercial and business accounts at the Verrazzano-Narrows Bridge by using a combination of MTA funds and New York State funds to pay for all or a portion of the toll. TBTA's "reduced rate" programs and MTA's rebate programs both result in increased traffic. TBTA's toll revenue is impacted unfavorably by charging a reduced rate for residents but there are no adverse revenue impacts stemming from the rebate programs because the rebate values are fully reimbursed by MTA and New York State.

- No other reduced rate toll programs will be introduced that would adversely affect TBTA toll facilities' revenue stream.
- Stantec assumes the economy to be cyclical and thus it will both grow and contract at certain points within the forecast period.
- No future natural disaster or local, state or national emergency will occur that would materially alter travel patterns and divert traffic from TBTA facilities.
- The forecast does not account for major policy changes that would limit the use of personal vehicles, consequently altering the proportion of vehicle use versus transit use.

While the forecast is made and presented year by year by Stantec, this presentation is intended to show trends on the basis of our analysis of historical data as well as the assumptions and conditions set forth above. Variations in the year-to-year forecasted results may occur and such variations may be significant.

PROJECTED TRAFFIC, REVENUES, AND EXPENSES

Current and future traffic and toll revenues are estimated for the 11-year (2025-2035) analysis period for each TBTA facility based on historical trends in traffic and toll revenue, CBD Tolling Program related effects on the TBTA facilities, elasticity factors for the future toll increase, toll collection operations, capacities of the nine crossings, facility maintenance, E-ZPass participation levels, externalities such as area bridge and roadway improvement plans and regional demographic projections, and the assumptions and conditions summarized previously. Trends in operating expenses for the toll facilities, TBTA's 2025 budget, 2025-2028 MTA Financial Plan, and growth estimates based on the Consumer Price Index and historical trends are reflected in the future operating expense forecast. Future operating expense estimates are used to develop net toll revenue projections over the forecast period.

Traffic and Toll Revenue, 2025

Stantec's development of the traffic and toll revenue estimates for 2025 considered the previous economic conditions reported for the region, fuel prices, unusual weather events, construction projects, current traffic data, post-pandemic behavior changes such as continued remote

home-based work, and preliminary data showing the effects of the CBD Tolling Program on the TBTA facilities.

Actual data through February 2025 was available for use in the analysis. The forecast for the remainder of 2025 (with an August 1, 2025 toll increase) estimates that the base traffic levels at TBTA facilities for the remaining ten months of calendar year 2025 will be 0.7 percent below the volumes in the same months of 2024.

The range of percent changes are shown in Table 25 for the forecast, which includes a toll increase on August 1, 2025 on the TBTA facilities. As mentioned earlier, in January and February 2025, traffic decreased at the Queens Midtown and Hugh L. Carey Tunnels, which lead directly into the CBD. In January and February, both facilities are more than 7 percent below the same month in 2024 due to the new CBD Tolling Program. Additionally, 2024 was a leap year and February 2024 had one more weekday than February 2025. Consequently, February 2025 had a larger loss when compared to the same month in the previous year.

Table 25 Estimated Changes in Annual Traffic, 2024 to 2025 (with 2025 Toll Increase)

Facility	Percent Change January - February 2024 to 2025[a,b]	Percent Change February - December 2024 to Forecast 2025[c]	Percent Change Full Year 2024 to Forecast 2025
Throgs Neck Bridge	-0.1%	0.4%	0.4%
Bronx-Whitestone Bridge	-2.1%	-0.3%	-0.5%
RFK Bridge	-0.9%	1.4%	1.1%
Queens Midtown Tunnel	-8.1%	-6.0%	-6.3%
Hugh L. Carey Tunnel	-7.8%	-6.3%	-6.5%
Verrazzano-Narrows Bridge	-1.4%	-0.1%	-0.3%
Henry Hudson Bridge	-3.7%	-3.8%	-3.8%
Marine Parkway-Gil Hodges Memorial Bridge	0.8%	0.0%	0.1%
Cross Bay Veterans Memorial Bridge	2.5%	1.8%	1.9%
Total	-2.3%	-0.9%	-1.1%

Notes:
(a) Based on preliminary audited traffic data for January and February 2025 (subject to final audit) and unaudited traffic volumes through April 16, 2025.
(b) Toll collection for the CBD Tolling Program began on January 5, 2025.
(c) Toll increase will begin August 1, 2025.

As shown in Table 25, total 2025 traffic is forecasted to decrease by 1.1 percent for the full year with a toll increase on August 1, 2025.

Traffic and toll revenue with a 2025 toll increase is presented in Table 26. The toll revenue in 2025 is based on average toll rates developed from the toll schedule that went into effect on August 6, 2023 for the first seven months of 2025, a toll increase on August 1, 2025, and the projected 2025 distribution by vehicle class and payment method.

In 2025, Table 26 shows there is a 1.1 percent decrease in traffic with an August 1, 2025 toll increase (as shown in Table 25), a 1.8 percent increase in the systemwide average toll, and a 0.7 percent increase in systemwide revenue over 2024, which reflects actual performance through February 2025 and projected traffic volumes for the remainder of the year.

Table 26 Estimated 2025 Toll-Paying Traffic and Toll Revenue (with toll increase)

Facility	Traffic (millions)	Average Toll	Revenue (millions)
Throgs Neck Bridge	45.0	$9.80	$441.02
Bronx-Whitestone Bridge	49.3	$8.68	$428.35
RFK Bridge	69.9	$8.36	$583.76
Queens Midtown Tunnel	28.2	$8.06	$227.44
Hugh L. Carey Tunnel	20.9	$7.53	$157.72
Verrazzano-Narrows Bridge[a]	80.2	$7.63	$612.39
Henry Hudson Bridge	24.2	$4.34	$104.75
Marine Parkway-Gil Hodges Memorial Bridge	8.0	$2.87	$22.80
Cross Bay Veterans Memorial Bridge	7.9	$2.98	$23.45
Total	333.6	$7.80	$2,601.68
Percent Change			
2024-2025 (All Facilities)	-1.1%	1.8%	0.7%

Table 26 provides the transition between the historical traffic and revenue data presented earlier in the report and the 10-year analyses in Table 27 and Table 28.

Traffic and Toll Revenue at Current Tolls

Traffic and toll revenues were first projected on the basis that the current toll schedule, which began on August 6, 2023, will be continued throughout the forecast period. The methodology employed by Stantec to analyze traffic was based on the development of an annual growth rate for each facility (based on recent and historical traffic trends), the effects of the CBD Tolling Program on the TBTA facilities, the construction activity (historical and projected) throughout the highway network (bridges, tunnels, and arterials), and the traffic capacity constraints in the transportation network. The forecast, represented in Table 27 below, is a projection of traffic and revenue through 2035.

Starting with the calculation for 2025 as a reference base, Stantec projected the traffic and toll revenue for the analysis period through 2035 (at constant tolls using the current rates), as shown in Table 27. As previously discussed, this is based on the actual change in traffic on each facility in January and February 2025 and Stantec's projections by facility for the March through December period.

Changes in traffic volumes are in the range of -5.7 to 2.1 percent in 2025 depending on the facility, and -0.56 percent systemwide. Traffic is forecasted to increase by 0.36 percent systemwide in 2026, with growth rates varying by facility. In 2027, traffic is forecasted to increase by 0.46 percent, with

growth rates varying by facility. Progressively lower annual growth rates have been estimated between 2026 and 2032; all facilities are assumed to grow between 0.0 and 0.3 percent annually after 2032 for the duration of the forecast.

The forecast is based on specific assumptions regarding potential changes in traffic volume, from both shorter-term and longer-term economic impacts. The economy is assumed to be cyclical and thus will both grow and contract in certain periods; this trendline growth assumption accounts for the overall growth pattern through these cycles. Impacts associated with a general increase in total (NYCSC and non-NYCSC) E-ZPass usage and toll increases are computed separately.

Construction related impacts are expected to affect three TBTA facilities during the ten-year forecast period. It is anticipated that additional traffic had rerouted to the Hugh L. Carey tunnel due to construction on the BQE and Brooklyn Bridge. After construction is completed, most of the traffic that switched the tunnel is expected to return back to the BQE and Brooklyn Bridge. Additionally, construction from 2020 through early 2023 on the Throgs Neck Bridge caused a loss of traffic on that facility, some of which had been rerouted to the Bronx-Whitestone Bridge. Since construction concluded in early 2023, traffic has been returning from the Bronx-Whitestone Bridge to the Throgs Neck Bridge. Structural rehabilitation on the Bronx-Whitestone Bridge, completed in late 2024, had also sent some additional traffic to the Throgs Neck Bridge. In 2025, without construction on either facility, traffic is estimated to begin returning to the original balance prior to 2020.

Traffic and Toll Revenue with Assumed 2025 and 2027 Toll Increases

The traffic analysis with assumed toll increases in 2025 and 2027 was built upon the base analysis (from Table 27), to which the elasticity impacts (from Table 23) were applied. In accordance with the 2025-2028 MTA Financial Plan, Stantec applied the assumed future increases in toll rates (from Table 24) effective August 1, 2025 (an assumed 5.0 percent toll increase) and March 1, 2027 (an assumed 5.8 percent toll increase) to calculate the corresponding toll revenues. The traffic and revenue analyses with the planned toll increases in 2025 and 2027 are presented in Table 28.

Table 27 Traffic and Toll Revenue Forecast at Current Tolls[a]

Year	Throgs Neck Bridge	Bronx-Whitestone Bridge	RFK Bridge	Queens Midtown Tunnel	Hugh L. Carey Tunnel	Verrazzano-Narrows Bridge	Henry Hudson Bridge	Marine Parkway-Gil Hodges Bridge	Cross Bay Bridge	All Facilities
Traffic Change										
2024-2025	0.58%	-0.31%	1.33%	-5.71%	-5.07%	-0.04%	-2.54%	0.34%	2.15%	-0.68%
2025-2026	0.47%	0.23%	0.88%	-0.17%	-0.48%	0.21%	0.00%	1.00%	2.00%	0.36%
2026-2027	0.43%	0.20%	0.77%	-0.13%	-0.97%	0.21%	2.50%	1.00%	1.00%	0.46%
2027-2028	0.40%	0.17%	0.65%	-0.10%	-0.63%	0.21%	1.00%	0.70%	1.00%	0.33%
2028-2029	0.37%	0.15%	0.53%	-0.07%	-0.13%	0.20%	0.50%	0.50%	1.00%	0.29%
2029-2030	0.33%	0.12%	0.42%	-0.03%	-0.02%	0.20%	0.50%	0.30%	1.00%	0.27%
2030-2031	0.30%	0.10%	0.30%	0.00%	0.10%	0.20%	0.50%	0.30%	0.70%	0.23%
2031-2032	0.20%	0.10%	0.20%	0.00%	0.10%	0.20%	0.30%	0.30%	0.50%	0.18%
2032-2033	0.20%	0.10%	0.20%	0.00%	0.10%	0.20%	0.30%	0.30%	0.30%	0.18%
2033-2034	0.10%	0.10%	0.10%	0.00%	0.10%	0.20%	0.30%	0.30%	0.30%	0.14%
2034-2035	0.10%	0.10%	0.10%	0.00%	0.10%	0.20%	0.30%	0.30%	0.30%	0.14%
Annual Traffic (millions)										
2024[b]	44.9	49.6	69.1	30.1	22.4	80.5	25.1	7.9	7.7	337.3
2025	45.1	49.4	70.0	28.4	21.3	80.4	24.5	8.0	7.9	335.0
2026	45.3	49.6	70.7	28.4	21.2	80.6	24.5	8.0	8.1	336.2
2027	45.5	49.7	71.2	28.3	20.9	80.8	25.1	8.1	8.1	337.8
2028	45.7	49.7	71.7	28.3	20.8	80.9	25.3	8.2	8.2	338.9
2029	45.9	49.8	72.0	28.3	20.8	81.1	25.5	8.2	8.3	339.9
2030	46.0	49.9	72.3	28.3	20.8	81.3	25.6	8.3	8.4	340.8
2031	46.2	49.9	72.6	28.3	20.8	81.4	25.7	8.3	8.4	341.6
2032	46.3	50.0	72.7	28.3	20.8	81.6	25.8	8.3	8.5	342.2
2033	46.3	50.0	72.8	28.3	20.8	81.8	25.9	8.3	8.5	342.8
2034	46.4	50.1	72.9	28.3	20.9	81.9	26.0	8.3	8.5	343.3
2035	46.4	50.1	73.0	28.3	20.9	82.1	26.0	8.4	8.6	343.8
Average Toll										
2024[b]	$9.63	$8.53	$8.21	$7.93	$7.40	$7.52	$4.28	$2.82	$2.93	$7.66
2025	$9.61	$8.51	$8.19	$7.91	$7.39	$7.48	$4.26	$2.81	$2.92	$7.65
2026	$9.61	$8.51	$8.20	$7.92	$7.40	$7.51	$4.27	$2.82	$2.92	$7.65
2027	$9.61	$8.50	$8.19	$7.91	$7.39	$7.50	$4.26	$2.81	$2.92	$7.64
2028	$9.60	$8.50	$8.19	$7.91	$7.39	$7.50	$4.25	$2.81	$2.91	$7.64
2029	$9.60	$8.50	$8.19	$7.91	$7.39	$7.50	$4.25	$2.81	$2.91	$7.63
2030	$9.60	$8.49	$8.18	$7.91	$7.39	$7.50	$4.25	$2.81	$2.91	$7.63
2031	$9.60	$8.49	$8.18	$7.91	$7.39	$7.49	$4.25	$2.81	$2.91	$7.63
2032	$9.59	$8.49	$8.18	$7.91	$7.39	$7.49	$4.25	$2.81	$2.91	$7.62
2033	$9.59	$8.49	$8.18	$7.90	$7.39	$7.49	$4.25	$2.81	$2.91	$7.62
2034	$9.59	$8.49	$8.18	$7.90	$7.38	$7.49	$4.24	$2.81	$2.91	$7.62
2035	$9.59	$8.49	$8.18	$7.90	$7.38	$7.49	$4.24	$2.81	$2.91	$7.62
Toll Revenue (millions)										
2024[b]	$431.7	$422.9	$567.4	$238.8	$165.8	$604.8	$107.4	$22.4	$22.6	$2,583.8
2025	$433.4	$421.0	$573.8	$224.6	$157.1	$602.1	$104.2	$22.4	$23.1	$2,561.6
2026	$435.7	$421.8	$579.3	$224.6	$156.5	$605.1	$104.4	$22.7	$23.5	$2,573.5
2027	$437.3	$422.3	$583.3	$224.1	$154.9	$606.0	$106.9	$22.9	$23.7	$2,581.4
2028	$438.8	$422.8	$586.7	$223.8	$153.9	$607.0	$107.8	$23.0	$23.9	$2,587.8
2029	$440.3	$423.3	$589.6	$223.6	$153.6	$608.1	$108.3	$23.1	$24.2	$2,594.1
2030	$441.7	$423.7	$592.0	$223.5	$153.6	$609.2	$108.8	$23.2	$24.4	$2,600.0
2031	$442.9	$424.0	$593.7	$223.5	$153.7	$610.4	$109.3	$23.3	$24.6	$2,605.3
2032	$443.7	$424.4	$594.7	$223.5	$153.8	$611.5	$109.6	$23.3	$24.7	$2,609.2
2033	$444.5	$424.7	$595.8	$223.4	$154.0	$612.6	$109.9	$23.4	$24.8	$2,613.1
2034	$444.9	$425.1	$596.3	$223.4	$154.1	$613.8	$110.2	$23.5	$24.8	$2,616.0
2035	$445.3	$425.4	$596.8	$223.4	$154.3	$614.9	$110.4	$23.5	$24.9	$2,618.9

(a) Totals may not add due to rounding.
(b) 2024 actual data provided by TBTA.

Table 28 Traffic and Toll Revenue Forecast with Assumed 2025 and 2027 Toll Increases[a]

Year	Throgs Neck Bridge	Bronx-Whitestone Bridge	RFK Bridge	Queens Midtown Tunnel	Hugh L. Carey Tunnel	Verrazzano-Narrows Bridge	Henry Hudson Bridge	Marine Parkway-Gil Hodges Bridge	Cross Bay Bridge	All Facilities
Traffic Change										
2024-2025	0.36%	-0.53%	1.08%	-6.05%	-5.40%	-0.30%	-2.82%	0.14%	1.89%	-0.94%
2025-2026	0.17%	-0.07%	0.55%	-0.67%	-0.96%	-0.15%	-0.39%	0.73%	1.64%	0.00%
2026-2027	-0.08%	-0.31%	0.20%	-0.99%	-1.77%	-0.40%	1.82%	0.54%	0.39%	-0.15%
2027-2028	0.31%	0.09%	0.55%	-0.25%	-0.77%	0.10%	0.89%	0.63%	0.90%	0.23%
2028-2029	0.37%	0.15%	0.53%	-0.07%	-0.13%	0.20%	0.50%	0.50%	1.00%	0.29%
2029-2030	0.33%	0.12%	0.42%	-0.03%	-0.02%	0.20%	0.50%	0.30%	1.00%	0.27%
2030-2031	0.30%	0.10%	0.30%	0.00%	0.10%	0.20%	0.50%	0.30%	0.70%	0.23%
2031-2032	0.20%	0.10%	0.20%	0.00%	0.10%	0.20%	0.30%	0.30%	0.50%	0.18%
2032-2033	0.20%	0.10%	0.20%	0.00%	0.10%	0.20%	0.30%	0.30%	0.30%	0.18%
2033-2034	0.10%	0.10%	0.10%	0.00%	0.10%	0.20%	0.30%	0.30%	0.30%	0.14%
2034-2035	0.10%	0.10%	0.10%	0.00%	0.10%	0.20%	0.30%	0.30%	0.30%	0.14%
Annual Traffic (millions)										
2024[b]	44.9	49.6	69.1	30.1	22.4	80.5	25.1	7.9	7.7	337.3
2025	45.0		69.9	28.3	21.2	80.2	24.4	8.0	7.9	334.1
2026	45.1	49.3	70.2	28.1	21.0	80.1	24.3	8.0	8.0	334.2
2027	45.0	49.1	70.4	27.8	20.6	79.8	24.8	8.1	8.0	333.6
2028	45.2	49.2	70.8	27.8	20.4	79.9	25.0	8.1	8.1	334.4
2029	45.4	49.3	71.1	27.7	20.4	80.0	25.1	8.1	8.2	335.4
2030	45.5	49.3	71.4	27.7	20.4	80.2	25.2	8.2	8.3	336.3
2031	45.6	49.4	71.7	27.7	20.4	80.3	25.3	8.2	8.3	337.1
2032	45.7	49.4	71.8	27.7	20.5	80.5	25.4	8.2	8.4	337.7
2033	45.8	49.5	71.9	27.7	20.5	80.7	25.5	8.2	8.4	338.3
2034	45.9	49.5	72.0	27.7	20.5	80.8	25.6	8.3	8.4	338.7
2035	45.9	49.6	72.1	27.7	20.5	81.0	25.7	8.3	8.4	339.2
Average Toll										
2024[b]	$9.63	$8.53	$8.21	$7.93	$7.40	$7.52	$4.28	$2.82	$2.93	$7.66
2025	$9.80	$8.68	$8.36	$8.06	$7.53	$7.63	$4.34	$2.87	$2.98	$7.80
2026	$10.06	$8.91	$8.58	$8.28	$7.74	$7.86	$4.46	$2.94	$3.05	$8.01
2027	$10.52	$9.31	$8.98	$8.66	$8.09	$8.22	$4.65	$3.08	$3.19	$8.37
2028	$10.60	$9.38	$9.04	$8.72	$8.15	$8.28	$4.68	$3.10	$3.21	$8.43
2029	$10.59	$9.37	$9.04	$8.72	$8.15	$8.28	$4.67	$3.10	$3.21	$8.42
2030	$10.59	$9.37	$9.03	$8.72	$8.15	$8.28	$4.67	$3.10	$3.21	$8.42
2031	$10.59	$9.37	$9.03	$8.72	$8.15	$8.27	$4.67	$3.10	$3.21	$8.42
2032	$10.59	$9.37	$9.03	$8.72	$8.15	$8.27	$4.67	$3.10	$3.21	$8.41
2033	$10.59	$9.37	$9.03	$8.72	$8.15	$8.27	$4.67	$3.10	$3.21	$8.41
2034	$10.58	$9.36	$9.03	$8.72	$8.15	$8.27	$4.67	$3.10	$3.21	$8.41
2035	$10.58	$9.36	$9.03	$8.72	$8.14	$8.27	$4.67	$3.10	$3.21	$8.41
Toll Revenue (millions)										
2024[b]	$431.7	$422.9	$567.4	$238.8	$165.8	$604.8	$107.4	$22.4	$22.6	$2,583.8
2025	$441.0	$428.4	$583.8	$228.1	$159.6	$612.4	$105.8	$22.8	$23.4	$2,605.3
2026	$453.6	$439.1	$602.8	$232.9	$162.3	$629.5	$108.3	$23.6	$24.4	$2,676.5
2027	$473.9	$457.6	$631.7	$241.0	$166.7	$655.6	$115.1	$24.8	$25.6	$2,792.2
2028	$478.8	$461.2	$639.7	$242.2	$166.7	$661.2	$116.8	$25.1	$26.0	$2,817.8
2029	$480.4	$461.8	$642.9	$242.0	$166.4	$662.4	$117.3	$25.3	$26.3	$2,824.7
2030	$481.9	$462.2	$645.5	$241.9	$166.4	$663.6	$117.9	$25.3	$26.5	$2,831.3
2031	$483.3	$462.6	$647.3	$241.9	$166.5	$664.8	$118.4	$25.4	$26.7	$2,837.0
2032	$484.2	$463.0	$648.5	$241.9	$166.7	$666.1	$118.7	$25.5	$26.8	$2,841.4
2033	$485.1	$463.4	$649.7	$241.8	$166.8	$667.3	$119.1	$25.6	$26.9	$2,845.7
2034	$485.5	$463.8	$650.2	$241.8	$167.0	$668.6	$119.4	$25.6	$27.0	$2,848.9
2035	$485.9	$464.1	$650.8	$241.8	$167.1	$669.8	$119.7	$25.7	$27.1	$2,852.1

(a) Totals may not add due to rounding.
(b) 2024 actual data provided by TBTA.

Effects of Second Avenue Subway Construction in Forecast Years

The foregoing tables forecasting traffic and toll revenues incorporate estimated effects of the continued construction of the Second Avenue Subway. Phase 2 of the project will extend the Second Avenue Subway north to 125th Street. As of March 2024, Phase 2 construction had commenced. When Governor Hochul paused the CBD Tolling Program in June, the Second Avenue project was one of multiple capital projects frozen resulting from lack of funds. In July, additional state funding was allocated to allow the project to resume.

Activity associated with such construction could result in changes to traffic patterns, possibly resulting in a shift of traffic volumes from the RFK Bridge to other TBTA facilities, as well as the toll-free East River Bridges or a diversion to mass transit. Such changes in traffic patterns could have an adverse effect on the forecasts.

Various stages of the project will result in visible construction activity on segments of Second Avenue at any given time. In addition, tunnel construction, either through the use of a tunnel boring machine or cut-and-cover, will affect vehicular activity not only on Second Avenue, but also on adjacent avenues and streets.

Cashless Tolling Accounting in Forecast Years

In the 2024 Report, the forecasts of traffic and toll revenues assumed that revenues associated with TBM transactions would be accounted for within the month that the transaction took place. A liability on the balance sheet was maintained to offset the toll revenue associated with TBM revenues and this liability would decrease as tolls were collected. Therefore, in the past, Stantec was able to assume that no delay in revenue collection was needed in our forecast due to the implementation of Cashless Tolling.

However, this was not the trend with actual revenue in 2024. While actual 2024 toll transactions were 0.4 percent lower than the 2024 forecast, actual revenue was 3.1 percent more than Stantec's comparable twelve-month 2024 forecast toll revenues. This was mainly caused by accounting adjustments throughout several months. In the foregoing forecasts, Stantec assumes that the trend of revenue reconciliation will continue throughout the forecast period. While Stantec cannot predict the specific adjustment swings within each month, we normalized the trend over each year with the goal of a correct average toll rate by each year end.

Operating Expenses

The projection of operating expenses for 2025 through 2035 is shown in Table 29. Total operating expenses, consisting of labor and non-labor, are estimated to increase from $545.9 million in 2025 to $708.3 million in 2034. Labor expenses consist of wages, salaries, overtime and fringe benefits. Non-labor expenses include items such as maintenance, tolling operations, supplies, utilities and other expenses. The table includes operating expenses budgeted by TBTA for 2025, operating expenses projected by TBTA through 2028, and Stantec's projections of operating expenses from 2028 through 2034. In 2025, expenses have been budgeted by TBTA at $521.5 million, an increase

of 1.3 percent over 2024 expenses of $514.9 million. These expenses are split into the following categories: labor expenses of $244.6 million (a decrease of 1.1 percent over 2024) and non-labor expenses of $276.9 million (an increase of 3.5 percent over 2024). Labor expenses are lower primarily due to the lower budgeted headcount, due to attrition and moving positions to MTA consolidation functions. The major factors behind growth in non-labor expenses are anticipated increases in major maintenance and higher E-ZPass expenses associated with expected continued growth in usage.

Table 29 Projected Operating Expenses
(millions)

Year	Labor[a]	Non-Labor[b]	Total[c]
2025[d]	$244.6	$276.9	$521.5
2026[d]	$255.9	$277.8	$533.7
2027[d]	$265.6	$282.2	$547.8
2028[d]	$276.2	$287.1	$563.3
2029[e]	$284.5	$295.7	$580.2
2030[e]	$287.0	$304.6	$591.6
2031[e]	$289.6	$313.7	$603.4
2032[e]	$292.2	$323.1	$615.4
2033[e]	$294.9	$332.8	$627.7
2034[e]	$297.5	$342.8	$640.3
2035[e]	$300.2	$353.1	$653.3

Notes:
(a) Salaries, overtime and fringe benefits, net of capital reimbursement.
(b) Non-labor includes the following categories: maintenance and supplies, outside services, insurance, power, leases, rentals and other expenses.
(c) Totals may not add due to rounding.
(d) Budgeted by TBTA for 2024 and from TBTA estimates for 2025-2027.
(e) Forecasted by Stantec for 2028-2034.

Net Revenues from Toll Operations

Finally, the projected operating expenses were deducted from the respective toll revenue calculations to produce the two sets of estimated net toll revenues (before debt service on outstanding TBTA obligations), one at current constant tolls and the other with toll increases in 2025 and 2027, as shown in Table 30. For 2025, net toll revenue for the constant toll scenario is estimated at $2.04 billion. For the scenario with 2025 and 2027 toll increases, net toll revenue is estimated at $2.08 billion in 2025. By 2035, annual net toll revenue is estimated to be $1.97 and $2.20 billion for the constant toll and the two-toll increase scenarios, respectively.

Table 30 Net Toll Revenue Forecast
(millions)

Year	Gross Toll Revenues		Operating Expenses	Net Toll Revenues	
	Constant Tolls	With 2025 and 2027 Toll Increase		Constant Tolls	With 2025 and 2027 Toll Increase
2025	$2,561.6	$2,605.3	$521.5	$2,040.1	$2,083.8
2026	$2,573.5	$2,676.5	$533.7	$2,039.8	$2,142.8
2027	$2,581.4	$2,792.2	$547.8	$2,033.6	$2,244.4
2028	$2,587.8	$2,817.8	$563.3	$2,024.5	$2,254.5
2029	$2,594.1	$2,824.7	$580.2	$2,013.9	$2,244.5
2030	$2,600.0	$2,831.3	$591.6	$2,008.4	$2,239.7
2031	$2,605.3	$2,837.0	$603.4	$2,001.9	$2,233.7
2032	$2,609.2	$2,841.4	$615.4	$1,993.9	$2,226.0
2033	$2,613.1	$2,845.7	$627.7	$1,985.4	$2,218.0
2034	$2,616.0	$2,848.9	$640.3	$1,975.7	$2,208.6
2035	$2,618.9	$2,852.1	$653.3	$1,965.6	$2,198.8

REVIEW OF PHYSICAL CONDITIONS

The facilities under TBTA's jurisdiction include the two tunnels and seven bridges listed in Table 31, along with facilities on Randall's Island and a parking garage and a pedestrian bridge in Manhattan near the Hugh L. Carey Tunnel. Some of these crossings have been in service since the 1930s, i.e., the RFK, Henry Hudson, Marine Parkway-Gil Hodges Memorial, and Bronx-Whitestone Bridges. The Queens Midtown Tunnel opened to traffic in 1940. The Hugh L. Carey Tunnel opened to traffic in 1950. Two bridges opened to traffic in the 1960s: the Throgs Neck in 1961 and the Verrazzano-Narrows in 1964 (lower level in 1969). The present Cross Bay Bridge opened to traffic in 1970, replacing the previous structure in service since 1939. The aging of TBTA facilities will influence the overall upkeep and capital improvements necessary to maintain the infrastructure over the forecast period and beyond. Table 32 lists TBTA's capital investments for each facility between 1992 through 2024.

Table 31 Opening Dates of TBTA Facilities

Facility	Open to Traffic	Years in Use
RFK Bridge	1936	89
Bronx-Whitestone Bridge	1939	86
Throgs Neck Bridge	1961	64
Henry Hudson Bridge	1936	89
Queens Midtown Tunnel	1940	85
Hugh L. Carey Tunnel	1950	75
Verrazzano-Narrows Bridge	1964	61
Cross Bay Veterans Memorial Bridge	1970	55
Marine Parkway-Gil Hodges Memorial Bridge	1937	88

Dinmore, subconsultant to Stantec, reviewed material pertaining to the physical condition of TBTA's seven (7) bridges and two (2) tunnels. The material reviewed includes pertinent sections and updates to the following:

- TBTA's Capital Investments at each facility during the year 2024
- Ongoing Rehabilitation and Maintenance Projects
- Biennial and Special In Lieu of Interim Bridge Inspection Reports
- Tunnel Inspection Reports
- Rehabilitation Projects addressing recommendations on previous inspection reports
- Repairs to alleviate flagged conditions on previous inspection reports

Table 32 Capital Investments by Facility, 1992 through 2024[(a)]

(Millions)

Facility	Total by Facility 1992 through 2024[(c)]
Bronx-Whitestone Bridge [(b)]	$1047.53
Cross Bay Veterans Memorial Bridge	$231.95
Henry Hudson Bridge	$630.37
Marine Parkway-Gil Hodges Memorial Bridge	$401.02
RFK Bridge	$2,830.83
Throgs Neck Bridge	$1,330.67
Verrazzano-Narrows Bridge	$1,865.22
Hugh L. Carey Tunnel	$998.11
Queens Midtown Tunnel	$783.90
Agency Wide[(d)]	$886.90
Total	$11,006.50

Notes:

(a) Values are as of December 31, 2024
(b) Includes Superstorm Sandy Capital Investments
(c) Data from TBTA.
(d) Agency Wide refers to projects that have been, or will be, carried out at two or more facilities.

Inspection Reports, Flagged[12] Conditions, and Rehabilitation Projects

The review by Dinmore of the pertinent material consists of the following subtasks:

[12] The New York State Bridge Inspection Manual defines the following "flags" for reporting purposes: Red Flag PIA (Prompt Interim Action) – A designation that is made when a Red Flag condition is considered extremely serious and in need of immediate attention. This designation requires appropriate action by the responsible party within twenty-four hours. Red Flag – A structural flag that is used to report the failure or potential failure of a primary structural component that is likely to occur within two years from the current inspection. Yellow Flag - A structural flag that is used to report a potentially hazardous structural condition that if left unattended could become a clear and present danger within two years from the current inspection, or the actual or imminent failure of a non-critical structural component, where such failure may reduce the reserve capacity or redundancy of the bridge but would not result in a structural collapse. Safety Flag PIA (Prompt Interim Action) – A flag that is used to report a condition presenting a clear and present danger to vehicular or pedestrian traffic but poses no danger of structural failure or collapse. Safety Flag PIA can be issued on closed bridges where conditions present a threat to vehicular or pedestrian traffic underneath the structure or in the immediate vicinity. This designation requires appropriate action by the responsible party within twenty-four hours. Include description of CMR's?

- Comparison of condition ratings of the current inspection reports with the previous inspection reports to note significant changes in observed deterioration and repairs to priority conditions from previous inspections, if any.
- Review of the current TBTA Capital Program to verify that the repairs recommended by the latest inspection reports are being addressed.
- Review of TBTA's Routine Maintenance Program to verify that the maintenance related recommendations of the current inspection reports are being addressed.

TBTA's seven bridges and two tunnel facilities undergo periodic condition inspections. Bridges and tunnels are inspected biennially per federal and state mandate, with interim yearly inspections of any components that require monitoring. The purpose of the biennial inspection program is to maintain the safety and structural integrity of bridges and tunnels.

Bridge and Tunnel Inspections

NYSDOT maintains a program of comprehensive bridge and tunnel management, maintenance and inspection applicable to TBTA's bridges and tunnels. That program includes the uniform codes for bridge inspection and tunnel inspection, which:

- Meet or exceed applicable federal law
- Require that bridges and tunnels be inspected at least every two years per the provisions of that code
- Prescribe qualifications for licensed professional engineers who inspect bridges and tunnels
- Require that such persons perform or supervise all bridge and tunnel inspections.

Bridge and tunnel inspection reports must be filed with NYSDOT, who may close bridges or tunnels that are found unsafe for public use. TBTA is in compliance with the NYSDOT program.

TBTA's Bridge Inspection Program was assessed from 2006 to 2007 by an independent engineering firm well-known in the field of structural inspection and appraisal, which noted that "the program is meeting the minimum State and federal standards" and "in several respects, the program exceeds the minimum standards" and "with respect to the accuracy, clarity, and thoroughness of the reports generated, we find them to be of the highest quality."

TBTA bridges and tunnels were last inspected, and their physical condition was appraised in 2023-2024 by various consultants and in-house inspection staff under the New York State Biennial Bridge and Tunnel Inspection Program, as shown in Table 33. Separate underwater and substructure inspections were performed in accordance with the five-year cycles of NYSDOT to obtain riverbed contours and to assess potential scour conditions at the substructures.

These ongoing inspections, performed by the inspection consultants and, in some cases, in-house inspection staff, consist of close visual examination, 100 percent hands-on inspection of designated critical elements, sounding concrete, and taking appropriate measurements to determine the physical conditions of the bridges and tunnels. All bridge inspections beginning in

2017 and continuing thereafter were performed per the updated 2017 New York State Bridge Inspection Manual and the AASHTO Manual for Bridge Element Inspection. All tunnel inspections beginning in 2017 and continuing thereafter were performed in accordance with the FHWA's National Tunnel Inspection Standards ("NTIS"), the 2015 Specifications for the National Tunnel Inventory, and the 2015 Tunnel Operations, Maintenance, Inspection and Evaluation Manual; and NYSDOT Technical Advisory, TA 16001.

Under these guidelines, all bridge and tunnel components are inspected and assigned a quantitative condition rating. Any priority conditions are reported immediately to TBTA for prompt attention. TBTA personnel review the ratings to assess which components of the bridge or tunnel require more comprehensive inspection and rehabilitation. Required rehabilitation needs are then packaged and awarded as contracts under the Capital and Maintenance Programs. Bridge and tunnel components that warrant more frequent monitoring due to their condition are monitored annually with a special in lieu of interim inspection.

After comparing the individual overall ratings of the current inspection reports against the previous inspection reports, it was noted that there has been no significant change in the overall ratings and the bridges and tunnels remain in Fair to Good condition.

TBTA has an ongoing seismic retrofit program to identify and implement necessary seismic retrofits to bring critical facilities to current seismic code standards. In previous programs and the 2020-2024 TBTA Capital Program, seismic improvements were incorporated in rehabilitation projects at the BWB, HHB, RFK, TNB and VNB wherever possible. As a result, the BWB and HHB seismic retrofits are essentially complete and the majority of the VNB will be seismically retrofitted once the upper-level approach construction in the 2020-2024 Capital Program is completed. The 2025-2029 Capital Program will continue these efforts with seismic improvements at various facilities.

While most inspection work is performed by consultants, some smaller structures are inspected by qualified in-house inspection staff. Table 33 lists the consulting engineering firms and the in-house inspection unit that performed the 2023 and 2024 biennial bridge or special in lieu of interim inspections and the 2024 tunnel inspections for each facility. The firms listed are well-known in the field of structural inspection and appraisal. Copies of pertinent sections of the final inspection reports for the various facilities were requested and made available by TBTA.

Table 33 Facility Inspection Firms

Facility	Inspection Firm (Inspection Year)
RFK Bridge	Stantec (2024), HNTB-Group A / AECOM-Group B / In-House-Group B (2023 Interim), HNTB-Group A / AECOM-Group B / In-House (2022).
Throgs Neck Bridge	Stantec (2024 Interim), Stantec (2023), Thornton Tomasetti (2021/ 2022)
Bronx-Whitestone Bridge	HNTB (2024 Interim), HNTB (2023), Stantec (2021 / 2022)
Henry Hudson Bridge	Lozier/In-House (2023), HNTB (2021 / 2022)
Queens Midtown Tunnel	Stantec (2023), Stantec (2021)
Queens Midtown Tunnel facility approach bridges	Lozier (2023), In-House (2021)
Hugh L. Carey Tunnel	Stantec (2023), Stantec (2021)
Hugh L. Carey-Battery Park Garage	Lazier (2023), HNTB (2021)
Hugh L. Carey-Morris St. & Governors Island Ped. Br.	Lozier (2023), In-House (2021/2022)
Verrazzano-Narrows Bridge	WSP (2024), Stantec-Group C - Mainline / WSP-Group D – Ramps (2023 Interim). Stantec-Bridge Main Line / WSP-Ramps (2022).
Marine Parkway-Gil Hodges Memorial Bridge	HNTB (2023), Hardesty & Hanover (2021)
Marine Parkway-Riis Park Pedestrian Bridge	HNTB (2023), In-House (2021)
Marine Parkway-Approach	HNTB (2023)
Cross Bay Veterans Memorial Bridge	HNTB (2023), Hardesty & Hanover / In-House (2021)

Current Work Under Both Capital Programs

Funds previously programmed for TBTA's 2015-2019 Capital Program are summarized in Table 34. The plan, which totals $2.667 billion, separates this amount into specific projects by facility as well as agency wide projects. This program gave high priority to key rehabilitation projects, all of which have been completed. The approved 2020-2024 Capital Program, shown in Table 35 at $2.821 billion, is underway, with an additional $0.503 billion budgeted for CBD Tolling for a grand total of $3.324 billion. Comparisons between the 2020-2024 Capital Program planned projects and total repair item lists for each facility, as prepared by inspection consultants in the biennial reports, confirm that the 2020-2024 Capital Program continues to give high priority to key rehabilitation projects by prioritizing necessary facility rehabilitation projects, TBTA is addressing all high priority recommendations in the current 2020-2024 Capital Program or maintenance programs.

As noted above, the CBD Tolling program budget is $0.503 billion. Pending the availability of CBD Tolling Program revenues, capital costs associated with the planning, design, installation, and construction of the CBD Tolling Program have been financed on the interim basis with proceeds of $378.835 million of TBTA Second Subordinate Bond Anticipation Notes. Such bond anticipation notes are expected to be paid from the amounts derived from CBD Tolling Program. On January 5, 2025, the Central Business District Tolling Program began revenue operations.

Table 34 TBTA 2015-2019 Capital Program by Facility

(Millions) [a]

Facility	2015-2019	Percent
Bronx-Whitestone Bridge	$156.93	6%
Cross Bay Veterans Memorial Bridge	$73.17	3%
Henry Hudson Bridge	$259.16	10%
Marine Parkway-Gil Hodges Memorial Bridge	$17.83	1%
RFK Bridge	$440.98	16%
Throgs Neck Bridge	$655.05	25%
Verrazzano-Narrows Bridge	$596.36	22%
Hugh L. Carey Tunnel	$120.60	4%
Queens Midtown Tunnel	$76.85	3%
Agency Wide[b]	$270.08	10%
Total	$2,667.01	100%

Notes:

(a) Values are as of December 31, 2024

(b) Agency Wide refers to projects that have been, or will be, carried out at two or more facilities.

Table 35 Capital Investments 2020-2024 Capital Program by Facility

(Millions)[a]

Facility	2020-2024	Percent
Bronx-Whitestone Bridge	$112.79	4%
Cross Bay Veterans Memorial Bridge	$35.72	1%
Henry Hudson Bridge	$73.71	3%
Marine Parkway-Gil Hodges Memorial Bridge	$53.24	2%
RFK Bridge	$809.14	29%
Throgs Neck Bridge	$230.11	8%
Verrazzano-Narrows Bridge	$1,204.55	43%
Hugh L. Carey Tunnel	$27.15	1%
Queens Midtown Tunnel	$32.85	1%
Agency Wide[b]	$241.96	8%
Total	$2821.22	100%

CBD Tolling Program	$503	100%

GRAND TOTAL (2020-2024 Capital Program)	$3,324.22

Notes:

(a) Values are as of December 31, 2024.

(b) Agency Wide refers to projects that have been, or will be, carried out at two or more facilities.

Bronx-Whitestone Bridge ("BWB")

During the 2023 Biennial Bridge Inspection of the BWB, forty-one (41) yellow flags were issued. Of these forty-one (41) yellow flags, four (4) were reissued yellow flags and thirty-seven (37) were new yellow flags. One (1) safety flag with prompt interim action (PIA) was issued and subsequently removed. No red flags were issued during the 2023 Biennial Bridge Inspection. During the 2024 Special inspection two (2) yellow flags were issued, these two (2) yellow flags were reissued from 2023.

The BWB is in overall fair to good condition.

Recently completed and ongoing projects in the 2020-2024 Capital Program at the BWB include:

- Miscellaneous Structural Rehabilitation and Painting Construction was awarded in late 2021 and was completed as expected in mid-2024.
- Bridge structural lighting, power redundancy and resiliency improvements. Construction was awarded in late 2022, is ongoing, and is planned for completion in mid-2026.
- Cable Dehumidification and Miscellaneous Work. Preliminary design is in the 2020-2024 Program and planned to begin in 2025. Construction is planned for under the 2025-2029 Capital Program.

Henry Hudson Bridge ("HHB")

During the 2023 Biennial Bridge Inspection of the HHB, no flags were issued. During the 2021 Biennial Bridge Inspection three (3) yellow flags were issued, two (2) of which were reissued yellow flags, and one (1) was new. All three (3) yellow flags were removed prior to the 2023 inspection.

The HHB is in overall fair to good condition.

Recently completed and ongoing projects in the 2020-2024 Capital Program at the HHB include:

- Dyckman Street and Kappock Substation Upgrades. Construction was awarded in late 2021, and was completed in 2024.
- Walkway widening and North Abutment and Retaining Wall Rehabilitation. The design was completed in the 2020-2024 Capital Program. Construction was advanced into the 2020-2024 Capital Program, awarded in late 2023, and completed in late 2024.

Hugh L. Carey Tunnel ("HLCT")

The Routine NTIS Tunnel inspection of the HLCT was performed in 2023. During the Routine 2023 NTIS inspection, no deficiencies were noted that required the issuance of flags. The HLCT seems to remain in overall fair to good condition, with no new inspections reported as of March 2025.

During the 2023 Biennial Bridge Inspection of the Morris Street Pedestrian Bridge (part of the HLCT Facility) no flags were issued and the bridge is in new condition.

A Biennial Inspection was also performed on the Battery Parking Garage (part of the HLCT Facility) in 2023. No flags were issued during the inspection, and the underside was found to be in overall good condition with very isolated concrete deterioration.

Recently completed and ongoing projects in the 2015-2019 Capital Program and ongoing and planned projects in the approved 2020-2024 Capital Program at the HLCT include:

- Rehabilitation of the Ventilation Buildings – Preliminary design for the seismic retrofit and miscellaneous structural repairs of the ventilation buildings is ongoing, funded from the 2015-2019 Capital Program. Construction is planned for the 2025-2029 Capital Program.
- Rehabilitation of Tunnel Entrance/Exit in Manhattan – Design is ongoing under the 2020-2024 Capital Program. Construction was advanced into the 2020-2024 Capital Program and is planned to begin in mid-2025.

- Installation of Fire Suppression System. Preliminary design is ongoing under the 2020-2024 Capital Program, with construction planned as part of the 2025-2029 Capital Program.

Queens Midtown Tunnel ("QMT")

The last Routine NTIS Tunnel Inspection of the QMT and the Biennial Inspection of the QMT approach bridges were performed in 2023. No flags were issued during the 2023 Routine Inspections.

The QMT and the QMT approach bridges are in fair to good condition. However, in September 2024, a contractor accidentally drilled a 2.5-inch hole in the tunnel's roof, causing a water leak and temporary closure. This issue was addressed, and the tunnel has reopened, with ongoing efforts for permanent repairs.

Recently completed and ongoing projects in the 2015-2019 Capital Program and ongoing and planned projects in the approved 2020-2024 Capital Program at the QMT include:

- Rehabilitation of the Ventilation Buildings – Preliminary design for the seismic retrofit and miscellaneous structural repairs of the ventilation buildings is ongoing funded from the 2015-2019 Capital Program. Construction is planned for the 2025-2029 Capital Program.

- Installation of Fire Suppression System. Preliminary design is ongoing under the 2020-2024 Capital Program, with construction planned as part of the 2025-2029 Capital Program.

Robert F. Kennedy Bridge ("RFK")

The Biennial Inspection was performed at the RFK (Group A and Group B) in 2024. For Group A, one-hundred-eighty-one (181) yellow structural flags were issued during the 2024 biennial inspection which included flags up to February 12th, 2025. This represents a decrease from the previous biennial inspection in 2022 (192 yellow flags) due to eight (8) flags being removed in 2024 and three (3) additional flags being removed in 2025. All one-hundred-eighty-one (181) of these flags were reissued.

For Group B, seven (7) yellow structural flags were issued during the 2024 biennial inspection. Four (4) of these flags are new, and three (3) were reissued. This represents a decrease from the previous biennial inspection in 2022 (18 yellow flags) due to sixteen (16) flags being removed in 2024, which includes flags up to February 12th, 2025.

The RFK is in overall fair to good condition.

Recently completed and ongoing projects in the 2020-2024 Capital Program at the RFK include:

- Structural rehabilitation of the ERSS and anchorages at the RFK Bridge was awarded in late 2023, is ongoing and projected for completion in 2027.
- Reconstruction of Randall's Island Ramps – Construction was awarded in late 2022, was completed in late 2024, improving access and safety.
- Widening of Southbound FDR Drive (125 St to 116 St) – Design was awarded in 2021. Construction was advanced into the 2020-2024 Capital Program and is planned to begin in mid-2025 with completion projected for 2027.

Throgs Neck Bridge ("TNB")

During the 2024 Interim Bridge Inspection of the TNB, one (1) new red flag and six (6) new yellow flags were issued. Of the thirty-nine (39) flags issued during the 2023 biennial inspection. Four (4) yellow flags have been reissued, and three (3) new red flags have been issued. All four (4) red flags have been inactivated during the special inspection.

The TNB is in overall fair to good condition.

Recently completed and ongoing projects in the 2020-2024 Capital Program at the TNB include:

- Anchorage and Tower Protection – The preliminary design contract was awarded in late 2019 and is ongoing. Construction is funded in the 2020-2024 Capital Program and was awarded in late 2023 and is projected to be completed in 2027.

Verrazzano-Narrows Bridge ("VNB")

The Biennial Inspection at the VNB (Group C and Group D) was performed in 2024. For Group C, twelve (12) yellow flags were issued, with two being new. Four (4) yellow flags were removed during the 2024 Biennial Inspection which includes flags up to January 31, 2025. For Group D, three (3) yellow flags were removed, leaving only three (3) reissued yellow flags. Since the previous Biennial Inspection, three (3) yellow flags for severe deck spalling at Ramp F were removed. Although the spalls and exposed reinforcement remain, timber shoring was installed to help prevent a localized deck failure at these three locations of Ramp F. Three (3) Yellow Flags were re-issued this cycle for rocker bearings not making contact across entire bearing lines with little to no change since the 2022 Biennial Inspection.

The VNB is in overall fair to good condition with scattered elements in locally poor condition. Most of these poorly rated structural elements were issued as Yellow Flags or were assigned as CMRs and Safety-CMRs. Other poorly rated elements include portions of the superstructure and substructures below deck joints and areas highly susceptible to roadway runoff and de-icing salts. Outside of these bridge elements, the bridges are in overall good to satisfactory structural condition.

Recently completed and ongoing projects in the 2020-2024 Capital Program at the VNB include:

- Rehabilitation of the Staten Island and Brooklyn Upper-level Approach Ramps – The feasibility study and conceptual design for the reconstruction and reconfiguration of the ramps and approaches were awarded in 2013. Construction for Phase I was awarded in late 2019 and was completed in fall 2022. Preliminary design for Phase 2 of the project was completed, funded from the 2015-2019 Capital Program. Construction is currently planned to begin in 2025 including painting of the Belt Parkway Ramps, funded from the 2020-2024 Capital Program.
- Miscellaneous Bridge Lighting and Electrical Improvements/Repairs. The design contract was awarded in March 2020. Construction was split into two projects. Phase 1, which includes upgrades to the anchorage substations and SCADA systems, was awarded in late 2022 as part of a bundled project with similar upgrades at the Bronx-Whitestone Bridge, with completion planned for mid-2025. Phase 2 which addresses electrical upgrades as well as tower and navigation lighting was awarded in late 2023 bundled with the tower painting and is projected to be completed in 2026.
- Painting of the towers at the VNB – The in-house design was completed in 2022. Construction was awarded in late 2023 and is projected to be completed in 2026.
- Lower-level Main Suspended Span Deck Rehabilitation. The design contract was awarded in 2019 and completed in early 2022. Construction was awarded in spring 2023, funded in the 2020-2024 Capital Program, and is projected for completion in late 2025.
- Widening of Belt Parkway. Construction was awarded in late 2022 and was completed in late 2024.

- Main Cable Dehumidification – Preliminary design and construction was advanced into the 2020-2024 Capital Program. Preliminary Design was completed in early 2024. Construction is planned to begin in 2025.

Marine Parkway Bridge ("MPB")

The Biennial Inspection of the MPB was performed in 2023. No flags were issued during the 2023 biennial inspection, and the case remains the same for present-day

The MPB is in overall fair to good condition.

Recently completed and ongoing projects in the 2020-2024 Capital Program at the MPB include:

- Miscellaneous Steel Repairs – Funding is included in the program for any necessary repairs identified under future inspections. This has been awarded as part of the CBB project for structural rehabilitation of the CBB referenced below. This project was completed in 2024.

Cross Bay Bridge ("CBB")

The Biennial Inspection of the CBB and all ramps was performed in 2023. Two (2) new yellow flags were issued during the 2023 biennial inspection. The (2) yellow flags have been removed in June 2024.

The CBB is in overall fair to good condition.

Recently completed and ongoing projects in the 2020-2024 Capital Program at the CBB include:

- Structural Rehabilitation of CBB – Construction was awarded in fall 2022 and was completed in late 2024.

Other System Wide Improvements

Agency-Wide ("AW") – Since the September 11, 2001 attack on the World Trade Center, TBTA has engaged consultants to assess the security risks of their facilities. As a result of these risk assessments, increased security improvements, including various monitoring, surveillance, and hardening projects, have been implemented or will begin construction shortly at TBTA facilities. Video surveillance software and hardware upgrades have been installed at many facilities. TBTA has also maintained a security department and incorporates mitigation measures into its operations, capital, and maintenance programs.

Recently completed and ongoing AW projects in the 2020-2024 Capital Program include:

- Hazardous Materials Abatement – This project will remove hazardous materials at various facility work sites.

- ATMS enhancements and upgrades to the Operations Command and Control Center system is planned to begin in April 2025.
- Tunnel Warning Signals - This project will design and implement additional traffic control devices including new traffic signals, new over height Vehicle Detection Stations, and enhanced portal signs and beacons.

Additional projects:

- Fiber Optic Infrastructure and Integration
- Toll Collection System Rehabilitation/Upgrades
- SCADA Systems

As part of the Capital Program planning process for each five-year plan, TBTA and the MTA C&D personnel conduct a capital needs assessment. The assessment is compiled from data from biennial inspections and system improvements suggested by the TBTA Business Unit of MTA C&D (formerly Engineering and Construction). It includes factors such as the service life of various structural components and normal replacement cycles. Scheduling of Major Maintenance projects is closely coordinated to ensure that the optimal level of service to the traveling public locally and systemwide, is maintained while balancing operating and capital expenditures.

Stantec's consultant team reviewed pertinent sections of the recent facility inspection reports and found them to be extensive and detailed. Based on that limited review, the reports appear, in Stantec's opinion, to be reasonable. The reviews proved informative. Facility projects and agencywide projects specific to each structure were discussed. Dinmore conducted the condition assessment of these facilities for Stantec.

It is important to note, however, that Stantec's consultant team review of portions of other parties' work shall not relieve such other parties from their responsibility for performing their work in accordance with applicable requirements and the customary standard of care. Stantec and its subconsultants shall not be responsible for the acts or omissions of other parties engaged by TBTA.

Long-Term Outlook for TBTA Facilities

The useful lives of bridges and tunnels, in general, could be cut short for two main reasons: (a) they are geometrically and functionally obsolescent because they are too narrow, too steep, lacking in clearance or sufficient spatial capacity to handle the traffic; or (b) they are structurally deficient because of deterioration or because their load-carrying capacity is inadequate to handle the loads imposed under current conditions. Deterioration may occur for various reasons, including aging, but it will occur sooner if there has been inadequate or improper maintenance.

Based on the foregoing review and information available to us from reports provided and prepared by others, it is our opinion that TBTA bridges, tunnels, and approaches are all geometrically and functionally adequate, structurally sound, and generally maintained to good standards. Ongoing maintenance requirements of the structures are assessed, prioritized, and addressed appropriately by TBTA to maintain a high level of safety for the traveling public and to maintain the structures for many years to come.

TBTA is looking forward and exploring ways to add capacity to its facilities (where possible) while maintaining and rehabilitating its structures to ensure their future service ability. We believe that all TBTA facilities are and will be physically capable of accommodating traffic volumes at the levels projected for 2033 through the duration of the outstanding bonds that have been issued and future bonds to be issued based on a pledge of TBTA revenues through 2057, assuming maintenance and rehabilitation consistent with past practice.

CONCLUDING REMARKS

It is Stantec's opinion that the revenue projections presented in this report have been prepared in accordance with accepted industry-wide practice for investment-grade studies. However, given the uncertainties within the current international and economic climate, Stantec considers it is necessary to state that the traffic and revenue projections take into consideration the following caveats:

- This report presents the results of Stantec's consideration of the information available to us as of the date hereof and the application of Stantec's experience and professional judgment to that information. It is not a guarantee of any future events or trends.
- The traffic and revenue forecasts will be subject to future economic and social conditions or demographic developments, which cannot be predicted with certainty.
- The traffic and revenue forecast assumes that the CBD Tolling Program will remain active throughout the forecast period.
- The projections contained in this report, while presented with numerical specificity, are based on a number of estimates and assumptions which, though considered reasonable to us, are inherently subject to significant economic and competitive uncertainties and contingencies, many of which will be beyond Stantec's control and that of TBTA. In many instances, a broad range of alternative assumptions could be considered reasonable. Changes in the assumptions used could result in material differences in projected outcomes.
- If, for any reason, any of these stated conditions should change due to changes in the economy or competitive environment, or other factors, Stantec's opinions or estimates may require amendment or further adjustments.
- Stantec's toll revenue projections only represent its best judgment and Stantec does not warrant or represent that actual toll revenues will not vary from its projections, estimates, and forecasts.

Many statements contained in this report that are not historical facts are forward-looking statements, which are based on Stantec's opinions, as well as assumptions made by, and information currently available to, the management and staff of Stantec. Because the statements are based on expectations about future events and economic performance and are not statements of fact, actual results may differ materially from those projected. The words "anticipate", "assume", "estimate", "expect", "objective", "projection", "plan", "forecast", "goal", "budget", or similar words are intended to identify forward-looking statements. The words or phrases "to date", "now", "currently", and the like are intended to mean as of the date of this report.

Respectfully,

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