16. Summary of Effects

16.1 INTRODUCTION

The Council on Environmental Quality's regulations implementing NEPA require Federal agencies to consider the reasonably foreseeable effects of a proposed action before a project can be approved. This chapter summarizes the direct, indirect, and cumulative effects of the CBD Tolling Alternative as discussed in the previous chapters of this Environmental Assessment (EA). It also summarizes the effects of the tolling scenarios and additional sensitivity analyses for the CBD Tolling Alternative, and it describes the results for a scenario that incorporates the Long Island Rail Road (LIRR) East Side Access Project into the background condition and presents the cumulative effects of East Side Access and the CBD Tolling Alternative.

16.2 SUMMARY OF DIRECT AND REASONABLY FORESEEABLE EFFECTS IDENTIFIED IN THIS EA

Chapters 4 through 15 of this EA present the direct, indirect, and cumulative effects of the Project. Table 16-1 summarizes these effects and measures to avoid or minimize potential adverse effects.

16.2.1 Direct Effects

The CBD Tolling Alternative would change travel patterns in the regional study area and the Manhattan CBD, resulting in an overall reduction in trips in the regional study area and the Manhattan CBD. The CBD Tolling Alternative could cause localized increases in traffic on highway segments and at local intersections because some drivers would alter their trip or divert around the Manhattan CBD to avoid the toll. The Project Sponsors will conduct a monitoring program and implement mitigation measures to alleviate adverse effects on traffic operations. Changes in travel patterns associated with the CBD Tolling Alternative would not result in any potential adverse effects on air quality or noise.

As described in other chapters of this EA, the new tolling infrastructure and tolling system equipment would be similar in form to streetlight poles and signs already present, and in many locations would replace existing infrastructure in the same location. As such, the tolling infrastructure and tolling system equipment associated with the CBD Tolling Alternative would not adversely affect nearby parks, historic properties, natural resources, visual character, or neighborhood character where they are installed. Construction activities for the CBD Tolling Alternative would involve installing tolling infrastructure and tolling system equipment along transportation rights-of-way within and near the Manhattan CBD. This would be similar to typical construction activities for the installation of new traffic lights or streetlights typically used throughout the city.

Where the CBD Tolling Alternative would require new poles or mounting structures, construction activities would include the following:

- Excavating and constructing the foundation(s)
- Placing the new support poles or structures
- Attaching the tolling system equipment and making utility connections
- Restoring the roadway and/or sidewalk surface

The overall duration of construction for the CBD Tolling Alternative would be approximately one year or less, and at each location, the total construction duration would be approximately two weeks. While construction activities could result in temporary effects in the neighborhoods where construction would occur due to sidewalk or traffic-lane closures and noise generated by construction equipment, TBTA would require the contractor to implement protocols and plans to minimize construction disruptions to the extent feasible and practical. Overall, based on the short duration and limited magnitude of work, construction activities would not have adverse effects in the neighborhoods where construction would occur.

16.2.2 Indirect Effects

Chapters 4 through 15 of this EA describe the potential effects of the CBD Tolling Alternative on the New York City metropolitan region, using a regional study area consisting of 28 counties. This EA examines effects of the Project in 2023, when the CBD Tolling Alternative would become operational, and in 2045, to identify any lasting effects of the Project.

The CBD Tolling Alternative would not create or extend the transportation network in a manner that would lead to long term induced growth in the region. As shown in Subchapter 4A, "Transportation: Regional Transportation Effects and Modeling," the Project would result in congestion relief within the Manhattan CBD through the reduction of vehicle trips and overall VMT. In the 2045 analysis year, the CBD Tolling Alternative would reduce vehicle trips entering and leaving the Manhattan CBD by a range of 13 percent (Tolling Scenario A) to 18 percent (Tolling Scenario E). This would result in a reduction in the regional VMT ranging from 0.2 percent (Tolling Scenario A) to 0.5 percent (Tolling Scenario E). These reductions in VMT would occur throughout the region, with the greatest percentage change in the Manhattan CBD and less change in the counties on Long Island, north of New York City, New Jersey, and Connecticut.

These changes would support the regional economy by enhancing regional mobility but would not be of a magnitude that would induce growth or larger changes. Generally, the CBD Tolling Alternative would decrease volumes on area highways and roadways to, from, and within the Manhattan CBD, resulting in less congestion and improved travel speeds and travel times for motorists who continue to use these roads, except for a limited number of locations where traffic volumes would increase as drivers adjust their routes to avoid the Manhattan CBD. In tolling scenarios with crossing credits that make the tolls similar among currently tolled bridges and tunnels and untolled bridges, people may alter their current routes to shorter or more direct routes since they would no longer take certain routes to avoid a toll. In local neighborhoods where traffic increases would occur, the changes in traffic volumes and patterns would not change community character or land uses in the nearby area (refer to Subchapter 5B, "Social Conditions: Neighborhood Character").

Table 16-1. Summary of Effects of the CBD Tolling Alternative with Tolling Scenarios Detail

EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
4A – Transportation: Regional Transportation Effects and Modeling	Vehicle Volumes	Decreases in daily vehicle trips to Manhattan CBD overall. Some diversions to different crossings to Manhattan CBD or around the Manhattan CBD altogether, depending on tolling scenario. As traffic, including truck trips, increase on some circumferential highways, simultaneously there is a reduction in traffic on other highway segments to the CBD. Diversions would increase or decrease traffic volumes at local intersections near the Manhattan CBD crossings. Overall decrease in vehicle-miles traveled (VMT) in the Manhattan CBD and region overall in all tolling scenarios and some shift from vehicle to transit mode.	Crossing locations to Manhattan CBD	% Increase or decrease in daily vehicles entering the Manhattan CBD relative to No Action Alternative	-15%	-16%	-17%	-19%	-20%	-18%	-17%	No	**No mitigation needed.** Beneficial effects
	Auto Journeys to Manhattan CBD		Manhattan CBD	% Increase or decrease in worker auto journeys to Manhattan CBD relative to No Action Alternative	-5%	-5%	-7%	-9%	-11%	-10%	-6%	No	**No mitigation needed.** Beneficial effects
				Absolute increase or decrease in daily worker auto trips to Manhattan CBD relative to No Action Alternative	-12,571	-12,883	-17,408	-24,017	-27,471	-24,433	-14,578		
	Truck Trips Through Manhattan CBD		Manhattan CBD	Increase or decrease in daily truck trips through Manhattan CBD (without origin or destination in the CBD) relative to No Action Alternative	-4,645 (-55%)	-5,695 (-59%)	-5,253 (-63%)	-5,687 (-68%)	-6,604 (-79%)	-6,784 (-81%)	-6,567 (-21%)	No	**No mitigation needed.** Beneficial effects
	Transit Journeys		Manhattan CBD	% Increase or decrease in daily Manhattan CBD-related transit journeys relative to No Action Alternative	+1 to +3%							No	**No mitigation needed.** No adverse effects
	Traffic Results		Manhattan CBD	% Increase or decrease in daily VMT relative to No Action Alternative	-9% to -7%							No	**No mitigation needed.** Beneficial effects in Manhattan CBD, New York City (non-CBD), north of New York City, and Connecticut; although there would be VMT increases in Long Island and New Jersey, the effects would not be adverse.
			NYC (non-Manhattan CBD)		-1 to 0%								
			New York north of NYC		-1% to 0%								
			Long Island		Less than (+) 0.2% change								
			New Jersey		Less than (+) 0.2% change								
			Connecticut		Less than (+) 0.2% change								

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4B – Transportation: Highways and Local Intersections	Traffic – Highway Segments	The introduction of the CBD Tolling Program may produce increased congestion on highway segments approaching on circumferential roadways used to avoid Manhattan CBD tolls, resulting in increased delays and queues in midday and PM peak hours on certain segments in some tolling scenarios: Westbound Long Island Expressway (I-495) near the Queens-Midtown Tunnel (midday) Approaches to westbound George Washington Bridge on I-95 (midday) Southbound and northbound FDR Drive between East 10th Street and Brooklyn Bridge (PM) Other locations will see an associated decrease in congestion particularly on routes approaching the Manhattan CBD	10 highway segments (AM)	Highway segments with increased delays and queues in peak hours that would result in adverse effects	0 out of 10 highway corridors in the analyzed tolling scenario (Tolling Scenario D)							Yes	**Mitigation needed.** The Project Sponsors will implement a monitoring plan prior to implementation with post-implementation data collected approximately three months after the start of operations and including thresholds for effects; if the thresholds are reached or crossed, the Project Sponsors will implement Transportation Demand Management (TDM) measures, such as ramp metering, motorist information, signage at all identified highway locations with adverse effects upon implementation of the Project. Post-implementation, the Project Sponsors will monitor effects and, if needed, TBTA will modify the toll rates, crossing credits, exemptions, and/or discounts to reduce adverse effects.
			10 highway segments (midday)		2 out of 10 highway corridors in the analyzed tolling scenario (Tolling Scenario D), as well as Tolling Scenarios E and F								
			10 highway segments (PM)		1 out of 10 highway corridors in the analyzed tolling scenario (Tolling Scenario D), as well as Tolling Scenarios E and F								
	Intersections	Shifts in traffic patterns, with increases in traffic at some locations and decreases at other locations, would change conditions at some local intersections within and near the Manhattan CBD. Of the 102 intersections analyzed, most intersections would see reductions in delay. Potential adverse effects on four local intersections in Manhattan: Trinity Place and Edgar Street (midday); East 36th Street and Second Avenue (midday); East 37th Street and Third Avenue (midday); East 125th Street and Second Avenue (AM, PM)	**363 locations (All day)**	Number of instances of intersections with an increase in volumes of 50 or more vehicles in the peak hours.	**9**	**10**	**24**	**50**	**48**	**50**	**10**	Yes	**Mitigation needed.** The Project Sponsors will monitor those intersections where adverse effects were identified and implement appropriate signal timing adjustments to mitigate the effect, per NYCDOT's normal practice. **Enhancement** Refer to the overall enhancement on monitoring at the end of this table.
			102 locations (AM)		2	2	3	3	3	3	2		
			102 locations (midday)		1	2	4	16	16	17	0		
			102 locations (PM)		1	1	1	10	9	9	1		
			57 locations (overnight)		5	5	16	21	20	21	5		
			4 locations	Locations with potential adverse effects that would be addressed with signal timing adjustments	0	0	0	4	4	4	0		
4C – Transportation: Transit	Transit Systems	The Project would generate a dedicated revenue source for investment in the transit system. Transit ridership would increase by 1 to 2 percent systemwide for travel to and from the Manhattan CBD, because some people would shift to transit rather than driving. Increases in transit ridership would not result in adverse effects on line-haul capacity on any transit routes.	New York City Transit	% Increase or decrease in total daily transit ridership systemwide	1.5% to 2.1%							No	**No mitigation needed.** No adverse effects
			PATH		0.8% to 2.0%								
			Long Island Rail Road		0.6% to 2.0%								
			Metro-North Railroad		0.6% to 1.9%								
			NJ TRANSIT commuter rail		0.3% to 2.3%								
			MTA/NYCT Buses		1.3% to 1.6%								
			NJ TRANSIT Bus		0.5% to 1.1%								
			Other buses (suburban and private operators)		0.0% to 0.9%								
			Ferries (Staten Island Ferry, NYC Ferry, NY Waterway, Seastreak)		2.5% to 3.5%								
			Roosevelt Island Tram		1.7% to 4.1%								

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4C – Transportation: Transit (Cont'd)	Bus System Effects	Decreases in traffic volumes within the Manhattan CBD and near the 60th Street boundary of the Manhattan CBD would reduce the roadway congestion that adversely affects bus operations, facilitating more reliable, faster bus trips.	Manhattan local buses	% Increase or decrease at maximum passenger load point	Increases of 0.5% to 1.2%							No	**No mitigation needed.** No adverse effects
			Bronx express buses		-1.6% to 2.2%								
			Queens local and express buses (via Ed Koch Queensboro Bridge)		2.0% to 2.8%								
			Queens express buses (via Queens-Midtown Tunnel)		-1.3% to 4.1%								
			Brooklyn local and express buses		1.3% to 2.6%								
			Staten Island express routes (via Brooklyn)		3.7% to 4.5%								
			Staten Island express routes (via NJ)		1.0% to 2.8%								
			NJ/West of Hudson buses (via Holland Tunnel)		-1.4% to 1.4%								
			NJ/West of Hudson buses (via Lincoln Tunnel)		0.4% to 1.5%								
	Transit Elements	Increased ridership would affect passenger flows with the potential for adverse effects at certain vertical circulation elements (i.e., stairs and escalators) in five transit stations: Hoboken Terminal, Hoboken, NJ PATH station Times Sq-42 St/42 St-Port Authority Bus Terminal subway station in the Manhattan CBD (N, Q, R, W, and S; Nos. 1, 2, 3, and 7; and A, C, E lines) Flushing-Main St subway station, Queens (No. 7 line) 14th Street-Union Square subway station in the Manhattan CBD (Nos. 4, 5, and 6; and L, N, Q, R, W lines) Court Square subway station, Queens (No. 7 and E, G, M lines)	Hoboken Terminal–PATH station (NJ) Stair 01/02	Net passenger increases or at stair in the peak hour	45	72	122	164	240	205	139	Yes	**Mitigation needed for Tolling Scenarios E and F.** TBTA will coordinate with NJ TRANSIT and PANYNJ to monitor pedestrian volumes on Stair 01/02 one month prior to commencing tolling operations to establish a baseline, and two months after Project operations begin. If a comparison of Stair 01/02 passenger volumes before and after implementation shows an incremental change that is greater than or equal to 205, then TBTA will coordinate with NJ TRANSIT and PANYNJ to implement improved signage and wayfinding to divert some people from Stair 01/02, and supplemental personnel if needed.
			42 St-Times Square–subway station (Manhattan) Stair ML6/ML8 connecting mezzanine to uptown 1/2/3 lines subway platform	Relative increase or decrease in passenger volumes at station OVERALL as compared to Tolling Scenario E (not only at the affected stair or location) in the peak hour, peak period	63%	59%	68%	82%	100%	82%	56%	Yes	**Mitigation needed.** TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, TBTA will coordinate with MTA NYCT to remove the center handrail and standardize the riser, so that the stair meets code without the hand rail. The threshold will be set to allow for sufficient time to implement the mitigation so that the adverse effect does not occur.

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4C – Transportation: Transit (Cont'd)	Transit Elements (Cont'd)	Increased ridership would affect passenger flows with the potential for adverse effects at certain vertical circulation elements (i.e., stairs and escalators) in five transit stations (cont'd)	Flushing-Main St subway station (Queens)–Escalator E456 connecting street to mezzanine level	Relative increase or decrease in passenger volumes at station OVERALL as compared to Tolling Scenario E (not only at the affected stair or location) in the peak hour, peak period	116%	91%	108%	116%	100%	133%	72%	Yes	**Mitigation needed**. TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, MTA NYCT will increase the speed from 100 feet per minute (fpm) to 120 fpm.
			Union Sq subway station (Manhattan)–Escalator E219 connecting the L subway line platform to the Nos. 4/5/6 line mezzanine	Relative increase or decrease in passenger volumes at station OVERALL as compared to Tolling Scenario E (not only at the affected stair or location) in the peak hour, peak period	63%	82%	87%	102%	100%	95%	61%	Yes	**Mitigation needed**. TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, MTA NYCT will increase the escalator speed from 100 fpm to 120 fpm.
			Court Sq subway station (Queens)–Stair P2/P4 to Manhattan-bound No. 7 line	Relative increase or decrease in passenger volumes at station OVERALL as compared to Tolling Scenario E (not only at the affected stair or location) in the peak hour, peak period	98%	90%	102%	104%	100%	117%	97%	Yes	**Mitigation needed.** TBTA will coordinate with MTA NYCT to implement a monitoring plan for this location. The plan will identify a baseline, specific timing, and a threshold for additional action. If that threshold is reached, TBTA will coordinate with MTA NYCT to construct a new stair from the northern end of the No. 7 platform to the street. The threshold will be set to allow for sufficient time to implement the mitigation so that the adverse effect does not occur.
4D – Transportation: Parking	Parking Conditions	All tolling scenarios would result in a reduction in parking demand within the Manhattan CBD of a similar magnitude to the reduction in auto trips into the Manhattan CBD. With a shift from driving to transit, there would be increased parking demand at subway and commuter rail stations and park-and-ride facilities outside the Manhattan CBD.	Manhattan CBD	Narrative	Reduction in parking demand due to reduction in auto trips to CBD							No	**No mitigation needed.** Beneficial effects
			Transit facilities	Narrative	Small changes in parking demand at transit facilities, corresponding to increased commuter rail and subway ridership							No	**No mitigation needed**. No adverse effects
4E – Transportation: Pedestrians and Bicycles	Pedestrian Circulation	Increased pedestrian activity on sidewalks outside transit hubs because of increased transit use. At all but one location in the Manhattan CBD (Herald Square/Penn Station), the increase in transit riders would not generate enough new pedestrians to adversely affect pedestrian circulation in the station area. Outside the Manhattan CBD, transit usage at individual stations would not increase enough to adversely affect pedestrian conditions on nearby sidewalks, crosswalks, or corners.	Herald Square/Penn Station NY	Sidewalks, corners, and crosswalks with pedestrian volumes above threshold in AM / PM peak periods	Adverse effects on pedestrian circulation at one sidewalk segment and two crosswalks							Yes	**Mitigation needed.** The Project Sponsors will implement a monitoring plan at this location. The plan will include a baseline, specific timing, and a threshold for additional action. If that threshold is reached, the Project Sponsors will increase pedestrian space on sidewalks and crosswalks via physical widening and/or removing or relocating obstructions.

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					A	B	C	D	E	F	G		
4E – Transportation: Pedestrians and Bicycles (Cont'd)	Bicycles	Small increases in bicycle trips near transit hubs and as a travel mode	Manhattan CBD	Narrative	Small increases in bicycle trips near transit hubs with highest increases in pedestrian trip share							No	**No mitigation needed**. No adverse effects
			Outside Manhattan CBD	Narrative	Some shifts from automobile to bicycles							No	**No mitigation needed**. No adverse effects
	Safety	No adverse effects	Overall	Narrative	No substantial increases in pedestrian volumes or increased safety concerns, including at existing identified high-crash locations. Overall, fewer vehicular trips entering and exiting the Manhattan CBD, the CBD Tolling Alternative could result in reduced traffic volumes at these locations. This would help to reduce vehicle-vehicle and vehicle-pedestrian conflicts, leading to an overall benefit to safety.							No	**No mitigation needed.** No adverse effects
5A – Social Conditions: Population	Benefits	Benefits in and near the Manhattan CBD	28-county study area	Narrative	Benefits in and near the Manhattan CBD related to travel-time savings, improved travel-time reliability, reduced vehicle operating costs, improved safety, reduced air pollutant emissions, and predictable funding source for transit improvements. This would positively affect community connections and access to employment, education, healthcare, and recreation for residents.							No	**No mitigation needed.** Beneficial effects
	Community Cohesion	Changes to travel patterns, including increased use of transit, resulting from new toll	28-county study area	Narrative	Changes to travel patterns, including increased use of transit, as a result of the Project would not adversely affect community cohesion or make it more difficult for people to connect with others in their community, given the extensive transit network connecting to the Manhattan CBD and the small change in trips predicted.							No	**No mitigation needed.** No adverse effects (see "Environmental Justice" below for mitigation related to increased costs for low-income drivers).
	Indirect Displacement	No notable changes in socioeconomic conditions or cost of living so as to induce potential involuntary displacement of residents	Manhattan CBD	Narrative	The Project would not result in the potential for indirect (involuntary) residential displacement. It would not result in substantial changes to market conditions so as to lead to changes in housing prices, given that real estate values in the Manhattan CBD are already high and the many factors that affect each household's decisions about where to live. In addition, low-income residents of the CBD would not experience a notable increase in the cost of living as a result of the Project because of the lack of change in housing costs, the many housing units protected through New York's rent-control, rent-stabilization, and other similar programs, the tax credit available to CBD residents with incomes of up to $60,000, and the conclusion that the cost of goods would not increase as a result of the Project (see "Economic Conditions" below).							No	**No mitigation needed**. No adverse effects
	Community Facilities and Services	Increased cost for community facilities and service providers in the Manhattan CBD, their employees who drive, and clientele who drive from outside the CBD	Manhattan CBD	Narrative	The Project would increase costs for community service providers that operate vehicles into and out of the Manhattan CBD and for people who travel by vehicle to community facilities and services in the Manhattan CBD, as well as residents of the CBD and employees of community facilities who use vehicles to travel to community facilities outside the CBD. Given the wide range of travel options other than driving, the cost for users to drive to community facilities and services would not constitute an adverse effect on community facilities and services.							No	**No mitigation needed**. No adverse effects

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5A – Social Conditions: Population (Cont'd)	Effects on Vulnerable Social Groups	Benefits to vulnerable social groups from new funding for MTA Capital Program	28-county study area	Narrative	The Project would benefit certain vulnerable social groups, including elderly populations, persons with disabilities, transit-dependent populations, and non-driver populations by creating a funding source for the MTA 2020–2024 Capital Program (and subsequent capital programs and by reducing congestion in the Manhattan CBD). Elderly individuals would benefit from the travel-time and reliability improvements to bus service with the CBD Tolling Alternative, as bus passengers tend to be older than riders on other forms of transit, such as the subway and, as described above, bus passengers in the Manhattan CBD would benefit from travel-time savings due to the decrease in congestion. People over the age of 65 with a qualifying disability receive a reduced fare on MTA subways and buses, and elderly individuals with a qualifying disability can also receive MTA's paratransit service, including taxis and FHVs operating on behalf of MTA to transport paratransit users. Elderly people with disabilities and low-income individuals who drive to the Manhattan CBD would be entitled to the same mitigation and enhancements proposed for low-income and disabled populations, in general. Other elderly individuals who drive to the Manhattan CBD would pay the toll.							No	**No mitigation needed**. No adverse effects
	Access to Employment	Increased cost for small number of people who drive to work	28-county study area	Narrative	Decrease in work trips by driving modes to and within the Manhattan CBD, with an offsetting increase in transit ridership. Those who would drive despite the CBD toll would do so based on the need or convenience of driving and would benefit from the reduced congestion in the Manhattan CBD. Negligible effect (less than 0.1%) on travel to employment within the Manhattan CBD and reverse-commuting from the CBD due to the wide range of transit options available and the small number of commuters who drive today.							No	**No mitigation needed.** No adverse effects
5B – Social Conditions: Neighborhood Character		No notable change in neighborhood character	Manhattan CBD	Narrative	The changes in traffic patterns on local streets are unlikely to change the defining elements of the neighborhood character of the Manhattan CBD.							No	**No mitigation needed**. No adverse effects
			Area near 60th Street Manhattan CBD boundary	Narrative	Changes in parking demand near the 60th Street CBD boundary (including increases just north of 60th Street and decreases just to the south) would not create a climate of disinvestment that could lead to adverse effects on neighborhood character nor alter the defining elements of the neighborhood character of this area.							No	**No mitigation needed**. No adverse effects
5C – Social Conditions: Public Policy		No effect	28-county study area	Narrative	The Project would be consistent with regional transportation plans and other public policies in place for the regional study area and the Manhattan CBD.							No	**No mitigation needed**. No adverse effects
6 – Economic Conditions	Benefits	Regional economic benefits	28-county study area	Narrative	Economic benefit through congestion relief in terms of travel-time savings and travel-time reliability improvements, which would increase productivity and utility, as well as safety improvements and reduced vehicle operating costs associated with reductions in congestion.							No	**No mitigation needed**. Beneficial effects
	Economic Effects of Toll Costs	Cost of new toll for workers and businesses in the CBD that rely on vehicles	Manhattan CBD	Narrative	No adverse effects to any particular industry or occupational category in the Manhattan CBD. Given the high level of transit access in the CBD and high percentage of transit share, the toll would affect only a small percentage of the overall workforce. This would not adversely affect operations of businesses in the Manhattan CBD or the viability of any business types, including the taxi/FHV industry.							No	**No mitigation needed.** No adverse effects
	Price of Goods	Cost of new toll would not result in changes in the cost of most consumer goods	Manhattan CBD	Narrative	Unlikely to result in meaningful change in cost for most consumer goods. Any cost increase associated with the new toll in the CBD Tolling Alternative that would be passed along to receiving businesses would be distributed among several customers per toll charge (since trucks make multiple deliveries) especially for businesses, including small businesses and micro-businesses, receiving smaller deliveries. This would minimize the cost to any individual business. Some commodity sectors (construction materials, electronics, beverages) are more prone to increases due to less competition within delivery market.							No	**No mitigation needed**. No adverse effects

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6 – Economic Conditions (Cont'd)	Taxi and FHV Industry	Depending on the tolling scenario, the toll could reduce taxi and FHV revenues due to a reduction in taxi/FHV VMT with passengers within the CBD. While this could adversely affect individual drivers (see "Environmental Justice" below), the industry would remain viable overall.	28-county study area	Net change in daily taxi/FHV VMT regionwide	-126,993 (-2.9%)	-14,028 (-0.3%)	-73,413 (-1.7%)	-217,477 (-5.0%)	-116,065 (-2.7%)	-4,888 (-1.0%)	-137,815 (-3.2%)	No	**No mitigation needed.** No adverse effects (see "Environmental Justice" below for mitigation related to effects on taxi and FHV drivers).
				Net change in daily taxi/FHV VMT in the CBD	-21,498 (-6.6%)	+15,020 (+4.6%)	-11,371 (-3.5%)	-54,476 (-16.8%)	-25,621 (-7.9%)	+4,962 (+1.5%)	-27,757 (-8.6%)		
	Local Economic Effects	Changes in parking demand near the 60th Street CBD boundary	Area near 60th Street Manhattan CBD boundary	Narrative	Changes in parking demand near the 60th Street Manhattan CBD boundary (including increases just north of 60th Street and decreases just to the south) could jeopardize the viability of one or more parking facilities in the area south of 60th Street but would not create a climate of disinvestment that could lead to adverse effects on neighborhood character.							No	**No mitigation needed**. No adverse effects
7 – Parks and Recreational Resources		New tolling infrastructure, tolling system equipment, and signage in the southern portion of Central Park	Manhattan CBD	Narrative	The Project would replace four existing streetlight poles at three detection locations in Central Park near 59th Street and on two adjacent sidewalks outside the park's wall. These poles would be in the same locations as existing poles and would not reduce the amount of park space or affect the features and activities of the park. The Project would also place tolling infrastructure beneath the structure of the High Line, outside the park area atop the High Line structure. FHWA through the public involvement process is soliciting public input related to the Project's effects on these parks (see Chapter 19, "Section 4(f) Evaluation)."							No	**No mitigation needed.** Refer to **Chapter 7, "Parks and Recreational Resources,"** for a listing of measures to avoid adverse effects to parks.
8 – Historic and Cultural Resources		New tolling infrastructure and tolling system equipment on or near historic properties	45 historic properties within the Project's Area of Potential Effects (APE)	Narrative	Based on a review of the Project in accordance with Section 106 of the National Historic Preservation Act, FHWA has determined that the Project would have No Adverse Effect on historic properties and the State Historic Preservation Office has concurred.							No	**No mitigation needed.** Refer to **Chapter 8, "Historic and Cultural Resources,"** for a listing of measures to avoid adverse effects to historic properties.
9 – Visual Resources		Changes in visual environment resulting from new tolling infrastructure and tolling system equipment	Area of visual effect	Narrative	Infrastructure and equipment would be similar in form to streetlight poles, sign poles, or similar structures already in use throughout New York City. Cameras included in the array of tolling system equipment would use infrared illumination at night to allow images of license plates to be collected without any need for visible light. The Project would have a neutral effect on viewer groups and no adverse effect on visual resources							No	**No mitigation needed**. No adverse effects

EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
10 – Air Quality	Increases or decreases in emissions related to truck traffic diversions		Cross Bronx Expressway at Macombs Road, Bronx, NY	Increase or decrease in Annual Average Daily Trips (AADT)	3,901	3,996	2,056	1,766	3,757	2,188	3,255	No	**No mitigation needed.** No adverse effects **Enhancements** **1.** Refer to the overall enhancement on monitoring at the end of this table. **2.** NYCDOT will coordinate to expand the existing network of sensors to monitor priority locations, and supplement a smaller number of real-time $PM_{2.5}$ monitors to provide insight into time-of-day patterns to determine whether the changes in air pollution can be attributed to changes in traffic occurring after implementation of the Project. The Project Sponsors will monitor air quality prior to implementation (setting a baseline), and two years following implementation. Following the initial two-year post-implementation analysis period, the Project Sponsors will assess the magnitude and variability of changes in air quality to determine whether more monitoring is necessary. **3.** MTA is currently transitioning its fleet to zero-emission buses, which will reduce air pollutants and improve air quality near bus depots and along bus routes. MTA is committed to prioritizing traditionally underserved communities and those impacted by poor air quality and climate change and has developed an approach that actively incorporates these priorities in the deployment phasing process of the transition. Based on feedback received during the outreach conducted for the Project and concerns raised by members of environmental justice communities, TBTA coordinated with MTA NYCT, which is committed to prioritizing the Kingsbridge Depot and Gun Hill Depot, both located in and serving primarily environmental justice communities in Upper Manhattan and the Bronx, when electric buses are received in MTA's next major procurement of battery electric buses, which will begin later in 2022. This independent effort by MTA NYCT is anticipated to provide air quality benefits to the environmental justice communities in the Bronx.
				Increase or decrease in daily number of trucks	509	704	170	510	378	536	50		
				Potential adverse air quality effects from truck diversions	No	No	No	No	No	No	No		
			I-95, Bergen County, NJ	Increase or decrease in AADT	9,843	11,459	7,980	5,003	7,078	5,842	12,506	No	
				Increase or decrease in daily number of trucks	801	955	729	631	696	637	-236		
				Potential adverse air quality effects from truck diversions	No	No	No	No	No	No	No		
			RFK Bridge, NY	Increase or decrease in AADT	18,742	19,440	19,860	19,932	20,465	20,391	21,006	No	
				Increase or decrease in daily number of trucks	2,257	2,423	2,820	3,479	4,116	3,045	432		
				Potential adverse air quality effects from truck diversions	No	No	No	No	No	No	No		

EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
11 – Energy		Reductions in regional energy consumption	28-county study area	Narrative	Reductions in regional VMT would reduce energy consumption							No	**No mitigation needed.** Beneficial effects
12 – Noise		Imperceptible increases or decreases in noise levels resulting from changes in traffic volumes	Bridge and tunnel crossings	Narrative	The maximum noise level increases (2.9 dB(A)), which were predicted adjacent to the Queens-Midtown Tunnel in Tolling Scenario D, would not be perceptible.							No	**No mitigation needed**. No adverse effects **Enhancement** Refer to the overall enhancement on monitoring at the end of this table.
			Local streets	Narrative	Tolling Scenario C was used to assess noise level changes in Downtown Brooklyn, Tolling Scenario D was used at all other locations assessed. The maximum predicted noise level increases (2.5 dB(A)), which were at Trinity Place and Edgar Street, would not be perceptible. There was no predicted increase in noise levels in the Downtown Brooklyn locations.							No	
13 – Natural Resources		Construction activities to install tolling infrastructure near natural resources	Sites of tolling infrastructure and tolling system equipment locations	Narrative	No effects on surface waters, wetlands, or floodplains. Potential effects on stormwater and ecological resources will be managed through construction commitments. The Project is consistent with coastal zone policies.							No	Refer to **Chapter 13, "Natural Resources,"** for a listing of construction commitments to avoid, minimize, or mitigate potential negative effects.
14 – Hazardous Waste		Potential for disturbance of existing contaminated or hazardous materials during construction	Sites of tolling infrastructure and tolling system equipment locations	Narrative	Soil disturbance during construction and the potential alteration, removal, or disturbance of existing roadway infrastructure and utilities that could contain asbestos-containing materials, lead-based paint, or other hazardous substances. Potential effects will be managed through construction commitments.							No	Refer to **Chapter 14, "Asbestos-Containing Materials, Lead-Based Paint, Hazardous Wastes, and Contaminated Materials,"** for a listing of construction commitments to avoid, minimize, or mitigate potential negative effects.
15 – Construction Effects		Potential disruption related to construction for installation of tolling infrastructure	Sites of tolling infrastructure and tolling system equipment locations	Narrative	Temporary disruptions to traffic and pedestrian patterns, and noise from construction activities, with a duration of less than one year overall, and approximately two weeks at any given location. These effects will be managed through construction commitments.							No	Refer to **Chapter 15, "Construction Effects,"** for a listing of construction commitments to avoid, minimize, or mitigate potential negative effects.

EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
17 – Environmental Justice	Potential disproportionately high and adverse effects on low-income drivers	The increased cost to drivers with the new CBD toll would disproportionately affect low-income drivers to the Manhattan CBD who do not have an alternative transportation mode for reaching the Manhattan CBD.	28-county study area	Narrative	The increased cost to drivers with the new CBD toll would disproportionately affect low-income drivers to the Manhattan CBD in all tolling scenarios.							Yes	**Mitigation needed.** The Project will include a tax credit for CBD tolls paid by residents of the Manhattan CBD whose New York adjusted gross income for the taxable year is less than $60,000. TBTA will coordinate with the New York State Department of Taxation and Finance (NYS DTF) to ensure availability of documentation needed for drivers eligible for the NYS tax credit. TBTA will post information related to the tax credit on the Project website, with a link to the appropriate location on the NYS DTF website to guide eligible drivers to information on claiming the credit. TBTA will eliminate the $10 refundable deposit currently required for E-ZPass customers who do not have a credit card linked to their account, and which is sometimes a barrier to access. TBTA will provide enhanced promotion of existing E-ZPass payment and plan options, including the ability for drivers to pay per trip (rather than a pre-load balance), refill their accounts with cash at participating retail locations, and discount plans already in place, about which they may not be aware. TBTA will coordinate with MTA to provide outreach and education on eligibility for existing discounted transit fare products and programs, including those for individuals 65 years of age and older, those with disabilities, and those with low incomes, about which many may not be aware. The Project Sponsors commit to establishing an Environmental Justice Community Group that would meet on a bi-annual basis, with the first meeting six months after Project implementation, to share updated data and analysis and hear about potential concerns.

EA CHAPTER / ENVIRONMENTAL CATEGORY	TOPIC	SUMMARY OF EFFECTS	LOCATION	DATA SHOWN IN TABLE	TOLLING SCENARIO							POTENTIAL ADVERSE EFFECT	MITIGATION AND ENHANCEMENTS
					A	B	C	D	E	F	G		
17 – Environmental Justice (Cont'd)	Potential disproportionately high and adverse effects on taxi and FHV drivers	A potential disproportionately high and adverse effect would occur to taxi and FHV drivers in New York City, who largely identify as minority populations, in tolling scenarios that toll their vehicles more than once a day. This would occur in unmodified Tolling Scenarios A, D, and G; for FHV drivers, it would also occur in Tolling Scenarios C and E. The adverse effect would be related to the cost of the new CBD toll and the reduction of VMT for taxis and FHVs, which would result in a decrease in revenues that could lead to losses in employment.	New York City	Narrative	Potential adverse effect would occur in Tolling Scenarios A, D, and G, which would not have caps or exemptions for taxis and FHV drivers.							Yes	**Mitigation needed for New York City taxi and/or FHV drivers if a tolling scenario is implemented with tolls of more than once per day for their vehicles.** The Project Sponsors will work with the appropriate city and state agencies so that when passengers are present, they pay the toll, rather than the driver. TBTA will work with MTA NYCT to institute an Employment Resource Coordination Program to connect drivers experiencing job insecurity with a direct pathway to licensing, training, and job placement with MTA or its affiliated vendors at no cost to the drivers. For those who may not want a commercial driver's license, TBTA will coordinate with MTA NYCT to submit a request to the Federal Transit Administration for a pilot program that will help increase eligibility of taxi and FHV drivers to use their vehicles to provide paratransit trips, and will implement this program if approved.
				Change in daily taxi/FHV VMT with passengers in the CBD relative to No Action Alternative: Scenarios included in EA	-21,498 (-6.6%)	+15,020 (+4.6%)	-11,371 (-3.5%)	-54,476 (-16.8%)	-25,621 (-7.9%)	+4,962 (+1.5%)	-27,757 (-8.6%)		
				Net change in daily taxi/FHV trips to CBD relative to scenarios included in EA: Additional analysis to assess effects of caps or exemptions	Tolls capped at 1x / Day: +2%	—	—	Tolls capped at 1x / Day: +3% Exempt: +50%	—	—	Tolls capped at 1x / Day: +2%		

OVERALL PROJECT ENHANCEMENT. The Project Sponsors commit to ongoing monitoring and reporting of potential effects on the Project, including for example, traffic entering the CBD, vehicle-miles traveled in the CBD; transit ridership from providers across the region; bus speeds within the CBD; air quality and emissions trends; parking; and Project revenue. Data will be collected in advance and after implementation of the Project. A formal report on the effects of the Project will be issued one year after implementation and then every two years. In addition, a reporting website will make data, analysis, and visualizations available in open data format to the greatest extent possible. Updates will be provided on at least a bi-annual basis as data becomes available and analysis is completed.

Similarly, while the CBD Tolling Alternative would increase the number of passengers on the regional transit network, this increase would be spread across the network and would not be large enough at any specific stations to result in changes in neighborhood character or economic conditions there due to increased traffic, parking demand, or pedestrian activity.

The CBD Tolling Alternative would result in regional economic benefits associated with travel-time savings, reduced VMT, regional air quality benefits, and the introduction of a reliable funding source for the MTA 2020–2024 Capital Program and subsequent programs.

Within and close to the Manhattan CBD, the CBD Tolling Alternative would reduce traffic congestion as well as parking demand. As described in **Subchapter 5A, "Social Conditions: Population Characteristics and Community Cohesion,"** and **Subchapter 5B, "Social Conditions: Neighborhood Character,"** this would benefit neighborhood character, but the benefits would not have a large influence on real estate and development trends or property values, either negatively or positively. The introduction of the new toll could induce a small number of residents to relocate outside the Manhattan CBD, but as stated in **Subchapter 5A**, this would not substantively change the population characteristics of the Manhattan CBD. Conversely, the CBD Tolling Alternative is unlikely to increase residential property values in the Manhattan CBD because of the reduction in congestion, given the well-established property values and development patterns of the Manhattan CBD, which are influenced by many factors (refer to **Subchapter 5A).**

Near 60th Street in Manhattan, the CBD Tolling Alternative would likely reduce the demand for off-street parking south of 60th Street and increase the demand north of 60th Street. This could jeopardize the viability of one or more parking facilities in the area south of 60th Street. If one or more parking facilities were to close, these facilities could be redeveloped or repurposed with other uses; the sites would be unlikely to remain vacant and would not create a climate of disinvestment that could lead to adverse effects on neighborhood character. It is unlikely that new off-street parking capacity would be added just north of 60th Street. The area is built-out and lacks available sites, and there has been a decades-long trend toward lower parking demand combined with high real estate values in this area (see **Subchapter 5B, "Social Conditions: Neighborhood Character"**).

In summary, the analyses conducted for this EA do not identify any adverse effects of the CBD Tolling Alternative that would occur later in time (i.e., over the long term) or farther removed in distance from the Project. Where changes in travel patterns because of the CBD Tolling Alternative could affect the operation of transportation facilities (i.e., local intersections, highway segments, and transit stations), the Project Sponsors are committed to post-implementation assessments to monitor conditions to confirm the need for Project improvements. Over the long term and for the larger region, the CBD Tolling Alternative would result in benefits for the regional study area and the Manhattan CBD.

16.2.3 Cumulative Effects

Cumulative effects occur when a project in combination with other independently planned projects could result in adverse effects. This EA considers cumulative effects of the Project and other proposed undertakings in the regional study area. The Best Practice Model (BPM) incorporates comprehensive social

and economic projections based on population and employment trends as well as planned land use and transportation projects in the region. The 2023 and 2045 No Action Alternative analysis in this EA incorporates these forecasts for the respective analysis years; therefore, these trends and projects are part of the background condition for the assessment of the CBD Tolling Alternative. Accordingly, the analyses that incorporate BPM results to project future conditions with the Project account for the potential cumulative effect of the Project and other independently planned projects in the regional study area, which include:

- Reconstruction of the Lincoln Tunnel (NJ 495) helix
- Reconstruction of the Port Authority Bus Terminal
- Metro-North Penn Station Access, including four new stations in the Bronx
- Phase 2 of the Second Avenue Subway Project
- The Hudson Tunnel Project

Where potential adverse effects have been identified, the EA recommends measures to mitigate these effects, and the cumulative effects of the CBD Tolling Alternative in combination with other planned projects would also be mitigated.

The improvements to the MTA transportation network included in the MTA 2020–2024 Capital Program and subsequent capital programs would benefit from the introduction of a reliable, sustained source of funding as a result of the CBD Tolling Alternative. Conversely, the increases in transit ridership that would result from the CBD Tolling Alternative would be served by those transit improvements. Cumulatively, the implementation of the CBD Tolling Alternative along with current and planned transit improvements would benefit the region's transportation network.

MTA and LIRR are completing the East Side Access Project in late 2022, which will provide a second terminal for LIRR trains in Manhattan beneath Madison Avenue and adjacent to Grand Central Terminal, to be called Grand Central Madison. Once complete, LIRR trains will call on both Penn Station New York and Grand Central Madison, New York, providing direct service to the east and west sides of Midtown Manhattan. The Project Sponsors prepared analysis of the cumulative effects of the completion of East Side Access and implementation of the Project, and the analysis concludes that the effects of the CBD Tolling Alternative are similar with or without completion of East Side Access. The analysis is described in Section 16.3.

As an independent action, MTA is currently transitioning its fleet to zero-emission buses, which will reduce air pollutants and improve air quality near bus depots and along bus routes. MTA is committed to prioritizing traditionally underserved communities and those impacted by poor air quality and climate change and has developed an approach that actively incorporates these priorities in the deployment phasing process of the transition. Based on feedback received during the outreach conducted for the Project and concerns raised by members of environmental justice communities TBTA coordinated with MTA NYCT, which is committed to prioritizing the Kingsbridge Depot and Gun Hill Depot, both located in and serving primarily environmental justice communities in Upper Manhattan and the Bronx, when electric buses are received in MTA's next major procurement of battery electric buses, which will begin later in

2022. This independent effort by MTA NYCT is anticipated to provide air quality benefits to the environmental justice communities.

16.2.4 Tolling Scenarios

16.2.4.1 Tolling Scenarios A, B, C, D, E, F, and G

As described in **Chapter 2, "Project Alternatives,"** this EA considers multiple tolling scenarios under the CBD Tolling Alternative. The tolling scenarios incorporate different toll schedules to explore the range of effects of various toll policies. By examining multiple tolling scenarios, the Project Sponsors aim to give the Traffic Mobility Review Board flexibility in identifying the toll schedule that it will recommend to the TBTA Board, while ensuring that this EA identifies effects and addresses mitigation to minimize or eliminate potential adverse effects associated with certain tolling scenarios. **Table 2-3** in **Chapter 2** shows the tolling scenarios examined in this EA.

All tolling scenarios would incorporate the same types and locations of tolling infrastructure and tolling system equipment. Therefore, effects related to the location of this tolling infrastructure and tolling system equipment and its construction are the same for all tolling scenarios. The categories of effects that would be the same for all tolling scenarios are parklands and recreational resources, historic and cultural resources, visual resources, natural resources, asbestos-containing materials, lead-based paint, hazardous wastes, and contaminated materials, and construction effects. The mitigation measures identified for any potential adverse effects associated with the CBD Tolling Alternative on these resources would also be the same for all tolling scenarios.

For the analyses that depend on the tolling scenario to assess the potential effects, this EA examines the scenario predicted to result in the most negative effects from implementation of the CBD Tolling Alternative. The scenario with the most negative effects was not the same scenario for every technical analysis, and therefore, the chapters of this EA identify the scenario or scenarios used for the analysis presented in that chapter.

Table 16-1 and the following summarize the differences in the effects of the tolling scenarios:

- **Regional Transportation Effects and Modeling:** All tolling scenarios would reduce traffic volumes within the Manhattan CBD, but to varying degree. Tolling Scenario D results in the greatest overall reduction in vehicle trips entering the Manhattan CBD because it has the greatest reduction in daily work trips by automobile. Tolling Scenario E results in the greatest reduction of truck trips traveling through the Manhattan CBD. Overall, the tolling scenarios result in a 7 percent to 9 percent reduction in VMT in the Manhattan CBD and less than 1 percent reduction in VMT elsewhere in the regional study area.
- **Highways and Local Intersections:** The tolling scenarios would adversely affect up to three highway segments in the midday peak hour and one highway segment in the PM peak hour. The tolling scenarios would not adversely affect highway segments in the AM peak hour. As described in **Table 16-1**, the Project Sponsors would implement travel demand management measures to mitigate these effects as necessary, based on the results of a post-implementation study.

Tolling Scenarios D and F would increase traffic by more than 50 vehicles at the greatest number of local intersections throughout the day (50 intersections) while Tolling Scenario A would affect the least number of intersections throughout the day (nine intersections). The analysis concluded that potential adverse effects would occur at four local intersections in Manhattan and the Project Sponsors have identified measures to mitigate the effects on traffic operations at local intersections. Refer to Appendix 4B.5, "Transportation: Traffic LOS: CBD Tolling Alternative with Mitigation," for more information.

- Transit: All tolling scenarios would increase ridership on commuter rail, subways, PATH, buses, ferries, and the tram. None of the tolling scenarios would adversely affect the ability of transit services to accommodate riders by resulting in an exceedance of guideline capacities at the peak load points.

  Tolling Scenarios E and F would cause an adverse effect on Stairway 01/02 at Hoboken Terminal, but other tolling scenarios would avoid the adverse effect at this location. The adverse effect may be mitigated with additional wayfinding

  In contrasting the projected increases in passenger volumes among the various tolling scenarios, it can be expected that Tolling Scenarios D and F would yield the same or comparable adverse effects that could be addressed with the same Project improvements identified for the representative tolling scenario (Tolling Scenario E). While these adverse effects and need for Project improvements may also materialize for Tolling Scenarios A, B, C, and G, the severity of the adverse effects and extent of Project improvements needed is likely to be relatively less than the other three tolling scenarios (D, E, and F) and varies by station element as a function of projected net passenger increase at the station. Nevertheless, so that the Project does not create an adverse effect at any of the four NYCT station elements described above, monitoring at all four NYCT station elements will be undertaken regardless of the tolling scenario selected. Monitoring of actual conditions before and after program implementation would determine if the potential Project improvement measures identified or variations thereof are warranted for implementation.

- Parking: While there would be increased demand for parking at commuter rail stations and some locations outside the Manhattan CBD, none of the tolling scenarios would increase demand enough to result in adverse parking shortfalls.

- Pedestrians and Bicyclists: Tolling Scenario E would result in the greatest potential increase in new pedestrian trips near the Herald Square/Penn Station complex and would result in adverse effects on three pedestrian elements (one sidewalk and two crosswalks). These impacts can be mitigated. The other tolling scenarios would result in the same or lesser effects and, based on the results of the analysis for Tolling Scenario E, any adverse effects can be mitigated.

- Population and Community Cohesion: None of the tolling scenarios would result in adverse effects on populations and community cohesion. Because the tolling scenarios would increase the cost of trips to the Manhattan CBD, tolling scenarios would affect people that drive to community facilities and services, elderly people that drive a private vehicle or use a taxi/FHV, and disabled people that drive a private vehicle or take a taxi/FHV. Because the tolls differ among tolling scenarios, the degree of these

effects vary based on the time of day and the type of vehicle used for the trip (private automobile or taxi/FHV).

- Neighborhood Character: All tolling scenarios would result in minimal changes in neighborhood character within the Manhattan CBD, near the 60th Street Manhattan CBD boundary study area, and within the regional study area.
- Public Policy: All tolling scenarios would be generally consistent with regional transportation plans and other relevant public policies, including those that aim to reduce congestion.
- Economic Considerations: Most economic effects of the CBD Tolling Alternative would not vary for the tolling scenarios except for effects related to the toll costs. The tolling scenarios and additional analyses assess a variety of tolling policies for taxis and FHVs ranging from charging a toll each time a taxi or FHV enters or remains in the Manhattan CBD to a complete exemption from paying the Manhattan CBD toll. Tolling scenarios that cap or exempt tolls for certain classes of vehicles result in lower costs for those drivers than other tolling scenarios. In particular, Tolling Scenarios B and E would result in lower trip costs for taxis and FHVs, and therefore, a lower reduction in trips by taxis and FHVs than other tolling scenarios. However, the decreased cost for taxis and FHVs would be offset by increased costs for other drivers. (Refer to Section 16.2.4.3, for a discussion of modified scenarios with exemptions or caps for taxis and FHVs.)
- Air Quality: The tolling scenarios would change the volume of truck trips on local highways at varying locations and of varying degree as compared to the No Action Alternative. The greatest increases in truck trips would occur with Tolling Scenario E at the RFK Bridge. Tolling Scenario B would result in the greatest increase in truck trips on I-95 in Bergen County, New Jersey and on the Cross Bronx Expressway at the McCombs Dam Bridge. For all tolling scenarios, the changes in traffic volumes, including changes in truck trips, would not result in regional or localized exceedances of National Ambient Air Quality Standards, and there would be no adverse effects on air quality from implementation of the CBD Tolling Alternative.
- Energy: Because all tolling scenarios would reduce VMT, all tolling scenarios would result in a reduction in energy demand.
- Noise: For all tolling scenarios, the predicted increase in traffic at locations in the regional study area would not result in a barely perceptible (between 2 dBA and 3 dBA) or lesser change in noise.
- Environmental Justice: All tolling scenarios would increase costs, ranging from $9 to $23 per trip for peak automobile E-ZPass customers, for low-income drivers who live outside the Manhattan CBD and drive to the Manhattan CBD. The taxi and FHV industries have a predominance of drivers that identify as a minority population. Mitigation is proposed for New York City taxi and/or FHV drivers for tolling scenarios with tolls of more than once per day for their vehicles.

As previously noted, the Traffic Mobility Review Board would recommend the toll schedule to the TBTA Board. The Project Sponsors would provide information from this EA, including the public review of this EA, to the Traffic Mobility Review Board to inform their decision.

16.2.4.2 Tolling Scenario B with 30 Percent Higher Tolls

Though Tolling Scenario B would not generate sufficient revenue to support the required $15 billion for the MTA Capital Program, it was retained in this analysis because public comments requested consideration of a low toll, combined with certain exemptions and discounts. To meet the revenue goals of the Project screening criteria, an additional variation of the original Tolling Scenario B was modeled. In this variation, toll rates were increased 30 percent from the original Tolling Scenario B for all vehicle classes across all time periods. All other tolling policies in this variation are consistent with the original Tolling Scenario B.

This variation of Tolling Scenario B would meet all the Project objectives. This variation of Tolling Scenario B would reduce VMT in the Manhattan CBD by 8.6 percent compared to the No Action Alternative. This variation would also reduce traffic entering the Manhattan CBD by 17.5 percent. This variation would have minor changes to transit ridership where transit mode share to the Manhattan CBD would grow from 78.2 percent to 79.5 percent of the total journeys accessing the Manhattan CBD. This is a 0.3 percent greater transit mode share than the original Tolling Scenario B, and less than the transit mode share increases in Tolling Scenarios D, E, and F.

For this variation of Tolling Scenario B, truck trips entering the Manhattan CBD would decline 13.8 percent. Similar to the original Tolling Scenario B, taxi and FHV person-journeys into the Manhattan CBD would remain nearly unchanged from the No Action Alternative in this variation of Tolling Scenario B.

16.2.4.3 Additional Analyses of Caps and Exemptions for Taxis and FHVs

In response to concerns expressed during the public outreach process with respect to the anticipated effects of the Project on taxi and FHV drivers, additional analyses were conducted. Specifically, analyses were done to assess the revenue and traffic effects of implementing Tolling Scenarios A and D with a cap of once per day for taxis and FHVs (like Tolling Scenarios B and F), implementing Tolling Scenario D with both taxis and FHVs exempt from the toll, and implementing Tolling Scenario G with a cap of once per day for taxis and FHVs. The effects of the modifications would be as follows:

- Tolling Scenario A with Taxis/FHVs Capped at Once Per Day – The estimated value of implementing a cap on taxis and FHVs so that these vehicles would be charged once each day is $100 million in forgone net annual revenue under the tolling rates used in Tolling Scenario A. The cap would result in about 22 percent more taxis and FHVs entering the Manhattan CBD as compared to the original tolling scenario. To still meet the congestion and revenue objectives of the Project, tolls would need to be raised 10 percent to 15 percent on all vehicle classes in Tolling Scenario A to offset forgone taxi and FHV revenues. This would further reduce personal vehicles and trucks at the Manhattan CBD boundary by 2 percent to 3 percent compared to Tolling Scenario A. However, the decline in personal vehicles and trucks would be mostly offset by the increase in taxis and FHVs entering the Manhattan CBD. As a result, the volumes of all vehicles entering the Manhattan CBD would not change overall.
- Tolling Scenario D with Taxis/FHVs Capped at Once Per Day – The estimated value of implementing a cap on taxis and FHVs so that these vehicles would be charged once each day is $150 million to $180 million in forgone net annual revenue with the tolling rates in original Tolling Scenario D. The cap would result in about 25 percent more taxis and FHVs entering the Manhattan CBD compared to the

original Tolling Scenario D. Since original Tolling Scenario D (with uncapped tolling of taxis and FHVs) would have annual net revenue higher than the Project objectives by about $300 million, this modified Tolling Scenario D would continue to meet the revenue objective without needing to raise toll rates from those in original Tolling Scenario D.

- Tolling Scenario D with Taxi/FHV Tolling Exemption – The estimated value of implementing an exemption for taxis and FHVs is $200 million to $250 million in forgone net annual revenue with the tolling rates in original Tolling Scenario D. Exempting taxis and FHVs from the Manhattan CBD toll would increase the number of additional taxis and FHVs entering the Manhattan CBD by up to 50 percent compared to original Tolling Scenario D. Since original Tolling Scenario D (with no exemption for taxis and FHVs) would have annual net revenue higher than the Project objectives by about $300 million, an exemption for taxis and FHVs could be accommodated without needing to raise toll rates presented in Tolling Scenario D.
- Tolling Scenario G with Taxis/FHVs Capped at Once Per Day – A variation of Tolling Scenario G was run to test the impact of adding a one-charge-per-day cap to taxis and FHVs. Adding this cap required increasing tolls on other vehicles by about 10 percent to meet the Project's revenue goal. This toll increase was low enough so as not to notably affect the results from Tolling Scenario G, and importantly, still addresses the concerns regarding commercial truck traffic in the South Bronx, though the number of trucks on the Cross Bronx Expressway at Macombs Road, would shift from 50 to 251, which is still lower than every other tolling scenario except Tolling Scenario C.

16.3 SENSITIVITY ANALYSIS OF EAST SIDE ACCESS PROJECT

The environmental analysis of the Project, including the development of a travel demand model, commenced in June 2019, shortly after the New York State legislature enacted the legislation authoring the Project. At that time, the Project was anticipated to commence operations in early 2021 before the East Side Access Project, a new LIRR connection to Grand Central Terminal, was anticipated to open in late 2022.

The Project uses the BPM for the regional travel demand forecasting. The BPM was refined and updated in 2019 and 2020 with the understanding, as explained above, that East Side Access would start operations after the Project's anticipated commencement. Therefore, East Side Access was not included in the BPM's 2021 No Action Alternative or CBD Tolling Alternative forecasts, but it was included in the 2045 BPM. This allowed the forecasting to capture the opening year of Project operation without East Side Access, and the 2045 forecast to include East Side Access. This approach allowed the forecast to show results both without and with East Side Access, and thus to show the ramifications of both then-anticipated scenarios.

The environmental review for the Project was delayed for a variety of reasons, including the robust public outreach program undertaken by the Project Sponsors and changes in transportation conditions. Consequently, the Project's proposed commencement date was pushed back from 2021 to 2023, while East Side Access was accelerated and is now expected to start operations in 2022. To make sure that the EA fully assesses predicted conditions in 2023, given the certainty of East Side Access completion by that

date, the Project Sponsors have prepared a supplemental analysis to incorporate the East Side Access into the 2023 analysis condition.

For most environmental topics, the incorporation of the East Side Access Project into the 2023 background condition would not result in substantive changes in the potential effects of the CBD Tolling Alternative. However, the changes in travel patterns associated with the East Side Access will increase subway ridership at certain stations and will increase pedestrian and bicycle activity in the vicinity of Grand Central Terminal. The following is an assessment of subway operations and pedestrian circulation and safety for the CBD Tolling Alternative with the East Side Access Project as part of its background condition.

16.3.1.1 Subways

In consideration of the conclusions presented in **Subchapter 4C, "Transportation: Transit,"** there was a comparison of the projected change in ridership for the 2023 build conditions with and without East Side Access to determine if the anticipated differences in riders would change any findings. This increment comparison categorized the analyzed stations into the following: 1) decrease or no increase in incremental subway trips with East Side Access; 2) small increase in incremental subway trips with East Side Access; and 3) notable increase in incremental subway trips with East Side Access.

Category 1: Decrease or No Increase in Incremental Subway Trips with East Side Access

For stations under the without East Side Access condition where no adverse effects were identified, there would likewise be no adverse effects anticipated with East Side Access. These stations would include the following locations:

- Grand Central-42 Street
- Lexington Avenue/53 Street and 51 Street
- Broadway-Lafayette Street and Bleecker Street
- Fulton Street (Manhattan)
- 168 Street-Washington Heights
- 59 Street-Columbus Circle
- Lexington Avenue/59 Street

Conditions with East Side Access would not change the identified effects or recommended improvements identified in **Subchapter 4C, "Transportation: Transit,"** for the following locations:

- 14 Street¬-Union Square
- Times Square-42 Street/42 Street-Port Authority Bus Terminal

Category 2: Small Increase in Incremental Subway Trips with East Side Access

The following small increases in incremental subway trips with East Side Access were identified for two of the analyzed stations:

- Canal Street (station at Canal and Broadway that serves the No. 6 and J, N, Q, R, and Z subway lines)
- Broadway Junction

The associated increase in riders in the AM peak hour with East Side Access would be 230 to 236 riders at the Canal Street station and 245 to 248 riders at the Broadway Junction station. Both stations have multiple entrances and exits and several stairways that lead between the street, the mezzanine, and the platform levels. Thus, these small differences would be dispersed across various station elements such that the increase in volume would not result in adverse effects.

Category 3: Notable Increase in Incremental Subway Trips with East Side Access

Five of the stations analyzed in **Subchapter 4C, "Transportation: Transit,"** would experience a notable increase in incremental subway trips with East Side Access over and above the increments identified without East Side Access. For the 34 Street-Herald Square station, which is expansive and adjacent to Penn Station New York and two other subway stations, the projected AM peak-hour incremental trips would increase from 319 without East Side Access to 380 with East Side Access. These trips would traverse an expansive network of street-level entrances and underground passageways extending from West 32nd to West 35th Streets across Broadway and Sixth Avenue, and onto multiple mezzanine areas and subway platforms. Accordingly, these incremental ridership increases (for both with or without East Side Access) would result in imperceptible changes to operations at these station facilities and are not expected to result in adverse effects.

For the four stations that were analyzed in detail in **Subchapter 4C, "Transportation: Transit,"** the projected increases for the AM peak hour as a result of East Side Access would be 342 to 405 for the 42 St-Bryant Park-5 Avenue station, 313 to 340 for the Atlantic Avenue-Barclays Center station, 268 to 305 for the 14 Street (Sixth Avenue/Seventh Avenue) station, and 332 to 386 for the Court Square station. The application of the higher increments (with East Side Access) to the **Subchapter 4C** analyses results identified no changes in the previously made adverse effect findings. Specifically, there would continue to be no adverse effects at the 42 Street-Bryant Park-5 Avenue, Atlantic Avenue-Barclays Center, and 14th Street (Sixth Avenue/Seventh Avenue) stations. For the Court Square station, the higher "with East Side Access" trip increments would result in the same adverse effect described for the without East Side Access condition and the same improvements identified (i.e., constructing a new stair on the Manhattan-bound No. 7 train platform) would similarly address the adverse effect under the with East Side Access condition.

In addition to the above, the Canal Street station (at Sixth Avenue, which serves the A, C, and E routes) would experience an increase in projected ridership under the East Side Access condition that triggered the need for further analyses. Following the analysis procedures and methodologies detailed in **Subchapter 4C "Transportation: Transit,"** additional data were collected at this station and calibrated against volume data provided by NYCT and projected volumes presented in the October 2021 SoHo/NoHo Neighborhood Plan Final Environmental Impact Statement (CEQR Technical Manual, No.: 21DCP059M) to establish a representative baseline for analysis. In coordination with NYCT, projected trip increments were assigned to the station's various control areas and circulation elements and analyzed. This assessment concluded that the incremental increase in trips at this station under the East Side Access condition would not result in any potential adverse effects. **Appendix 4C.7, "Transportation: Level of Service Tables – New York City."** presents the analysis details.

16.3.1.2 Parking

Results of the transportation modeling conducted for the Project with East Side Access using the BPM show that all tolling scenarios evaluated would result in a decrease in the number of vehicle trips entering and leaving the Manhattan CBD and a corresponding increase in the number of trips made to the Manhattan CBD using public transit. Consequently, there would be a decrease in demand for parking within the Manhattan CBD and an increase in demand for parking at the region's transit stations and commuter park-and-ride locations. Based on the BPM results with East Side Access, the increase in commuters at individual stations or park-and-ride facilities outside the Manhattan CBD would be distributed throughout the region, and no locations would have increases in vehicle trips of 50 or more vehicles in the peak hour for any tolling scenario. Moreover, the new vehicle trips at stations would include some customers who would be dropped off without parking and therefore would not add to the demand for parking. Because other modes of public transit in the regional study area (e.g., subways, light rail) would incur even fewer additional vehicle trips as a result of the Project with East Side Access, those locations would also not exceed 50 more vehicles in the peak hour for any tolling scenario. Consequently, using the tiered methodology summarized above and described in greater detail in **Subchapter 4D, "Transportation: Parking,"** no adverse effect would occur to parking conditions at locations in the regional study area.

The number of commuters and visitors to the Manhattan CBD who would use transit for their journey would increase in all tolling scenarios. Although the BPM predicts it would be at far lower numbers than commuter rail and park-and-ride facilities described in the regional study area, some of these new transit users would drive to transit stations in New York City outside the Manhattan CBD to access transit to complete their journey. Consequently, the CBD Tolling Alternative with East Side Access would increase the number of drivers who would seek parking near transit facilities in New York City outside the Manhattan CBD. Based on the BPM results with East Side Access, the increase in the number of travelers at individual transit facilities in New York City outside the Manhattan CBD would be distributed across the city, and no transit destinations would have increases of 50 or more vehicles in the peak hour. Moreover, the new vehicle trips at transit facilities would include some customers who would be dropped off without parking and therefore would not add to the demand for parking. Consequently, using the tiered methodology summarized above and described in more detail in **Subchapter 4D, "Transportation: Parking,"** no adverse effect would occur to parking conditions at locations in New York City outside the Manhattan CBD.

16.3.1.3 Pedestrians and Bicyclists

Analysis prepared for the CBD Tolling Alternative without East Side Access in the background condition identified 16 transit stations where there would be more than 200 new peak-hour pedestrian trips (refer to **Figure 4E-1** and **Table 4E-1**). When including the East Side Access Project in the background condition, fifteen of these stations would receive more than 200 new peak-hour pedestrian trips in peak hours, but one station—Secaucus NJ TRANSIT station—would not. The CBD Tolling Alternative with East Side Access would not result in any new or additional transit stations that would exceed more than 200 new peak-hour pedestrian trips as compared to the analysis presented in **Subchapter 4E, "Transportation: Pedestrians and Bicyclists." Figure 4E-1 and Table 4E-1** shows the pedestrian analysis study area with East Side Access.

Three areas (**Table 4E-1** and **Figure 4E-1**) would have more than 200 new pedestrians in the peak hour at an individual pedestrian element (i.e., crosswalk, sidewalk, or corner reservoir) as follows:

- Herald Square/Penn Station New York
- Grand Central Terminal
- World Trade Center/Fulton Street

Based on revised analysis that incorporates the East Side Access Project into the background condition, future pedestrian conditions would not change at the World Trade Center/Fulton Street station area as compared to analysis presented in **Subchapter 4E, "Transportation: Pedestrians and Bicyclists,"** and there would be no adverse effects on pedestrian circulation at this location. The detailed analysis results for this station location are presented in **Appendix 4E.5, "Pedestrian Analysis at Commuter Rail Stations in the Regional Study Area including the East Side Access Project."**

For the Herald Square/Penn Station New York and Grand Central Terminal areas, **Table 16-2** presents the assessment of pedestrian facilities that would accommodate an increase of 200 or more peak-hour pedestrian trips as a result of the CBD Tolling Alternative with East Side Access in the background condition.

Table 16-2. CBD Tolling Alternative Pedestrian Analysis Results with East Side Access

TRANSIT STATION AREA	PEAK HOUR	PEDESTRIAN ELEMENT	NUMBER OF ANALYSIS LOCATIONS	NUMBER OF LOCATIONS THAT OPERATE AT			
				LOS C OR BETTER	LOS D	LOS E	LOS F
Herald Square/Penn Station New York	AM	Sidewalks	4	3	1	0	0
		Corner Reservoirs	4	4	0	0	0
		Crosswalks	2	1	0	1	0
	PM	Sidewalks	4	4	0	0	0
		Corner Reservoirs	4	4	0	0	0
		Crosswalks	2	1	0	0	1
Grand Central Terminal	AM	Sidewalks	1	0	0	1	0
	PM	Sidewalks	1	0	0	1	0

Because the East Side Access Project would divert some pedestrians from Penn Station New York to the new terminal under Madison Avenue, there would be changes in pedestrian volumes near Penn Station New York. At some locations, volumes would be lower than and the potential effects would be lesser than for the CBD Tolling Alternative without the East Side Access Project. With implementation of the CBD Tolling Alternative, all analysis locations near Herald Square/Penn Station New York would operate at marginally acceptable Level of Service (LOS) D or better except for the following:

- The north crosswalk of Sixth Avenue and West 34th Street would operate at LOS E in the AM peak hour and LOS F in the PM peak hour.

Although there would be no change in the number of congested LOS E or LOS F pedestrian elements with or without the Project, there would be slight deteriorations in square feet per pedestrian (SFP) values.

Based on the *CEQR Technical Manual* adverse effects criteria presented in **Subchapter 4E, "Transportation: Pedestrians and Bicycles,"** the CBD Tolling Alternative would result in potential adverse pedestrian effects near Herald Square/Penn Station New York, as follows:

- The Sixth Avenue and West 34th Street north crosswalk would operate at LOS E with a decrease of 1.8 SFP in the AM peak hour and at LOS F with a decrease of 0.6 SFP in the PM peak hour compared to the No Action Alternative.

The potential adverse effects at this location can be resolved through measures that would be implemented as part of the Project. This measure would not affect existing bicycle infrastructure in the street. Increased pedestrian space on the crosswalk can be achieved via physical widening. **Table 16-3** shows the recommended measure and predicted conditions with the implementation. This measure would be developed in coordination with NYCDOT prior to its implementation. **Table 16-3** also notes the relative ease of implementation of the recommended measure.

Table 16-3. CBD Tolling Alternative with Improvement Measures with East Side Access—Pedestrian Level of Service Analysis—Herald Square/Penn Station New York

LOCATION	PROJECT IMPROVEMENT MEASURES	NO ACTION		CBD TOLLING		CBD TOLLING (IMPROVED)	
		SFP	LOS	SFP	LOS	SFP	LOS
Weekday AM Peak Hour							
Sixth Avenue and West 34th Street: north crosswalk	Widen the crosswalk by 1.5 feet (easy to implement). Crosswalk widening of 2.0 feet needed without East Side Access.	12.8	E	11.0	E	12.0	E
Weekday PM Peak Hour							
Sixth Avenue and West 34th Street: north crosswalk	Widen the crosswalk by 1.5 feet (easy to implement). Crosswalk widening of 2.0 feet needed without East Side Access.	6.8	F	6.2	F	6.8	F

Note: SFP = square feet per pedestrian.

The adverse effects and Project improvement measures presented in **Subchapter 4E, "Transportation: Pedestrians and Bicycles"** on the west sidewalk of Eighth Avenue between 35th and West 34th Streets and the north crosswalk of Seventh Avenue and West 32nd Street without East Side Access would not occur with East Side Access.

With implementation of the CBD Tolling Alternative, the west sidewalk of Lexington Avenue between East 44th and East 45th Streets during the AM and PM peak hours would continue to operate at LOS E, with decreases of 1.0 SFP in both peak hours compared to the No Action Alternative. Based on the expected LOS and the adverse effects criteria, the CBD Tolling Alternative would not result in any adverse pedestrian effects at this or any other pedestrian elements near Grand Central Terminal.

There would be imperceptible volume differences (fewer than 20 pedestrians per peak hour) at the World Trade Center/Fulton Street station area with East Side Access. Therefore, the same conclusion from **Subchapter 4E, "Transportation: Pedestrians and Bicycles,"** can be drawn, which is that bicycle trip

increases with the Project would be negligible compared to the magnitude of existing bicycle use adjacent to that transit station complex. A comparison of pedestrian trips at the two other transit hubs with and without East Side Access is presented. With up to 1,695 and 1,407 pedestrian trips, 34 and 28 new hourly bicycle trips would be generated by the Project at Herald Square/Penn Station New York and Grand Central Terminal with East Side Access, assuming a 2 percent bike share, respectively. This is in comparison to 2,051 and 1,205 new pedestrian trips predicted in the peak hours, where 41 and 24 new hourly bicycle trips would be generated by the Project at Herald Square/Penn Station New York and Grand Central Terminal, without East Side Access, assuming a 2 percent bike share, respectively. With or without East Side Access, because there would be an average of fewer than one new bicycle trip per minute, these increases would be negligible compared to the magnitude of existing bicycle use adjacent to the two transit station complexes.

Outside the Manhattan CBD under the CBD Tolling Alternative with East Side Access, the shift to bicycle use because of the CBD Tolling Alternative would not be substantial, based on the predicted numbers of commuters who would shift from automobiles to transit for their daily trips (as well as the inefficiencies of switching from auto to bicycle as distances increase). Although the BPM cannot predict such activity, a small proportion of commuters would shift from automobiles to bicycles for their daily trips, depending on distance, available bicycle facilities, comfort, and other factors. Therefore, the CBD Tolling Alternative would not result in any adverse effects on bicycle operations.

The CBD Tolling Alternative with East Side Access would not result in substantial increases in pedestrian volumes or exacerbate safety concerns at the three identified high-crash locations, which experience high pedestrian volumes throughout the day. The CBD Tolling Alternative with East Side Access would also not result in substantial increases in pedestrian volumes or exacerbate safety concerns at other locations in the Manhattan CBD that do not already experience high pedestrian volumes throughout the day. The CBD Tolling Alternative with East Side Access would not result in substantially modified geometric or operational traffic, pedestrian, or bicycle conditions, with or without recommended improvement measures, which would therefore not exacerbate safety concerns. Also, because of fewer vehicular trips entering and exiting the Manhattan CBD, the CBD Tolling Alternative with East Side Access could result in reduced traffic volumes at these locations. This would help to reduce vehicle-vehicle and vehicle-pedestrian conflicts, leading to an overall benefit to safety. Therefore, the CBD Tolling Alternative with East Side Access would not result in any adverse effects on vehicular, pedestrian, and bicycle safety.