Appendix B.4 Transportation

B.4.1 INTRODUCTION

This appendix presents the analysis of the potential effects of the No Action Alternative and Preferred Alternative on transportation conditions during the permanent operations of the No Action and Preferred Project Alternatives. Effects on transportation conditions during construction can be found in **Appendix B.7, "Construction."**

The Port Authority of New York & New Jersey (PANYNJ) proposes to replace the existing Port Authority Bus Terminal (PABT) in Manhattan, New York with a new Main Terminal, Storage and Staging Facility (SSF) (also referred to as the West Adjunct in the Final National Environmental Policy Act (NEPA) Scoping Information Packet), and associated ramp infrastructure (collectively, the "Replacement Facility"). To accommodate the new Main Terminal, a portion of West 41st Street would be permanently closed between Eighth and Ninth Avenues. Two decks over below-grade portions of Dyer Avenue and the Lincoln Tunnel Expressway would be constructed to facilitate construction-period bus operations. These "Dyer Deck-Overs" would be converted to publicly accessible open space following completion of the Replacement Facility. The Replacement Facility would be accompanied by private development necessary to fund its construction. The Replacement Facility, conversion of the Dyer Deck-Overs to publicly accessible open space, and private development are collectively referred to as the Bus Terminal Replacement Project (the "Proposed Project").[1]

This appendix summarizes the analysis and comparison of the No Action Alternative and Proposed Project regarding as listed in **Table B.4-1**.

Table B.4-1. Technical Areas Summarized in Appendix B.4 and Related Appendices

Technical Area	Appendix	Description
Bus Services	B.4.1	Describes commuter and intercity bus operations, facility capacities and ability to accommodate forecast bus demand.
Vehicular Traffic	B.4.2	Provides analysis and details potential effects on the traffic network and mobility
Transit	App. 9C of the DEIS	Details potential changes to ridership on subways and buses, and circulation conditions on stairs, escalators and through fare arrays at subway stations
Pedestrian	B.4.3	Describes potential changes to pedestrian conditions and circulation on sidewalks, street corners and crosswalks in the study area
Parking	B.4.4	Evaluates potential changes to the availability of parking
Travel Demand Factors Technical Memorandum (TDF)	App. 9F of the DEIS	Detailed summary on the methodology used for Traffic, Transit, and Pedestrian analysis, including data collection, trip generation, and definition of study areas

[1] For the purposes of this analysis the "Preferred Alternative" and the "Proposed Project" are used interchangeably.

B.4.2 PROJECT DESCRIPTION

The Proposed Project would be located within Manhattan Community District 4 and is generally bounded by West 42nd Street to the north, West 37th Street to the south, Eighth Avenue to the east, and Eleventh Avenue to the west.

The proposed retail program, with street facing retail and interior terminal retail[2],would be developed as part of the Replacement Facility. The private development associated with the Proposed Project will consist of two commercial office towers totaling five million square feet.

Chapter 1, "Introduction" provides a detailed description of the Proposed Project, which is summarized in **Table B.4-2** and depicted in **Figure B.4-1**.

Table B.4-2. Square Footage Summaries of Existing PABT and Proposed Project

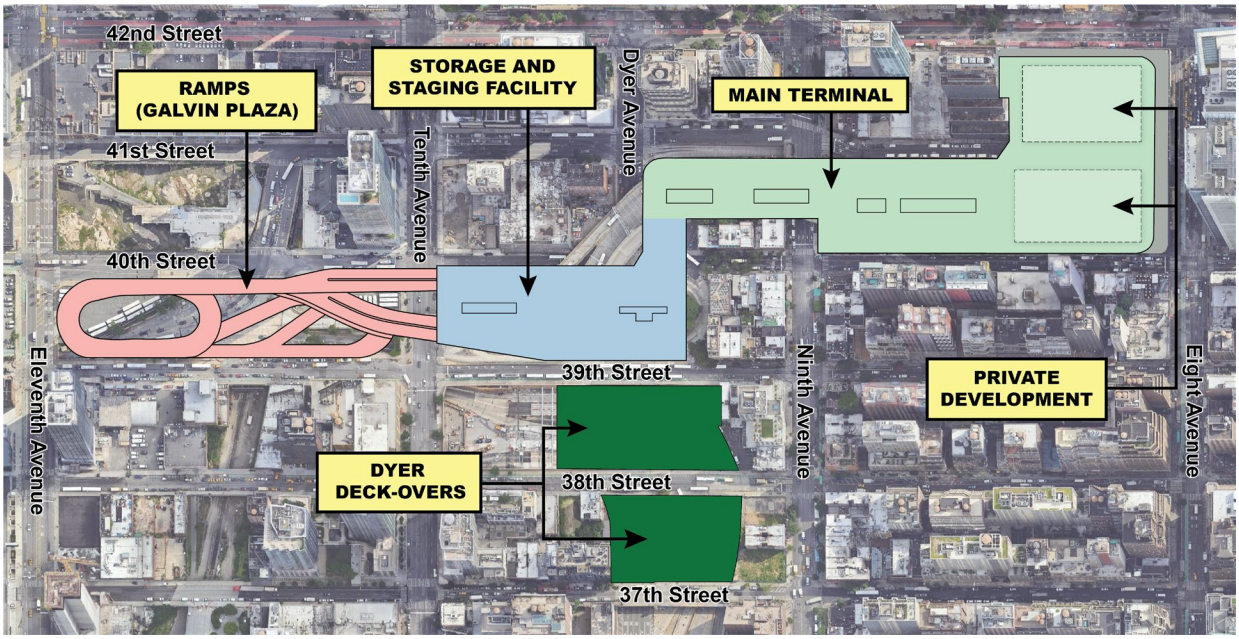
	Terminal (sf)	Commercial (sf)	Retail (sf)			Total SF
			Street-Facing	Interior	Retail Total	
Existing PABT	1,212,030	-			158,168	1,370,198
New Main Terminal	2,458,250	-	55,665	13,700	69,365	2,527,615
SSF	893,449	-	65,700	-	65,700	959,149
Ramp Structure	-	-	20,279	-	20,279	20,279
Tower 1	-	3,000,000	-	-	-	3,000,000
Tower 2	-	2,000,000	-	-	-	2,000,000
Total	3,351,699	5,000,000	141,644	13,700	155,344	8,507,043

As described in **Chapter 1, "Introduction,"** following publication of the Draft EIS, modifications were made to the retail programming within the Replacement Facility.[3] The density-based analyses (*i.e.*, those analyses that utilize square footage as a basis for computation, including trip generation) presented in the Draft EIS, generally represent a conservative development condition; as a result, the refinements in programming would not be anticipated to result in new or increased potential impacts or mitigations related to those potential impacts. Therefore, this analysis was not modified to reflect the change in programming.

[2] Street-facing retail is located within the Replacement Facility but is visible and directly accessible from the street while interior retail is only-visible and accessible from within the Replacement Facility. Retail which may be accessible directly from the street or from within the Replacement Facility is considered street-facing.

[3] Following publication of the DEIS, modifications were made to the programming of the Replacement Facility. The Replacement Facility would contain approximately 3,053,499 gross square feet (gsf) of transportation use area, approximately 109,283 gsf of street-facing retail, and approximately 48,700 gsf of interior retail area. The area of the private development remains unchanged at up to approximately 5.0 million gsf of commercial office use.

Figure B.4-1. Bus Terminal Replacement Project



Source: WSP (2024)

B.4.3 METHODOLOGY

This analysis was prepared in accordance with NEPA and as applicable, in accordance with the methodologies established under the New York State Environmental Quality Review Act and New York City's *City Environmental Quality Review Technical Manual, 2020 Edition* (the CEQR Technical Manual) to identify the potential for impacts. A full summary of the methodology used for traffic, transit, and pedestrian analysis, including data collection, trip generation, and definition of study areas can be found in Appendix 9F, "Travel Demand Factors (TDF) Technical Memorandum" of the DEIS **(Appendix A).**

Assessments and conclusions in **Appendix B.4.1, "Bus Services,"** specific to bus operations required additional transportation modeling and forecasting, beyond those established by CEQR. This analysis relied on operational modeling based on available information from the PANYNJ, NJ TRANSIT and private bus carriers.

B.4.3.1 Regulatory Context

The existing PABT (including the terminal and connected ramp structures) are located on property owned by the PANYNJ. The Lincoln Tunnel Expressway and the Lincoln Tunnel are operated by the PANYNJ and located on PANYNJ property. Certain roadway and pedestrian conditions that may be affected by the Proposed Project are within the jurisdiction of NYC DOT. Transit services that may be affected are under the jurisdiction of the Metropolitan Transportation Authority (MTA) or New York City Transit (NYCT).

B.4.3.2 Analysis Methodology

B.4.3.2.1 Analysis Years

For the purpose of environmental review, the EIS assesses potential impacts of the No Action Alternative and the Proposed Project in the following years, based on several future conditions of the Proposed Project:

- **2028:** When construction of the Dyer Deck-Overs, SSF and Ramps is expected to be completed.

  During interim operations (2028-2032) the existing PABT would be demolished, and the new Main Terminal would be constructed. The SSF would be operated as an interim bus terminal and the Dyer Deck-Overs would be used for temporary bus operations and bus staging. The assessment of the potential effects on transportation during the construction period are covered in **Appendix B.7**.
- **2032:** When construction of the Main Terminal is expected to be completed and the SSF has been converted to its long-term use as a bus storage and staging facility; and retail associated with the Replacement Facility is completed and assumed fully occupied and operational. The private development would not have been constructed. Under the No Action Alternative, the existing PABT is assumed to be undergoing major structural repairs in 2028 and 2032.
- **2040:** When full demand for bus ridership is projected to occur and private development is anticipated to be complete and fully occupied.

  Major repairs of the existing PABT under the No Action Alternative are assumed to be completed by 2040.

B.4.3.2.2 Data Collection

Bus Services

Demand for bus service, and the future volumes of buses operating in Midtown Manhattan (applicable for both the No Action Alternative and the Proposed Project) were developed by the PANYNJ in the Trans-Hudson Commuting Capacity Study. The study developed a trans-Hudson travel demand forecast between 2013 to 2015 to support planning efforts at the PABT, the Port Authority Trans-Hudson (PATH) system, and other PANYNJ facilities. This forecast was updated in 2022 using new socio-economic and demographic data, as detailed in Appendix 1A, "Purpose and Need" of the DEIS **(Appendix A)**.

While the 2022 forecast uses the latest demographics available, it does not account for the changes created by the COVID-19 pandemic of 2020. While opinions vary about the long-term effect of the pandemic on travel and commuting patterns, COVID-19 may have accelerated trends already underway in the workplace and enabled more employees to work remotely, at least some of the time. Based on surveys of office employers and data on Manhattan's occupational mix, the "new normal" for commuting to Manhattan workplaces is anticipated to

be roughly 11 – 16 percent lower than it was before the pandemic.[4] While this is a meaningful reduction in commuting activity, it does not alter the need for the Replacement Facility with significant additional capacity to absorb growth and accommodate peak activity days. Should post-pandemic remote work practices continue to depress ridership, then it may take several more years beyond 2040 to realize future ridership levels forecasted.

Traffic

To determine existing traffic volumes, data was collected through a variety of sources, and updated on multiple occasions.

- Automated Traffic Recorder (ATR) counts were collected at 25 roadway locations in May 2018 and ten ATR counts were collected on ramps and entrances/exits to and from the PABT area in June 2018. These counts were supplemented by ATR data from the Western Rail Yards EIS[5] and NYC DOT Traffic Information Management System (TIMS) data as available. Turning movement counts (TMC) were conducted from 6 a.m. – 7 p.m. from May 8 – 10, 2018 at 65 locations. The TMC data collection also categorized vehicles by vehicle type, including motorcycles, cars, light goods vehicles,[6] buses, single-unit trucks and articulated buses.
- 10 additional manual turning movement counts were conducted in November 2021 during the 8 - 9 a.m. and 5 - 6 p.m. peak hours (and two intersections previously counted in 2018 were recounted to ensure volume compatibility between the two time frames).

  Due to proposed Street Improvement Projects (SIP) planned by NYC DOT, the number of lanes will decrease on several adjacent avenues between the existing year and the future years of analysis. Additional traffic TMC and ATR counts were collected in May 2023 at locations where these improvements had already been installed. These counts were used to verify the change in traffic volumes on streets where travel lanes had already been reduced and to more accurately forecast future traffic volumes on streets where the changes had not yet been implemented. The process used to update the analysis to reflect these changes is described in the Updated Volume and Flow Map Methodology memo in **Appendix B.4.5.**

Transit

Passenger volumes on individual station elements were collected from counts conducted in 2018 and passenger volumes provided by NYCT for the MTA's Central Business District Tolling Project (CBDTP) in 2019. Fare control volumes were also developed in consultation with NYCT.

[4] Based on review of American Community Survey 2015-2019 for the 18-county core region; "How Many Jobs Can be Done at Home?" Jonathan I. Dingel and Brent Neiman (June 2020), (https://bfi.uchicago.edu/wp-content/uploads/BFI_White-Paper_Dingel_Neiman_3.2020.pdf); Partnership for New York City, "Survey of Employers," February 2023 (https://pfnyc.org/wp-content/uploads/2023/02/2023-02-RTO-Survey.pdf)

[5] Western Rail Yard Infrastructure Project, http://www.westernrailyardinfrastructure.com/fullfeis.html

[6] Per 40 CFR 86.082-02 - A light goods vehicle is defined as a commercial motor vehicle with a gross vehicle weight of no more than 8,500 pounds and designed primarily for transportation of property or people (with a capacity of 12 or more). Typical light goods vehicles include vans and pick-up trucks.

Pedestrian

In coordination with NYC DOT, pedestrian counts were conducted in 2018 and 2022. Additional data from the Pennsylvania Station Area Civic and Land Use Improvement Project EIS[7] was used where the study areas overlap. Counts from different dates were calibrated using standard growth rates.

Parking

In accordance with the *CEQR Technical Manual*, the locations of public parking lots and garages within the Study Area was inventoried to determine existing utilization and availability of parking spaces. The Study Area for the parking analysis was defined as being within a 0.5-mile radius of the existing PABT, per *CEQR Technical Manual* guidance. These inventories and interviews with parking operators were conducted in both May 2018 (prior to the COVID-19 pandemic), and then again in April 2024. The 2024 data collection shows a large increase in available parking spaces within the study area.

COVID-19 Adjustments

Data collection was primarily based on counts (traffic, pedestrian, transit ridership and parking) conducted prior to the disruption caused by the COVID-19 pandemic. Counts for traffic and pedestrians that occurred later than March 2020 were compared against 2019 (pre-COVID-19) counts and adjusted to make them consistent, balancing the different observed levels with potential background growth or other development factors. Adjustments were developed in coordination with the NYC DOT and NYCT.

B.4.3.2.3 Peak Hours

Data collection and subsequent categorization of the results resulted in peak hours used in the assessment of transportation conditions.

Peak Hours for traffic and transit were determined to be:

- AM Peak Hour: 8:00 a.m. – 9:00 a.m.
- PM Peak Hour: 5:00 p.m. – 6:00 p.m.

While the evening peak hour for passengers entering the bus terminal is from 5:00 p.m. to 6:00 p.m., the peak hour for buses departing the terminal is 5:30 p.m. to 6:30 p.m., so the forecast 5:30 p.m. to 6:30 p.m. passenger volume is used for analysis of bus services to coincide with the greatest volume of departing commuter buses from the terminal.

An additional midday peak hour was determined for Pedestrian analysis; 12:00 p.m. - 1:00 p.m. when lunchtime trips generate additional pedestrian activity.

[7] ESD Pennsylvania Station Civic and Land Use Project environmental review, Penn Station Area Environmental Review | Empire State Development (ny.gov)

B.4.3.2.4 Trip Generation

Trip Generation rates used for the future scenarios were developed using a combination of the CEQR Technical Manual, U.S. Census data, guidance from NYC DOT, and information from other approved environmental reviews.

Trip generation rates used are summarized in **Table B.4-3**. Trip rates for office use were used from the *CEQR Technical Manual (November 2020 Version)*, while other trip rates were determined with additional guidance from NYC DOT.

Table B.4-3. Trip Generation Rates

Land Use	Weekday Trip Rate
Office (per 1,000 gsf)	18
Local Retail (per 1,000 gsf)	153.75

The private development associated with the Proposed Project is anticipated to consist of approximately 5.0 million gsf of commercial office space; 3.0 million gsf in Tower 1 and 2.0 million gsf in Tower 2.

141,644 square feet of retail space would be located within the proposed Main Terminal, SSF, and ramp structure.[8] Of this, 55,665 gsf would replace the existing 158,000 gsf of retail that currently generates trips at the PABT. Only the 65,700 sf of retail at the SSF and the 20,279 sf of retail at the ramp structure would result in new trips.[9]

Collectively, by 2040 the commercial office space and new retail would be expected to generate 11,574, 11,139, and 11,604 person trips in the AM, Midday, and PM peak hours, respectively. Trips by all modes begin or end as pedestrian trips at the project site and all are included in the pedestrian analysis, except for some subway and commuter bus trips that occur exclusively within the Main Terminal. The pedestrian trips generated by the Proposed Project are shown, by land use below in **Table B.4-4**.

Table B.4-4. 2040 Pedestrian Trip Generation

Peak Hour Trips	Office	Local Retail	Total
Morning (8-9AM)	10,800	774	11,574
Midday (12-1PM)	9,900	1,239	11,139
Evening (5-6PM)	9,900	1,704	11,604
Saturday – Midday (1-2PM)	2,728	3,245	5,973

Note: Includes walking to/from other modes.

The Replacement Facility would accommodate a forecasted growth in commuter and intercity bus ridership of 5,995 and 5,514 person trips in the AM and PM peak hours, respectively, by 2040. Of these bus riders, 2,728 would be expected to make subway and bus trips in the AM peak hour

[8] In addition to 13,700 gsf of interior retail. Interior retail will serve travelers already using the Main Terminal and is not anticipated to generate additional trips.

[9] Additionally, in accordance with CEQR Technical Manual methodology, a 25 percent credit in the number of local retail trips was assumed for linked or pass-by trips for both weekday and Saturday conditions. For office and residential trips, no reduction was made for linked or pass-by trips.

and 2,509 subway and bus trips in the PM peak hour; the remainder would complete their journey as pedestrians. As detailed in Appendix 9F of the DEIS **(Appendix A)**, these forecast volumes were used to inform transportation analysis (traffic, transit, and pedestrian).

The combined development generated trips and incremental bus terminal trips are subsequently referred to as "Project trips."

The forecasted growth in commuter and intercity bus ridership is not dependent on the Replacement Facility or the Proposed Project. Bus demand is forecasted to grow and would be anticipated to be provided by public and private bus carriers regardless of the alternative selected or pursued. Under the existing conditions, congestion regularly occurs on major roadways and highways connecting to the Lincoln Tunnel, in both the inbound and outbound directions. Potential congestion at the Lincoln Tunnel, or major connected roadways would not be anticipated to be exacerbated as a result of the Proposed Project. The Proposed Project has the potential to reduce the number of trans-Hudson bus trips by providing space within the SSF; however, for the purposes of a conservative analysis, this was not accounted for.

In addition, despite increased demand, the Replacement Facility is not anticipated to increase the number of bus trips on city streets due to bus operations utilizing direct tunnel access to the Replacement Facility, and additional ramps / bridges over intervening streets allowing bus circulation between the SSF and Main Terminal without the use of adjacent streets. Rather, the bus volumes on the city streets in the Future with the Proposed Project would be anticipated to decrease due to the redesigned ramp structure and the SSF. Conversely, the Future without the Proposed Project (No Action Alternative) would see continued growth in trans-Hudson bus operations and buses serving midtown that are unable to be accommodated within the repaired PABT.

Appendix B.4.1 provides details on the operation of the Replacement Facility and bus operations.

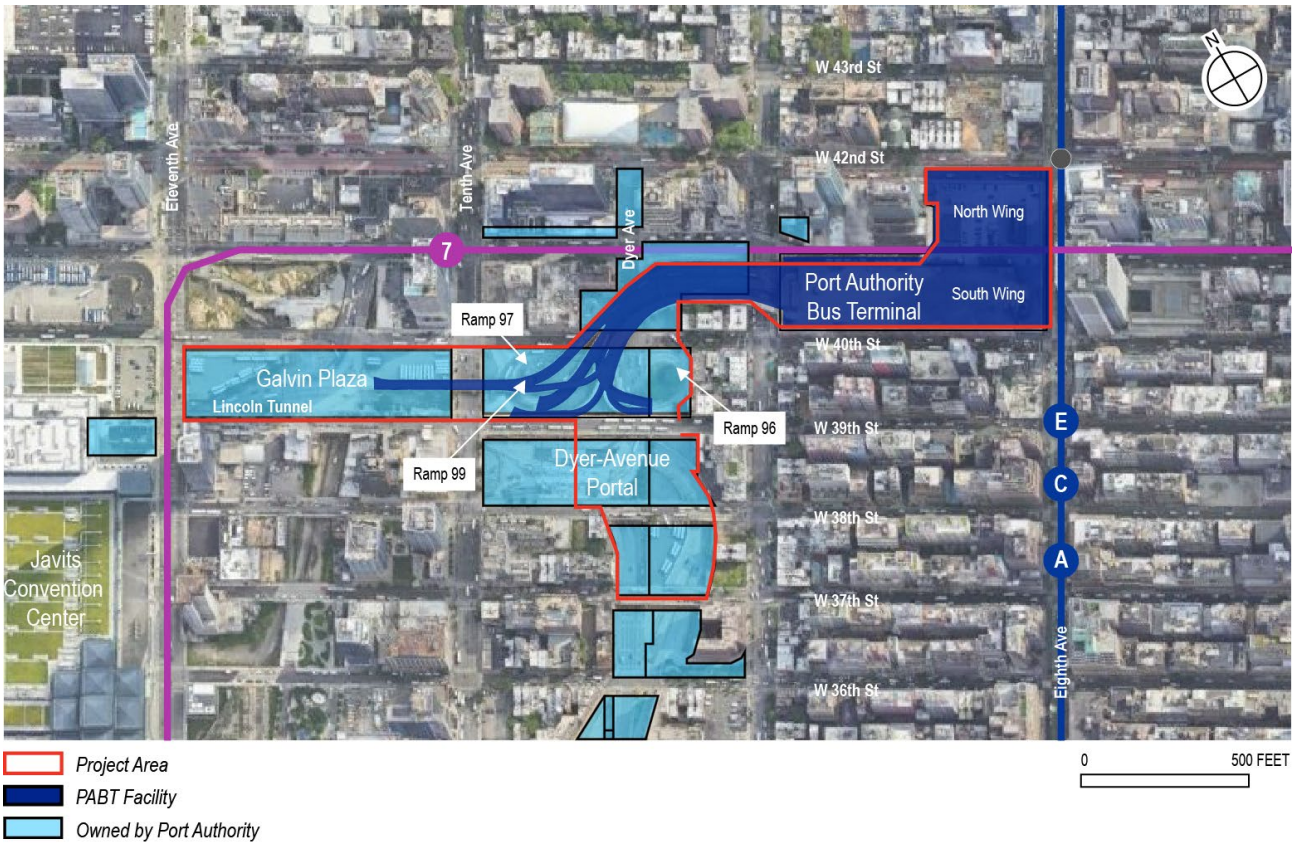
Trips to the newly created open space and existing passive parks were excluded from temporal distribution, in/out splits, and modal splits because it is assumed that 100 percent of the trips attracted to these open spaces would be pedestrian trips generated by local land uses, not by the open space itself.

B.4.3.2.5 Study Area

The EIS identifies several geographic areas of analysis for the Proposed Project:

- **PROJECT AREA:** The Project Area is defined as the area of any potential new construction associated with the Proposed Project, and any on-site or off-site construction activities. **Figure B.4-2** identifies the Project Area.

Figure B.4-2. Project Area



Source: WSP (2023)

- **STUDY AREA:** For environmental analyses, an impact assessment study area is typically created for a project area and a larger area surrounding the project site. Study areas relevant to each analysis category are defined by the geographic area with the potential to be affected by a proposed project for each impact category and shown in **Figure B.4-3**.

Figure B.4-3. Study Area Map for Traffic, Transit & Pedestrian Analyses

Source: WSP (2023)

Traffic Study Area

The Study Area is bound by West 30th Street to the south, West 50th Street to the north, Seventh Avenue to the east and the West Side Highway/Twelfth Avenue to the west. The Study Area encompasses streets, avenues, bus terminal ramps, and Lincoln Tunnel approaches. Selection of the Study Area was determined by assessing the amount of vehicle trips to be generated by the Proposed Project and identifying which intersections would be anticipated to experience an increase of 50 or more peak hour vehicle trips.

Transit Study Area

The Transit Study Area is determined by the specific locations of the transit elements, subway, and bus lines to be studied. The transit analysis considers stairs, escalators, ramps, and fare control arrays (turnstiles, high exits, and high entrance/exit turnstiles) in adjacent stations. Transit locations where the total project-generated pedestrian trips equaled or exceeded 200 per hour in any peak period were added to the Transit Study Area.

Pedestrian Study Area

The Pedestrian Study Area is determined by first calculating the projected number of new pedestrian trips generated as a result of the Proposed Project. These project-generated trips are then distributed and assigned to specific pedestrian elements (sidewalks, corners, and crosswalks). If 200 or more new pedestrian trips are added to a specific pedestrian element, then those elements are added to the Pedestrian Study Area.

The Pedestrian Study Area extends north to 43rd Street, east to Seventh Avenue, west to Eleventh Avenue, and south to 33rd Street. Within the study area 49 sidewalks, 72 corners, and 46 crosswalks were analyzed to assess potential impacts.

Parking Study Area

The CEQR technical manual states that a Parking Study Area should initially be established at 0.25 miles from the project site, which is considered a "convenient walking distance." If the amount of available parking within 0.25 miles is insufficient to meet projected demand, the *CEQR Technical Manual* allows for the Study Area to be expanded to no more than a one-half mile radius of the project site. This EIS defined the Study Area for the parking analysis was defined as being within a one-half mile radius of the existing PABT.

B.4.4 AFFECTED ENVIRONMENT

B.4.4.1 Existing Conditions

Bus Services

As one of the major trans-Hudson transportation hubs, the existing PABT accommodates bus routes for daily commuters throughout New Jersey, eastern Pennsylvania, and the Lower Hudson Valley in New York. It also accommodates routes that provide frequent intercity services to and from locations including upstate New York, New England, the Mid-Atlantic, and Canada.

Commuter services operate on regular schedules, typically with higher trip frequencies and ridership during the morning and evening peak periods. NJ TRANSIT is the largest operator of commuter bus service to the PABT, responsible for approximately 60% of total bus service before the COVID-19 pandemic and closer to 80% at present. Approximately ten private bus companies provide additional commuter bus services. Commuter jitney routes from northern New Jersey also operate within the terminal.[10]

Intercity bus services are offered by several carriers with regional and long-distance routes, they operate with less frequency when compared to commuter bus service and typically have longer layover times and less turnover of trips at their departure gates. Many intercity bus carriers

[10] Jitney services are operated by private companies and typically mirror NJ TRANSIT bus routes. Jitneys do not operate on set schedules; a mix of carrier companies, fleet managers, and independent drivers typically combine to provide service on key corridors. Within the PABT, departures are typically made on a "load and go" basis, filling vehicles and cycling in the next to depart when ridership is sufficient. Jitney vehicle sizes range from 16-passenger mini-buses to full-size buses.

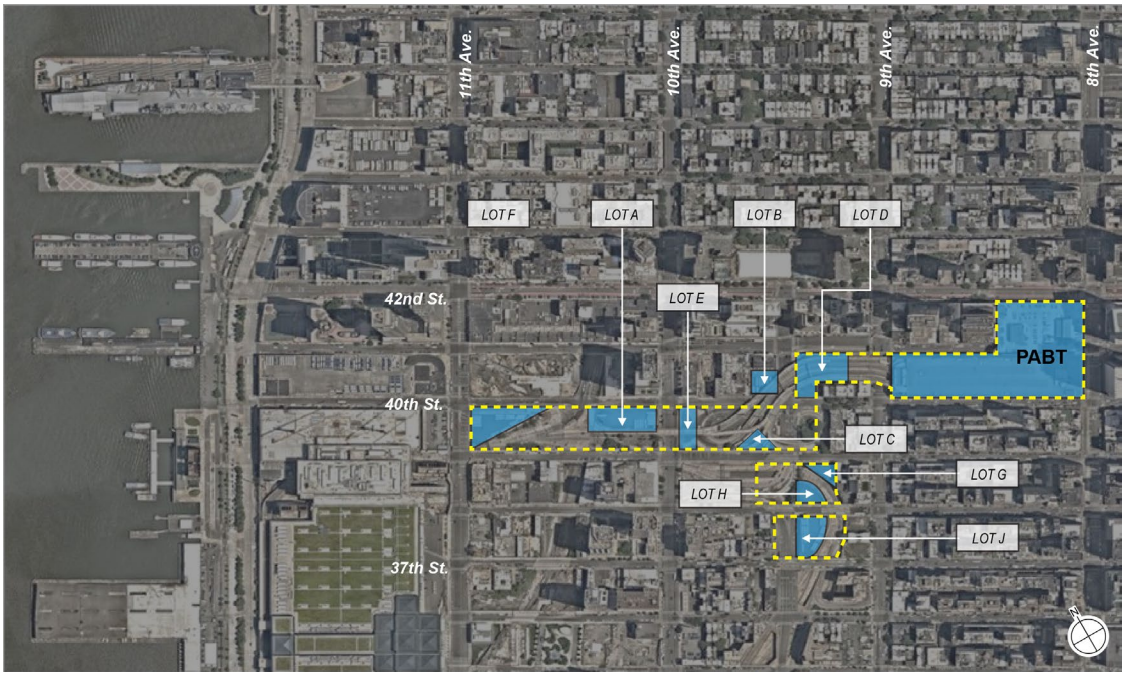
operate from within the PABT while a significant market for "curbside" intercity operations has grown in Midtown Manhattan. Carriers such as MegaBus, FlixBus, and others coordinate on-street stop locations with NYC DOT and service customers without any facility.

Buses operate at the PABT 24 hours a day, seven days a week. In the overnight/early morning hours, PANYNJ consolidates operations to the lower level.

Integral to the operation of the PABT are related bus storage and staging elements. Bus volumes into and out of the PABT are significantly higher during the AM and PM peak periods than during midday, evening, and overnight periods. Therefore, carriers schedule trips differently for each time period with varying bus volumes throughout the day so buses that are not in service during off-peak times must be stored.

PANYNJ owns several surface parking lots in the vicinity of the PABT, including space under the existing ramp structure, on Galvin Plaza, and various parcels in the Dyer Avenue and Lincoln Tunnel Expressway corridor extending south to West 30th Street (see **Figure B.4-4**). These lots are leased to NJ TRANSIT and private carriers for midday parking of buses near the PABT. Buses use these lots for midday storage or buses operate on local streets for some period of time to gain access to and egress from these lots. Most of these lots would no longer be available after completion of the Replacement Facility as they would be occupied by the facility or required structure.

Figure B.4-4. PANYNJ Owned Bus Parking Lots Adjacent to Existing PABT



Source: PANYNJ (2023)

Streets & Avenues

The Project Area is located in Midtown Manhattan, where the street network is primarily a grid system composed of mostly one-way avenues and streets through commercial neighborhoods. The primary vehicular routes through the Study Area include the six north-south avenues (Twelfth Avenue, Eleventh Avenue, Tenth Avenue, Ninth Avenue, Eighth Avenue, and Seventh Avenue), and two east-west streets (42nd Street, 34th Street). There are numerous secondary east-west street routes as well as one secondary north-south route (Broadway).

Streets in the Study Area run either east or west and have curb-to-curb widths of approximately 30 to 35 feet. The two primary east-west streets that run in both directions (34th Street and 42nd Street) are the exception and have widths of approximately 50 to 60 feet.

Avenues generally run north to south and have a width of approximately 60 to 70 feet. Avenues have sidewalks running parallel on both sides. The directions of the avenues alternate with Eighth and Tenth Avenues running northbound and Broadway, Seventh, Ninth, and Eleventh Avenues running southbound. Route 9A/Twelfth Avenue runs in both the Northbound and Southbound directions. Other north-south roadways include Dyer and Galvin Avenues.

Almost every street in the Study Area has sidewalks and crosswalks. Sidewalks on avenues are typically wider than those on streets. The exception to this is 42nd Street, which has both wider sidewalks and higher levels of pedestrian activity. Pedestrian volumes on avenues generally diminishes as you move west within the study area.

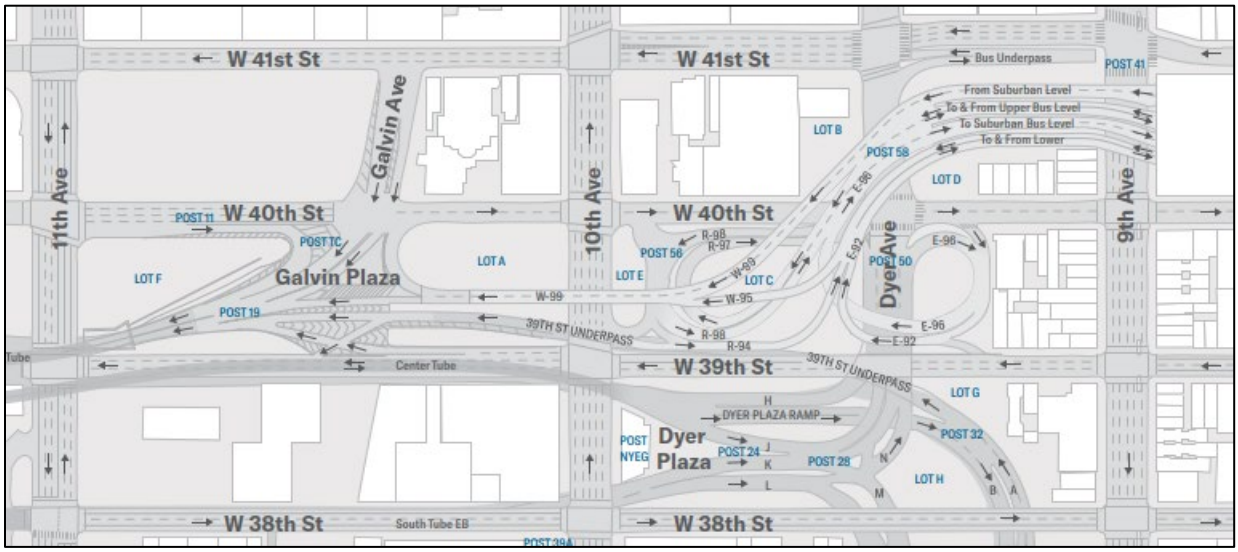
Designated bike lanes and shared bike lanes, used in the analysis of existing conditions, are present on portions of West 38th, West 39th, West 40th, and West 43rd Streets. The segment of West 42nd Street between Seventh Avenue and Broadway includes a shared bike lane in the eastbound direction.

There are 138 intersections in the Study Area. 132 are signalized, and six are un-signalized.

Tunnel & Terminal Infrastructure

The Study Area contains the Manhattan ingress and egress to the Lincoln Tunnel, a major Hudson River crossing linking Midtown Manhattan with Weehawken, New Jersey. The tunnel, operated by the PANYNJ, consists of three, two-lane tubes: the North Tube, the Center Tube, and the South Tube (see **Figure B.4-5**). The North Tube operates in the westbound direction at all times, the South Tube operates in the eastbound direction at all times, and the Center Tube is bi-directional, with both lanes operating in the eastbound direction during the weekday AM peak period and both lanes operating in the westbound direction during the weekday PM peak period. During the weekday AM peak period, the north lane of the Center Tube generally serves as the extension of the Exclusive Bus Lane (XBL), a 2.5-mile-long contraflow lane that the PANYNJ operates on New Jersey Route 495 to alleviate congestion for commuters traveling by bus to Manhattan from New Jersey. The XBL provides eastbound service for buses only on weekdays from 6:00 a.m. to 10:00 a.m., allowing a direct connection between the New Jersey Turnpike and Manhattan via the Lincoln Tunnel.

Figure B.4-5. PABT Ramp Area Map (Existing Conditions)



Source: PANYNJ (2023)

The proximity of the Lincoln Tunnel has a major influence on the Study Area. Important access points to the tunnel within the Study Area include Galvin Avenue at West 40th Street and Dyer Avenue at West 40th Street. Galvin Avenue acts as an entry point, providing access to the North Tube, while Dyer Avenue acts as an entry/exit point for both the Center and South Tubes. The Lincoln Tunnel Expressway also provides access to the Manhattan approach of the tunnel at West 30th, West 31st, West 33rd, and West 36th Streets.

Buses traveling between the Lincoln Tunnel and the PABT primarily use grade-separated ramp connections that do not require buses to travel on the local street network (this applies to buses headed in either westbound or eastbound directions). These ramps serve distinct routes to and from the tunnel, with some ramps reversing direction in the morning and evening to match the peak directional operation of the tunnel.

During the AM peak period, buses enter and exit the PABT via the following connections:

- Lower Level (North Wing): Buses exit from either the Center or South Tubes of the Lincoln Tunnel and travel north on Dyer Avenue through West 40th Street to access the Greyhound Tunnel.[11] Buses leaving the lower level of the North Wing exit at the Greyhound Tunnel, proceed west to the local network on West 41st Street through West 41st Street and Ninth Avenue, West 41st Street and Dyer Avenue, and West 41st Street and Tenth Avenue intersections before turning left on Galvin Avenue through West 40th Street and Galvin Avenue intersection to access the North Tube of the Lincoln Tunnel.
- Lower Level (South Wing): Buses traveling to the lower level of the South Wing exit from either the Center or South Tubes of the Lincoln Tunnel and travel north on Dyer Avenue merging to

[11] The Greyhound Tunnel connects from Dyer Avenue, on the east side, just south of the intersection with West 41st Street under Ninth Avenue and directly into the lower level of the existing Main Terminal.

the local street network to turn right onto West 40th Street and access the South Wing entrance after passing through the intersection of West 40th Street and Ninth Avenue. Buses leaving the lower level of the South Wing exit left to the local network onto West 41st Street and proceed west through West 41st Street and Ninth Avenue, West 41st Street and Dyer Avenue, and West 41st Street and Tenth Avenue intersections before turning left onto Galvin Avenue through West 40th Street and Galvin Avenue intersection to access the North Tube of the Lincoln Tunnel.

- PABT Levels 3 and 4: Buses traveling to the third and fourth levels of the PABT from the South Tube of the Lincoln Tunnel proceed north on Dyer Avenue followed by an immediate right turn onto Ramp 96, which continues up to both the third and fourth levels. Buses exiting from the Center Tube also proceed north on Dyer Avenue but turn left onto Ramps 97 and 98, which both continue up to the third and fourth levels. Buses leaving the third and fourth levels proceed onto Ramp 99, which leads directly to the North Tube of the Lincoln Tunnel. Ramp 99 also offers the option of turning right for those buses returning to the local street network onto West 40th Street and Tenth Avenue intersection.

During the PM peak period, buses enter and exit the PABT via the following connections:

- Lower Level (North Wing): Buses traveling to the lower level of the North Wing all exit from the South Tube of the Lincoln Tunnel and travel north on Dyer Avenue through West 40th Street to access the Greyhound Tunnel. Buses leaving the lower level of the North Wing exit at the Greyhound Tunnel and either proceed west to the local network on West 41st Street through West 41st Street and Ninth Avenue, West 41st Street and Dyer Avenue, and West 41st Street and Tenth Avenue intersections before turning left on Galvin Avenue through West 40th Street and Galvin Avenue intersection to access the North Tube of the Lincoln Tunnel or turn left on Dyer Avenue and use the contraflow lane to access the Center Tube of the Lincoln Tunnel.
- Lower Level (South Wing): Buses leaving the lower level of the South Wing exit left to the local network onto West 41st Street and proceed west through West 41st Street and Ninth Avenue, West 41st Street and Dyer Avenue, and West 41st Street and Tenth Avenue intersections before turning left onto Galvin Avenue through West 40th Street and Galvin Avenue intersection to access the North Tube of the Lincoln Tunnel. During the PM peak period, buses exiting the lower level of the South Wing also have the option of using the contraflow lane on Dyer Avenue to access the Center Tube of the Lincoln Tunnel.
- PABT Levels 3 and 4: Buses leaving the third and fourth levels proceed onto Ramp 99, which leads directly to the North Tube of the Lincoln Tunnel. Ramp 99 also offers the option of turning right for those buses returning to the local street network onto West 40th Street and Tenth Avenue intersection. During the PM peak period, Ramp 98 is closed and Ramp 97 reverses direction, allowing buses leaving the third and fourth levels to enter the Center Tube of the Lincoln Tunnel via the contraflow lane on Dyer Avenue.[12]

[12] Most ramps at the existing PABT are restricted to buses only. However, automobiles accessing the parking garage on the top levels of the terminal can use Ramps 92, 94, 95, 96, and 99 with some restrictions.

Transit

The Project Area is served by the NYCT Eighth Avenue-42nd Street-PABT station served by the A, C and E subway lines, and the 42nd Street (Seventh Avenue)-Times Square station served by the 1, 2, 3, 7, N, Q, R, and S subway lines).

The SIM 8, SIM 8X, SIM 22, SIM 23, SIM 24, SIM 25, and SIM 30 express bus routes operate along West 42nd Street between Dyer and Sixth Avenues

There are several NYCT bus lines that provide service near the PABT. This includes the M42, M104, M20, M11, and Select Bus Service route 34A.

Parking

The roof deck of the existing PABT contains a parking lot with 1,385 public parking spaces. Within one-half mile of the PABT there are 45 parking facilities providing total capacity of approximately 7,543 public parking spaces, of which 3,634 are available as excess capacity. Of that excess capacity, there are 2,391 available parking spaces within 0.25 miles. An additional 1,243 parking are available within one-half mile of the Project Area.

B.4.4.2 Future Conditions in the Study Area

Future conditions in the study area include several changes, independent of the Proposed Project, compared to existing conditions. These changes include the construction of several residential and commercial development projects, as well as other changes to the pedestrian network such as roadway modifications to incorporate new bicycle lanes and improved pedestrian elements. Private land use developments are identified in **Appendix B.1, "Land Use, Zoning, and Public Policy."**

The MTA's CBDTP completed environmental review in April 2023. The exact timing and details of the program (including tolling rates and any credits or discounts) has not been determined. In its Environmental Assessment of the CBDTP, the MTA evaluated several tolling scenarios with varying tolling rates, credits, and discounts. To fully disclose any potential impacts, traffic levels were not modified to assume that CBDTP would be in operation (and thus, traffic levels utilized in our forecast are generally higher). For the purposes of transit analysis, CBDTP was assumed to be implemented, generally resulting in a higher rate of transit ridership, based on a "mid-range" tolling scenario modeled by the MTA.[13]

Roadway conditions that have changed or are expected to change between 2019 and all future years of analysis are summarized below:

- The block of Broadway between 39th Street and 40th Street has been closed to only allow pedestrians. This also results in re-routing of traffic within the No Action flow maps.
- The number of travel lanes along Tenth Avenue decreases from five to four in future conditions due to a new bike lane that was striped in 2023.

[13] https://new.mta.info/document/111101

  - Tenth Avenue, 14th to 52nd Streets: Protected east side bike lane (creates pedestrian islands at intersections, and reduces the length of crosswalks).
- New Eighth Avenue, Ninth Avenue, and Eleventh Avenue striping plans from a 2022 Street Improvement Project (SIP) were used to update the model in the Study Area and resulted in removal of a traffic lane along most of the corridor.
  - Eighth Avenue, 31st to 38th Street: Sidewalk widening (additional sidewalk space and pedestrian islands for crossings on the west side of the avenue)
  - Eighth Avenue, 43rd to 51st Street: Sidewalk widening (additional sidewalk space and pedestrian islands for crossings on the west side of the avenue)
  - Ninth Avenue, 30th to 34th Street: Sidewalk widening (additional sidewalk space and pedestrian corners for crossings on the east side of the avenue)
- Northern blocks (46th Street to 50th Street) of Seventh Avenue in the study area decreased from four to three travel lanes due to the planned bike lane improvements.
- During the construction for the Hudson Yards development, there were several roads that were closed to traffic in 2019 that will be re-opened before 2028:
  - Hudson Blvd between 33rd and 36th Street
  - One lane of 35th Street between Tenth Avenue and Eleventh Avenue
- There were several turn restrictions implemented between 2019 and 2022:
  - Eighth Avenue at West 34th Street: Prohibited Eastbound Left Turn & Northbound Left turn & Northbound Right Turn
  - Seventh Avenue at West 42nd Street: Prohibited Westbound Left Turn & Eastbound Right Turn
  - Eighth Avenue at West 42nd Street: Prohibited Northbound Left Turn

In addition to geometric changes made in the Study Area, signal timing changes were made for a large portion of the Study Area, due to changes made since 2019.

There are no proposed changes to the subway lines, service, or stations in the area of the Proposed Project within the analysis period to 2040.[14]

Several of the background growth projects would include new parking facilities, including Silverstein Phase 1 and Hudson Yards Projected Site twenty-four.

[14] The MTA's 2025-2044 40-year Needs Assessment includes the addition of a new Tenth Avenue subway station on the No 7 line which would fall within the Study Area. The Needs Assessment evaluates the potential benefits and costs of the new station but is not a commitment to build the station. It is not included in the analysis of this EIS.

B.4.5 POTENTIAL IMPACTS OF THE NO ACTION ALTERNATIVE

Under the No Action Alternative, PANYNJ would retain the existing PABT but would undertake a significant repair effort of the terminal and its ramps over an approximately 10- to 13-year period to continue its safe use. Repair work would require the replacement of existing floor slabs throughout the PABT and substantial construction to make the terminal compliant with the Americans with Disabilities Act (ADA). Replacement of floor slabs may require temporary closure of 25% to 100% of bus gates on any one floor on a rolling basis. Staging for the repair work would take place on several PANYNJ owned parking lots shown in **Figure B.4-4** above.

Table B.4-5 below shows changes in terminal capacity and alternate operations during and following construction, for both No Action and the Proposed Project (With Action).

Table B.4-5. Terminal Capacity Analysis

	Measure	Construction Peak (2032)		2040
No Action	Peak Hour Bus Forecast	764		907
	Peak Hour Terminal Capacity	417		556
	Unaccommodated Buses	**347**		**351**
	Dyer Deck-overs	-		-
	Diversions	46		-
	Curbside	90		90
	West 30th Street	55		55
	Remain unaccommodated	**156**		**206**
	Measure	**2028**	**2032**	**2040**
With Action	Peak Hour Bus Forecast	764	869	907
	Peak Hour Terminal Capacity	460**	1,030	1,030
	Unaccommodated Buses	**304**	**(161)**	**(123)**
	Dyer Deck-overs	115	-	-
	Diversions	46	-	-
	Curbside	90	-	-
	West 30th Street	55		
	Remain unaccommodated	**(2)**	**(161)**	**(123)**

Notes:

While the forecasted demand for the construction peak of the No Action Alternative would be up to approximately 869 buses, the existing PABT terminal capacity is 764 buses. Accordingly, this analysis utilizes the capacity of the existing PABT (764 buses) for the evaluation of the No Action Alternative for the year 2032 because the PANYNJ would not be responsible for accommodating the growth in forecasted bus ridership that could not already be accommodated by the existing PABT during construction of the No Action Alternative.

numbers in parentheses indicate a negative value, so in the "remain unaccommodated" row a value of (161) would mean that there is spare capacity of 161 buses in the terminal.

* - Existing PABT terminal capacity is 764 buses in the PM peak hour; bus carriers are not permitted to operate additional buses, thus reflecting a cap on current capacity.

** - In 2028 under the With Action Alternative the SSF is used as a temporary terminal during construction of the Main Terminal.

B.4.5.1 2032

Bus Services

The capacity of the PABT would be lowered in 2032, approximately the mid-point of the anticipated repair work that would occur in the No Action Alternative. During the peak of structural work, it was assumed one floor would be completely unavailable for bus operations, with repairs completed on two other floors of the terminal. Those floors would be operating at approximately 73% of their previous capacity (a 27% reduction in bus capacity).

In the No Action Alternative, 764 buses are expected to be operating in the 2032 PM Peak Hour with the majority departing the PABT en route to New Jersey.[15] The terminal's capacity at peak construction is reduced to 417, resulting in a shortfall of approximately 347 bus trips which would not be able to be accommodated within the terminal. In coordination with NYC DOT and NJ TRANSIT, this EIS created a series of prospective service modifications to better accommodate a portion of this demand. As noted above, this analysis utilizes the capacity of the existing PABT (764 buses) for the evaluation of the No Action Alternative for the year 2032 because the PANYNJ would not be responsible for accommodating growth in forecasted bus ridership that could not already be accommodated by the existing PABT during construction of the No Action Alternative. Bus operators and carriers would be required to coordinate with NYC DOT for the approval of permits to facilitate curbside operations for additional bus trips beyond the 764 that would otherwise be accommodated at the existing PABT.

Intercity buses currently using the PABT are expected to operate from a temporary location on Port Authority property at West 30th Street between Ninth and Tenth Avenues. This site would accommodate 55 intercity bus trips during the PM peak hour and associated demand outside of the peak hours. The West 30th Street location is currently used for midday parking of some PABT buses with spaces leased to private bus carriers, as well as two on-street departure gates. The long-term use of this location for intercity bus operations is expected only in the No Action Alternative; it does not constitute part of the Proposed Project (though this location would be used for temporary bus operations during construction of the Replacement Facility, described in **Appendix B.7**.

Two additional potential/prospective options were considered tor the remaining bus trips that cannot be accommodated within PABT during this peak construction condition. First, in coordination with NJ TRANSIT, routes serving PABT were reviewed to determine if they could be diverted, either to a different terminal (the George Washington Bridge Bus Terminal in Upper Manhattan) or by shifting passengers to another mode of travel to reach Manhattan (including ferry, subway or PATH). Based on that coordination it was assumed that there was the potential to divert approximately 46 bus trips via these methods during construction.

[15] The 764 buses reflect a capped capacity based on the existing PABT Terminal peak hour capacity, bus carriers are not permitted to operate additional buses with expectation to use the terminal, particularly during repair / construction.

The second potential method was to identify curbside locations suitable for bus operations. Locations were selected based on suitable curbside space, distance from the Project Area (with a preference for locations closer to the PABT) and proximity to transit connections. This process identified 18 curbside locations able to accommodate approximately 90 bus trips in the PM peak hour.

Each of the locations identified below in **Table B.4-6** (and depicted in **Figure B.4-6**) is intended to accommodate two bus positions:[16]

Table B.4-6. Potential Curbside Bus Operating Positions

Curbside Location	On	Between	Bus Positions
1a	Dyer Avenue	West 34th and West 35th Street	2
1b	Dyer Avenue	West 35th and West 36th Street	2
2a	Ninth Avenue	West 34th and West 35th Street	2
2b	West 37th Street	Tenth Avenue and Hudson Boulevard West	2
3	West 35th Street	Hudson Boulevard East and Tenth Avenue	2
4	Tenth Avenue	West 34th and West 35th Street	2
5	West 37th Street	Eighth and Ninth Avenues	2
6a	West 33rd Street	Ninth Avenue and Lincoln Tunnel Expressway	2
6b	West 33rd Street	Lincoln Tunnel Expressway and Tenth Avenue	2
		SUBTOTAL	**18**

Additional curbside operating locations are identified in **Table B.4-7** to address bus trips that were expected to exit the study area (as analyzed in the DEIS). These locations follow the same siting criteria as the locations above.

Table B.4-7. Additional Curbside Bus Operating Positions

Curbside Location	On	Between	Bus Positions
7	West 39th Street	Tenth and Eleventh Avenue	7
8	West 39th Street	Ninth and Tenth Avenue	3
9	West 38th Street	Ninth and Tenth Avenue	4
10	West 37th Street	Ninth and Tenth Avenue	3
11	PANYNJ Lot J	West 37th and West 38th Street (off-street lot)	5
12	West 36th Street	Ninth and Dyer Avenue	2
13	West 37th Street	Dyer and Tenth Avenue	2
14	West 34th Street	Eleventh and Twelfth Avenue	4
15	West 38th Street	Tenth and Eleventh Avenue	2
16	West 33rd Street	Eleventh and Twelfth Avenue	6
17	Tenth Avenue	West 31st and West 33rd Street	4
		SUBTOTAL	**42**

[16] A curbside bus "position" is the space required for a bus to maneuver alongside a sidewalk, board or alight passengers and re-enter the travel lane on the street.

Together, these groups of curbside locations offer 60 bus positions and 300 peak hour departure turns (arrivals and departures. These curbside locations represent a best estimate of viable operating positions, each of which is subject to review and approval by NYC DOT, bus carriers, and other stakeholders.

Figure B.4-6. Curbside boarding positions (No Action Alternative)

Source: WSP and FHI Studio (2024)

Note: Locations shown in green reflect curbside bus operating positions used during Phase 2 of the construction of the Proposed Project while blue reflects curbside locations used by buses during and after repairs of the existing terminal in the No Action Alternative.

Additional details regarding assumptions, alternate (non-terminal) accommodation of bus service (diversions, curbside operations) are further detailed in **Appendix B.4.1**.

Traffic

In the AM model, there were many movements that operated at Level of Service (LOS) E or F. There were 22 intersections of the 138 with an overall LOS E, and 31 with LOS F. All other intersections operated at LOS D or better. See **Figure B.4-7**.

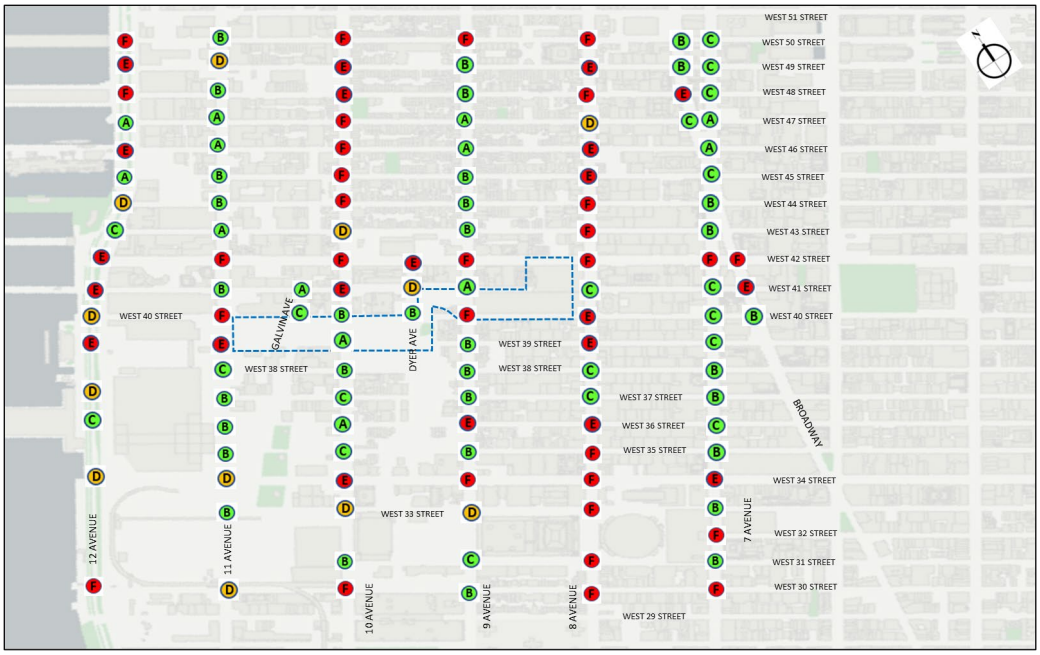
In the PM model, there were many movements that operated at LOS E or F. There were 20 intersections of the 138 with an overall LOS E, and 45 with LOS F. All other intersections operated at LOS D or better. See **Figure B.4-8**.

Figure B.4-7. 2032 AM Traffic Conditions (No Action Alternative)

Project Site

Intersection LOS

A; B; C
D
E; F



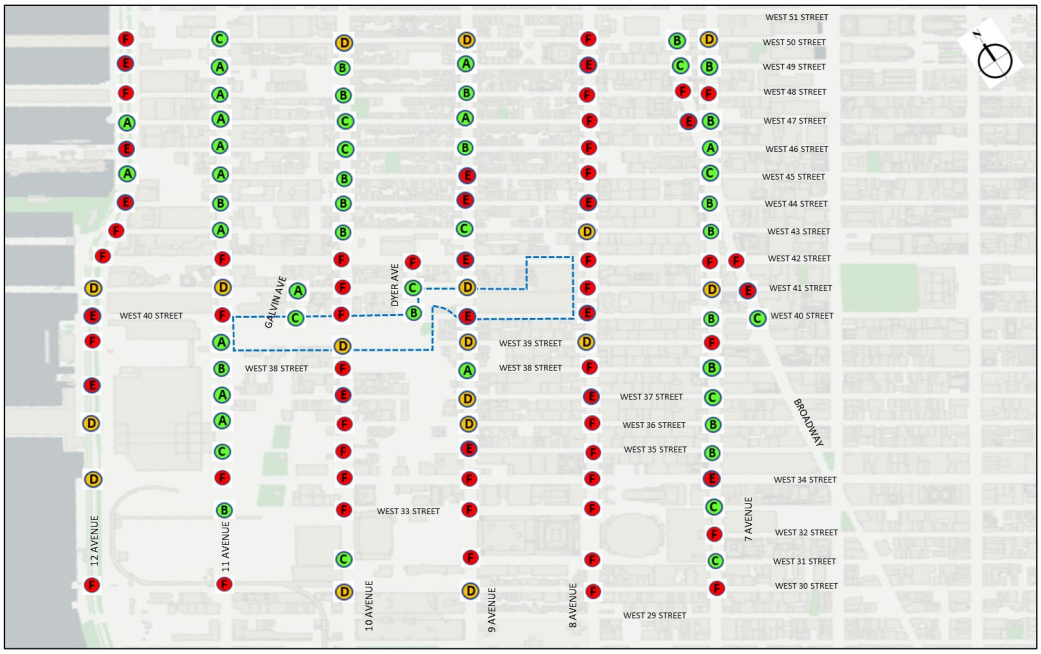
2032 No Action Traffic Condition Intersection Level of Service – AM Peak Hour

Figure B.4-8. 2032 PM Traffic Conditions (No Action Alternative)

Project Site

Intersection LOS

A; B; C
D
E; F



2032 No Action Traffic Condition Intersection Level of Service – PM Peak Hour

Transit

Bus and subway line haul analysis were not conducted for 2032 because in that year the Proposed Project does not include any commercial development to generate trips and the incremental growth in trips served by the new Main Terminal is less than the 2040 volumes.

At the Times Square – 42nd Street station, stair BMT stair P5/P7 decreases from LOS E to LOS F in the AM peak period and stair IRT ML6 declines from LOS D to LOS E in the AM and from LOS E to LOS F in the PM under the No Action Alternative in 2032.[17] BMT stair P10 also declines from LOS C to LOS D in the AM peak hour in 2032.

Pedestrian

Pedestrian analysis considers LOS conditions at sidewalks, corners, and crosswalks. The Pedestrian Study Area has a total of 51 sidewalks, 73 corners, and 45 crosswalks that met conditions requiring a detailed LOS analysis, and includes bus passengers who may now arrive and depart at locations outside of the PABT.

In 2032, various sidewalk and corner conditions worsen in the No Action Alternative due to increased pedestrian volumes. In the AM peak, seven sidewalks operate at LOS D, five at LOS E, and one sidewalk operates at LOS F . In the PM peak, nine sidewalks operate at LOS D, seven at LOS E, and one sidewalk operates at LOS F. Up to 32 corners experience LOS D, E, or F during one of the three time periods. Crosswalks in the 2032 No Action Alternative (compared to baseline conditions) operating at an LOS of D, E, or F stayed the same in the AM peak hour at 27, increased from 22 to 25 in the midday peak hour, and increased from 28 to 32 in the PM peak hour.

Parking

The No Action Alternative is not expected to reduce the supply of available parking, nor generate additional demand for parking spaces.

B.4.5.2 2040

Bus Services

By 2040 the rehabilitation of the PABT is completed and the terminal is anticipated to have a capacity to accommodate approximately 556 buses in the PM Peak Hour. Based on the most current forecasting information, bus service would increase to approximately 907 bus trips in the PM Peak Hour, resulting in approximately 351 bus trips not able to be accommodated in the PABT.[18] Of these unaccommodated buses, 55 intercity bus trips would continue from the West

[17] Level of Service (LOS) of F is described in the CEQR Technical Manual as "Severely congested, queued" and has a volume / capacity (v/c) ratio of 1.67 or higher. Full LOS descriptions and the methodology for calculating v/c rations can be found in Section 9.2.2.5 of Appendix 9C of the DEIS **(Appendix A)**.

[18] As described in additional detail in Appendix 1A of the DEIS **(Appendix A)**, an initial forecast from 2015, developed by the PANYNJ and NYMTC, was used to inform initial scoping discussions for the Replacement Facility and determined a total 2040 PM Hour bus demand of 1,011. A subsequent forecast in 2022 was produced by NYMTC, which provides the latest socioeconomic data available, and was the basis for the current 2040 PM Peak hour volume of buses (907) expected.

30th Street location between Ninth and Tenth Avenues and another 296 buses would continue curbside operations at the locations identified. These curbside locations represent a best estimate of viable operating positions, each of which is subject to review and approval by NYC DOT and bus carriers.

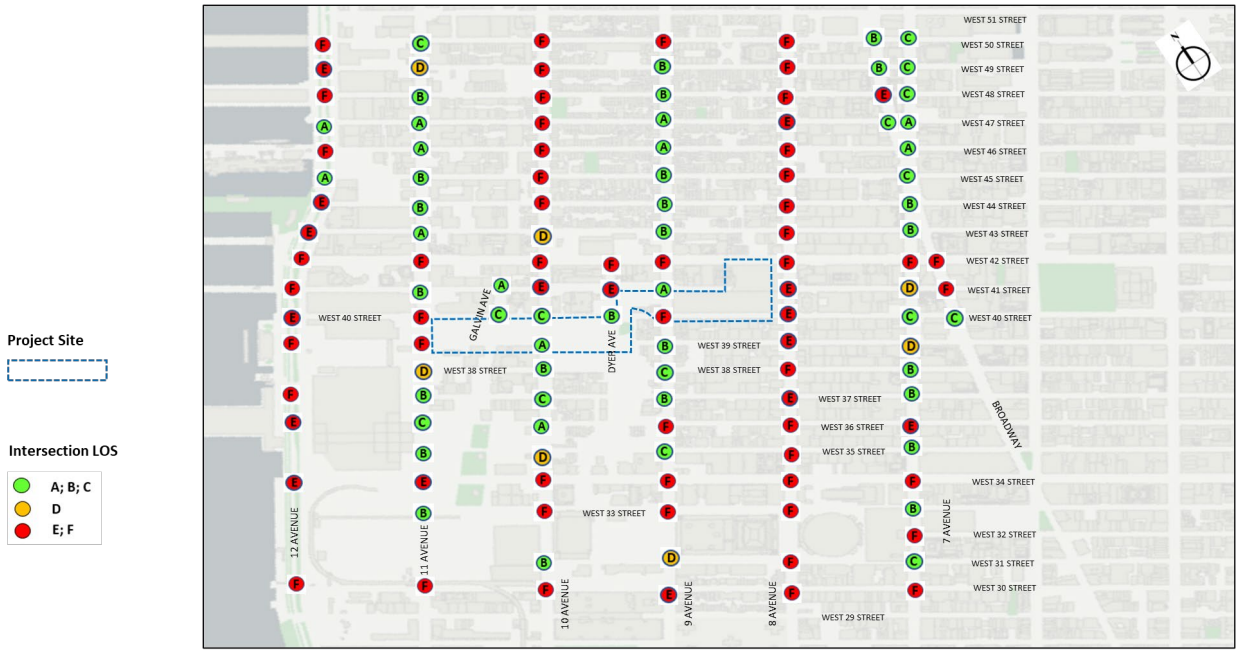
In coordination with NJ TRANSIT it was determined that diversions to alternate locations or modes would only be provided during construction activities and not become integrated into long-term operations.

Traffic

In the AM model, there were many movements that operated at LOS E or F. There were 18 intersections of the 138 with an overall LOS E, and 52 with LOS F. All other intersections operated at LOS D or better. See **Figure B.4-9.**

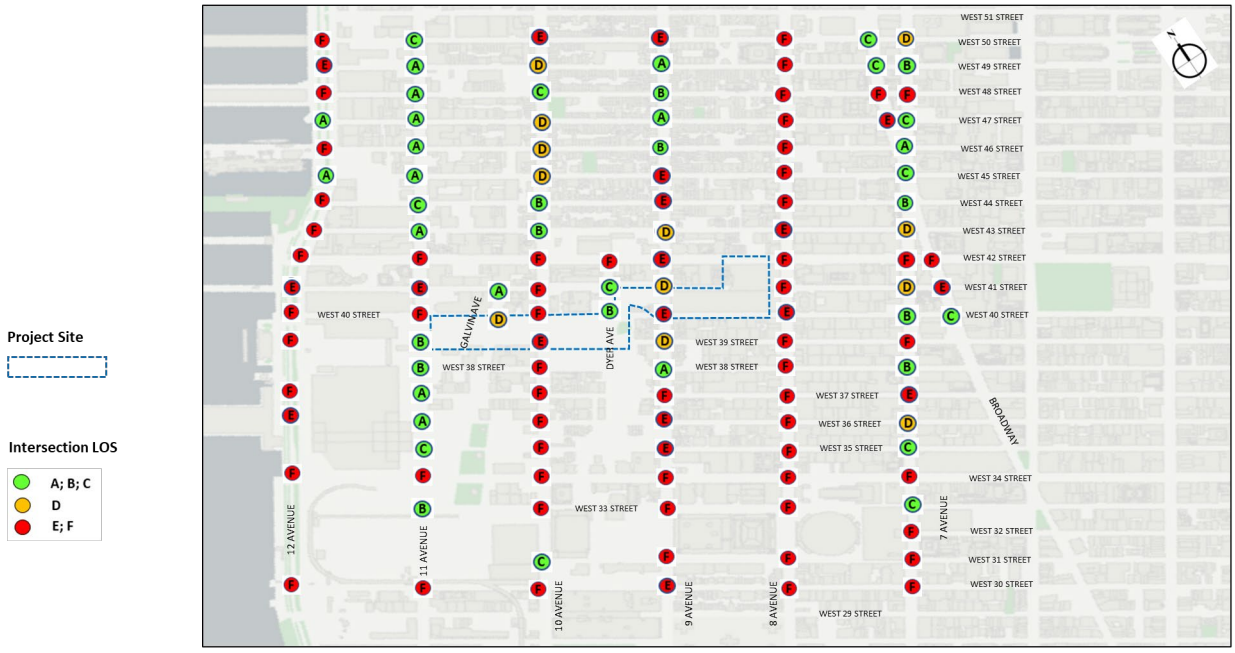
In the PM model, there were many movements that operated at LOS E or F. There were 20 intersections of the 138 with an overall LOS E, and 61 with LOS F. All other intersections operated at LOS D or better. See **Figure B.4-10**.

Figure B.4-9. 2040 AM Traffic Conditions (No Action Alternative)



2040 No Action Traffic Condition Intersection Level of Service – AM Peak Hour

Figure B.4-10. 2040 PM Traffic Conditions (No Action Alternative)



2040 No Action Traffic Condition Intersection Level of Service – PM Peak Hour

Transit

In 2040, the No Action Alternative would not be projected to significantly increase ridership on any particular (MTA / NYCT) bus or subway route and no impacts were anticipated in either AM or PM Peak Hours.

At the Times Square-42nd Street station stair IRT ML6 would decline to LOS E, stair BMT P5/P7 would decline to LOS F, and stair BMT P10 would decline to LOS D in the AM peak hour with the No Action Alternative. Stairs FLU PL7 and IRT ML6 at the Times Square-42nd Street station would decline to LOS F during the PM peak hour.

Pedestrian

In 2040, under the No Action Alternative, during the AM peak seven sidewalks would operate a LOS D, six sidewalks would operate at LOS E, and three sidewalks would operate at LOS F. During the midday seven sidewalks would operate at LOS D, three sidewalks would operate at LOS E, and no sidewalks would operate at LOS F. During the PM peak, 13 sidewalks would operate at LOS D, eight sidewalks would operate at LOS E, and two sidewalks would operate at LOS F.

During the AM peak 10 corners would operate a LOS D, five corners would operate at LOS E, and 10 corners would operate at LOS F. During the midday six corners would operate at LOS D, 13 corners would operate at LOS E, and three corners would operate at LOS F. During the PM peak, eight corners would operate at LOS D, 13 corners would operate at LOS E, and 11 corners would operate at LOS F. In the 2040 No Action Alternative 28 crosswalks would operate at LOS D, E, or F in the AM, 25 in the midday, and 32 in the PM peak hours, compared to 27, 22, and 28 in the 2019 baseline, respectively.

Parking

The No Action Alternative is not expected to reduce the supply of available parking, nor generate additional demand for parking spaces.

B.4.6 POTENTIAL IMPACTS OF THE PREFERRED ALTERNATIVE

B.4.6.1 2032

Bus Services

In 2032 the Main Terminal is anticipated to be operational, and the SSF would be converted to its long-term use as a facility for bus storage and staging. 869 bus trips[19] are forecast for the PM Peak Hour, and the new Main Terminal has a capacity to accommodate 1,030 bus trips in the peak hour. All buses are projected to be accommodated by the new Main Terminal.

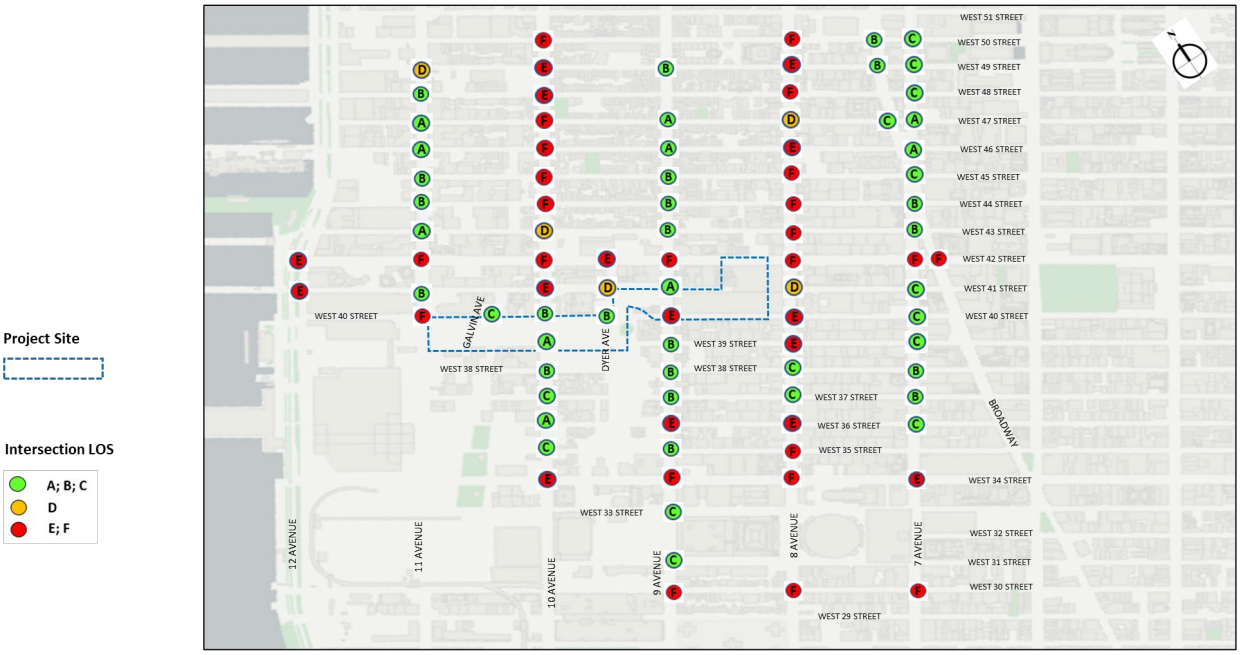
Traffic

In the AM peak period model, there were many movements that operated at LOS E or F. Of the 89 intersections that required analysis, there were 15 intersections with an overall LOS E, and 23 with LOS F. All other intersections operated at LOS D or better. See **Figure B.4-11**.

In the PM peak period model, there were many movements that operated at LOS E or F. Of the 89 intersections that required analysis, there were 13 intersections with an overall LOS E, and 28 with LOS F. All other intersections operated at LOS D or better. See **Figure B.4-12**.

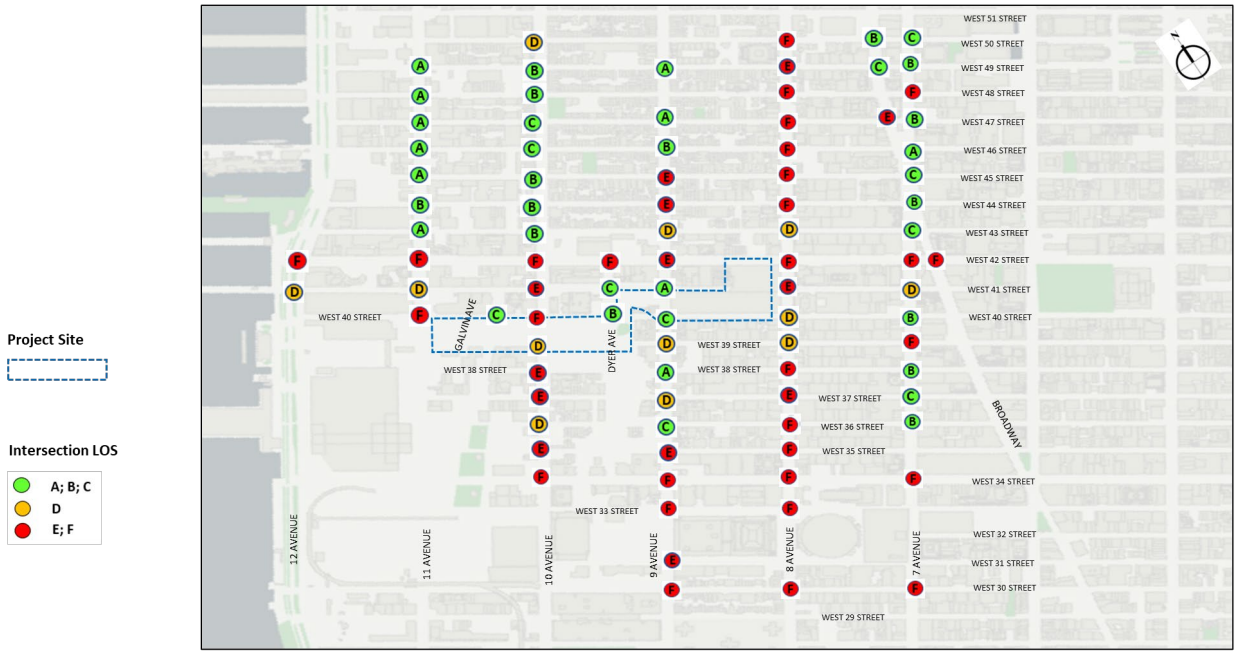
[19] 869 bus trips is the forecasted volume. The Proposed Project uses a higher number of buses compared to the No Action (764) in 2032 because the Proposed Project has completed construction of the Replacement Facility by 2032.

Figure B.4-11. 2032 AM Traffic Conditions (Proposed Project)



2032 With Action Traffic Condition Intersection Level of Service – AM Peak Hour (Calibrated)

Figure B.4-12. 2032 PM Traffic Conditions (Proposed Project)



2032 With Action Traffic Condition Intersection Level of Service – PM Peak Hour (Calibrated)

Transit

Bus and subway line haul analysis were not conducted for 2032 because in that year the Proposed Project does not include any commercial development to generate trips and the incremental growth in trips served by the new Main Terminal is less than the 2040 volume, which results in an impact to only one bus line and no subway lines, so line-haul impacts are unlikely in 2032.

For the year 2032, the Proposed Project decreased the LOS of one subway stair to LOS F in the Times Square – 42nd Street station.

Pedestrian

The Proposed Project would result in only minor changes in pedestrian LOS in 2032 compared to the No Action Alternative in 2032. The number of sidewalks, corners, or crosswalks at LOS D, E, or F increases by just one or two in any period, and in some cases the number of elements at LOS D, E, or F decreases by one or two due to sidewalk improvements around the perimeter of the project.. See **Table B.4-11**.

Parking

In the Future with the Proposed Project (2032), there would be no additional parking needed, therefore the parking availability in 2032 would be sufficient.

B.4.6.2 2040

Bus Services

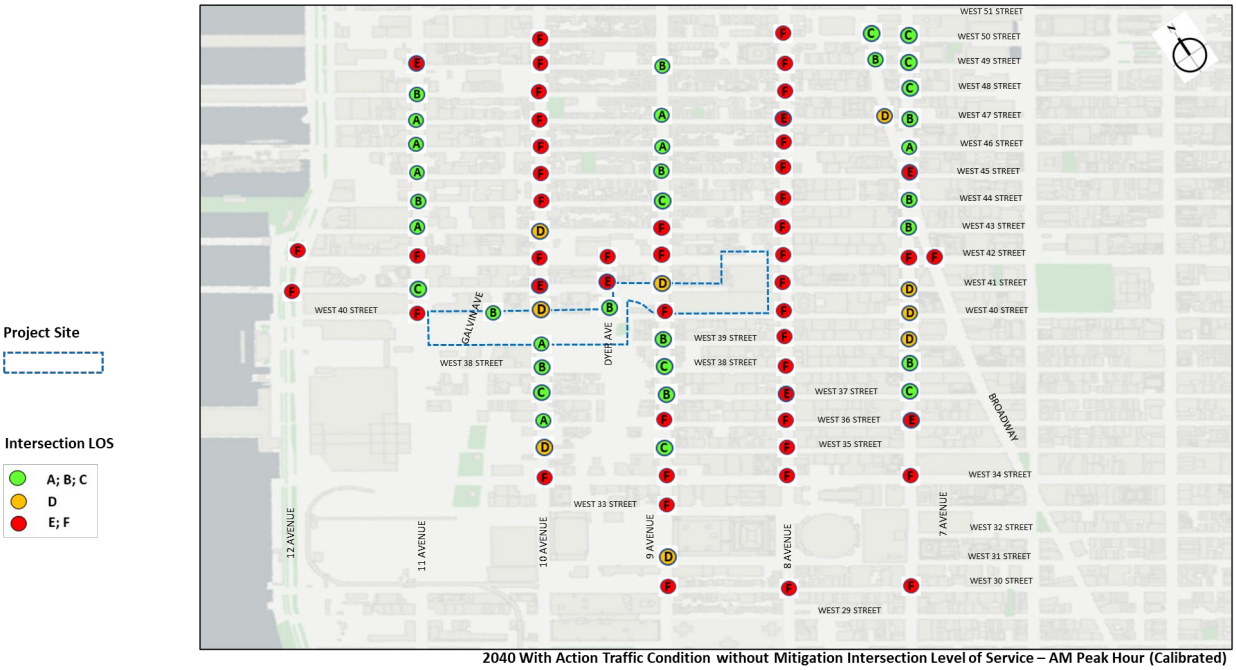
In 2040, 907 bus trips are forecast for the PM Peak Hour, and the new Main Terminal has a capacity to accommodate 1,030 bus trips forecast in the peak hour. All buses are projected to be accommodated by the new Main Terminal.

Traffic

In the AM peak period, there were many movements that operated at LOS E or F. Of the 89 intersections that required analysis, there were 7 intersections with an overall LOS E, and 41 with LOS F. All other intersections operated at LOS D or better. See **Figure B.4-13**

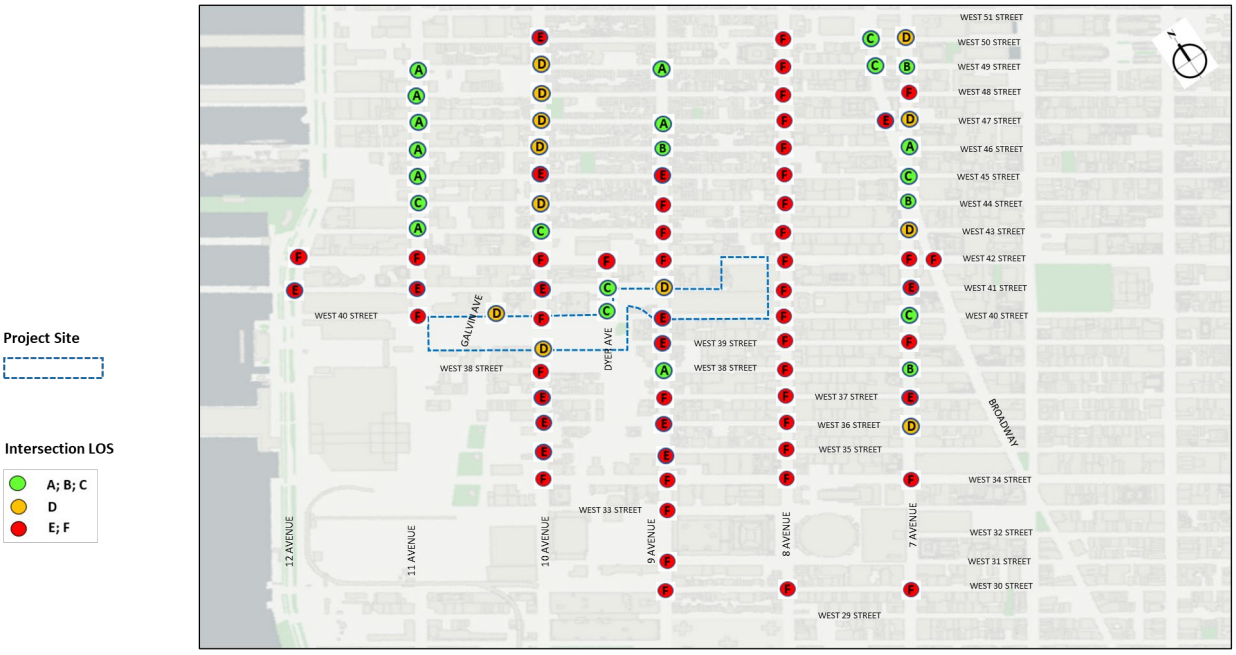
In the PM peak period, there were many movements that operated at LOS E or F. Of the 89 intersections that required analysis, there were 16 intersections with an overall LOS E, and 40 with LOS F. All other intersections operated at LOS D or better. See **Figure B.4-14**.

Figure B.4-13. 2040 AM Traffic Conditions (Proposed Project)



2040 With Action Traffic Condition without Mitigation Intersection Level of Service – AM Peak Hour (Calibrated)

Figure B.4-14. 2040 PM Traffic Conditions (Proposed Project)



2040 With Action Traffic Condition without Mitigation Intersection Level of Service – PM Peak Hour (Calibrated)

Transit

While the Proposed Project would add riders to each of the subway lines serving the Study Area, those passengers would be distributed across the many trains and cars on each train. The added passengers do not cause significant impacts to any of the subway lines in the AM or PM peaks.

Year 2040 ridership and volume/capacity (v/c) ratios of bus routes serving the study area were analyzed. V/C ratios serve as a measurement of the level of congestion. The v/c ratios for each of the bus routes serving the area increase marginally. Only the M20 route, which operates on Seventh and Eighth Avenues, would exceed capacity at it runs northbound as a result of the Proposed Project and result in a significant impact. A detailed line haul analysis of relevant subway lines can be found in Appendix 9C, "Transit" of the DEIS **(Appendix A).**

The additional number of trips as a result of the Proposed Project has the potential to result in impacts to transit station elements at the 42nd Street – Port Authority Bus Terminal and Times Square – 42nd Street subway station. In the AM peak hour, one stair at each station declines from LOS A-C to a lower LOS and the number of stairs operating at LOS F at Times Square Station increases from four to five. During the PM peak hour one stair at each station also declines from LOS A-C to a lower LOS and the number of stairs operating at LOS F at Times Square Station would increase from four to five.

Analysis determined that the Proposed Project would have the potential to result in impacts to 12 subway stairwells and one fare array at the 42nd Street – Port Authority Bus Terminal subway station, accessed via the northwest corner of Eighth Avenue and 42nd Street. See **Table B.4-8** below.

Table B.4-8. Transit Station Impacts Proposed Project 2040

Subway Stairs	Location	AM	PM
Eighth Avenue - 42nd Street - PABT Station			
IND P8	between N62A paid zone and uptown A/C/E platform	Impact	Impact
IND P9	between N62A paid zone and uptown A/C/E platform	Impact	Impact
Times Square-42nd Street Station			
FLU PL1/PL2	between lower mezzanine and No. 7 platform	Impact	Impact
FLU PL5	between lower mezzanine and No. 7 platform	Impact	
IRT ML5	between lower mezzanine and downtown 1/2/3 platform	Impact	Impact
IRT ML6	between lower mezzanine and uptown 1/2/3 platform	Impact	Impact
IRT ML9	between lower mezzanine and downtown 1/2/3 platform	Impact	-
ML13/ML14/ ML15/ML16	between lower and upper mezzanine	Impact	Impact
BMT P10	between BMT mezzanine and uptown N/Q/R/W platform	Impact	Impact
BMT P11	between upper mezzanine and downtown N/Q/R/W platform	Impact	Impact
BMT P13	between upper mezzanine and downtown N/Q/R/W platform	Impact	-
BMT P15/P17	between upper mezzanine and downtown N/Q/R/W platform	Impact	Impact

A detailed examination of relevant analysis to transit capacity, congestion and LOS for subway lines, bus lines and subway stations can be found in can be found in **Table 9C-7** (Subway Line Haul Analysis 2040), **Table 9C-8** (Bus Line Haul Analysis 2040) and **9C-9** (Station Elements by LOS (2040) in Appendix 9C of the DEIS **(Appendix A)**.

Pedestrian

In 2040, the Proposed Project saw a reduction in the LOS at several locations when compared to the No Action Alternative. The Proposed Project would result in impacts to 15 sidewalks, seven corners, and 21 crosswalks in one or more of the peak time periods and one or both of the analysis years, 2032 and 2040. The impacts to sidewalks, corners, and crosswalks are identified in **Table B.4-9**, **Table B.4-10**, and **Table B.4-11.**

Table B.4-9. Sidewalk Impacts Resulting From the Proposed Project

Year		Build Year 2032			Build Year 2040			Width Required (ft)
Sidewalk	Side	AM	MD	PM	AM	MD	PM	
42nd Street, 7th to 8th Avenue	South				Impact	Impact		0.2
42nd Street, 7th to 8th Avenue	North					Impact		0.3
42nd Street, 8th to 9th Avenue	North		Impact		Impact	Impact	Impact	1.0
8th Avenue, 33rd to 34th Street	West				Impact			0.3
8th Avenue, 34th to 35th Street	East				Impact			0.0
8th Avenue, 35th to 36th Street	West				Impact		Impact	0.1
8th Avenue, 36th to 37th Street	West				Impact		Impact	0.8
8th Avenue, 36th to 37th Street	East				Impact		Impact	0.6
8th Avenue, 37th to 38th Street	West				Impact		Impact	0.9
8th Avenue, 37th to 38th Street	East				Impact		Impact	0.3
8th Avenue, 38th to 39th Street	East				Impact		Impact	0.2
8th Avenue, 38th to 39th Street	West				Impact	Impact	Impact	1.7
8th Avenue, 39th to 40th Street	West	Impact			Impact	Impact	Impact	1.8
8th Avenue, 39th to 40th Street	East				Impact		Impact	0.4
9th Avenue, 39th to 40th Street	East	Impact		Impact	Impact	Impact	Impact	0.6

Table B.4-10. Corner Impacts Resulting From the Proposed Project

Year		Build Year 2032			Build Year 2040			Area Required (ft^2)
Intersection	Corner	AM	MD	PM	AM	MD	PM	
8th Avenue-35th Street	SE				Impact			4.2
8th Avenue-35th Street	SW				Impact			13.8
8th Avenue-35th Street	NW						Impact	9.2
8th Avenue-37th Street	NE				Impact			8.6
8th Avenue-37th Street	SE				Impact			11.2
8th Avenue-38th Street	SW				Impact			31.2
8th Avenue-41st Street	NE						Impact	11.0

Table B.4-11. Crosswalk Impacts Resulting From the Proposed Project

Year		Build Year 2032			Build Year 2040			Width Required (ft)
Intersection	Side	AM	MD	PM	AM	MD	PM	
8th Avenue-33rd Street	E						Impact	0.1
8th Avenue-34th Street	E					Impact	Impact	7.2
8th Avenue-34th Street	W					Impact	Impact	0.1
8th Avenue-35th Street	E						Impact	1.2
8th Avenue-35th Street	W						Impact	0.7
8th Avenue-37th Street	E						Impact	3.8
8th Avenue-37th Street	W						Impact	1.6
8th Avenue-38th Street	E						Impact	0.1
8th Avenue-39th Street	W	Impact				Impact		5.6
8th Avenue-40th Street	N	Impact		Impact			Impact	7.5
8th Avenue-40th Street	E						Impact	5.5
8th Avenue-40th Street	W	Impact	Impact	Impact			Impact	0.0*
8th Avenue-42nd Street	N			Impact		Impact	Impact	5.5
8th Avenue-42nd Street	E	Impact				Impact	Impact	0.1
8th Avenue-42nd Street	S	Impact				Impact	Impact	2.8
8th Avenue-42nd Street	W	Impact		Impact		Impact	Impact	7.2
8th Avenue-43rd Street	E						Impact	0.1
9th Avenue-40th Street	E	Impact		Impact		Impact		3.1
9th Avenue-41st Street	W	Impact				Impact		3.8
9th Avenue-42nd Street	E						Impact	1.6
9th Avenue-42nd Street	S				Impact		Impact	0.1

* Width required is less than 0.1 feet.

Parking

The 2040 parking estimate indicates there would be 2,350 available parking spaces within a 0.25-mile radius, and an additional 1,187 spaces between a 0.25- and 0.5-mile radius. This totals approximately 3,537 available parking spaces within a 0.5-mile radius of the PABT. In the Future with the Proposed Project (2040), it is estimated that the private development associated with the Proposed Project would generate 409 combined inbound and outbound passenger car trips during the PM peak hour (the highest hour of the day). Combined with the 1,385 parking spaces that would be eliminated from the Study Area as a result of the demolition of the existing PABT, there would be a need for approximately 1,794 parking spaces, so there would be sufficient parking availability during the Future with the Proposed Project.

B.4.7 CONCLUSIONS

B.4.7.1 Bus Services

The Proposed Project offers significant advantages to accommodating the forecast growth of bus service to Midtown Manhattan when compared to the No Action Alternative. The No Action Alternative forces nearly 350 buses to find alternate locations *(e.g., curbside operating positions)* for operations in 2040 (and beyond).

B.4.7.2 Traffic

The comparison between the No Action Alternative and Proposed Project concluded that 52 and 49 of the 89 intersections in the AM and PM peak periods, respectively, would experience significant adverse impacts as a result of the Proposed Project.

Mitigation efforts were analyzed for all movements (as well as overall intersections) that showed a significant impact as a result of the Proposed Project. When conducting the mitigation analysis, there were several standard CEQR approved efforts that were identified and analyzed. The first mitigation effort that was applied was signal timing green time allocation (adjusted by a maximum of four seconds per CEQR guidelines). Additional mitigation efforts included removal of parking during peak hours, re-striping through and turn lanes, and potentially adding exclusive or overlapping turning phases.

Overall, 16 of 52 intersections were able to be mitigated[20] through these measures in the AM model, and 10 of 49 intersections in the PM.

B.4.7.3 Transit

Analysis has determined that the Proposed Project would have the potential to result in an impact to the line haul capacity for one bus line (the M20 northbound) but would not impact any subway lines. The No Action Alternative was not shown to have any line haul capacity impacts on either subways or buses.

Analysis determined that the Proposed Project would have the potential to result in impacts to 12 subway stairwells and one fare array at the 42nd Street – Port Authority Bus Terminal subway station, accessed via the northwest corner of Eighth Avenue and 42nd Street.

Subway stair impacts may be mitigated by adding additional stairs, widening existing stairs, or changes to station configuration to redistribute volumes where feasible. Impacts to subway fare arrays may be mitigated by adding additional fare gates, replacing lower capacity elements such as High Entrance Exit Turnstiles (HEETS) with higher capacity fare gates, or other reconfigurations of access and fare control where possible.

B.4.7.4 Pedestrian

Pedestrian conditions under the Proposed Project would experience decreases in LOS levels when compared to the No Action Alternative and would be expected to result in impacts as shown in **Table B.4-9**, **Table B.4-10**, and **Table B.4-11**.

The Proposed Project would result in impacts to 15 sidewalks, seven corners, and 21 crosswalks in one or more of the peak time periods and one or both of the analysis years, 2032 and 2040.

[20] Mitigated intersections require improvements that restore the intersections level of service to those projected in the No Action or better.

Potential mitigations for impacts to sidewalks, corners, and crosswalks vary, and in many cases, more than one potential mitigation measure is possible (*e.g.*, an impacted crosswalk could be mitigated through signal timing adjustments and widening). Sidewalk and corner impacts can potentially be mitigated by removal or relocation of certain obstructions or by expanding sidewalk or corner areas. While some sidewalk obstructions are required on every block, such as sign posts, light and signal poles, and fire hydrants, some other elements such as planters, private fixtures, news dispensers, and food carts can be relocated off critical areas or repositioned to provide more space for passing pedestrians. Obstructions that are located within corner areas can often be relocated out of the corner area.

As indicated previously, at the direction of NYC DOT, the analysis did not include painted sidewalk and corner expansions in the existing or future conditions. Where these painted sidewalk areas exist along sidewalks or at corners, they are sufficient to mitigate the project impacts.

Crosswalk impacts are typically addressed by widening the crosswalk (*i.e.*, painting the crosswalk wider) but can also be addressed by changing signal timings or shortening a crosswalk by extending one or both corners at the end of the crosswalk.

PANYNJ will coordinate with NYC DOT to monitor pedestrian conditions and develop coordinated mitigations that are responsive to and commensurate with the contribution of the Proposed Project to overall increases in pedestrian activity on area sidewalks, corners, and crosswalks. As indicated by the analysis results, many of the potential impacts to pedestrian elements will not occur until the private development is constructed and occupied, after the completion of the Replacement Facility. In addition, the analysis accounts for developments that would occur in the surrounding area, independent of the Proposed Project. It is possible that these developments would not be constructed or would be modified, which would result in a change to conditions presented in this analysis, and may reduce pedestrian volumes such that potential impacts to certain sidewalks, corners, or crosswalks do not materialize as anticipated in this analysis.

B.4.7.5 Parking

In the Future with the Proposed Project (2040), the private development associated with the Proposed Project would generate 409 combined inbound and outbound passenger car trips during the PM peak hour (the highest hour of the day). Combined with the 1,385 parking spaces that would be eliminated from the Study Area as a result of the demolition of the existing PABT, there would be a need for approximately 1,794 parking spaces. Accordingly, in the Future with the Proposed Project (2040) there would be sufficient parking availability during the Future with the Proposed Project. Therefore, the Proposed Project would not be anticipated to result in an adverse impact to parking.