3.11.4 Construction Transportation

3.11.4.1 Introduction

The analyses in this chapter have been prepared following the guidance of the *City Environmental Quality Review (CEQR) Technical Manual* and the methodologies for transportation impact assessments. The chapter examines the potential temporary construction period impacts of project construction on traffic, parking, and pedestrian conditions (operational impacts are presented in Chapter 3.8, "Transportation"). As the first step in this analysis, peak construction activities during the standard construction peak period hours of 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM ("Peak Construction Analysis") were considered. Transportation screening assessments were undertaken using construction worker and truck activity for the highest peak quarter that is forecasted to occur during the Peak Construction Analysis scenario. Additionally, locations that are projected to have a reduced capacity during construction (such as removing a moving lane or narrowing a travel lane/pedestrian/bicycle pathway) or where pedestrian diversions are proposed due to a full sidewalk closure as part of the construction project's Maintenance and Protection of Traffic (MPT) during the commuter weekday AM, midday, and PM and Saturday peak hours ("Construction MPT Analysis") were considered. A qualitative analysis of pedestrian and bicycle diversions due to open space closures has been conducted. For the Construction MPT Analysis scenario, transportation screening assessments were undertaken using the latest MPT plan that is anticipated to be in place. Both the Peak Construction Analysis and Construction MPT Analysis scenarios were used to evaluate the potential for significant adverse transportation impacts during construction. Key data used in this analysis (e.g., phasing, construction, and worker trips) were developed based on project build-out data developed by the design build team (e.g., Turner construction).

The transportation analyses reflected in this chapter, as well as the recommended mitigation measures in Chapter 4.0, "Mitigation," were based on the initial construction schedule of 66 months. This schedule was further refined and condensed to 60 months[1], with the peak quarter of construction trips occurring in 2027. The previous construction schedule had the same or higher numbers of workers and trucks during the peak quarter, and the peak would have occurred in 2030, at which time there would have been additional traffic and pedestrian growth as compared to 2027. Therefore, the results shown in this chapter for the 2030 conditions under the previous schedule are more conservative, with the exception of the Route 9A/West Street and North Moore Street intersection, which would increase by up to 13 passenger car equivalent trips, as noted below.

The construction schedule previously analyzed included construction activities in Reaches 3, 5, 6 and 7, and drainage improvements in 2030, resulting in peak worker and truck activity. The current construction schedule results in peak worker and truck activity in 2027, with construction activity in Reaches 1, 2, 4, 5, 6 and 7, as well as drainage improvements and the pump station, which would modify pedestrian and vehicular travel patterns for workers and vehicular travel patterns for trucks.

[1] The 60-month construction schedule includes 7 months of early works projects which are described further in Construction Overview, Section 3.11.

The previous transportation analyses had also assumed all MPT activity occurring simultaneously in 2030 to reflect a potential worst-case scenario for transportation impact purposes. That is, the analysis assumed that all sidewalk closures, narrowed sidewalks/walkways, travel lane and parking lane closures, as well as narrowed travel lanes and parking lanes, that could potentially occur during the 66-month construction project would happen at the same time, coinciding with the peak construction worker and truck activity. This condition was analyzed to project the maximum potential significant adverse transportation impacts possible, thereby providing a conservative analysis that would encompass any changes to construction MPT phasing or construction start and end times for any reaches. Accordingly, there would be no difference in the geometric effects of construction MPT as presented in the transportation analyses in this chapter based on the revised schedule.

The pedestrian trips generated by workers were evaluated for the modified patterns and would still screen out entirely. As previously described, construction MPT would be assumed to still affect the same pedestrian elements in 2027 as presented in this chapter.

After evaluating the revised traffic patterns for worker vehicles and trucks at the intersections that were analyzed assuming the initial construction schedule, vehicle trips generated by construction activity would generally decrease under the revised schedule assumptions. The number of intersections that would warrant detailed analysis according to the methodology used in this chapter would be reduced by two intersections if the current construction schedule was applied. However, construction vehicles would increase by up to 13 passenger car equivalent trips at the Route 9A/West Street and North Moore Street intersection. The implementation of the recommended mitigation for the previous analysis at Route 9A/West Street and North Moore Street (i.e., a signal timing change) would adequately mitigate for the limited additional vehicles at this location.

Since traffic and pedestrian volumes at other locations previously analyzed for construction peak and MPT conditions would decrease with the current schedule and 2027 peak analysis year, the implementation of the recommended mitigation measures for the 66-month schedule, specifically, signal timing changes for traffic at North End Avenue and Vesey Street, Route 9A/West Street and Laight Street, Route 9A/West Street and Harrison Street, and Route 9A/West Street and Albany Street, and removal of a trash can on the northeast corner of Greenwich Street and North Moore Street and removal of flowerpots along the east sidewalk of Greenwich Street between Franklin Street and North Moore Street for pedestrian impacts due to MPT would negate any need for any further mitigation at those locations.

At unmitigated traffic intersections (Route 9A/West Street and Murray Street and Route 9A/West Street and Liberty Street) and pedestrian elements (West Walkway along Route 9A/West Street between Harrison Street and Chambers Street, Greenwich Street and North Moore Street South Crosswalk, and Greenwich Street and Franklin Street North Crosswalk), the volumes would be lower with the current schedule, but the significant impacts at those locations may persist and may continue to be unmitigatable.

As stated in Chapter 4.0 “Mitigation,” the proposed mitigation measures would be subject to approval by the New York City Department of Transportation (NYCDOT) and the New York State Department of Transportation prior to implementation.

3.11.4.2 Principal Conclusions

3.11.4.2.1 Traffic

Traffic conditions were evaluated at 14 intersections for the Peak Construction Analysis for the construction weekday AM and PM peak hours. Based on that analysis, during project construction significant adverse traffic impacts were identified at two intersections during the construction weekday AM peak hour and four intersections during the construction weekday PM peak hour. **Table 3.11.4-1** summarizes these projected significant adverse traffic impacts. To address these impacts, potential improvement measures that may be implemented to mitigate these impacts are presented in Chapter 4.0, "Mitigation." Since the impacts identified in this analysis are construction-related, the potential measures to address the identified traffic and pedestrian impacts will be implemented as part of the project's MPT plans. Potential measures are presented in Chapter 4.0, "Mitigation" and will be reviewed with the relevant agencies for feasibility and implementation.

Table 3.11.4-1
Summary of Peak Construction Analysis Significant Adverse Traffic Impacts

Intersection			
NB/SB Street	**EB/WB Street**	**Weekday AM Peak Hour**	**Weekday PM Peak Hour**
North End Avenue	Vesey Street		SB-LT
Route 9A/West Street	Murray Street		EB-L
			WB-LT
Route 9A/West Street	Laight Street	WB-L	
Route 9A/West Street	Liberty Street		EB-DefL
		NB-L	NB-L
Route 9A/West Street	Albany Street		EB-LTR

Note:
L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound

For the traffic locations affected by the MPT plan, two intersections were analyzed for six peak hours, comprising the commuter weekday AM, midday, and PM and Saturday peak hours, and the construction weekday AM and PM peak hours. According to analyses conducted under the MPT Construction Analysis scenario, potential significant adverse traffic impacts at two intersections could result: Route 9A/West Street and Harrison Street (AM peak hour) and Route 9A/West Street and North Moore Street (midday, PM, construction PM, and Saturday peak hours). **Table 3.11.4-2** summarizes these impacts. The potential improvement measures that may be implemented to mitigate these impacts are discussed in Chapter 4.0, "Mitigation," which consist of signal timing changes for traffic and relocation of moveable obstructions for pedestrians. While it is unlikely that all of the closures presented in **Table 3.11.4-3** would occur simultaneously with the peak quarter of construction conditions in 2030, in order to provide a conservative analysis of the traffic effects at MPT locations and flexibility should construction staging or durations be modified, it is assumed in this environmental impact statement (EIS) that all areas impacted by closures would occur simultaneously and overlap with the peak quarter of construction.

Table 3.11.4-2
Summary of Construction MPT Analysis Significant Adverse Traffic Impacts

Intersection		Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour	Construction Weekday AM Peak Hour	Construction Weekday PM Peak Hour
NB/SB Street	EB/WB Street						
Route 9A/West Street	Harrison Street	NB-TR					
Route 9A/West Street	North Moore Street		WB-L		WB-L		
				WB-R			WB-R

Note:
L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn, EB = Eastbound, WB = Westbound, NB = Northbound, SB = Southbound

3.11.4.2.2 Transit

The incremental subway, Port Authority Trans-Hudson Corporation (PATH) and bus trips generated during project construction would be well below the respective *CEQR Technical Manual* thresholds. Therefore, detailed transit analyses are not warranted, and the Proposed Project would not result in any significant adverse transit impacts.

3.11.4.2.3 Citywide Ferry Service

Given its location and trip generation characteristics, the Proposed Project is not expected to generate any incremental Citywide Ferry Service (CWFS) trips during construction. Therefore, an analysis of ferry facilities is not warranted, and the Proposed Project would not result in any significant adverse ferry impacts. [2]

3.11.4.2.4 Pedestrians

The incremental pedestrian trips generated during construction per pedestrian element for the Peak Construction Analysis would be well below the *CEQR Technical Manual* analysis threshold of 200 pedestrians per hour. Therefore, a detailed pedestrian analysis is not warranted, and the Proposed Project would not result in any significant adverse pedestrian impacts for the Peak Construction Analysis scenario.

To determine the impacts under the MPT Analysis scenario of narrowed sidewalks/walkways and sidewalk closures, pedestrian conditions were evaluated at eight sidewalks/walkways, four corners, and two crosswalks for the commuter weekday AM, midday, and PM and Saturday peak hours. Based on this analysis, significant adverse pedestrian impacts during construction were identified at five pedestrian elements during the weekday AM peak hour, two elements during the weekday midday peak hour, five elements during the weekday PM peak hour, and two elements during the Saturday peak hour. **Table**

[2] While the project worker trips originating New Jersey may also use NY Waterway, these trips were conservatively assumed in the vehicle or transit modes.

3.11.4-3 summarizes these projected significant adverse pedestrian impacts and the potential mitigation measures that may be implemented to address these impacts are discussed in Chapter 4.0, "Mitigation."

Table 3.11.4-3
Summary of Construction MPT Analysis Significant Adverse Pedestrian Impacts

Pedestrian Element	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour
West Walkway along Route 9A/West Street between Harrison Street and Chambers Street	Impacted		Impacted	Impacted
East Sidewalk along Greenwich Street between North Moore Street and Franklin Street	Impacted		Impacted	
Greenwich Street and Franklin Street Northeast Corner	Impacted	Impacted	Impacted	Impacted
Greenwich Street and North Moore Street South Crosswalk	Impacted		Impacted	
Greenwich Street and Franklin Street North Crosswalk	Impacted	Impacted	Impacted	

To determine the impacts of open space closures on pedestrians and bicyclists, a qualitative analysis of alternate routes bypassing closed open spaces and routes to other available open spaces was conducted. Based on this analysis, the potential for temporary unmitigated significant adverse effects on pedestrians and bicyclists would result in 2027, the peak year of construction activity, and would result at lesser levels throughout the duration of the construction schedule.

As described further in Construction Overview, Section 3.11, there would be an Early Works Package (EWP) of drainage and utility improvements which is encompassed within the overall 60-month current schedule. The durations of the individual projects would vary but be completed within a total duration of 7 months. As a result, the EWP would involve temporary travel lane, parking lane, and street end closures in the Project Area, but the closures would be of short duration. While this may result in temporary unmitigatable significant adverse traffic and pedestrian impacts throughout the 7-month EWP, MPT plans will be developed in close consultation with and approved by NYCDOT and NYSDOT to minimize these impacts on pedestrians, cyclists, and vehicles.

3.11.4.2.5 Parking

The Proposed Project would generate a daily parking demand of 104 vehicles during peak construction activities. This demand could be fully accommodated by nearby off-street facilities within ¼ mile of the Project Area. Therefore, the Proposed Project would not result in any potential significant adverse parking impacts.

3.11.4.3 Screening Assessment

As defined in the *CEQR Technical Manual*, a two-tiered screening analysis is performed to determine whether a quantified traffic, transit, ferry, pedestrian, or parking analysis is needed to evaluate transportation impacts. The methodology begins with the preparation of a trip generation analysis to determine the volume of person and vehicle trips associated with the Proposed Project. The results are then compared with the *CEQR Technical Manual*-specified thresholds (Level 1 screening analysis) to determine whether a Level 2 screening analysis is needed. If the Proposed Project would result in 50 or

more vehicle trips, 50 or more CWFS trips, and/or 200 or more transit/pedestrian trips during a given peak hour (a "Level 1" screening), a Level 2 screening analysis is undertaken.

For the Level 2 screening analysis, project-generated trips are assigned along specific streets and through intersections, into transit modes and along pedestrian routes. For a typical Level 2 screening, if the results of this analysis show that the Proposed Project (in Manhattan) would result in 50 or more vehicle trips at an intersection, 25 or more passenger ferry trips in a single direction on a single route, 50 or more bus riders on a route in one direction, 200 more subway trips at a station, or 200 or more pedestrian trips at a crosswalk, street corner, or sidewalk segment, quantified analyses may be warranted to analyze the potential for traffic, transit, pedestrian, and/or parking impacts.

As stated above, separate assessments/analyses were prepared for the Peak Construction Analysis and the Construction MPT Analysis scenarios; both are presented below.

3.11.4.3.1 Construction Worker and Delivery Projections

The Proposed Project is to be constructed in a single phase, with construction anticipated to begin in 2025 and be completed in 2030. The analyses in this chapter were based on the peak worker and truck trips during project construction that were developed based on several factors including construction vehicle and worker projections by reach, modal split, vehicle occupancy and trip distribution, truck passenger car equivalents (PCEs), and arrival/departure patterns which were then reviewed to determine the peak quarter of construction. This analysis included projecting construction workers and trucks for average weekdays by construction quarter on a rolling basis and selecting the highest (or peak) quarter of combined workers and truck PCEs, which is based on standard *CEQR Technical Manual* guidance. Based on this analysis, as shown in **Table 3.11.3-4**, the peak quarter of construction activity is projected to be in the first quarter of 2030.

Table 3.11.3-4
Average Number of Daily Workers and Trucks by Year and Quarter

Year	2025		2026				2027				2028				2029				2030			
Quarter	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Daily Workers																						
Reach 1	10	30	40	60	70	80	85	80	70	60	25	10	-	-	-	-	-	-	-	-	-	-
Reach 2	10	65	110	110	25	25	75	120	120	120	95	10	-	-	-	-	-	-	-	-	-	-
Reach 3	-	-	-	-	-	-	-	-	-	-	-	-	10	10	20	70	40	30	100	80	40	-
Reach 4	10	10	10	10	75	75	30	20	30	40	110	110	10	10	-	-	-	-	-	-	-	-
Reach 5	10	10	10	35	40	50	60	65	70	100	125	130	110	80	45	45	160	170	180	55	20	10
Reach 6	-	-	-	-	-	-	-	35	70	40	25	55	160	150	95	110	100	80	35	30	-	-
Reach 7	-	-	-	-	-	-	-	-	-	-	-	40	40	80	85	80	70	110	85	30	20	10
Drainage Improvements	10	15	15	15	15	20	20	30	30	20	20	20	20	20	20	20	20	20	20	20	15	15
Total Workers	**50**	**130**	**185**	**230**	**225**	**250**	**270**	**350**	**390**	**380**	**400**	**375**	**350**	**350**	**265**	**325**	**390**	**410**	**420**	**215**	**95**	**35**
Daily Trucks																						
Reach 1	5	15	20	30	35	40	40	40	35	30	15	5	-	-	-	-	-	-	-	-	-	-
Reach 2	5	30	50	50	15	15	35	55	55	55	45	5	-	-	-	-	-	-	-	-	-	-
Reach 3	-	-	-	-	-	-	-	-	-	-	-	-	5	5	10	35	20	15	45	40	20	-
Reach 4	5	5	5	5	35	35	15	10	15	20	50	50	5	5	-	-	-	-	-	-	-	-
Reach 5	5	5	5	20	20	25	30	30	35	45	60	60	50	40	25	25	75	80	85	25	10	5
Reach 6	-	-	-	-	-	-	-	20	35	20	15	25	75	70	45	50	45	40	20	15	-	-
Reach 7	-	-	-	-	-	-	-	-	-	-	-	20	20	40	40	40	35	50	40	15	10	5
Drainage Improvements	5	10	10	10	10	10	10	15	15	10	10	10	10	10	10	10	10	10	10	10	10	10
Total Trucks	**25**	**65**	**90**	**115**	**115**	**125**	**130**	**170**	**190**	**180**	**195**	**175**	**165**	**170**	**130**	**160**	**185**	**195**	**200**	**105**	**50**	**20**

Note: Highlighted text indicates peak quarter of construction.

3.11.4.3.2 Hours of Work

It is expected that the majority of construction activities would be performed in accordance with New York City laws and regulations, which allow weekday construction between 7 AM and 6 PM. Construction work typically begins at 7 AM on weekdays, with most workers arriving between 6 AM and 7 AM. Normally the work day ends at 3:30 PM, but may be extended beyond normal work hours to complete certain critical tasks (e.g., finishing a concrete pour). Any extended workdays generally last until approximately 6 PM and would not include all construction workers on-site, but only those involved in the specific task requiring additional work time. Additionally, overnight and weekend work may be necessary, but would be the exception of less intensity and potential for significant adverse transportation impacts than the normal weekday 7 AM to 3:30 PM workday.

Based on the above, it was determined that the most conservative conditions for this construction impact analysis were a 7 AM to 3:30 PM workday.

3.11.4.3.3 Deliveries and Access

Based on specific construction logistics developed by the project's design build team, construction trucks/workers are expected to access/egress each reach at the following locations (on a relative basis):

- Reach 1:
  - North Moore Street at the corner of Route 9A/West Street – 75%
  - North Moore Street at the corner of Greenwich Street – 25%
- Reach 2:
  - Route 9A/West Street at the corner of Stuyvesant Plaza – 100%
- Reach 3:
  - River Terrace and Chambers Street – 25%
  - River Terrace and Warren Street – 25%
  - River Terrace and Murray Street – 25%
  - River Terrace and River Terrace – 25%
- Reach 4:
  - Vesey Street and North End Avenue – 100%
- Reach 5:
  - Vesey Street and North End Avenue – 50%
  - Liberty Street and South End Avenue – 50%
- Reach 6:
  - Liberty Street and South End Avenue – 25%
  - Albany Street and South End Avenue – 25%
  - Rector Place and South End Avenue – 25%
  - West Thames Street and South End Avenue – 25%
- Reach 7:

- South End Avenue at Southern Turnaround – 50%
- South End Avenue and Third Place – 20%
- South End Avenue and Second Place – 20%
- South End Avenue and First Place – 10%

- Drainage Improvements:
  - Route 9A/West Street at Chambers Street (north side) – 15%
  - Route 9A/West Street at North Esplanade – 14%
  - North End Avenue at Vesey Street – 14%
  - Route 9A/West Street at Vesey Street – 15%
  - South End Avenue at Albany Street – 14%
  - South End Avenue at Rector Place – 13%
  - Route 9A/West Street at Albany Street – 15%

3.11.4.3.4 Transportation Planning Assumptions

The temporal distribution of construction worker and truck trips is assumed to follow the patterns summarized in **Table 3.11.4-5**. As shown, construction workers typically arrive in the early morning and depart in the mid-afternoon, while truck deliveries typically peak in the early morning and diminish through the balance of the work day.

Table 3.11.4-5
Temporal Distributions of Construction Worker and Truck Trips

	Construction Workers		Construction Trucks	
Beginning Hour	**Arrival**	**Departure**	**Arrival**	**Departure**
6 AM	80%	0%	25%	25%
7 AM	20%	0%	10%	10%
8 AM	0%	0%	10%	10%
9 AM	0%	0%	10%	10%
10 AM	0%	0%	10%	10%
11 AM	0%	0%	10%	10%
Noon	0%	0%	10%	10%
1 PM	0%	0%	5%	5%
2 PM	0%	5%	5%	5%
3 PM	0%	80%	5%	5%
4 PM	0%	15%	0%	0%
Daily Total	**100%**	**100%**	**100%**	**100%**

For the construction workers modal splits, the latest available U.S. Census reverse journey-to-work (RJTW) data for workers in the construction and excavation industry (2000 Census data) were reviewed. The census tracts within and adjacent to the Project Area (south to north from North Moore Street to First Place and east to west from Route 9A/West Street to Greenwich Street) were included, New York County tracts 13, 21, 33, 39, 317.03, and 317.04. Travel demand assumptions for the Proposed Project's peak construction worker person and vehicle trips and truck trips are summarized in **Table 3.11.4-6** for the standard construction peak hours of 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM.

Table 3.11.4-6
Travel Demand Assumptions—Proposed Project Peak Construction

Total Daily Person Trips	Construction Workers 420 workers 2.0 trips / worker	
Temporal	**6 AM–7 AM**	**3 PM–4 PM**
	(1)	(1)
	40.0%	40.0%
Direction	(1)	(1)
In	100%	0%
Out	0%	100%
Total	100%	100%
Modal Split	(2)	(2)
Auto	29.0%	29.0%
Taxi	0.0%	0.0%
Subway	47.0%	47.0%
Railroad (PATH)[1]	13.0%	13.0%
Bus	8.0%	8.0%
Walk	3.0%	3.0%
Total	100%	100%
Vehicle Occupancy	(2) Weekday	(2) Weekday
Auto	1.18	1.18
Total Daily Truck Trips	**Construction Trucks 200 trucks 2.0 trips / truck**	
Temporal	**6 AM–7 AM**	**3 PM–4 PM**
	(1)	(1)
	25.0%	5.0%
Delivery Direction	(1)	(1)
In	50%	50%
Out	50%	50%
Total	100%	100%

Sources:
(1) Hourly construction worker and truck trips were derived from an estimated quarterly average number of construction workers and truck deliveries per day, with each truck delivery resulting in two daily trips (arrival and departure).
(2) U.S. Census Bureau, 2000 Estimates –RJTW Data for Construction and Excavation Occupations: New York County census tracts 13, 21, 33, 39, 317.03, and 317.04.

Note:
[1] PATH = Port Authority Trans-Hudson railroad. Per the 2000 census RJTW data for workers in the construction and excavation industry, railroad and ferry trips are grouped together. General 2012–2016 RJTW data were reviewed for the same census tracts identified above to estimate the percentage of ferry trips compared to railroad trips. Based on the 2012–2016 RJTW data, approximately 2-percent of the construction worker trips would be made by ferry. However, it is expected that those ferry trips would be mainly via the Staten Island Ferry (where analysis is not required) rather than the Citywide Ferry Service (CWFS). Therefore, it is proposed that the construction worker PATH trips will conservatively include all ferry trips.

Daily Workforce and Truck Deliveries

The combined daily construction workforce and truck trip projections in the peak quarter of 2030 were used as the basis for estimating peak hour construction trips. Project construction is estimated to have a peak of approximately 420 workers and 200 truck deliveries per day. Based on 2000 RJTW data from the U.S. Census, it is anticipated that approximately 29 percent of construction workers would commute to each reach using private autos at an average occupancy of approximately 1.18 persons per vehicle. The modal split of 29 percent and vehicle occupancy rate of 1.18 persons per vehicle is the latest available data for workers in the construction and excavation industry and its usage for construction workforce trip projection follows standard *CEQR Technical Manual* guidance.

Like other construction projects in New York City, the majority of the construction activities are expected to begin at 7:00 AM and end at 3:30 PM. While construction truck trips would be distributed throughout

the day (with more trips during the morning), and most trucks would remain in the area for short durations, construction workers would commute during the hours before and after the work shift. For analysis purposes, each truck delivery was assumed to result in two truck trips during the same hour (one "in" and one "out"), whereas each worker vehicle was assumed to arrive near the work shift start hour and depart near the work shift end hour. Further, in accordance with the *CEQR Technical Manual*, the traffic analysis assumed that each truck has a PCE of two standard vehicles for transportation analysis purposes.

The estimated daily vehicle trips were then distributed throughout the workday based on projected work shift allocations and likely arrival/departure patterns for construction workers and trucks (see **Table 3.11.4-5**). For construction workers, the majority (approximately 80 percent of total workers) of the arrival and departure trips are expected during the hour before and after each work shift (6:00 AM to 7:00 AM for arrival and 3:00 PM to 4:00 PM for departure on a regular day shift). Construction truck deliveries typically peak during the hour before each shift (25 percent of total truck trips), overlapping with construction worker arrival traffic.

3.11.4.3.5 Level 1 Screening

Based on the travel demand assumptions presented in **Table 3.11.4-6**, the Proposed Project's construction peak hour person and vehicle trips during peak construction were developed and are shown in **Table 3.11.4-7**.

Table 3.11.4-7
Peak Quarter of 2030 Construction Trip Generation Summary: Proposed Project

			Person Trip							Vehicle Trips (PCEs)			
	Peak Hour	In/Out	Auto	Taxi	Subway	PATH	Bus	Walk	Total	Auto	Taxi	Truck	Total
Cumulative Construction Trips for all Reaches	6–7 AM	In	98	0	158	44	27	9	336	83	0	100	183
		Out	0	0	0	0	0	0	0	0	0	100	100
		Total	98	0	158	44	27	9	336	83	0	200	283
	3–4 PM	In	0	0	0	0	0	0	0	0	0	20	20
		Out	98	0	158	44	27	9	336	83	0	20	103
		Total	98	0	158	44	27	9	336	83	0	40	123

Note: PCE = Passenger Car Equivalent. A PCE factor of 2.0 has been applied to truck trips for transportation screening assessment purposes.

Traffic

As shown in **Table 3.11.43-7**, the Proposed Project's construction vehicle-generated trips during peak construction activities are projected to be a PCE of 283 and 123 vehicle trips during the weekday AM and PM construction peak hours, respectively. Therefore, since the vehicle trips during the weekday AM and PM construction peak hours exceed the *CEQR Technical Manual* analysis threshold of 50 peak hour vehicle trips, a Level 2 screening assessment (presented in the section below) was conducted to determine if there is a need for additional quantified traffic analysis during the weekday AM and PM construction peak hours.

Transit

Public transit options to and from the Project Area are shown in **Appendix H-1**. The Project Area is well served by transit (comprised of both rail and bus service) with the New York City Transit (NYCT) Franklin Street (No. 1/2/3 trains) Station, Chambers Street (No. 1/2/3 trains) Station, Park Place (No. 2/3 trains)

Station, Cortlandt Street (R/W trains) Station, Bowling Green (No. 4/5 trains) Station, Rector Street (No. 1 train) Station, Rector Street (R/W trains) Station, Fulton Street (No. 4/5 trains) Station, Wall Street (No. 4/5 trains) Station, WTC Cortlandt Street (No. 1 train) Station, and World Trade Center (E train) Station included within the Study Area. Local NYCT bus service is provided by the M9, M20, M22, M55, and M103 bus routes. Public transportation connections to New Jersey are also available via the PATH World Trade Center Station.

Based on the modal splits derived from the 2000 reverse-journey-to-work data for construction and excavation occupations from the U.S. Census Bureau, it is anticipated that approximately 47 percent, 13 percent, and 8 percent of workers would commute to the project area via subway, PATH, and bus, respectively, which is the equivalent of a peak quarter of 420 average daily construction workers, with 80 percent of these workers arriving or departing during the construction peak hours. As shown in **Table 3.11.4-7**, the incremental subway, PATH, and bus trips generated during construction would be 158, 44, and 27 trips during both the weekday AM and PM construction peak hours. Therefore, since all modes of transit would be expected to incur incremental peak hour trips well below respective *CEQR Technical Manual* thresholds, detailed analyses are not warranted, and the Proposed Project would not result in any significant adverse impacts on transit systems.

Citywide Ferry Service

The Project Area is served by the St. George Route of the Citywide Ferry Service, stopping at Battery Park City/Vesey Street (see figure in **Appendix H-1**). As shown in **Table 3.11.4-7**, the Proposed Project is not expected to generate any incremental construction worker trips on the Citywide of NJ Ferry Service. Therefore, an analysis of ferry facilities is not warranted, and the Proposed Project would not result in any significant adverse ferry impacts.

Pedestrians

As shown in **Table 3.11.4-7**, the projected number of incremental pedestrian trips generated by project construction is 336 during both the weekday AM and PM construction peak hours. Since the incremental pedestrian trips would be greater than 200 person trips during the weekday AM and PM construction peak hours, a Level 2 screening assessment was conducted to determine pedestrian elements where quantified analysis may be warranted during construction, if any.

3.11.4.3.6 Level 2 Screening

As part of the Level 2 screening assessment, construction-generated trips are assigned to specific intersections and pedestrian elements near the project site. As stated above, a further quantified construction period transportation analyses would be warranted if the trip assignments identify key intersections with 50 or more project-generated peak hour PCE vehicle trips or pedestrian elements with 200 or more project-generated peak hour pedestrian trips.

Traffic

As shown in **Table 3.11.4-7**, incremental vehicle trips resulting from project construction would exceed the *CEQR* Level-1 screening threshold during the weekday AM and PM peak hours. These vehicle trips were then assigned to area intersections based on the most likely travel routes to and from the project area, prevailing travel patterns, commuter origin-destination (O-D) summaries from the 2000 census data and the locations of off-street parking facilities. Trucks are expected to follow NYCDOT-designated truck routes and enter each reach at the locations detailed above under "Deliveries and Access."

As shown in **Appendix H-1**, there are approximately 35 off-street parking facilities (garages and lots) located within ¼ mile of the Project Area. Level 2 traffic trip assignments were individually developed for the construction worker vehicle trips and truck trips by reach (see **Appendix H-1)**. Construction worker vehicle trips were assigned to five nearby off-street parking facilities by reach based on the locations detailed above under "Deliveries and Access" (see **Table 3.11.4-8)**.

Table 3.11.4-8
Existing Off-Street Parking Supply and Utilization

Garage #	Name/Address	License Number	Licensed Capacity	Utilization Rate					Utilized Spaces					Available Spaces				
				AM	MD	PM	ON	SAT	AM	MD	PM	ON	SAT	AM	MD	PM	ON	SAT
1	Patriot Parking LLC. / 308 Greenwich Street	1159592	232	80%	90%	80%	40%	75%	186	209	186	93	174	46	23	46	139	58
2	MP 400 LLC. / 400 Chambers Street	1367106	123	75%	85%	85%	30%	75%	92	105	105	37	92	31	18	18	86	31
3	SP Plus Corporation / 250 Vesey Street	2021912	371	70%	80%	80%	20%	75%	260	297	297	74	278	111	74	74	297	93
4	MP Battery Gateway LLC. / 345 South End Avenue	2095748	415	80%	85%	80%	50%	70%	332	353	332	208	291	83	62	83	207	124
5	MP Battery 70 LLC. / 70 Little West Street	2087595	100	70%	85%	80%	50%	70%	70	85	80	50	70	30	15	20	50	30
Totals		-	1,241	76%	85%	81%	37%	73%	940	1049	1000	462	905	**301**	**192**	**241**	**779**	**336**

Notes: MD = Midday; SAT = Saturday; ON = Overnight
Sources: Survey conducted by AKRF Inc. June 2023

As shown in **Table 3.11.4-9 and Figure 3.11.4-1**, based on the construction-generated traffic assignments, 14 intersections were selected for detailed construction traffic analysis.

Table 3.11.4-9
Traffic Level 2 Screening Analysis Results—
Selected Traffic Peak Construction Analysis Locations: Peak Construction Analysis

Intersection	Weekday Vehicle Trips		Selected Analysis Locations
	6–7 AM	3–4 PM	
North End Avenue and Warren Street	39	24	
North End Avenue and Murray Street (South)	36	24	
North End Avenue and River Terrace	36	24	
North End Avenue and Vesey Street	**62**	**26**	✓
South End Avenue and Liberty Street	**54**	**21**	✓
South End Avenue and Albany Street	46	35	
South End Avenue and W Thames Street	30	21	
Battery Place and W Thames Street	30	19	
Battery Place and Third Place	28	17	
Battery Place and Second Place	36	25	
Battery Place and First Place	30	12	
Little W Street and Battery Place	37	12	
Route 9A/West Street and Laight Street	**108**	**59**	✓
Route 9A/West Street and Hubert Street (East)**	30	55	
Route 9A/West Street and Hubert Street (West)**	78	4	
Route 9A/West Street and N Moore Street	**108**	**59**	✓
Route 9A/West Street and Harrison Street (East)	**30**	**55**	✓

8.28.24

Peak Construction Traffic Analysis Locations

NORTH/WEST BATTERY PARK CITY RESILIENCY

3.11.4-1

Table 3.11.4-9
Traffic Level 2 Screening Analysis Results—
Selected Traffic Peak Construction Analysis Locations: Peak Construction Analysis

Intersection	Weekday Vehicle Trips		Selected Analysis Locations
	6–7 AM	3–4 PM	
Route 9A/West Street and Harrison Street (West)*	78	4	
Route 9A/West Street and Chambers Street	**118**	**61**	✓
Route 9A/West Street and Warren Street	**119**	**69**	✓
Route 9A/West Street and Murray Street	**143**	**67**	✓
Route 9A/West Street and Barclay Street (East)	45	34	
Route 9A/West Street and Barclay Street (West)**	78	11	
Route 9A/West Street and Vesey Street	**99**	**41**	✓
Route 9A/West Street and Liberty Street	**95**	**43**	✓
Route 9A/West Street and Albany Street	**99**	**46**	✓
Route 9A/West Street and Carlisle Street (East)	39	6	
Route 9A/West Street and Carlisle Street (West)	44	22	
Route 9A/West Street and Rector Street (East)	39	6	
Route 9A/West Street and Rector Street (West)	44	22	
Route 9A/West Street and Joseph P Ward Street	40	6	
Route 9A/West Street and West Thames Street	44	22	
Route 9A/West Street and Hugh Carey Tunnel	**65**	**27**	✓
Route 9A/West Street and Morris Street (East)	38	7	
Route 9A/West Street and Morris Street (West)	27	20	
Route 9A/West Street and Battery Place (East)	**82**	**23**	✓
Route 9A/West Street and Battery Place (West)	**61**	**17**	✓
Washington Street and Laight Street	25	0	
Washington Street and Battery Place*	82	23	
Greenwich Street and Laight Street	25	0	
Greenwich Street and Murray Street	34	13	
Greenwich Street and Park Place	28	13	
Greenwich Street and Barclay Street	24	4	
Hudson Street and Laight Street and Holland Tunnel	25	1	

Notes:
Intersections with fewer than 20 project-generated vehicle trips in both peak hours are not presented in this table
✓ denotes intersection recommended for detailed traffic analysis
* denotes an intersection with 50 or more incremental peak hour vehicle trips that consist of only through movements where no conflicting pedestrians or conflicting vehicles can affect traffic capacity or delays
** denotes intersections with 50 or more incremental peak hour vehicle trips that cannot be analyzed using the 2000 Highway Capacity Manual (HCM) methodology (not signalized or stop-controlled)

Pedestrians

As shown in **Table 3.11.4-7**, the incremental pedestrian trips generated by construction of the Proposed Project would exceed the *CEQR* analysis threshold of 200 pedestrians during the weekday AM and PM construction peak hours. Therefore, Level 2 pedestrian trip assignments were developed for the construction-generated worker trips walking to and from (see also **Appendix H-1**).

- Parking Garages—Construction workers arriving by vehicle would primarily park at off-street parking facilities in the Study Area and then walk to and from these off-street parking facilities and the construction site.
- City Bus Trips—Construction workers using City buses would arrive and depart from City bus stops along Route 9A/West Street, South End Avenue, North End Avenue, Murray Street, Vesey Street, Trinity Place, Battery Place, West Thames Street, and Broadway.

- Subway and PATH Trips—Subway riders were assigned to the Chambers Street (No. 1/2/3 trains) Station, Park Place (No. 2/3 trains) Station, Cortlandt Street (R/W trains) Station, Rector Street (No. 1 train) Station, Rector Street (R/W trains) Station, WTC Cortlandt Street (No. 1 train) Station, World Trade Center (E train) Station, and PATH WTC Station.
- Walk-Only Trips—Walk-only trips were developed by distributing construction-generated person trips to the study area pedestrian elements (i.e., sidewalks, corner reservoirs, and crosswalks).

As summarized in **Table 3.11.4-10**, none of the surrounding pedestrian elements would incur 200 or more incremental person trips during construction. Further assessment of detailed pedestrian analyses during construction is presented in the section below "Construction MPT Analysis."

Table 3.11.4-10
Construction Pedestrian Level 2 Screening Analysis Results: Peak Construction Analysis

Pedestrian Elements	Incremental Pedestrian Trips	
	AM	PM
North End Avenue and Murray Street		
Northwest Corner	54	55
Route 9A/West Street and Vesey Street		
Southwest Corner	62	62
Route 9A/West Street and Liberty Street		
Northwest Corner	66	66
North Sidewalk along Liberty Street between Route 9A/West Street and South End Avenue	64	65
Note: Pedestrian elements with fewer than 50 incremental pedestrian trips in all peak hours were not presented in this table.		

Parking

As discussed above, construction workers would park at nearby off-street parking facilities within ¼-mile of the Project Area. The construction worker parking demand was calculated to determine if the Proposed Project would result in a parking shortfall.

3.11.4.4 Transportation Analysis Methodologies

3.11.4.4.1 Traffic Operations

The construction period operations of all the signalized intersections in the study area were assessed using methodologies presented in the *2000 HCM* using the *Highway Capacity Software (HCS+ 5.5)*. The *HCM* procedure evaluates the levels of service (LOS) for signalized intersections using average stop control delay, in seconds per vehicle, as described below.

The average control delay per vehicle is the basis for LOS determination for individual lane groups (grouping of movements in one or more travel lanes), the approaches, and the overall intersection. The levels of service are defined in **Table 3.11.4-11**.

Table 3.11.4-11
Level of Service Criteria for Signalized Intersections

LOS	Average Control Delay
A	≤ 10.0 seconds
B	>10.0 and ≤ 20.0 seconds
C	>20.0 and ≤ 35.0 seconds
D	>35.0 and ≤ 55.0 seconds
E	>55.0 and ≤ 80.0 seconds
F	>80.0 seconds

Source: Transportation Research Board. *Highway Capacity Manual*, 2000.

Although the *HCM* methodology calculates a volume-to-capacity (v/c) ratio, there is no strict relationship between v/c ratios and LOS as defined in the *HCM*. A high v/c ratio indicates substantial traffic passing through an intersection, but a high v/c ratio combined with low average delay represents the most efficient condition in terms of traffic engineering standards, where an approach or the whole intersection processes traffic close to its theoretical maximum capacity with minimal delay. However, very high v/c ratios—especially those approaching or greater than 1.0—are often correlated with a deteriorated LOS. Other important variables affecting delay include cycle length, progression, and green time. LOS A and B indicate good operating conditions with minimal delay. At LOS C, the number of vehicles stopping is higher, but congestion is still fairly light. LOS D describes a condition where congestion levels are more noticeable and individual cycle failures (a condition where motorists may have to wait for more than one green phase to clear the intersection) can occur. Conditions at LOS E and F reflect poor service levels, and cycle breakdowns are frequent. The *HCM* methodology also provides for a summary of the total intersection operating conditions. The analysis chooses the two critical movements (the worst case from each roadway) and calculates a summary critical v/c ratio. The overall intersection delay, which determines the intersection's LOS, is based on a weighted average of control delays of the individual lane groups. Within New York City, LOS D or better (average control delay less than or equal to 55.0 seconds of delay) is considered to reflect acceptable operations.

Significant Impact Criteria

According to the criteria presented in the *CEQR Technical Manual*, impacts are considered significant and require examination of mitigation if they result in an increase in the Proposed Action condition of 5 or more seconds of delay in a lane group over No Action levels within LOS E. For No Action LOS F, a 4-second increase in delay is considered significant. In addition, impacts are considered significant if levels of service deteriorate from acceptable A, B, C, or D in the No Action condition to unacceptable LOS E or F in the Proposed Action condition.

3.11.4.4.2 Pedestrian Operations

The adequacy of the study area's sidewalk, crosswalk, and corner reservoir capacities is evaluated based on the methodologies presented in the *2010 HCM* and the procedures detailed in the *CEQR Technical Manual*.

The primary performance measure for sidewalks and walkways is pedestrian space, expressed as square feet per pedestrian (SFP), which is an indicator of the quality of pedestrian movement and comfort. The calculation of the sidewalk SFP is based on the pedestrian volumes by direction, the effective sidewalk or walkway width, and average walking speed. The SFP forms the basis for sidewalk LOS analysis.

Crosswalks and street corners are not easily measured in terms of free pedestrian flow, as they are influenced by the effects of traffic signals. To that end, corners should provide sufficient space for a mix of standing pedestrians (i.e., queued to cross a street) and circulating pedestrians (i.e., crossing the street or moving around the corner). The *HCM* methodologies apply a measure of time and space availability based on the area of the corner, the timing of the intersection signal, and the estimated space used by circulating pedestrians.

The total "time-space" available for these activities, expressed in square feet-seconds, is calculated by multiplying the net area of the corner (in square feet) by the signal's cycle length. The analysis then determines the total circulation time for all pedestrian movements at the corner per signal cycle (expressed as pedestrians per second). The ratio of net time-space divided by the total pedestrian circulation volume per signal cycle provides the LOS measurement of SFP.

Crosswalk LOS is also a function of time and space. Similar to the street corner analysis, crosswalk conditions are first expressed as a measurement of the available area (the crosswalk width multiplied by the width of the street) and the permitted crossing time. This measure is expressed in square feet-second. The average time required for a pedestrian to cross the street is calculated based on the width of the street and an assumed walking speed. The ratio of time-space available in the crosswalk to the total crosswalk pedestrian occupancy time is the LOS measurement of available square feet per pedestrian. The LOS analysis also accounts for vehicular turning movements that traverse the crosswalk.

The LOS standards for sidewalks, crosswalks, and corner reservoirs are summarized in **Table 3.11.4-12**. The *CEQR Technical Manual*-specified acceptable LOS in Central Business District (CBD) areas is mid-LOS D or better (minimum of 31.5 SFP for sidewalks; minimum of 19.5 SFP for corners and crosswalks), which includes the Proposed Project's Study Area.

Table 3.11.4-12
Level of Service Criteria for Pedestrian Elements

LOS	Sidewalks	Corner Reservoirs and Crosswalks
A	≥ 530.1 SFP	≥ 60.1 SFP
B	90.1 – 530.0 SFP	40.1 – 60.0 SFP
C	40.1 – 90.0 SFP	24.1 – 40.0 SFP
D	23.1 – 40.0 SFP	15.1 – 24.0 SFP
E	11.1 – 23.0 SFP	8.1 – 15.0 SFP
F	≤ 11.0 SFP	≤ 8.0 SFP

Note: SFP = square feet per pedestrian
Source: New York City Mayor's Office of Environmental Coordination, *CEQR Technical Manual,* 2021

Significant Impact Criteria

Determining significant pedestrian impacts considers the level of predicted decrease in pedestrian space between the No Action and Proposed Action conditions. For different pedestrian elements, flow conditions, and area types, the *CEQR Technical Manual* procedure for assessing these impacts corresponds with various sliding-scale formulas, as further detailed below.

Sidewalks

The sliding-scale formula for determining sidewalk impacts is $Y \geq X/(9.5 - 0.321)$, where Y is the decrease in pedestrian space in SFP and X is the No Action pedestrian space in SFP. Since a decrease in pedestrian space within acceptable levels would not constitute a significant impact, these formulas would apply only if the Proposed Action pedestrian space falls short of mid-LOS D in CBD areas or LOS C in non-CBD areas. **Table 3.11.4-13** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant sidewalk impacts.

Corner Reservoirs and Crosswalks

The determination of significant corner and crosswalk impacts is also based on a sliding scale using the following formula: $Y \geq X/9.0 - 0.31$, where Y is the decrease in pedestrian space in SFP and X is the No Action pedestrian space in SFP. Since a decrease in pedestrian space within acceptable levels would not constitute a significant impact, this formula would apply only if the Proposed Action pedestrian space falls short of mid-LOS D in CBD areas or LOS C in non-CBD areas. **Table 3.11.4-14** summarizes the sliding scale guidance provided by the *CEQR Technical Manual* for determining potential significant corner reservoir impacts.

Table 3.11.4-13
Significant Impact Guidance for Sidewalks

Sliding Scale Formula: $Y^3 X/9.5 - 0.321$			
Non-CBD Areas		CBD Areas	
No Action Pedestrian Space (X, SFP)	Proposed Action Pedestrian Space Reduction (Y, SFP)	No Action Pedestrian Space (X, SFP)	ProposedAction Pedestrian Space Reduction (Y, SFP)
≥ 44.3	Proposed Action Condition ≤ 40.0		
43.5 to 44.2	≥ 4.3	–	–
42.5 to 43.4	≥ 4.2	–	–
41.6 to 42.4	≥ 4.1	–	–
40.6 to 41.5	≥ 4.0	–	–
39.7 to 40.5	≥ 3.9	–	–
38.7 to 39.6	≥ 3.8	–	–
37.8 to 38.6	≥ 3.7	–	–
36.8 to 37.7	≥ 3.6	–	–
35.9 to 36.7	≥ 3.5	–	–
34.9 to 35.8	≥ 3.4	≥ 34.7	Proposed Action Condition ≤ 31.4
34.0 to 34.8	≥ 3.3	34.0 to 34.6	≥ 3.3
33.0 to 33.9	≥ 3.2	33.0 to 33.9	≥ 3.2
32.1 to 32.9	≥ 3.1	32.1 to 32.9	≥ 3.1
31.1 to 32.0	≥ 3.0	31.1 to 32.0	≥ 3.0
30.2 to 31.0	≥ 2.9	30.2 to 31.0	≥ 2.9
29.2 to 30.1	≥ 2.8	29.2 to 30.1	≥ 2.8
28.3 to 29.1	≥ 2.7	28.3 to 29.1	≥ 2.7
27.3 to 28.2	≥ 2.6	27.3 to 28.2	≥ 2.6
26.4 to 27.2	≥ 2.5	26.4 to 27.2	≥ 2.5
25.4 to 26.3	≥ 2.4	25.4 to 26.3	≥ 2.4
24.5 to 25.3	≥ 2.3	24.5 to 25.3	≥ 2.3

Table 3.11.4-13
Significant Impact Guidance for Sidewalks

Sliding Scale Formula: $Y^3 X/9.5 - 0.321$			
Non-CBD Areas		CBD Areas	
No Action Pedestrian Space (X, SFP)	Proposed Action Pedestrian Space Reduction (Y, SFP)	No Action Pedestrian Space (X, SFP)	ProposedAction Pedestrian Space Reduction (Y, SFP)
23.5 to 24.4	≥ 2.2	23.5 to 24.4	≥ 2.2
22.6 to 23.4	≥ 2.1	22.6 to 23.4	≥ 2.1
21.6 to 22.5	≥ 2.0	21.6 to 22.5	≥ 2.0
20.7 to 21.5	≥ 1.9	20.7 to 21.5	≥ 1.9
19.7 to 20.6	≥ 1.8	19.7 to 20.6	≥ 1.8
18.8 to 19.6	≥ 1.7	18.8 to 19.6	≥ 1.7
17.8 to 18.7	≥ 1.6	17.8 to 18.7	≥ 1.6
16.9 to 17.7	≥ 1.5	16.9 to 17.7	≥ 1.5
15.9 to 16.8	≥ 1.4	15.9 to 16.8	≥ 1.4
15.0 to 15.8	≥ 1.3	15.0 to 15.8	≥ 1.3
14.0 to 14.9	≥ 1.2	14.0 to 14.9	≥ 1.2
13.1 to 13.9	≥ 1.1	13.1 to 13.9	≥ 1.1
12.1 to 13.0	≥ 1.0	12.1 to 13.0	≥ 1.0
11.2 to 12.0	≥ 0.9	11.2 to 12.0	≥ 0.9
10.2 to 11.1	≥ 0.8	10.2 to 11.1	≥ 0.8
9.3 to 10.1	≥ 0.7	9.3 to 10.1	≥ 0.7
8.3 to 9.2	≥ 0.6	8.3 to 9.2	≥ 0.6
7.4 to 8.2	≥ 0.5	7.4 to 8.2	≥ 0.5
6.4 to 7.3	≥ 0.4	6.4 to 7.3	≥ 0.4
≤ 6.3	≥ 0.3	≤ 6.3	≥ 0.3

Notes: SFP = square feet per pedestrian; Y = decrease in pedestrian space in SFP; X = No Action pedestrian space in SFP.
Sources: New York City Mayor's Office of Environmental Coordination, 2021 *CEQR Technical Manual*.

3.11.4.4.1 Parking Conditions Assessment

The parking analysis identifies the extent to which on- and off-street parking is available and occupied under existing and future conditions. It takes into account anticipated changes in area parking supply and provides a comparison of parking needs versus availability to determine if a parking shortfall is likely to result from parking displacement attributable to or additional demand generated by a proposed project. Typically, this analysis encompasses a study area within a ¼-mile of the Project Area unless a shortfall is identified in which case the study area may be extended to a ½-mile to account for additional parking facilities.

Under the *CEQR Technical Manual* guidance, for proposed projects located in Manhattan or other areas near CBDs (Parking Zones 1 and 2), the absence of sufficient parking is considered a parking shortfall, but not a significant impact given the range of available alternative modes of transportation. Since the Proposed Project is located in Lower Manhattan, any identified parking shortfall would not be considered a significant CEQR impact.

Table 3.11.4-14
Significant Impact Guidance for Corners and Crosswalks

Sliding Scale Formula: $Y^3 X/9.0–0.31$			
Non-CBD Areas		**CBD Areas**	
No Action Pedestrian Space (X, SFP)	**Proposed Action Pedestrian Space Reduction (Y, SFP)**	**No Action Pedestrian Space (X, SFP)**	**Proposed Action Pedestrian Space Reduction (Y, SFP)**
≥ 26.6	Proposed Action Condition ≤ 24.0		
25.8 to 26.5	≥ 2.6	–	–
24.9 to 25.7	≥ 2.5	–	–
24.0 to 24.8	≥ 2.4	–	–
23.1 to 23.9	≥ 2.3	–	–
22.2 to 23.0	≥ 2.2	≥ 21.5	Proposed Action Condition ≤ 19.4
21.3 to 22.1	≥ 2.1	21.3 to 21.4	≥ 2.1
20.4 to 21.2	≥ 2.0	20.4 to 21.2	≥ 2.0
19.5 to 20.3	≥ 1.9	19.5 to 20.3	≥ 1.9
18.6 to 19.4	≥ 1.8	18.6 to 19.4	≥ 1.8
17.7 to 18.5	≥ 1.7	17.7 to 18.5	≥ 1.7
16.8 to 17.6	≥ 1.6	16.8 to 17.6	≥ 1.6
15.9 to 16.7	≥ 1.5	15.9 to 16.7	≥ 1.5
15.0 to 15.8	≥ 1.4	15.0 to 15.8	≥ 1.4
14.1 to 14.9	≥ 1.3	14.1 to 14.9	≥ 1.3
13.2 to 14.0	≥ 1.2	13.2 to 14.0	≥ 1.2
12.3 to 13.1	≥ 1.1	12.3 to 13.1	≥ 1.1
11.4 to 12.2	≥ 1.0	11.4 to 12.2	≥ 1.0
10.5 to 11.3	≥ 0.9	10.5 to 11.3	≥ 0.9
9.6 to 10.4	≥ 0.8	9.6 to 10.4	≥ 0.8
8.7 to 9.5	≥ 0.7	8.7 to 9.5	≥ 0.7
7.8 to 8.6	≥ 0.6	7.8 to 8.6	≥ 0.6
6.9 to 7.7	≥ 0.5	6.9 to 7.7	≥ 0.5
6.0 to 6.8	≥ 0.4	6.0 to 6.8	≥ 0.4
5.1 to 5.9	≥ 0.3	5.1 to 5.9	≥ 0.3
≤ 5.0	≥ 0.2	≤ 5.0	≥ 0.2

Notes: SFP = square feet per pedestrian; Y = decrease in pedestrian space in SFP; X = No Action pedestrian space in SFP
Sources: New York City Mayor's Office of Environmental Coordination, 2021 *CEQR Technical Manual*

3.11.4.5 Detailed Peak Construction Traffic Analysis

3.11.4.5.1 Existing Conditions

Project Area

As described in greater detail in Chapter 1.0, "Project Description," the Project Area is comprised of 7 design reaches. Reach 1 includes the project segments along Greenwich Street, North Moore Street, the westernmost segment of Harrison Street, and Route 9A/West Street; the balance of the Project Area and six remaining reaches are in Battery Park City and includes segments along the Battery Park City North Esplanade, Rockefeller Park, and North and South Coves.

Traffic Operations

As the first step in this analysis, traffic data were collected in June 2023 and March 2024 for the weekday construction 6:00 AM to 7:00 AM and 3:00 PM to 4:00 PM peak hours via a combination of video intersection counts and 24-hour Automatic Traffic Recorder (ATR) counts. Existing peak hour traffic volumes were developed based on these counts as shown in **Appendix H-1**.

Inventories of roadway geometry, traffic controls, bus stops, and parking regulations/activities were recorded to provide appropriate inputs for the analyses. Official signal timings were also obtained from NYCDOT for use in the analysis.

A summary of the existing conditions traffic analysis results is presented in **Table 3.11.4-15**. Details on level-of-service, v/c ratios, and average delays are presented in **Table 3.11.4-16**.

Table 3.11.4-15
Summary of Construction Existing Traffic Analysis Results

Level of Service	Analysis Peak Hours	
	Construction AM	Construction PM
Lane Groups at LOS A/B/C	41	30
Lane Groups at LOS D	22	24
Lane Groups at LOS E	8	14
Lane Groups at LOS F	2	5
Total	73	73
Lane Groups with v/c ≥ 0.90	1	8

Notes: LOS = Level-of-Service; v/c = volume-to-capacity ratio.

Table 3.11.4-16
Construction Existing Conditions Level of Service Analysis

Intersection	Construction AM				Construction PM			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
North End Avenue and Vesey Street								
Westbound	LR	0.17	11.2	B	LR	0.20	11.7	B
Northbound	TR	0.05	24.1	C	TR	0.09	24.5	C
Southbound	LT	0.28	27.6	C	LT	0.92	74.0	E
	Intersection		18.7	B	Intersection		50.2	D
South End Avenue and Liberty Street								
Westbound	LR	0.32	20.7	C	LR	0.46	23.1	C
Northbound	TR	0.21	31.5	C	TR	0.54	40.3	D
Southbound	LT	0.04	28.4	C	LT	0.15	30.1	C
	Intersection		23.0	C	Intersection		28.8	C
Route 9A/West Street and Laight Street								
Westbound	L	1.05	124.6	F	L	0.88	77.3	E
	R	0.70	69.7	E	R	0.62	57.6	E
Northbound	T	0.43	12.5	B	T	0.72	20.2	C
Southbound	T	0.50	13.6	B	T	0.73	21.2	C
	Intersection		25.8	C	Intersection		26.1	C
Route 9A/West Street and North Moore Street								
Westbound	L	0.11	42.1	D	L	0.59	51.1	D
	R	0.13	42.5	D	R	0.69	57.0	E
Northbound	T	0.45	12.7	B	T	0.65	18.6	B
Southbound	T	0.61	15.4	B	T	0.87	27.0	C
	Intersection		14.8	B	Intersection		25.7	C
Route 9A/West Street and Harrison Street								
Westbound	R	0.05	41.0	D	R	0.08	38.0	D
Northbound	TR	0.48	13.1	B	TR	0.71	20.2	C
Southbound	T	0.61	15.4	B	T	0.94	33.8	C
	Intersection		14.4	B	Intersection		27.1	C
Route 9A/West Street and Chambers Street								
Eastbound	LTR	0.20	43.4	D	LTR	0.34	41.1	D
Westbound	LT	0.47	50.9	D	LT	0.53	47.0	D
	R	0.40	32.6	C	R	0.51	32.4	C
Northbound	TR	0.56	27.3	C	TR	0.81	37.9	D
Southbound	L	0.84	89.4	F	L	1.05	139.1	F
	T	0.53	15.0	B	T	0.86	29.7	C
	R	0.37	59.4	E	R	0.55	72.0	E

Table 3.11.4-16

Construction Existing Conditions Level of Service Analysis

Intersection	Construction AM				Construction PM			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
	Intersection		29.0	C	Intersection		40.2	D
Route 9A/West Street and Warren Street								
Eastbound	LTR	0.19	45.1	D	LTR	0.40	50.3	D
Northbound	L	0.23	70.2	E	L	0.53	84.6	F
	TR	0.52	21.2	C	TR	0.71	25.4	C
Southbound	T	0.62	23.5	C	T	0.95	41.6	D
	R	0.14	54.7	D	R	0.14	54.8	D
	Intersection		23.5	C	Intersection		34.8	C
Route 9A/West Street and Murray Street								
Eastbound	L	0.14	42.2	D	L	0.54	57.0	E
	TR	0.14	42.0	D	TR	0.34	47.1	D
Westbound	LTR	0.44	50.1	D	---	---	---	---
	---	---	---	---	LT	0.98	109.3	F
	---	---	---	---	R	0.44	50.3	D
Northbound	L	0.59	75.0	E	L	0.81	89.6	F
	TR	0.57	25.4	C	TR	0.75	29.7	C
Southbound	L	0.20	65.5	E	L	0.18	66.1	E
	T	0.65	28.3	C	T	1.00	55.3	E
	R	0.27	64.2	E	R	0.33	66.8	E
	Intersection		31.1	C	Intersection		48.3	D
Route 9A/West Street and Vesey Street								
Eastbound	LT	0.17	41.7	D	LT	0.45	50.4	D
	R	0.11	40.0	D	R	0.56	54.8	D
Westbound	LT	0.01	38.3	D	LT	0.02	38.5	D
	R	0.00	38.2	D	R	0.00	38.2	D
Northbound	T	0.44	14.8	B	T	0.54	16.4	B
Southbound	T	0.53	16.4	B	T	0.87	27.3	C
	R	0.39	51.3	D	R	0.41	56.0	E
	Intersection		17.7	B	Intersection		24.8	C
Route 9A/West Street and Liberty Street								
Eastbound	DefL	0.17	43.1	D	DefL	0.77	76.1	E
	TR	0.03	40.1	D	TR	0.05	40.4	D
Westbound	LT	0.02	40.0	D	LT	0.02	39.9	D
	R	0.06	40.8	D	R	0.12	42.2	D
Northbound	L	0.60	79.4	E	L	1.05	153.5	F
	T	0.51	24.8	C	T	0.73	29.2	C
	R	0.02	18.0	B	R	0.02	17.1	B
Southbound	L	0.17	62.7	E	L	0.11	63.2	E
	T	0.59	26.7	C	T	1.00	53.8	D
	R	0.40	50.1	D	R	0.68	66.9	E
	Intersection		29.2	C	Intersection		48.7	D
Route 9A/West Street and Albany Street								
Eastbound	LTR	0.36	45.3	D	LTR	0.72	55.2	E
Northbound	TR	0.50	20.2	C	TR	0.66	26.2	C
Southbound	T	0.39	18.5	B	T	0.76	29.2	C
	R	0.10	15.2	B	R	0.13	18.1	B
	Intersection		20.4	C	Intersection		29.5	C
Route 9A/West Street and Hugh Carey Tunnel								
Westbound	L	0.58	28.8	C	L	0.67	43.7	D
	R	0.53	27.4	C	R	0.69	43.8	D
Northbound	T	0.37	36.2	D	T	0.44	25.3	C
	R	0.16	0.2	A	R	0.64	1.4	A
Southbound	T	0.47	32.4	C	T	0.48	21.0	C
	Intersection		27.9	C	Intersection		25.5	C
Route 9A/West Street and Joseph P Ward Street								
Westbound	R	0.04	20.3	C	R	0.25	35.6	D
	Intersection		20.3	C	Intersection		35.6	D
Route 9A/West Street and Hugh Carey Tunnel Reversal Lane								
Westbound	L	0.59	29.4	C	---	---	---	---
	Intersection		29.4	C	Intersection		---	---
Route 9A/West Street and Battery Place (East)								

Table 3.11.4-16
Construction Existing Conditions Level of Service Analysis

Intersection	Construction AM				Construction PM			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Eastbound	LT	0.26	13.0	B	LT	0.25	13.0	B
Westbound	TR	0.34	30.7	C	TR	0.82	50.6	D
	R	0.25	29.3	C	R	0.77	46.8	D
Southbound	L	0.13	18.1	B	L	0.16	18.4	B
	Intersection		19.5	B	Intersection		35.4	D
Route 9A/West Street and Battery Place (West)								
Eastbound	T	0.05	24.7	C	T	0.15	25.9	C
Westbound	T	0.16	26.0	C	T	0.28	27.7	C
Southbound	L	0.52	28.7	C	L	0.43	26.4	C
	LR	0.43	26.6	C	LR	0.38	25.5	C
	Intersection		27.4	C	Intersection		26.3	C

Notes: DefL = Defacto Left Turn, L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service

The capacity analysis indicates that most of the study area's intersection approaches/lane groups operate acceptably—at LOS D or better (i.e., with delays of 55 seconds or less per vehicle for signalized intersections)—during both peak hours. Approaches/lane groups operating beyond LOS D and those with v/c ratios of 0.90 or greater are listed below.

- Southbound approach at the North End Avenue and Vesey Street intersection (LOS E with a v/c ratio of 0.92 and a delay of 74.0 seconds per vehicle [spv] during the construction PM peak hour);
- Westbound left-turn at the Route 9A/West Street and Laight Street intersection (LOS F with a v/c ratio of 1.05 and a delay of 124.6 spv during the construction AM peak hour and LOS E with a v/c ratio of 0.88 and a delay of 77.3 spv during the construction PM peak hour);
- Westbound right-turn at the Route 9A/West Street and Laight Street intersection (LOS E with a v/c ratio of 0.70 and a delay of 69.7 spv during the construction AM peak hour and LOS E with a v/c ratio of 0.62 and a delay of 57.6 spv during the construction PM peak hour);
- Westbound right-turn at the Route 9A/West Street and North Moore Street intersection (LOS E with a v/c ratio of 0.69 and a delay of 57.0 spv during the construction PM peak hour);
- Southbound left-turn at the Route 9A/West Street and Chambers Street intersection (LOS F with a v/c ratio of 0.84 and a delay of 89.4 spv during the construction AM peak hour and LOS F with a v/c ratio of 1.05 and a delay of 139.1 spv during the construction PM peak hour);
- Southbound right-turn at the Route 9A/West Street and Chambers Street intersection (LOS E with a v/c ratio of 0.37 and a delay of 59.4 spv during the construction AM peak hour and LOS E with a v/c ratio of 0.55 and a delay of 72.0 spv during the construction PM peak hour);
- Northbound left-turn at the Route 9A/West Street and Warren Street intersection (LOS E with a v/c ratio of 0.23 and a delay of 70.2 spv during the construction AM peak hour and LOS F with a v/c ratio of 0.53 and a delay of 84.6 spv during the construction PM peak hour);
- Eastbound left-turn at the Route 9A/West Street and Murray Street intersection (LOS E with a v/c ratio of 0.54 and a delay of 57.0 spv during the construction PM peak hour);
- Westbound left-turn/through at the Route 9A/West Street and Murray Street intersection (LOS F with a v/c ratio of 0.98 and a delay of 109.3 spv during the construction PM peak hour);

- Northbound left-turn at the Route 9A/West Street and Murray Street intersection (LOS E with a v/c ratio of 0.59 and a delay of 75.0 spv during the construction AM peak hour and LOS F with a v/c ratio of 0.81 and a delay of 89.6 spv during the construction PM peak hour);
- Southbound left-turn at the Route 9A/West Street and Murray Street intersection (LOS E with a v/c ratio of 0.20 and a delay of 65.5 spv during the construction AM peak hour and LOS E with a v/c ratio of 0.18 and a delay of 66.1 spv during the construction PM peak hour);
- Southbound through at the Route 9A/West Street and Murray Street intersection (LOS E with a v/c ratio of 1.00 and a delay of 55.3 spv during the construction PM peak hour);
- Southbound right-turn at the Route 9A/West Street and Murray Street intersection (LOS E with a v/c ratio of 0.27 and a delay of 64.2 spv during the construction AM peak hour and LOS E with a v/c ratio of 0.33 and a delay of 66.8 spv during the construction PM peak hour);
- Southbound right-turn at the Route 9A/West Street and Vesey Street intersection (LOS E with a v/c ratio of 0.41 and a delay of 56.0 spv during the construction PM peak hour);
- Eastbound defacto left-turn at the Route 9A/West Street and Liberty Street intersection (LOS E with a v/c ratio of 0.77 and a delay of 76.1 spv during the construction PM peak hour);
- Northbound left-turn at the Route 9A/West Street and Liberty Street intersection (LOS E with a v/c ratio of 0.60 and a delay of 79.4 spv during the construction AM peak hour and LOS F with a v/c ratio of 1.05 and a delay of 153.5 spv during the construction PM peak hour);
- Southbound left-turn at the Route 9A/West Street and Liberty Street intersection (LOS E with a v/c ratio of 0.17 and a delay of 62.7 spv during the construction AM peak hour and LOS E with a v/c ratio of 0.11 and a delay of 63.2 spv during the construction PM peak hour);
- Southbound right-turn at the Route 9A/West Street and Liberty Street intersection (LOS E with a v/c ratio of 0.68 and a delay of 66.9 spv during the construction PM peak hour); and
- Eastbound approach at the Route 9A/West Street and Albany Street intersection (LOS E with a v/c ratio of 0.72 and a delay of 55.2 spv during the construction PM peak hour).

3.11.4.5.2 No Action Conditions

No Action condition traffic volumes were estimated by increasing existing traffic levels to reflect expected growth in overall travel through and within the study area. As per *CEQR* guidelines, an annual background growth rate of 0.25 percent was assumed for the first five years (2025 to 2029) and 0.125 percent was assumed for the following year (2030). As approved by NYCDOT, an additional growth rate of 3.0 percent was also assumed to account for volume increases resulting from No Build projects within ¼ mile of the Project Area. These growth rates together represent a cumulative increase of 4.4 percent over existing conditions.

The 2030 No Action volumes are shown in **Appendix H-1**. A summary of the 2030 No Action condition traffic analysis results is presented in **Table 3.11.4-17**. Details on level-of-service, v/c ratios, and average delays are presented in **Table 3.11.4-18**.

Table 3.11.4-17
Summary of 2030 Construction No Action Traffic Analysis Results

Level of Service	Analysis Peak Hours	
	Construction AM	Construction PM
Lane Groups at LOS A/B/C	41	29
Lane Groups at LOS D	22	23
Lane Groups at LOS E	7	13
Lane Groups at LOS F	3	8
Total	73	73
Lane Groups with v/c ≥ 0.90	1	12

Notes:
LOS = Level-of-Service; v/c = volume-to-capacity ratio.

Based on the analysis results presented in **Table 3.11.4-18**, the majority of the approaches/lane-groups in the No Action condition will operate at the same LOS as in the existing conditions or at LOS D or better (i.e., with delays of 55 seconds or less per vehicle for signalized intersections) for both peak hours. The following approaches/lane groups in the No Action condition are expected to operate at deteriorated LOS when compared with existing conditions:

- Southbound approach at the North End Avenue and Vesey Street intersection will deteriorate to LOS F with a v/c ratio of 0.98 and a delay of 88.3 spv during the construction PM peak hour;
- Westbound left-turn at the Route 9A/West Street and Laight Street intersection will deteriorate to LOS F with a v/c ratio of 0.92 and a delay of 83.5 spv during the construction PM peak hour;
- Eastbound right-turn at the Route 9A/West Street and Vesey Street intersection will deteriorate to LOS E with a v/c ratio of 0.59 and a delay of 56.2 spv during the construction PM peak hour;
- Eastbound de facto left-turn at the Route 9A/West Street and Liberty Street intersection will deteriorate to LOS F with a v/c ratio of 0.81 and a delay of 81.6 spv during the construction PM peak hour; and
- Northbound left-turn at Route 9A/West Street and Liberty Street intersection will deteriorate to LOS F with a v/c ratio of 0.63 and a delay of 81.4 spv during the construction AM peak hour.

Table 3.11.4-18

Construction Existing and 2030 No Action Conditions Level of Service Analysis

Intersection	Construction AM								Construction PM							
	2024 Existing				2030 No Action				2024 Existing				2030 No Action			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
North End Avenue and Vesey Street																
Westbound	LR	0.17	11.2	B	LR	0.18	11.3	B	LR	0.20	11.7	B	LR	0.21	11.8	B
Northbound	TR	0.05	24.1	C	TR	0.06	24.1	C	TR	0.09	24.5	C	TR	0.09	24.6	C
Southbound	LT	0.28	27.6	C	LT	0.29	27.8	C	LT	0.92	74.0	E	LT	0.98	88.3	F
	Intersection		18.7	B	Intersection		18.8	B	Intersection		50.2	D	Intersection		58.9	E
South End Avenue and Liberty Street																
Westbound	LR	0.32	20.7	C	LR	0.33	20.9	C	LR	0.46	23.1	C	LR	0.47	23.4	C
Northbound	TR	0.21	31.5	C	TR	0.22	31.8	C	TR	0.54	40.3	D	TR	0.55	41.0	D
Southbound	LT	0.04	28.4	C	LT	0.04	28.4	C	LT	0.15	30.1	C	LT	0.16	30.2	C
	Intersection		23.0	C	Intersection		23.2	C	Intersection		28.8	C	Intersection		29.2	C
Route 9A/West Street and Laight Street																
Westbound	L	1.05	124.6	F	L	1.10	139.7	F	L	0.88	77.3	E	L	0.92	83.5	F
	R	0.70	69.7	E	R	0.74	72.4	E	R	0.62	57.6	E	R	0.65	58.8	E
Northbound	T	0.43	12.5	B	T	0.45	12.8	B	T	0.72	20.2	C	T	0.75	21.2	C
Southbound	T	0.50	13.6	B	T	0.52	13.9	B	T	0.73	21.2	C	T	0.77	22.3	C
	Intersection		25.8	C	Intersection		27.5	C	Intersection		26.1	C	Intersection		27.5	C
Route 9A/West Street and North Moore Street																
Westbound	L	0.11	42.1	D	L	0.12	42.3	D	L	0.59	51.1	D	L	0.62	52.5	D
	R	0.13	42.5	D	R	0.13	42.6	D	R	0.69	57.0	E	R	0.73	59.4	E
Northbound	T	0.45	12.7	B	T	0.47	13.0	B	T	0.65	18.6	B	T	0.68	19.3	B
Southbound	T	0.61	15.4	B	T	0.63	16.0	B	T	0.87	27.0	C	T	0.91	29.9	C
	Intersection		14.8	B	Intersection		15.2	B	Intersection		25.7	C	Intersection		27.5	C
Route 9A/West Street and Harrison Street																
Westbound	R	0.05	41.0	D	R	0.05	41.1	D	R	0.08	38.0	D	R	0.08	38.1	D
Northbound	TR	0.48	13.1	B	TR	0.50	13.4	B	TR	0.71	20.2	C	TR	0.75	21.1	C
Southbound	T	0.61	15.4	B	T	0.63	16.0	B	T	0.94	33.8	C	T	0.98	41.0	D
	Intersection		14.4	B	Intersection		14.9	B	Intersection		27.1	C	Intersection		31.2	C
Route 9A/West Street and Chambers Street																
Eastbound	LTR	0.20	43.4	D	LTR	0.21	43.6	D	LTR	0.34	41.1	D	LTR	0.36	41.9	D
Westbound	LT	0.47	50.9	D	LT	0.49	51.5	D	LT	0.53	47.0	D	LT	0.56	48.2	D
	R	0.40	32.6	C	R	0.42	33.1	C	R	0.51	32.4	C	R	0.54	33.1	C
Northbound	TR	0.56	27.3	C	TR	0.58	27.9	C	TR	0.81	37.9	D	TR	0.85	39.6	D
Southbound	L	0.84	89.4	F	L	0.88	94.2	F	L	1.05	139.1	F	L	1.09	151.6	F
	T	0.53	15.0	B	T	0.55	15.4	B	T	0.86	29.7	C	T	0.90	32.6	C
	R	0.37	59.4	E	R	0.39	59.9	E	R	0.55	72.0	E	R	0.58	73.3	E
	Intersection		29.0	C	Intersection		29.8	C	Intersection		40.2	D	Intersection		42.8	D
Route 9A/West Street and Warren Street																
Eastbound	LTR	0.19	45.1	D	LTR	0.19	45.3	D	LTR	0.40	50.3	D	LTR	0.42	50.7	D
Northbound	L	0.23	70.2	E	L	0.24	70.5	E	L	0.53	84.6	F	L	0.55	85.9	F
	TR	0.52	21.2	C	TR	0.54	21.6	C	TR	0.71	25.4	C	TR	0.74	26.3	C
Southbound	T	0.62	23.5	C	T	0.65	24.2	C	T	0.95	41.6	D	T	1.00	50.5	D
	R	0.14	54.7	D	R	0.15	54.8	D	R	0.14	54.8	D	R	0.15	54.9	D
	Intersection		23.5	C	Intersection		24.0	C	Intersection		34.8	C	Intersection		39.6	D
Route 9A/West Street and Murray Street																
Eastbound	L	0.14	42.2	D	L	0.14	42.4	D	L	0.54	57.0	E	L	0.58	60.1	E
	TR	0.14	42.0	D	TR	0.15	42.2	D	TR	0.34	47.1	D	TR	0.36	47.7	D
Westbound	LTR	0.44	50.1	D	LTR	0.47	51.2	D	---	---	---	---	---	---	---	---
	---	---	---	---	---	---	---	---	LT	0.98	109.3	F	LT	1.03	122.5	F
	---	---	---	---	---	---	---	---	R	0.44	50.3	D	R	0.46	51.0	D
Northbound	L	0.59	75.0	E	L	0.62	76.0	E	L	0.81	89.6	F	L	0.84	93.8	F
	TR	0.57	25.4	C	TR	0.61	26.4	C	TR	0.75	29.7	C	TR	0.81	32.2	C
Southbound	L	0.20	65.5	E	L	0.21	65.7	E	L	0.18	66.1	E	L	0.18	66.1	E
	T	0.65	28.3	C	T	0.68	29.1	C	T	1.00	55.3	E	T	1.04	68.0	E
	R	0.27	64.2	E	R	0.29	64.7	E	R	0.33	66.8	E	R	0.34	67.3	E
	Intersection		31.1	C	Intersection		32.0	C	Intersection		48.3	D	Intersection		55.5	E

Table 3.11.4-18 (cont'd)

Construction Existing and 2030 No Action Conditions Level of Service Analysis

	Construction AM								Construction PM							
	2024 Existing				2030 No Action				2024 Existing				2030 No Action			
Intersection	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Route 9A/West Street and Vesey Street																
Eastbound	LT	0.17	41.7	D	LT	0.19	42.0	D	LT	0.45	50.4	D	LT	0.48	51.5	D
	R	0.11	40.0	D	R	0.11	40.1	D	R	0.56	54.8	D	R	0.59	56.2	E
Westbound	LT	0.01	38.3	D	LT	0.01	38.3	D	LT	0.02	38.5	D	LT	0.02	38.5	D
	R	0.00	38.2	D	R	0.00	38.2	D	R	0.00	38.2	D	R	0.00	38.2	D
Northbound	T	0.44	14.8	B	T	0.46	15.1	B	T	0.54	16.4	B	T	0.56	16.8	B
Southbound	T	0.53	16.4	B	T	0.55	16.8	B	T	0.87	27.3	C	T	0.91	30.3	C
	R	0.39	51.3	D	R	0.41	51.8	D	R	0.41	56.0	E	R	0.42	56.5	E
	Intersection		17.7	B	Intersection		18.1	B	Intersection		24.8	C	Intersection		26.5	C
Route 9A/West Street and Liberty Street																
Eastbound	DefL	0.17	43.1	D	DefL	0.18	43.3	D	DefL	0.77	76.1	E	DefL	0.81	81.6	F
	TR	0.03	40.1	D	TR	0.03	40.1	D	TR	0.05	40.4	D	TR	0.05	40.4	D
Westbound	LT	0.02	40.0	D	LT	0.02	40.0	D	LT	0.02	39.9	D	LT	0.02	39.9	D
	R	0.06	40.8	D	R	0.06	40.8	D	R	0.12	42.2	D	R	0.13	42.4	D
Northbound	L	0.60	79.4	E	L	0.63	81.4	F	L	1.05	153.5	F	L	1.10	167.2	F
	T	0.51	24.8	C	T	0.54	25.2	C	T	0.73	29.2	C	T	0.77	30.7	C
	R	0.02	18.0	B	R	0.02	18.0	B	R	0.02	17.1	B	R	0.02	17.1	B
Southbound	L	0.17	62.7	E	L	0.18	62.7	E	L	0.11	63.2	E	L	0.11	63.2	E
	T	0.59	26.7	C	T	0.62	27.3	C	T	1.00	53.8	D	T	1.04	66.5	E
	R	0.40	50.1	D	R	0.41	50.5	D	R	0.68	66.9	E	R	0.71	68.9	E
	Intersection		29.2	C	Intersection		29.7	C	Intersection		48.7	D	Intersection		56.2	E
Route 9A/West Street and Albany Street																
Eastbound	LTR	0.36	45.3	D	LTR	0.38	45.7	D	LTR	0.72	55.2	E	LTR	0.76	57.8	E
Northbound	TR	0.50	20.2	C	TR	0.52	20.6	C	TR	0.66	26.2	C	TR	0.68	27.0	C
Southbound	T	0.39	18.5	B	T	0.41	18.7	B	T	0.76	29.2	C	T	0.79	30.4	C
	R	0.10	15.2	B	R	0.10	15.3	B	R	0.13	18.1	B	R	0.14	18.2	B
	Intersection		20.4	C	Intersection		20.8	C	Intersection		29.5	C	Intersection		30.6	C
Route 9A/West Street and Hugh Carey Tunnel																
Westbound	L	0.58	28.8	C	L	0.61	29.4	C	L	0.67	43.7	D	L	0.70	44.7	D
	R	0.53	27.4	C	R	0.55	27.9	C	R	0.69	43.8	D	R	0.72	44.8	D
Northbound	T	0.37	36.2	D	T	0.39	36.5	D	T	0.44	25.3	C	T	0.46	25.6	C
	R	0.16	0.2	A	R	0.16	0.2	A	R	0.64	1.4	A	R	0.67	1.6	A
Southbound	T	0.47	32.4	C	T	0.49	32.8	C	T	0.48	21.0	C	T	0.50	21.4	C
	Intersection		27.9	C	Intersection		28.4	C	Intersection		25.5	C	Intersection		26.0	C
Route 9A/West Street and Joseph P Ward Street																
Westbound	R	0.04	20.3	C	R	0.04	20.4	C	R	0.25	35.6	D	R	0.26	35.8	D
	Intersection		20.3	C	Intersection		20.4	C	Intersection		35.6	D	Intersection		35.8	D
Route 9A/West Street and Hugh Carey Tunnel Reversal Lane																
Westbound	L	0.59	29.4	C	L	0.61	30.1	C	---	---	---	---	---	---	---	---
	Intersection		29.4	C	Intersection		30.1	C	Intersection		---	---	Intersection		---	---
Route 9A/West Street and Battery Place (East)																
Eastbound	LT	0.26	13.0	B	LT	0.27	13.1	B	LT	0.25	13.0	B	LT	0.27	13.1	B
Westbound	TR	0.34	30.7	C	TR	0.35	30.9	C	TR	0.82	50.6	D	TR	0.86	54.6	D
	R	0.25	29.3	C	R	0.26	29.5	C	R	0.77	46.8	D	R	0.80	49.7	D
Southbound	L	0.13	18.1	B	L	0.13	18.2	B	L	0.16	18.4	B	L	0.16	18.5	B
	Intersection		19.5	B	Intersection		19.7	B	Intersection		35.4	D	Intersection		37.6	D
Route 9A/West Street and Battery Place (West)																
Eastbound	T	0.05	24.7	C	T	0.05	24.8	C	T	0.15	25.9	C	T	0.15	26.0	C
Westbound	T	0.16	26.0	C	T	0.16	26.1	C	T	0.28	27.7	C	T	0.29	27.9	C
Southbound	L	0.52	28.7	C	L	0.54	29.4	C	L	0.43	26.4	C	L	0.44	26.8	C
	LR	0.43	26.6	C	LR	0.44	27.0	C	LR	0.38	25.5	C	LR	0.40	25.8	C
	Intersection		27.4	C	Intersection		27.8	C	Intersection		26.3	C	Intersection		26.6	C

Notes: DefL = Defacto Left Turn, L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service

3.11.4.5.3 Proposed Action Conditions: Peak Construction Analysis

The 2030 Proposed Action traffic volumes, provided in **Appendix H-1**, were constructed by layering on top of the No Action condition traffic volumes the incremental vehicle trips associated with project construction. A summary of the 2030 Proposed Action condition traffic analysis results is presented in **Table 3.11.4-19**. Details on level-of-service, v/c ratios, and average delays are presented in **Tables 3.11.4-20**.

Table 3.11.4-19
Summary of 2030 Construction Proposed Action Peak Construction Analysis Traffic Analysis Results

Level of Service	Analysis Peak Hours	
	Construction AM	Construction PM
Lane Groups at LOS A/B/C	41	29
Lane Groups at LOS D	20	21
Lane Groups at LOS E	9	15
Lane Groups at LOS F	3	8
Total	73	73
Lane Groups with v/c ≥ 0.90	1	13

Notes: LOS = Level-of-Service; v/c = volume-to-capacity ratio

Table 3.11.4-20
2030 Construction No Action and Proposed Action Peak Construction Analysis Conditions Level of Service Analysis

Intersection	Construction AM								Construction PM							
	2030 No Action				2030 Proposed Action				2030 No Action				2030 Proposed Action			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
North End Avenue and Vesey Street																
Westbound	LR	0.18	11.3	B	LR	0.22	11.7	B	LR	0.21	11.8	B	LR	0.22	11.9	B
Northbound	TR	0.06	24.1	C	TR	0.08	24.3	C	TR	0.09	24.6	C	TR	0.14	25.1	C
Southbound	LT	0.29	27.8	C	LT	0.29	28.0	C	LT	0.98	88.3	F	LT	1.02	98.0	F+
	Intersection		18.8	B	Intersection		18.6	B	Intersection		58.9	E	Intersection		62.3	E
South End Avenue and Liberty Street																
Westbound	LR	0.33	20.9	C	LR	0.41	22.2	C	LR	0.47	23.4	C	LR	0.48	23.6	C
Northbound	TR	0.22	31.8	C	TR	0.22	31.8	C	TR	0.55	41.0	D	TR	0.63	44.5	D
Southbound	LT	0.04	28.4	C	LT	0.04	28.4	C	LT	0.16	30.2	C	LT	0.17	30.4	C
	Intersection		23.2	C	Intersection		23.9	C	Intersection		29.2	C	Intersection		30.8	C
Route 9A/West Street and Laight Street																
Westbound	L	1.10	139.7	F	L	1.17	163.9	F+	L	0.92	83.5	F	L	0.92	83.5	F
	R	0.74	72.4	E	R	0.74	72.4	E	R	0.65	58.8	E	R	0.65	58.8	E
Northbound	T	0.45	12.8	B	T	0.46	12.8	B	T	0.75	21.2	C	T	0.76	21.6	C
Southbound	T	0.52	13.9	B	T	0.54	14.2	B	T	0.77	22.3	C	T	0.77	22.3	C
	Intersection		27.5	C	Intersection		30.3	C	Intersection		27.5	C	Intersection		27.7	C
Route 9A/West Street and North Moore Street																
Westbound	L	0.12	42.3	D	L	0.12	42.3	D	L	0.62	52.5	D	L	0.62	52.5	D
	R	0.13	42.6	D	R	0.13	42.6	D	R	0.73	59.4	E	R	0.73	59.4	E
Northbound	T	0.47	13.0	B	T	0.47	13.0	B	T	0.68	19.3	B	T	0.70	19.7	B
Southbound	T	0.63	16.0	B	T	0.66	16.5	B	T	0.91	29.9	C	T	0.91	30.0	C
	Intersection		15.2	B	Intersection		15.5	B	Intersection		27.5	C	Intersection		27.6	C
Route 9A/West Street and Harrison Street																
Westbound	R	0.05	41.1	D	R	0.05	41.1	D	R	0.08	38.1	D	R	0.08	38.1	D
Northbound	TR	0.50	13.4	B	TR	0.50	13.5	B	TR	0.75	21.1	C	TR	0.76	21.6	C
Southbound	T	0.63	16.0	B	T	0.66	16.6	B	T	0.98	41.0	D	T	0.98	41.2	D
	Intersection		14.9	B	Intersection		15.2	B	Intersection		31.2	C	Intersection		31.4	C
Route 9A/West Street and Chambers Street																
Eastbound	LTR	0.21	43.6	D	LTR	0.21	43.7	D	LTR	0.36	41.9	D	LTR	0.36	41.9	D
Westbound	LT	0.49	51.5	D	LT	0.53	53.3	D	LT	0.56	48.2	D	LT	0.56	48.4	D
	R	0.42	33.1	C	R	0.42	33.1	C	R	0.54	33.1	C	R	0.54	33.1	C

Table 3.11.4-20

2030 Construction No Action and Proposed Action Peak Construction Analysis Conditions

Level of Service Analysis

Northbound	TR	0.58	27.9	C	TR	0.58	28.0	C	TR	0.85	39.6	D	TR	0.87	40.8	D
Southbound	L	0.88	94.2	F	L	0.88	94.7	F	L	1.09	151.6	F	L	1.09	151.6	F
	T	0.55	15.4	B	T	0.58	15.9	B	T	0.90	32.6	C	T	0.90	32.7	C
	R	0.39	59.9	E	R	0.40	60.1	E	R	0.58	73.3	E	R	0.58	73.3	E
	Intersection		29.8	C	Intersection		29.9	C	Intersection		42.8	D	Intersection		43.3	D
Route 9A/West Street and Warren Street																
Eastbound	LTR	0.19	45.3	D	LTR	0.21	45.7	D	LTR	0.42	50.7	D	LTR	0.50	53.2	D
Northbound	L	0.24	70.5	E	L	0.29	72.4	E	L	0.55	85.9	F	L	0.55	85.9	F
	TR	0.54	21.6	C	TR	0.55	21.7	C	TR	0.74	26.3	C	TR	0.75	26.7	C
Southbound	T	0.65	24.2	C	T	0.67	24.8	C	T	1.00	50.5	D	T	1.00	50.7	D
	R	0.15	54.8	D	R	0.26	57.4	E	R	0.15	54.9	D	R	0.16	55.1	E
	Intersection		24.0	C	Intersection		24.7	C	Intersection		39.6	D	Intersection		39.9	D
Route 9A/West Street and Murray Street																
Eastbound	L	0.14	42.4	D	L	0.18	43.2	D	L	0.58	60.1	E	L	0.69	69.0	E+
	TR	0.15	42.2	D	TR	0.18	42.7	D	TR	0.36	47.7	D	TR	0.38	48.1	D
Westbound	LTR	0.47	51.2	D	LTR	0.52	53.6	D	---	---	---	---	---	---	---	---
	---	---	---	---	---	---	---	---	LT	1.03	122.5	F	LT	1.05	129.9	F+
	---	---	---	---	---	---	---	---	R	0.46	51.0	D	R	0.48	51.8	D
Northbound	L	0.62	76.0	E	L	0.68	79.1	E	L	0.84	93.8	F	L	0.85	94.8	F
	TR	0.61	26.4	C	TR	0.62	26.5	C	TR	0.81	32.2	C	TR	0.83	32.7	C
Southbound	L	0.21	65.7	E	L	0.21	65.7	E	L	0.18	66.1	E	L	0.18	66.1	E
	T	0.68	29.1	C	T	0.71	29.8	C	T	1.04	68.0	E	T	1.05	69.1	E
	R	0.29	64.7	E	R	0.29	64.7	E	R	0.34	67.3	E	R	0.34	67.3	E
	Intersection		32.0	C	Intersection		32.9	C	Intersection		55.5	E	Intersection		56.7	E
Route 9A/West Street and Vesey Street																
Eastbound	LT	0.19	42.0	D	LT	0.19	42.2	D	LT	0.48	51.5	D	LT	0.48	51.8	D
	R	0.11	40.1	D	R	0.12	40.2	D	R	0.59	56.2	E	R	0.60	56.8	E
Westbound	LT	0.01	38.3	D	LT	0.01	38.3	D	LT	0.02	38.5	D	LT	0.02	38.5	D
	R	0.00	38.2	D	R	0.00	38.2	D	R	0.00	38.2	D	R	0.00	38.2	D
Northbound	T	0.46	15.1	B	T	0.46	15.2	B	T	0.56	16.8	B	T	0.57	17.0	B
Southbound	T	0.55	16.8	B	T	0.56	17.0	B	T	0.91	30.3	C	T	0.91	30.6	C
	R	0.41	51.8	D	R	0.52	55.1	E	R	0.42	56.5	E	R	0.43	56.8	E
	Intersection		18.1	B	Intersection		18.7	B	Intersection		26.5	C	Intersection		26.7	C
Route 9A/West Street and Liberty Street																
Eastbound	DefL	0.18	43.3	D	DefL	0.19	43.6	D	DefL	0.81	81.6	F	DefL	0.92	100.4	F+
	TR	0.03	40.1	D	TR	0.03	40.1	D	TR	0.05	40.4	D	TR	0.05	40.5	D
Westbound	LT	0.02	40.0	D	LT	0.02	40.0	D	LT	0.02	39.9	D	LT	0.02	40.0	D
	R	0.06	40.8	D	R	0.06	40.8	D	R	0.13	42.4	D	R	0.13	42.4	D
Northbound	L	0.63	81.4	F	L	0.80	97.6	F+	L	1.10	167.2	F	L	1.11	173.4	F+
	T	0.54	25.2	C	T	0.54	25.3	C	T	0.77	30.7	C	T	0.78	31.1	C
	R	0.02	18.0	B	R	0.02	18.0	B	R	0.02	17.1	B	R	0.02	17.1	B
Southbound	L	0.18	62.7	E	L	0.18	62.7	E	L	0.11	63.2	E	L	0.11	63.2	E
	T	0.62	27.3	C	T	0.62	27.5	C	T	1.04	66.5	E	T	1.04	67.4	E
	R	0.41	50.5	D	R	0.48	52.5	D	R	0.71	68.9	E	R	0.71	68.9	E
	Intersection		29.7	C	Intersection		31.1	C	Intersection		56.2	E	Intersection		57.7	E
Route 9A/West Street and Albany Street																
Eastbound	LTR	0.38	45.7	D	LTR	0.45	47.9	D	LTR	0.76	57.8	E	LTR	0.84	66.0	E+
Northbound	TR	0.52	20.6	C	TR	0.53	20.7	C	TR	0.68	27.0	C	TR	0.69	27.0	C
Southbound	T	0.41	18.7	B	T	0.42	18.8	B	T	0.79	30.4	C	T	0.79	30.5	C
	R	0.10	15.3	B	R	0.10	15.3	B	R	0.14	18.2	B	R	0.14	18.2	B
	Intersection		20.8	C	Intersection		21.2	C	Intersection		30.6	C	Intersection		31.4	C
Route 9A/West Street and Hugh Carey Tunnel																
Westbound	L	0.61	29.4	C	L	0.61	29.5	C	L	0.70	44.7	D	L	0.70	44.7	D
	R	0.55	27.9	C	R	0.55	27.9	C	R	0.72	44.8	D	R	0.72	44.8	D
Northbound	T	0.39	36.5	D	T	0.41	36.9	D	T	0.46	25.6	C	T	0.46	25.7	C
	R	0.16	0.2	A	R	0.16	0.2	A	R	0.67	1.6	A	R	0.67	1.7	A
Southbound	T	0.49	32.8	C	T	0.50	33.0	C	T	0.50	21.4	C	T	0.50	21.5	C
	Intersection		28.4	C	Intersection		28.6	C	Intersection		26.0	C	Intersection		26.0	C
Route 9A/West Street and Joseph P Ward Street																
Westbound	R	0.04	20.4	C	R	0.04	20.4	C	R	0.26	35.8	D	R	0.26	35.8	D
	Intersection		20.4	C	Intersection		20.4	C	Intersection		35.8	D	Intersection		35.8	D
Route 9A/West Street and Hugh Carey Tunnel Reversal Lane																
Westbound	L	0.61	30.1	C	L	0.61	30.1	C	---	---	---	---	---	---	---	---

Table 3.11.4-20
2030 Construction No Action and Proposed Action Peak Construction Analysis Conditions
Level of Service Analysis

	Intersection		30.1	C	Intersection		30.1	C	Intersection		---	---	Intersection		---	---
Route 9A/West Street and Battery Place (East)																
Eastbound	LT	0.27	13.1	B	LT	0.29	13.3	B	LT	0.27	13.1	B	LT	0.28	13.2	B
Westbound	TR	0.35	30.9	C	TR	0.41	32.2	C	TR	0.86	54.6	D	TR	0.87	56.3	E
	R	0.26	29.5	C	R	0.29	30.1	C	R	0.80	49.7	D	R	0.81	50.0	D
Southbound	L	0.13	18.2	B	L	0.13	18.2	B	L	0.16	18.5	B	L	0.16	18.5	B
	Intersection		19.7	B	Intersection		20.4	C	Intersection		37.6	D	Intersection		38.1	D
Route 9A/West Street and Battery Place (West)																
Eastbound	T	0.05	24.8	C	T	0.07	25.0	C	T	0.15	26.0	C	T	0.17	26.2	C
Westbound	T	0.16	26.1	C	T	0.20	26.6	C	T	0.29	27.9	C	T	0.30	28.0	C
Southbound	L	0.54	29.4	C	L	0.56	30.0	C	L	0.44	26.8	C	L	0.45	26.9	C
	LR	0.44	27.0	C	LR	0.47	27.6	C	LR	0.40	25.8	C	LR	0.41	25.9	C
	Intersection		27.8	C	Intersection		28.3	C	Intersection		26.6	C	Intersection		26.8	C

Notes: DefL = Defacto Left Turn, L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service
+ Denotes a significant adverse impact

Based on the above analysis, the following five intersections would have significant adverse traffic impacts during at least one peak hour (two in the AM peak hour and four in the PM peak hour) in the 2030 analysis year:

- The southbound approach at the North End Avenue and Vesey Street intersection would deteriorate within LOS F (v/c ratio of 0.98 and 88.3 spv of delay to a v/c ratio of 1.02 and 98.0 spv of delay), an increase in delay of more than four seconds, during the construction PM peak hour.
- The westbound left-turn at the Route 9A/West Street and Laight Street intersection would deteriorate within LOS F (v/c ratio of 1.10 and 139.7 spv of delay to a v/c ratio of 1.17 and 163.9 spv of delay), an increase in delay of more than four seconds, during the construction AM peak hour.
- The eastbound left-turn at the Route 9A/West Street and Murray Street intersection would deteriorate within LOS E (v/c ratio of 0.58 and 60.1 spv of delay to a v/c ratio of 0.69 and 69.0 spv of delay), an increase in delay of more than five seconds, during the construction PM peak hour.
- The westbound left-turn/through at the Route 9A/West Street and Murray Street intersection would deteriorate within LOS F (v/c ratio of 1.03 and 122.5 spv of delay to a v/c ratio of 1.05 and 129.9 spv of delay), an increase in delay of more than four seconds, during the construction PM peak hour.
- The eastbound de facto left-turn at the Route 9A/West Street and Liberty Street intersection would deteriorate within LOS F (v/c ratio of 0.81 and 81.6 spv of delay to a v/c ratio of 0.92 and 100.4 spv of delay), an increase in delay of more than four seconds, during the construction PM peak hour.
- The northbound left-turn at the Route 9A/West Street and Liberty Street intersection would deteriorate from within LOS F (v/c ratio of 0.63 and 81.4 spv of delay to a v/c ratio of 0.80 and 97.6 spv of delay) and from within LOS F (v/c ratio of 1.10 and 167.2 spv of delay to a v/c ratio of 1.11 and 173.4 spv of delay), increases in delay of more than four seconds during the construction AM and PM peak hours.
- The eastbound approach at the Route 9A/West Street and Albany Street intersection would deteriorate within LOS E (v/c ratio of 0.76 and 57.8 spv of delay to a v/c ratio of 0.84 and 66.0 spv of delay), an increase in delay of more than five seconds, during the construction PM peak hour.

To address these impacts, potential mitigation measures are presented in Chapter 4.0, "Mitigation." As previously described, these impacts were based on the 66-month construction schedule. After evaluating the revised traffic patterns for worker vehicles and trucks at the intersections that were analyzed assuming the initial construction schedule, vehicle trips generated by construction activity would generally decrease under the revised schedule assumptions. The number of intersections that would warrant detailed analysis according to the methodology used in this chapter would be reduced by two intersections if the current construction schedule was applied. However, construction vehicles would increase by up to 13 passenger car equivalent trips at the Route 9A/West Street and North Moore Street intersection, which would incur significant adverse traffic impacts when MPT effects are considered (see **3.11.4.2, "Construction MPT Analysis"**) under the 66-month schedule. The implementation of the recommended mitigation for the previous analysis at Route 9A/West Street and North Moore Street (i.e., a signal timing change) under the Construction MPT Analysis scenario would adequately mitigate for the limited additional vehicles at this location. Since traffic and pedestrian volumes at other locations previously analyzed for construction peak and MPT conditions would decrease with the current schedule and 2027 peak analysis year, the implementation of the recommended traffic mitigation measures for the 66-month schedule, specifically, signal timing changes for traffic at North End Avenue and Vesey Street, Route 9A/West Street and Laight Street, Route 9A/West Street and Harrison Street, and Route 9A/West Street and Albany Street would negate any need for any further mitigation at those locations. At unmitigated traffic intersections (Route 9A/West Street and Murray Street and Route 9A/West Street and Liberty Street), the volumes would be lower with the current schedule, but the significant impacts at those locations may persist and may continue to be unmitigatable.

3.11.4.6 Construction MPT Analysis

As previously stated, transportation screening assessments were undertaken using the latest MPT plan that is anticipated to be in place (see **Appendix H-1**). This plan includes estimated durations for affected locations, i.e., those traffic intersections and pedestrian elements that are projected to have a reduced capacity during construction (such as removing a moving lane or narrowing a travel lane/pedestrian/bicycle pathway) or where pedestrian diversions are proposed due to a full sidewalk closure. Based on the preliminary MPT plan, travel lanes would be removed/narrowed at two intersections, two sidewalks would be fully closed diverting pedestrians to the other side of the street, and six pedestrian sidewalks/walkways would be narrowed. These affected locations were therefore selected for detailed analysis during the commuter weekday AM, midday, and PM and Saturday peak hours for traffic and pedestrians. Additionally, a detailed traffic analysis was also prepared for the construction weekday AM and PM peak hours. The existing and No Action results for the traffic Construction MPT Analysis would be the same as the traffic Peak Construction Analysis for both analysis intersections for both construction peak hours (refer to **Tables 3.11.4-15 through 3.11.4-18**). Even though the schedule of the proposed closures/sidewalk/walkway width reductions would vary, a future analysis year of 2030 overlapping with the greatest number of construction worker and truck activity was assumed to provide a conservative analysis of impacts.

The below "Traffic Operations" and "Pedestrian Operations" sections detail the potential impacts of the proposed closures/sidewalk/walkway width reductions according to *CEQR Technical Manual*

methodologies, which address locations alongside and within streets. As described in Chapter 3.8, "Transportation," pathways for pedestrians and bicycles separated from streets, such as those in park areas in Reaches 2 to 7, are not defined in the *CEQR Technical Manual* as warranting detailed analysis. The two-way bikeway along Route 9A/West Street would be maintained during construction. For other pathways, there would be temporary closures to accommodate construction which would divert pedestrians and bicycles to nearby, open access points.

3.11.4.6.1 Traffic Operations: Construction MPT Analysis

The intersections of Route 9A/West Street and North Moore Street and Route 9A/West Street and Harrison Street were selected for detailed analysis (see **Figure 3.11.4-2**). The proposed geometric modifications at these intersections are detailed below:

- The parking lane and travel lane adjacent to the parking lane along the east side of Route 9A/West Street between Chambers Street and North Moore Street would be closed for approximately 24 months. As such, parking along the east curb and one northbound travel lane at both analysis intersections would be removed in the Proposed Action condition; and
- The westbound approach of Route 9A/West Street and North Moore Street would be narrowed by eight feet, reducing the travel lane widths from 16 feet to 13 feet in the Proposed Action condition.

Existing Conditions

Traffic data were collected in June 2023 and March 2024 for the weekday hours of 6:00 AM to 10:00 AM, 11:00 AM to 2:00 PM, and 3:00 PM to 7:00 PM, and the Saturday hours of 12:00 PM to 5:00 PM via a combination of video intersection counts and 24-hour ATR counts. Existing peak hour traffic volumes were developed based on these counts as shown in **Appendix H-1**.

A summary of the existing conditions traffic analysis results is presented in **Table 3.11.4-21**. Details on level-of-service, v/c ratios, and average delays are presented in **Table 3.11.4-22**.

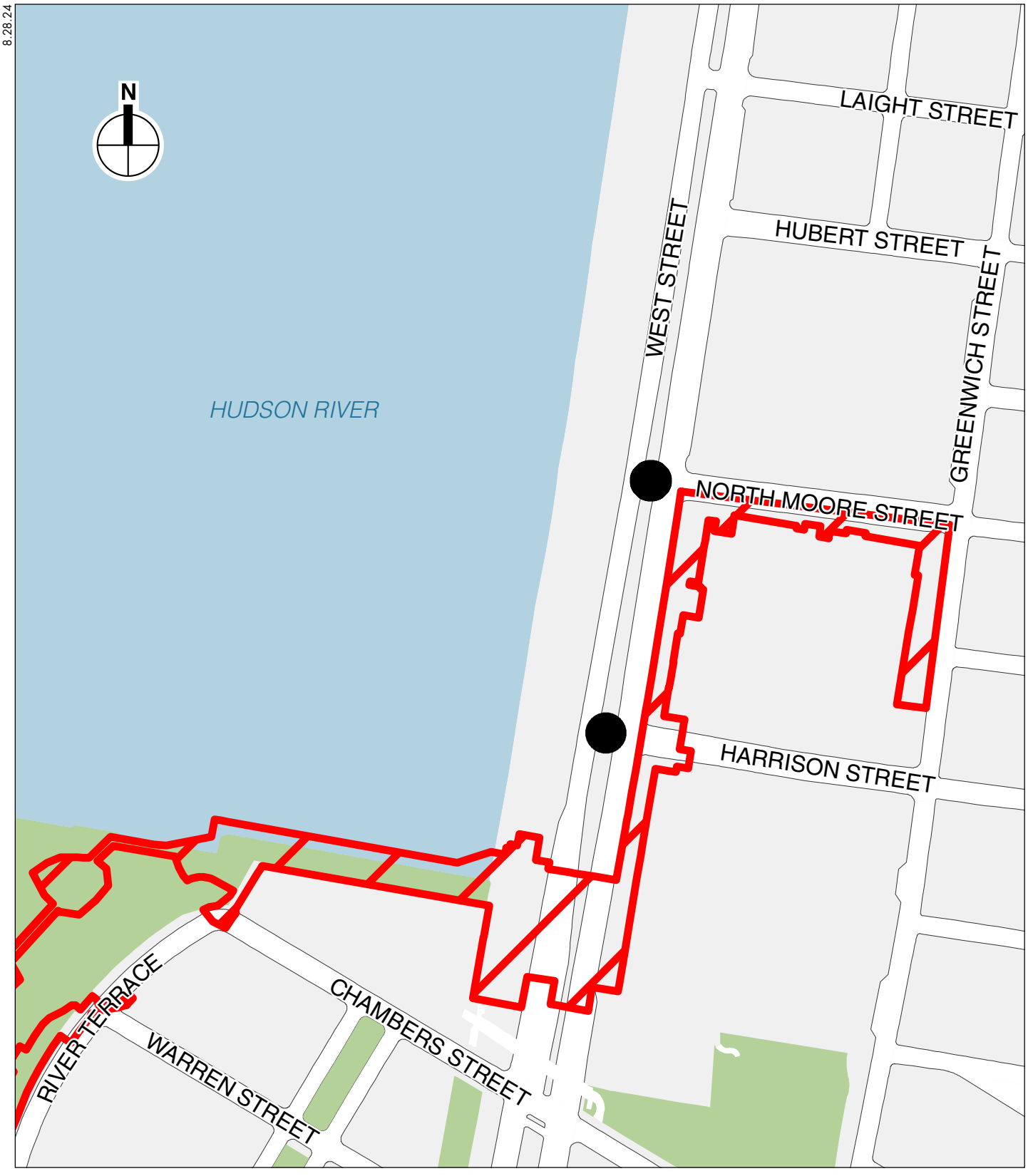
Table 3.11.4-21
Summary of Construction MPT Analysis Existing Traffic Conditions

Level of Service	Analysis Peak Hours[1]			
	Weekday AM	Weekday Midday	Weekday PM	Saturday
Lane Groups at LOS A/B/C	4	5	4	5
Lane Groups at LOS D	3	2	2	1
Lane Groups at LOS E	0	0	0	1
Lane Groups at LOS F	0	0	1	0
Total	7	7	7	7
Lane Groups with v/c ≥ 0.90	0	0	0	0

Notes:
LOS = level of service; v/c = volume-to-capacity ratio
[1] Construction weekday AM and PM peak hours shown in **Table 3.11.3-15**

The capacity analysis indicates that most of the study area intersection approaches/lane groups operate acceptably—at LOS D or better (delays of 55 seconds or less per vehicle for signalized intersections)—during all analysis peak hours. Approaches/lane groups operating beyond LOS D and those with v/c ratios of 0.90 or greater during the weekday AM, midday, and PM and Saturday peak hours are listed below.

8.28.24



Project Area

MPT Traffic Analysis Location

0 500 FEET

MPT Traffic Analysis Locations

- Westbound left-turn at the Route 9A/West Street and North Moore Street intersection (LOS E with a v/c ratio of 0.80 and a delay of 58.5 spv during the Saturday peak hour); and
- Westbound right-turn at the Route 9A/West Street and North Moore Street intersection (LOS F with a v/c ratio of 0.95 and a delay of 89.8 spv during the weekday PM peak hour).

Table 3.11.4-22
Construction MPT Analysis Existing Conditions Level of Service Analysis

Intersection[1]	Weekday AM				Weekday Midday				Weekday PM				Saturday			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Route 9A/West Street and North Moore Street																
Westbound	L	0.34	47.3	D	L	0.66	48.4	D	L	0.52	49.3	D	L	0.80	58.5	E
	R	0.39	48.6	D	R	0.34	37.9	D	R	0.95	89.8	F	R	0.54	42.4	D
Northbound	T	0.71	17.4	B	T	0.55	13.0	B	T	0.71	20.0	C	T	0.60	14.7	B
Southbound	T	0.78	20.3	C	T	0.75	17.3	B	T	0.83	25.1	C	T	0.82	20.9	C
	Intersection		20.1	C	Intersection		17.4	B	Intersection		27.2	C	Intersection		20.9	C
Route 9A/West Street and Harrison Street																
Westbound	R	0.08	41.7	D	R	0.07	33.9	C	R	0.18	39.8	D	R	0.08	31.2	C
Northbound	TR	0.78	19.6	B	TR	0.61	13.0	B	TR	0.76	21.5	C	TR	0.67	16.1	B
Southbound	T	0.82	21.6	C	T	0.79	17.3	B	T	0.91	29.9	C	T	0.90	24.9	C
	Intersection		20.7	C	Intersection		15.3	B	Intersection		25.8	C	Intersection		20.7	C

Notes: L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service
[1]Construction weekday AM and PM peak hours shown in **Table 3.11.3-16**

No Action Conditions

No Action condition traffic volumes were estimated by increasing existing traffic levels to reflect expected growth in overall travel through and within the study area. As per *CEQR* guidelines, an annual background growth rate of 0.25 percent was assumed for the first five years (2025 to 2029) and 0.125 percent was assumed for the following year (2030). Consistent with the Peak Construction Analysis methodology, an additional growth rate of 3.0 percent was also assumed to account for volume increases resulting from No Build projects within ¼ mile of the Project Area. These growth rates together represent a cumulative increase of 4.4 percent over existing conditions.

The 2030 No Action volumes are shown in **Appendix H-1**. A summary of the 2030 No Action condition traffic analysis results is presented in **Table 3.11.4-23**. Details on level-of-service, v/c ratios, and average delays are presented in **Tables 3.11.4-24**.

Table 3.11.4-23
Summary of 2030 Construction MPT Analysis No Action Traffic Analysis Results

Level of Service	Analysis Peak Hours[1]			
	Weekday AM	Weekday Midday	Weekday PM	Saturday
Lane Groups at LOS A/B/C	4	5	4	5
Lane Groups at LOS D	3	2	2	1
Lane Groups at LOS E	0	0	0	1
Lane Groups at LOS F	0	0	1	0
Total	7	7	7	7
Lane Groups with v/c ≥ 0.90	0	0	0	0

Notes:
LOS = level of service; v/c = volume-to-capacity ratio
[1] Construction weekday AM and PM peak hours shown in **Table 3.11.3-17**

Table 3.11.4-24

Existing and 2030 Construction MPT Analysis No Action Conditions Level of Service Analysis

	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2024 Existing				2030 No Action				2024 Existing				2030 No Action				2024 Existing				2030 No Action				2024 Existing				2030 No Action			
Intersection[1]	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Route 9A/West Street and North Moore Street																																
Westbound	L	0.34	47.3	D	L	0.36	47.9	D	L	0.66	48.4	D	L	0.69	50.7	D	L	0.52	49.3	D	L	0.54	50.2	D	L	0.80	58.5	E	L	0.85	63.6	E
	R	0.39	48.6	D	R	0.41	49.3	D	R	0.34	37.9	D	R	0.36	38.4	D	R	0.95	89.8	F	R	1.01	104.1	F	R	0.54	42.4	D	R	0.57	43.8	D
Northbound	T	0.71	17.4	B	T	0.74	18.3	B	T	0.55	13.0	B	T	0.57	13.3	B	T	0.71	20.0+	C	T	0.74	20.9	C	T	0.60	14.7	B	T	0.62	15.2	B
Southbound	T	0.78	20.3	C	T	0.82	21.7	C	T	0.75	17.3	B	T	0.78	18.3	B	T	0.83	25.1	C	T	0.87	27.2	C	T	0.82	20.9	C	T	0.86	22.7	C
	Intersection		20.1	C	Intersection		21.2	C	Intersection		17.4	B	Intersection		18.1	B	Intersection		27.2	C	Intersection		29.4	C	Intersection		20.9	C	Intersection		22.2	C
Route 9A/West Street and Harrison Street																																
Westbound	R	0.08	41.7	D	R	0.09	41.7	D	R	0.07	33.9	C	R	0.07	33.9	C	R	0.18	39.8	D	R	0.19	40.0	D	R	0.08	31.2	C	R	0.08	31.2	C
Northbound	TR	0.78	19.6	B	TR	0.82	20.9	C	TR	0.61	13.0	B	TR	0.64	13.4	B	TR	0.76	21.5	C	TR	0.79	22.6	C	TR	0.67	16.1	B	TR	0.70	16.8	B
Southbound	T	0.82	21.6	C	T	0.85	23.5	C	T	0.79	17.3	B	T	0.82	18.6	B	T	0.91	29.9	C	T	0.95	34.5	C	T	0.90	24.9	C	T	0.94	28.7	C
	Intersection		20.7	C	Intersection		22.2	C	Intersection		15.3	B	Intersection		16.2	B	Intersection		25.8	C	Intersection		28.5	C	Intersection		20.7	C	Intersection		23.0	C

Notes:
L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service
[1]Construction weekday AM and PM peak hours shown in **Table 3.11.3-18**

Based on the analysis results presented in **Table 3.11.4-24**, all of the approaches/lane-groups in the No Action condition will operate at the same LOS as in the existing conditions or within LOS D or better (delays of 55 seconds or less per vehicle for signalized intersections) for all six peak hours.

Proposed Action Conditions: Construction MPT Analysis

The 2030 Proposed Action traffic volumes (provided in **Appendix H-1**) were constructed by layering the incremental construction worker auto and truck trips over the No Action condition traffic volumes. Construction worker auto and truck trips would overlap with the construction weekday AM and PM peak hours, while only construction truck trips would overlap with the commuter weekday AM and midday peak hours. The No Action/Proposed Action volumes would be the same for the commuter PM and Saturday peak hours since there would be no overlap with construction worker auto and truck trips during those periods. A summary of the 2030 Proposed Action condition traffic analysis results is presented in **Table 3.11.4-25**. Details on level-of-service, v/c ratios, and average delays are presented in **Tables 3.11.4-26a and 3.11.4-26b**.

Table 3.11.4-25
Summary of 2030 Construction MPT Analysis Proposed Action Traffic Analysis Results

	Analysis Peak Hours					
Level of Service	**Weekday AM**	**Weekday Midday**	**Weekday PM**	**Saturday**	**Construction Weekday AM**	**Construction Weekday PM**
Lane Groups at LOS A/B/C	2	5	2	5	4	2
Lane Groups at LOS D	4	1	4	1	3	3
Lane Groups at LOS E	1	1	0	1	0	2
Lane Groups at LOS F	0	0	1	0	0	0
Total	7	7	7	7	7	7
Lane Groups with v/c ≥ 0.90	2	2	2	2	2	2

Notes: LOS = Level-of-Service; v/c = volume-to-capacity ratio

Table 3.11.4-26a

2030 Construction MPT Analysis No Action and Proposed Action Conditions Level of Service Analysis

Operational Peak Hours

	Weekday AM								Weekday Midday								Weekday PM								Saturday							
	2030 No Action				2030 Proposed Action				2030 No Action				2030 Proposed Action				2030 No Action				2030 Proposed Action				2030 No Action				2030 Proposed Action			
Intersection	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Route 9A/West Street and North Moore Street																																
Westbound	L	0.36	47.9	D	L	0.40	49.2	D	L	0.69	50.7	D	L	0.76	57.1	E+	L	0.54	50.2	D	L	0.59	53.3	D	L	0.85	63.6	E	L	0.93	78.6	E+
	R	0.41	49.3	D	R	0.45	51.0	D	R	0.36	38.4	D	R	0.40	39.7	D	R	1.01	104.1	F	R	1.11	135.4	F+	R	0.57	43.8	D	R	0.63	47.2	D
Northbound	T	0.74	18.3	B	T	0.99	40.4	D	T	0.57	13.3	B	T	0.77	17.8	B	T	0.74	20.9	C	T	0.99	42.2	D	T	0.62	15.2	B	T	0.83	21.3	C
Southbound	T	0.82	21.7	C	T	0.82	21.8	C	T	0.78	18.3	B	T	0.78	18.3	B	T	0.87	27.2	C	T	0.87	27.2	C	T	0.86	22.7	C	T	0.86	22.7	C
	Intersection		21.2	C	Intersection		32.8	C	Intersection		18.1	B	Intersection		20.5	C	Intersection		29.4	C	Intersection		41.6	D	Intersection		22.2	C	Intersection		25.9	C
Route 9A/West Street and Harrison Street																																
Westbound	R	0.09	41.7	D	R	0.09	41.7	D	R	0.07	33.9	C	R	0.07	33.9	C	R	0.19	40.0	D	R	0.19	40.0	D	R	0.08	31.2	C	R	0.08	31.2	C
Northbound	TR	0.82	20.9	C	TR	1.05	58.2	E+	TR	0.64	13.4	B	TR	0.82	18.8	B	TR	0.79	22.6	C	TR	1.02	50.0	D	TR	0.70	16.8	B	TR	0.90	25.6	C
Southbound	T	0.85	23.5	C	T	0.86	23.6	C	T	0.82	18.6	B	T	0.82	18.6	B	T	0.95	34.5	C	T	0.95	34.5	C	T	0.94	28.7	C	T	0.94	28.7	C
	Intersection		22.2	C	Intersection		42.2	D	Intersection		16.2	B	Intersection		18.8	B	Intersection		28.5	C	Intersection		42.5	D	Intersection		23.0	C	Intersection		27.2	C

Notes:
L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service
+ Denotes a significant adverse impact

Table 3.11.4-26b
2030 Construction MPT Analysis No Action and Proposed Action Conditions Level of Service Analysis
Construction Peak Hours

Intersection	Construction Weekday AM								Construction Weekday PM							
	2030 No Action				2030 Proposed Action				2030 No Action				2030 Proposed Action			
	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS	Lane Group	v/c Ratio	Delay (sec)	LOS
Route 9A/West Street and North Moore Street																
Westbound	L	0.12	42.3	D	L	0.13	42.5	D	L	0.62	52.5	D	L	0.68	56.4	E
	R	0.13	42.6	D	R	0.15	43.0	D	R	0.73	59.4	E	R	0.80	66.7	E+
Northbound	T	0.47	13.0	B	T	0.63	16.0	B	T	0.68	19.3	B	T	0.93	32.0	C
Southbound	T	0.63	16.0	B	T	0.66	16.5	B	T	0.91	29.9	C	T	0.91	30.0	C
	Intersection		15.2	B	Intersection		16.9	B	Intersection		27.5	C	Intersection		33.8	C
Route 9A/West Street and Harrison Street																
Westbound	R	0.05	41.1	D	R	0.05	41.1	D	R	0.08	38.1	D	R	0.08	38.1	D
Northbound	TR	0.50	13.4	B	TR	0.65	16.4	B	TR	0.75	21.1	C	TR	0.98	40.6	D
Southbound	T	0.63	16.0	B	T	0.66	16.6	B	T	0.98	41.0	D	T	0.98	41.2	D
	Intersection		14.9	B	Intersection		16.6	B	Intersection		31.2	C	Intersection		40.9	D

Notes: L = Left Turn, T = Through, R = Right Turn, LOS = Level of Service
+ Denotes a significant adverse impact

According to analyses conducted under the MPT Construction Analysis scenario, potential significant adverse traffic impacts at Route 9A/West Street and Harrison Street (AM peak hour) and Route 9A/West Street and North Moore Street (midday, PM, construction PM, and Saturday peak hours) could result due to the projected increases in delay:

- The westbound left-turn at the Route 9A/West Street and North Moore Street intersection would deteriorate from LOS D (v/c ratio of 0.69 and 50.7 spv of delay) to LOS E (v/c ratio of 0.76 and 57.1 spv of delay) and from within LOS E (v/c ratio of 0.85 and 63.6 spv of delay to a v/c ratio of 0.93 and 78.6 spv of delay), increases in delay of more than five seconds during the weekday midday and Saturday peak hours.
- The westbound right-turn at the Route 9A/West Street and North Moore Street intersection would deteriorate within LOS F (v/c ratio of 1.01 and 104.1 spv of delay to a v/c ratio of 1.11 and 135.4 spv of delay) and within LOS E (v/c ratio of 0.73 and 59.4 spv of delay to a v/c ratio of 0.80 and 66.7 spv of delay), increases in delay of more than four and five seconds, during the weekday PM and construction PM peak hours, respectively.
- The northbound approach at the Route 9A/West Street and Harrison Street intersection would deteriorate from LOS C (v/c ratio of 0.82 and 20.9 spv of delay) to LOS E (v/c ratio of 1.05 and 58.2 spv of delay), an increase in delay of more than five seconds, during the weekday AM peak hour.

To address these impacts, potential mitigation measures are presented in Chapter 4.0, "Mitigation." As previously described, these impacts were based on the 66-month construction schedule. After evaluating the revised traffic patterns for worker vehicles and trucks at the intersections that were analyzed assuming the initial construction schedule, vehicle trips generated by construction activity would generally decrease under the revised schedule assumptions. The number of intersections that would warrant detailed analysis according to the methodology used in this chapter would be reduced by two intersections if the current construction schedule was applied. However, construction vehicles would increase by up to 13 passenger car equivalent trips at the Route 9A/West Street and North Moore Street intersection, which would incur significant adverse traffic impacts when MPT effects are considered under

the 66-month schedule. The implementation of the recommended mitigation for the previous analysis at Route 9A/West Street and North Moore Street (i.e., a signal timing change) would adequately mitigate for the limited additional vehicles at this location. Since traffic and pedestrian volumes at other locations previously analyzed for construction peak and MPT conditions would decrease with the current schedule and 2027 peak analysis year, the implementation of the recommended traffic mitigation measures for the 66-month schedule, specifically, signal timing changes for traffic at North End Avenue and Vesey Street, Route 9A/West Street and Laight Street, Route 9A/West Street and Harrison Street, and Route 9A/West Street and Albany Street would negate any need for any further mitigation at those locations. At unmitigated traffic intersections (Route 9A/West Street and Murray Street and Route 9A/West Street and Liberty Street), the volumes would be lower with the current schedule, but the significant impacts at those locations may persist and may continue to be unmitigatable.

3.11.4.6.2 Pedestrian Operations: Construction MPT Analysis

Under the preliminary MPT plan, two sidewalks are proposed to be fully closed which would divert pedestrians to the other side of the street and six pedestrian sidewalks/walkways are to be narrowed. The proposed geometric modifications and the pedestrian elements identified for quantified analysis (see also **Figure 3.11.4-3**) include eight sidewalks/walkways, four corners, and two crosswalks, as follows:

- The south sidewalk of North Moore Street between Route 9A/West Street and Greenwich Street is proposed to be closed for approximately 18 months and pedestrians would be diverted to the north side of North Moore Street during this period. As such, a detailed analysis was prepared for the north sidewalk of North Moore Street between Route 9A/West Street and Greenwich Street. Additionally, adjoining crosswalks/corners at the North Moore Street and Route 9A/West Street and North Moore Street and Greenwich Street intersections that would incur increases of 200 or more pedestrians in any peak hour as a result of the diversions were also selected for analysis based on background volumes. The northwest, southwest, and southeast corners and the south crosswalk of North Moore Street and Greenwich Street were selected for analysis per the above.
- The west sidewalk of Greenwich Street between North Moore Street and Franklin Street is proposed to be closed for approximately 18 months and pedestrians would be diverted to the east side of Greenwich Street during this period. As such, a detailed analysis was prepared for the east sidewalk of Greenwich Street between North Moore Street and Franklin Street. Additionally, the adjoining crosswalks/corners at the North Moore Street and Greenwich Street and Franklin Street and Greenwich Street intersections that would incur increases of 200 or more pedestrians in any peak hour as a result of the diversions were also selected for analysis based on background volumes. The northeast corner and north crosswalk of Franklin Street and Greenwich Street were selected for analysis per the above.
- The east sidewalk of Route 9A/West Street between North Moore Street and Harrison Street is proposed to be narrowed to a 5-foot pedestrian path for pedestrians for approximately 24 months and was selected for analysis.
- The east sidewalk of Route 9A/West Street between Harrison Street and Chambers Street is proposed to be narrowed to a 5-foot pedestrian path for pedestrians for approximately 24 months and was selected for analysis.

8.28.24

◎ *Corner*

Crosswalk

Sidewalk

MPT Pedestrian Analysis Locations

NORTH/WEST BATTERY PARK CITY RESILIENCY

Figure 3.11.4-3

- The west walkway of Route 9A/West Street between Harrison Street and Chambers Street is proposed to be narrowed to a 5-foot pedestrian path for pedestrians for approximately 20 months and was selected for analysis. This analysis location is east of the North Esplanade and provides a connection to the Hudson River Park's continuous waterfront esplanade north of the walkway.
- The west sidewalks of River Terrace between River Terrace and Chambers Street are proposed to be closed for approximately 22 months and pedestrians diverted to the parking lanes along the west curb with a 5-foot pedestrian path width. Three sidewalk segments were selected for analysis.

Existing Conditions

As part of this analysis, pedestrian volume data were collected in June 2023 and March 2024 in accordance with procedures outlined in the *CEQR Technical Manual* during the weekday hours from 7:00 AM to 10:00 AM, 11:00 AM to 2:00 PM, and 4:00 PM to 7:00 PM and Saturday hours from 12:00 PM to 5:00 PM. Based on the data collected during the respective peak periods the highest peak hour pedestrian volumes observed were from 8:00 AM to 9:00 AM, 12:00 PM to 1:00 PM, and 5:00 PM to 6:00 PM for weekday and 12:00 PM to 1:00 PM for Saturday. These peak hour volumes were used for the analysis. The existing peak hour pedestrian volumes are shown in **Appendix H-1**.

As shown in **Tables 3.11.4-27 through 3.11.4-29**, all the analysis locations currently operate at LOS C or better.

Table 3.11.4-27
Construction MPT Analysis Existing Conditions: Sidewalk Level of Service Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday AM Peak Hour						
Route 9A/West Street between Harrison Street and Chambers Street	East	15.5	96	0.77	1800.0	A
Route 9A/West Street between Harrison Street and Chambers Street	West Walkway	6.0	1129	0.88	66.6	C
North Moore Street between Route 9A/West Street and Greenwich Street	North	6.5	252	0.76	281.8	B
Route 9A/West Street between North Moore Street and Harrison Street	East	8.5	119	0.66	679.9	A
Greenwich Street between North Moore Street and Franklin Street	East	4.5	374	0.68	117.0	B
River Terrace between River Terrace and Murray Street	West	6.0	155	0.69	385.6	B
River Terrace between Warren Street and Chambers Street	West	7.5	133	0.68	550.9	A
River Terrace between Warren Street and Murray Street	West	6.0	140	0.73	449.9	B
Weekday Midday Peak Hour						
Route 9A/West Street between Harrison Street and Chambers Street	East	15.5	145	0.68	1052.8	A
Route 9A/West Street between Harrison Street and Chambers Street	West Walkway	6.0	804	0.86	91.8	B
North Moore Street between Route 9A/West Street and Greenwich Street	North	6.5	328	0.69	198.1	B
Route 9A/West Street between North Moore Street and Harrison Street	East	8.5	123	0.72	711.6	A
Greenwich Street between North Moore Street and Franklin Street	East	4.5	598	0.92	98.9	B
River Terrace between River Terrace and Murray Street	West	6.0	110	0.59	459.5	B
River Terrace between Warren Street and Chambers Street	West	7.5	90	0.73	870.9	A
River Terrace between Warren Street and Murray Street	West	6.0	120	0.77	553.8	A

Table 3.11.4-27, cont'd

Construction MPT Analysis Existing Conditions: Sidewalk Level of Service Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday PM Peak Hour						
Route 9A/West Street between Harrison Street and Chambers Street	East	15.5	180	0.74	914.7	A
Route 9A/West Street between Harrison Street and Chambers Street	West Walkway	6.0	1504	0.81	45.7	C
North Moore Street between Route 9A/West Street and Greenwich Street	North	6.5	444	0.79	166.9	B
Route 9A/West Street between North Moore Street and Harrison Street	East	8.5	171	0.84	599.9	A
Greenwich Street between North Moore Street and Franklin Street	East	4.5	556	0.90	104.1	B
River Terrace between River Terrace and Murray Street	West	6.0	231	0.83	308.4	B
River Terrace between Warren Street and Chambers Street	West	7.5	228	0.77	364.7	B
River Terrace between Warren Street and Murray Street	West	6.0	252	0.76	260.1	B
Saturday Peak Hour						
Route 9A/West Street between Harrison Street and Chambers Street	East	15.5	94	0.76	1800.0	A
Route 9A/West Street between Harrison Street and Chambers Street	West Walkway	6.0	1686	0.87	43.7	C
North Moore Street between Route 9A/West Street and Greenwich Street	North	6.5	173	0.75	403.3	B
Route 9A/West Street between North Moore Street and Harrison Street	East	8.5	76	0.54	874.2	A
Greenwich Street between North Moore Street and Franklin Street	East	4.5	336	0.80	154.0	B
River Terrace between River Terrace and Murray Street	West	6.0	122	0.69	490.8	B
River Terrace between Warren Street and Chambers Street	West	7.5	96	0.67	749.9	A
River Terrace between Warren Street and Murray Street	West	6.0	151	0.76	431.9	B

Note: SFP = square feet per pedestrian

Table 3.11.4-28

Construction MPT Analysis Existing Conditions: Corner Level of Service Analysis

Location	Corner	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Greenwich Street and North Moore Street	Northwest	202.0	A	309.6	A	197.6	A	956.1	A
	Southwest	307.7	A	436.5	A	307.2	A	866.7	A
	Southeast	100.8	A	92.6	A	83.5	A	137.3	A
Greenwich Street and Franklin Street	Northeast	49.1	B	35.9	C	39.5	C	59.8	B

Note: SFP = square foot per pedestrian

Table 3.11.4-29
Construction MPT Analysis Existing Conditions: Crosswalk Level of Service Analysis

Location	Crosswalk	Crosswalk Length (ft)	Crosswalk Width (ft)	Two-way Peak Hour Volume	SFP	LOS
Weekday AM Peak Hour						
Greenwich Street and North Moore Street	South	38.0	12.5	298	82.7	A
Greenwich Street and Franklin Street	North	38.0	14.5	110	208.1	A
Weekday Midday Peak Hour						
Greenwich Street and North Moore Street	South	38.0	12.5	260	107.2	A
Greenwich Street and Franklin Street	North	38.0	14.5	117	208.1	A
Weekday PM Peak Hour						
Greenwich Street and North Moore Street	South	38.0	12.5	341	72.5	A
Greenwich Street and Franklin Street	North	38.0	14.5	135	184.7	A
Saturday Peak Hour						
Greenwich Street and North Moore Street	South	38.0	12.5	192	140.7	A
Greenwich Street and Franklin Street	North	38.0	14.5	80	244.4	A

Note: SFP = square feet per pedestrian.

No Action Conditions

No Action condition pedestrian volumes were grown following the same methodology and the results are provided in **Appendix H-1**. As discussed above, three corners and one crosswalk at the North Moore Street and Greenwich Street intersection and one corner and one crosswalk at the Franklin Street and Greenwich Street intersection are projected to experience increases of 200 or more pedestrians in any peak hour as a result of the diversions associated with the sidewalk closures. Figures showing the pedestrian diversion volumes associated with the sidewalk closures for all peak hours based on the 2030 No Action background volumes are provided in **Appendix H-1**.

As shown in **Tables 3.11.4-30 through 3.11.4-32**, in the No Action condition, all analysis locations would continue to operate at LOS C or better.

Table 3.11.4-30

Construction MPT Analysis No Action Conditions: Sidewalk Level of Service Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday AM Peak Hour						
Route 9A/West Street between Harrison Street and Chambers Street	East	15.5	100	0.77	1728.0	A
Route 9A/West Street between Harrison Street and Chambers Street	West Walkway	6.0	1179	0.88	63.7	C
North Moore Street between Route 9A/West Street and Greenwich Street	North	6.5	263	0.76	270.0	B
Route 9A/West Street between North Moore Street and Harrison Street	East	8.5	124	0.66	652.5	A
Greenwich Street between North Moore Street and Franklin Street	East	4.5	390	0.68	112.2	B
River Terrace between River Terrace and Murray Street	West	6.0	162	0.69	368.9	B
River Terrace between Warren Street and Chambers Street	West	7.5	139	0.68	527.2	B
River Terrace between Warren Street and Murray Street	West	6.0	146	0.73	431.4	B
Weekday Midday Peak Hour						
Route 9A/West Street between Harrison Street and Chambers Street	East	15.5	152	0.68	1004.3	A
Route 9A/West Street between Harrison Street and Chambers Street	West Walkway	6.0	840	0.86	87.8	C
North Moore Street between Route 9A/West Street and Greenwich Street	North	6.5	342	0.69	190.0	B
Route 9A/West Street between North Moore Street and Harrison Street	East	8.5	128	0.72	683.8	A
Greenwich Street between North Moore Street and Franklin Street	East	4.5	624	0.92	94.8	B
River Terrace between River Terrace and Murray Street	West	6.0	115	0.59	439.5	B
River Terrace between Warren Street and Chambers Street	West	7.5	94	0.73	833.9	A
River Terrace between Warren Street and Murray Street	West	6.0	125	0.77	531.6	A
Weekday PM Peak Hour						
Route 9A/West Street between Harrison Street and Chambers Street	East	15.5	188	0.74	875.8	A
Route 9A/West Street between Harrison Street and Chambers Street	West Walkway	6.0	1571	0.81	43.7	C
North Moore Street between Route 9A/West Street and Greenwich Street	North	6.5	464	0.79	159.7	B
Route 9A/West Street between North Moore Street and Harrison Street	East	8.5	179	0.84	573.1	A
Greenwich Street between North Moore Street and Franklin Street	East	4.5	581	0.90	99.6	B
River Terrace between River Terrace and Murray Street	West	6.0	242	0.83	294.4	B
River Terrace between Warren Street and Chambers Street	West	7.5	238	0.77	349.4	B
River Terrace between Warren Street and Murray Street	West	6.0	263	0.76	249.2	B
Saturday Peak Hour						
Route 9A/West Street between Harrison Street and Chambers Street	East	15.5	99	0.76	1709.1	A
Route 9A/West Street between Harrison Street and Chambers Street	West Walkway	6.0	1761	0.87	41.8	C
North Moore Street between Route 9A/West Street and Greenwich Street	North	6.5	180	0.75	387.6	B
Route 9A/West Street between North Moore Street and Harrison Street	East	8.5	79	0.54	841.0	A
Greenwich Street between North Moore Street and Franklin Street	East	4.5	351	0.80	147.4	B
River Terrace between River Terrace and Murray Street	West	6.0	127	0.69	471.5	B
River Terrace between Warren Street and Chambers Street	West	7.5	100	0.67	719.9	A
River Terrace between Warren Street and Murray Street	West	6.0	158	0.76	412.8	B

Note: SFP = square feet per pedestrian.

Table 3.11.4-31
Construction MPT Analysis No Action Conditions: Corner Level of Service Analysis

Location	Corner	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Greenwich Street and North Moore Street	Northwest	193.3	A	296.1	A	188.5	A	916.3	A
	Southwest	294.2	A	417.7	A	293.8	A	829.0	A
	Southeast	96.1	A	88.3	A	79.7	A	130.9	A
Greenwich Street and Franklin Street	Northeast	46.6	B	33.8	C	37.2	C	56.7	B
Note: SFP = square foot per pedestrian									

Table 3.11.4-32
Construction MPT Analysis No Action Conditions: Crosswalk Level of Service Analysis

Location	Crosswalk	Crosswalk Length (ft)	Crosswalk Width (ft)	Two-way Peak Hour Volume	SFP	LOS
Weekday AM Peak Hour						
Greenwich Street and North Moore Street	South	38.0	12.5	311	78.9	A
Greenwich Street and Franklin Street	North	38.0	14.5	115	199.0	A
Weekday Midday Peak Hour						
Greenwich Street and North Moore Street	South	38.0	12.5	271	102.5	A
Greenwich Street and Franklin Street	North	38.0	14.5	122	199.5	A
Weekday PM Peak Hour						
Greenwich Street and North Moore Street	South	38.0	12.5	356	69.0	A
Greenwich Street and Franklin Street	North	38.0	14.5	141	176.6	A
Saturday Peak Hour						
Greenwich Street and North Moore Street	South	38.0	12.5	201	133.9	A
Greenwich Street and Franklin Street	North	38.0	14.5	83	235.5	A
Note: SFP = square feet per pedestrian.						

Proposed Action Conditions: Construction MPT Analysis

The Proposed Action volumes (provided in **Appendix H-1**) were projected by layering the No Action volumes on top of the sidewalk closure diversion volumes and the results are provided in **Tables 3.11.4-33 through 3.11.4-35**. Based on these results and the *CEQR Technical Manual* sliding scale impact thresholds, as summarized below two sidewalks, one corner, and two crosswalks would experience significant adverse pedestrian impacts in at least one peak hour, including (see also **Table 3.11.4-36):**

- The west walkway of Route 9A/West Street between Harrison Street and Chambers Street which is significantly impacted during the weekday AM, PM, and Saturday peak hours.
- The east sidewalk of Greenwich Street between North Moore Street and Franklin Street which is significantly impacted during the AM and PM peak hours.
- The northeast corner of Greenwich Street and Franklin Street which is significantly impacted during all four peak hours.
- The south crosswalk of Greenwich Street and North Moore Street which is significantly impacted during the weekday AM and PM peak hours.

- The north crosswalk of Greenwich Street and Franklin Street which is significantly impacted during the weekday AM, midday, and PM peak hours.

Table 3.11.4-33

Construction MPT Analysis Proposed Action Conditions: Sidewalk Level of Service Analysis

Location	Sidewalk	Effective Width (ft)	Two-way Peak Hour Volume	PHF	SFP	Platoon LOS
Weekday AM Peak Hour						
Route 9A/West Street between Harrison Street and Chambers Street	East	2.5	100	0.77	278.5	B
Route 9A/West Street between Harrison Street and Chambers Street	West Walkway	2.5	1179	0.88	25.2	D
North Moore Street between Route 9A/West Street and Greenwich Street	North	6.5	438	0.76	161.9	B
Route 9A/West Street between North Moore Street and Harrison Street	East	2.5	124	0.66	191.7	B
Greenwich Street between North Moore Street and Franklin Street	East	4.5	1802	0.68	22.5	E
River Terrace between River Terrace and Murray Street	West	2.5	162	0.69	153.5	B
River Terrace between Warren Street and Chambers Street	West	2.5	139	0.68	175.5	B
River Terrace between Warren Street and Murray Street	West	2.5	146	0.73	179.5	B
Weekday Midday Peak Hour						
Route 9A/West Street between Harrison Street and Chambers Street	East	2.5	152	0.68	161.7	B
Route 9A/West Street between Harrison Street and Chambers Street	West Walkway	2.5	840	0.86	35.6	D
North Moore Street between Route 9A/West Street and Greenwich Street	North	6.5	580	0.69	111.7	B
Route 9A/West Street between North Moore Street and Harrison Street	East	2.5	128	0.72	200.9	B
Greenwich Street between North Moore Street and Franklin Street	East	4.5	1643	0.92	34.9	D
River Terrace between River Terrace and Murray Street	West	2.5	115	0.59	182.9	B
River Terrace between Warren Street and Chambers Street	West	2.5	94	0.73	277.8	B
River Terrace between Warren Street and Murray Street	West	2.5	125	0.77	221.3	B
Weekday PM Peak Hour						
Route 9A/West Street between Harrison Street and Chambers Street	East	2.5	188	0.74	140.9	B
Route 9A/West Street between Harrison Street and Chambers Street	West Walkway	2.5	1571	0.81	16.2	E
North Moore Street between Route 9A/West Street and Greenwich Street	North	6.5	828	0.79	89.1	C
Route 9A/West Street between North Moore Street and Harrison Street	East	2.5	179	0.84	168.3	B
Greenwich Street between North Moore Street and Franklin Street	East	4.5	1892	0.90	29.3	D
River Terrace between River Terrace and Murray Street	West	2.5	242	0.83	122.4	B
River Terrace between Warren Street and Chambers Street	West	2.5	238	0.77	116.1	B
River Terrace between Warren Street and Murray Street	West	2.5	263	0.76	103.5	B
Saturday Peak Hour						
Route 9A/West Street between Harrison Street and Chambers Street	East	2.5	99	0.76	275.5	B
Route 9A/West Street between Harrison Street and Chambers Street	West Walkway	2.5	1761	0.87	15.3	E
North Moore Street between Route 9A/West Street and Greenwich Street	North	6.5	522	0.75	133.4	B
Route 9A/West Street between North Moore Street and Harrison Street	East	2.5	80	0.54	244.1	B
Greenwich Street between North Moore Street and Franklin Street	East	4.5	853	0.80	60.0	C
River Terrace between River Terrace and Murray Street	West	2.5	127	0.69	196.3	B
River Terrace between Warren Street and Chambers Street	West	2.5	100	0.67	239.8	B
River Terrace between Warren Street and Murray Street	West	2.5	158	0.76	171.8	B

Note: SFP = square feet per pedestrian.

Table 3.11.4-34
Construction MPT Analysis Proposed Action Conditions: Corner Level of Service Analysis

Location	Corner	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour		Saturday Peak Hour	
		SFP	LOS	SFP	LOS	SFP	LOS	SFP	LOS
Greenwich Street and North Moore Street	Northwest	175.3	A	262.3	A	161.8	A	425.0	A
	Southwest	192.4	A	316.5	A	205.6	A	668.2	A
	Southeast	26.7	C	40.7	B	33.9	C	83.8	A
Greenwich Street and Franklin Street	Northeast	6.7	F	5.2	F	-3.1	F	16.2	D
Note: SFP = square foot per pedestrian									

Table 3.11.4-35
Construction MPT Analysis Proposed Action Conditions: Crosswalk Level of Service Analysis

Location	Crosswalk	Crosswalk Length (ft)	Crosswalk Width (ft)	Two-way Peak Hour Volume	SFP	LOS
Weekday AM Peak Hour						
Greenwich Street and North Moore Street	South	38.0	12.5	1144	17.9	D
Greenwich Street and Franklin Street	North	38.0	14.5	1526	10.7	E
Weekday Midday Peak Hour						
Greenwich Street and North Moore Street	South	38.0	12.5	824	31.2	C
Greenwich Street and Franklin Street	North	38.0	14.5	1141	18.5	D
Weekday PM Peak Hour						
Greenwich Street and North Moore Street	South	38.0	12.5	1141	18.2	D
Greenwich Street and Franklin Street	North	38.0	14.5	1452	13.3	E
Saturday Peak Hour						
Greenwich Street and North Moore Street	South	38.0	12.5	371	70.9	A
Greenwich Street and Franklin Street	North	38.0	14.5	585	29.3	C
Note: SFP = square feet per pedestrian						

Table 3.11.4-36
Summary of Significant Adverse Construction MPT Analysis Pedestrian Impacts

Pedestrian Element	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour
West Walkway along Route 9A/West Street between Harrison Street and Chambers Street	Impacted		Impacted	Impacted
East Sidewalk along Greenwich Street between North Moore Street and Franklin Street	Impacted		Impacted	
Greenwich Street and Franklin Street Northeast Corner	Impacted	Impacted	Impacted	Impacted
Greenwich Street and North Moore Street South Crosswalk	Impacted		Impacted	
Greenwich Street and Franklin Street North Crosswalk	Impacted	Impacted	Impacted	

As previously described, these impacts were based on the 66-month construction schedule. Traffic and pedestrian volumes at pedestrian elements previously analyzed would decrease with the current schedule and 2027 peak analysis year. The implementation of the recommended mitigation measures for the 66-month schedule, specifically, removal of a trash can on the northeast corner of Greenwich Street and North Moore Street and removal of flowerpots along the east sidewalk of Greenwich Street between Franklin Street and North Moore Street for pedestrian impacts due to MPT would negate any need for any further mitigation at those locations. At unmitigated pedestrian elements (West Walkway along Route 9A/West Street between Harrison Street and Chambers Street, Greenwich Street and North Moore Street

South Crosswalk, and Greenwich Street and Franklin Street North Crosswalk), the volumes would be lower with the current schedule, but the significant impacts at those locations may persist and may continue to be unmitigatable.

As described further in Construction Overview, Section 3.11, there would be an Early Works Package (EWP) of drainage and utility improvements which is encompassed within the overall 60-month current schedule. The durations of the individual projects would vary but be completed within a total duration of 7 months. As a result, the EWP would involve temporary travel lane, parking lane, and street end closures in the Project Area, but the closures would be of short duration. While this may result in temporary unmitigatable significant adverse traffic and pedestrian impacts throughout the 7-month EWP, MPT plans will be developed in close consultation with and approved by NYCDOT and NYSDOT to minimize these impacts on pedestrians, cyclists, and vehicles.

3.11.4.6.3 Pedestrian and Bicycle Operations: Open Space Closures

The Construction MPT Analysis scenario analyzes pedestrian operations for potential significant adverse pedestrian impacts where MPT would narrow pedestrian elements or generate diversions of pedestrian trips along sidewalks, corner reservoir areas, and crosswalks due to sidewalk and corner closures in Reach 1. In Reaches 2 through 7, construction within open space areas would close pedestrian and bicycle paths and reroute users, generating diversions of pedestrian and bicycle trips. As stated in Chapter 3.8 "Transportation," pathways for pedestrians and bicycles are not defined in the *CEQR Technical Manual* as warranting detailed analysis, and a qualitative analysis of pedestrian and bicycle pathways is presented. Similarly, this chapter presents a qualitative analysis of the effects of open space closures in Reaches 2 through 7 and the potential for significant adverse transportation impacts on pedestrian and bicycle operations during construction.

Proposed Open Space Closure Diversion Plan

As stated in Chapter 1.0 "Project Description," one of the principal purposes of the project is to preserve, enhance, and protect to the maximum extent practicable the open spaces and waterfront cultural resources of Battery Park City. To construct the Proposed Project, open spaces would be closed and then reopened after construction is completed in a manner that minimizes effects on open space areas to the maximum extent possible. Open space users would detour around such closed areas or may decide to avoid the Study Area altogether to enjoy other open spaces nearby.

Sequential maps of open space closures throughout the duration of the construction project have been developed (see Chapter 3.11.2 "Open Space" Figures 3.11.2-3a through 3.11.2-3l), which identify possible routes that may be taken by pedestrians or bicyclists for each open space closure. The Battery Park City street grid and open spaces provide options for additional detour routes that may be taken around closed open spaces in addition to those identified in the maps. Existing open space users will decide on whatever route they are comfortable with and may not follow the identified detour route for each open space closure. Pedestrians would use available paths or sidewalks, corner reservoir areas, or crosswalks. Bicyclists would use streets or available bicycle facilities based on their level of comfort. For example, bicyclists currently using the waterfront esplanade to pass from The Battery to Hudson River Park may

decide to use the dedicated bikeway parallel to Route 9A/West Street for its entirety past Battery Park City, or access waterfront esplanade segments not closed for construction. Pedestrian and bicyclist diversions are therefore anticipated to be dispersed among many streets, paths, and dedicated bicycle facilities.

In addition to detours of users bypassing closed open spaces, there may be diversions of existing recreation trips to open spaces outside the Study Area. As described in Chapter 3.11.2, "Construction Open Space," the temporary closure of open space in the Project Area during construction would redirect users to other Study Area open spaces that would in turn experience increased demand, and that chapter describes the surrounding open space resources that are expected to experience the greatest increases in use from the diverted populations. It also states, "while the construction impact on open space would extend over the full construction period and would result in a temporary, significant adverse impact, it has been phased to minimize these impacts to the maximum extent practicable, recognizing that the flood protection system is largely aligned along the public open spaces of Battery Park City. Furthermore, Rockefeller Park would remain open throughout construction." Chapter 4.0 "Mitigation" identifies a list of potential temporary open space mitigation opportunities within Battery Park City during construction.

Assessment of Impacts

As previously described, there would be many possible outcomes of the open space closures and open space mitigation for pedestrian and bicycle users:

- Continue to access open spaces adjacent to closed open spaces, using detour routes illustrated on maps presented in Chapter 3.11.2 "Open Space" or other routes suiting their comfort level
- Avoid the areas under construction and reroute to nearby open spaces
- Instead of rerouting to nearby open spaces, continue to use open spaces and other areas within Battery Park City using potential open space mitigation opportunities, i.e., play areas, parklets and street seats, pop-up parks, seating, and Open Streets, as presented in Chapter 4.0 "Mitigation"

There would be construction activity for the pump station and in six of the seven reaches during 2027, the peak year of activity for workers and trucks under the construction schedule. Given the many possible outcomes of diversions from the open space closures and open space mitigation in 2027, pedestrian trip diversion peak hour volumes cannot reliably be estimated or assigned to the Study Area as was provided for the detailed analyses of sidewalks, corner reservoir areas, or crosswalks for pedestrians in Reach 1. Also, pathways for pedestrians and bicycles are not defined in the *CEQR Technical Manual* as warranting detailed analysis. Nonetheless, it is conservatively concluded for this DEIS that during the peak year of construction in 2027 there is the potential for temporary unmitigated significant adverse effects on pedestrians and bicycles, given the size and geographic extent of the Proposed Project and the multiple open space closures which would generate trip diversions. These effects would be experienced at their maximum during the peak year of construction, but there would be open space closures throughout construction that would result in temporary unmitigated significant adverse effects on pedestrians and bicycles, but at lesser levels than the peak year of construction.

3.11.4.7 Parking Assessment

3.11.4.7.1 Existing Conditions

As discussed above, there are approximately 35 off-street parking facilities (i.e., parking garages and surface parking lots) located within ¼ mile of the Project Area. Construction worker vehicle trips were assigned to five of these off-street parking facilities (see **Table 3.11.4-8**) and inventories of these facilities were conducted in June 2023 that compiled data on legal capacities and utilization levels. Based on responses provided by parking attendants and visual inspections, where possible, estimates were made on the parking occupancy or utilization at each facility for the weekday AM, midday, PM, overnight, and Saturday time periods.

The combined parking capacity of these five facilities is 1,241 spaces. Based on the survey, these facilities were 76, 85, 81, 37, and 73 percent utilized, with 301, 192, 241, 779, and 336 parking spaces available during the weekday AM, midday, PM, overnight, and Saturday time periods, respectively. (It is noted that the overnight and Saturday time periods are shown for informational purposes and no additional parking demand associated with the Proposed Project would be generated during these peak hours during construction.)

3.11.4.7.2 No Action Conditions

For the purposes of this analysis, public parking utilization is expected to experience the same growth as traffic. However, since the parking data were collected in 2023 only, a 2023 baseline year was assumed instead of 2024, and an additional year of CEQR background growth was included for the No Action condition compared to traffic. An annual background growth rate of 0.25 percent was assumed for the first five years (2024 to 2028) and 0.125 percent was assumed for the following two years (2029 to 2030). Consistent with the Peak Construction Analysis traffic methodology, an additional growth rate of 3.0 percent was also assumed to account for volume increases resulting from No Build projects within ¼ mile of the Project Area. These growth rates together represent a cumulative increase of 4.6 percent over existing conditions.

As presented in **Table 3.11.4-37**, the No Action condition utilization is expected to increase to 79, 88, 84, 39, and 76 percent, with 259, 143, 195, 759, and 295 parking spaces available during the weekday AM, midday, PM, overnight, and Saturday time periods, respectively.

Table 3.11.4-37
Existing and 2030 No Action Parking Supply and Utilization

	Weekday AM	Weekday Midday	Weekday PM	Overnight	Saturday
Existing Public Parking Supply	1,241	1,241	1,241	1,241	1,241
Existing Public Parking Demand	940	1,049	1,000	462	905
Existing Public Parking Utilization	76%	85%	81%	37%	73%
2030 No Action Public Parking Supply Total	1,241	1,241	1,241	1,241	1,241
2030 No Action Public Parking Demand Total	982	1,098	1,046	482	946
2030 No Action Public Parking Utilization	79%	88%	84%	39%	76%
2030 No Action Available Spaces	259	143	195	759	295

3.11.4.7.3 Proposed Action Conditions

Project construction is estimated to have a peak of approximately 420 workers per day. Based on 2000 Reverse Journey to Work data from the U.S. Census, it is anticipated that approximately 29 percent of construction workers would commute using private autos at an average occupancy of approximately 1.18 persons per vehicle. Based on the above, the Proposed Project would generate a daily parking demand of 104 vehicles in the Proposed Action condition.

As shown in **Table 3.11.4-38**, accounting for the No Action parking supply and demand utilization, and the parking demand generated by the Proposed Project, the Proposed Action public parking utilization is expected to increase to 88, 97, 85, 39, and 76 percent, with 155, 39, 180, 759, and 295 parking spaces available during the weekday AM, midday, PM, overnight, and Saturday time periods, respectively. Therefore, based on this analysis the Proposed Project it is concluded that the proposed project would not result in an impact on parking facilities during the construction period.

sTable 3.11.4-38
2030 No Action and Proposed Action Parking Supply and Utilization

	Weekday AM	Weekday Midday	Weekday PM	Overnight	Saturday
2030 No Action Public Parking Supply	1,241	1,241	1,241	1,241	1,241
2030 No Action Public Parking Demand	982	1,098	1,046	482	946
2030 No Action Public Parking Utilization	79%	88%	84%	39%	76%
Proposed Project Parking Demand	104	104	15	0	0
2030 Proposed Action Public Parking Demand Total	1,086	1,202	1,061	482	946
2030 Proposed Action Public Parking Utilization	88%	97%	85%	39%	76%
2030 Proposed Action Available Spaces	155	39	180	759	295