Chapter 18 : Construction

I. INTRODUCTION

This chapter assesses the potential impacts of the activities required to construct the Proposed Project that would result from approval of the Proposed Actions. Construction impacts, although temporary, can include noticeable and disruptive effects. As stated in the 2014 *City Environmental Quality Review (CEQR) Technical Manual*, determination of the significance of construction impacts and need for mitigation is based on the duration and magnitude of the impacts. Construction impacts are usually important when construction activity could affect traffic conditions, hazardous materials, archaeological resources, the integrity of historic resources, community noise patterns, and air quality conditions.

As described in Chapter 1, "Project Description," the Applicant is seeking a set of Proposed Actions in the form of discretionary approvals to include zoning map and text amendments, a large-scale general development special permit, a City Map Amendment to re-establish a portion of Beach 52nd Street south of Rockaway Beach Boulevard to reconnect with Rockaway Freeway, and public funding and/or financing from various City and New York State agencies and/or programs related to affordable housing development on the Project Site. The Project Site is situated in Queens Community District 14 (CD 14). The Proposed Actions would facilitate the Proposed Project to consist of an approximately 2,371,000 gross square feet (gsf) development on the Project Site, comprised of 11 buildings with approximately 2,200 income-restricted dwelling units (DUs), of which 1,927 DUs would be income-restricted up to 80% of the Area Median Income (AMI), to include approximately 201 DUs set aside for Affordable Independent Residences for Seniors, with the remaining 273 DUs restricted to income levels not exceeding 130% of AMI. In addition to the residential DUs, the Proposed Project would include approximately 72,000 gsf of retail space, including a fitness center and a supermarket, approximately 77,000 gsf of community facility space, approximately 24,000 square feet (sf) of publicly-accessible open space, and approximately 973 accessory parking spaces.

Guidance in the C*EQR Technical Manual* indicates that construction duration is often broken down into short-term (less than two years) and long-term (two or more years) durations. Where the duration of construction is expected to be short-term, impacts resulting from such short-term construction generally do not require detailed assessment. As described below, the construction period for the Proposed Project is expected to span a 10-year period, over five phases of construction, and consequently be considered long-term. Therefore, an assessment of potential construction impacts was prepared in conformance to the guidelines of the *CEQR Technical Manual*.

II. PRINCIPAL CONCLUSIONS

Construction of the Proposed Project would result in the potential for significant adverse construction-related impacts on traffic and noise during peak construction periods. Construction-related activities are not expected to result in any significant adverse impacts on other technical impact areas evaluated in this EIS.

Transportation

Traffic

The projected number of auto and truck trips generated during the construction peak hours would be less than those generated during operational peak hours of the Proposed Project. **Table 18-1: Significant Adverse Impacts at Signalized Intersections** identifies the signalized intersections that would experience significant adverse traffic impacts during the peak construction period. As shown in **Table 18-1**, the construction of the Proposed Project would result in significant adverse impacts at ten signalized intersections during the weekday PM construction peak hour and seven signalized intersections during the Saturday PM construction peak hour. There were no significant adverse impacts during the Weekday AM peak hour or Saturday AM peak hour.

Table 18-1: Significant Adverse Impacts at Signalized Intersections

#	Intersection	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday AM Peak Hour	Saturday PM Peak Hour
1	Beach Channel Drive & Beach 116th Street		X		
15	Beach Channel Drive & Beach 62nd Street		X		X
16	Rockaway Beach Boulevard & Beach 62nd Street		X		
19	Arverne Boulevard & Beach 59th Street		X		
21	Rockaway Beach Boulevard & Beach 59th Street		X		X
23	Arverne Boulevard & Beach 54th Street		X		X
25	Edgemere Avenue & Beach 54th Street		X		X
46	Beach Channel Drive & Mott Avenue		X		X
47	Beach Channel Drive & Dix Avenue		X		X
50	Beach Channel Drive & Hassock Street		X		X
	Total Number of Impacted Intersections:	**0**	**10**	**0**	**7**
	Total Number of Impacted Lane Groups:	**0**	**10**	**0**	**7**

Table 18-2: Significant Adverse Impacts at Unsignalized Intersections identifies the unsignalized intersections that would experience significant adverse traffic impacts during the peak construction period. As shown in **Table 18-2**, the construction of the Proposed Project would result in significant adverse impacts at two unsignalized intersections during the Weekday PM peak hour and two unsignalized intersections during the Saturday PM peak hour. There were no significant adverse impacts during the Weekday AM peak hour or Saturday AM peak hour.

Table 18-2: Significant Adverse Impacts at Unsignalized Intersections

#	Intersection	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday AM Peak Hour	Saturday PM Peak Hour
26	Beach Channel Drive & Beach 53rd Street		X		X
27	Rockaway Beach Boulevard & Beach 53rd Street		X		X
	Total Number of Impacted Intersections:	**0**	**2**	**0**	**2**
	Total Number of Impacted Lane Groups:	**0**	**2**	**0**	**2**

X - denotes intersection significantly impacted in the peak hour

Transit

A segment of construction workers is expected to take the bus or subway to travel to and from the Project Site. The projected number of transit trips generated during the construction peak hours would be less than those generated during the peak operation hours of the Proposed Project. Therefore, no construction-related transit impacts would occur due to construction of the Proposed Project.

Pedestrians

New pedestrian trips generated during the construction period would consist of construction workers walking between the Project Site and nearby residences and transit stops. The projected number of

pedestrians generated during the construction peak hours would be less than those generated during the peak operation hours of the Proposed Project. However, since the operational analysis indicates potential significant adverse pedestrian impacts during all peak hours under the With-Action conditions, a detailed pedestrian analysis was conducted for the Weekday AM, Weekday PM, Saturday AM, and Saturday PM construction peak hours for all pedestrian elements. The detailed analysis did not identify additional pedestrian impacts. Therefore, no construction-related pedestrian impacts are expected due to construction of the Proposed Project.

Parking

Based on the off-street parking spaces available within the study area, there would be adequate parking capacity to accommodate the projected construction worker parking demand during the peak construction period. Therefore, no parking shortfalls are expected during construction of the Proposed Project.

Air Quality

Detailed dispersion modeling of construction-related activities indicated that pollutant emissions during peak periods of construction activity would not result in exceedances of the National Ambient Air Quality Standards (NAAQS) for CO, NO_2, PM_{10} or $PM_{2.5}$, or the New York City (NYC) 24-hour or annual de minimis increments for "fine" particulate matter ($PM_{2.5}$). Therefore, no significant adverse construction air quality impact would occur.

Noise

Increases in noise levels due to construction activities would be limited to the daytime and, occasionally, the early evening. Consistent with guidance in the *CEQR Technical Manual*, further analysis was carried out for construction noise because construction-related activities would exceed two years. The analysis included the Applicant's commitment to use equipment with noise levels quieter than typical noise levels for such equipment, as well as path controls placed between the equipment and specific sensitive receptors.

Analysis conducted in conformance with guidance in the *CEQR Technical Manual* determined that for some sensitive receptors and construction periods, the duration and magnitude of the noise levels would constitute a significant adverse construction-period noise impact. However, no sensitive receptors would experience noise levels that exceed the criterion of an absolute L_{eq} of 85 dBA, but some would experience increases over ambient noise levels of 15 dBA or more. Source and paths controls to reduce or eliminate potential significant adverse construction noise impacts would be employed by the Applicant. However, there may be periods during construction where use of select controls would not be feasible; therefore, construction of the Proposed Project would have the potential to result in significant adverse noise impacts at one or more sensitive receptors. Mitigation measures to address these impacts are identified in Chapter 20, "Mitigation."

Other Technical Areas

Land Use and Neighborhood Character

Construction activities associated with the Proposed Project would affect land use on the Project Site but would not alter surrounding land uses. Measures would be implemented to control noise, vibration, and dust throughout the construction period, including the erection of construction fencing and barriers. While construction activities and any subsequent disruptions at the Project Site would be evident to the local community, the limited duration of construction would not result in any significant or long-term adverse impacts on local land use patterns or the character of the nearby area.

Socioeconomic Conditions

Construction activities associated with the Proposed Project would not result in any significant adverse construction-related impacts on socioeconomic conditions since construction activities would directly or indirectly displace any residence or business, or adversely affect any major industry in the City. In addition, it would not block or restrict access to any residences or businesses in the area, affect the operations of any nearby businesses, or obstruct major thoroughfares providing access to residences or businesses.

Community Facilities and Services

No community facility would be directly displaced or altered by construction of the Proposed Project, nor would construction activities substantially restrict access to any community facility during the construction period. Therefore, no significant adverse construction-related impacts on community facilities would occur.

Open Space

No open space resources currently exist on the Project Site, nor would any open space resource be used for staging or other construction activities. Consequently, no open space resources would be directly displaced during the construction of the Proposed Project. In addition, construction activities would not limit access to any existing or proposed publicly available open space. Consequently, there would be no significant adverse construction-related impacts on open space resources.

Historic and Cultural Resources

An assessment of potential impacts on historic and cultural resources is described in Chapter 6, “Historic and Cultural Resources.” There are no archaeological or architectural resources located at the Project Site. It was determined that the Proposed Project would not result in significant adverse impacts on archaeological or architectural resources following consultation with the NYC Landmarks Preservation Commission (LPC). Therefore, there would be no significant adverse impacts due to the construction of the Proposed Project related to historic and cultural Resources.

Hazardous Materials

The Proposed Project would require ground disturbance to provide the foundation for the proposed buildings, and related improvements, thereby potentially disturbing on-site hazardous materials. As described in Chapter 9, “Hazardous Materials,” the presence of on-site hazardous materials was confirmed based on the findings of Phase II Environmental Site Assessment (ESA) investigations conducted on the North and South Parcels of the Project Site. The greatest potential for human exposure to contaminants due to soil disturbance during construction would be during excavation.

Consequently, a Remedial Action Plan (RAP) and site-specific Construction Health and Safety Plan (CHASP) will be prepared to establish procedures for all construction-related activities and ground disturbance at the Project Site. Construction management, site-specific controls, and monitoring procedures established therein would be submitted to the NYC Office of Environmental Remediation (OER) for review and approval. Documentation of the RAP is required prior to the issuance of NYC building permits to allow building occupancy on the Project Site.

To ensure remediation of the Project Site following the completion of the CEQR process, an (E) Designation will be mapped on the North and South Parcels of the Project Site as administered and overseen by OER pursuant to Section 11-15 (Environmental requirements) of the Zoning Resolution of the City of New York and Chapter 24 of Title 15 of the Rules of the City of New York. Furthermore, as of October 5, 2017, the North Parcels of the Project Site have been accepted into the Brownfield Cleanup Program (BCP) (Site No. C241200) and a Brownfield Cleanup Agreement (BCA) had been executed, which provides incentives for the remediation and redevelopment of urban “brownfields.” The BCP is a voluntary and comprehensive program that includes or surpasses requirements of the City’s hazardous materials (E) designation

program. As a result, remedial actions performed in conjunction with the Proposed Project are subject to approval and oversight by NYSDEC and compliance with the requirements of the BCP, which would prevent significant adverse impacts from the Proposed Project due to the presence of contaminated materials. The (E) designation mapped on the North Parcels serves to ensure that testing and mitigation will be provided as necessary prior to any future development and/or soil disturbance at the Project Site in the event the Applicant withdraws their participation in the BCP.

With the implementation of the RAP and CHASP per the (E) Designation mapped on the Project Site, the Proposed Project would not result in significant adverse construction-related impacts pertaining to hazardous materials.

III. REGULATORY FRAMEWORK

Governmental Coordination and Oversight

The governmental oversight of construction in NYC is extensive and involves city, state, and federal agencies. **Table 18-3: Construction Oversight in New York City** identifies the main agencies involved in construction oversight and each agency's areas of responsibility. The primary responsibilities lie with NYC agencies. The NYC Department of Buildings (DOB) has the primary responsibility for ensuring that the construction meets the requirements of the Building Code and that buildings are structurally, electrically, and mechanically safe. In addition, DOB enforces safety regulations to protect both construction workers and the public. The areas of DOB responsibility include installation and operation of construction equipment, including cranes and lifts, sidewalk shed, and safety netting and scaffolding. The DEP enforces the Noise Code, approves RAPs and CHASPs, and regulates water disposal into the sewer system. The New York City Fire Department (FDNY) has primary oversight for compliance with the Fire Code and for the installation of tanks containing flammable materials. The NYC Department of Transportation reviews and approves any traffic lane and sidewalk closures. NYC Transit and the Metropolitan Transportation Authority regulate bus stop relocations and any subsurface construction within 200 feet of a subway. LPC approves studies and testing to prevent loss of archaeological materials and to prevent damage to fragile historic structures.

NYSDEC regulates discharge of water into rivers and streams, disposal of hazardous materials, and construction, operation, and removal of bulk petroleum and chemical storage tanks. The New York State Department of Labor licenses asbestos workers. On the federal level, the US Environmental Protection Agency has wide ranging authority over environmental matters, including air emissions, noise, hazardous materials, and the use of poisons. Much of its responsibility is delegated to the state level. The US Occupational Safety and Health Administration sets standards for work site safety and construction equipment.

Table 18-3: Construction Oversight in New York City

Agency	Area(s) of Responsibility
New York City	
Department of Buildings	Primary oversight for Building Code and site safety
Department of Environmental Protection	Noise, hazardous materials, dewatering
Fire Department	Compliance with Fire Code, tank operation
Department of Transportation	Traffic lane and sidewalk closures
New York City Transit	Bus stop relocation; any subsurface construction within 200 feet of a subway
Landmarks Preservation Commission	Archaeological and historic architectural protection

New York State	
Department of Labor	Asbestos workers
Department of Environmental Conservation	Dewatering, hazardous materials, tanks, Stormwater Pollution Prevention Plan, Industrial SPDES, if any discharge into the Hudson River
Federal	
Environmental Protection Agency	Air emissions, noise, hazardous materials, toxic substances
Occupational Safety and Health Administration	Worker safety

Construction Noise

Construction noise is regulated by the requirements of the NYC Noise Control Code (Chapter 24 of the Administrative Code of the City of New York, or Local Law 113), the DEP Notice of Adoption Rules for Citywide Construction Noise Mitigation (also known as Chapter 28), and EPA noise emission standards. These local and Federal requirements mandate that specific construction equipment and motor vehicles meet specified noise standards; that construction activities be limited to weekdays between the hours of 7:00 AM and 6:00 PM; and that construction materials be handled and transported in such a manner as not to create unnecessary noise. For weekend and after-hours work, permits would be required, as specified in the NYC Noise Control Code. In addition, EPA requirements mandate that certain classifications of construction equipment meet specified noise emission standards.

IV. ANTICIPATED CONSTRUCTION SCHEDULE AND ACTIVITIES

Construction Sequencing

Construction of the Proposed Project would take place over a 10-year period, throughout five phases of construction beginning December 2019 and reaching completion by December 2029. In conformance to guidance in the *CEQR Technical Manual*, this would be considered long-term since it is two or more years in duration. A construction sequencing plan was developed for use in the assessment of construction impacts and is illustrated in **Table 18-4: Anticipated Construction Schedule**. As depicted in **Table 18-4**, major construction phases include excavation and foundations, superstructure, and exterior and interior fit-outs. Since the Project Site does not currently include any built structure, no demolition would be required to construct the Proposed Project.

The phasing sequence for the Proposed Project is provided in **Table 18-5: Project Phasing**. Infrastructure improvements associated with the development of the Project Site are detailed below to consist of roadway improvements as well as water, sanitary and stormwater infrastructure improvements to facilitate operations of the mixed-use development.

Table 18-4: Anticipated Construction Schedule

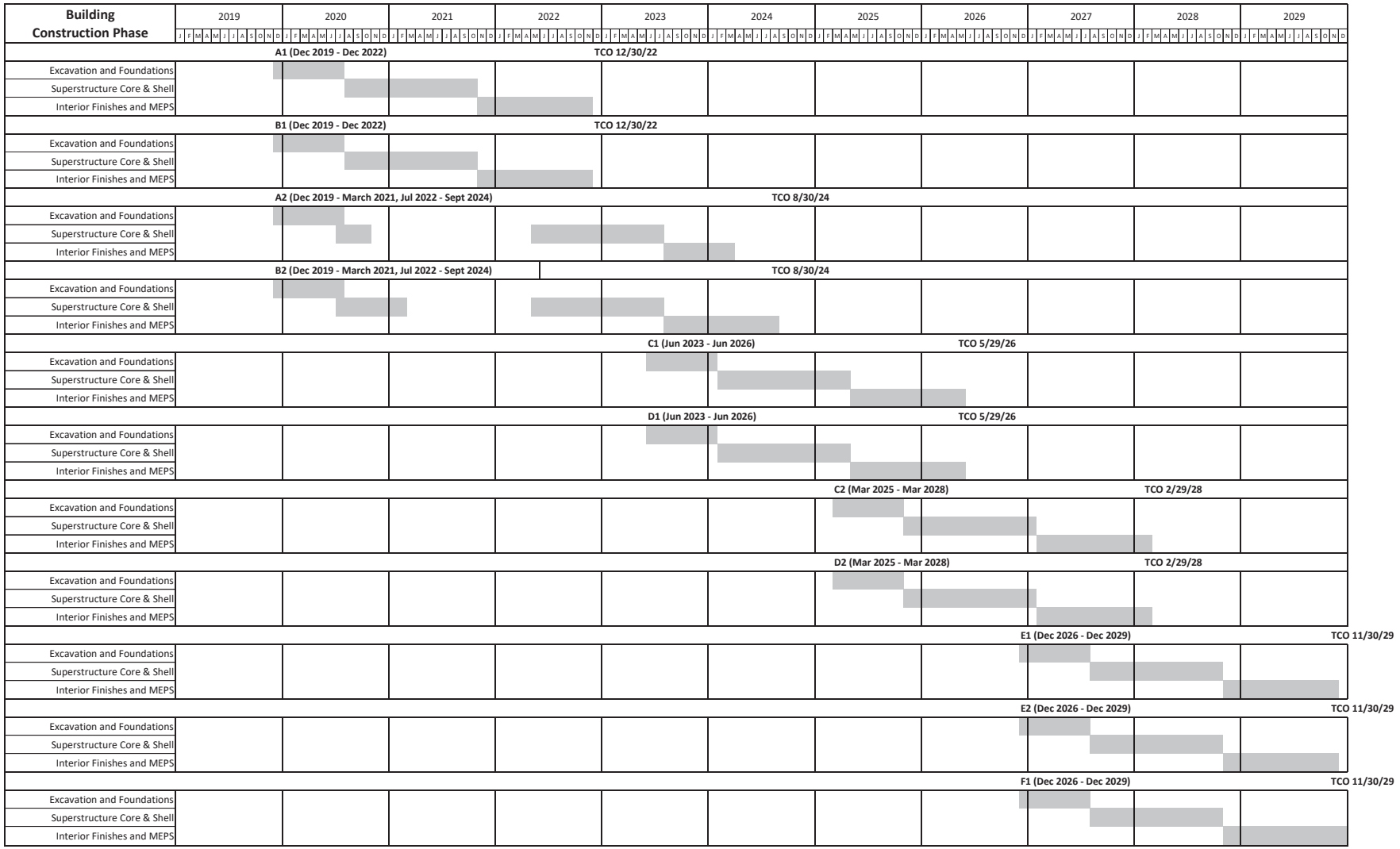


Table 18-5: Project Phasing

No.	Building	Roadway/ Infrastructure Completion	Roadway Improvement	Infrastructure Improvement	
				Water/Sanitary	Stormwater
1	A1	Upon completion of Buildings A1 and B1	Construct full-width Beach 52nd Street along frontage of buildings/ NYCDOT standard	Water: Connect to existing DEP watermain in Beach Channel Drive and Beach 53rd Street. Construct internal watermain in Beach 52nd Street and Peninsula Way. Sewer: Internal sanitary drain constructed in Beach 52nd Street; discharging to existing DEP sewer in Rockaway Beach Boulevard.	On-site detention, on-site infiltration, and connection to existing DEP storm sewer in Beach Channel Drive.
2	B1				
3	A2	Upon completion of Buildings A2 and B2	Extend full-width Beach 52nd Street south to Peninsula Way intersection and construct full-width Peninsula Way between Beach 53rd Street and Beach 52nd Street/ NYCDOT standard	Water: Connect to existing DEP watermain in Beach 53rd Street, and Beach 52nd Street internal watermain; constructed during Phase 1. Sewer: Connect to internal sanitary drain in Beach 52nd Street; constructed during Phase 1.	Connect to detention tanks built during Phase 1.
4	B2				
5	C1	Upon completion of Buildings C1 and D1	Extend full-width Peninsula Way east to Beach 51st Street Plaza/ NYCDOT standard	Water: Connect to existing DEP watermain in Beach 53rd Street, existing internal watermain constructed during Phase 1, and existing DEP watermain in Rockaway Beach Boulevard. Sewer: Connect to internal sanitary drain in Beach 52nd Street; constructed during Phase 1, and future DEP sewer in Rockaway Beach Boulevard (sewer to be completed in August 2021).	On-site detention, on-site infiltration, and connection to future DEP storm sewer in Rockaway Beach Boulevard. (sewer to completed in August 2021).
6	D1				
7	C2	Upon completion of Buildings C2 and D2	Extend full-width Beach 52nd Street south to Rockaway Beach Boulevard/ NYCDOT standard	Water: Extend Beach 52nd Street watermain to Rockaway Beach Boulevard. Connect to existing internal watermain constructed during Phase 1, internal main built during this phase, and existing DEP watermain in Rockaway Beach Boulevard. Sewer: Connect to internal sanitary drain in Beach 52nd Street; constructed during Phase 1, and future DEP sewer in Rockaway Beach Boulevard (sewer to be completed in August 2021).	Connect to detention tanks built during Phase 3.
8	D2				

No.	Building	Roadway/ Infrastructure Completion	Roadway Improvement	Infrastructure Improvement	
				Water/Sanitary	Stormwater
9	E1	Upon completion of Buildings E1, E2 and F1	Extend full-width Peninsula Way east to Beach 50th Street Plaza/ NYCDOT standard	Water: Extend Peninsula Way watermain east to Phase 5. Connect to existing internal main built during this phase, existing DEP watermain in Rockaway Beach Boulevard, and existing DEP main in Beach 50th Street. Sewer: Connect to future DEP sewer in Rockaway Beach Boulevard (sewer to be completed in August 2021).	On-site detention, on-site infiltration, and connection to future DEP storm sewer in Rockaway Beach Boulevard. (sewer to be completed in August 2021).
10	E2				
11	F1				

Construction Activities

The Proposed Project would be constructed using standard construction techniques and equipment typically used for construction projects in NYC. Trucks transporting materials and workers to and from the Project Site would access the Project Site via Beach Channel Drive as designated by the NYC Truck Route. As depicted in the site plan (see Chapter 1, "Project Description") and construction staging plans in **Appendix 18-1**, freight parking and site access will be maintained as follows:

- **Phase 1 (December 2019 – December 2022).** For the construction of buildings A1 and B1, freight parking will be maintained on the surface parking lot on sub-section A on the Project Site. Site access will be maintained along the southern perimeters of sub-sections A and B.
- **Phase 2 (December 2019 – March 2021, July 2022 – September 2024).** For the construction of buildings A2 and B2, freight parking will be maintained along the southern perimeter of sub-section A. Site access will be maintained along the southern perimeters of sub-sections A and B of the Project Site.
- **Phase 3 (June 2023 – June 2026).** For the construction of buildings C1 and D1, freight parking will be maintained between sub-sections C and D of the Project Site. Site access will be maintained along the southern perimeter of sub-section C.
- **Phase 4 (March 2025 – March 2028).** For the construction of buildings C2 and Ds, freight parking will be maintained along the eastern perimeter of sub-section D. Site access will be maintained between sub-sections of C and D of the Project Site, as well as the southern perimeter of sub-sections C and D.
- **Phase 5 (December 2026 – December 2029).** For the construction of buildings E1, E2, and F1, freight parking will be maintained along the eastern perimeter of sub-section E. Site access will be maintained along the southern perimeter of sub-section E.

Construction phasing may be adjusted to advance the delivery of community facility space in Building E1/E2 and the open space between buildings D and E.

Overall, freight parking and site access will be restricted to internal areas of the Project Site during construction to limit disruptions to traffic and pedestrian activity in the surrounding area. Construction fencing would be installed along the perimeter of the Project Site while allowing for a minimum five-foot-wide pedestrian pathway.

The following is a general outline of construction activities and equipment that would be applied to construct the Proposed Project within the 10-year construction period:

- **Excavation and Foundation.** Excavation and installation of the foundation for the Proposed Project would consist of removal of the existing asphalt and concrete pavement at the Project Site formerly occupied by the Peninsula Hospital. Typical equipment for these activities includes concrete mixer and pump trucks, chain saws, ground compactors, compressors, excavators, and impact pile drivers. Given the current lack of structures on the Project Site, no major demolition would occur on the Project Site.
    - Approx. 8 months each phase of construction
- **Construction.** Construction of the Proposed Project would consist of erection of the superstructure, exterior fit-outs, interior fit-outs, installation of the mechanical, electrical and plumbing systems, and building finishing features. Typical equipment for these activities includes a crane positioned in the center of the Project Site, a dumpster for rubbish removal, generators, material and personnel hoists, and welders or torches.
    - Approx. 13 to 23 months

Estimate of Construction Period Trucks and Construction Workers

Estimates of the anticipated number of daily construction workers and trucks are provided in **Table 18-6: Average Number of Daily Construction Workers and Trucks by Quarter**. Construction would begin in the fourth quarter of 2019 and continue through full build-out of the Project Site by the end of 2029.

Table 18-6: Average Number of Daily Construction Workers and Trucks by Quarter

Year	2019	2020				2021				2022				2023				2024				2025				2026				2027				2028				2029			
Quarter	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	20	60	60	160	160	200	120	120	120	140	200	180	160	120	130	163	170	203	180	200	120	130	150	170	203	180	200	120	135	165	185	228	220	240	160	153	160	190	190	147	110
Trucks	9	15	65	87	83	44	33	28	28	31	31	51	35	30	33	36	86	101	75	33	33	33	35	92	114	84	37	33	34	37	93	116	93	47	47	40	40	43	40	26	14
Total	29	75	125	247	243	244	153	148	148	171	231	231	195	150	163	199	256	304	255	233	153	163	185	262	317	264	237	153	169	202	278	344	313	287	207	193	200	233	230	172	124

Note: *Total worker and truck estimates based on data provided by developer.*

Peak Period for the Assessment of Cumulative Construction Effects

As shown in **Table 18-6**, peak construction traffic is expected to occur during the third quarter of 2027 (Q3 2027, "the peak construction period"). The daily workforce and truck trip projections during this peak period were used to estimate potential transportation, air quality, and noise impacts during construction. It is expected that an average of 228 workers and 116 trucks would be utilized at the Project Site each Weekday and Saturday during this peak construction period.

Peak Construction Period Conditions

The assessment of transportation, air quality, and noise construction impacts was based on a comparison for each respective technical area of the Q3 2027 peak construction period condition against a baseline condition defined as the future without the Proposed Project (or No-Action condition).

Transportation Construction Peak Period

No-Action Construction Condition

The No-Action construction condition considered the Existing conditions, background growth between 2016 and 2027, nearby projects expected to be completed by 2027, and the portion of the Proposed Project that would be built by 2027.

The *CEQR Technical Manual* guidelines (see Chapter 16, "Transportation," Table 16-4) provides an annual background growth rate for this area of Queens of 0.50% for the first five years and 0.25% for the years beyond. The annual growth rates were applied, over a period of 11 years, to the Existing conditions volumes to develop the 2027 No-Action conditions background traffic, transit, pedestrian, and parking volumes.

Of the No-Action development projects described in Chapter 2, "Land Use, Zoning, and Public Policy," No-Action sites 5, 6, 9, 16, 17, 19, and 20 are expected to be built before 2027 and were included in the No-Action construction condition. No-Action sites 1, 2, 3, 4, 7, and 13 will be built incrementally between 2021 and 2028 and were assumed to be 87.5% complete by 2027. No-Action sites 15 and 18, which are expected to be built after 2027, were not included in the No-Action construction condition.

It is expected that buildings A1, A2, B1, B2, C1, and D1 of the Proposed Project would be constructed and occupied by 2027. Therefore, these buildings were included in the No-Action construction condition. The remaining buildings (C2, D2, E1, E2, and F1) would be under construction during Q3 2027.

Q3 2027 Peak Construction Condition

Construction activities generated by the Proposed Project in Q3 2027 were overlaid onto the No-Action construction condition, as outlined above, to define the Q3 2027 peak construction condition for transportation.

Peak Construction Period Roadway Conditions

The No-Action roadway improvements described in Chapter 12, "Transportation," were assumed to be implemented by Q3 2027, with the exception of improvements at intersections 40 through 50, which will be implemented after 2027 as part of improvements for No-Action site 15 (Downtown Far Rockaway Redevelopment). In addition to the No-Action roadway improvements, it was assumed that Peninsula Way between the pedestrian plaza at Beach 51st Street and Beach 50th Street and the extension of Beach 52nd Street to Rockaway Freeway would be under construction and closed to vehicular traffic.

Air Quality and Noise Construction Peak Period

The sizes, types, and number of construction equipment were obtained from the construction activity schedule provided by the project construction manager. The construction air quality impact assessment was based on pollutant emissions and construction traffic calculated for individual construction quarters. For $PM_{2.5}$ and PM_{10}, the worst-case period would be the fourth quarter of 2027, followed by the first quarter of 2020, due to equipment exhaust. For NO_2, the peak period would be the fourth quarter of 2027, followed by the fourth quarter of 2020, due to on-site equipment exhaust emissions. A construction analysis showed that noise levels varied throughout the ten-year construction period and that effects varied among surrounding sensitive receptors depending on which buildings were under construction.

Construction Working Hours

Typical construction activities at the Project Site would occur on weekdays between 7:00 AM and 4:00 PM and on Saturdays between 8:00 AM and 3:00 PM. Approximately 80% of the arrivals of construction workers are projected to take place the hour before construction activities start (between 6:00 AM and 7:00 AM on weekdays and between 7:00 AM and 8:00 AM on Saturdays), and approximately 80% of the departures of construction workers is projected to take place the hour after construction activities end (between 4:00 PM and 5:00 PM on weekdays and between 3:00 PM and 4:00 PM on Saturdays). On days with concrete pours, concrete trucks would arrive throughout the day, with the first set of trucks arriving at the Project Site the hour before construction activities start and the last set of trucks arriving an hour before construction activities end. Other truck deliveries would occur throughout the day during active construction, with more trips made during the morning hours.

Construction Staging Areas, Sidewalk and Lane Closures

Construction staging areas would be installed around the boundaries of buildings E and F of the Project Site to facilitate construction activities. Staging would reduce the lane widths on Beach 50th Street and Rockaway Beach Boulevard adjacent to the building E construction site. Peninsula Way between the pedestrian plaza at Beach 51st Street and Beach 50th Street would be under construction and fully closed except for the north sidewalk, which would be open to pedestrian traffic. Full sidewalk closures would occur along Beach 50th Street and Rockaway Beach Boulevard adjacent to the construction sites. The near sidewalks on Beach 53rd Street, Beach Channel Drive, and Rockaway Beach Boulevard would be closed during construction of adjacent buildings.

V. PRELIMINARY ASSESSMENT

In conformance to guidance in the *CEQR Technical Manual*, a preliminary assessment was completed to evaluate the potential construction period impacts of the Proposed Project, including impacts on transportation (traffic, transit, pedestrians, and parking), air quality, noise, land use and neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, and hazardous materials.

Transportation

As discussed in Section IV, “Anticipated Construction Schedule and Activities” of this chapter, peak construction traffic is expected to occur during Q3 2027. The peak daily workforce and truck trip projections during this period were used to estimate peak hour construction trips and to provide an assessment of the maximum transportation impacts during construction of the Proposed Project. As summarized in **Table 18-6**, it is expected that an average of 228 workers and 116 truck deliveries would occur each workday during the peak construction period for transportation.

Worker and truck trip projections were refined to account for the modes that would be use by construction workers to travel to and from the Project Site and the anticipated number of construction workers that would occupy private autos. Estimates were based on the Year 2000 Census reverse-journey-to-work data for the construction and excavation industry for the census tract in which the Project Site is located and adjacent census tracts. Year 2000 Census data was then adjusted to reflect Year 2010 Census conditions. Based on this data, approximately 42.7% of the construction workers would be expected to travel to the Project Site by private autos at an average occupancy of 1.02 persons per vehicle. The remaining 57.3% of the construction workers would either walk or use public transportation (16.7% on-foot, 20.6% by subway, and 20% by bus) to travel to and from the Project Site.

Worker and truck trip projections were refined to account for the directional distribution of arrival and departure trips to and from the Project Site. Estimates were also completed for the passenger car equivalents (PCE) of the construction trucks that will be used during the construction period. PCEs are used to account for the effects of trucks and other vehicles on traffic conditions compared to autos.

Traffic

Level 1 Screening

Construction activities at the Project Site would be limited to between 7:00 AM and 4:00 PM on weekdays and between 8:00 AM and 3:00 PM on Saturdays. General construction truck trips would occur throughout the workday, with more trips made during the morning period; concrete truck trips would be more evenly distributed throughout the day. Since most trucks would remain at the Project Site for only short durations, it was assumed that each truck delivery would result in two truck trips during the same hour (one “in” and one “out”). In accordance with guidance in the *CEQR Technical Manual*, it was further assumed that each truck has a PCE of 2.0. Each construction worker vehicle was assumed to arrive in the morning and depart in the afternoon.

The estimated daily vehicle trips were distributed throughout the workday based on projected work shift allocations and conventional arrival/departure patterns of construction workers and trucks. For construction workers, it was assumed that approximately 80% of the arrival trips would take place between 6:00 AM and 7:00 AM on weekdays and between 7:00 AM and 8:00 AM on Saturdays, and approximately 80% of departure trips would take place between 4:00 PM and 5:00 PM on weekdays and between 3:00 PM and 4:00 PM on Saturdays. Since most construction truck deliveries typically peak during the early morning, it was assumed that approximately 25% of daily truck trips would occur between 7:00 AM and 8:00 AM on weekdays and between 8:00 AM and 9:00 AM and 9:00 AM and 10:00 AM on Saturdays. During days with concrete pours, concrete trucks are assumed to begin to reach the site the hour before work starts, and continue to arrive every hour of the workday, until one hour before the workday ends. The hourly construction trip projections for the peak construction quarter during the Weekday and Saturday shifts are summarized in **Table 18-7: Weekday Q3 2027 Peak Incremental Construction Vehicle Trip Projections (in PCEs)** and in **Table 18-8: Saturday Q3 2027 Peak Incremental Construction Vehicle Trip Projections (in PCEs),** respectively.

Table 18-7: Weekday Q3 2027 Peak Incremental Construction Vehicle Trip Projections (in PCEs)

Hour	Auto Trips					Concrete Truck Trips					General Truck Trips					Total Vehicle Trips		
	In		Out		Total	In		Out		Total	In		Out		Total			
	%	#	%	#		%	#	%	#		%	#	%	#		In	Out	Total
5 AM - 6 AM	0%	0	0%	0	0	0%	0	0%	0	0	0%	0	0%	0	0	0	0	0
6 AM - 7 AM	80%	77	0%	0	77	11%	17	11%	17	33	0%	0	0%	0	0	93	17	110
7 AM - 8 AM	20%	19	0%	0	19	11%	17	11%	17	33	25%	21	25%	21	41	56	37	93
8 AM - 9 AM	0%	0	0%	0	0	11%	17	11%	17	33	20%	16	20%	16	33	33	33	66
9 AM - 10 AM	0%	0	0%	0	0	11%	17	11%	17	33	10%	8	10%	8	16	25	25	50
10 AM - 11 AM	0%	0	0%	0	0	11%	17	11%	17	33	10%	8	10%	8	16	25	25	50
11 AM - 12 PM	0%	0	0%	0	0	11%	17	11%	17	33	10%	8	10%	8	16	25	25	50
12 PM - 1 PM	0%	0	0%	0	0	11%	17	11%	17	33	10%	8	10%	8	16	25	25	50
1 PM - 2 PM	0%	0	0%	0	0	11%	17	11%	17	33	5%	4	5%	4	8	21	21	42
2 PM - 3 PM	0%	0	0%	0	0	11%	17	11%	17	33	5%	4	5%	4	8	21	21	42
3 PM - 4 PM	0%	0	5%	5	5	0%	0	0%	0	0	5%	4	5%	4	8	4	9	13
4 PM - 5 PM	0%	0	80%	77	77	0%	0	0%	0	0	0%	0	0%	0	0	0	77	77
5 PM - 6 PM	0%	0	15%	14	14	0%	0	0%	0	0	0%	0	0%	0	0	0	14	14
6 PM - 7 PM	0%	0	0%	0	0	0%	0	0%	0	0	0%	0	0%	0	0	0	0	0
Daily Total	100%	96	100%	96	191	100%	150	100%	150	300	100%	82	100%	82	164	328	328	655

Notes:
1. Hourly construction worker and truck trips were derived from an estimated monthly average number of construction workers and truck deliveries per day, with each truck delivery resulting in two daily trips (arrival and departure).
2. Columns labeled as "%" represent the temporal distribution of the construction trips provided by the construction manager.
3. Volumes may not add up due to rounding.

Table 18-8: Saturday Q3 2027 Peak Incremental Construction Vehicle Trip Projections (in PCEs)

Hour	Auto Trips					Concrete Truck Trips					General Truck Trips					Total Vehicle Trips		
	In		Out		Total	In		Out		Total	In		Out		Total			
	%	#	%	#		%	#	%	#		%	#	%	#		In	Out	Total
5 AM - 6 AM	0%	0	0%	0	0	0%	0	0%	0	0	0%	0	0%	0	0	0	0	0
6 AM - 7 AM	0%	0	0%	0	0	0%	0	0%	0	0	0%	0	0%	0	0	0	0	0
7 AM - 8 AM	80%	77	0%	0	77	14.3%	21	14.3%	21	43	0%	0	0%	0	0	98	21	119
8 AM - 9 AM	20%	19	0%	0	19	14.3%	21	14.3%	21	43	25%	21	25%	21	41	61	42	103
9 AM - 10 AM	0%	0	0%	0	0	14.3%	21	14.3%	21	43	25%	21	25%	21	41	42	42	84
10 AM - 11 AM	0%	0	0%	0	0	14.3%	21	14.3%	21	43	20%	16	20%	16	33	38	38	76
11 AM - 12 PM	0%	0	0%	0	0	14.3%	21	14.3%	21	43	15%	12	15%	12	25	34	34	67
12 PM - 1 PM	0%	0	0%	0	0	14.3%	21	14.3%	21	43	5%	4	5%	4	8	26	26	51
1 PM - 2 PM	0%	0	0%	0	0	14.3%	21	14.3%	21	43	5%	4	5%	4	8	26	26	51
2 PM - 3 PM	0%	0	5%	5	5	0.0%	0	0.0%	0	0	5%	4	5%	4	8	4	9	13
3 PM - 4 PM	0%	0	80%	77	77	0%	0	0%	0	0	0%	0	0%	0	0	0	77	77
4 PM - 5 PM	0%	0	15%	14	14	0%	0	0%	0	0	0%	0	0%	0	0	0	14	14
5 PM - 6 PM	0%	0	0%	0	0	0%	0	0%	0	0	0%	0	0%	0	0	0	0	0
6 PM - 7 PM	0%	0	0%	0	0	0%	0	0%	0	0	0%	0	0%	0	0	0	0	0
Daily Total	100%	96	100%	96	191	100%	150	100%	150	300	100%	82	100%	82	164	328	328	655

Notes:
1. Hourly construction worker and truck trips were derived from an estimated monthly average number of construction workers and truck deliveries per day, with each truck delivery resulting in two daily trips (arrival and departure).
2. Columns labeled as "%" represent the temporal distribution of the construction trips provided by the construction manager.
3. Volumes may not add up due to rounding.

As summarized in **Table 18-7** and **Table 18-8**, construction activities during Q3 2027 would generate more than 50 vehicle trips during the Weekday AM, Weekday PM, Saturday AM, and Saturday PM construction peak hours (110 PCEs between 6:00 AM and 7:00 AM, 77 PCEs between 4:00 PM and 5:00 PM, 119 PCEs between 7:00 AM and 8:00 AM, and 77 PCEs between 3:00 PM and 4:00 PM, respectively). In accordance with the *CEQR Technical Manual*, a Level 2 screening was performed to distribute the construction trips to the surrounding roadway network and determine the study intersections to be included in the construction peak hour analysis.

Level 2 Screening

A total of 110 construction trips would be generated during the Weekday AM construction peak hour (6:00 AM to 7:00 AM). Weekday AM construction peak hour vehicle trips were assigned to the study intersections to determine the Weekday AM construction vehicle increment, as shown on **Figure 18-1: Q3 2027 Construction Increment, Weekday AM Construction Peak Hour.** More than 50 vehicle trips would be generated at the following two intersections during the Weekday AM construction peak hour:

- Peninsula Way and Beach 52nd Street
- Beach Channel Drive and Beach 50th Street

However, the construction trips would be overlaid onto the Q3 2027 background volumes, which include trips generated by planned developments expected to be operational by Q3 2027 and operational trips generated by the portion of the Proposed Project expected to be constructed and occupied by Q3 2027, as described earlier. As potential significant adverse traffic impacts are expected during the Weekday AM With-Action condition at multiple study locations, a detailed vehicular traffic analysis was conducted for the Weekday AM construction peak hour for all study intersections.

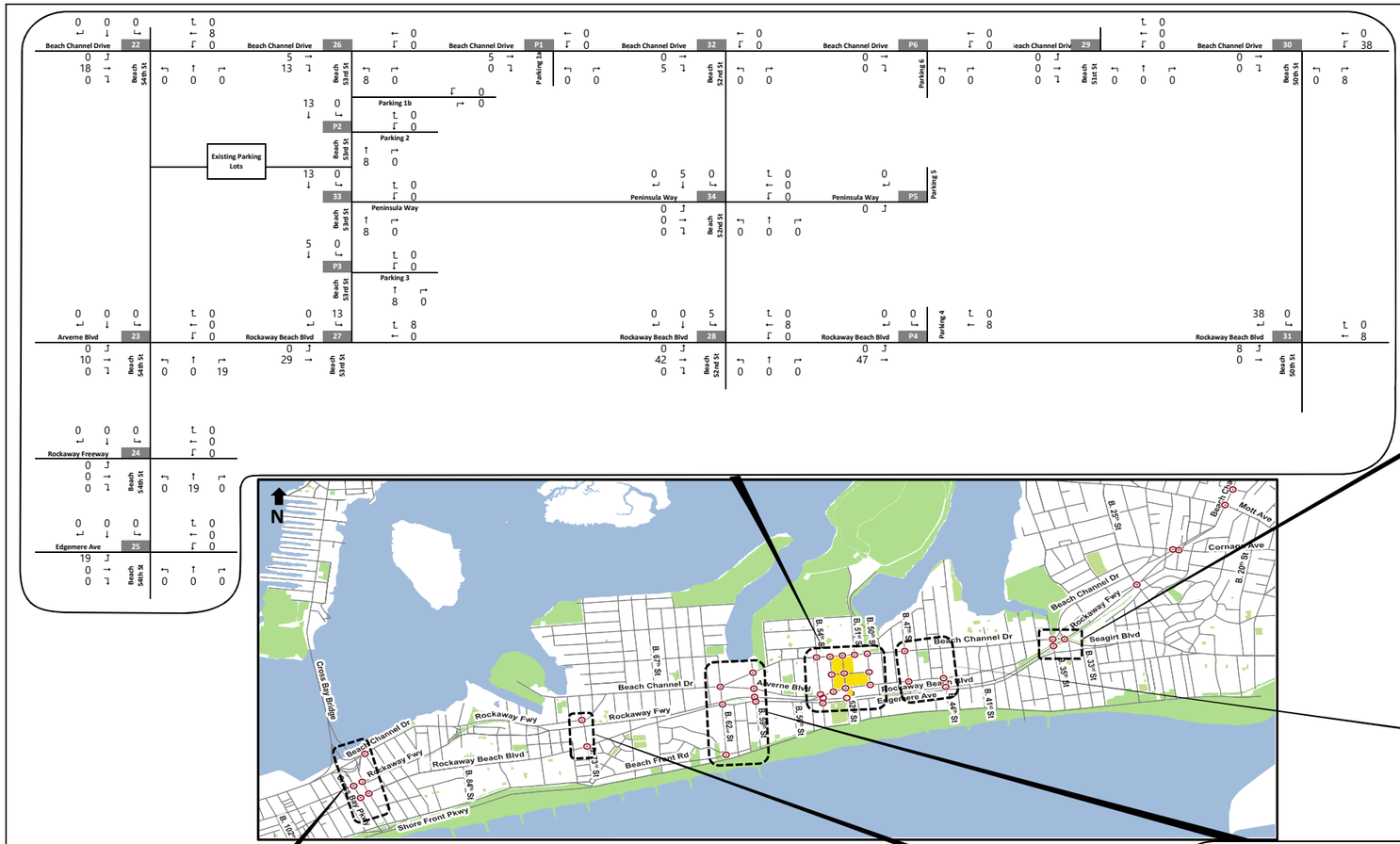
A total of 77 construction trips would be generated during the Weekday PM construction peak hour (4:00 PM to 5:00 PM). Weekday PM construction peak hour vehicle trips were assigned to the study intersections to determine the Weekday PM construction vehicle increment, as shown on **Figure 18-2: Q3 2027 Construction Increment, Weekday PM Construction Peak Hour.** Fewer than 50 vehicle trips would be generated at all study intersections during the Weekday PM construction peak hour. However, as potential significant adverse traffic impacts are expected during the Weekday PM With-Action condition at multiple study locations, a detailed vehicular traffic analysis was conducted for the Weekday PM construction peak hour for all study intersections.

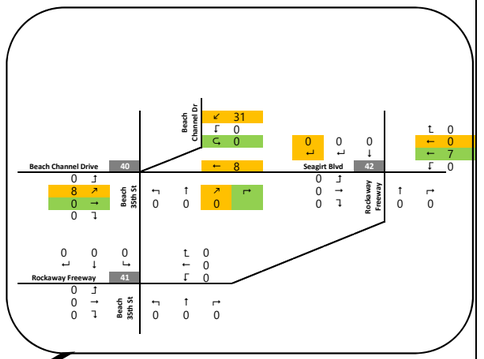
A total of 119 construction trips would be generated during the Saturday AM construction peak hour (7:00 AM to 8:00 AM). Saturday AM construction peak hour vehicle trips were assigned to the study intersections to determine the Saturday AM construction vehicle increment, as shown on **Figure 18-3: Q3 2027 Construction Increment, Saturday AM Construction Peak Hour.** More than 50 vehicle trips would be generated at the following five intersections during the Saturday AM construction peak hour:

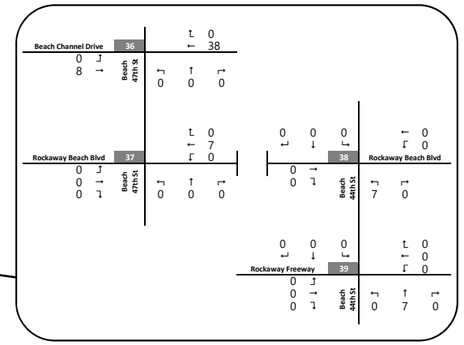
- Peninsula Way and Beach 52nd Street
- Rockaway Beach Boulevard and Beach 50th Street
- Beach Channel Drive and Beach 50th Street
- Beach Channel Drive and Beach 47th Street
- Beach Channel Drive and Beach 35th Street

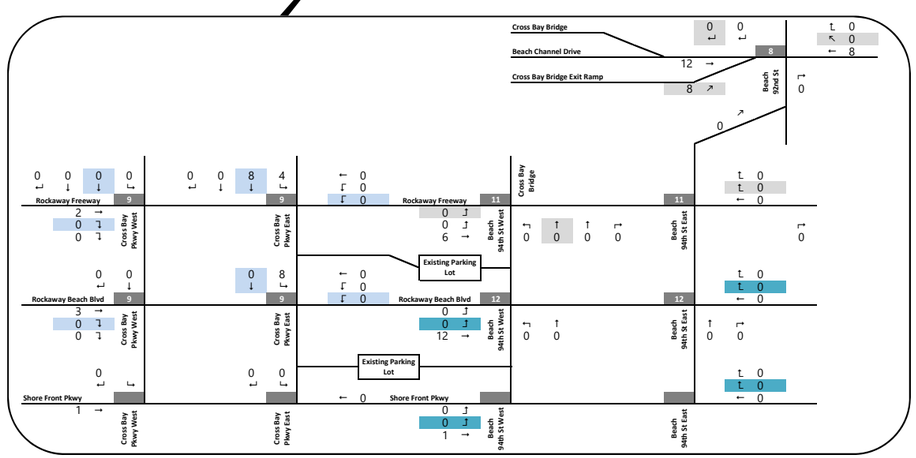
However, as potential significant adverse traffic impacts are expected during the Saturday MD With-Action condition at multiple study locations, a detailed vehicular traffic analysis was conducted for the Saturday AM construction peak hour for all study intersections.

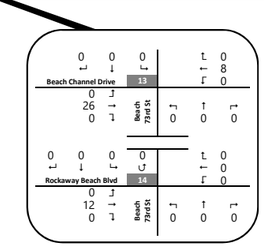
A total of 77 construction trips would be generated during the Saturday PM construction peak hour (3:00 PM to 4:00 PM). Saturday PM construction peak hour vehicle trips were assigned to the study intersections to determine the Saturday PM construction vehicle increment, as shown on **Figure 18-4: Q3 2027 Construction Increment, Saturday PM Construction Peak Hour.** Fewer than 50 vehicle trips would be generated at all study intersections during the Weekday PM construction peak hour. However, as potential significant adverse traffic impacts are expected during the Saturday MD With-Action condition at multiple study locations, a detailed vehicular traffic analysis was conducted for the Saturday PM construction peak hour for all study intersections.

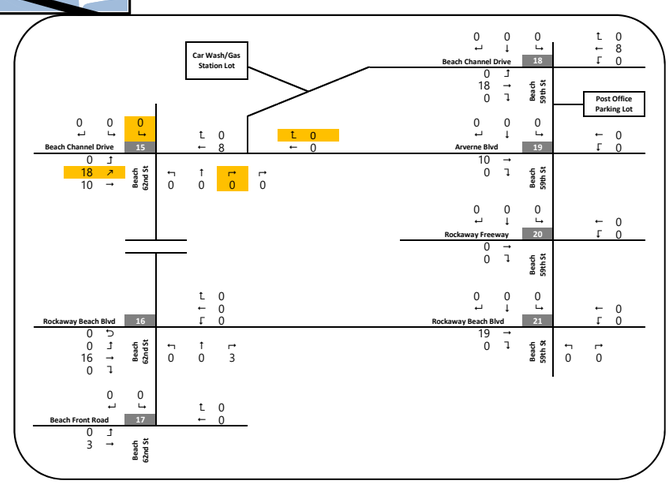










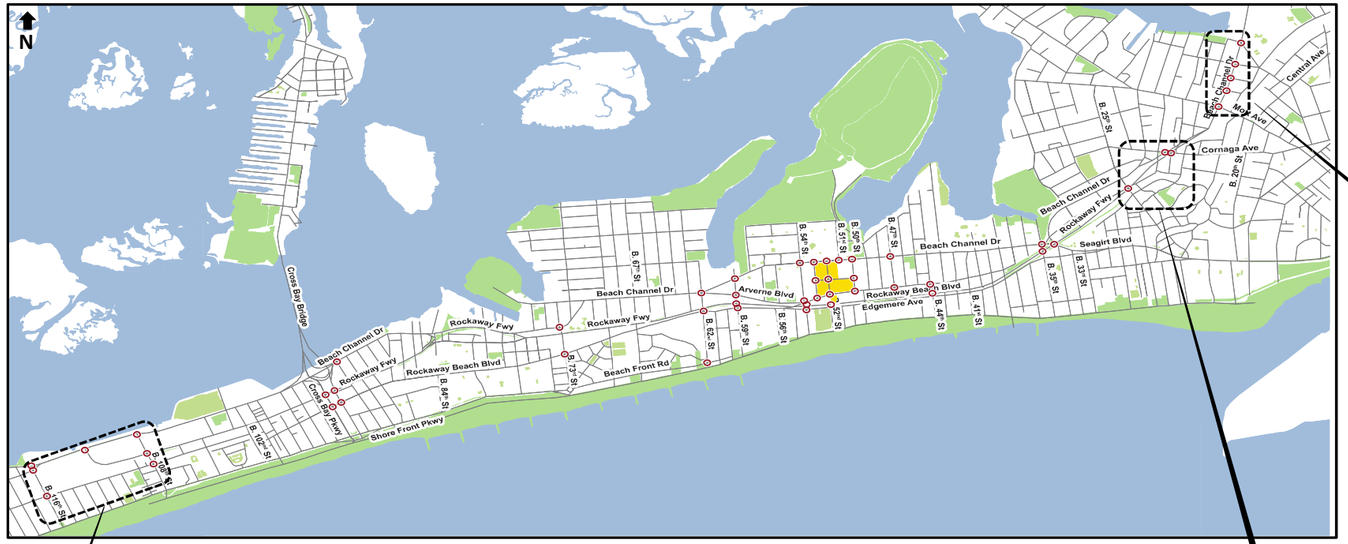


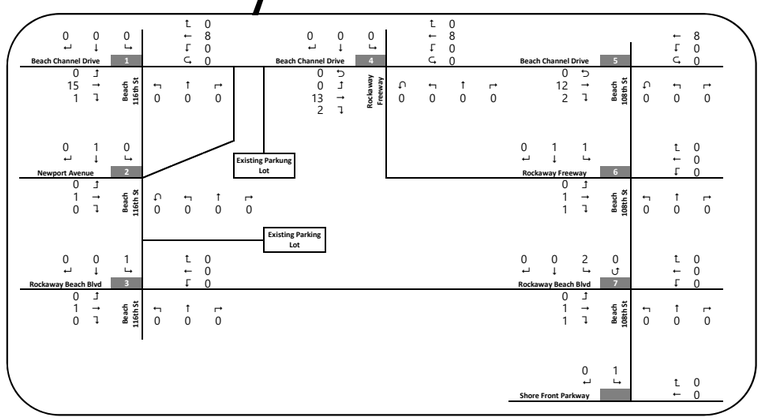
Legend
To Cross Bay Parkway East
To/From Beach Channel Drive
To/From Cross Bay Bridge
To/From Seagirt Blvd
To/From Beach 94th St West

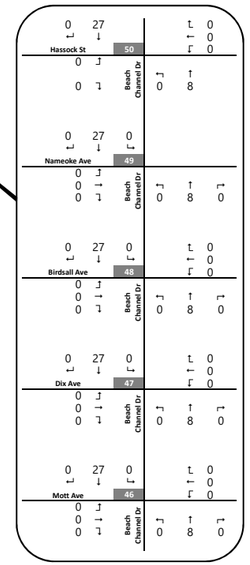
NOT TO SCALE

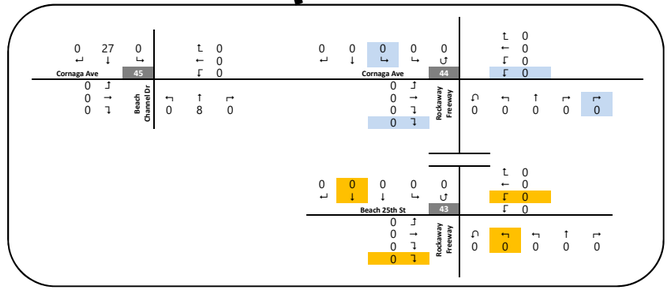
Peninsula Hospital EIS

Construction Increment
Weekday AM Peak Hour
Figure 18-1A







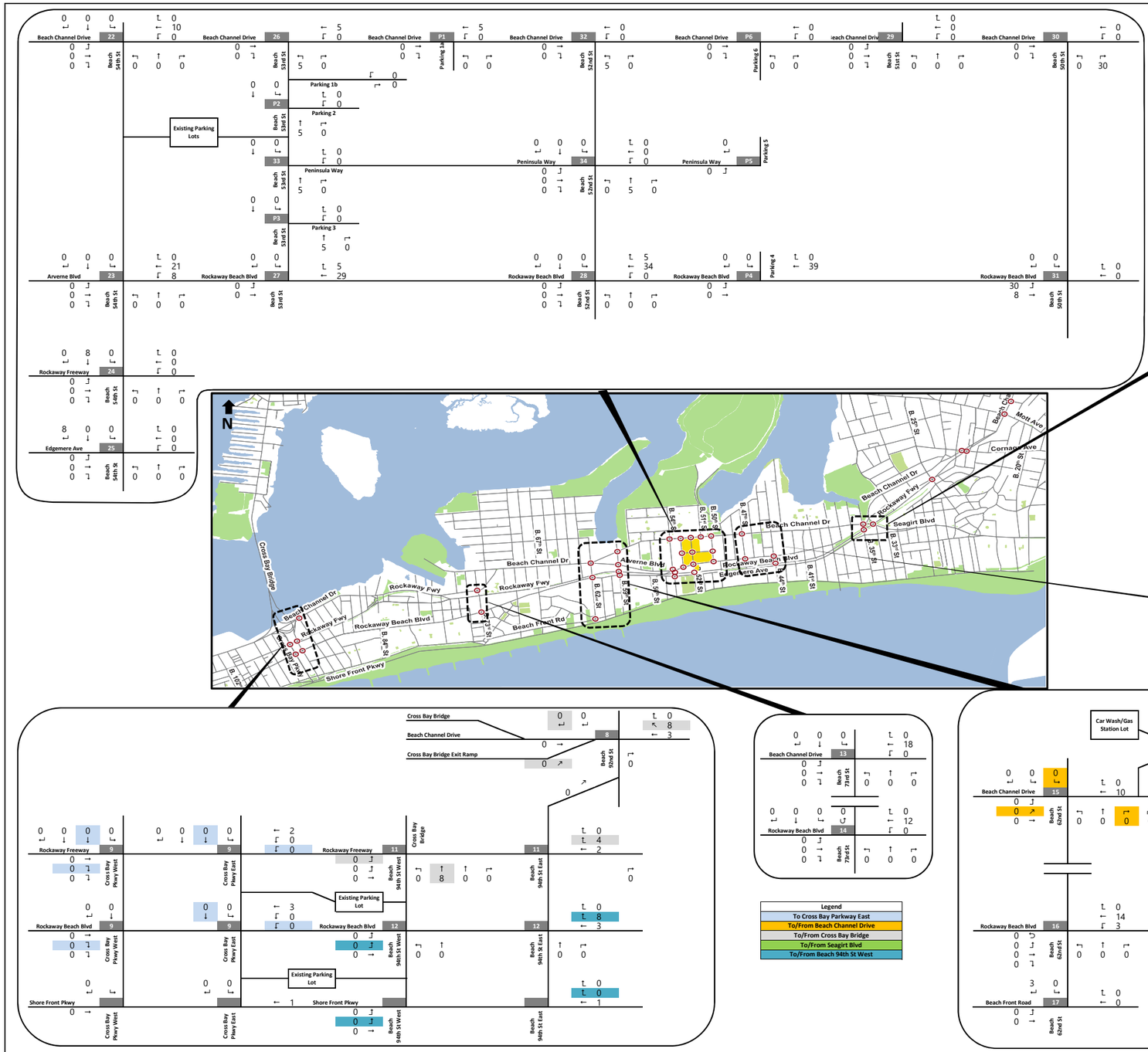


Legend
To Nasby Pl
To Far Rockaway Blvd

NOT TO SCALE

Peninsula Hospital EIS

Construction Increment
Weekday AM Peak Hour
Figure 18-1B



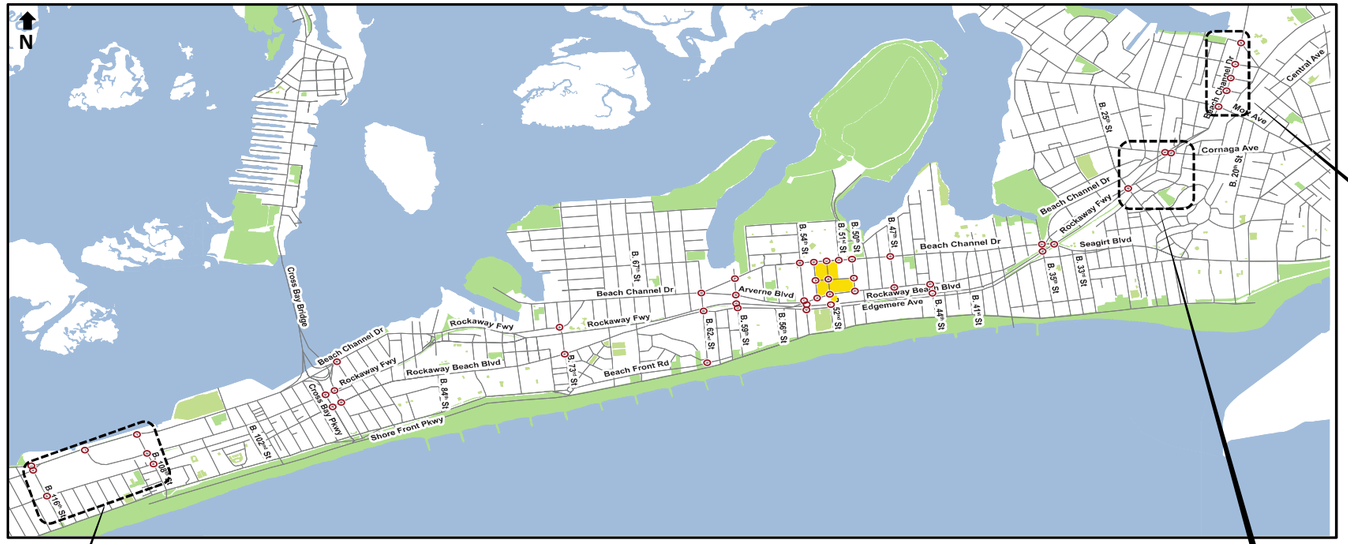
Legend

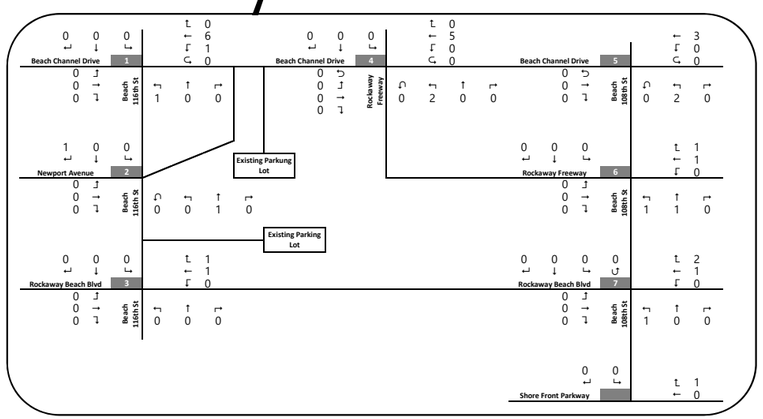
- To Cross Bay Parkway East
- To/From Beach Channel Drive
- To/From Cross Bay Bridge
- To/From Seagirt Blvd
- To/From Beach 94th St West

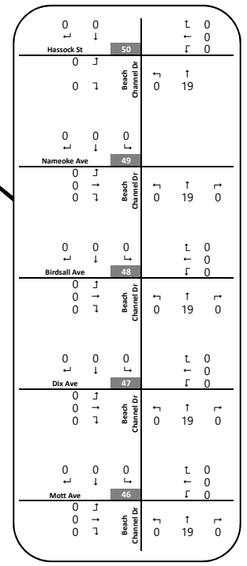
NOT TO SCALE

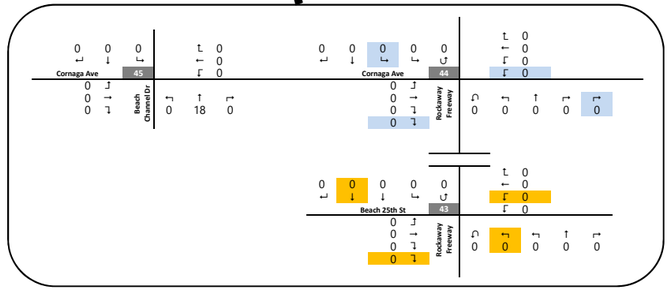
Peninsula Hospital EIS

Construction Increment
Weekday PM Peak Hour
Figure 18-2A







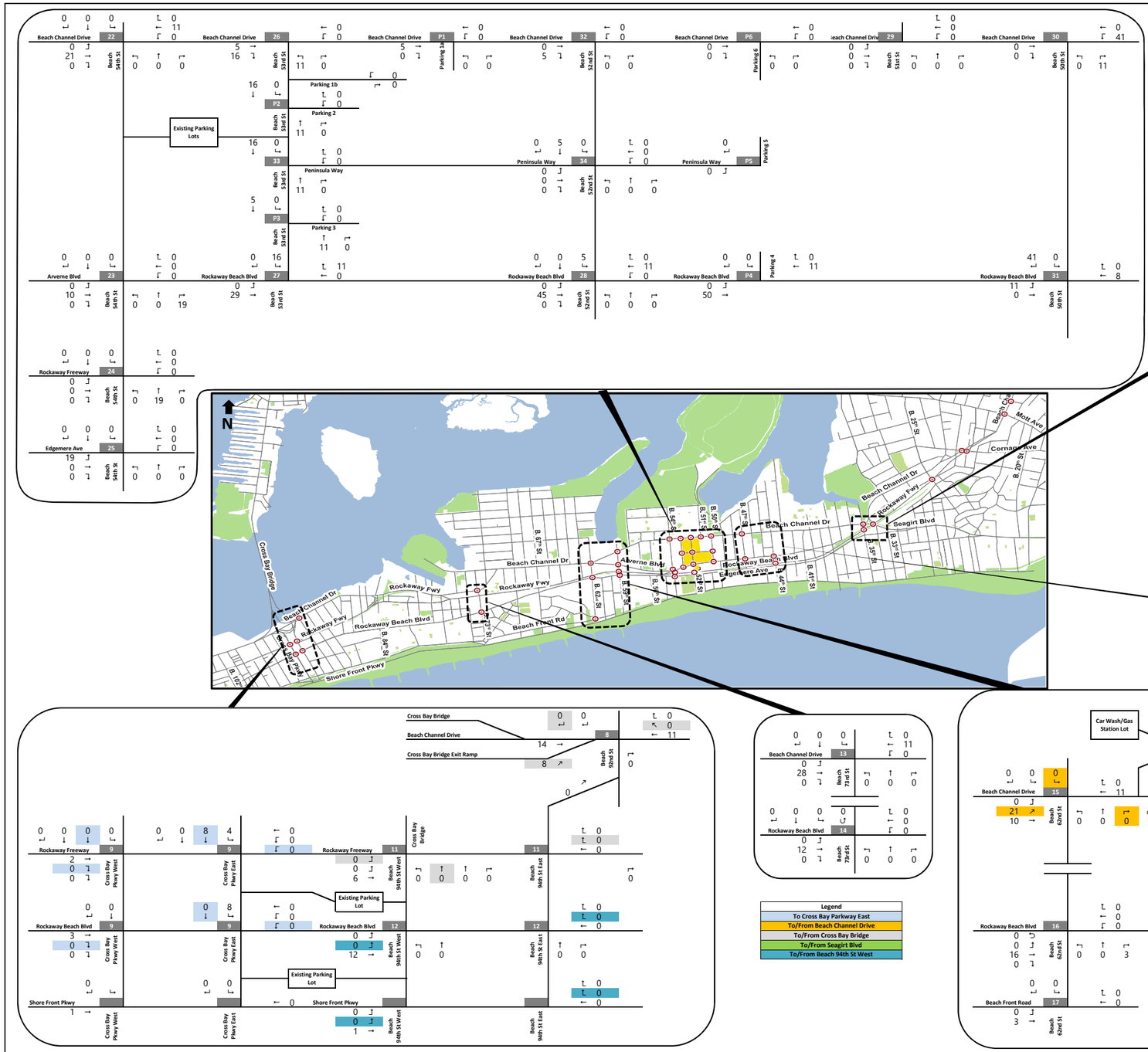


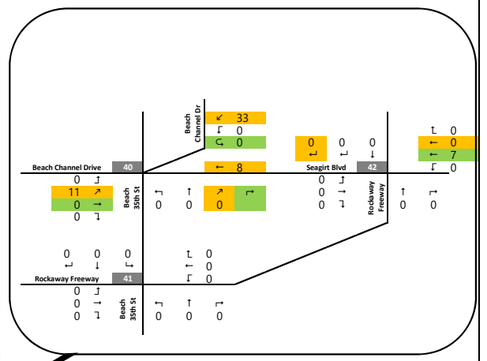
Legend
To Nasby Pl
To Far Rockaway Blvd

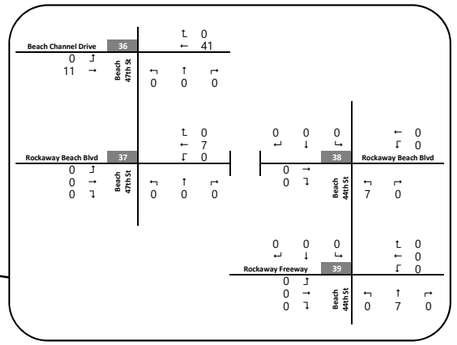
NOT TO SCALE

Peninsula Hospital EIS

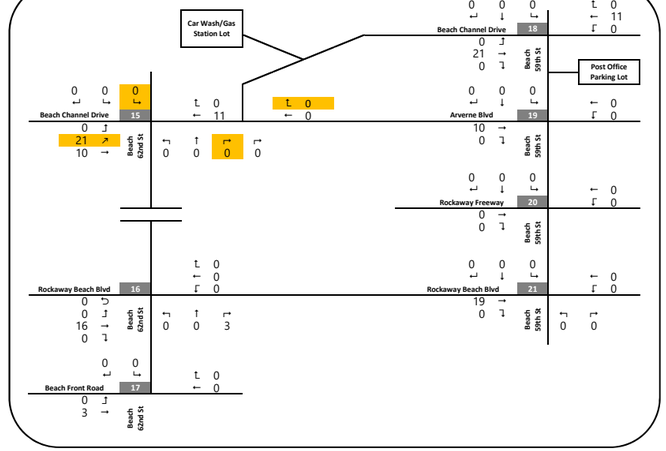
Construction Increment
Weekday PM Peak Hour
Figure 18-2B







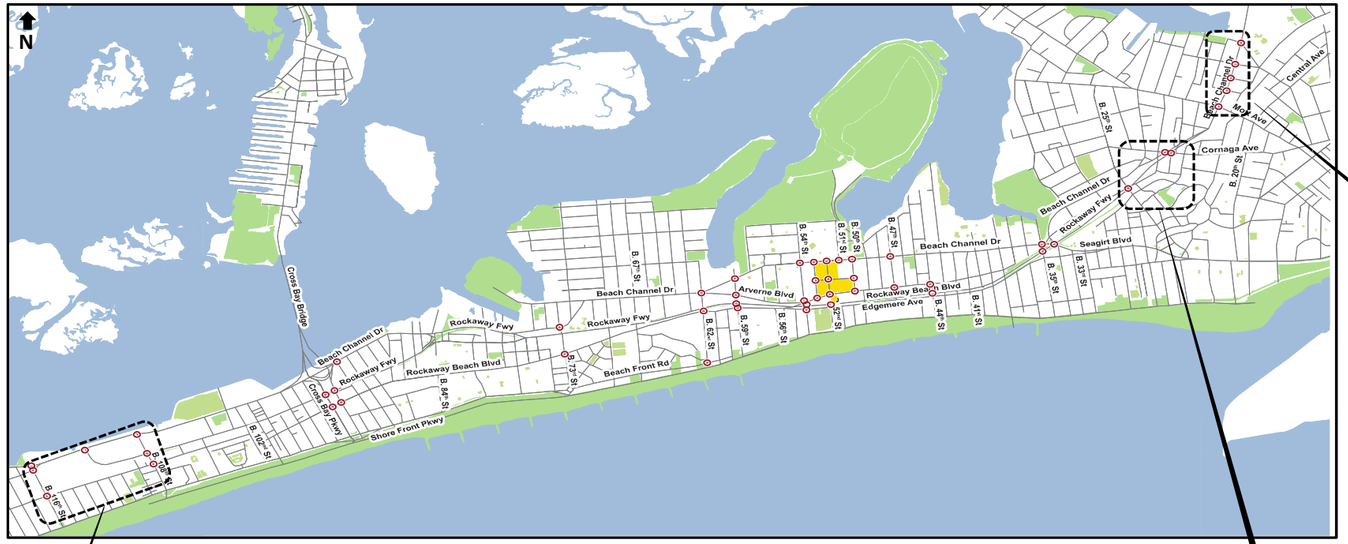
Legend
To Cross Bay Parkway East
To/From Beach Channel Drive
To/From Cross Bay Bridge
To/From Seagirt Blvd
To/From Beach 94th St West

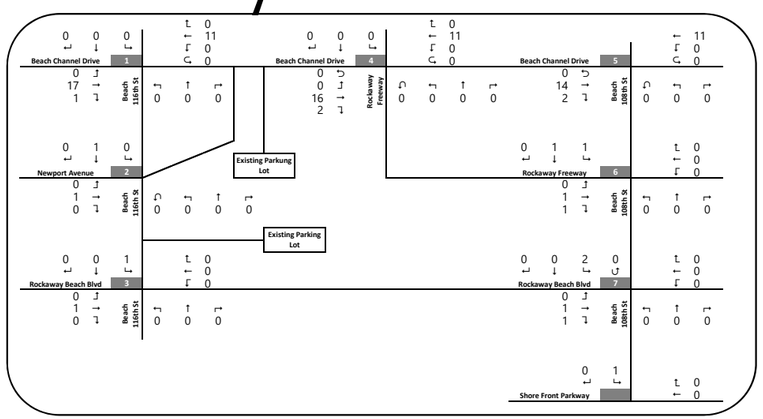


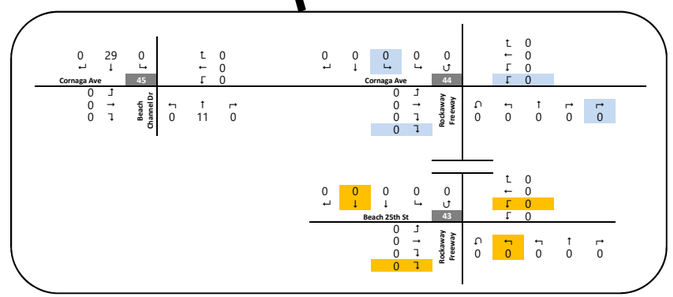
NOT TO SCALE

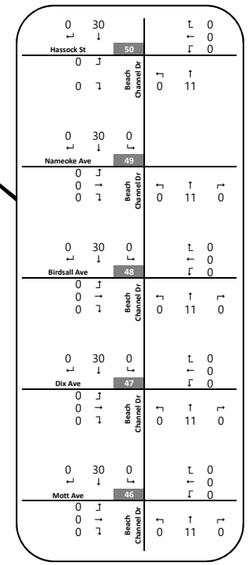
Peninsula Hospital EIS

Construction Increment
Saturday AM Peak Hour
Figure 18-3A







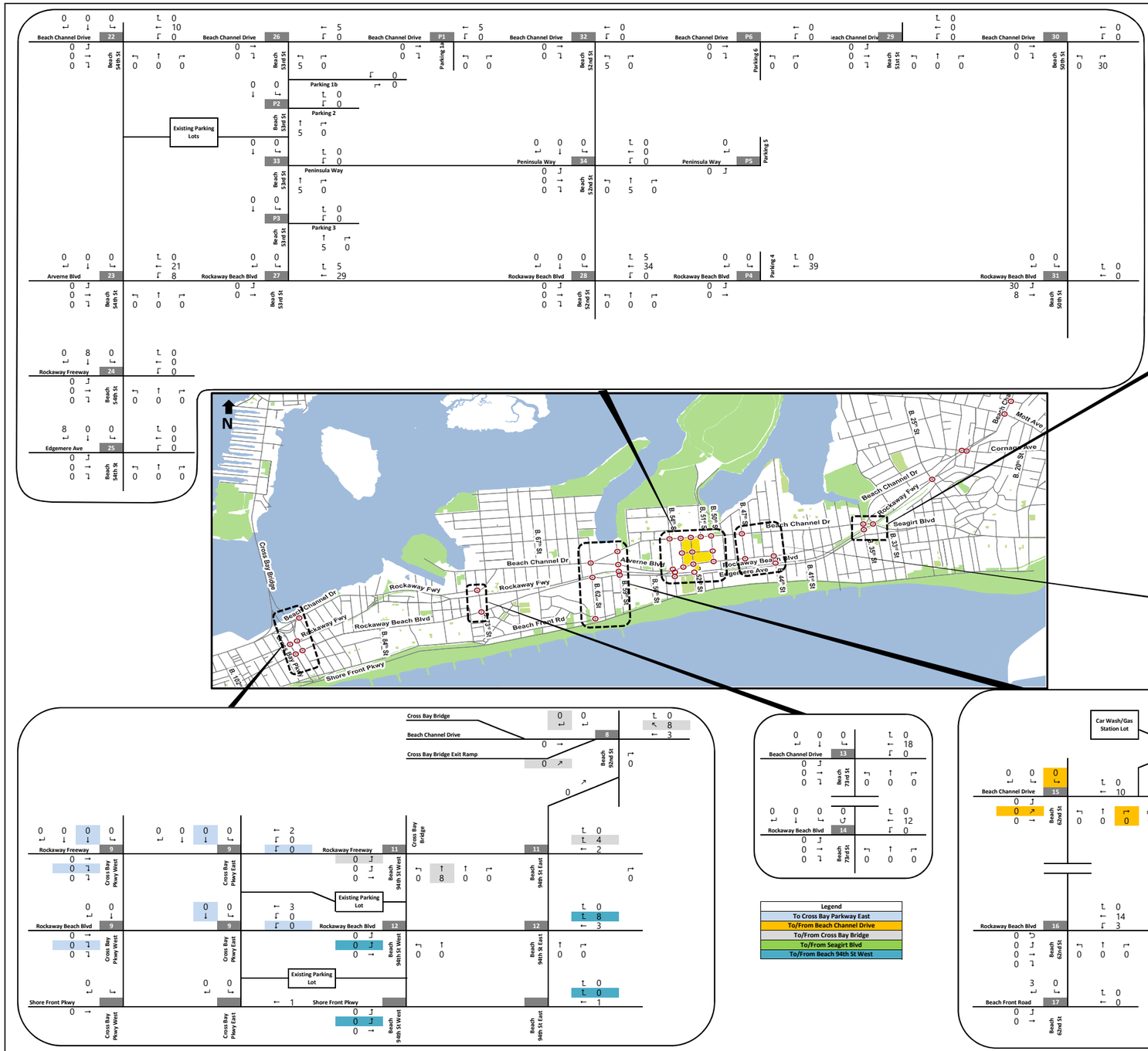


Legend
To Nasby Pl
To Far Rockaway Blvd

NOT TO SCALE

Peninsula Hospital EIS

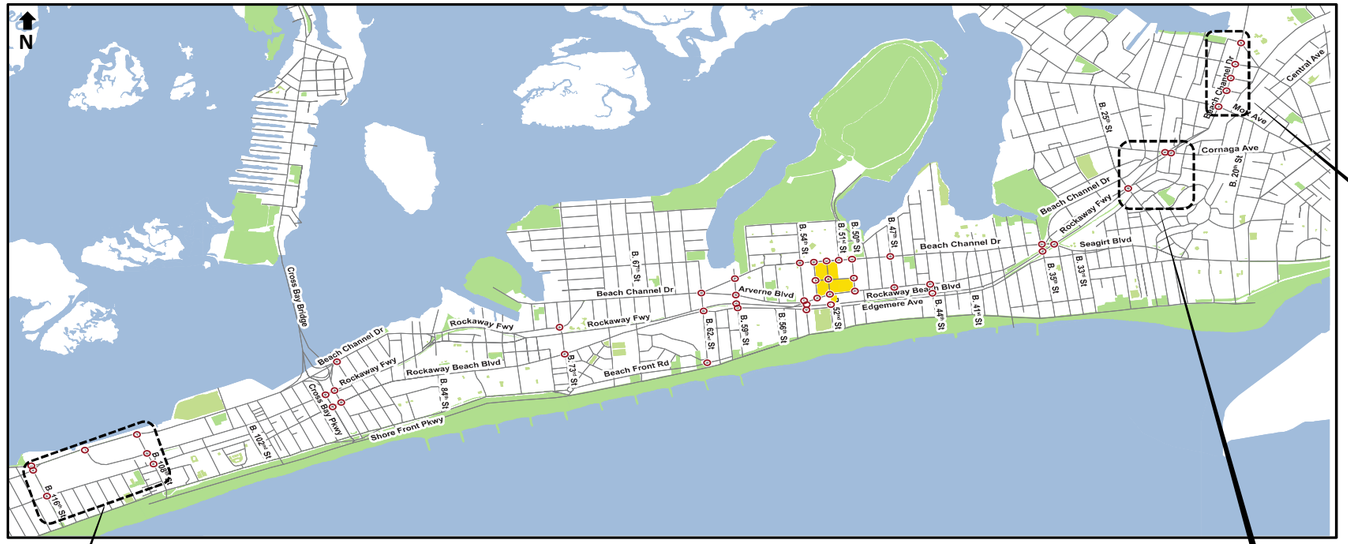
Construction Increment
Saturday AM Peak Hour
Figure 18-3B

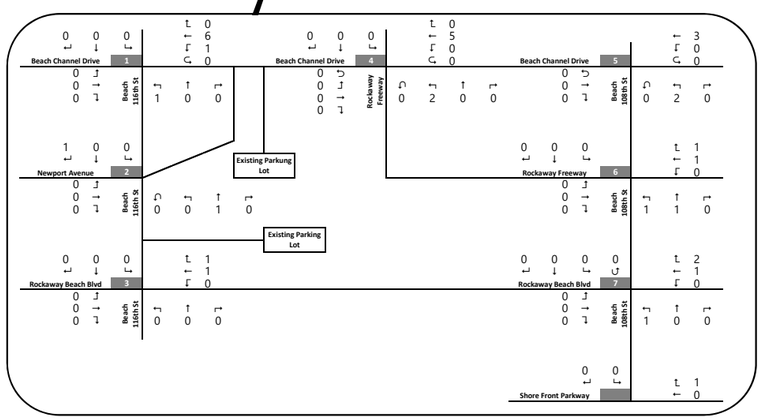


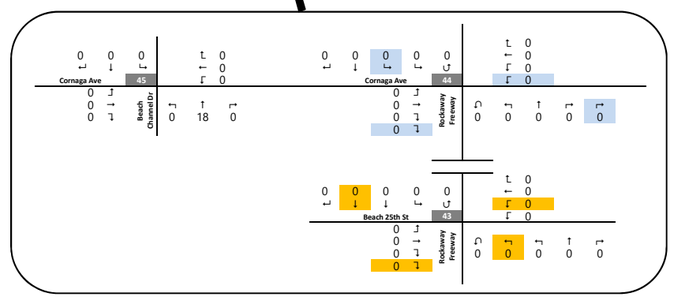
NOT TO SCALE

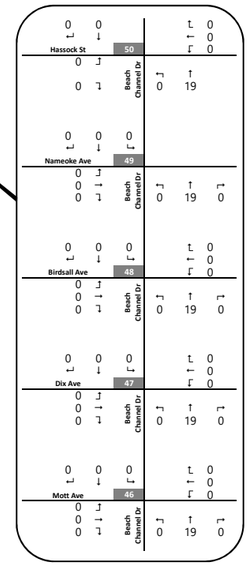
Peninsula Hospital EIS

Construction Increment
Saturday PM Peak Hour
Figure 18-4A









Legend
To Nasby Pl
To Far Rockaway Blvd

NOT TO SCALE

Peninsula Hospital EIS

Construction Increment
Saturday PM Peak Hour
Figure 18-4B

Transit

In accordance with the *CEQR Technical Manual*, Level 1 and Level 2 screening analyses were performed to determine if any transit elements would exceed the *CEQR Technical Manual* thresholds during the construction peak hours. It is projected that approximately 40.6% of construction workers would travel to and from the Project Site via public transit, including 20.6% by subway and 20% by bus. Most of these trips would be made during hours outside of the Weekday AM and Weekday PM commuter peak periods and Saturday midday (MD) peak period. Based on the projected number of construction workers traveling to and from the Project Site, this anticipated transit share would result in approximately 93 daily workers traveling by transit, with 80% of these workers arriving during the Weekday and Saturday construction peak hours from 6:00 AM to 7:00 AM and from 7:00 AM to 8:00 AM, respectively; and 80% departing during the Weekday and Saturday construction peak hours from 4:00 PM to 5:00 PM and from 3:00 PM to 4:00 PM, respectively.

The total estimated number of peak hour transit trips would be approximately 74 trips during the Weekday AM and PM construction peak hours, of which there would be approximately 38 subway trips and 37 bus trips, both of which are below the subway and bus thresholds noted in the *CEQR Technical Manual*. Since no significant adverse subway impacts were identified in Chapter 12, “Transportation,” no significant adverse subway impacts are expected to occur during construction of the Proposed Project. However, since the operational analysis indicates potential significant adverse bus impacts during the Weekday AM and PM peak hours under the With-Action conditions, a detailed bus lane haul analysis was conducted for the Weekday AM and PM construction peak hours for the Q22 and Q52-SBS buses.

Pedestrians

In accordance with the *CEQR Technical Manual*, a Level 1 and Level 2 screening analysis was performed to determine if any pedestrian elements would exceed the *CEQR Technical Manual* thresholds during the construction peak hours. It is estimated that approximately 57.3% of construction workers were projected to travel to the Project Site on-foot, including those who would take transit (40.6%) and walk to the Project Site, and those who would walk directly from their residences to the Project Site (16.7%). As with vehicle and transit trips, most of these trips would occur outside of the Weekday AM and Weekday PM commuter peak periods and Saturday MD peak period. During the peak construction period, it is expected that 57.3% of the construction workers (approximately 131 daily workers) would travel on foot, with 80% of these workers arriving during the Weekday AM and Saturday AM construction peak hours from 6:00 AM to 7:00 AM and from 7:00 AM to 8:00 AM, respectively; and 80% departing during the Weekday PM and Saturday PM construction peak hours from 4:00 PM to 5:00 PM and from 3:00 PM to 4:00 PM, respectively.

The total estimated number of peak hour pedestrian trips would be approximately 105 trips during the Weekday AM, Weekday PM, Saturday AM, and Saturday PM construction peak hours, which is below the 200 pedestrian trips threshold described in the *CEQR Technical Manual*. However, since the operational analysis indicates potential significant adverse pedestrian impacts during all peak hours under the With-Action conditions, a detailed pedestrian analysis was conducted for the Weekday AM, Weekday PM, Saturday AM, and Saturday PM construction peak hours for all pedestrian elements.

Parking

The parking analysis during the peak construction period assesses the parking demand generated by construction workers. Based on the vehicle trip estimates for the peak construction period and average vehicle occupancy, the peak construction worker parking demand would be 96 spaces. Since no on-site parking spaces would be provided for construction workers, it is assumed that those driving to the Project Site would have to park on-street. A detailed parking analysis was conducted for the Weekday AM, Weekday PM, Saturday AM, and Saturday PM construction peak hours to identify if parking shortfalls would be expected during the peak construction period.

Construction Staging Areas, Sidewalk and Lane Closures

Maintenance and Protection of Traffic (MPT) plans would be developed for any temporary sidewalk, lane, and/or street closures. Approval of these plans and implementation of the closures would be coordinated with the New York City Department of Transportation (DOT)'s Office of Construction Mitigation and Coordination (OCMC)

Like other construction projects in NYC, reduction in roadway lane widths and temporary sidewalk closures are anticipated during construction of the Proposed Project. While any specific temporary reductions in roadway lane width and roadway closures will be subject to review and approval by DOT's OCMC, a reasonable worst-case (RWC) construction scenario has been advanced in order to determine the potential for significant adverse impacts associated with any such temporary changes to the traffic and pedestrian network during construction.

The RWC changes to the traffic and pedestrian network duration of the peak construction period, Q3 2027, are listed below:

- Rockaway Beach Boulevard between the pedestrian plaza at Beach 51st Street and Beach 50th Street would be narrowed to accommodate a construction staging area on the north side of the block, adjacent to building E construction site. Temporary changes include:
    - Narrowing the eastbound and westbound travel lanes to 10 feet.
    - Removing on-street parking on the north side of the block.
- Beach 50th Street between Rockaway Beach Boulevard and Peninsula Way would be narrowed to accommodate a construction staging area on the west side of the block, adjacent to building E construction site. Temporary changes include:
    - Narrowing the northbound and southbound travel lanes to 12 feet.
    - Removing on-street parking on the west side of the block.
- Peninsula Way between the pedestrian plaza at Beach 51st Street and Beach 50th Street would be under construction and closed to vehicular traffic. However, the north sidewalk would be open to pedestrian traffic.
- A construction fence would be installed along the south curb of Rockaway Beach Boulevard between Beach 52nd Street and the pedestrian plaza at Beach 51st Street, adjacent to building F construction site. As a result, on-street parking on the south side of the block would be prohibited.

The following sidewalks may be closed to pedestrian traffic for the duration of this phase of construction:

- The west sidewalk on Beach 50th Street between Peninsula Way and Rockaway Beach Boulevard.
- The north sidewalk on Rockaway Beach Boulevard between the pedestrian plaza at Beach 51st Street and Beach 50th Street.
- The south sidewalk on Rockaway Beach Boulevard between Beach 52nd Street and the pedestrian plaza at Beach 51st Street.

The RWC temporary changes identified above may cause pedestrian flows on these sidewalks to be temporarily redirected to adjacent sidewalks and temporary crosswalks. In conformance with *CEQR Technical Manual* guidelines, since more than 200 peak hour pedestrian trips may be added to the south sidewalk of Rockaway Beach Boulevard between the pedestrian plaza at Beach 51st Street and Beach 50th Street and to the temporary crosswalk at Rockaway Beach Boulevard and pedestrian plaza at Beach 51st Street, detailed pedestrian analyses were completed for these elements.

As noted above, Maintenance and Protection of Traffic (MPT) plans would be developed and approval and implementation of any of these plans would be coordinated with OCMC.

Air Quality

The construction air quality impact assessment was based on the peak construction periods for individual pollutants and construction traffic. As stated in Section IV, "Anticipated Construction Schedule and Activities," the worst-case period for air pollutant emissions is the fourth quarter of 2027, while the worst-case period for construction traffic is the third quarter of 2027.

Off-Site Mobile Source Screen

The assessment of construction period off-site mobile source impacts was based on the worst-case construction period in the third quarter of 2027. It is estimated that 77 workers would arrive.at the construction site during the construction worker peak arrival period of 6:00 AM to 7:00 AM. In addition, 33 concrete truck trips and 41 general truck trips would arrive at the Project Site during the 6:00 AM to 7:00 AM peak period resulting in a total of 151 vehicular trips. See **Table 18-7: Weekday Q3 2027 Peak Incremental Construction Vehicle Trip Projections (in PCEs).** Based on guidance in the *2014 CEQR Technical Manual* these trips were estimated to be equivalent to 96 heavy-duty diesel vehicles on a local road. It is projected that the maximum number of project-generated vehicles through an intersection would occur in peak PM hour in 2034, during which 396 passenger vehicles would pass through the worst-case intersection. *CEQR Technical Manual* construction period screening procedures indicate that 396 passenger vehicles are equivalent to 191 heavy-duty diesel vehicles. Since this number of "equivalent" trucks during the peak construction period is less than the peak number of equivalent trucks in 2034 when the Proposed Project is fully occupied, no standalone analysis of off-site mobile sources air quality impact is needed.

On-Site Trucks Screen

Trucks would enter interior areas of the site to load soil to be removed from the site as well as to drop off or remove roll offs with discarded materials. Consequently, an assessment of on-site trucking activity is warranted.

Parking Facility Screen

A parking facility analysis is required if the off-street parking is 85 or more spaces. As shown in **Table 18-6: Average Number of Daily Construction Workers and Trucks by Quarter,** the maximum number of workers on the active construction sites at one time is estimated to be 228, which would occur in the third quarter of 2027. Many workers would use public transportation or carpool. As shown in **Table 18-7: Weekday Q3 2027 Peak Incremental Construction Vehicle Trip Projections (in PCEs)**, the maximum number of auto trips by workers would be 96. A maximum of 77 vehicles would enter or leave the area within a one-hour period. All would be parked at multiple locations along streets near the Project Site rather than congregated into one lot. Therefore, this volume does not trigger the need for an air quality analysis of parking.

On-Site Construction Activities Screen

A screening analysis was prepared for on-site construction activities that included emissions from idling delivery and concrete trucks at the site boundary, exhaust and fugitive dust emissions from on-site trucks and equipment, and fugitive dust during loading of trucks with soil to be removed from the site. Estimates were completed of the pounds per day that would be emitted for each pollutant of concern. The estimated quantities of emissions for multiple construction quarters were used to complete a detailed air quality analysis of on-site construction activities during the periods with the highest pollutant emissions.

Noise and Vibration

The *CEQR Technical Manual* states that significant noise impacts due to construction would occur, "only at sensitive receptors that would be subjected to high construction noise levels for an extensive period of time." Based on the *CEQR Technical Manual* a construction noise impact may occur if sensitive receptors would experience the following:

- Noise levels exceeding ambient noise levels by three to five dBA or more for a sustained period. If the No-Action noise level is 60 dBA $L_{eq(1)}$ or less, a five dBA $L_{eq(1)}$ or greater increase would be considered significant. If the No-Action noise level is 61 dBA $L_{eq(1)}$, the maximum incremental increase would be four dBA. Similarly, if the No-Action noise level is 62 dBA $L_{eq(1)}$ or more, a three dBA $L_{eq(1)}$ or greater change is considered significant;
- In addition to the CEQR criteria above, for the purposes of this analysis, determination of significant adverse construction noise impacts would be considered based on the intensity and duration of the noise:
  - noise levels exceeding 85 dBA for a sustained period;
  - noise level increment of 15 dBA or more for prolonged period of 12 months;
  - noise level increment of 20 dBA or more for prolonged period of 3 months or more.

For conservative analysis purposes, existing noise levels for the peak AM period were used as the baseline for estimating on-site construction-generated noise level increases. A screening analysis determined that a detailed examination of equipment noise is required.

An estimated 19 workers would arrive at the construction site between 7:00 AM and 8:00 AM. Eight concrete truck trips and eleven general truck trips would occur during the same hour, resulting in a total of 38 vehicular trips (see **Table 18-7: Weekday Q3 2027 Peak Incremental Construction Vehicle Trip Projections (in PCEs)**[1]. This represents the worst-case period of the day for the noise analysis. Based on 2014 *CEQR Technical Manual* guidelines, these trips would be equivalent to 1,766 PCEs, which would exceed the number of PCEs on Beach 53rd Street and Rockaway Beach Boulevard under baseline conditions and generate an increase in noise levels by more than 3 dBA. Consequently, a detailed construction noise assessment was undertaken.

Other Technical Areas

Land Use and Neighborhood Character

Consistent with guidance in the *CEQR Technical Manual,* a construction period impact assessment of land use and neighborhood character is typically needed if construction would require continuous use of property for an extended duration, thereby having the potential to affect the nature of the land use and character of the neighborhood. Construction activities associated with the Proposed Project would affect land use on the Project Site but would not alter surrounding land uses. As is common with construction projects, during periods of peak construction activity there would be some disruption in the nearby area. There would be construction trucks and constructions workers traveling to and from the Project Site. There would also be noise, sometimes intrusive, from excavation and foundation activities as well as trucks and other vehicles backing up, loading, and unloading. Measures would be implemented to control noise, vibration, and dust throughout the construction period, including the erection of construction fencing and barriers. While

[1] Trucks in Table 18-7 are calculated as equivalent passenger car equivalents (PCEs), trucks representing the equivalent of two passenger cars. Consequently, for the purposes of the noise analysis, the number of PCEs in Table 18-7 was divided by two to estimate the number of trucks.

construction activities and any subsequent disruptions at the Project Site would be evident to the local community, the temporary construction-period activities would not result in a significant adverse impact on local land use patterns.

Socioeconomic Conditions

Construction activities associated with the Proposed Project would not result in any significant adverse impacts on socioeconomic conditions since they would not directly displace any residence or business, have the potential to indirectly displace any residence or business due to a change in socioeconomic conditions created by the Proposed Project, or directly or indirectly affect the operation of a major industry or commercial operation in the City. Construction activities would neither block or restrict access to any residence or nearby businesses, nor would it obstruct major thoroughfares used by customers or business. Construction would create direct benefits resulting from expenditures by material suppliers, construction workers, and other employees involved in the construction activity. Construction would contribute to increased tax revenues for the City and State, including those from personal income taxes. Therefore, no significant adverse construction-related impacts on socioeconomics would occur.

Community Facilities

No community facilities would be directly displaced or altered by construction activities, nor would construction activities substantially restrict access to any community facility during the construction period. Therefore, no significant adverse construction-related impacts on community facilities would occur.

Open Space

Construction of the Proposed Project would not result in significant adverse impacts to publicly-accessible open space resources since no open space resources currently exist on the Project Site, no open space resources would be used for staging or other construction activities, and since construction activities would not restrict access to any publicly-accessible open space resource. Consequently, there would be no significant adverse construction-related impacts on open space resources.

Historic and Cultural Resources

As discussed in Chapter 6, “Historic and Cultural Resources,” the presence of archaeological and/or architectural resources were screened within the area of disturbance to develop the Proposed Project and within 400 feet of the Project Site, respectively. In consultation with the LPC, it was determined that the Proposed Project would not result in significant adverse impacts on archaeological resources following. In a letter dated March 19, 2018, LPC determined that the Project Site does not possess archaeological significance. LPC also determined, in a letter dated April 18, 2018, that the Proposed Project would not result in a significant adverse impact on architectural resources, and that there were no designated, listed, or eligible architectural properties located within 400 feet of the Project Site. Therefore, there would be no significant adverse impacts due to the construction of the Proposed Project related to historic and cultural Resources.

Hazardous Materials

The Proposed Project would require ground disturbance to provide the foundation for the proposed buildings, and related improvements, thereby potentially disturbing on-site hazardous materials. The presence of on-site hazardous materials was confirmed based on the findings of Phase II ESA investigations conducted on the North and South Parcels of the Project Site. The greatest potential for human exposure to contaminants due to soil disturbance during construction would be during excavation activities conducted on the Project Site.

To remediate the Project Site, a RAP and site-specific CHASP will be prepared to establish procedures for all construction-related activities and ground disturbance at the Project Site. Construction management,

site-specific controls, and monitoring procedures established therein would be submitted to for approval and review by DEP and OER. Documentation of the RAP is required prior to the issuance of NYC DOB permits to allow building occupancy on the Project Site.

To ensure remediation of the Project Site, following the completion of the CEQR process, an (E) Designation will be mapped on the Project Site, administered and overseen by the OER pursuant to Section 11-15 (Environmental requirements) of the Zoning Resolution of the City of New York and Chapter 24 of Title 15 of the Rules of the City of New York. The North Parcels of the Project Site have been accepted into the BCP (Site No. C241200) and a BCA had been executed. The BCP is a voluntary and comprehensive program that includes or surpasses requirements of the City's hazardous materials (E) designation program. As a result, remedial actions performed in conjunction with the Proposed Project are subject to approval and oversight by NYSDEC and compliance with the requirements of the BCP, which would prevent significant adverse impacts from the Proposed Project due to the presence of contaminated materials. However, the (E) designation mapped on the North Parcels serves to ensure that testing and mitigation will be provided as necessary prior to any future development and/or soil disturbance at the Project Site in the event the Applicant withdraws their participation in the BCP.

With the implementation of the RAP and CHASP per the (E) Designation mapped on the Project Site, the Proposed Project would not result in significant adverse construction-related impacts pertaining to hazardous materials.

VI. DETAILED ASSESSMENT

Transportation

Construction Period Peak Hours

Detailed traffic, parking, and pedestrian analyses were conducted for the Weekday AM, Weekday PM, Saturday AM, and Saturday PM construction peak hours and a detailed bus line-haul analysis was conducted for the Weekday AM and Weekday PM construction peak hours. As shown in **Table 18-7**, the representative peak hours for the construction analysis were determined to be:

- Weekday AM: 6:00 AM to 7:00 AM
- Weekday PM: 4:00 PM to 5:00 PM
- Saturday AM: 7:00 AM to 8:00 AM
- Saturday PM: 3:00 PM to 4:00 PM

Aggregate automatic traffic recorder (ATR) count data indicates that overall traffic volumes on the study area street network are approximately 39% and 2% lower during the Q3 2027 Weekday AM and PM construction peak hours than during the 2034 Weekday AM and PM operational peak hours analyzed for the Proposed Project, respectively. Aggregate ATR count data indicates that overall traffic volumes on the study area street network are approximately 51% and 11% lower during the Q3 2027 Saturday AM and PM construction peak hours than during the 2034 Saturday MD operational peak hour analyzed for the Proposed Project, respectively.

The 2034 peak Weekday AM vehicle, transit, and pedestrian background volumes were reduced by 39% to estimate the vehicle, transit, and pedestrian volumes during the Q3 2027 Weekday AM construction peak hour, and the 2034 peak Saturday MD vehicle and pedestrian background volumes were reduced by 51% to estimate the vehicle and pedestrian volumes during the Q3 2027 Saturday AM construction peak hour. Since the aggregate ATR data did not show a significant difference in volumes between the 2034 Weekday

PM operational and Q3 2027 Weekday PM construction peak hours or between the 2034 Saturday MD operational and Q3 2027 Saturday PM construction peak hours, the 2034 Weekday PM and Saturday MD vehicle, transit, and pedestrian background volumes were conservatively not adjusted and were used for the basis of the Q3 2027 construction analyses for the respective peak hours.

Construction Period Trip Assignment

It is expected that construction workers would park on-street in the vicinity of the Project Site or walk to the Project Site from nearby subway stations and bus stops or from a local residence. Construction worker traffic patterns within the study area were based on the anticipated routes between worker residences and the Project Site as indicated by reverse journey-to-work data in available Census data. Construction truck trips were assigned to the local street network, using truck routes, based on the anticipated entry locations to the construction site on Rockaway Beach Boulevard between Beach 52nd Street and Beach 50th Street. Construction pedestrian trips (subway, bus, and walk-only) were assigned to and from the subway entrances, bus stops and walk-only portals to the Project Site using the most direct routes available.

Construction Period Study Area

Study Area Intersections

In total, 35 existing signalized intersections, 11 existing unsignalized intersections, and five additional intersections and nine driveways that would be created as part of the Proposed Project were selected for vehicular analysis. They are listed below and shown on **Figure 18-5: Construction Vehicular Study Locations**. The intersections analyzed during the construction peak hours are the same as those analyzed in Chapter 12, "Transportation," to assess the operation-related impacts of the Proposed Project, with the exception of four intersections that would be under construction during Q3 2027 (Peninsula Way and Beach 50th Street, Rockaway Freeway and Beach 52nd Street, Beach 52nd Street and Parking Garage 7 driveway, and Peninsula Way and Parking Garage 8 driveway).

1. Beach Channel Drive and Beach 116th Street (signalized)
2. Newport Avenue and Beach 116th Street (signalized)
3. Rockaway Beach Boulevard and Beach 116th Street (signalized)
4. Beach Channel Drive and Rockaway Freeway (signalized)
5. Beach Channel Drive and Beach 108th Street (signalized)
6. Rockaway Freeway and Beach 108th Street (signalized)
7. Rockaway Beach Boulevard and Beach 108th Street (signalized)
8. Beach Channel Drive and Beach 92nd Street/Beach 94th Street (unsignalized)
9. Rockaway Freeway and Cross Bay Parkway (signalized)
10. Rockaway Beach Boulevard and Cross Bay Parkway (signalized)
11. Rockaway Freeway and Beach 94th Street (signalized)
12. Rockaway Beach Boulevard and Beach 94th Street (signalized)
13. Beach Channel Drive and Beach 73rd Street (signalized)
14. Rockaway Beach Boulevard and Beach 73rd Street (signalized)
15. Beach Channel Drive/Arverne Boulevard and Beach 62nd Street (signalized)
16. Rockaway Beach Boulevard and Beach 62nd Street (signalized)

17. Beach Front Road and Beach 62nd Street (unsignalized)
18. Beach Channel Drive and Beach 59th Street (signalized)
19. Arverne Boulevard and Beach 59th Street (signalized)
20. Rockaway Freeway and Beach 59th Street (signalized)
21. Rockaway Beach Boulevard and Beach 59th Street (signalized)
22. Beach Channel Drive and Beach 54th Street (signalized)
23. Arverne Boulevard and Beach 54th Street (signalized)
24. Rockaway Freeway and Beach 54th Street (signalized)
25. Edgemere Avenue and Beach 54th Street (signalized)
26. Beach Channel Drive and Beach 53rd Street (unsignalized)
27. Rockaway Beach Boulevard and Beach 53rd Street (unsignalized)
28. Rockaway Beach Boulevard and Beach 52nd Street (new southbound approach at existing intersection, unsignalized)
29. Beach Channel Drive and Beach 51st Street (signalized)
30. Beach Channel Drive and Beach 50th Street (unsignalized)
31. Rockaway Beach Boulevard and Beach 50th Street (unsignalized)
32. Beach Channel Drive and Beach 52nd Street (future intersection, unsignalized)
33. Peninsula Way and Beach 53rd Street (future intersection, unsignalized)
34. Peninsula Way and Beach 52nd Street (future intersection, unsignalized)
35. Peninsula Way and Beach 50th Street (future intersection, unsignalized, under construction during Q3 2027)
36. Beach Channel Drive and Beach 47th Street (unsignalized)
37. Arverne Boulevard/Rockaway Beach Boulevard and Beach 47th Street (unsignalized)
38. Rockaway Beach Boulevard and Beach 44th Street (unsignalized)
39. Rockaway Freeway and Beach 44th Street (signalized)
40. Beach Channel Dr/Seagirt Boulevard and Beach 35th Street (signalized)
41. Rockaway Freeway and Beach 35th Street (signalized)
42. Rockaway Freeway and Seagirt Boulevard (signalized)
43. Rockaway Freeway and Beach 25th Street (signalized)
44. Rockaway Freeway and Cornaga Avenue (signalized)
45. Beach Channel Drive and Cornaga Avenue (signalized)
46. Beach Channel Drive and Mott Avenue (signalized)
47. Dix Avenue and Beach Channel Drive (signalized)
48. Birdsall Avenue and Beach Channel Drive (unsignalized)
49. Nameoke Avenue and Beach Channel Drive (signalized)

50. Hassock Street and Beach Channel Drive (signalized)
51. Rockaway Freeway and Beach 52nd Street (future intersection, unsignalized, not built as of Q3 2027)
52. Parking Lot 1 driveway, via Beach Channel Drive
53. Parking Lot 1 driveway, via Beach 53rd Street
54. Parking Garage 2 driveway, via Beach 53rd Street
55. Parking Garage 3 driveway, via Beach 53rd Street
56. Parking Garage 4 driveway, via Rockaway Beach Boulevard
57. Parking Garage 5 driveway, via Peninsula Way
58. Parking Lot 6 driveway, via Beach Channel Drive
59. Parking Garage 7 driveway, via Beach 52nd Street (under construction during Q3 2027)
60. Parking Garage 8 driveway, via Peninsula Way (under construction during Q3 2027)

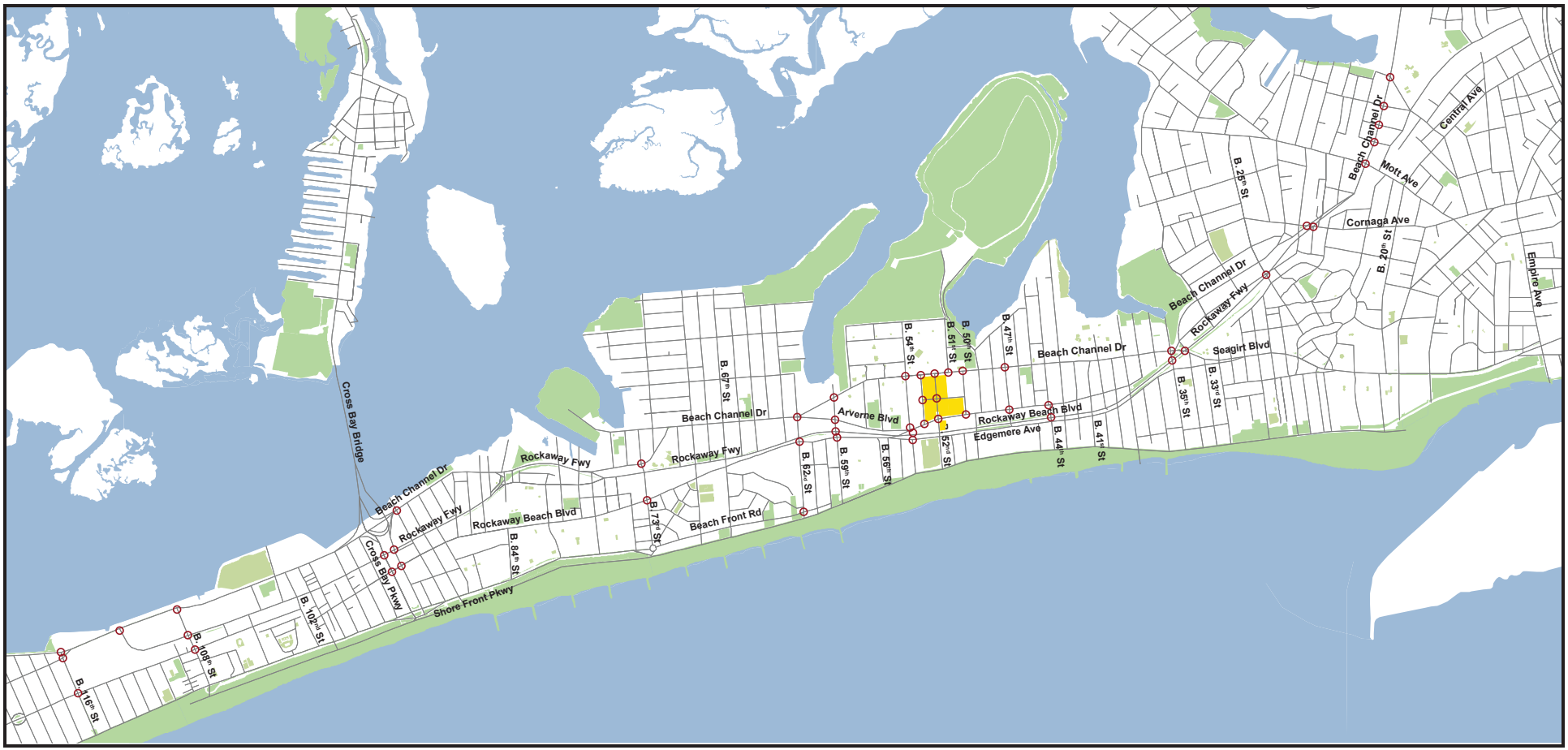
Transit Elements

The Q22 and Q52-SBS buses were selected for bus line-haul analysis. The bus line hauls analyzed during the construction peak hours are the same as those analyzed in Chapter 12, "Transportation" to assess the operation-related impacts of the Proposed Project.

Pedestrian Elements

As shown in **Figure 18-6: Construction Pedestrian Study Locations**, the pedestrian elements consist of 28 sidewalks, 16 crosswalks, 36 corner reservoirs, and two median elements located along key routes between subway stations and bus stops and the construction site entrances on Rockaway Beach Boulevard. The pedestrian elements analyzed during the construction peak hours are those analyzed in Chapter 12, "Transportation" to assess the operation-related impacts of the Proposed Project that would be built by Q3 2027, except for the following elements:

- A temporary crosswalk at Beach 51st Street and Rockaway Beach Boulevard (east crosswalk) will be analyzed, as more than 200 pedestrians may be rerouted to use this crosswalk due to construction staging on nearby sidewalks. This sidewalk was not analyzed in Chapter 12, "Transportation".
- The south sidewalk on the east leg of Beach 51st Street and Rockaway Beach Boulevard will be analyzed, as more than 200 pedestrians will be rerouted to use this sidewalk due to construction staging on nearby sidewalks. This sidewalk was not analyzed in Chapter 12, "Transportation".
- The southeast corner at Rockaway Beach Boulevard and Beach 52nd Street will be under construction during Q3 2027; therefore, this element will not be analyzed.
- The south sidewalk on the east leg of Rockaway Beach Boulevard and Beach 52nd Street will be under construction during Q3 2027; therefore, this element will not be analyzed.
- The west crosswalk and southwest corner at Peninsula Way and Beach 50th Street will be under construction during Q3 2027; therefore, these elements will not be analyzed.
- The south sidewalk on the west leg of Peninsula Way and Beach 50th Street will be under construction during Q3 2027; therefore, this element will not be analyzed.
- The west sidewalk on the north leg of Peninsula Way and Beach 50th Street will be under construction during Q3 2027; therefore, this element will not be analyzed.



Project Site

Study Locations

CONSTRUCTION VEHICULAR STUDY LOCATIONS

Figure 18-5

Peninsula Hospital Site Redevelopment

Source: 2016 Pluto, NYCDCP

Project Site

Sidewalk

Corner

Median

Crosswalk

Pedestrian Element for Construction

CONSTRUCTION PEDESTRIAN STUDY LOCATIONS

Figure 18-6

Peninsula Hospital Site Redevelopment

No-Action Construction Period Condition Analysis

The assessment of construction period impacts was based on the estimated increase in vehicle, transit, and pedestrian trips that would occur due to construction-related trips in the Q3 2027 peak construction period. To complete this assessment, the No-Action construction condition was estimated based on the existing traffic, transit, and pedestrian volumes, background growth, trips generated by other nearby projects expected to be completed by the 2027, and project trips generated by the portion of the Proposed Project expected to be completed by 2027. The analysis of the No-Action construction period condition served as the baseline against which the future condition during construction was compared to identify impacts.

Of the No-Action development projects described in Chapter 12, "Transportation," No-Action sites 5, 6, 9, 16, 17, 19, and 20 are expected to be built before 2027, and were included in the No-Action construction analysis. No-Action sites 1, 2, 3, 4, 7, and 13 will be built incrementally between 2021 and 2028 and were assumed to be 87.5% complete in 2027. No-Action sites 15 and 18, which are expected to be built after 2027, were not included in the No-Action construction analysis. In addition to the No-Action development projects, the trips generated by the portion of the Proposed Project that would be built by 2027 (buildings A1, A2, B1, B2, C1, and D1) were also included in the No-Action construction analysis. No-Action background volumes and No-Action project trips were adjusted based on hourly ATR data to reflect the Weekday AM and Saturday AM construction period peak hours. No adjustments were made to the Weekday PM or Saturday PM peak hour volumes.

No-Action roadway improvements described in Chapter 12, "Transportation," were assumed to be implemented by the peak construction period, with the exception of improvements at intersections 40 through 50, which will be implemented after 2027 as part of improvements for No-Action site 15. In addition to the No-Action roadway improvements, it was assumed that Peninsula Way between the pedestrian plaza at Beach 51st Street and Beach 50th Street and the extension of Beach 52nd Street to Rockaway Freeway would be under construction and closed to vehicular traffic.

Traffic

Figure 18-7 through **Figure 18-10** present the No-Action traffic volumes for the Weekday AM, Weekday PM, Saturday AM, and Saturday PM construction peak hours.

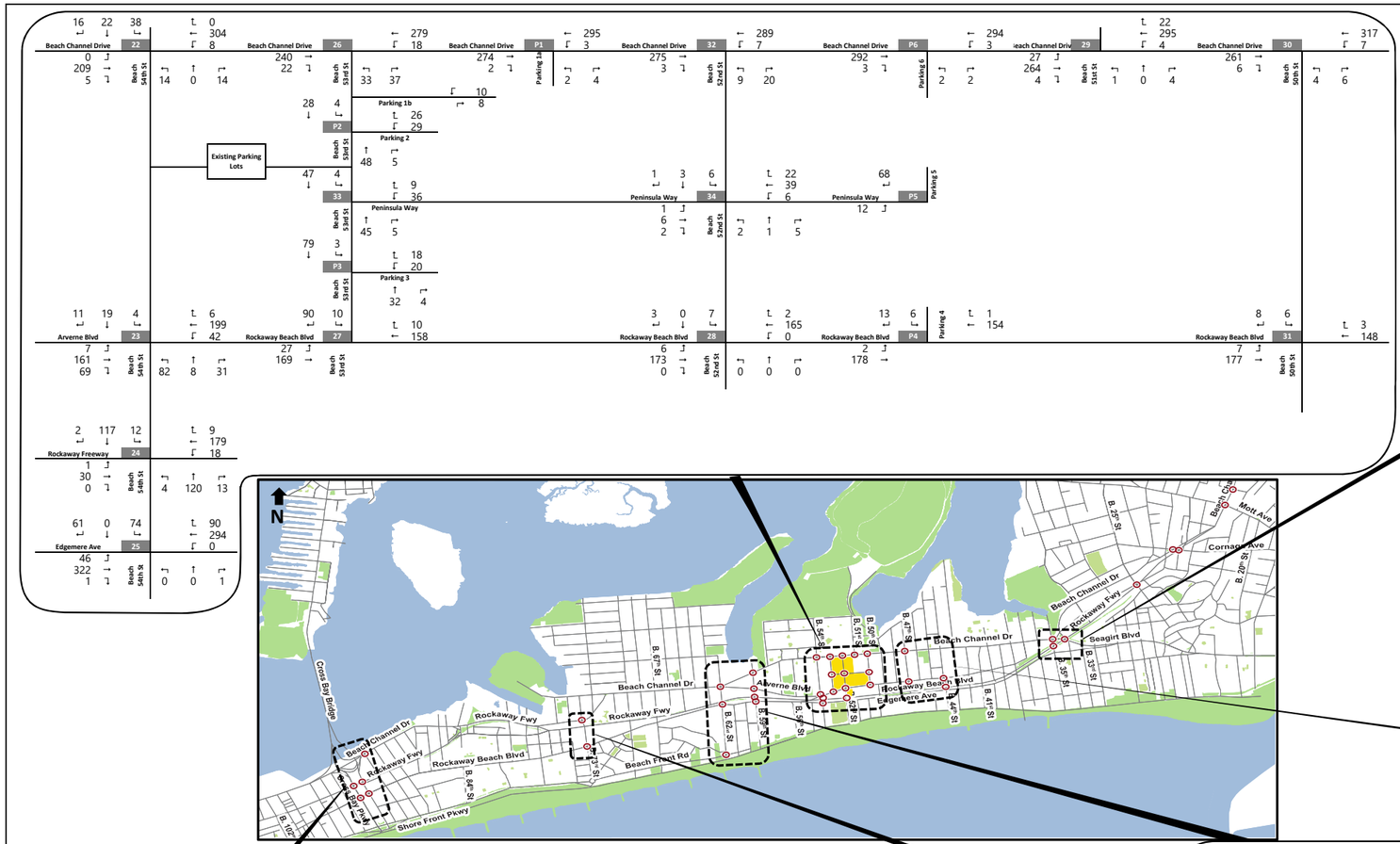
Table 18-11: Q3 2027 No-Action Condition Level of Service Analysis – Signalized Intersections presents the No-Action construction period condition analysis results for the signalized study intersections, and **Table 18-12: Q3 2027 No-Action Condition Level of Service Analysis – Unsignalized Intersections** presents the No-Action construction period condition analysis results for the unsignalized study intersections. The signalized lane groups that would operate at worse than mid-LOS D in the No-Action condition are summarized in **Table 18-9: Signalized Lane Groups Operating Worse than Mid-LOS D – Q3 2027 No-Action Condition**. The unsignalized lane groups that would operate at worse than mid-LOS D in the No-Action condition are summarized in **Table 18-10: Unsignalized Lane Groups Operating Worse than Mid-LOS D – Q3 2027 No-Action Condition.**

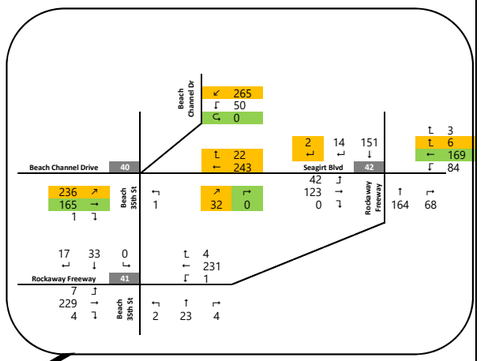
Table 18-9: Signalized Lane Groups Operating Worse than Mid-LOS D – Q3 2027 No-Action Condition

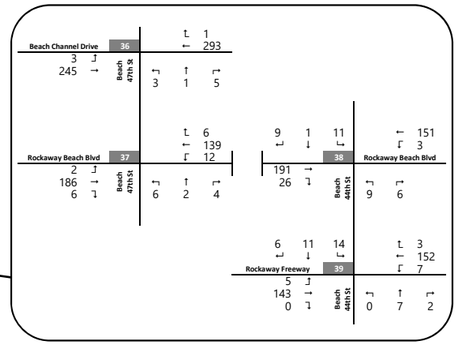
#	Intersection	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday AM Peak Hour	Saturday PM Peak Hour
1	Beach Channel Drive & Beach 116th Street		EB-LTR,WB-DefactoL, WB-TR, SB-LTR	SB-LTR	SB-LTR
2	Newport Avenue & Beach 116th Street		NB-LT		NB-LT
3	Rockaway Beach Boulevard & Beach 116th Street		WB-LTR		
4	Beach Channel Drive & Rockaway Freeway		EB-LTR, WB-LTR		EB-LTR
8	Beach Channel Drive & Beach 92nd Street/Beach 94th Street		NEB(Cross Bay Bridge Exit Ramp)-R		NEB(Cross Bay Bridge Exit Ramp)-R
15	Beach Channel Drive & Beach 62nd Street	WB (Beach Channel Dr)-T, WB (Arverne Boulevard)-LR	EB-LT, WB (Arverne Boulevard)-L, SB-L		EB-LT, WB (Arverne Boulevard)-LR
16	Rockaway Beach Boulevard & Beach 62nd Street		WB-LTR		
19	Arverne Boulevard & Beach 59th Street		WB-LT		
20	Rockaway Freeway & Beach 59th Street	WB-L	WB-L		WB-L
21	Rockaway Beach Boulevard & Beach 59th Street		EB-TR, WB-LT		EB-TR, WB-LT
23	Arverne Boulevard & Beach 54th Street		EB-LTR, WB-LTR		
25	Edgemere Avenue & Beach 54th Street		EB-LTR, WB-LTR, SB-LTR		EB-LTR, SB-LTR
42	Rockaway Freeway & Seagirt Boulevard		EB-TR		
46	Beach Channel Drive & Mott Avenue		EB-LTR, NB-TR, SB-L, SB-TR		NB-TR
47	Beach Channel Drive & Dix Avenue		NB-LTR, SB-LTR		NB-LTR, SB-LTR
49	Beach Channel Drive & Nameoke Avenue		SB-TR		SB-TR
50	Beach Channel Drive & Hassock Street		NB-LT, SB-T		NB-LT, SB-T
	Total Number of Impacted Lane Groups:	**3**	**32**	**1**	**17**

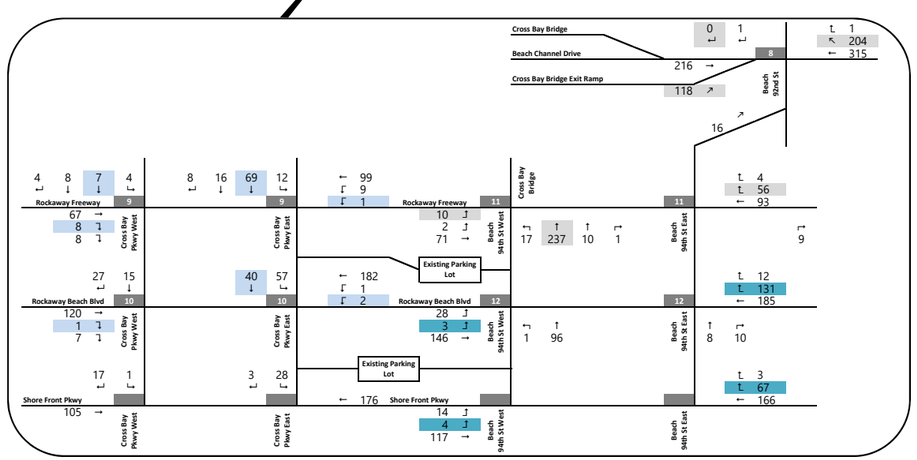
Table 18-10: Unsignalized Lane Groups Operating Worse than Mid-LOS D – Q3 2027 No-Action Condition

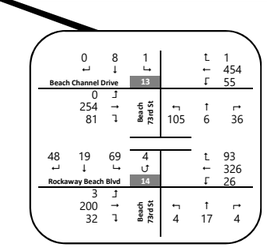
#	Intersection	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday AM Peak Hour	Saturday PM Peak Hour
26	Beach Channel Drive & Beach 53rd Street		NB-LR		NB-LR
27	Rockaway Beach Boulevard & Beach 53rd Street		SB-LR		SB-LR
28	Rockaway Beach Boulevard & Beach 52nd Street		SB-LTR		SB-LTR
34	Peninsula Way & Beach 52nd Street		SB-LTR		SB-LTR
37	Arverne Boulevard/Rockaway Beach Boulevard & Beach 47th Street		NB-LTR		
38	Rockaway Beach Boulevard & Beach 44th Street		NB-LR		
48	Beach Channel Drive & Birdsall Avenue		EB-LTR, WB-LTR		
P6	Parking Lot 6, via Beach Channel Drive		NB-LR		
	Total Number of Impacted Lane Groups:	**0**	**9**	**0**	**4**



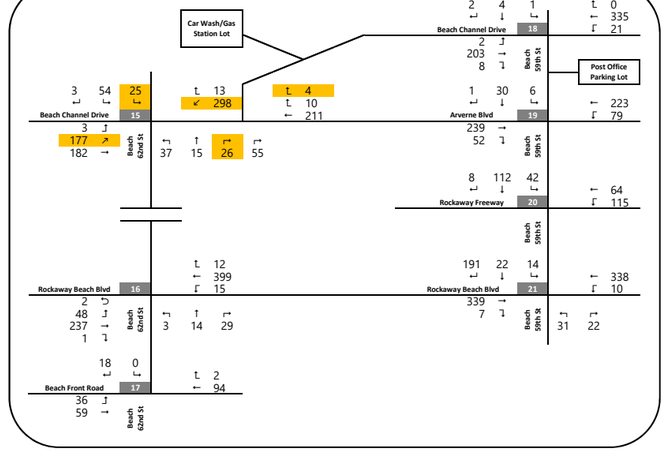








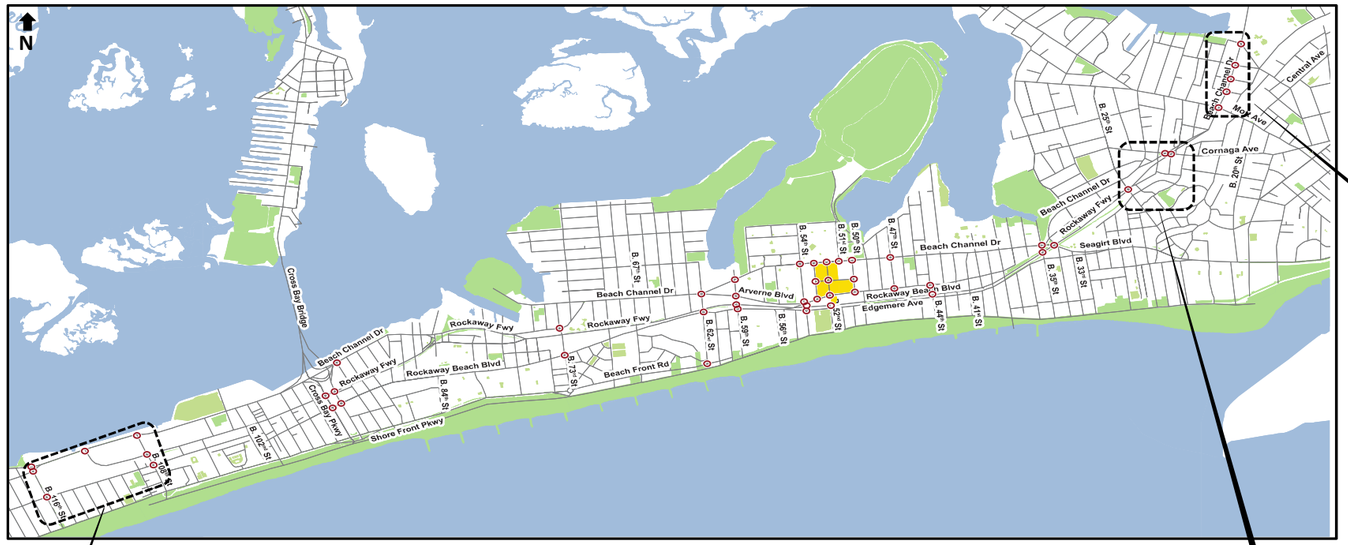
Legend
- To Cross Bay Parkway East
- To/From Beach Channel Drive
- To/From Cross Bay Bridge
- To/From Seagirt Blvd
- To/From Beach 94th St West

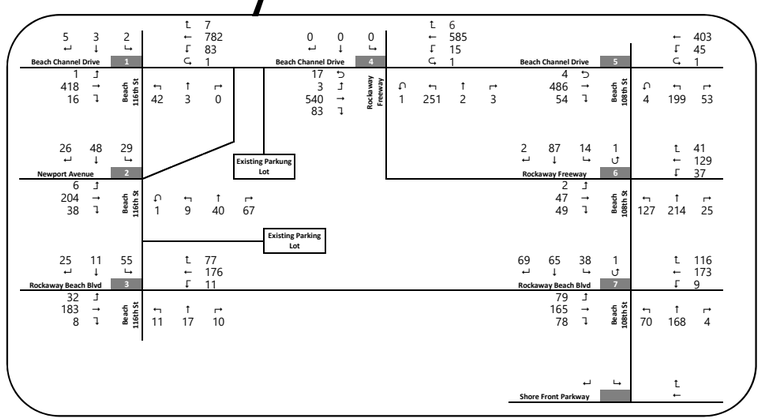


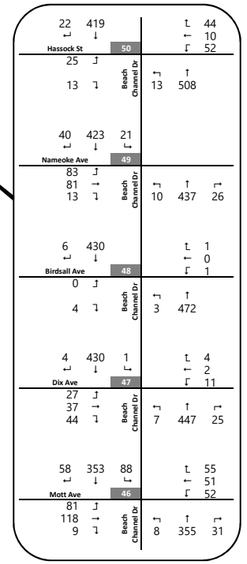
NOT TO SCALE

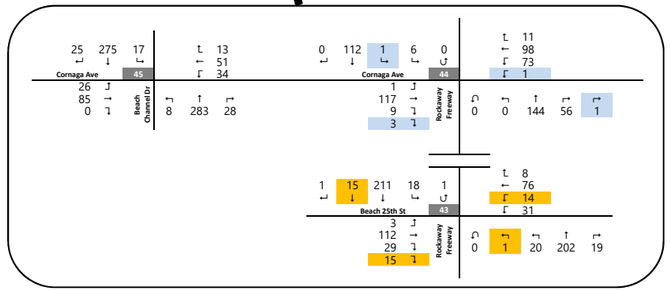
Peninsula Hospital Site Redevelopment

Q3 2027 No-Action Condition Traffic Volumes
Weekday AM Peak Hour
Figure 18-7A







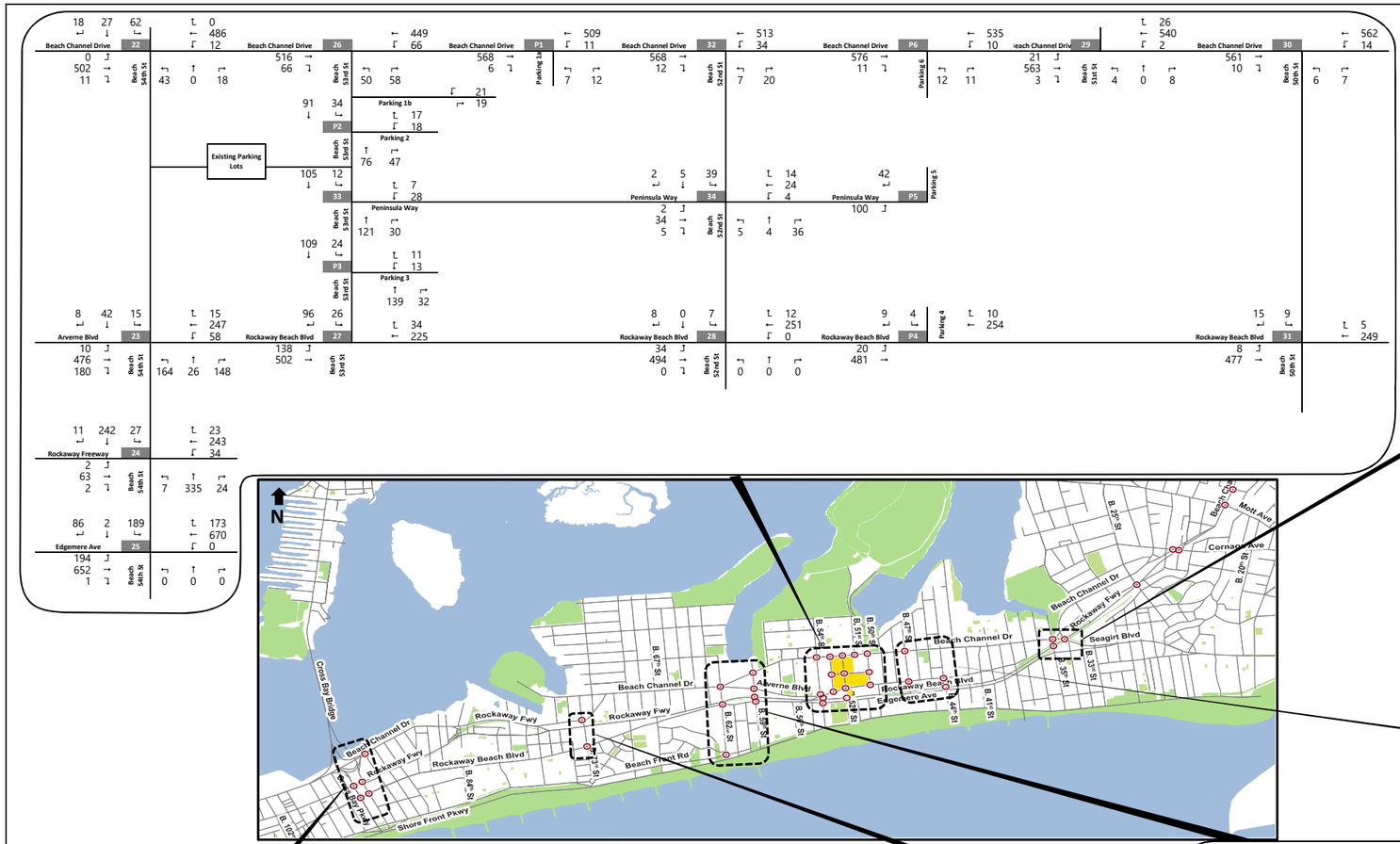


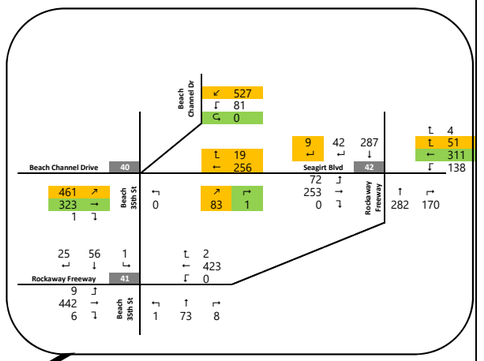
Legend
To Nasby Pl
To Far Rockaway Blvd

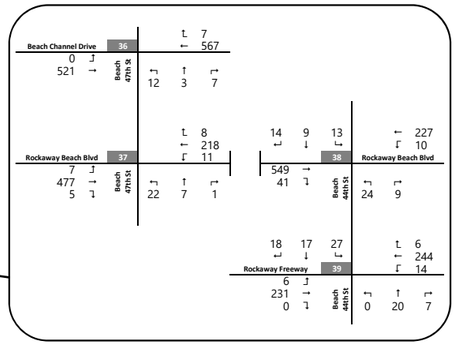
NOT TO SCALE

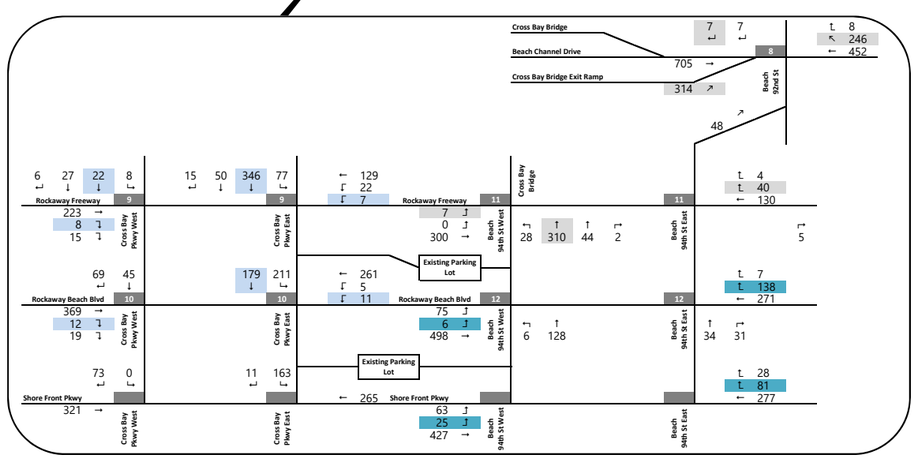
Peninsula Hospital EIS

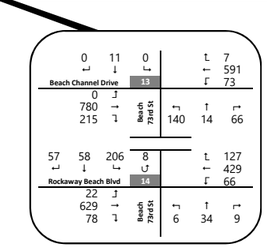
Q3 2027 No-Action Condition Traffic Volumes
Weekday AM Peak Hour
Figure 18-7B



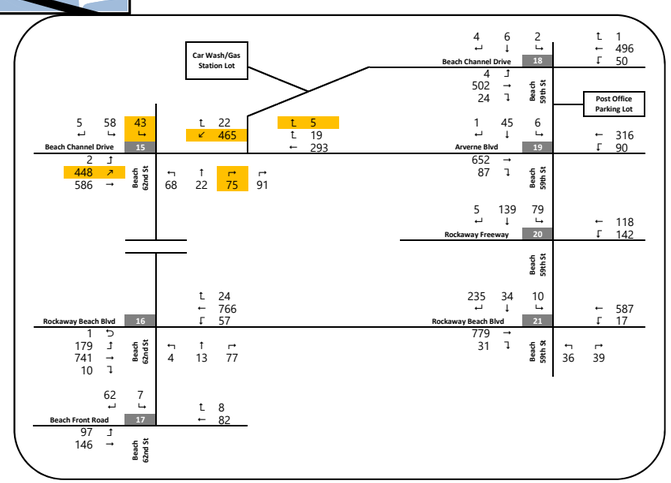








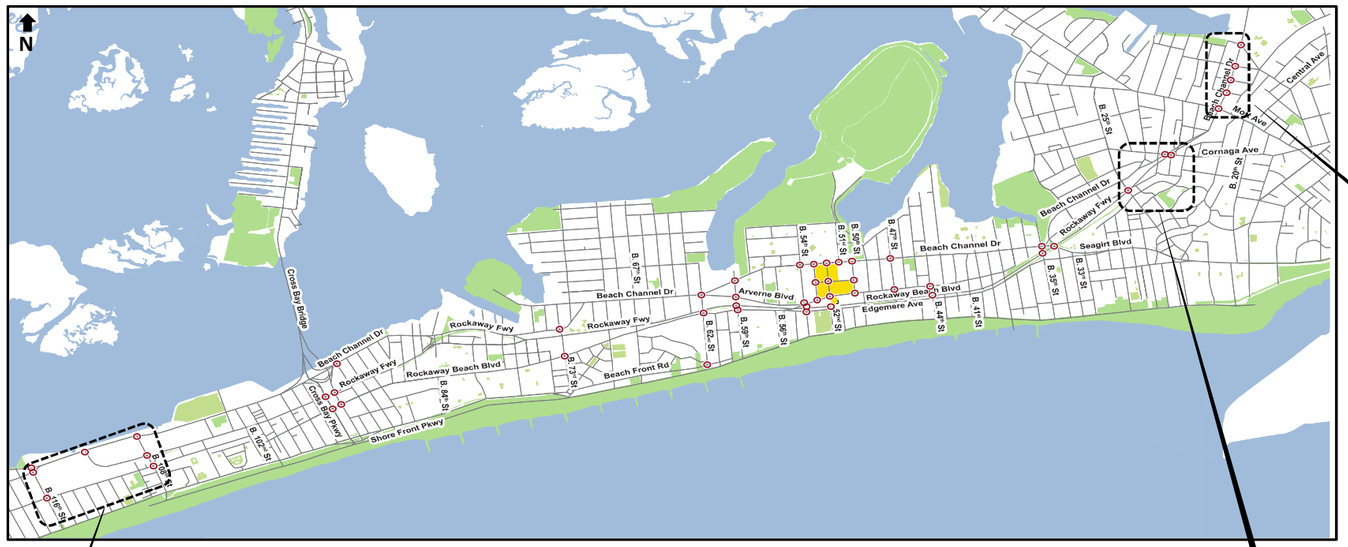
Legend
To Cross Bay Parkway East
To/From Beach Channel Drive
To/From Cross Bay Bridge
To/From Seagirt Blvd
To/From Beach 94th St West

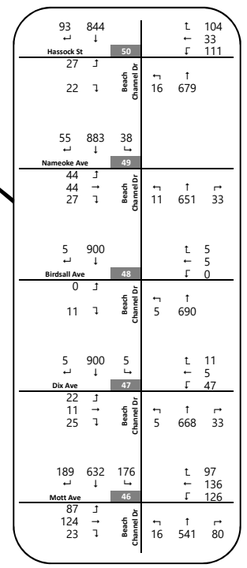


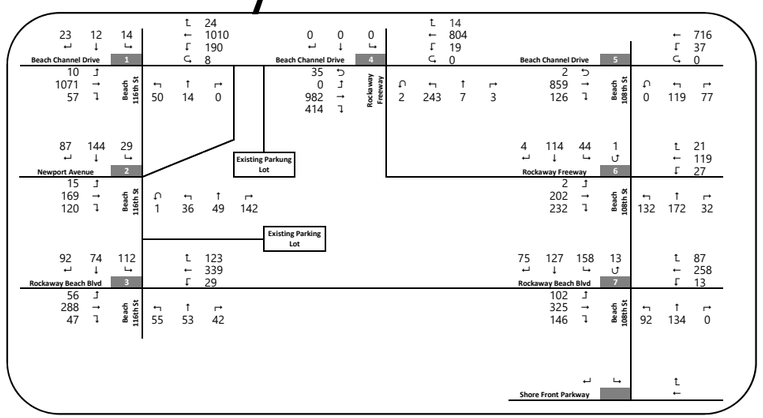
NOT TO SCALE

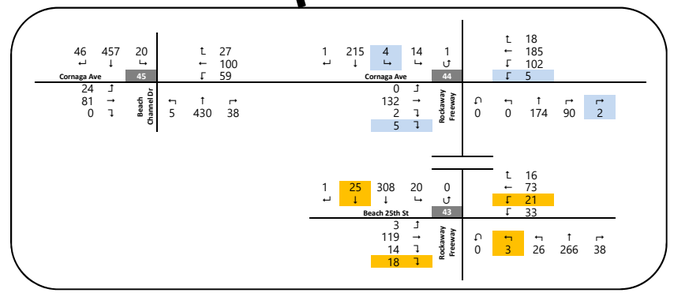
Peninsula Hospital Site Redevelopment

Q3 2027 No-Action Condition Traffic Volumes
Weekday PM Peak Hour
Figure 18-8A







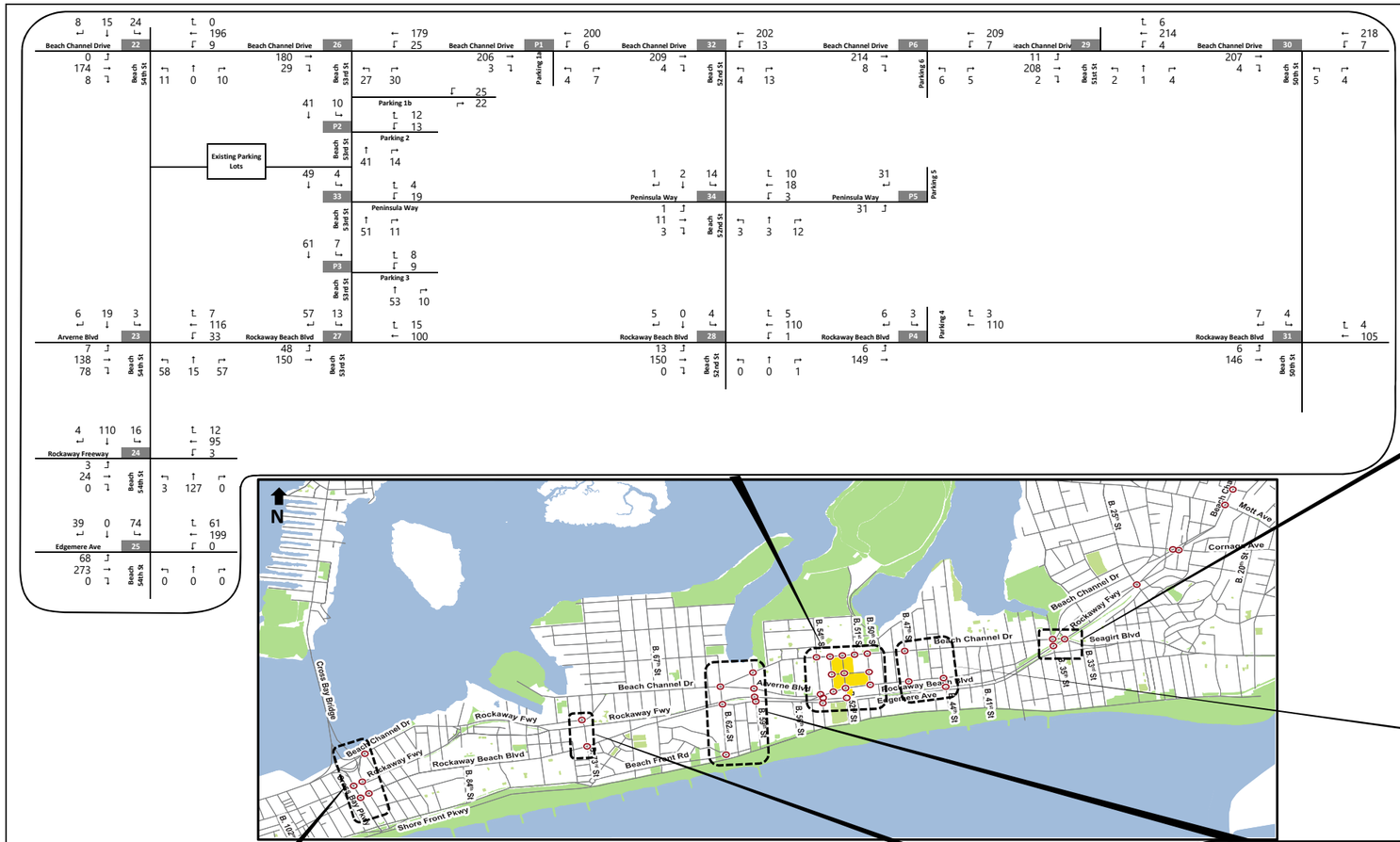


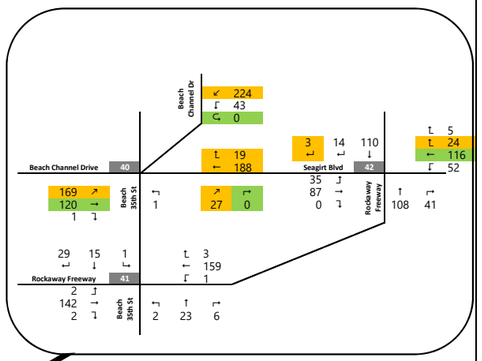
Legend
To Nasby Pl
To Far Rockaway Blvd

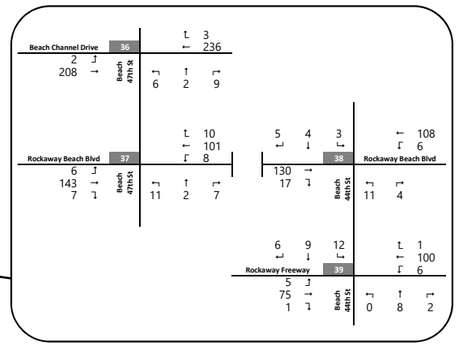
NOT TO SCALE

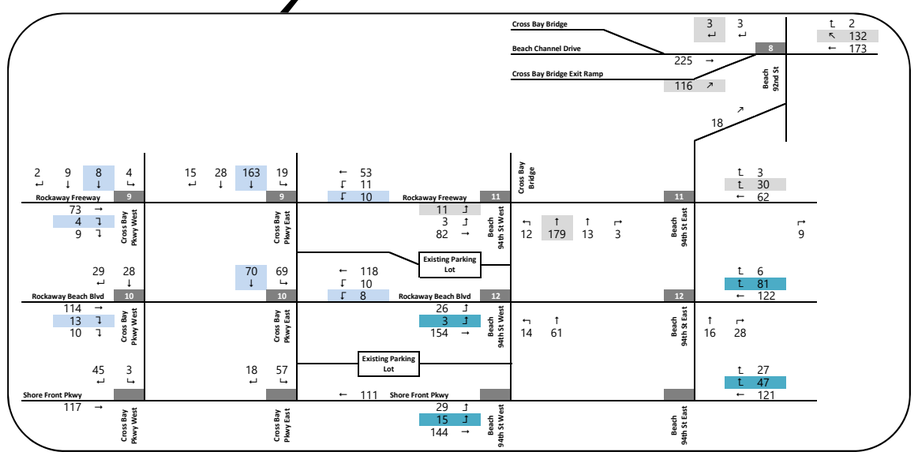
Peninsula Hospital EIS

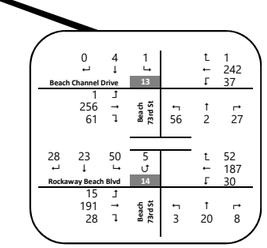
Q3 2027 No-Action Condition Traffic Volumes
Weekday PM Peak Hour
Figure 18-8B



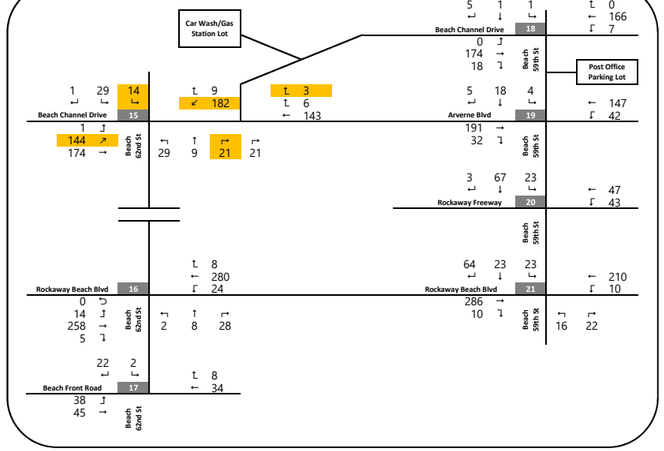








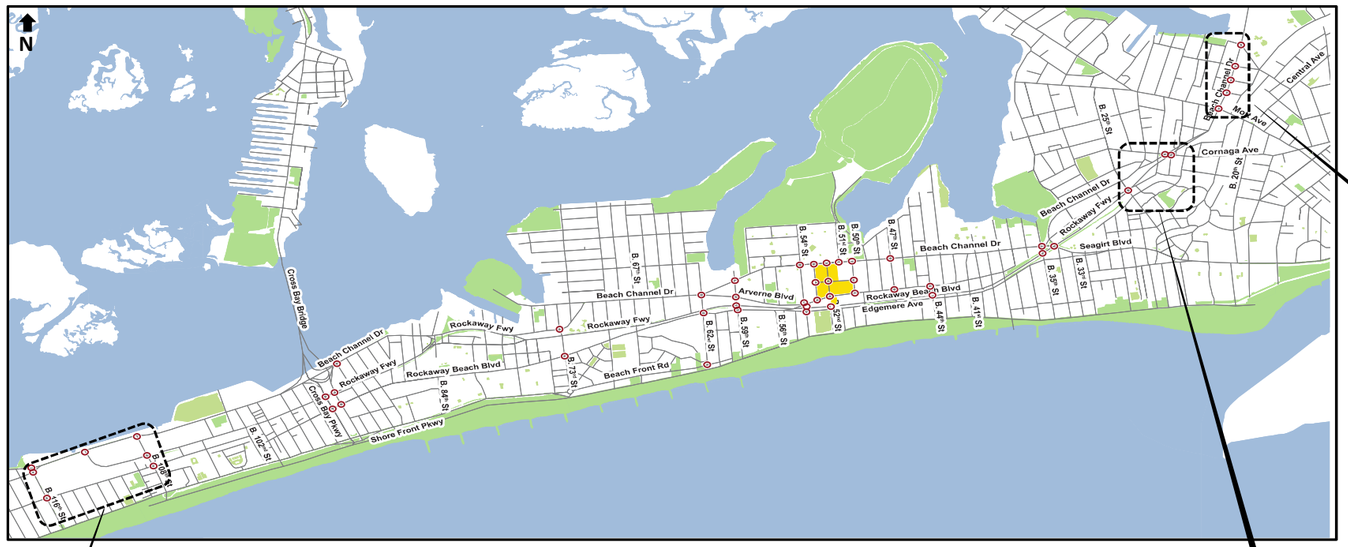
Legend
To Cross Bay Parkway East
To/From Beach Channel Drive
To/From Cross Bay Bridge
To/From Seagirt Blvd
To/From Beach 94th St West

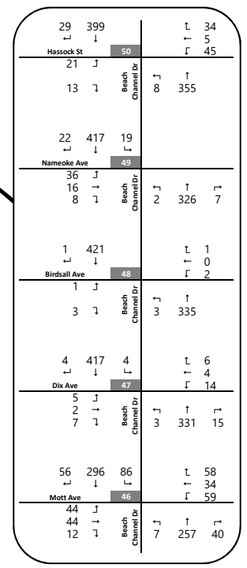


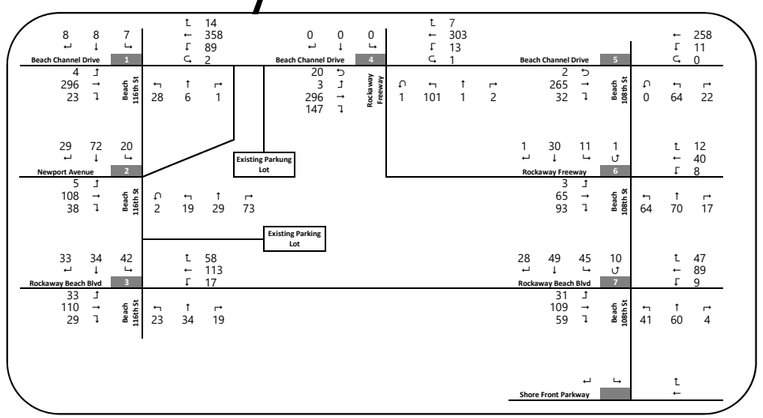
NOT TO SCALE

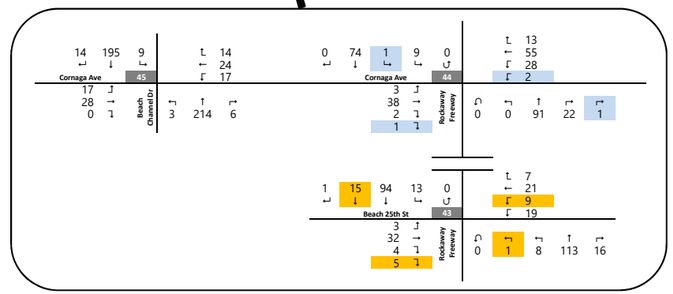
Peninsula Hospital Site Redevelopment

Q3 2027 No-Action Condition Traffic Volumes
Saturday AM Peak Hour
Figure 18-9A







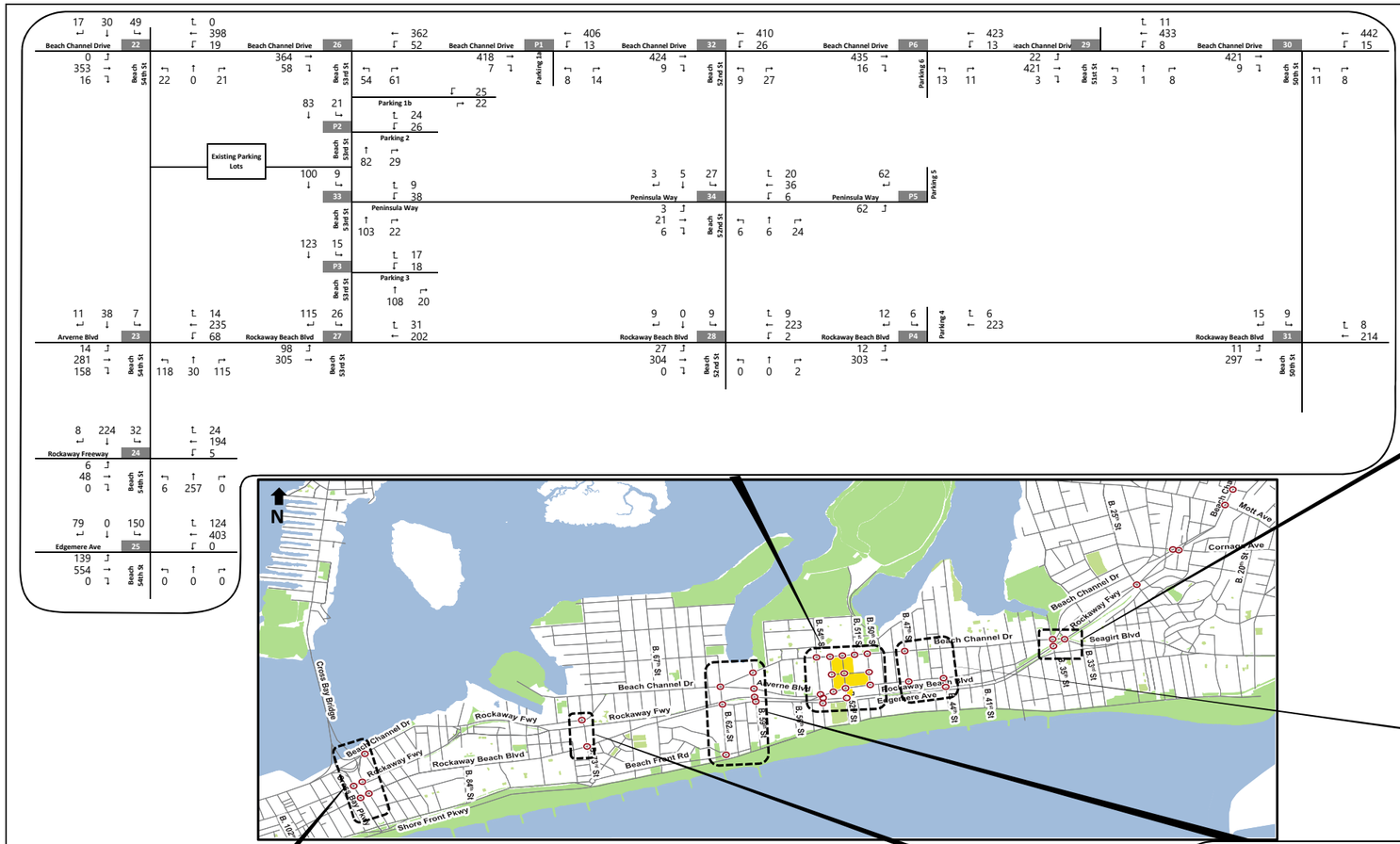


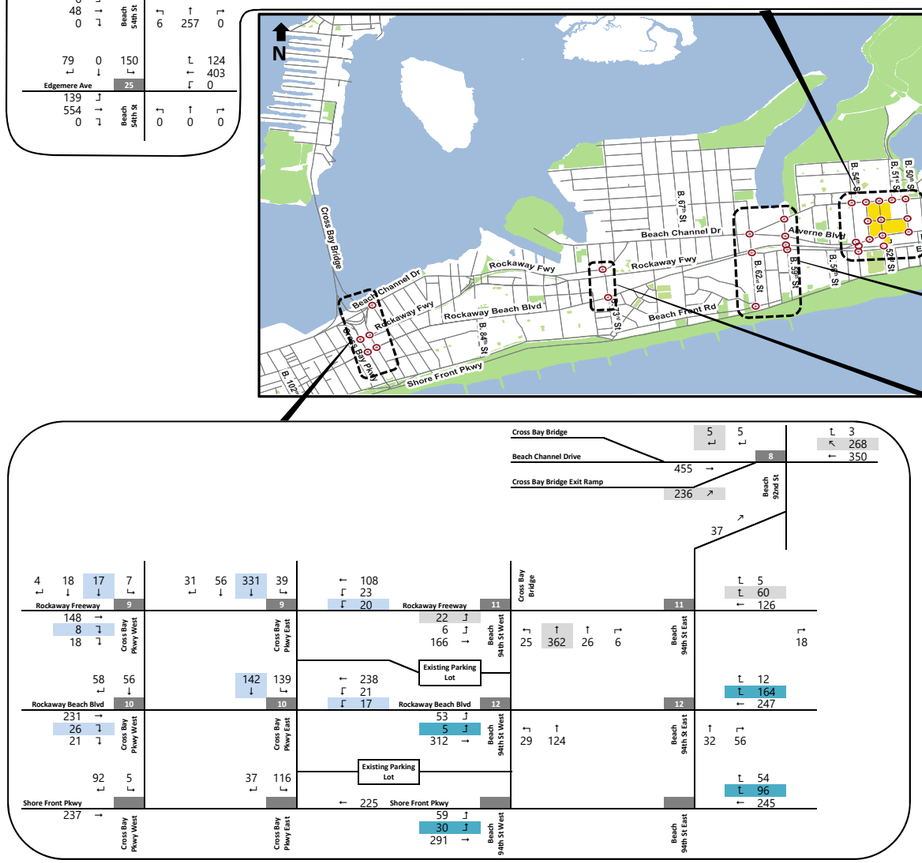
Legend
To Nasby Pl
To Far Rockaway Blvd

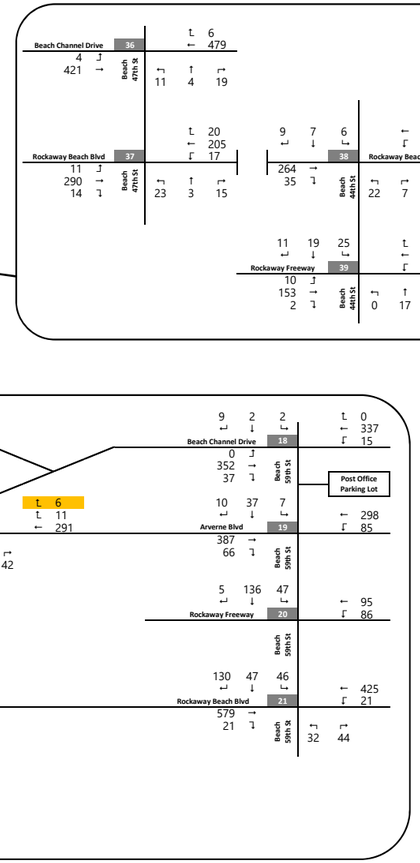
NOT TO SCALE

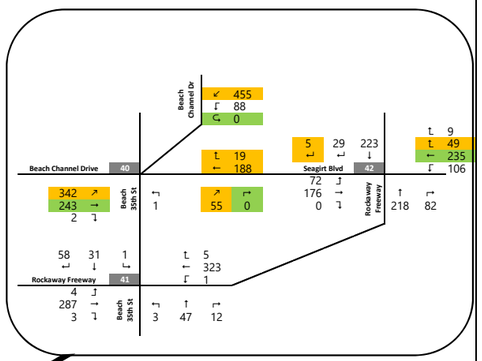
Peninsula Hospital EIS

Q3 2027 No-Action Condition Traffic Volumes
Saturday AM Peak Hour
Figure 18-9B





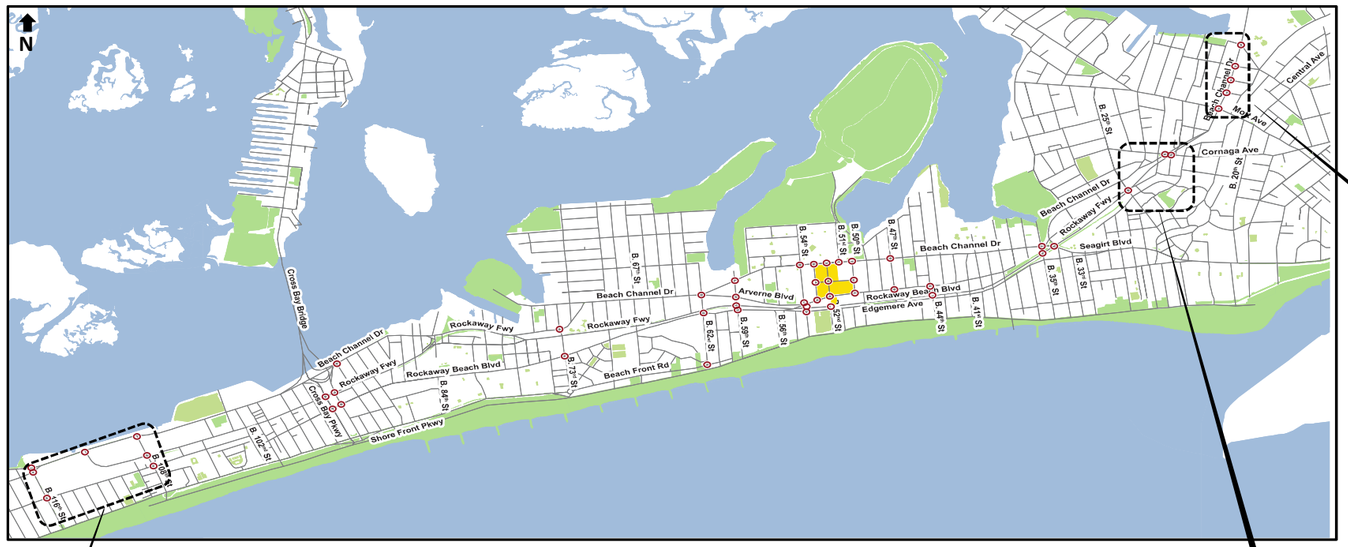


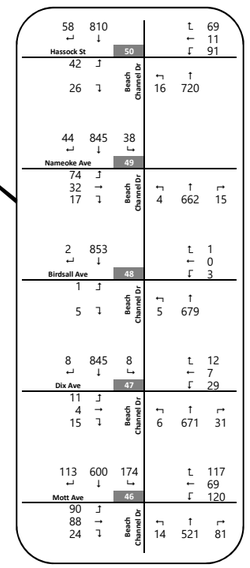


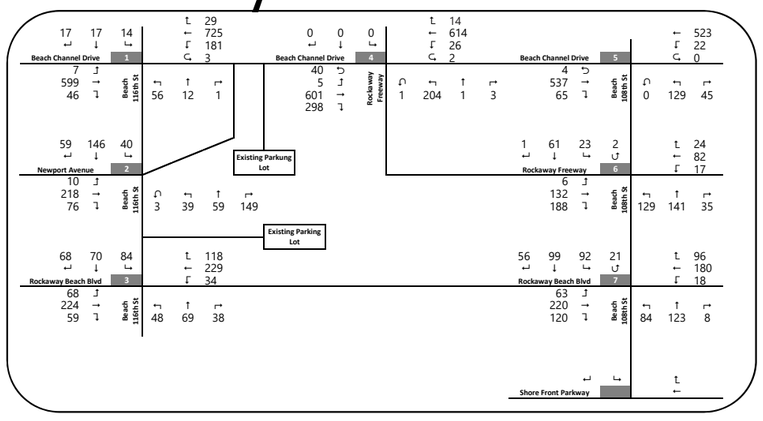
NOT TO SCALE

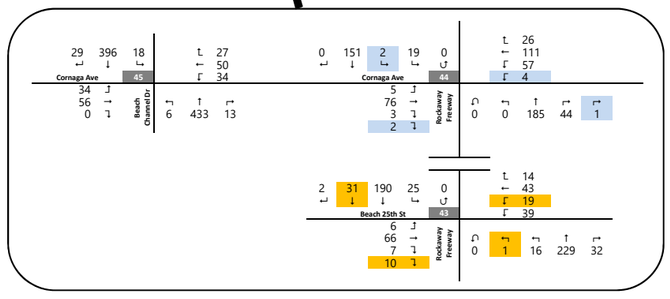
Peninsula Hospital Site Redevelopment

Q3 2027 No-Action Condition Traffic Volumes
Saturday PM Peak Hour
Figure 18-10A









Legend
To Nasby Pl
To Far Rockaway Blvd

NOT TO SCALE

Peninsula Hospital EIS

Q3 2027 No-Action Condition Traffic Volumes
Saturday PM Peak Hour
Figure 18-10B

Table 18-11: Q3 2027 No-Action Condition Level of Service Analysis – Signalized Intersections

#	Intersection & Approach	Weekday AM Peak Hour				Weekday PM Peak Hour				Saturday AM Peak Hour				Saturday PM Peak Hour			
		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
1	**Beach Channel Drive and Beach 116th Street**																
	Eastbound	LTR	0.41	25.6	C	LTR	0.96	51.5	D	LTR	0.29	23.8	C	LTR	0.59	29.0	C
	Westbound	LTR	0.77	25.2	C					LTR	0.38	15.7	B	LTR	0.91	36.7	D
						DefL	1.06	114.2	F								
						TR	1.41	217.6	F								
	Northbound	LTR	0.20	43.9	D	LTR	0.25	44.5	D	LTR	0.12	42.4	D	LTR	0.23	44.1	D
	Southbound	LTR	0.06	45.0	D	LTR	0.25	48.3	D	LTR	0.12	45.9	D	LTR	0.24	48.1	D
		Intersection		26.2	C	Intersection		126.6	F	Intersection		21.0	C	Intersection		34.4	C
2	**Newport Avenue and Beach 116th Street**																
	Eastbound	LTR	0.48	28.2	C	LTR	0.61	31.7	C	LTR	0.28	24.1	C	LTR	0.56	30.1	C
	Northbound	LT	0.22	44.3	D	LT	0.42	49.4	D	LT	0.22	44.3	D	LT	0.50	51.6	D
		R	0.20	31.1	C	R	0.40	34.9	C	R	0.21	31.0	C	R	0.43	35.7	D
	Southbound	LTR	0.16	16.8	B	LTR	0.39	20.0	C	LTR	0.16	16.7	B	LTR	0.37	19.7	B
		Intersection		27.8	C	Intersection		30.3	C	Intersection		25.8	C	Intersection		30.8	C
3	**Rockaway Beach Boulevard and Beach 116th Street**																
	Eastbound	LTR	0.38	12.0	B	LTR	0.65	16.9	B	LTR	0.29	10.8	B	LTR	0.63	16.5	B
	Westbound	LTR	0.55	15.2	B	LTR	0.99	52.0	D	LTR	0.34	11.6	B	LTR	0.72	20.3	C
	Northbound	L	0.03	12.3	B	L	0.20	14.4	B	L	0.07	12.7	B	L	0.17	13.8	B
		TR	0.08	12.7	B	TR	0.27	14.8	B	TR	0.12	13.0	B	TR	0.25	14.4	B
	Southbound	L	0.19	14.1	B	L	0.40	17.9	B	L	0.14	13.4	B	L	0.32	16.2	B
		TR	0.10	12.9	B	TR	0.42	16.9	B	TR	0.15	13.3	B	TR	0.32	15.2	B
		Intersection		13.6	B	Intersection		29.9	C	Intersection		11.9	B	Intersection		17.2	B
4	**Beach Channel Drive and Rockaway Freeway**																
	Eastbound	LTR	0.55	25.3	C	LTR	1.29	168.3	F	LTR	0.37	22.0	C	LTR	0.93	45.5	D
	Westbound	LTR	0.55	25.4	C	LTR	0.94	46.8	D	LTR	0.29	20.8	C	LTR	0.67	28.6	C
	Northbound	LT	0.37	22.6	C	LT	0.35	22.2	C	LT	0.14	19.2	B	LT	0.28	21.2	C
		R	0.01	17.7	B	R	0.01	17.7	B	R	0.00	17.6	B	R	0.01	17.7	B
		Intersection		24.8	C	Intersection		108.5	F	Intersection		21.2	C	Intersection		36.3	D
5	**Beach Channel Drive and Beach 108th Street**																
	Eastbound	TR	0.47	18.8	B	TR	0.81	27.1	C	TR	0.26	16.1	B	TR	0.54	19.8	B
	Westbound	LT	0.53	20.1	C	LT	0.82	28.9	C	LT	0.23	15.8	B	LT	0.47	18.9	B
	Northbound	L	0.31	17.1	B	L	0.17	15.5	B	L	0.10	14.8	B	L	0.20	15.8	B
		R	0.12	15.2	B	R	0.16	15.5	B	R	0.04	14.3	B	R	0.08	14.7	B
		Intersection		18.9	B	Intersection		26.6	C	Intersection		15.8	B	Intersection		18.9	B
6	**Rockaway Freeway and Beach 108th Street**																
	Eastbound	LTR	0.09	14.6	B	LTR	0.31	16.7	B	LTR	0.10	14.7	B	LTR	0.25	16.1	B
	Westbound	LTR	0.20	15.5	B	LTR	0.17	15.3	B	LTR	0.05	14.3	B	LTR	0.12	14.8	B
	Northbound	L	0.28	17.2	B	L	0.30	17.5	B	L	0.12	15.1	B	L	0.26	16.8	B
		TR	0.20	15.6	B	TR	0.18	15.4	B	TR	0.08	14.5	B	TR	0.16	15.2	B
	Southbound	LTR	0.20	16.0	B	LTR	0.32	17.6	B	LTR	0.08	14.7	B	LTR	0.18	15.8	B
		Intersection		15.8	B	Intersection		16.5	B	Intersection		14.7	B	Intersection		15.8	B
7	**Rockaway Beach Boulevard and Beach 108th Street**																
	Eastbound	L	0.32	18.9	B	L	0.42	21.4	C	L	0.08	14.7	B	L	0.21	16.7	B
		TR	0.46	19.9	B	TR	0.84	33.7	C	TR	0.30	17.1	B	TR	0.60	22.8	C
	Westbound	L	0.03	14.2	B	L	0.09	15.3	B	L	0.02	14.1	B	L	0.07	14.8	B
		TR	0.59	22.9	C	TR	0.64	24.3	C	TR	0.25	16.5	B	TR	0.50	20.6	C
	Northbound	L	0.20	16.2	B	L	0.30	18.1	B	L	0.11	15.0	B	L	0.24	16.9	B
		TR	0.25	16.4	B	TR	0.19	15.7	B	TR	0.10	14.9	B	TR	0.22	16.0	B
	Southbound	L	0.13	15.5	B	L	0.49	21.6	C	L	0.15	15.6	B	L	0.33	18.5	B
		TR	0.25	16.6	B	TR	0.35	17.8	B	LTR	0.14	15.2	B	LTR	0.28	16.8	B
		Intersection		19.2	B	Intersection		24.7	C	Intersection		16.0	B	Intersection		19.5	B
8 [1,2]	**Beach Channel Drive and Beach 92nd Street/Beach 94th Street**																
	Eastbound	T	0.22	7.4	A	T	0.66	16.2	B	T	0.26	7.9	A	T	0.48	12.2	B
	Northeastbound (Cross Bay Bridge Exit Ramp)	R	0.48	38.4	D	R	1.12	123.4	F	R	0.49	38.4	D	R	0.93	74.3	E
	Northeastbound (Beach 94th St)	R	0.08	30.2	C	R	0.21	32.6	C	R	0.08	30.3	C	R	0.16	31.6	C
	Westbound	TR	0.42	1.9	A	TR	0.62	5.2	A	TR	0.26	1.3	A	TR	0.53	3.9	A
	Northbound	R	0.05	40.0	D	R	0.21	42.5	D	R	0.13	41.2	D	R	0.21	42.2	D
	Southbound	R	0.01	39.0	D	R	0.13	39.7	D	R	0.06	39.5	D	R	0.10	39.3	D
		Intersection		9.2	A	Intersection		30.9	C	Intersection		11.9	B	Intersection		20.5	C
9	**Rockaway Freeway and Cross Bay Parkway**																
	Eastbound	TR	0.16	19.1	B	TR	0.38	22.0	C	TR	0.16	19.1	B	TR	0.32	21.1	C
	Westbound	L	0.01	35.6	D	L	0.05	36.2	D	L	0.06	36.5	D	L	0.13	37.6	D
		T	0.13	10.4	B	T	0.18	10.7	B	T	0.08	9.9	A	T	0.17	10.6	B
	Southbound (Cross Bay Bridge Off-Ramp)	LTR	0.12	20.4	C	LTR	0.46	24.3	C	LTR	0.23	21.5	C	LTR	0.47	24.5	C
	Southbound (Beach Channel Drive Off-Ramp)	LTR	0.05	19.8	B	LTR	0.14	20.8	C	LTR	0.05	19.8	B	LTR	0.10	20.3	C
		Intersection		16.7	B	Intersection		21.4	C	Intersection		19.4	B	Intersection		21.7	C
10	**Rockaway Beach Boulevard and Cross Bay Parkway**																
	Eastbound	TR	0.25	9.0	A	TR	0.69	16.4	B	TR	0.25	9.0	A	TR	0.52	12.4	B
	Westbound	LT	0.25	8.7	A	LT	0.40	10.2	B	LT	0.18	8.1	A	LT	0.36	9.8	A
	Southbound (Cross Bay Bridge Off-Ramp)	LT	0.11	14.7	B	LT	0.44	17.5	B	LT	0.16	15.1	B	LT	0.35	16.7	B
	Southbound (Beach Channel Drive Off-Ramp)	TR	0.12	15.2	B	TR	0.30	17.2	B	TR	0.14	15.3	B	TR	0.30	17.1	B
		Intersection		10.8	B	Intersection		15.4	B	Intersection		11.3	B	Intersection		13.5	B
11 [2]	**Rockaway Freeway and Beach 94th Street**																
	Eastbound	L	0.08	36.8	D	L	0.05	36.2	D	L	0.07	36.6	D	L	0.14	37.6	D
		T	0.10	10.1	B	T	0.33	12.2	B	T	0.11	10.2	B	T	0.23	11.2	B
	Westbound	TR	0.28	20.5	C	TR	0.29	20.6	C	TR	0.18	19.3	B	TR	0.35	21.6	C
	Northbound (Cross Bay Bridge On-Ramp)	LTR	0.23	21.4	C	LTR	0.35	22.7	C	LTR	0.20	21.1	C	LTR	0.40	23.4	C
		Intersection		19.6	B	Intersection		18.7	B	Intersection		18.6	B	Intersection		20.6	C
12	**Rockaway Beach Boulevard and Beach 94th Street**																
	Eastbound	LT	0.23	8.6	A	LT	0.75	17.2	B	LT	0.22	8.4	A	LT	0.47	11.0	B
	Westbound	TR	0.51	12.1	B	TR	0.60	13.6	B	TR	0.31	9.4	A	TR	0.63	14.4	B
	Northbound (Cross Bay Bridge On-Ramp)	LT	0.21	15.9	B	LT	0.31	17.0	B	LT	0.16	15.4	B	LT	0.33	17.3	B
	Northbound (Beach Channel Drive On-Ramp)	TR	0.05	14.4	B	TR	0.16	15.5	B	TR	0.13	15.3	B	TR	0.28	17.1	B
		Intersection		11.8	B	Intersection		15.8	B	Intersection		10.4	B	Intersection		13.8	B

Notes: L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recorded during this peak hour.
1. Intersection was unsignalized in the Existing Conditions.
2. Signalized intersection with stop-controlled approach(es).
3. Due to complex geometry and per NYCDOT request, LOS results were calculated using Synchro 10.

Table 18-11 (continued): Q3 2027 No-Action Condition Level of Service Analysis – Signalized Intersections

#	Intersection & Approach	Weekday AM Peak Hour				Weekday PM Peak Hour				Saturday AM Peak Hour				Saturday PM Peak Hour			
		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
13[2]	**Beach Channel Drive and Beach 73rd Street**																
	Eastbound	L	0.00	9.3	A	L	0.00	9.3	A	L	0.00	9.4	A	L	0.00	9.4	A
		T	0.28	11.6	B	T	0.72	19.4	B	T	0.24	11.3	B	T	0.49	14.2	B
	Westbound	L	0.15	10.9	B	L	0.68	39.6	D	L	0.09	10.1	B	L	0.30	13.7	B
		TR	0.61	17.6	B	TR	0.93	37.3	D	TR	0.34	12.6	B	TR	0.69	19.8	B
	Northbound	LT	0.26	22.4	C	LT	0.33	23.5	C	LT	0.11	20.5	C	LT	0.24	22.2	C
	Southbound	LTR	0.02	19.6	B	LTR	0.03	19.7	B	LTR	0.01	19.5	B	LTR	0.02	19.6	B
		Intersection		16.0	B	Intersection		27.9	C	Intersection		12.7	B	Intersection		17.3	B
14	**Rockaway Beach Boulevard and Beach 73rd Street**																
	Eastbound	LT	0.22	8.3	A	LT	0.65	14.2	B	LT	0.21	8.2	A	LT	0.44	10.6	B
		R	0.06	7.2	A	R	0.13	7.7	A	R	0.04	7.1	A	R	0.09	7.4	A
	Westbound	L	0.05	7.2	A	L	0.23	9.8	A	L	0.06	7.2	A	L	0.17	8.4	A
		T	0.36	9.7	A	T	0.48	11.1	B	T	0.20	8.1	A	T	0.40	10.1	B
		R	0.14	7.9	A	R	0.19	8.3	B	R	0.08	7.3	A	R	0.16	8.0	A
	Northbound	LT	0.06	24.1	C	LT	0.12	24.9	C	LT	0.06	24.2	C	LT	0.12	24.9	C
		R	0.02	23.7	C	R	0.03	23.9	C	R	0.03	23.8	C	R	0.07	24.3	C
	Southbound	L	0.23	26.7	C	L	0.69	39.8	D	L	0.16	25.6	C	L	0.35	28.9	C
		TR	0.26	27.2	C	TR	0.40	29.7	C	TR	0.16	25.5	C	TR	0.34	28.3	C
		Intersection		12.2	B	Intersection		17.1	B	Intersection		11.6	B	Intersection		13.6	B
15	**Beach Channel Drive/Arverne Boulevard and Beach 62nd Street**																
	Eastbound	LT	0.72	30.8	C	LT	1.82	401.7	F	LT	0.58	25.7	C	LT	1.18	124.6	F
	Westbound (Beach Channel Drive)	T	0.88	47.6	D	T	0.80	34.3	C	T	0.30	20.1	C	T	0.60	25.7	C
	Westbound (Arverne Blvd)	LR	0.96	82.0	F					LR	0.49	34.9	C	LR	0.99	77.6	E
						L	0.98	75.1	E								
						R	0.02	27.4	C								
	Northbound	LTR	0.41	33.0	C	LTR	0.54	34.6	C	LTR	0.15	28.7	C	LTR	0.32	30.6	C
	Southbound	L	0.41	35.5	D	L	0.64	47.1	D	L	0.18	29.8	C	L	0.39	34.5	C
		R	0.01	27.4	C	R	0.02	27.5	C	R	0.00	27.3	C	R	0.00	27.3	C
		Intersection		46.4	D	Intersection		213.5	F	Intersection		26.7	C	Intersection		77.0	E
16	**Rockaway Beach Boulevard and Beach 62nd Street**																
	Eastbound	L	0.15	25.3	C	L	0.48	31.1	C	L	0.04	23.9	C	L	0.08	24.3	C
		TR	0.27	7.2	A	TR	0.81	18.6	B	TR	0.28	7.2	A	TR	0.56	10.6	B
	Westbound	LTR	0.52	26.9	C	LTR	1.71	356.9	F	LTR	0.35	24.3	C	LTR	0.88	41.7	D
	Northbound	LTR	0.19	29.0	C	LTR	0.37	32.3	C	LTR	0.14	28.1	C	LTR	0.28	30.3	C
		Intersection		20.8	C	Intersection		178.8	F	Intersection		17.3	B	Intersection		27.4	C
18	**Beach Channel Drive and Beach 59th Street**																
	Eastbound	LT	0.28	11.9	B	LT	0.56	15.8	B	LT	0.20	10.9	B	LT	0.41	13.2	B
		R	0.01	9.4	A	R	0.05	9.7	A	R	0.03	9.6	A	R	0.07	9.9	A
	Westbound	LTR	0.42	13.6	B	LTR	0.79	24.3	C	LTR	0.18	10.8	B	LTR	0.38	12.9	B
	Southbound	LTR	0.01	19.4	B	LTR	0.02	19.5	B	LTR	0.01	19.5	B	LTR	0.02	19.6	B
		Intersection		13.0	B	Intersection		20.0	C	Intersection		11.0	B	Intersection		13.0	B
19	**Arverne Boulevard and Beach 59th Street**																
	Eastbound	T	0.29	9.0	A	T	0.65	13.6	B	T	0.22	8.4	A	T	0.44	10.4	B
		R	0.11	7.8	A	R	0.17	8.4	A	R	0.06	7.4	A	R	0.14	8.1	A
	Westbound	LT	0.48	11.5	B	LT	1.06	71.7	E	LT	0.28	9.0	A	LT	0.69	16.6	B
	Southbound	LTR	0.09	14.7	B	LTR	0.13	15.1	B	LTR	0.07	14.6	B	LTR	0.15	15.3	B
		Intersection		10.4	B	Intersection		35.0	C	Intersection		9.0	A	Intersection		13.2	B
20	**Rockaway Freeway and Beach 59th Street**																
	Westbound	L	0.57	46.8	D	L	0.98	103.1	F	L	0.28	40.4	D	L	0.56	49.6	D
		T	0.06	8.9	A	T	0.14	10.4	B	T	0.05	9.7	A	T	0.11	10.1	B
	Southbound	LTR	0.49	33.7	C	LTR	0.69	39.4	D	LTR	0.27	27.6	C	LTR	0.56	33.6	C
		Intersection		33.4	C	Intersection		51.4	D	Intersection		26.0	C	Intersection		31.3	C
21	**Rockaway Beach Boulevard and Beach 59th Street**																
	Eastbound	TR	0.62	27.4	C	TR	1.51	264.4	F	TR	0.54	25.3	C	TR	1.10	93.7	F
	Westbound	LT	0.59	26.2	C	LT	1.56	293.1	F	LT	0.37	21.8	C	LT	1.00	68.3	E
	Northbound	LR	0.31	31.5	C	LR	0.40	32.1	C	LR	0.14	26.0	C	LR	0.35	30.4	C
	Southbound	LTR	0.44	20.0	C	LTR	0.49	20.8	C	LTR	0.18	16.1	B	LTR	0.39	19.0	B
		Intersection		25.3	C	Intersection		222.8	F	Intersection		22.6	C	Intersection		68.3	E
22	**Beach Channel Drive and Beach 54th Street**																
	Eastbound	T	0.29	11.9	B	T	0.56	15.7	B	T	0.22	11.1	B	T	0.44	13.7	B
		R	0.01	9.4	A	R	0.03	9.6	A	R	0.01	9.5	A	R	0.04	9.7	A
	Westbound	LT	0.48	14.9	B	LT	0.72	21.3	C	LT	0.31	12.2	B	LT	0.64	18.3	B
	Northbound	LR	0.10	20.7	C	LR	0.27	23.6	C	LR	0.07	20.3	C	LR	0.18	22.0	C
	Southbound	LTR	0.18	21.4	C	LTR	0.31	23.4	C	LTR	0.11	20.6	C	LTR	0.26	22.6	C
		Intersection		15.0	B	Intersection		19.2	B	Intersection		13.0	B	Intersection		17.0	B
23	**Arverne Boulevard and Beach 54th Street**																
	Eastbound	LTR	0.42	20.8	C	LTR	1.11	94.6	F	LTR	0.36	19.7	B	LTR	0.74	29.2	C
	Westbound	LTR	0.53	23.4	C	LTR	0.97	65.1	E	LTR	0.34	19.8	B	LTR	0.85	42.0	D
	Northbound	LTR	0.19	14.0	B	LTR	0.56	19.6	B	LTR	0.21	14.2	B	LTR	0.45	17.6	B
	Southbound	LTR	0.09	22.4	C	LTR	0.18	23.6	C	LTR	0.07	22.1	C	LTR	0.15	23.0	C
		Intersection		20.6	C	Intersection		65.2	E	Intersection		18.5	B	Intersection		29.6	C
24	**Rockaway Freeway and Beach 54th Street**																
	Eastbound	LTR	0.04	16.0	B	LTR	0.10	16.5	B	LTR	0.04	16.0	B	LTR	0.09	16.4	B
	Westbound	L	0.11	37.1	D	L	0.21	38.9	D	L	0.02	35.8	D	L	0.03	36.0	D
		TR	0.18	9.3	A	TR	0.31	10.5	B	TR	0.11	8.8	A	TR	0.22	9.7	A
	Northbound	LTR	0.27	24.3	C	LTR	0.70	33.6	C	LTR	0.27	24.5	C	LTR	0.55	29.4	C
	Southbound	LTR	0.27	24.4	C	LTR	0.59	30.6	C	LTR	0.25	24.1	C	LTR	0.53	29.0	C
		Intersection		19.3	B	Intersection		25.9	C	Intersection		19.9	B	Intersection		23.4	C
25	**Edgemere Avenue and Beach 54th Street**																
	Eastbound	LTR	0.69	27.9	C	LTR	8.10	3239.0	F	LTR	0.63	26.0	C	LTR	2.58	749.0	F
	Westbound	LTR	0.52	22.1	C	LTR	1.18	121.6	F	LTR	0.37	19.7	B	LTR	0.76	29.0	C
	Northbound	LTR	0.00	21.4	C	LTR	0.00	21.4	C	LTR	0.00	21.4	C	LTR	0.00	21.4	C
	Southbound	LTR	0.21	14.2	B	LTR	1.24	158.7	F	LTR	0.50	22.5	C	LTR	1.05	91.9	F
		Intersection		23.2	C	Intersection		1475.0	F	Intersection		23.1	C	Intersection		371.0	F

Notes: L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recorded during this peak hour.
1. Intersection was unsignalized in the Existing Conditions.
2. Signalized intersection with stop-controlled approach(es).
3. Due to complex geometry and per NYCDOT request, LOS results were calculated using Synchro 10, version 10.2, build 0, revision 45 (10,2,0,45).

Table 18-11 (continued): Q3 2027 No-Action Condition Level of Service Analysis – Signalized Intersections

#	Intersection & Approach	Weekday AM Peak Hour				Weekday PM Peak Hour				Saturday AM Peak Hour				Saturday PM Peak Hour			
		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
29	**Beach Channel Drive and Beach 51st Street**																
	Eastbound	L	0.08	10.1	B	L	0.09	10.5	B	L	0.02	9.5	A	L	0.07	10.1	B
		TR	0.49	15.2	B	TR	0.79	24.6	C	TR	0.31	12.3	B	TR	0.63	18.0	B
	Westbound	LT	0.39	13.2	B	LT	0.64	17.8	B	LT	0.26	11.6	B	LT	0.53	15.3	B
		R	0.04	9.7	B	R	0.05	9.7	B	R	0.01	9.4	B	R	0.02	9.5	B
	Northbound	LTR	0.01	19.4	B	LTR	0.02	19.6	B	LTR	0.01	19.5	B	LTR	0.03	19.6	B
		Intersection		13.9	B	Intersection		20.7	C	Intersection		11.9	B	Intersection		16.4	B
39	**Rockaway Freeway and Beach 44th Street**																
	Eastbound	L	0.03	36.0	D	L	0.04	36.1	D	L	0.03	36.0	D	L	0.06	36.5	D
		TR	0.22	17.8	B	TR	0.36	19.6	B	TR	0.11	16.6	B	TR	0.22	17.8	B
	Westbound	L	0.01	8.3	A	L	0.03	10.4	B	L	0.01	8.1	A	L	0.02	8.5	A
		TR	0.20	17.6	B	TR	0.37	19.7	B	TR	0.14	16.9	B	TR	0.28	18.5	B
	Northbound	LTR	0.02	21.6	C	LTR	0.06	21.9	C	LTR	0.02	21.5	C	LTR	0.04	21.7	C
	Southbound	LTR	0.11	22.7	C	LTR	0.23	24.5	C	LTR	0.08	22.2	C	LTR	0.17	23.5	C
		Intersection		18.4	B	Intersection		20.2	C	Intersection		17.9	B	Intersection		19.2	B
40[2,3]	**Beach Channel Drive/Seagirt Boulevard and Beach 35th Street**																
	Eastbound	LTR	0.37	13.0	B	LTR	0.87dl	22.8	C	LTR	0.25	11.3	B	LTR	0.52	16.9	B
	Westbound	LT	0.40	11.9	B	LT	0.66	22.7	C	LT	0.24	12.6	B	LT	0.49	14.2	B
	Southbound	LT	0.09	21.2	C	LT	0.15	21.9	C	LT	0.08	21.1	C	LT	0.17	22.1	C
		R	0.34	6.9	A	R	0.69	12.5	B	R	0.29	6.4	A	R	0.58	9.7	A
	Northbound	LTR	0.08	15.8	B	LTR	0.17	12.6	B	LTR	0.06	11.3	B	LTR	0.11	11.6	B
		Intersection		11.7	B	Intersection		19.3	B	Intersection		10.8	B	Intersection		14.4	B
41[3]	**Rockaway Freeway and Beach 35th Street**																
	Eastbound	L	0.04	34.7	C	L	0.05	34.8	C	L	0.01	34.0	C	L	0.02	34.2	C
		TR	0.32	18.2	B	TR	0.64	24.6	C	TR	0.19	16.6	B	TR	0.38	19.1	B
	Westbound	L	0.00	41.0	D	L	0.00	0.0	-	L	0.00	43.0	D	L	0.00	44.0	D
		TR	0.34	8.6	A	TR	0.56	9.0	A	TR	0.23	8.0	A	TR	0.46	8.9	A
	Southbound	LTR	0.15	7.6	A	LTR	0.23	8.1	A	LTR	0.15	7.7	A	LTR	0.29	10.2	B
	Northbound	LTR	0.09	25.7	C	LTR	0.24	27.6	C	LTR	0.09	25.7	C	LTR	0.18	26.9	C
		Intersection		13.7	B	Intersection		17.6	B	Intersection		12.8	B	Intersection		14.4	B
42[3]	**Rockaway Freeway and Seagirt Boulevard**																
	Eastbound	L	0.13	40.4	D	L	0.23	39.1	D	L	0.11	41.2	D	L	0.23	42.0	D
		TR	0.14	17.8	B	TR	0.25	84.9	F	TR	0.09	12.4	B	TR	0.18	26.8	C
	Westbound	LTR	0.37	29.7	C	LTR	0.71	37.0	D	LTR	0.26	28.4	C	LTR	0.52	32.0	C
	Southbound	TR	0.31	22.0	C	TR	0.66	30.2	C	TR	0.22	20.9	C	TR	0.42	23.7	C
	Northbound	TR	0.38	10.1	B	TR	0.87	25.9	C	TR	0.24	10.3	B	TR	0.47	11.6	B
		Intersection		21.9	C	Intersection		39.2	D	Intersection		21.1	C	Intersection		25.3	C
43	**Rockaway Freeway and Beach 25th Street**																
	Eastbound	LTR	0.35	25.7	C	LTR	0.33	25.4	C	LTR	0.09	22.3	C	LTR	0.19	23.4	C
	Westbound	LTR	0.29	24.9	C	LTR	0.36	26.1	C	LTR	0.12	22.7	C	LTR	0.27	24.7	C
	Northbound	L	0.12	36.3	D	L	0.18	37.3	D	L	0.05	35.3	D	L	0.10	36.0	D
		TR	0.34	20.1	C	TR	0.49	22.6	C	TR	0.21	18.3	B	TR	0.42	21.3	C
	Southbound	L	0.10	36.1	D	L	0.11	36.2	D	L	0.08	35.7	D	L	0.15	36.9	D
		TR	0.35	20.0	C	TR	0.43	21.2	C	TR	0.15	17.6	B	TR	0.31	19.4	B
		Intersection		22.9	C	Intersection		23.9	C	Intersection		20.4	C	Intersection		22.4	C
44	**Rockaway Freeway and Cornaga Avenue**																
	Eastbound	LTR	0.20	19.5	B	LTR	0.21	19.5	B	LTR	0.07	18.1	B	LTR	0.14	18.8	B
	Westbound	LTR	0.48	25.0	C	LTR	0.81	39.7	D	LTR	0.21	19.9	B	LTR	0.46	24.0	C
	Northbound	TR	0.43	26.4	C	TR	0.53	28.6	C	TR	0.22	23.1	C	TR	0.45	26.6	C
	Southbound	L	0.05	36.2	D	L	0.13	37.6	D	L	0.06	36.4	D	L	0.13	37.5	D
		TR	0.16	13.2	B	TR	0.30	14.6	B	TR	0.10	12.6	B	TR	0.21	13.6	B
		Intersection		22.3	C	Intersection		27.6	C	Intersection		19.5	B	Intersection		22.3	C
45	**Beach Channel Drive and Cornaga Avenue**																
	Eastbound	LTR	0.20	19.5	B	LTR	0.18	19.3	B	LTR	0.08	18.2	B	LTR	0.17	19.2	B
	Westbound	LTR	0.22	19.9	B	LTR	0.42	23.0	C	LTR	0.11	18.5	B	LTR	0.23	20.0	C
	Northbound	L	0.02	12.0	B	L	0.02	12.1	B	L	0.01	11.8	B	L	0.02	12.0	B
		TR	0.39	15.8	B	TR	0.57	18.7	B	TR	0.25	14.0	B	TR	0.50	17.4	B
	Southbound	L	0.05	12.3	B	L	0.09	13.0	B	L	0.02	11.9	B	L	0.07	12.6	B
		TR	0.37	15.6	B	TR	0.59	19.3	B	TR	0.24	13.9	B	TR	0.49	17.3	B
		Intersection		16.6	B	Intersection		19.5	B	Intersection		14.8	B	Intersection		17.7	B
46	**Beach Channel Drive and Mott Avenue**																
	Eastbound	LTR	0.47	24.3	C	LTR	0.85	49.3	D	LTR	0.23	20.0	C	LTR	0.65	31.7	C
	Westbound	LT	0.27	20.9	C	LT	0.74	35.7	D	LT	0.23	20.3	C	LT	0.59	28.7	C
		R	0.11	10.2	B	R	0.21	11.3	C	R	0.09	10.0	B	R	0.20	11.2	C
	Northbound	L	0.04	19.8	B	L	0.25	28.5	C	L	0.03	19.7	B	L	0.15	23.3	C
		TR	0.78	36.8	D	TR	1.23	150.0	F	TR	0.57	28.1	C	TR	1.16	121.5	F
	Southbound	L	0.38	17.8	B	L	0.82	45.4	D	L	0.26	14.2	B	L	0.82	43.5	D
		TR	0.51	16.4	B	TR	0.98	45.3	D	TR	0.38	14.4	B	TR	0.78	24.0	C
		Intersection		23.9	C	Intersection		71.0	E	Intersection		19.3	B	Intersection		54.8	D
47	**Beach Channel Drive and Dix Avenue**																
	Eastbound	LTR	0.33	24.1	C	LTR	0.20	22.1	C	LTR	0.04	19.8	B	LTR	0.09	20.5	C
	Westbound	LTR	0.05	19.9	B	LTR	0.17	21.4	C	LTR	0.06	20.0	B	LTR	0.13	20.9	C
	Northbound	LTR	0.72	21.2	C	LTR	1.04	65.2	E	LTR	0.49	15.0	B	LTR	1.00	53.3	D
	Southbound	LTR	0.62	17.9	B	LTR	1.30	163.6	F	LTR	0.60	17.3	B	LTR	1.22	132.9	F
		Intersection		20.1	C	Intersection		112.7	F	Intersection		16.5	B	Intersection		93.6	F
49	**Beach Channel Drive and Nameoke Avenue**																
	Eastbound	LTR	0.46	26.4	C	LTR	0.34	24.1	C	LTR	0.16	21.3	C	LTR	0.33	23.9	C
	Northbound	L	0.04	9.7	A	L	0.17	15.0	B	L	0.01	9.4	A	L	0.06	11.2	B
		TR	0.56	16.0	B	TR	0.81	24.8	C	TR	0.39	13.1	B	TR	0.79	23.2	C
	Southbound	L	0.08	10.2	B	L	0.23	13.3	B	L	0.05	9.9	A	L	0.24	13.8	B
		TR	0.58	16.5	B	TR	1.15	101.0	F	TR	0.52	15.2	B	TR	1.05	65.6	E
		Intersection		17.7	B	Intersection		63.8	E	Intersection		14.7	B	Intersection		44.5	D
50	**Beach Channel Drive and Hassock Avenue**																
	Eastbound	LR	0.09	18.4	B	LR	0.13	18.9	B	LR	0.08	18.3	B	LR	0.18	19.5	B
	Westbound	L	0.11	18.7	B	L	0.27	20.7	C	L	0.10	18.5	B	L	0.20	19.7	B
		TR	0.13	18.8	B	TR	0.35	22.1	C	TR	0.08	18.3	B	TR	0.18	19.4	B
	Northbound	LT	0.82	28.7	C	LT	1.13	99.6	F	LT	0.60	19.4	B	LT	1.24	140.5	F
	Southbound	T	0.62	19.4	B	T	1.17	113.0	F	T	0.57	18.3	B	T	1.16	109.6	F
		R	0.05	11.2	B	R	0.19	12.6	B	R	0.06	11.3	B	R	0.13	12.0	B
		Intersection		23.4	C	Intersection		87.9	F	Intersection		18.5	B	Intersection		106.5	F

Notes: L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recorded during this peak hour.
1. Intersection was unsignalized in the Existing Conditions.
2. Signalized intersection with stop-controlled approach(es).
3. Due to complex geometry and per NYCDOT request, LOS results were calculated using Synchro 10, version 10.2, build 0, revision 45 (10,2,0,45).

Table 18-12: Q3 2027 No-Action Condition Level of Service Analysis – Unsignalized Intersections

#	Intersection & Approach	Weekday AM Peak Hour				Weekday PM Peak Hour				Saturday AM Peak Hour				Saturday PM Peak Hour			
		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
11 [1,2]	**Rockaway Freeway and Beach 94th Street**																
	Northbound	T	0.03	9.1	A	T	0.07	9.3	A	T	0.03	9.1	A	T	0.07	9.3	A
13 [1]	**Beach Channel Drive and Beach 73rd Street**																
	Eastbound	R	0.08	8.8	A	R	0.25	9.6	A	R	0.07	8.7	A	R	0.15	9.0	A
	Northbound	R	0.06	10.2	B	R	0.22	17.3	C	R	0.04	9.9	A	R	0.12	12.5	B
17	**Beach Front Road and Beach 62nd Street**																
	Eastbound	LT	0.14	9.9	A	LT	0.39	12.7	B	LT	0.12	9.8	A	LT	0.28	11.6	B
	Westbound	TR	0.12	9.7	A	TR	0.14	10.4	B	TR	0.06	9.4	A	TR	0.13	10.1	B
	Southbound	LTR	0.00	7.2	A	LTR	0.01	7.3	A	LTR	0.00	7.4	A	LTR	0.00	7.5	A
26	**Beach Channel Drive and Beach 53rd Street**																
	Westbound	LT	0.03	9.2	A	LT	0.20	18.5	C	LT	0.03	9.0	A	LT	0.14	14.0	B
	Northbound	LR	0.25	18.5	C	LR	2.48	835.8	F	LR	0.18	16.0	C	LR	1.28	248.9	F
27	**Rockaway Beach Boulevard and Beach 53rd Street**																
	Eastbound	LT	0.04	9.2	A	LT	0.35	16.4	C	LT	0.06	9.0	A	LT	0.23	13.6	B
	Southbound	LR	0.25	14.6	B	LR	1.80	485.9	F	LR	0.18	14.0	B	LR	1.00	121.8	F
28	**Rockaway Beach Boulevard and Beach 52nd Street**																
	Eastbound	LTR	0.01	8.0	A	LTR	0.05	10.0	A	LTR	0.01	8.3	A	LTR	0.04	10.1	B
	Westbound	LTR	0.00	7.7	A	LTR	0.00	8.5	A	LTR	0.00	7.6	A	LTR	0.00	8.1	A
	Northbound	LR	0.00	0.0	-	LR	0.00	0.0	-	LR	0.00	9.8	A	LR	0.00	12.0	B
	Southbound	LTR	0.02	13.1	B	LTR	0.13	39.2	E	LTR	0.02	13.2	B	LTR	0.13	34.0	D
30	**Beach Channel Drive and Beach 50th Street**																
	Westbound	LT	0.01	8.4	A	LT	0.02	10.4	B	LT	0.01	8.2	A	LT	0.02	9.8	A
	Northbound	LR	0.02	13.0	B	LR	0.09	29.6	D	LR	0.02	12.1	B	LR	0.10	23.6	C
31	**Rockaway Beach Boulevard and Beach 50th Street**																
	Eastbound	LT	0.01	7.8	A	LT	0.01	7.9	A	LT	0.00	7.5	A	LT	0.01	7.8	A
	Southbound	LR	0.02	10.1	B	LR	0.06	12.6	B	LR	0.01	9.5	A	LR	0.05	11.5	B
32 [3]	**Beach Channel Drive and Beach 52nd Street**																
	Westbound	LT	0.01	8.3	A	LT	0.06	11.1	B	LT	0.01	8.4	A	LT	0.04	10.3	B
	Northbound	LR	0.06	12.5	B	LR	0.14	26.2	D	LR	0.03	11.3	B	LR	0.12	17.5	C
33 [3]	**Peninsula Way and Beach 53rd Street**																
	Westbound	LR	0.07	10.5	B	LR	0.10	15.3	C	LR	0.03	10.4	B	LR	0.11	14.1	B
	Southbound	LT	0.00	7.8	A	LT	0.02	9.2	A	LT	0.00	7.9	A	LT	0.01	8.8	A
34 [3]	**Peninsula Way and Beach 52nd Street**																
	Eastbound	LTR	0.00	7.7	A	LTR	0.00	8.4	A	LTR	0.00	7.8	A	LTR	0.00	8.5	A
	Westbound	LTR	0.00	7.5	A	LTR	0.00	8.3	A	LTR	0.00	7.7	A	LTR	0.01	8.4	A
	Nouthbound	LTR	0.01	10.6	B	LTR	0.16	19.3	C	LTR	0.04	12.0	B	LTR	0.15	21.7	C
	Southbound	LTR	0.02	11.7	B	LTR	0.30	36.3	E	LTR	0.04	14.1	B	LTR	0.25	37.0	E
35 [4]	**Peninsula Way and Beach 50th Street**																
	Eastbound																
	Northbound																
36	**Beach Channel Drive and Beach 47th Street**																
	Eastbound	LT	0.00	8.4	A	LT	0.00	9.2	A	LT	0.00	7.9	A	LT	0.00	7.9	A
	Northbound	LTR	0.02	12.3	B	LTR	0.13	26.7	D	LTR	0.04	11.8	B	LTR	0.04	11.8	B
37	**Arverne Boulevard/Rockaway Beach Boulevard and Beach 47th Street**																
	Eastbound	LTR	0.00	7.6	A	LTR	0.01	8.1	A	LTR	0.00	7.6	A	LTR	0.00	7.6	A
	Westbound	LTR	0.01	8.3	A	LTR	0.02	11.2	B	LTR	0.01	8.4	A	LTR	0.01	8.4	A
	Northbound	LTR	0.02	12.1	B	LTR	0.22	33.9	D	LTR	0.05	13.1	B	LTR	0.05	13.1	B
38	**Rockaway Beach Boulevard and Beach 44th Street**																
	Westbound	LT	0.00	8.0	A	LT	0.01	9.1	A	LT	0.00	7.6	A	LT	0.00	7.6	A
	Northbound	LR	0.03	12.2	B	LR	0.24	35.4	E	LR	0.03	12.0	B	LR	0.03	12.0	B
	Southbound	LTR	0.05	12.0	B	LTR	0.18	22.9	C	LTR	0.02	10.9	B	LTR	0.02	10.9	B
40 [1,5]	**Beach Channel Drive and Seagirt Boulevard**																
	Westbound	R	0.01	10.2	B	R	0.15	13.5	B	R	0.04	9.7	A	R	0.12	12.1	B
48	**Beach Channel Drive and Birdsall Avenue**																
	Eastbound	LTR	0.01	11.2	B	LTR	0.40	122.5	F	LTR	0.01	13.7	B	LTR	0.01	13.7	B
	Westbound	LTR	0.00	13.1	B	LTR	0.27	111.9	F	LTR	0.01	14.6	B	LTR	0.01	14.6	B
	Northbound	LTR	0.00	8.3	A	LTR	0.01	11.1	B	LTR	0.00	8.2	A	LTR	0.00	8.2	A
	Southbound	LTR	0.00	8.4	A	LTR	0.01	9.9	A	LTR	0.00	8.0	A	LTR	0.00	8.0	A
51 [4]	**Rockaway Freeway and Beach 52nd Street**																
	Southbound																
P1a [6]	**Parking Lot 1 driveway, via Beach Channel Drive**																
	Westbound	LT	0.00	8.8	A	LT	0.03	13.9	B	LT	0.01	9.0	A	LT	0.01	9.0	A
	Northbound	LR	0.01	12.5	B	LR	0.12	29.3	D	LR	0.02	12.9	B	LR	0.02	12.9	B
P1b [6]	**Parking Lot 1 driveway, via Beach 53rd Street**																
	Westbound	LR	0.01	10.0	B	LR	0.04	12.9	B	LR	0.03	10.1	B	LR	0.03	10.1	B
	Southbound	LT	0.00	7.7	A	LT	0.00	8.5	A	LT	0.00	7.7	A	LT	0.00	7.7	A
P2 [6]	**Parking Garage 2 driveway, via Beach 53rd Street**																
	Westbound	LR	0.07	9.9	A	LR	0.07	12.7	B	LR	0.04	9.8	A	LR	0.04	9.8	A
	Southbound	LT	0.00	7.7	A	LT	0.04	8.6	A	LT	0.01	7.7	A	LT	0.01	7.7	A
P3 [6]	**Parking Garage 3 driveway, via Beach 53rd Street**																
	Westbound	LR	0.06	11.1	B	LR	0.09	18.5	C	LR	0.03	10.8	B	LR	0.03	10.8	B
	Southbound	LT	0.00	8.1	A	LT	0.04	10.5	B	LT	0.01	8.1	A	LT	0.01	8.1	A
P4 [6]	**Parking Garage 4 driveway, via Rockaway Beach Boulevard**																
	Eastbound	LT	0.00	8.0	A	LT	0.03	9.9	A	LT	0.01	8.3	A	LT	0.01	8.3	A
	Southbound	LR	0.03	10.7	B	LR	0.05	19.1	C	LR	0.02	11.4	B	LR	0.02	11.4	B
P5 [6]	**Parking Garage 5 driveway, via Peninsula Way**																
	Eastbound	LT	0.01	7.2	A	LT	0.07	7.4	A	LT	0.02	7.3	A	LT	0.02	7.3	A
	Southbound	LR	0.07	8.6	A	LR	0.04	8.5	A	LR	0.03	8.4	A	LR	0.03	8.4	A
P6 [4]	**Parking Lot 6 driveway, via Beach Channel Drive**																
	Westbound	LT	0.00	8.4	A	LT	0.02	11.1	B	LT	0.01	8.4	A	LT	0.01	8.4	A
	Northbound	LR	0.01	13.1	B	LR	0.16	34.2	D	LR	0.02	12.8	B	LR	0.02	12.8	B
P7 [4]	**Parking Garage 7 driveway, via Beach 52nd Street**																
	Westbound																
	Southbound																
P8 [4]	**Parking Garage 8 driveway, via Peninsula Way**																
	Westbound																
	Northbound																

Notes: L = Left Turn, T = Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recorded during this peak hour.

1. Signalized intersection with stop-controlled approach(es).
2. The northbound through movement was signalized in the Existing Conditions.
3. Intersection created due to project development.
4. Intersection under construction/not built during Q3 2027.
5. Due to complex geometry and per NYCDOT request, LOS results were calculated using Synchro 10.
6. Driveway to parking garage/parking lot created due to project development.

Transit

Table 18-13: Q3 2027 No-Action Condition – Bus Line-Haul summarizes the bus line-haul during the Q3 2027 No-Action condition, including the number of buses during the peak hour, the peak hour passengers, average passengers per bus, total capacity, and available capacity for the Q22 and the Q52-SBS bus routes.

As shown in **Table 18-13**, the Q22 and Q52-SBS buses would operate below capacity except where noted below:

- The Q52-SBS bus in the southbound direction during the Weekday PM peak hour

Table 18-13: Q3 2027 No-Action Condition – Bus Line-Haul

Route	Peak Direction	Maximum Load Point	Peak Hour Buses [1]	Peak Hour Passengers [2]	Average Passengers Per Bus	Total Capacity Per Bus [3]	Available Capacity Per Bus
Weekday AM							
Q22	EB	Beach Channel Dr and Beach 35th St	7	196	28	54	26
Q22	WB	Rockaway Beach Blvd and Beach 91st St	5	247	49	54	5
Q52-SBS	NB	Woodhaven Blvd and Atlantic Ave	2	168	84	85	1
Q52-SBS	SB	Woodhaven Blvd and Jamaica Ave	4	90	23	85	62
Weekday PM							
Q22	EB	Seagirt Blvd and Crest Rd	6	269	45	54	9
Q22	WB	Beach Channel Dr and Beach 36th St	7	340	49	54	5
Q52-SBS	NB	Woodhaven Blvd and Myrtle Ave	4	175	44	85	41
Q52-SBS	SB	Woodhaven Blvd and Metropolitan Ave	4	346	86	85	-1

Notes:
(1) NYCT provided updated peak hour bus numbers for the future condition.
(2) Bus volumes associated with general background growth were distributed proportionally based on existing ridership.
(3) Available capacity based on a maximum of 54 passengers per bus (40-foot standard bus) for Q22 buses and 85 passengers per bus (60-foot articulated bus) for Q52-SBS buses.

Pedestrian

As shown in **Table 18-14: Q3 2027 No-Action Condition – Sidewalks**, the majority of sidewalk locations would operate at LOS C or better for both non-platoon and platoon conditions during the Q3 2027 No-Action condition with the exception of the following three locations:

- Platoon Conditions
  - The north sidewalk on the east leg of Beach 54th Street and Arverne Boulevard would operate at LOS D during the Saturday PM peak hour.
  - The south sidewalk on the west leg Beach Channel Drive and Beach 53rd Street would operate at LOS D during the Weekday PM peak hour.
  - The west sidewalk on the north leg of Rockaway Freeway and Beach 44th Street would operate at LOS D during the PM peak hour.

Table 18-14: Q3 2027 No-Action Condition – Sidewalks

Location	Total Width (ft) [1]	Obstruction Width (ft)	Effective Width (ft)	Available Circulation Space (ft^2/p)				Non-Platoon Conditions LOS				Platoon Conditions LOS			
				Weekday		Saturday		Weekday		Saturday		Weekday		Saturday	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Beach 59th St and Arverne Blvd (E leg, N sidewalk)	5.8	3.0	2.8	121	60	127	62	A	A	A	A	B	C	B	C
Beach 59th St and Rockaway Fwy (W leg, N sidewalk)	8.0	3.0	5.0	148	93	225	111	A	A	A	A	B	B	B	B
Beach 54th St and Beach Channel Dr (W leg, N sidewalk)	7.0	3.0	4.0	187	128	178	88	A	A	A	A	B	B	B	C
Beach 54th St and Arverne Blvd (E leg, N sidewalk)	8.0	3.0	5.0	121	63	75	36	A	A	A	C	B	C	C	D
Beach 54th St and Arverne Blvd (W leg, N sidewalk)	10.0	3.0	7.0	169	82	143	70	A	A	A	A	B	C	B	C
Beach 53rd St and Beach Channel Dr (E leg, S sidewalk) [2]	18.3	3.0	15.3	605	281	365	180	A	A	A	A	A	B	B	B
Beach 53rd St and Beach Channel Dr (W leg, S sidewalk)	10.0	3.0	7.0	88	52	61	29	A	B	A	C	C	C	C	D
Beach 53rd St and Rockaway Beach Blvd (N leg, E sidewalk) [2]	6.5	3.5	3.0	65	48	118	58	A	B	A	B	C	C	B	C
Beach 53rd St and Rockaway Beach Blvd (E leg, N sidewalk) [2]	9.0	3.5	5.5	170	115	210	103	A	A	A	A	B	B	B	B
Beach 50th St and Rockaway Beach Blvd (E leg, S sidewalk)	7.0	3.0	4.0	165	64	107	53	A	A	A	B	B	C	B	C
Beach 47th St and Rockaway Beach Blvd (E leg, S sidewalk)	7.8	3.0	4.8	163	62	217	107	A	A	A	A	B	C	B	B
Beach 44th St and Rockaway Fwy (N leg, W sidewalk)	5.5	3.0	2.5	134	35	140	69	A	C	A	A	B	D	B	C
Beach 44th St and Rockaway Fwy (W leg, N sidewalk)	14.3	3.0	11.3	375	91	500	247	A	A	A	A	B	B	B	B
Beach 56th St and Arverne Blvd (W leg, N sidewalk)	10.0	3.0	7.0	94	118	204	101	A	A	A	A	B	B	B	B
Beach 57th St and Arverne Blvd (E leg, N sidewalk)	10.0	3.0	7.0	237	182	371	183	A	A	A	A	B	B	B	B
Beach 52nd St and Beach Channel Dr (E leg, S sidewalk) [2]	10.5	5.5	5.0	338	152	193	95	A	A	A	A	B	B	B	B
Beach 53rd St and Peninsula Way (N leg, E sidewalk) [2]	6.0	3.5	2.5	121	78	181	89	A	A	A	A	B	C	B	C
Beach 52nd St and Peninsula Way (N leg, W sidewalk) [2]	6.5	3.5	3.0	275	96	180	89	A	A	A	A	B	B	B	C
Beach 52nd St and Peninsula Way (W leg, N sidewalk) [2]	6.5	3.5	3.0	270	116	238	117	A	A	A	A	B	B	B	B
Beach 52nd St and Peninsula Way (N leg, E sidewalk) [2]	6.0	3.5	2.5	160	63	125	61	A	A	A	A	B	C	B	C
Beach 52nd St and Peninsula Way (E leg, N sidewalk) [2]	5.0	3.5	1.5	476	134	232	114	A	A	A	A	B	B	B	B
Beach 52nd St and Peninsula Way (S leg, E sidewalk) [2]	8.0	3.5	4.5	898	245	416	205	A	A	A	A	A	B	B	B
Beach 52nd St and Peninsula Way (E leg, S sidewalk) [2]	14.5	3.5	11.0	1215	457	823	406	A	A	A	A	A	B	A	B
Beach 52nd St and Peninsula Way (S leg, W sidewalk) [2]	8.5	3.5	5.0	553	195	371	183	A	A	A	A	A	B	B	B
Beach 52nd St and Peninsula Way (W leg, S sidewalk) [2]	5.0	3.5	1.5	264	92	178	87	A	A	A	A	B	B	B	C
Beach 52nd St and Rockaway Beach Blvd (E leg, N sidewalk) [2]	10.0	3.5	6.5	184	67	142	70	A	A	A	A	B	C	B	C
Beach 51st St and Rockaway Beach Blvd (N leg, E sidewalk) [2]	25.0	3.0	22.0	2861	968	1688	832	A	A	A	A	A	A	A	A
Beach 51st St and Rockaway Beach Blvd (E leg, S sidewalk) [2]	21.0	3.0	18.0	1352	541	219	108	A	A	A	A	A	A	B	B

Notes:
(1) The total width was measured at the narrowest point along the sidewalk.
(2) The total width was measured from the site plan at narrowest point along the sidewalk.

As shown in **Table 18-15: Q3 2027 No-Action Condition – Signalized Crosswalks**, all signalized crosswalk locations would operate at LOS C or better during the Q3 2027 No-Action condition with the exception of the south crosswalk at Beach 54th Street and Beach Channel Drive, which would operate at LOS D during the Weekday PM peak hour. As shown in **Table 18-16: Q3 2027 No-Action Condition – Unsignalized Crosswalks**, all unsignalized crosswalks are projected to operate at LOS C or better during the Q3 2027 No-Action condition during all peak hours.

Table 18-15: Q3 2027 No-Action Condition – Signalized Crosswalks

Location	Length (ft)	Width (ft)	Available Circulation Space (ft^2/p)				Crosswalk Circulation LOS			
			Weekday		Saturday		Weekday		Saturday	
			AM	PM	AM	PM	AM	PM	AM	PM
Beach 54th St and Beach Channel Dr (S leg)	33.8	14.5	84	23	62	29	A	D	A	C
Beach 54th St and Arverne Blvd (N leg)	40.0	12.2	91	26	71	33	A	C	A	C

Table 18-16: Q3 2027 No-Action Condition – Unsignalized Crosswalks

Location	Length (ft)	Width (ft)	Average Pedestrian Delay (s)				Crosswalk Circulation LOS			
			Weekday		Saturday		Weekday		Saturday	
			AM	PM	AM	PM	AM	PM	AM	PM
Beach 53rd St and Beach Channel Dr (S leg)	30.0	10.0	1.4	2.2	1.1	2.4	A	A	A	A
Beach 53rd St and Rockaway Beach Blvd (N leg) [1]	35.0	10.0	2.6	3.3	1.8	4.0	A	A	A	A
Beach 47th St and Rockaway Beach Blvd (S leg)	30.0	11.3	0.2	0.6	0.4	0.8	A	A	A	A
Beach 56th St and Arverne Blvd (N leg) [2]	40.6	12.7	0.6	0.4	0.9	0.9	A	A	A	A
Beach 57th St and Arverne Blvd (N leg) [2]	42.0	13.6	1.6	1.2	2.5	2.5	A	A	A	A
Beach 52nd St and Beach Channel Dr (S leg) [3]	23.0	10.0	0.4	0.3	0.2	0.5	A	A	A	A
Beach 53rd St and Peninsula Way (E leg) [3]	23.0	10.0	5.0	12.0	3.3	8.5	A	C	A	B
Beach 52nd St and Peninsula Way (N leg) [3]	23.0	10.0	0.1	0.6	0.2	0.5	A	A	A	A
Beach 52nd St and Peninsula Way (E leg) [3]	23.0	10.0	0.9	0.6	0.4	0.8	A	A	A	A
Beach 52nd St and Peninsula Way (S leg) [3]	23.0	10.0	0.1	0.6	0.2	0.5	A	A	A	A
Beach 52nd St and Peninsula Way (W leg) [3]	23.0	10.0	0.1	0.6	0.2	0.4	A	A	A	A
Beach 52nd St and Rockaway Beach Blvd (N leg) [3]	23.0	10.0	0.1	0.2	0.1	0.2	A	A	A	A
Beach 51st St and Rockaway Beach Blvd (E leg) [3]	23.0	10.0	2.4	4.3	1.6	3.6	A	A	A	A

Notes: The east crosswalk at Beach 52nd Street and Rockaway Beach Boulevard will be under construction during Q3 2017 and will not be analyzed in the No-Action condition.
(1) A width of 10 feet was assumed as the crosswalk is not marked.
(2) Spot counts were performed to capture conflicting vehicles, as traffic counts were not collected at this intersection.
(3) Crosswalk length and width measured from the site plan.

As shown in **Table 18-17: Q3 2027 No-Action Condition – Corners**, all corner reservoirs are projected to operate at LOS C or better during the Q3 2027 No-Action condition for all peak hours.

Table 18-17: Q3 2027 No-Action Condition – Corners

Location	Available Circulation Space (ft^2/p)				Corner Circulation LOS			
	Weekday		Saturday		Weekday		Saturday	
	AM	PM	AM	PM	AM	PM	AM	PM
Beach 59th St and Arverne Blvd (NE corner)	324	183	366	175	A	A	A	A
Beach 59th St and Arverne Blvd (SE corner)	86	51	110	52	A	B	A	B
Beach 59th St and Rockaway Fwy (NW corner)	180	142	391	189	A	A	A	A
Beach 54th St and Beach Channel Dr (NE corner)	1144	755	1247	609	A	A	A	A
Beach 54th St and Beach Channel Dr (SE corner)	344	133	275	129	A	A	A	A
Beach 54th St and Beach Channel Dr (SW corner)	672	217	576	276	A	A	A	A
Beach 54th St and Beach Channel Dr (NW corner)	219	117	268	127	A	A	A	A
Beach 54th St and Arverne Blvd (NE corner)	105	30	83	36	A	C	A	C
Beach 54th St and Arverne Blvd (NW corner)	330	92	219	102	A	A	A	A
Beach 53rd St and Beach Channel Dr (SE corner)	79	38	88	43	A	C	A	B
Beach 53rd St and Beach Channel Dr (SW corner)	126	58	144	71	A	B	A	A
Beach 51st St and Beach Channel Dr (SE corner)	266	149	370	176	A	A	A	A
Beach 47th St and Rockaway Beach Blvd (SW corner)	233	72	152	75	A	A	A	A
Beach 47th St and Rockaway Beach Blvd (SE corner)	166	53	112	55	A	B	A	B
Beach 44th St and Rockaway Beach Blvd (SW corner)	403	119	237	117	A	A	A	A
Beach 44th St and Rockaway Fwy (NW corner)	219	77	475	230	A	A	A	A
Beach 56th Pl and Arverne Blvd (NW corner)	318	92	354	164	A	A	A	A
Beach 56th Pl and Arverne Blvd (NE corner)	271	88	347	161	A	A	A	A
Beach 56th Pl and Arverne Blvd (SW corner) [(1)]	405	111	262	120	A	A	A	A
Beach 56th Pl and Arverne Blvd (SE corner) [(1)]	298	100	231	106	A	A	A	A
Beach 56th St and Arverne Blvd (NW corner)	364	168	428	210	A	A	A	A
Beach 56th St and Arverne Blvd (NE corner)	496	177	461	227	A	A	A	A
Beach 56th Pl and Rockaway Fwy (NW corner) [(1)]	684	184	645	315	A	A	A	A
Beach 56th Pl and Rockaway Fwy (NE corner) [(1)]	1120	597	1869	913	A	A	A	A
Beach 57th St and Arverne Blvd (NW corner)	521	223	419	207	A	A	A	A
Beach 57th St and Arverne Blvd (NE corner)	408	183	352	173	A	A	A	A
Beach 52nd St and Beach Channel Dr (SE corner)	1690	623	1197	590	A	A	A	A
Beach 52nd St and Beach Channel Dr (SW corner)	3036	1086	2110	1040	A	A	A	A
Beach 53rd St and Peninsula Way (NE corner)	375	241	536	264	A	A	A	A
Beach 53rd St and Peninsula Way (SE corner)	368	230	514	253	A	A	A	A
Beach 50th St and Peninsula Way (NW corner)	45087	36238	73038	36022	A	A	A	A
Beach 52nd St and Rockaway Beach Blvd (NW corner)	483	162	295	145	A	A	A	A

Notes: Unsignalized corners at two-way stop-controlled intersections with uncontrolled crosswalks across the major street cannot be analyzed. Therefore, the northeast and northwest corners at Beach 53rd Street and Rockaway Boulevard, the southwest corner at Beach 50th Street and Rockaway Beach Boulevard, northeast, northwest, southeast, and southwest corners at Beach 52nd Street and Peninsula Way and the northeast and northwest corners at Beach 52nd Street and Rockaway Beach Boulevard were not included in this table.
(1) Median element that was analyzed at two adjacent corners.

Parking

All No-Action projects within a 0.25-mile radius of the Project Site that would be built by Q3 2027 are assumed to provide on-site parking to meet their respective parking demands, with the exception of Edgemere Site 1 (local retail land use), Edgemere Site 7 (local retail land use), the Ocean View EIS, and Beach Green Dunes. Therefore, the projected peak hour parking demands for these three projects were included as additional demands for on-street parking spaces. The parking demand generated by the Proposed Project as of Q3 2027 is expected to be accommodated by the provided parking lots and parking garages, with the exception of the Weekday Overnight peak demand, which would be partially accommodated on-street.

Table 18-18: Q3 2027 No-Action Condition On-Street Parking Utilization Summary presents the expected on-street parking utilization in the No-Action construction period during operational peak periods. The results indicate that within 0.25-mile radius of the Project Site, on-street parking utilization is expected to increase to 69%, 60%, 59%, and 57% during the Weekday AM, Weekday MD, Weekday PM, and Weekday Overnight operational peak periods, respectively. The on-street parking utilization is expected to increase to 56% for the Saturday MD operational peak period.

Table 18-18: Q3 2027 No-Action Condition On-Street Parking Utilization Summary

Q3 2027 No-Action	Weekday AM	Weekday MD	Weekday PM	Weekday Overnight	Saturday MD
Capacity					
Existing Capacity	1,622	1,622	1,668	1,668	1,668
Net Change in No-Action On-Street Parking Supply [1]	60	60	60	60	60
Total No-Action On-Street Capacity	1,682	1,682	1,728	1,728	1,728
Demand					
2016 Existing Demand	1,098	926	957	919	875
Background Growth Increment [2]	45	38	39	37	36
Demand generated by the portion of the Project Site completed by Q3 2027 [3]	0	0	0	29	0
No-Action On-Street Parking Demand Generated by No-Action Projects [4]	12	41	21	6	51
Total No-Action On-Street Demand	1,154	1,004	1,017	991	961
Utilization					
Available Spaces	528	678	711	737	767
No-Action Utilization	**69%**	**60%**	**59%**	**57%**	**56%**

Notes:
1. Reflects the on-street parking at the Project Site that would be built by and available for use during Q3 2027.
2. Reflects annual background growth rates of 0.50 percent for the first five years (2016-2021) and 0.25 percent for the years beyond (2021-2027) (*CEQR Technical Manual* , Table 16-4).
3. Most of the demand generated by the portion of the Project Site that would be completed by Q3 2027 would be accommodated on-site.
4. Considers only on-street parking demand that would not be accommodated on-site.

Peak Construction Period Analysis

Peak construction-related vehicle and pedestrian trips associated with the Proposed Project (generated by construction activities during Q3 2027) were added to the No-Action volumes to generate the construction peak hour volumes for the Weekday AM, Weekday PM, Saturday AM, and Saturday PM peak hours. Mitigation measures will be identified to alleviate these transportation-related construction impacts.

Traffic

Figure 18-11 through **Figure 18-14** show the traffic volumes for the Weekday AM, Weekday PM, Saturday AM, and Saturday PM peak hour construction volumes for Q3 2027. **Table 18-21: Q3 2027 No-Action vs. Peak Construction Period Condition Level of Service Analysis – Signalized Intersections** presents a comparison of No-Action and peak construction period conditions for the signalized study intersections and **Table 18-22: Q3 2027 No-Action vs. Peak Construction Period Condition Level of Service Analysis – Unsignalized Intersections** presents a comparison of No-Action and peak construction period conditions for the unsignalized study intersections. Based on the significance criteria described in the *CEQR Technical Manual*, the significantly impacted lane groups are summarized in **Table 18-19: Significantly Impacted Lane Groups at Signalized Intersections** for the signalized intersections and **Table 18-20: Significantly Impacted Lane Groups at Unsignalized Intersections** for the unsignalized intersections.

Table 18-19: Significantly Impacted Lane Groups at Signalized Intersections

#	Intersection	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday AM Peak Hour	Saturday PM Peak Hour
1	Beach Channel Drive & Beach 116th Street		WB-TR		
15	Beach Channel Drive & Beach 62nd Street		WB (Arverne Boulevard)-L		WB (Arverne Boulevard)-LR
16	Rockaway Beach Boulevard & Beach 62nd Street		WB-LTR		
19	Arverne Boulevard & Beach 59th Street		WB-LT		
21	Rockaway Beach Boulevard & Beach 59th Street		WB-LT		WB-LT
23	Arverne Boulevard & Beach 54th Street		WB-LTR		WB-LTR
25	Edgemere Avenue & Beach 54th Street		SB-LTR		SB-LTR
46	Beach Channel Drive & Mott Avenue		NB-TR		NB-TR
47	Beach Channel Drive & Dix Avenue		NB-LTR		NB-LTR
50	Beach Channel Drive & Hassock Street		NB-LT		NB-LT
	Total Number of Impacted Lane Groups:	**0**	**10**	**0**	**7**
	Total Number of Impacted Intersections:	**0**	**10**	**0**	**7**

Table 18-20: Significantly Impacted Lane Groups at Unsignalized Intersections

#	Intersection	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday AM Peak Hour	Saturday PM Peak Hour
26	Beach Channel Drive & Beach 53rd Street		NB-LR		NB-LR
27	Rockaway Beach Boulevard & Beach 53rd Street		SB-LR		SB-LR
	Total Number of Impacted Lane Groups:	**0**	**2**	**0**	**2**
	Total Number of Impacted Intersections:	**0**	**2**	**0**	**2**

Significantly impacted lane groups are denoted with a "**+**" sign in **Table 18-21** and **Table 18-22** and are summarized below:

Level of Service – Signalized Intersections

Traffic Impacts

Beach Channel Drive and Beach 116th Street

- During the **Weekday PM Peak Hour**, the westbound through/right-turn lane group would deteriorate within LOS F from an average delay of 217.6 seconds and a v/c ratio of 1.41 to an average delay of 221.4 seconds and a v/c ratio of 1.42.

Beach Channel Drive/Arverne Boulevard and Beach 62nd Street

- During the **Weekday PM Peak Hour**, the westbound (Arverne Boulevard) left-turn lane group would deteriorate from LOS E with an average delay of 75.1 seconds and a v/c ratio of 0.98 to LOS F with an average delay of 82.8 seconds and a v/c ratio of 1.01.
- During the **Saturday PM Peak Hour**, the westbound (Arverne Boulevard) left-turn/right-turn lane group would deteriorate from LOS E with an average delay of 77.6 seconds and a v/c ratio of 0.99 to LOS F with an average delay of 85.6 seconds and a v/c ratio of 1.02.

Rockaway Beach Boulevard and Beach 62nd Street

- During the **Weekday PM Peak Hour**, the westbound left-through-right lane group would deteriorate within LOS F from an average delay of 356.9 seconds and a v/c ratio of 1.71 to an average delay of 381.3 seconds and a v/c ratio of 1.76.

Arverne Boulevard and Beach 59th Street

- During the **Weekday PM Peak Hour**, the westbound left-turn/through lane group would deteriorate from LOS E with an average delay of 71.7 seconds and a v/c ratio of 1.06 to LOS F with an average delay of 120.4 seconds and a v/c ratio of 1.19.

Rockaway Beach Boulevard and Beach 59th Street

- During the **Weekday PM Peak Hour**, the westbound left-turn/through lane group would deteriorate within LOS F from an average delay of 293.1 seconds and a v/c ratio of 1.56 to an average delay of 303.6 seconds and a v/c ratio of 1.59.
- During the **Saturday PM Peak Hour**, the westbound left-turn/through lane group would deteriorate within LOS E from an average delay of 68.3 seconds and a v/c ratio of 1.00 to an average delay of 73.0 seconds and a v/c ratio of 1.02.

Arverne Boulevard and Beach 54th Street

- During the **Weekday PM Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS E with an average delay of 65.1 seconds and a v/c ratio of 0.97 to LOS F with an average delay of 112.0 seconds and a v/c ratio of 1.13.
- During the **Saturday PM Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS D with an average delay of 42.0 seconds and a v/c ratio of 0.85 to LOS E with an average delay of 59.0 seconds and a v/c ratio of 0.95.

Edgemere Avenue and Beach 54th Street

- During the **Weekday PM Peak Hour**, the southbound left-through-right lane group would deteriorate within LOS F from an average delay of 158.7 seconds and a v/c ratio of 1.24 to an average delay of 181.8 seconds and a v/c ratio of 1.30.
- During the **Saturday PM Peak Hour**, the southbound left-through-right lane group would deteriorate within LOS F from an average delay of 91.9 seconds and a v/c ratio of 1.05 to an average delay of 103.9 seconds and a v/c ratio of 1.08.

Beach Channel Drive and Mott Avenue

- During the **Weekday PM Peak Hour**, the northbound through/right-turn lane group would deteriorate within LOS F from an average delay of 150.0 seconds and a v/c ratio of 1.23 to an average delay of 164.7 seconds and a v/c ratio of 1.27.
- During the **Saturday PM Peak Hour**, the northbound through/right-turn lane group would deteriorate within LOS F from an average delay of 121.5 seconds and a v/c ratio of 1.16 to an average delay of 134.4 seconds and a v/c ratio of 1.20.

Beach Channel Drive and Dix Avenue

- During the **Weekday PM Peak Hour**, the northbound left-through-right lane group would deteriorate within LOS E from an average delay of 65.2 seconds and a v/c ratio of 1.04 to an average delay of 73.9 seconds and a v/c ratio of 1.07.
- During the **Saturday PM Peak Hour**, the northbound left-through-right lane group would deteriorate from LOS D with an average delay of 53.3 seconds and a v/c ratio of 1.00 to LOS E with an average delay of 60.3 seconds and a v/c ratio of 1.03.

Beach Channel Drive and Hassock Avenue

- During the **Weekday PM Peak Hour**, the northbound left-turn/through lane group would deteriorate within LOS F from an average delay of 99.6 seconds and a v/c ratio of 1.13 to an average delay of 111.7 seconds and a v/c ratio of 1.16.
- During the **Saturday PM Peak Hour**, the northbound left-turn/through lane group would deteriorate within LOS F from an average delay of 140.5 seconds and a v/c ratio of 1.24 to an average delay of 153.7 seconds and a v/c ratio of 1.27.

Level of Service – Unsignalized Intersections

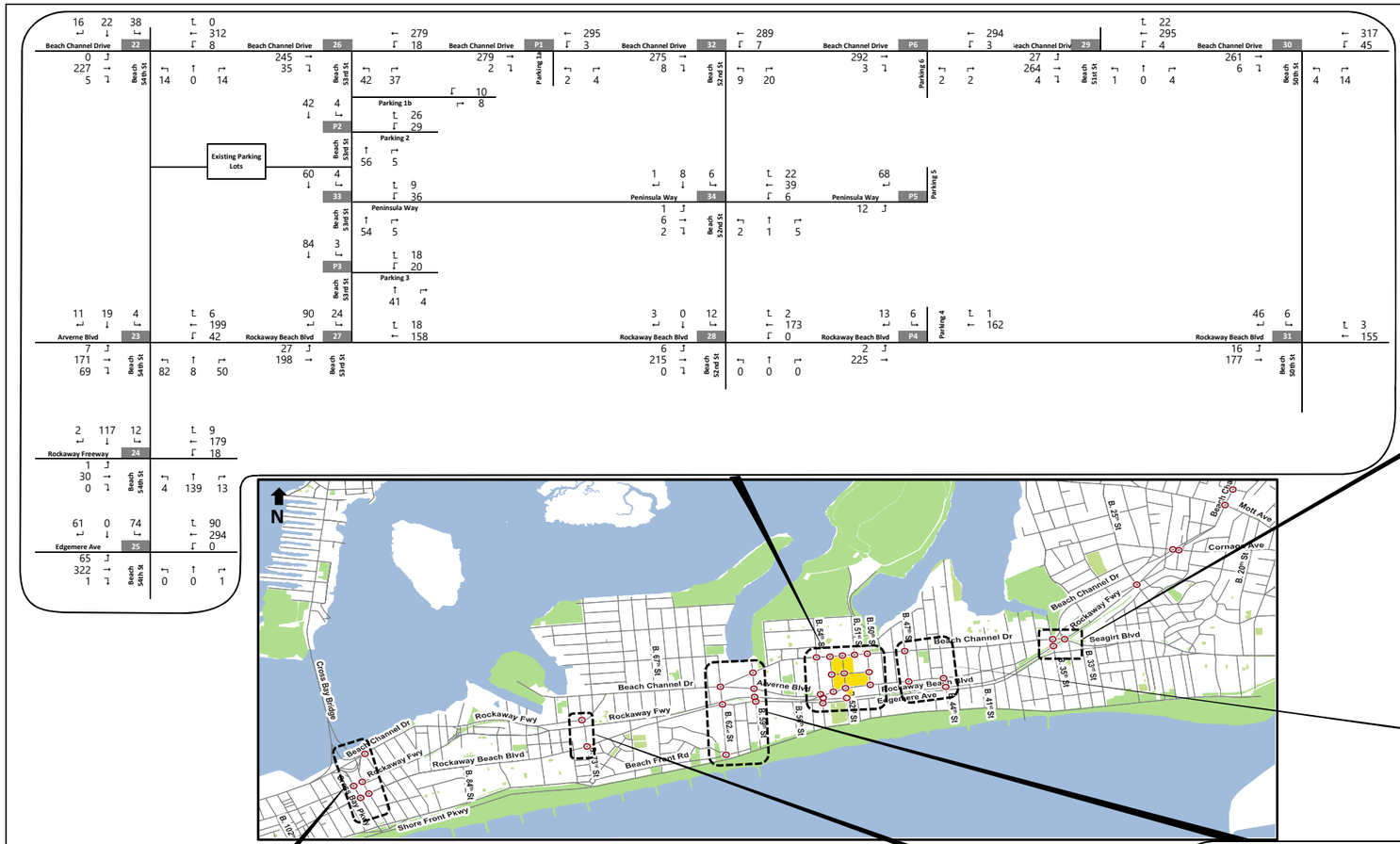
Traffic Impacts

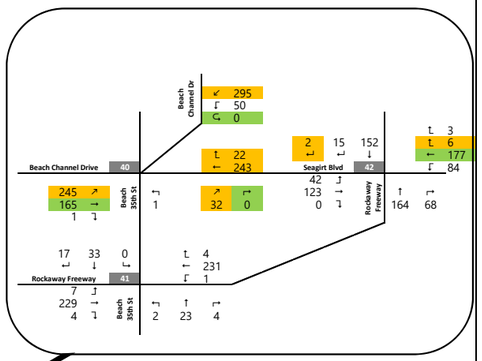
Beach Channel Drive and Beach 53rd Street

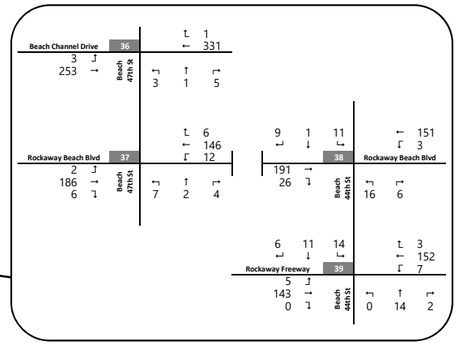
- During the **Weekday PM Peak Hour**, the northbound left-turn/right-turn lane group would deteriorate within LOS F from an average delay of 835.8 seconds and a v/c ratio of 2.48 to an average delay of 1015.0 seconds and a v/c ratio of 2.86.
- During the **Saturday PM Peak Hour**, the northbound left-turn/right-turn lane group would deteriorate within LOS F from an average delay of 248.9 seconds and a v/c ratio of 1.28 to an average delay of 328.2 seconds and a v/c ratio of 1.46.

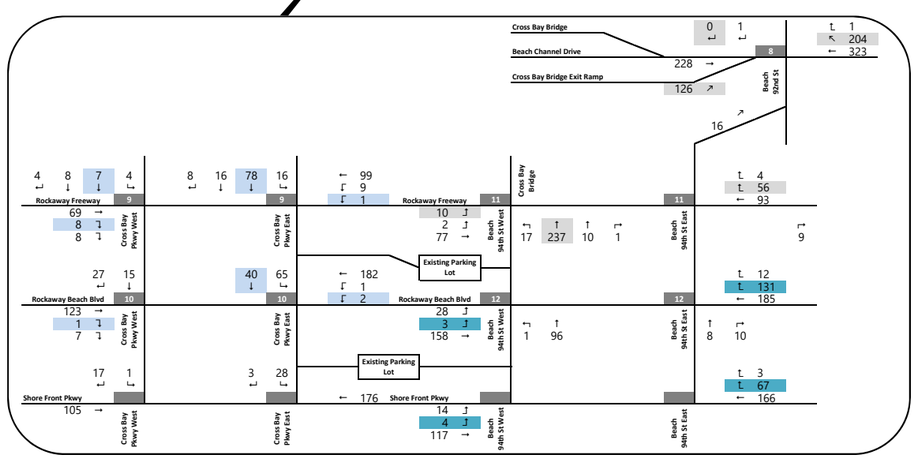
Rockaway Beach Boulevard and Beach 53rd Street

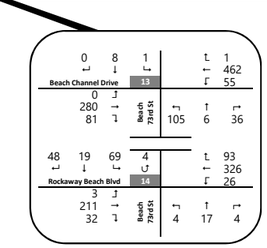
- During the **Weekday PM Peak Hour**, the southbound left-turn/right-turn lane group would deteriorate within LOS F from an average delay of 485.9 seconds and a v/c ratio of 1.80 to an average delay of 707.0 seconds and a v/c ratio of 2.25.
- During the **Saturday PM Peak Hour**, the southbound left-turn/right-turn lane group would deteriorate within LOS F from an average delay of 121.8 seconds and a v/c ratio of 1.00 to an average delay of 191.3 seconds and a v/c ratio of 1.18.



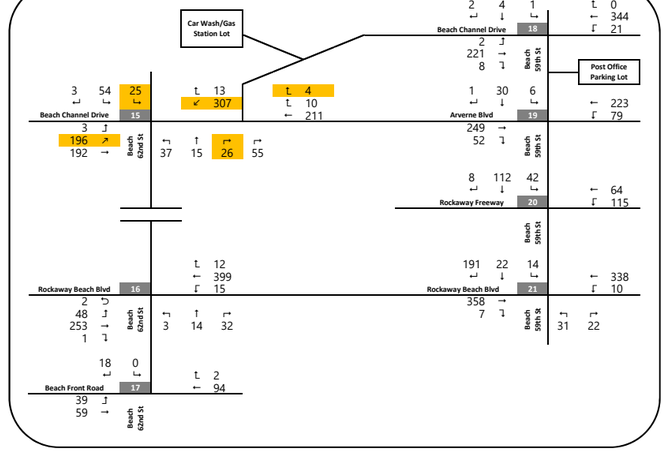








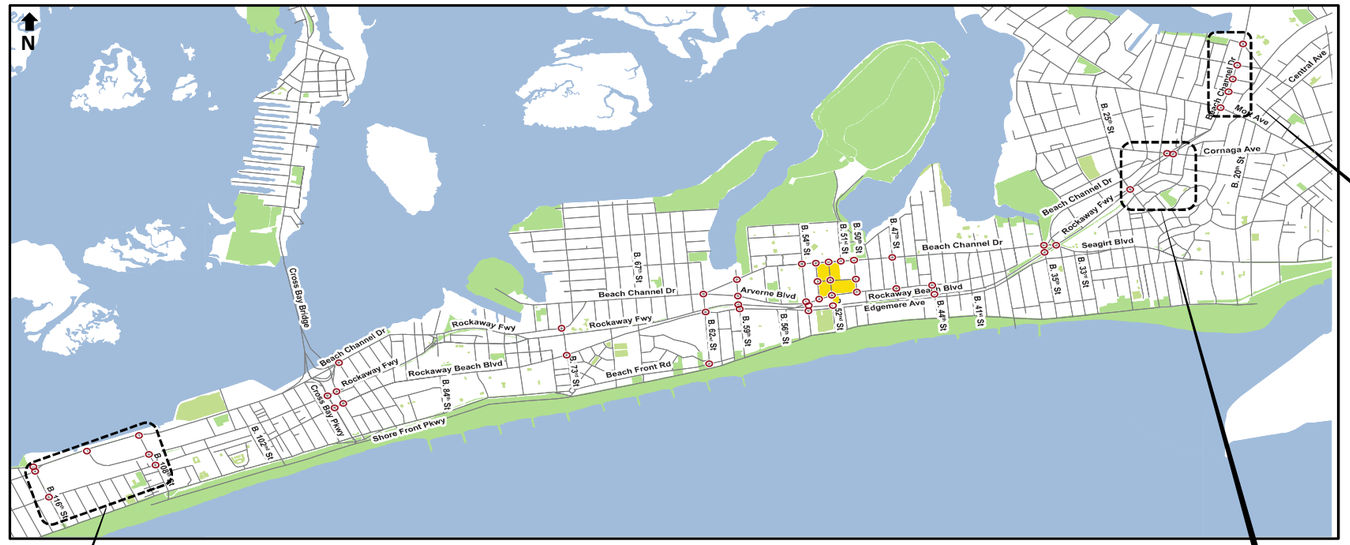
Legend
To Cross Bay Parkway East
To/From Beach Channel Drive
To/From Cross Bay Bridge
To/From Seagirt Blvd
To/From Beach 94th St West

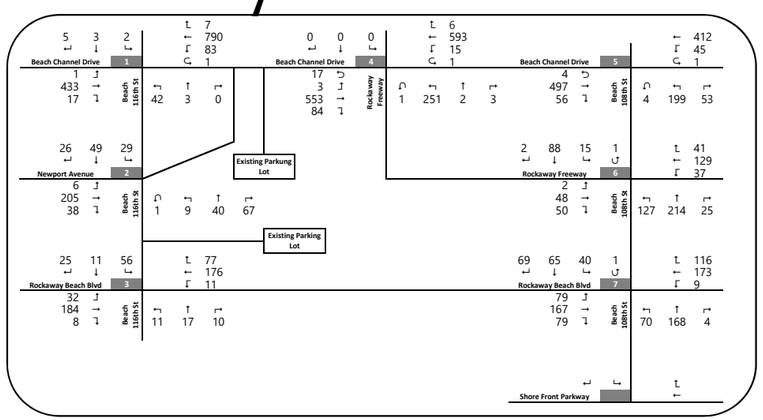


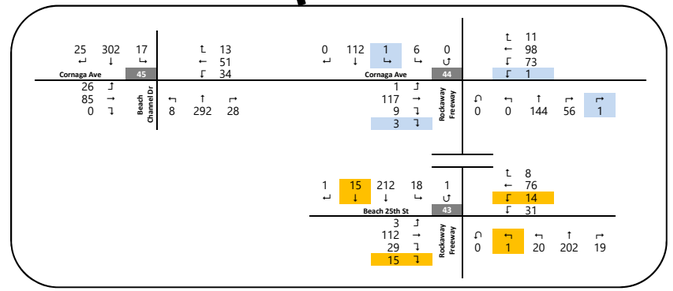
NOT TO SCALE

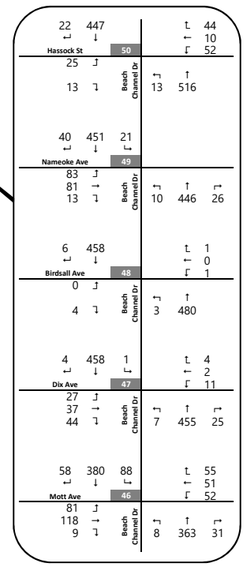
Peninsula Hospital Site Redevelopment

Q3 2027 Peak Construction Period Condition Traffic Volumes
Weekday AM Peak Hour
Figure 18-11A







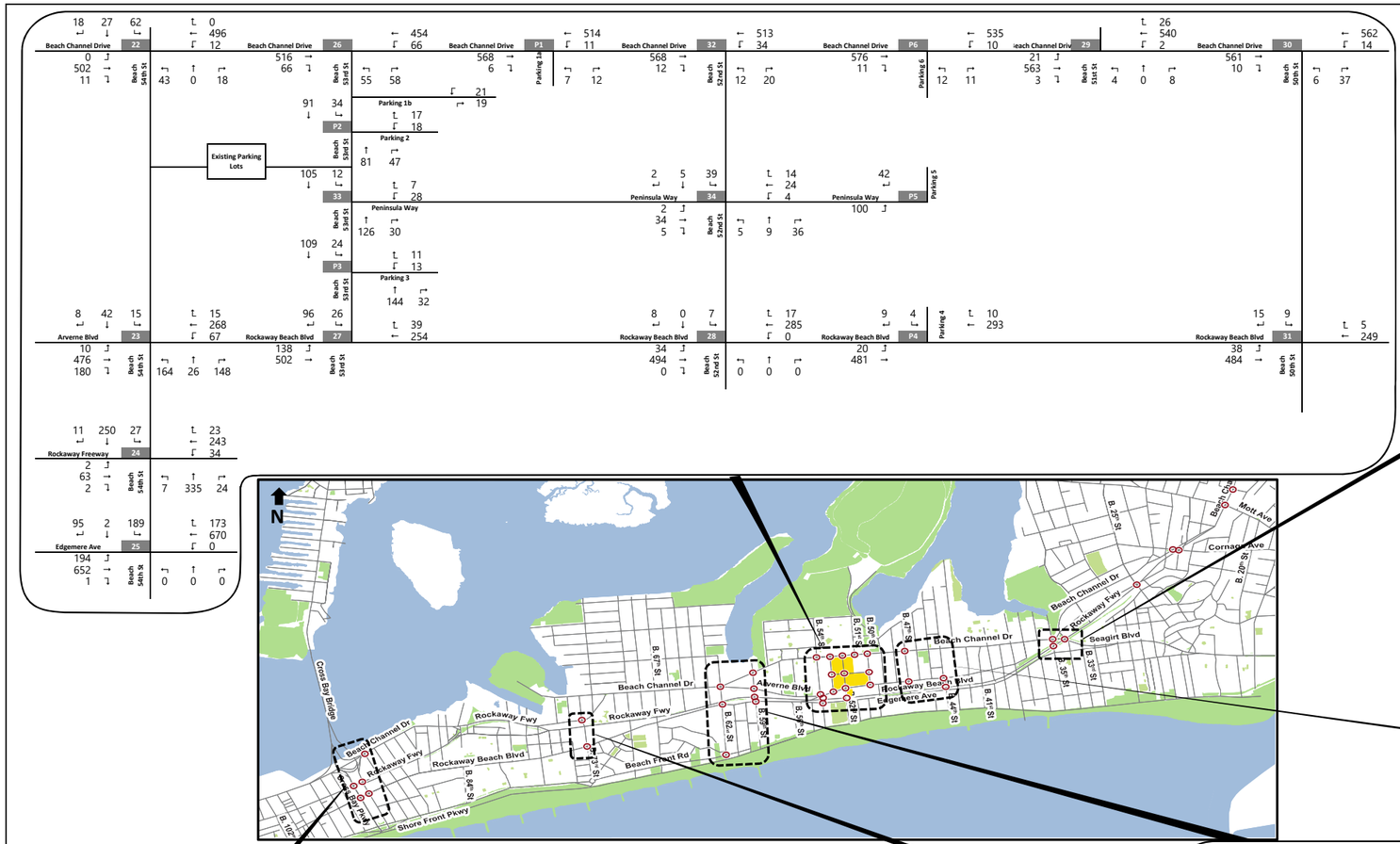


Legend
To Nasby Pl
To Far Rockaway Blvd

NOT TO SCALE

Peninsula Hospital EIS

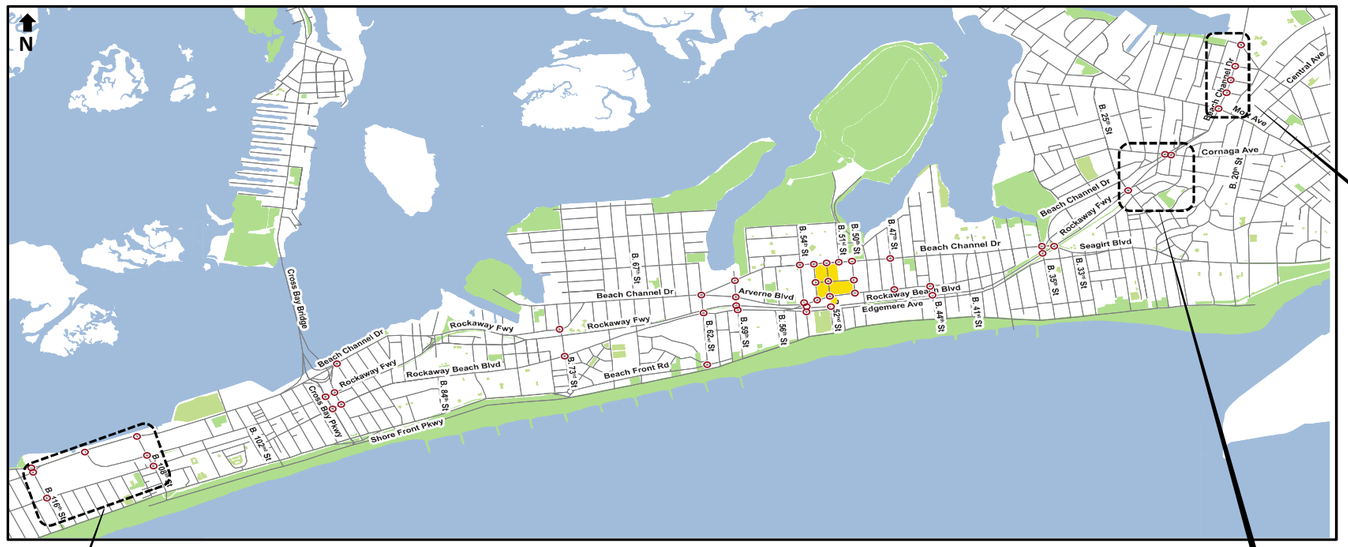
Q3 2027 Peak Construction Period Condition Traffic Volumes
Weekday AM Peak Hour
Figure 18-11B

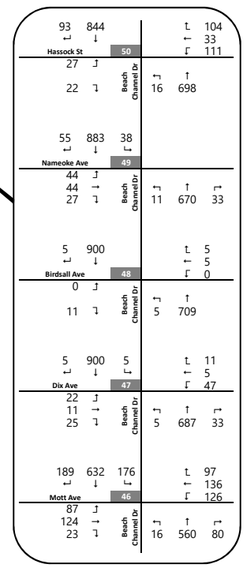


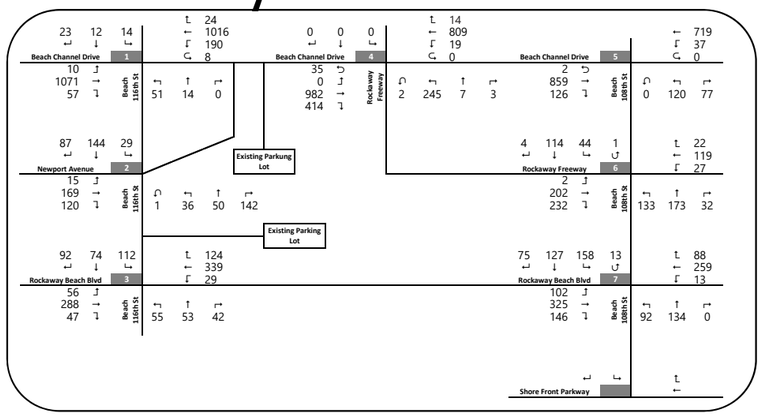
NOT TO SCALE

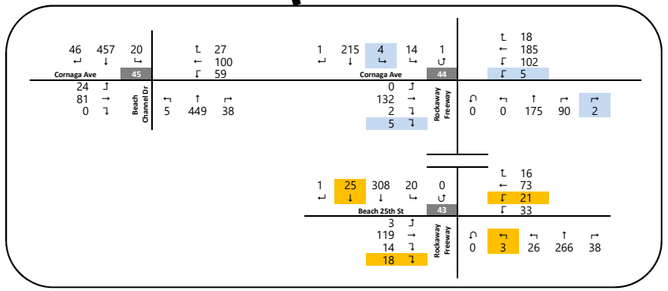
Peninsula Hospital Site Redevelopment

Q3 2027 Peak Construction Period Condition Traffic Volumes
Weekday PM Peak Hour
Figure 18-12A







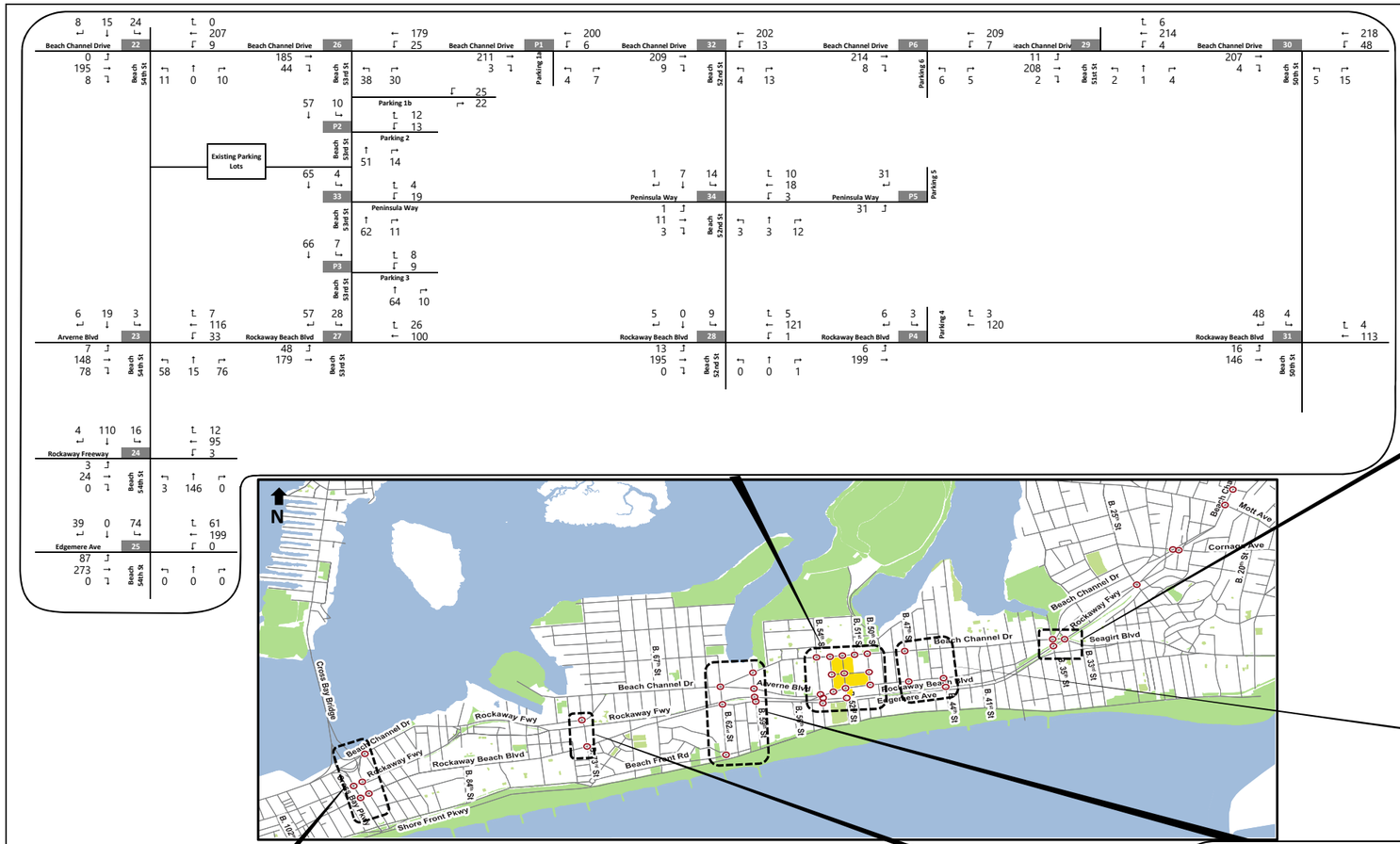


Legend
To Nasby Pl
To Far Rockaway Blvd

NOT TO SCALE

Peninsula Hospital EIS

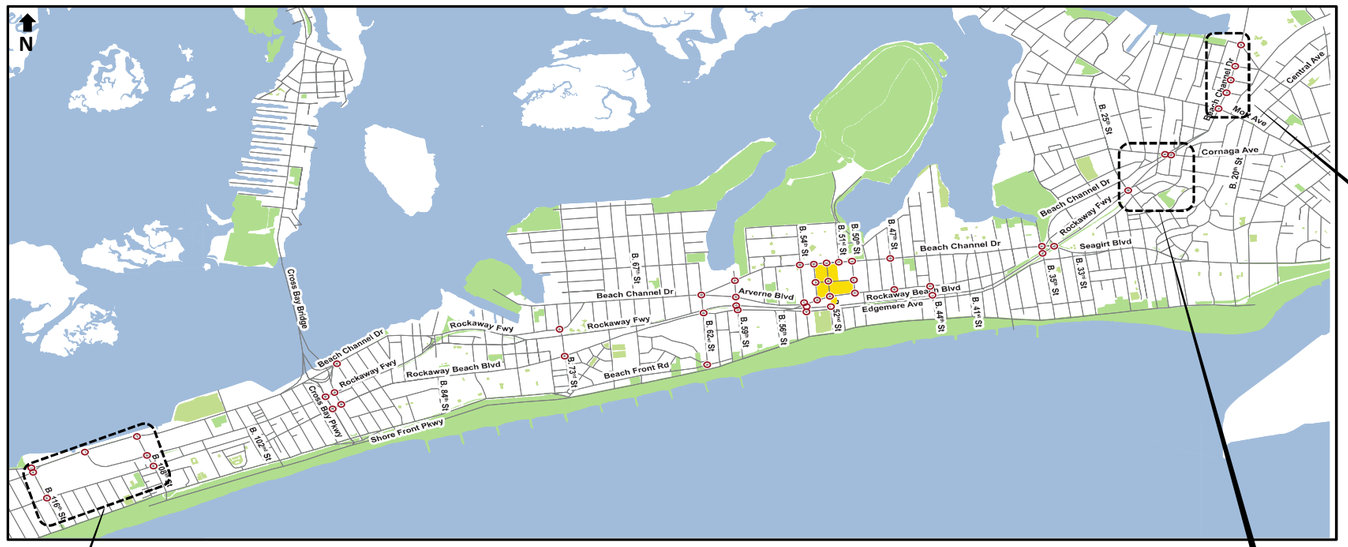
Q3 2027 Peak Construction Period Condition Traffic Volumes
Weekday PM Peak Hour
Figure 18-12B

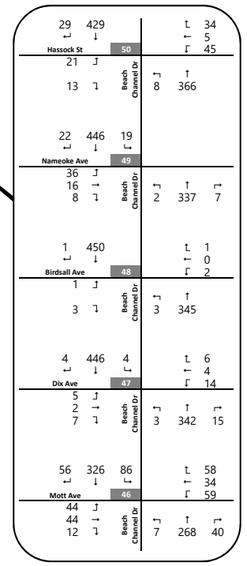


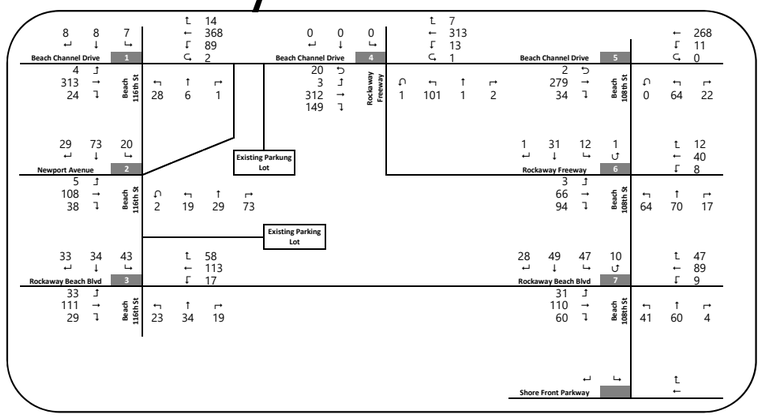
NOT TO SCALE

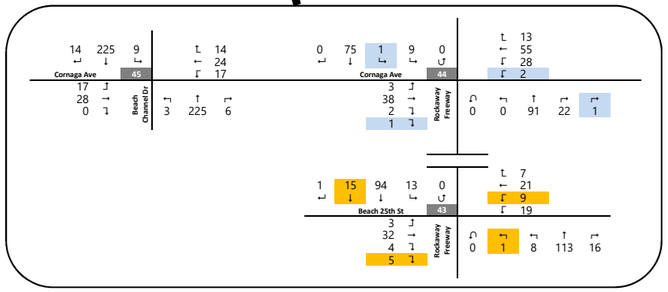
Peninsula Hospital Site Redevelopment

Q3 2027 Peak Construction Period Condition Traffic Volumes
Saturday AM Peak Hour
Figure 18-13A







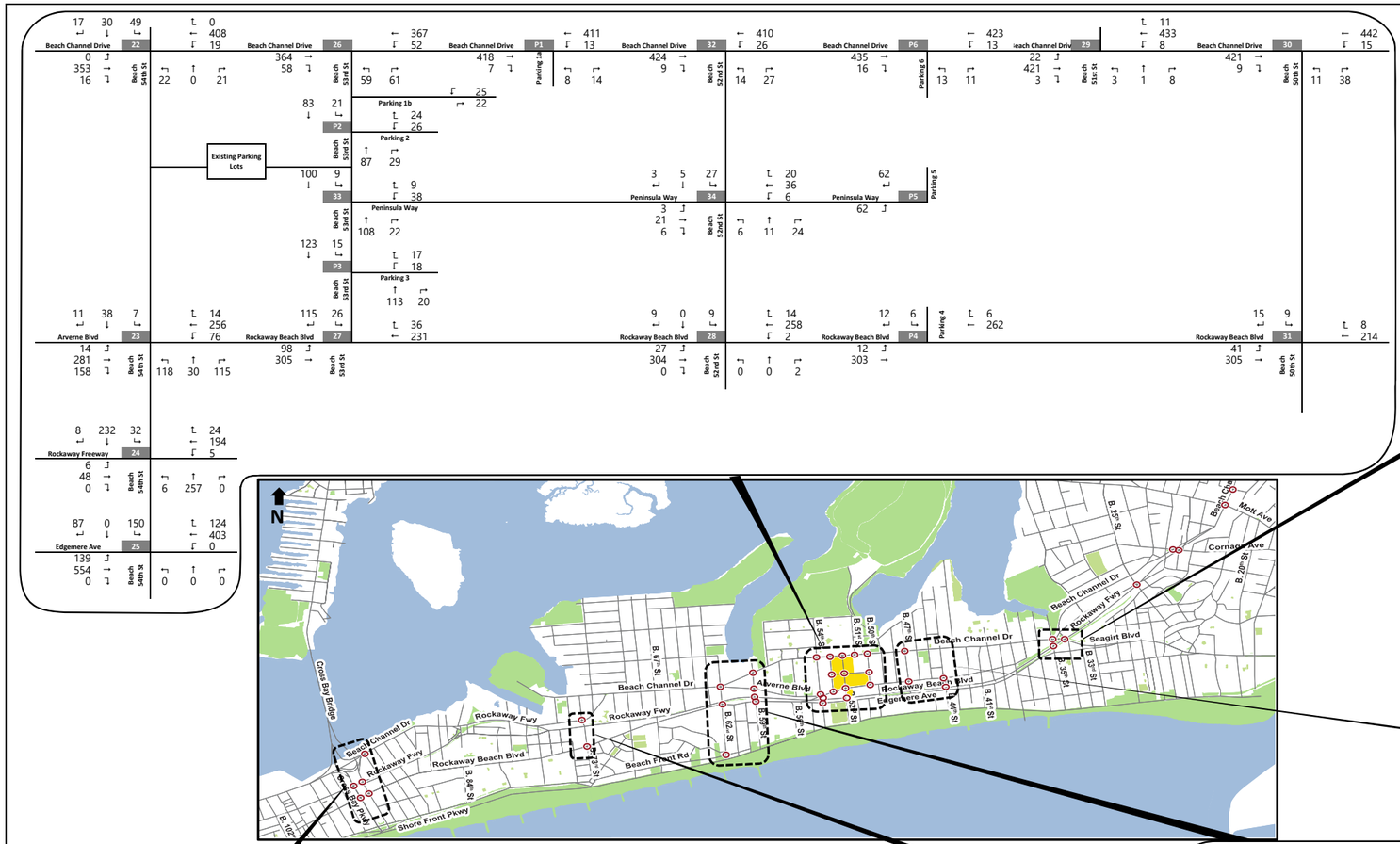


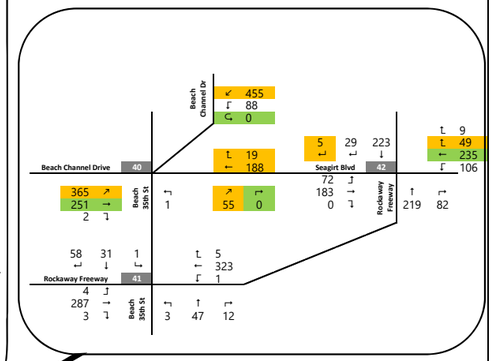
Legend
To Nasby Pl
To Far Rockaway Blvd

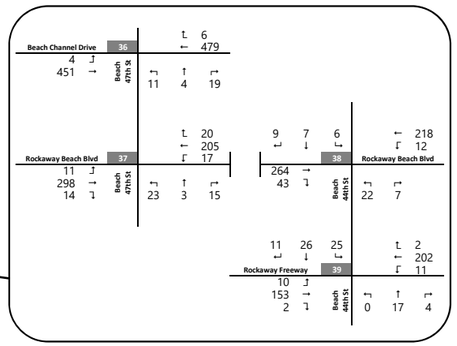
NOT TO SCALE

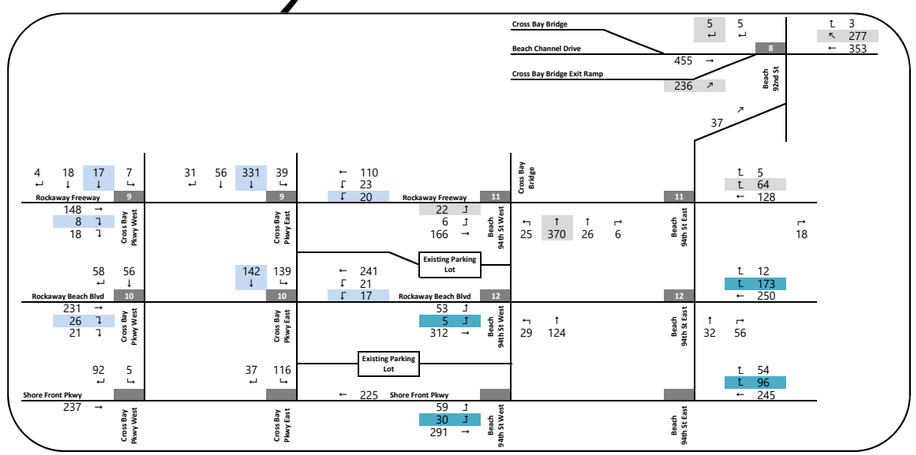
Peninsula Hospital EIS

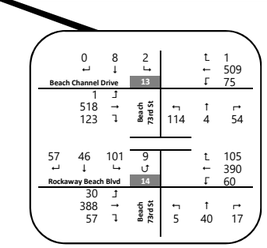
Q3 2027 Peak Construction Period Condition Traffic Volumes
Saturday AM Peak Hour
Figure 18-13B



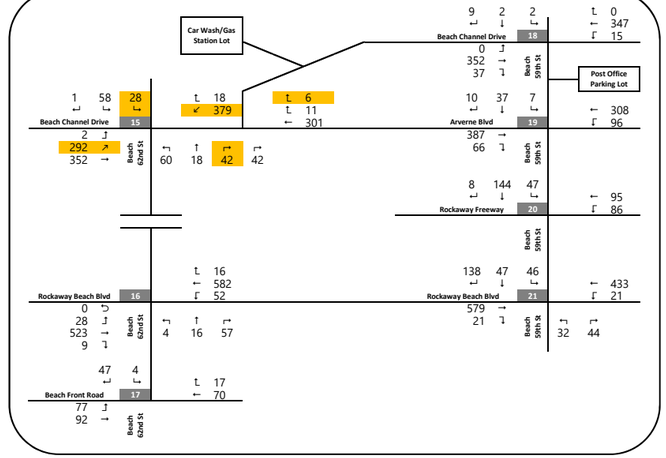








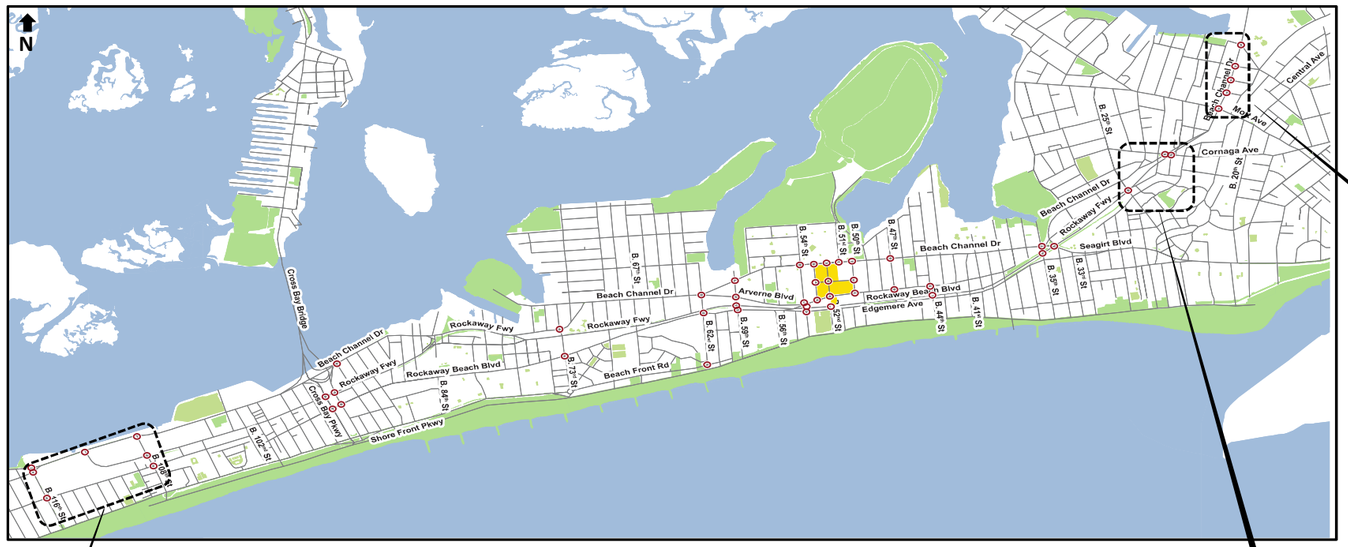
Legend
- To Cross Bay Parkway East
- To/From Beach Channel Drive
- To/From Cross Bay Bridge
- To/From Seagirt Blvd
- To/From Beach 94th St West

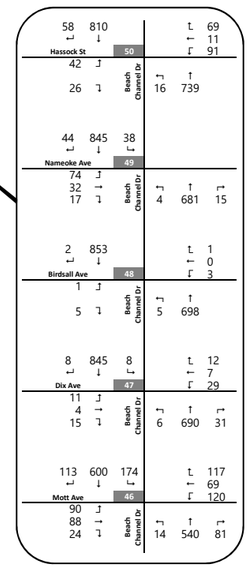


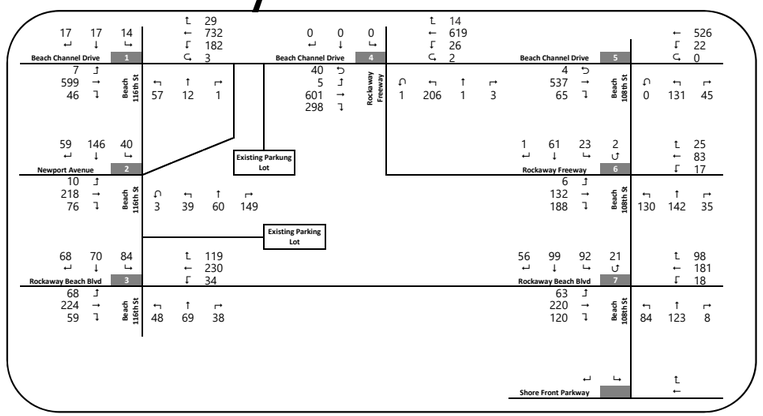
NOT TO SCALE

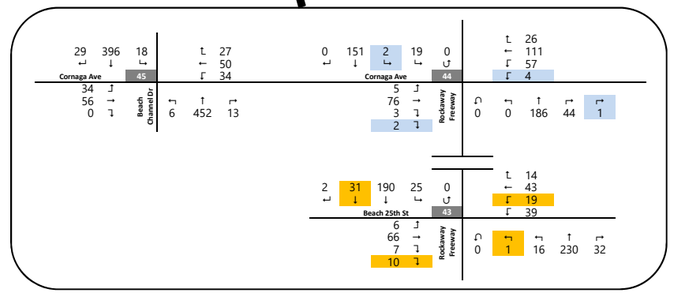
Peninsula Hospital Site Redevelopment

Q3 2027 Peak Construction Period Condition Traffic Volumes
Saturday PM Peak Hour
Figure 18-14A









Legend
To Nasby Pl
To Far Rockaway Blvd

NOT TO SCALE

Peninsula Hospital EIS

Q3 2027 Peak Construction Period Condition Traffic Volumes
Saturday PM Peak Hour
Figure 18-14B

Table 18-21: Q3 2027 No-Action vs. Peak Construction Period Condition Level of Service Analysis – Signalized Intersections

#	Intersection & Approach	Weekday AM Peak Hour								Weekday PM Peak Hour								Saturday AM Peak Hour								Saturday PM Peak Hour							
		Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction			
		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
1	**Beach Channel Drive and Beach 116th Street**																																
	Eastbound	LTR	0.41	25.6	C	LTR	0.42	25.8	C	LTR	0.96	51.5	D	LTR	0.96	51.5	D	LTR	0.29	23.8	C	LTR	0.30	24.0	C	LTR	0.59	29.0	C	LTR	0.59	29.0	C
	Westbound	LTR	0.77	25.2	C	LTR	0.78	25.7	C									LTR	0.38	15.7	B	LTR	0.39	15.9	B	LTR	0.91	36.7	D	LTR	0.92	37.6	D
										DefL	1.06	114.2	F	DefL	1.06	114.2	F															
										TR	1.41	217.6	F	TR	1.42	221.4	F	+														
	Northbound	LTR	0.20	43.9	D	LTR	0.20	43.9	D	LTR	0.25	44.5	D	LTR	0.25	44.6	D	LTR	0.12	42.4	D	LTR	0.12	42.4	D	LTR	0.23	44.1	D	LTR	0.24	44.2	D
	Southbound	LTR	0.06	45.0	D	LTR	0.06	45.0	D	LTR	0.25	48.3	D	LTR	0.25	48.3	D	LTR	0.12	45.9	D	LTR	0.12	45.9	D	LTR	0.24	48.1	D	LTR	0.24	48.1	D
		Intersection		26.2	C	Intersection		26.6	C	Intersection		126.6	F	Intersection		128.4	F	Intersection		21.0	C	Intersection		21.2	C	Intersection		34.4	C	Intersection		34.9	C
2	**Newport Avenue and Beach 116th Street**																																
	Eastbound	LTR	0.48	28.2	C	LTR	0.48	28.2	C	LTR	0.61	31.7	C	LTR	0.61	31.7	C	LTR	0.28	24.1	C	LTR	0.28	24.1	C	LTR	0.56	30.1	C	LTR	0.56	30.1	C
	Northbound	LT	0.22	44.3	D	LT	0.22	44.3	D	LT	0.42	49.4	D	LT	0.43	49.6	D	LT	0.22	44.3	D	LT	0.22	44.3	D	LT	0.50	51.6	D	LT	0.50	51.8	D
		R	0.20	31.1	C	R	0.20	31.1	C	R	0.40	34.9	C	R	0.40	34.9	C	R	0.21	31.0	C	R	0.21	31.1	C	R	0.43	35.7	D	R	0.43	35.7	D
	Southbound	LTR	0.16	16.8	B	LTR	0.16	16.8	B	LTR	0.39	20.0	C	LTR	0.39	20.1	C	LTR	0.16	16.7	B	LTR	0.17	16.8	B	LTR	0.37	19.7	B	LTR	0.37	19.7	B
		Intersection		27.8	C	Intersection		27.8	C	Intersection		30.3	C	Intersection		30.4	C	Intersection		25.8	C	Intersection		25.8	C	Intersection		30.8	C	Intersection		30.9	C
3	**Rockaway Beach Boulevard and Beach 116th Street**																																
	Eastbound	LTR	0.38	12.0	B	LTR	0.38	12.0	B	LTR	0.65	16.9	B	LTR	0.65	16.9	B	LTR	0.29	10.8	B	LTR	0.29	10.8	B	LTR	0.63	16.5	B	LTR	0.63	16.5	B
	Westbound	LTR	0.55	15.2	B	LTR	0.55	15.2	B	LTR	0.99	52.0	D	LTR	1.00	52.4	D	LTR	0.34	11.6	B	LTR	0.34	11.6	B	LTR	0.72	20.3	C	LTR	0.72	20.5	C
	Northbound	L	0.03	12.3	B	L	0.03	12.3	B	L	0.20	14.4	B	L	0.20	14.4	B	L	0.07	12.7	B	L	0.07	12.7	B	L	0.17	13.8	B	L	0.17	13.8	B
		TR	0.08	12.7	B	TR	0.08	12.7	B	TR	0.27	14.8	B	TR	0.27	14.8	B	TR	0.12	13.0	B	TR	0.12	13.0	B	TR	0.25	14.4	B	TR	0.25	14.4	B
	Southbound	L	0.19	14.1	B	L	0.19	14.1	B	L	0.40	17.9	B	L	0.40	17.9	B	L	0.14	13.4	B	L	0.14	13.4	B	L	0.32	16.2	B	L	0.32	16.2	B
		TR	0.10	12.9	B	TR	0.10	12.9	B	TR	0.42	16.9	B	TR	0.42	16.9	B	TR	0.15	13.3	B	TR	0.15	13.3	B	TR	0.32	15.2	B	TR	0.32	15.2	B
		Intersection		13.6	B	Intersection		13.6	B	Intersection		29.9	C	Intersection		30.1	C	Intersection		11.9	B	Intersection		11.9	B	Intersection		17.2	B	Intersection		17.3	B
4	**Beach Channel Drive and Rockaway Freeway**																																
	Eastbound	LTR	0.55	25.3	C	LTR	0.56	25.6	C	LTR	1.29	168.3	F	LTR	1.29	169.4	F	LTR	0.37	22.0	C	LTR	0.38	22.2	C	LTR	0.93	45.5	D	LTR	0.93	45.9	D
	Westbound	LTR	0.55	25.4	C	LTR	0.56	25.6	C	LTR	0.94	46.8	D	LTR	0.94	47.7	D	LTR	0.29	20.8	C	LTR	0.30	21.0	C	LTR	0.67	28.6	C	LTR	0.68	28.8	C
	Northbound	LT	0.37	22.6	C	LT	0.37	22.6	C	LT	0.35	22.2	C	LT	0.35	22.2	C	LT	0.14	19.2	B	LT	0.14	19.2	B	LT	0.28	21.2	C	LT	0.29	21.2	C
		R	0.01	17.7	B	R	0.01	17.7	B	R	0.01	17.7	B	R	0.01	17.7	B	R	0.00	17.6	B	R	0.00	17.6	B	R	0.01	17.7	B	R	0.01	17.7	B
		Intersection		24.8	C	Intersection		25.0	C	Intersection		108.5	F	Intersection		109.1	F	Intersection		21.2	C	Intersection		21.4	C	Intersection		36.3	D	Intersection		36.5	D
5	**Beach Channel Drive and Beach 108th Street**																																
	Eastbound	TR	0.47	18.8	B	TR	0.49	19.0	B	TR	0.81	27.1	C	TR	0.81	27.1	C	TR	0.26	16.1	B	TR	0.27	16.3	B	TR	0.54	19.8	B	TR	0.54	19.8	B
	Westbound	LT	0.53	20.1	C	LT	0.54	20.3	C	LT	0.82	28.9	C	LT	0.82	29.0	C	LT	0.23	15.8	B	LT	0.23	15.9	B	LT	0.47	18.9	B	LT	0.48	18.9	B
	Northbound	L	0.31	17.1	B	L	0.31	17.1	B	L	0.17	15.5	B	L	0.17	15.5	B	L	0.10	14.8	B	L	0.10	14.8	B	L	0.20	15.8	B	L	0.20	15.9	B
		R	0.12	15.2	B	R	0.12	15.2	B	R	0.16	15.5	B	R	0.16	15.5	B	R	0.04	14.3	B	R	0.04	14.3	B	R	0.08	14.7	B	R	0.08	14.7	B
		Intersection		18.9	B	Intersection		19.0	B	Intersection		26.6	C	Intersection		26.6	C	Intersection		15.8	B	Intersection		15.9	B	Intersection		18.9	B	Intersection		18.9	B
6	**Rockaway Freeway and Beach 108th Street**																																
	Eastbound	LTR	0.09	14.6	B	LTR	0.09	14.6	B	LTR	0.31	16.7	B	LTR	0.31	16.7	B	LTR	0.10	14.7	B	LTR	0.10	14.7	B	LTR	0.25	16.1	B	LTR	0.25	16.1	B
	Westbound	LTR	0.20	15.5	B	LTR	0.20	15.5	B	LTR	0.17	15.3	B	LTR	0.17	15.3	B	LTR	0.05	14.3	B	LTR	0.05	14.3	B	LTR	0.12	14.8	B	LTR	0.12	14.8	B
	Northbound	L	0.28	17.2	B	L	0.28	17.2	B	L	0.30	17.5	B	L	0.30	17.5	B	L	0.12	15.1	B	L	0.12	15.1	B	L	0.26	16.8	B	L	0.26	16.8	B
		TR	0.20	15.6	B	TR	0.20	15.6	B	TR	0.18	15.4	B	TR	0.18	15.4	B	TR	0.08	14.5	B	TR	0.08	14.5	B	TR	0.16	15.2	B	TR	0.16	15.2	B
	Southbound	LTR	0.20	16.0	B	LTR	0.21	16.1	B	LTR	0.32	17.6	B	LTR	0.32	17.6	B	LTR	0.08	14.7	B	LTR	0.09	14.7	B	LTR	0.18	15.8	B	LTR	0.18	15.8	B
		Intersection		15.8	B	Intersection		15.8	B	Intersection		16.5	B	Intersection		16.5	B	Intersection		14.7	B	Intersection		14.7	B	Intersection		15.8	B	Intersection		15.8	B
7	**Rockaway Beach Boulevard and Beach 108th Street**																																
	Eastbound	L	0.32	18.9	B	L	0.32	18.9	B	L	0.42	21.4	C	L	0.42	21.5	C	L	0.08	14.7	B	L	0.08	14.7	B	L	0.21	16.7	B	L	0.21	16.7	B
		TR	0.46	19.9	B	TR	0.47	20.0	C	TR	0.84	33.7	C	TR	0.84	33.7	C	TR	0.30	17.1	B	TR	0.30	17.1	B	TR	0.60	22.8	C	TR	0.60	22.8	C
	Westbound	L	0.03	14.2	B	L	0.03	14.2	B	L	0.09	15.3	B	L	0.09	15.3	B	L	0.02	14.1	B	L	0.02	14.1	B	L	0.07	14.8	B	L	0.07	14.8	B
		TR	0.59	22.9	C	TR	0.59	22.9	C	TR	0.64	24.3	C	TR	0.65	24.4	C	TR	0.25	16.5	B	TR	0.25	16.5	B	TR	0.50	20.6	C	TR	0.51	20.7	C
	Northbound	L	0.20	16.2	B	L	0.20	16.2	B	L	0.30	18.1	B	L	0.30	18.1	B	L	0.11	15.0	B	L	0.11	15.0	B	L	0.24	16.9	B	L	0.24	16.9	B
		TR	0.25	16.4	B	TR	0.25	16.4	B	TR	0.19	15.7	B	TR	0.19	15.7	B	TR	0.10	14.9	B	TR	0.10	14.9	B	TR	0.22	16.0	B	TR	0.22	16.0	B
	Southbound	L	0.13	15.5	B	L	0.14	15.6	B	L	0.49	21.6	C	L	0.49	21.6	C	L	0.15	15.6	B	L	0.15	15.6	B	L	0.33	18.5	B	L	0.33	18.5	B
		TR	0.25	16.6	B	TR	0.25	16.6	B	TR	0.35	17.8	B	TR	0.35	17.8	B	LTR	0.14	15.2	B	LTR	0.14	15.2	B	LTR	0.28	16.8	B	LTR	0.28	16.8	B
		Intersection		19.2	B	Intersection		19.3	B	Intersection		24.7	C	Intersection		24.7	C	Intersection		16.0	B	Intersection		16.0	B	Intersection		19.5	B	Intersection		19.5	B
8 [2]	**Beach Channel Drive and Beach 92nd Street/Beach 94th Street**																																
	Eastbound	T	0.22	7.4	A	T	0.23	7.4	A	T	0.66	16.2	B	T	0.66	16.2	B	T	0.26	7.9	A	T	0.24	7.8	A	T	0.48	12.2	B	T	0.48	12.2	B
	Northeastbound (Cross Bay Bridge Exit Ramp)	R	0.48	38.4	D	R	0.51	39.4	D	R	1.12	123.4	F	R	1.12	123.4	F	R	0.49	38.4	D	R	0.52	39.5	D	R	0.93	74.3	E	R	0.93	74.3	E
	Northeastbound (Beach 94th St)	R	0.08	30.2	C	R	0.08	30.2	C	R	0.21	32.6	C	R	0.21	32.6	C	R	0.08	30.3	C	R	0.08	30.3	C	R	0.16	31.6	C	R	0.16	31.6	C
	Westbound	TR	0.42	1.9	A	TR	0.43	1.9	A	TR	0.62	5.2	A	TR	0.63	5.4	A	TR	0.26	1.3	A	TR	0.26	1.3	A	TR	0.53	3.9	A	TR	0.54	4.0	A
	Northbound	R	0.05	40.0	D	R	0.05	40.0	D	R	0.21	42.5	D	R	0.21	42.5	D	R	0.13	41.2	D	R	0.13	41.2	D	R	0.21	42.2	D	R	0.21	42.2	D
	Southbound	R	0.01	39.0	D	R	0.01	39.0	D	R	0.13	39.7	D	R	0.13	39.7	D	R	0.06	39.5	D	R	0.06	39.5	D	R	0.10	39.3	D	R	0.10	39.3	D
		Intersection		9.2	A	Intersection		9.5	A	Intersection		30.9	C	Intersection		30.8	C	Intersection		11.9	B	Intersection		12.3	B	Intersection		20.5	C	Intersection		20.4	C
9	**Rockaway Freeway and Cross Bay Parkway**																																
	Eastbound	TR	0.16	19.1	B	TR	0.16	19.1	B	TR	0.38	22.0	C	TR	0.38	22.0	C	TR	0.16	19.1	B	TR	0.16	19.1	B	TR	0.32	21.1	C	TR	0.32	21.1	C
	Westbound	L	0.01	35.6	D	L	0.01	35.6	D	L	0.05	36.2	D	L	0.05	36.2	D	L	0.06	36.5	D	L	0.06	36.5	D	L	0.13	37.6	D	L	0.13	37.6	D
		T	0.13	10.4	B	T	0.13	10.4	B	T	0.18	10.7	B	T	0.18	10.8	B	T	0.08	9.9	A	T	0.08	9.9	A	T	0.17	10.6	B	T	0.17	10.6	B
	Southbound (Cross Bay Bridge Off-Ramp)	LTR	0.12	20.4	C	LTR	0.14	20.6	C	LTR	0.46	24.3	C	LTR	0.46	24.3	C	LTR	0.23	21.5	C	LTR	0.25	21.6	C	LTR	0.47	24.5	C	LTR	0.47	24.5	C
	Southbound (Beach Channel Drive Off-Ramp)	LTR	0.05	19.8	B	LTR	0.05	19.8	B	LTR	0.14	20.8	C	LTR	0.14	20.8	C	LTR	0.05	19.8	B	LTR	0.05	19.8	B	LTR	0.10	20.3	C	LTR	0.10	20.3	C
		Intersection		16.7	B	Intersection		17.0	B	Intersection		21.4	C	Intersection		21.4	C	Intersection		19.4	B	Intersection		19.5	B	Intersection		21.7	C	Intersection		21.6	C

Notes: L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recorded during this peak hour. "+" denotes significant adverse impact.
1. Stop-controlled approach at signalized intersection.
2. Due to complex geometry and per NYCDOT request, LOS results were calculated using Synchro 10.

Table 18-21 (continued): Q3 2027 No-Action vs. Peak Construction Period Condition Level of Service Analysis – Signalized Intersections

#	Intersection & Approach	Weekday AM Peak Hour								Weekday PM Peak Hour								Saturday AM Peak Hour								Saturday PM Peak Hour							
		Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction			
		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
10	**Rockaway Beach Boulevard and Cross Bay Parkway**																																
	Eastbound	TR	0.25	9.0	A	TR	0.25	9.1	A	TR	0.69	16.4	B	TR	0.69	16.4	B	TR	0.25	9.0	A	TR	0.26	9.0	A	TR	0.52	12.4	B	TR	0.52	12.4	B
	Westbound	LT	0.25	8.7	A	LT	0.25	8.7	A	LT	0.40	10.2	B	LT	0.40	10.3	B	LT	0.18	8.1	A	LT	0.18	8.1	A	LT	0.36	9.8	A	LT	0.37	9.8	A
	Southbound (Cross Bay Bridge Off-Ramp)	LT	0.11	14.7	B	LT	0.12	14.8	B	LT	0.44	17.5	B	LT	0.44	17.5	B	LT	0.16	15.1	B	LT	0.17	15.1	B	LT	0.35	16.7	B	LT	0.35	16.7	B
	Southbound (Beach Channel Drive Off-Ramp)	TR	0.12	15.2	B	TR	0.12	15.2	B	TR	0.30	17.2	B	TR	0.30	17.2	B	TR	0.14	15.3	B	TR	0.14	15.3	B	TR	0.30	17.1	B	TR	0.30	17.1	B
		Intersection		10.8	B	Intersection		11.0	B	Intersection		15.4	B	Intersection		15.4	B	Intersection		11.3	B	Intersection		11.4	B	Intersection		13.5	B	Intersection		13.5	B
11 [1]	**Rockaway Freeway and Beach 94th Street**																																
	Eastbound	L	0.08	36.8	D	L	0.08	36.8	D	L	0.05	36.2	D	L	0.05	36.2	D	L	0.07	36.6	D	L	0.07	36.6	D	L	0.14	37.6	D	L	0.14	37.6	D
		T	0.10	10.1	B	T	0.11	10.2	B	T	0.33	12.2	B	T	0.33	12.2	B	T	0.11	10.2	B	T	0.12	10.2	B	T	0.23	11.2	B	T	0.23	11.2	B
	Westbound	TR	0.28	20.5	C	TR	0.28	20.5	C	TR	0.29	20.6	C	TR	0.30	20.7	C	TR	0.18	19.3	B	TR	0.18	19.3	B	TR	0.35	21.6	C	TR	0.37	21.8	C
	Northbound (Cross Bay Bridge On-Ramp)	LTR	0.23	21.4	C	LTR	0.23	21.4	C	LTR	0.35	22.7	C	LTR	0.35	22.8	C	LTR	0.20	21.1	C	LTR	0.20	21.1	C	LTR	0.40	23.4	C	LTR	0.41	23.5	C
		Intersection		19.6	B	Intersection		19.5	B	Intersection		18.7	B	Intersection		18.8	B	Intersection		18.6	B	Intersection		18.5	B	Intersection		20.6	C	Intersection		20.7	C
12	**Rockaway Beach Boulevard and Beach 94th Street**																																
	Eastbound	LT	0.23	8.6	A	LT	0.24	8.7	A	LT	0.75	17.2	B	LT	0.76	17.6	B	LT	0.22	8.4	A	LT	0.23	8.5	A	LT	0.47	11.0	B	LT	0.47	11.0	B
	Westbound	TR	0.51	12.1	B	TR	0.51	12.1	B	TR	0.60	13.6	B	TR	0.61	14.0	B	TR	0.31	9.4	A	TR	0.31	9.4	A	TR	0.63	14.4	B	TR	0.64	14.9	B
	Northbound (Cross Bay Bridge On-Ramp)	LT	0.21	15.9	B	LT	0.21	15.9	B	LT	0.31	17.0	B	LT	0.31	17.0	B	LT	0.16	15.4	B	LT	0.16	15.4	B	LT	0.33	17.3	B	LT	0.33	17.3	B
	Northbound (Beach Channel Drive On-Ramp)	TR	0.05	14.4	B	TR	0.05	14.4	B	TR	0.16	15.5	B	TR	0.16	15.5	B	TR	0.13	15.3	B	TR	0.13	15.3	B	TR	0.28	17.1	B	TR	0.28	17.1	B
		Intersection		11.8	B	Intersection		11.7	B	Intersection		15.8	B	Intersection		16.1	B	Intersection		10.4	B	Intersection		10.4	B	Intersection		13.8	B	Intersection		14.1	B
13 [1]	**Beach Channel Drive and Beach 73rd Street**																																
	Eastbound	L	0.00	9.3	A	L	0.00	9.3	A	L	0.00	9.3	A	L	0.00	9.3	A	L	0.00	9.4	A	L	0.00	9.4	A	L	0.00	9.4	A	L	0.00	9.4	A
		T	0.28	11.6	B	T	0.30	11.9	B	T	0.72	19.4	B	T	0.72	19.4	B	T	0.24	11.3	B	T	0.27	11.5	B	T	0.49	14.2	B	T	0.49	14.2	B
	Westbound	L	0.15	10.9	B	L	0.16	11.0	B	L	0.68	39.6	D	L	0.68	39.6	D	L	0.09	10.1	B	L	0.09	10.2	B	L	0.30	13.7	B	L	0.30	13.7	B
		TR	0.61	17.6	B	TR	0.62	17.9	B	TR	0.93	37.3	D	TR	0.95	42.2	D	TR	0.34	12.6	B	TR	0.35	12.8	B	TR	0.69	19.8	B	TR	0.71	20.6	C
	Northbound	LT	0.26	22.4	C	LT	0.26	22.4	C	LT	0.33	23.5	C	LT	0.33	23.5	C	LT	0.11	20.5	C	LT	0.11	20.5	C	LT	0.24	22.2	C	LT	0.24	22.2	C
	Southbound	LTR	0.02	19.6	B	LTR	0.02	19.6	B	LTR	0.03	19.7	B	LTR	0.03	19.7	B	LTR	0.01	19.5	B	LTR	0.01	19.5	B	LTR	0.02	19.6	B	LTR	0.02	19.6	B
		Intersection		16.0	B	Intersection		16.1	B	Intersection		27.9	C	Intersection		29.9	C	Intersection		12.7	B	Intersection		12.8	B	Intersection		17.3	B	Intersection		17.7	B
14	**Rockaway Beach Boulevard and Beach 73rd Street**																																
	Eastbound	LT	0.22	8.3	A	LT	0.24	8.4	A	LT	0.65	14.2	B	LT	0.65	14.2	B	LT	0.21	8.2	A	LT	0.22	8.3	A	LT	0.44	10.6	B	LT	0.44	10.6	B
		R	0.06	7.2	A	R	0.06	7.2	A	R	0.13	7.7	A	R	0.13	7.7	A	R	0.04	7.1	A	R	0.04	7.1	A	R	0.09	7.4	A	R	0.09	7.4	A
	Westbound	L	0.05	7.2	A	L	0.05	7.2	A	L	0.23	9.8	A	L	0.23	9.8	A	L	0.06	7.2	A	L	0.06	7.2	A	L	0.17	8.4	A	L	0.17	8.4	A
		T	0.36	9.7	A	T	0.36	9.7	A	T	0.48	11.1	B	T	0.49	11.3	B	T	0.20	8.1	A	T	0.20	8.1	A	L	0.17	8.4	A	L	0.17	8.4	A
		R	0.14	7.9	A	R	0.14	7.9	A	R	0.19	8.3	B	R	0.19	8.3	B	R	0.08	7.3	A	R	0.08	7.3	A	R	0.16	8.0	A	R	0.16	8.0	A
	Northbound	LT	0.06	24.1	C	LT	0.06	24.1	C	LT	0.12	24.9	C	LT	0.12	24.9	C	LT	0.06	24.2	C	LT	0.06	24.2	C	LT	0.12	24.9	C	LT	0.12	24.9	C
		R	0.02	23.7	C	R	0.02	23.7	C	R	0.03	23.9	C	R	0.03	23.9	C	R	0.03	23.8	C	R	0.03	23.8	C	R	0.07	24.3	C	R	0.07	24.3	C
	Southbound	L	0.23	26.7	C	L	0.23	26.7	C	L	0.69	39.8	D	L	0.69	39.8	D	L	0.16	25.6	C	L	0.16	25.6	C	L	0.35	28.9	C	L	0.35	28.9	C
		TR	0.26	27.2	C	TR	0.26	27.2	C	TR	0.40	29.7	C	TR	0.40	29.7	C	TR	0.16	25.5	C	TR	0.16	25.5	C	TR	0.34	28.3	C	TR	0.34	28.3	C
		Intersection		12.2	B	Intersection		12.2	B	Intersection		17.1	B	Intersection		17.1	B	Intersection		11.6	B	Intersection		11.6	B	Intersection		13.6	B	Intersection		13.6	B
15	**Beach Channel Drive/Arverne Boulevard and Beach 62nd Street**																																
	Eastbound	LT	0.72	30.8	C	LT	0.77	33.7	C	LT	1.82	401.7	F	LT	1.82	401.7	F	LT	0.58	25.7	C	LT	0.64	27.4	C	LT	1.18	124.6	F	LT	1.18	124.6	F
	Westbound (Beach Channel Drive)	T	0.88	47.6	D	T	0.90	51.0	D	T	0.80	34.3	C	T	0.82	35.4	D	T	0.30	20.1	C	T	0.31	20.3	C	T	0.60	25.7	C	T	0.62	26.1	C
	Westbound (Arverne Boulevard)	LR	0.96	82.0	F	LR	0.96	82.0	F									LR	0.49	34.9	C	LR	0.49	34.9	C	LR	0.99	77.6	E	LR	1.02	85.6	F	+
										L	0.98	75.1	E	L	1.01	82.8	F	+														
										R	0.02	27.4	C	R	0.02	27.4	C															
	Northbound	LTR	0.41	33.0	C	LTR	0.41	33.0	C	LTR	0.54	34.6	C	LTR	0.54	34.6	C	LTR	0.15	28.7	C	LTR	0.15	28.7	C	LTR	0.32	30.6	C	LTR	0.32	30.6	C
	Southbound	L	0.41	35.5	D	L	0.41	35.5	D	L	0.64	47.1	D	L	0.64	47.1	D	L	0.18	29.8	C	L	0.18	29.8	C	L	0.39	34.5	C	L	0.39	34.5	C
		R	0.01	27.4	C	R	0.01	27.4	C	R	0.02	27.5	C	R	0.02	27.5	C	R	0.00	27.3	C	R	0.00	27.3	C	R	0.00	27.3	C	R	0.00	27.3	C
		Intersection		46.4	D	Intersection		48.3	D	Intersection		213.5	F	Intersection		214.8	F	Intersection		26.7	C	Intersection		27.4	C	Intersection		77.0	E	Intersection		78.6	E
16	**Rockaway Beach Boulevard and Beach 62nd Street**																																
	Eastbound	L	0.15	25.3	C	L	0.15	25.3	C	L	0.48	31.1	C	L	0.48	31.1	C	L	0.04	23.9	C	L	0.04	23.9	C	L	0.08	24.3	C	L	0.08	24.3	C
		TR	0.27	7.2	A	TR	0.29	7.3	A	TR	0.81	18.6	B	TR	0.81	18.6	B	TR	0.28	7.2	A	TR	0.30	7.3	A	TR	0.56	10.6	B	TR	0.56	10.6	B
	Westbound	LTR	0.52	26.9	C	LTR	0.53	26.9	C	LTR	1.71	356.9	F	LTR	1.76	381.3	F	+	LTR	0.35	24.3	C	LTR	0.36	24.4	C	LTR	0.88	41.7	D	LTR	0.92	46.3	D
	Northbound	LTR	0.19	29.0	C	LTR	0.20	29.2	C	LTR	0.37	32.3	C	LTR	0.37	32.3	C		LTR	0.14	28.1	C	LTR	0.15	28.3	C	LTR	0.28	30.3	C	LTR	0.28	30.3	C
		Intersection		20.8	C	Intersection		20.6	C	Intersection		178.8	F	Intersection		191.9	F		Intersection		17.3	B	Intersection		17.2	B	Intersection		27.4	C	Intersection		29.9	C
18	**Beach Channel Drive and Beach 59th Street**																																
	Eastbound	LT	0.28	11.9	B	LT	0.31	12.1	B	LT	0.56	15.8	B	LT	0.56	15.8	B		LT	0.20	10.9	B	LT	0.23	11.2	B	LT	0.41	13.2	B	LT	0.41	13.2	B
		R	0.01	9.4	A	R	0.01	9.4	A	R	0.05	9.7	A	R	0.05	9.7	A		R	0.03	9.6	A	R	0.03	9.6	A	R	0.07	9.9	A	R	0.07	9.9	A
	Westbound	LTR	0.42	13.6	B	LTR	0.44	13.8	B	LTR	0.79	24.3	C	LTR	0.80	25.1	C		LTR	0.18	10.8	B	LTR	0.19	10.9	B	LTR	0.38	12.9	B	LTR	0.39	13.0	B
	Southbound	LTR	0.01	19.4	B	LTR	0.01	19.4	B	LTR	0.02	19.5	B	LTR	0.02	19.5	B		LTR	0.01	19.5	B	LTR	0.01	19.5	B	LTR	0.02	19.6	B	LTR	0.02	19.6	B
		Intersection		13.0	B	Intersection		13.1	B	Intersection		20.0	C	Intersection		20.5	C		Intersection		11.0	B	Intersection		11.1	B	Intersection		13.0	B	Intersection		13.1	B
19	**Arverne Boulevard and Beach 59th Street**																																
	Eastbound	T	0.29	9.0	A	T	0.30	9.1	A	T	0.65	13.6	B	T	0.65	13.6	B		T	0.22	8.4	A	T	0.23	8.4	A	T	0.44	10.4	B	T	0.44	10.4	B
		R	0.11	7.8	A	R	0.11	7.8	A	R	0.17	8.4	A	R	0.17	8.4	A		R	0.06	7.4	A	R	0.06	7.4	A	R	0.14	8.1	A	R	0.14	8.1	A
	Westbound	LT	0.48	11.5	B	LT	0.48	11.6	B	LT	1.06	71.7	E	LT	1.19	120.4	F	+	LT	0.28	9.0	A	LT	0.28	9.1	A	LT	0.69	16.6	B	LT	0.77	20.5	C
	Southbound	LTR	0.09	14.7	B	LTR	0.09	14.7	B	LTR	0.13	15.1	B	LTR	0.13	15.1	B		LTR	0.07	14.6	B	LTR	0.07	14.6	B	LTR	0.15	15.3	B	LTR	0.15	15.4	B
		Intersection		10.4	B	Intersection		10.5	B	Intersection		35.0	C	Intersection		54.4	D		Intersection		9.0	A	Intersection		9.0	A	Intersection		13.2	B	Intersection		15.1	B

Notes: L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recorded during this peak hour. "+" denotes significant adverse impact.
1. Stop-controlled approach at signalized intersection.
2. Due to complex geometry and per NYCDOT request, LOS results were calculated using Synchro 10.

Table 18-21 (continued): Q3 2027 No-Action vs. Peak Construction Period Condition Level of Service Analysis – Signalized Intersections

#	Intersection & Approach	Weekday AM Peak Hour									Weekday PM Peak Hour									Saturday AM Peak Hour									Saturday PM Peak Hour								
		Q3 2027 No-Action				Q3 2027 Peak Construction					Q3 2027 No-Action				Q3 2027 Peak Construction					Q3 2027 No-Action				Q3 2027 Peak Construction					Q3 2027 No-Action				Q3 2027 Peak Construction				
		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	
20	**Rockaway Freeway and Beach 59th Street**																																				
	Westbound	L	0.57	46.8	D	L	0.57	46.8	D		L	0.98	103.1	F	L	0.98	103.1	F		L	0.28	40.4	D	L	0.28	40.4	D		L	0.56	49.6	D	L	0.56	49.6	D	
		T	0.06	8.9	A	T	0.06	8.9	A		T	0.14	10.4	B	T	0.14	10.4	B		T	0.05	9.7	A	T	0.05	9.7	A		T	0.11	10.1	B	T	0.11	10.1	B	
	Southbound	LTR	0.49	33.7	C	LTR	0.49	33.7	C		LTR	0.69	39.4	D	LTR	0.72	41.0	D		LTR	0.27	27.6	C	LTR	0.27	27.6	C		LTR	0.56	33.6	C	LTR	0.59	34.9	C	
		Intersection		33.4	C	Intersection		33.4	C		Intersection		51.4	D	Intersection		51.9	D		Intersection		26.0	C	Intersection		26.0	C		Intersection		31.3	C	Intersection		32.0	C	
21	**Rockaway Beach Boulevard and Beach 59th Street**																																				
	Eastbound	TR	0.62	27.4	C	TR	0.65	28.4	C		TR	1.51	264.4	F	TR	1.51	264.4	F		TR	0.54	25.3	C	TR	0.57	26.1	C		TR	1.10	93.7	F	TR	1.10	93.7	F	
	Westbound	LT	0.59	26.2	C	LT	0.59	26.2	C		LT	1.56	293.1	F	LT	1.59	303.6	F	+	LT	0.37	21.8	C	LT	0.37	21.8	C		LT	1.00	68.3	E	LT	1.02	73.0	E	+
	Northbound	LR	0.31	31.5	C	LR	0.31	31.5	C		LR	0.40	32.1	C	LR	0.41	32.5	C		LR	0.14	26.0	C	LR	0.14	26.0	C		LR	0.35	30.4	C	LR	0.36	30.6	C	
	Southbound	LTR	0.44	20.0	C	LTR	0.44	20.1	C		LTR	0.49	20.8	C	LTR	0.50	21.1	C		LTR	0.18	16.1	B	LTR	0.18	16.1	B		LTR	0.39	19.0	B	LTR	0.41	19.3	B	
		Intersection		25.3	C	Intersection		25.7	C		Intersection		222.8	F	Intersection		225.5	F		Intersection		22.6	C	Intersection		23.0	C		Intersection		68.3	E	Intersection		69.6	E	
22	**Beach Channel Drive and Beach 54th Street**																																				
	Eastbound	T	0.29	11.9	B	T	0.31	12.2	B		T	0.56	15.7	B	T	0.56	15.7	B		T	0.22	11.1	B	T	0.24	11.3	B		T	0.44	13.7	B	T	0.44	13.7	B	
		R	0.01	9.4	A	R	0.01	9.4	A		R	0.03	9.6	A	R	0.03	9.6	A		R	0.01	9.5	A	R	0.01	9.5	A		R	0.04	9.7	A	R	0.04	9.7	A	
	Westbound	LT	0.48	14.9	B	LT	0.49	15.2	B		LT	0.72	21.3	C	LT	0.73	21.9	C		LT	0.31	12.2	B	LT	0.32	12.4	B		LT	0.64	18.3	B	LT	0.65	18.8	B	
	Northbound	LR	0.10	20.7	C	LR	0.10	20.7	C		LR	0.27	23.6	C	LR	0.27	23.7	C		LR	0.07	20.3	C	LR	0.08	20.3	C		LR	0.18	22.0	C	LR	0.18	22.0	C	
	Southbound	LTR	0.18	21.4	C	LTR	0.18	21.5	C		LTR	0.31	23.4	C	LTR	0.31	23.6	C		LTR	0.11	20.6	C	LTR	0.11	20.6	C		LTR	0.26	22.6	C	LTR	0.26	22.6	C	
		Intersection		15.0	B	Intersection		15.1	B		Intersection		19.2	B	Intersection		19.5	B		Intersection		13.0	B	Intersection		13.1	B		Intersection		17.0	B	Intersection		17.2	B	
23	**Arverne Boulevard and Beach 54th Street**																																				
	Eastbound	LTR	0.42	20.8	C	LTR	0.44	21.1	C		LTR	1.11	94.6	F	LTR	1.11	94.6	F		LTR	0.36	19.7	B	LTR	0.37	20.0	B		LTR	0.74	29.2	C	LTR	0.74	29.2	C	
	Westbound	LTR	0.53	23.4	C	LTR	0.53	23.5	C		LTR	0.97	65.1	E	LTR	1.13	112.0	F	+	LTR	0.34	19.8	B	LTR	0.34	19.9	B		LTR	0.85	42.0	D	LTR	0.95	59.0	E	+
	Northbound	LTR	0.19	14.0	B	LTR	0.22	14.3	B		LTR	0.56	19.6	B	LTR	0.56	19.7	B		LTR	0.21	14.2	B	LTR	0.24	14.6	B		LTR	0.45	17.6	B	LTR	0.45	17.7	B	
	Southbound	LTR	0.09	22.4	C	LTR	0.09	22.4	C		LTR	0.18	23.6	C	LTR	0.18	23.6	C		LTR	0.07	22.1	C	LTR	0.07	22.1	C		LTR	0.15	23.0	C	LTR	0.15	23.0	C	
		Intersection		20.6	C	Intersection		20.6	C		Intersection		65.2	E	Intersection		76.7	E		Intersection		18.5	B	Intersection		18.5	B		Intersection		29.6	C	Intersection		35.2	D	
24	**Rockaway Freeway and Beach 54th Street**																																				
	Eastbound	LTR	0.04	16.0	B	LTR	0.04	16.0	B		LTR	0.10	16.5	B	LTR	0.10	16.5	B		LTR	0.04	16.0	B	LTR	0.04	16.0	B		LTR	0.09	16.4	B	LTR	0.09	16.4	B	
	Westbound	L	0.11	37.1	D	L	0.11	37.1	D		L	0.21	38.9	D	L	0.21	38.9	D		L	0.02	35.8	D	L	0.02	35.8	D		L	0.03	36.0	D	L	0.03	36.0	D	
		TR	0.18	9.3	A	TR	0.18	9.3	A		TR	0.31	10.5	B	TR	0.31	10.5	B		TR	0.11	8.8	A	TR	0.11	8.8	A		TR	0.22	9.7	A	TR	0.22	9.7	A	
	Northbound	LTR	0.27	24.3	C	LTR	0.30	24.8	C		LTR	0.70	33.6	C	LTR	0.70	33.7	C		LTR	0.27	24.5	C	LTR	0.31	25.0	C		LTR	0.55	29.4	C	LTR	0.55	29.4	C	
	Southbound	LTR	0.27	24.4	C	LTR	0.27	24.4	C		LTR	0.59	30.6	C	LTR	0.61	31.0	C		LTR	0.25	24.1	C	LTR	0.25	24.2	C		LTR	0.53	29.0	C	LTR	0.54	29.3	C	
		Intersection		19.3	B	Intersection		19.7	B		Intersection		25.9	C	Intersection		26.0	C		Intersection		19.9	B	Intersection		20.3	C		Intersection		23.4	C	Intersection		23.6	C	
25	**Edgemere Avenue and Beach 54th Street**																																				
	Eastbound	LTR	0.69	27.9	C	LTR	0.84	38.3	D		LTR	8.10	3239.0	F	LTR	8.10	3239.0	F		LTR	0.63	26.0	C	LTR	0.75	31.6	C		LTR	2.58	749.0	F	LTR	2.58	749.0	F	
	Westbound	LTR	0.52	22.1	C	LTR	0.52	22.1	C		LTR	1.18	121.6	F	LTR	1.18	121.6	F		LTR	0.37	19.7	B	LTR	0.37	19.7	B		LTR	0.76	29.0	C	LTR	0.76	29.0	C	
	Northbound	LTR	0.00	21.4	C	LTR	0.00	21.4	C		LTR	0.00	21.4	C	LTR	0.00	21.4	C		LTR	0.00	21.4	C	LTR	0.00	21.4	C		LTR	0.00	21.4	C	LTR	0.00	21.4	C	
	Southbound	LTR	0.21	14.2	B	LTR	0.21	14.2	B		LTR	1.24	158.7	F	LTR	1.30	181.8	F	+	LTR	0.50	22.5	C	LTR	0.50	22.6	C		LTR	1.05	91.9	F	LTR	1.08	103.9	F	+
		Intersection		23.2	C	Intersection		27.9	C		Intersection		1475.0	F	Intersection		1472.0	F		Intersection		23.1	C	Intersection		25.8	C		Intersection		371.0	F	Intersection		371.5	F	
29	**Beach Channel Drive and Beach 51st Street**																																				
	Eastbound	L	0.08	10.1	B	L	0.08	10.1	B		L	0.09	10.5	B	L	0.09	10.5	B		L	0.02	9.5	A	L	0.02	9.5	A		L	0.07	10.1	B	L	0.07	10.1	B	
		TR	0.49	15.2	B	TR	0.49	15.2	B		TR	0.79	24.6	C	TR	0.79	24.6	C		TR	0.31	12.3	B	TR	0.31	12.3	B		TR	0.63	18.0	B	TR	0.63	18.0	B	
	Westbound	LT	0.39	13.2	B	LT	0.39	13.2	B		LT	0.64	17.8	B	LT	0.64	17.8	B		LT	0.26	11.6	B	LT	0.26	11.6	B		LT	0.53	15.3	B	LT	0.53	15.3	B	
		R	0.04	9.7	B	R	0.04	9.7	B		R	0.05	9.7	B	R	0.05	9.7	B		R	0.01	9.4	B	R	0.01	9.4	B		R	0.02	9.5	B	R	0.02	9.5	B	
	Northbound	LTR	0.01	19.4	B	LTR	0.01	19.4	B		LTR	0.02	19.6	B	LTR	0.02	19.6	B		LTR	0.01	19.5	B	LTR	0.01	19.5	B		LTR	0.03	19.6	B	LTR	0.03	19.6	B	
		Intersection		13.9	B	Intersection		13.9	B		Intersection		20.7	C	Intersection		20.7	C		Intersection		11.9	B	Intersection		11.9	B		Intersection		16.4	B	Intersection		16.4	B	
39	**Rockaway Freeway and Beach 44th Street**																																				
	Eastbound	L	0.03	36.0	D	L	0.03	36.0	D		L	0.04	36.1	D	L	0.04	36.1	D		L	0.03	36.0	D	L	0.03	36.0	D		L	0.06	36.5	D	L	0.06	36.5	D	
		TR	0.22	17.8	B	TR	0.22	17.8	B		TR	0.36	19.6	B	TR	0.36	19.6	B		TR	0.11	16.6	B	TR	0.11	16.6	B		TR	0.22	17.8	B	TR	0.22	17.8	B	
	Westbound	L	0.01	8.3	A	L	0.01	8.3	A		L	0.03	10.4	B	L	0.03	10.4	B		L	0.01	8.1	A	L	0.01	8.1	A		L	0.02	8.5	A	L	0.02	8.5	A	
		TR	0.20	17.6	B	TR	0.20	17.6	B		TR	0.37	19.7	B	TR	0.37	19.7	B		TR	0.14	16.9	B	TR	0.14	16.9	B		TR	0.28	18.5	B	TR	0.28	18.5	B	
	Northbound	LTR	0.02	21.6	C	LTR	0.03	21.7	C		LTR	0.06	21.9	C	LTR	0.06	21.9	C		LTR	0.02	21.5	C	LTR	0.03	21.7	C		LTR	0.04	21.7	C	LTR	0.04	21.7	C	
	Southbound	LTR	0.11	22.7	C	LTR	0.11	22.7	C		LTR	0.23	24.5	C	LTR	0.24	24.8	C		LTR	0.08	22.2	C	LTR	0.08	22.2	C		LTR	0.17	23.5	C	LTR	0.19	23.7	C	
		Intersection		18.4	B	Intersection		18.4	B		Intersection		20.2	C	Intersection		20.3	C		Intersection		17.9	B	Intersection		18.1	B		Intersection		19.2	B	Intersection		19.3	B	
40[1,2]	**Beach Channel Drive/Seagirt Boulevard and Beach 35th Street**																																				
	Eastbound	LTR	0.37	13.0	B	LTR	0.38	13.3	B		LTR	0.87dl	22.8	C	LTR	0.91dl	24.7	C		LTR	0.25	11.3	B	LTR	0.25	11.4	B		LTR	0.52	16.9	B	LTR	0.55	17.4	B	
	Westbound	LT	0.40	11.9	B	LT	0.41	11.9	B		LT	0.66	22.7	C	LT	0.66	22.8	C		LT	0.24	12.6	B	LT	0.26	12.4	B		LT	0.49	14.2	B	LT	0.49	14.4	B	
	Southbound	LT	0.09	21.2	C	LT	0.09	21.2	C		LT	0.15	21.9	C	LT	0.15	21.9	C		LT	0.08	21.1	C	LT	0.08	21.1	C		LT	0.17	22.1	C	LT	0.17	22.1	C	
		R	0.34	6.9	A	R	0.38	7.3	A		R	0.69	12.5	B	R	0.69	12.5	B		R	0.29	6.4	A	R	0.31	6.5	A		R	0.58	9.7	A	R	0.60	10.2	B	
	Northbound	LTR	0.08	15.8	B	LTR	0.08	15.8	B		LTR	0.17	12.6	B	LTR	0.17	12.6	B		LTR	0.06	11.3	B	LTR	0.06	11.4	B		LTR	0.11	11.6	B	LTR	0.11	11.6	B	
		Intersection		11.7	B	Intersection		11.8	B		Intersection		19.3	B	Intersection		20.2	C		Intersection		10.8	B	Intersection		10.7	B		Intersection		14.4	B	Intersection		14.9	B	
41[2]	**Rockaway Freeway and Beach 35th Street**																																				
	Eastbound	L	0.04	34.7	C	L	0.04	34.7	C		L	0.05	34.8	C	L	0.05	34.8	C		L	0.01	34.0	C	L	0.01	34.0	C		L	0.02	34.2	C	L	0.02	34.2	C	
		TR	0.32	18.2	B	TR	0.32	18.2	B		TR	0.64	24.6	C	TR	0.64	24.6	C		TR	0.19	16.6	B	TR	0.19	16.6	B		TR	0.38	19.1	B	TR	0.38	19.1	B	
	Westbound	L	0.00	41.0	D	L	0.00	39.0	D		L	0.00	0.0	-	L	0.00	0.0	-		L	0.00	43.0	D	L	0.00	43.0	D		L	0.00	44.0	D	L	0.00	48.0	D	
		TR	0.34	8.6	A	TR	0.34	8.5	A		TR	0.56	9.0	A	TR	0.56	9.0	A		TR	0.23	8.0	A	TR	0.23	8.0	A		TR	0.46	8.9	A	TR	0.46	8.8	A	
	Southbound	LTR	0.15	7.6	A	LTR	0.15	7.6	A		LTR	0.23	8.1	A	LTR	0.23	8.1	A		LTR	0.15	7.7	A	LTR	0.15	7.7	A		LTR	0.29	10.2	B	LTR	0.29	10.2	B	
	Northbound	LTR	0.09	25.7	C	LTR	0.09	25.7	C		LTR	0.24	27.6	C	LTR	0.24	27.6	C		LTR	0.09	25.7	C	LTR	0.09	25.7	C		LTR	0.18	26.9	C	LTR	0.18	26.9	C	
		Intersection		13.7	B	Intersection		13.7	B		Intersection		17.6	B	Intersection		17.6	B		Intersection		12.8	B	Intersection		12.8	B		Intersection		14.4	B	Intersection		14.4	B	

Notes: L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recorded during this peak hour. "+" denotes significant adverse impact.
1. Stop-controlled approach at signalized intersection.
2. Due to complex geometry and per NYCDOT request, LOS results were calculated using Synchro 10.

Table 18-21 (continued): Q3 2027 No-Action vs. Peak Construction Period Condition Level of Service Analysis – Signalized Intersections

#	Intersection & Approach	Weekday AM Peak Hour								Weekday PM Peak Hour								Saturday AM Peak Hour								Saturday PM Peak Hour							
		Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction				
		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	
42 [2]	**Rockaway Freeway and Seagirt Boulevard**																																
	Eastbound	L	0.13	40.4	D	L	0.13	40.0	D	L	0.23	39.1	D	L	0.23	38.7	D	L	0.11	41.2	D	L	0.11	41.2	D	L	0.23	42.0	D	L	0.23	41.6	D	
		TR	0.14	17.8	B	TR	0.14	18.5	B	TR	0.25	84.9	F	TR	0.25	85.0	F	TR	0.09	12.4	B	TR	0.09	12.5	B	TR	0.18	26.8	C	TR	0.18	28.4	C	
	Westbound	LTR	0.37	29.7	C	LTR	0.38	29.8	C	LTR	0.71	37.0	D	LTR	0.71	37.1	D	LTR	0.26	28.4	C	LTR	0.26	28.4	C	LTR	0.52	32.0	C	LTR	0.55	32.8	C	
	Southbound	TR	0.31	22.0	C	TR	0.31	22.1	C	TR	0.66	30.2	C	TR	0.66	30.2	C	TR	0.22	20.9	C	TR	0.22	20.8	C	TR	0.42	23.7	C	TR	0.45	24.6	C	
	Northbound	TR	0.38	10.1	B	TR	0.38	10.1	B	TR	0.87	25.9	C	TR	0.87	25.9	C	TR	0.24	10.3	B	TR	0.24	10.3	B	TR	0.47	11.6	B	TR	0.49	11.9	B	
		Intersection		21.9	C	Intersection		22.1	C	Intersection		39.2	D	Intersection		39.4	D	Intersection		21.1	C	Intersection		21.1	C	Intersection		25.3	C	Intersection		26.0	C	
43	**Rockaway Freeway and Beach 25th Street**																																
	Eastbound	LTR	0.35	25.7	C	LTR	0.35	25.7	C	LTR	0.33	25.4	C	LTR	0.33	25.4	C	LTR	0.09	22.3	C	LTR	0.09	22.3	C	LTR	0.19	23.4	C	LTR	0.19	23.4	C	
	Westbound	LTR	0.29	24.9	C	LTR	0.29	24.9	C	LTR	0.36	26.1	C	LTR	0.36	26.1	C	LTR	0.12	22.7	C	LTR	0.12	22.7	C	LTR	0.27	24.7	C	LTR	0.27	24.7	C	
	Northbound	L	0.12	36.3	D	L	0.12	36.3	D	L	0.18	37.3	D	L	0.18	37.3	D	L	0.05	35.3	D	L	0.05	35.3	D	L	0.10	36.0	D	L	0.10	36.0	D	
		TR	0.34	20.1	C	TR	0.34	20.1	C	TR	0.49	22.6	C	TR	0.49	22.6	C	TR	0.21	18.3	B	TR	0.21	18.3	B	TR	0.42	21.3	C	TR	0.42	21.3	C	
	Southbound	L	0.10	36.1	D	L	0.10	36.1	D	L	0.11	36.2	D	L	0.11	36.2	D	L	0.08	35.7	D	L	0.08	35.7	D	L	0.15	36.9	D	L	0.15	36.9	D	
		TR	0.35	20.0	C	TR	0.35	20.0	C	TR	0.43	21.2	C	TR	0.43	21.2	C	TR	0.15	17.6	B	TR	0.15	17.6	B	TR	0.31	19.4	B	TR	0.31	19.4	B	
		Intersection		22.9	C	Intersection		22.9	C	Intersection		23.9	C	Intersection		23.9	C	Intersection		20.4	C	Intersection		20.4	C	Intersection		22.4	C	Intersection		22.5	C	
44	**Rockaway Freeway and Cornaga Avenue**																																
	Eastbound	LTR	0.20	19.5	B	LTR	0.20	19.5	B	LTR	0.21	19.5	B	LTR	0.21	19.5	B	LTR	0.07	18.1	B	LTR	0.07	18.1	B	LTR	0.14	18.8	B	LTR	0.14	18.8	B	
	Westbound	LTR	0.48	25.0	C	LTR	0.48	25.0	C	LTR	0.81	39.7	D	LTR	0.81	39.7	D	LTR	0.21	19.9	B	LTR	0.21	19.9	B	LTR	0.46	24.0	C	LTR	0.46	24.0	C	
	Northbound	TR	0.43	26.4	C	TR	0.43	26.4	C	TR	0.53	28.6	C	TR	0.53	28.6	C	TR	0.22	23.1	C	TR	0.22	23.1	C	TR	0.45	26.6	C	TR	0.45	26.6	C	
	Southbound	L	0.05	36.2	D	L	0.05	36.2	D	L	0.13	37.6	D	L	0.13	37.6	D	L	0.06	36.4	D	L	0.06	36.4	D	L	0.13	37.5	D	L	0.13	37.5	D	
		TR	0.16	13.2	B	TR	0.16	13.2	B	TR	0.30	14.6	B	TR	0.30	14.6	B	TR	0.10	12.6	B	TR	0.10	12.6	B	TR	0.21	13.6	B	TR	0.21	13.6	B	
		Intersection		22.3	C	Intersection		22.3	C	Intersection		27.6	C	Intersection		27.7	C	Intersection		19.5	B	Intersection		19.5	B	Intersection		22.3	C	Intersection		22.3	C	
45	**Beach Channel Drive and Cornaga Avenue**																																
	Eastbound	LTR	0.20	19.5	B	LTR	0.20	19.5	B	LTR	0.18	19.3	B	LTR	0.18	19.3	B	LTR	0.08	18.2	B	LTR	0.08	18.2	B	LTR	0.17	19.2	B	LTR	0.17	19.2	B	
	Westbound	LTR	0.22	19.9	B	LTR	0.22	19.9	B	LTR	0.42	23.0	C	LTR	0.42	23.0	C	LTR	0.11	18.5	B	LTR	0.11	18.5	B	LTR	0.23	20.0	C	LTR	0.23	20.0	C	
	Northbound	L	0.02	12.0	B	L	0.02	12.0	B	L	0.02	12.1	B	L	0.02	12.1	B	L	0.01	11.8	B	L	0.01	11.8	B	L	0.02	12.0	B	L	0.02	12.0	B	
		TR	0.39	15.8	B	TR	0.40	15.9	B	TR	0.57	18.7	B	TR	0.59	19.2	B	TR	0.25	14.0	B	TR	0.26	14.1	B	TR	0.50	17.4	B	TR	0.52	17.8	B	
	Southbound	L	0.05	12.3	B	L	0.05	12.3	B	L	0.09	13.0	B	L	0.09	13.1	B	L	0.02	11.9	B	L	0.02	12.0	B	L	0.07	12.6	B	L	0.08	12.7	B	
		TR	0.37	15.6	B	TR	0.40	16.0	B	TR	0.59	19.3	B	TR	0.59	19.3	B	TR	0.24	13.9	B	TR	0.28	14.3	B	TR	0.49	17.3	B	TR	0.49	17.3	B	
		Intersection		16.6	B	Intersection		16.8	B	Intersection		19.5	B	Intersection		19.7	B	Intersection		14.8	B	Intersection		15.0	B	Intersection		17.7	B	Intersection		17.9	B	
46	**Beach Channel Drive and Mott Avenue**																																
	Eastbound	LTR	0.47	24.3	C	LTR	0.47	24.3	C	LTR	0.85	49.3	D	LTR	0.85	49.3	D	LTR	0.23	20.0	C	LTR	0.23	20.0	C	LTR	0.65	31.7	C	LTR	0.65	31.7	C	
	Westbound	LT	0.27	20.9	C	LT	0.27	20.9	C	LT	0.74	35.7	D	LT	0.74	35.7	D	LT	0.23	20.3	C	LT	0.23	20.3	C	LT	0.59	28.7	C	LT	0.59	28.7	C	
		R	0.11	10.2	B	R	0.11	10.2	B	R	0.21	11.3	C	R	0.21	11.3	C	R	0.09	10.0	B	R	0.09	10.0	B	R	0.20	11.2	C	R	0.20	11.2	C	
	Northbound	L	0.04	19.8	B	L	0.04	19.9	B	L	0.25	28.5	C	L	0.25	28.5	C	L	0.03	19.7	B	L	0.03	19.7	B	L	0.15	23.3	C	L	0.15	23.3	C	
		TR	0.78	36.8	D	TR	0.80	37.9	D	TR	1.23	150.0	F	TR	1.27	164.7	F	+	TR	0.57	28.1	C	TR	0.59	28.7	C	TR	1.16	121.5	F	TR	1.20	134.4	F	+
	Southbound	L	0.38	17.8	B	L	0.38	18.1	B	L	0.82	45.4	D	L	0.82	45.4	D	L	0.26	14.2	B	L	0.27	14.4	B	L	0.82	43.5	D	L	0.82	46.5	D	
		TR	0.51	16.4	B	TR	0.54	16.9	B	TR	0.98	45.3	D	TR	0.98	45.3	D	TR	0.38	14.4	B	TR	0.41	14.9	B	TR	0.78	24.0	C	TR	0.78	24.0	C	
		Intersection		23.9	C	Intersection		24.4	C	Intersection		71.0	E	Intersection		75.6	E	Intersection		19.3	B	Intersection		19.6	B	Intersection		54.8	D	Intersection		59.5	E	
47	**Beach Channel Drive and Dix Avenue**																																
	Eastbound	LTR	0.33	24.1	C	LTR	0.33	24.1	C	LTR	0.20	22.1	C	LTR	0.20	22.1	C	LTR	0.04	19.8	B	LTR	0.04	19.8	B	LTR	0.09	20.5	C	LTR	0.09	20.5	C	
	Westbound	LTR	0.05	19.9	B	LTR	0.05	19.9	B	LTR	0.17	21.4	C	LTR	0.17	21.4	C	LTR	0.06	20.0	B	LTR	0.06	20.0	B	LTR	0.13	20.9	C	LTR	0.13	20.9	C	
	Northbound	LTR	0.72	21.2	C	LTR	0.73	21.7	C	LTR	1.04	65.2	E	LTR	1.07	73.9	E	+	LTR	0.49	15.0	B	LTR	0.51	15.3	B	LTR	1.00	53.3	D	LTR	1.03	60.3	E	+
	Southbound	LTR	0.62	17.9	B	LTR	0.66	19.1	B	LTR	1.30	163.6	F	LTR	1.30	163.6	F	LTR	0.60	17.3	B	LTR	0.64	18.4	B	LTR	1.22	132.9	F	LTR	1.22	132.9	F	
		Intersection		20.1	C	Intersection		20.8	C	Intersection		112.7	F	Intersection		115.8	F	Intersection		16.5	B	Intersection		17.2	B	Intersection		93.6	F	Intersection		96.2	F	
49	**Beach Channel Drive and Nameoke Avenue**																																
	Eastbound	LTR	0.46	26.4	C	LTR	0.46	26.4	C	LTR	0.34	24.1	C	LTR	0.34	24.1	C	LTR	0.16	21.3	C	LTR	0.16	21.3	C	LTR	0.33	23.9	C	LTR	0.33	23.9	C	
	Northbound	L	0.04	9.7	A	L	0.04	9.8	A	L	0.17	15.0	B	L	0.17	15.0	B	L	0.01	9.4	A	L	0.01	9.4	A	L	0.06	11.2	B	L	0.06	11.2	B	
		TR	0.56	16.0	B	TR	0.57	16.2	B	TR	0.81	24.8	C	TR	0.83	26.3	C	TR	0.39	13.1	B	TR	0.40	13.3	B	TR	0.79	23.2	C	TR	0.81	24.3	C	
	Southbound	L	0.08	10.2	B	L	0.08	10.2	B	L	0.23	13.3	B	L	0.24	13.8	B	L	0.05	9.9	A	L	0.05	9.9	A	L	0.24	13.8	B	L	0.26	14.4	B	
		TR	0.58	16.5	B	TR	0.61	17.3	B	TR	1.15	101.0	F	TR	1.15	101.0	F	TR	0.52	15.2	B	TR	0.55	15.9	B	TR	1.05	65.6	E	TR	1.05	65.6	E	
		Intersection		17.7	B	Intersection		18.1	B	Intersection		63.8	E	Intersection		64.0	E	Intersection		14.7	B	Intersection		15.1	B	Intersection		44.5	D	Intersection		44.7	D	
50	**Beach Channel Drive and Hassock Avenue**																																
	Eastbound	LR	0.09	18.4	B	LR	0.09	18.4	B	LR	0.13	18.9	B	LR	0.13	18.9	B	LR	0.08	18.3	B	LR	0.08	18.3	B	LR	0.18	19.5	B	LR	0.18	19.5	B	
	Westbound	L	0.11	18.7	B	L	0.11	18.7	B	L	0.27	20.7	C	L	0.27	20.7	C	L	0.10	18.5	B	L	0.10	18.5	B	L	0.20	19.7	B	L	0.20	19.7	B	
		TR	0.13	18.8	B	TR	0.13	18.8	B	TR	0.35	22.1	C	TR	0.35	22.1	C	TR	0.08	18.3	B	TR	0.08	18.3	B	TR	0.18	19.4	B	TR	0.18	19.4	B	
	Northbound	LT	0.82	28.7	C	LT	0.83	29.7	C	LT	1.13	99.6	F	LT	1.16	111.7	F	+	LT	0.60	19.4	B	LT	0.62	19.8	B	LT	1.24	140.5	F	LT	1.27	153.7	F	+
	Southbound	T	0.62	19.4	B	T	0.66	20.6	C	T	1.17	113.0	F	T	1.17	113.0	F		T	0.57	18.3	B	T	0.62	19.4	B	T	1.16	109.6	F	T	1.16	109.6	F	
		R	0.05	11.2	B	R	0.05	11.2	B	R	0.19	12.6	B	R	0.19	12.6	B		R	0.06	11.3	B	R	0.06	11.3	B	R	0.13	12.0	B	R	0.13	12.0	B	
		Intersection		23.4	C	Intersection		24.2	C	Intersection		87.9	F	Intersection		92.2	F	Intersection		18.5	B	Intersection		19.2	B	Intersection		106.5	F	Intersection		112.2	F	

Notes: L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recorded during this peak hour. "+" denotes significant adverse impact.
1. Stop-controlled approach at signalized intersection.
2. Due to complex geometry and per NYCDOT request, LOS results were calculated using Synchro 10.

Table 18-22: Q3 2027 No-Action vs. Peak Construction Period Condition Level of Service Analysis – Unsignalized Intersections

#	Intersection & Approach	Weekday AM Peak Hour								Weekday PM Peak Hour								Saturday AM Peak Hour								Saturday PM Peak Hour							
		Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction			
		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	
11 [1]	**Rockaway Freeway and Beach 94th Street**																																
	Northbound	T	0.03	9.1	A	T	0.03	9.1	A	T	0.07	9.3	A	T	0.07	9.3	A	T	0.03	9.1	A	T	0.03	9.1	A	T	0.07	9.3	A	T	0.07	9.3	A	
13 [1]	**Beach Channel Drive and Beach 73rd Street**																																
	Eastbound	R	0.08	8.8	A	R	0.08	8.8	A	R	0.25	9.6	A	R	0.25	9.6	A	R	0.07	8.7	A	R	0.07	8.7	A	R	0.15	9.0	A	R	0.15	9.0	A	
	Northbound	R	0.06	10.2	B	R	0.06	10.4	B	R	0.22	17.3	C	R	0.22	17.3	C	R	0.04	9.9	A	R	0.04	10.0	B	R	0.12	12.5	B	R	0.12	12.5	B	
17	**Beach Front Road and Beach 62nd Street**																																
	Eastbound	LT	0.14	9.9	A	LT	0.14	9.9	A	LT	0.39	12.7	B	LT	0.39	12.7	B	LT	0.12	9.8	A	LT	0.12	9.8	A	LT	0.28	11.6	B	LT	0.28	11.7	B	
	Westbound	TR	0.12	9.7	A	TR	0.12	9.7	A	TR	0.14	10.4	B	TR	0.14	10.4	B	TR	0.06	9.4	A	TR	0.06	9.4	A	TR	0.13	10.1	B	TR	0.13	10.1	B	
	Southbound	LTR	0.00	7.2	A	LTR	0.00	7.2	A	LTR	0.01	7.3	A	LTR	0.01	7.3	A	LTR	0.00	7.4	A	LTR	0.00	7.4	A	LTR	0.00	7.5	A	LTR	0.00	7.5	A	
26	**Beach Channel Drive and Beach 53rd Street**																																
	Westbound	LT	0.03	9.2	A	LT	0.03	9.5	A	LT	0.20	18.5	C	LT	0.21	19.3	C	LT	0.03	9.0	A	LT	0.04	9.3	A	LT	0.14	14.0	B	LT	0.14	14.4	B	
	Northbound	LR	0.25	18.5	C	LR	0.31	21.4	C	LR	2.48	835.8	F	LR	2.86	1015.0	F	+	LR	0.18	16.0	C	LR	0.23	18.1	C	LR	1.28	248.9	F	LR	1.46	328.2	F	+
27	**Rockaway Beach Boulevard and Beach 53rd Street**																																
	Eastbound	LT	0.04	9.2	A	LT	0.04	9.4	A	LT	0.35	16.4	C	LT	0.39	18.5	C		LT	0.06	9.0	A	LT	0.06	9.2	A	LT	0.23	13.6	B	LT	0.25	14.9	B	
	Southbound	LR	0.25	14.6	B	LR	0.33	17.7	C	LR	1.80	485.9	F	LR	2.25	707.0	F	+	LR	0.18	14.0	B	LR	0.26	17.0	C	LR	1.00	121.8	F	LR	1.18	191.3	F	+
28	**Rockaway Beach Boulevard and Beach 52nd Street**																																
	Eastbound	LTR	0.01	8.0	A	LTR	0.01	8.2	A	LTR	0.05	10.0	A	LTR	0.05	10.5	B		LTR	0.01	8.3	A	LTR	0.01	8.4	A	LTR	0.04	10.1	B	LTR	0.04	10.6	B	
	Westbound	LTR	0.00	7.7	A	LTR	0.00	7.9	A	LTR	0.00	8.5	A	LTR	0.00	8.6	A		LTR	0.00	7.6	A	LTR	0.00	7.8	A	LTR	0.00	8.1	A	LTR	0.00	8.2	A	
	Northbound	LR	0.00	0.0	-	LR	0.00	0.0	-	LR	0.00	0.0	-	LR	0.00	0.0	-		LR	0.00	9.8	A	LR	0.00	10.7	B	LR	0.00	12.0	B	LR	0.00	12.7	B	
	Southbound	LTR	0.02	13.1	B	LTR	0.05	15.7	C	LTR	0.13	39.2	E	LTR	0.16	51.0	F	6	LTR	0.02	13.2	B	LTR	0.04	16.8	C	LTR	0.13	34.0	D	LTR	0.16	43.6	E	6
30	**Beach Channel Drive and Beach 50th Street**																																
	Westbound	LT	0.01	8.4	A	LT	0.05	8.6	A	LT	0.02	10.4	B	LT	0.03	10.5	B		LT	0.01	8.2	A	LT	0.05	8.4	A	LT	0.02	9.8	A	LT	0.02	9.9	A	
	Northbound	LR	0.02	13.0	B	LR	0.05	13.1	B	LR	0.09	29.6	D	LR	0.20	22.4	C		LR	0.02	12.1	B	LR	0.04	11.8	B	LR	0.10	23.6	C	LR	0.20	19.8	C	
31	**Rockaway Beach Boulevard and Beach 50th Street**																																
	Eastbound	LT	0.01	7.8	A	LT	0.02	7.9	A	LT	0.01	7.9	A	LT	0.04	8.0	A		LT	0.00	7.5	A	LT	0.01	7.5	A	LT	0.01	7.8	A	LT	0.04	7.9	A	
	Southbound	LR	0.02	10.1	B	LR	0.08	10.1	B	LR	0.06	12.6	B	LR	0.06	13.5	B		LR	0.01	9.5	A	LR	0.07	9.5	A	LR	0.05	11.5	B	LR	0.06	12.2	B	
32 [2]	**Beach Channel Drive and Beach 52nd Street**																																
	Westbound	LT	0.01	8.3	A	LT	0.01	8.4	A	LT	0.06	11.1	B	LT	0.06	11.2	B		LT	0.01	8.4	A	LT	0.01	8.4	A	LT	0.04	10.3	B	LT	0.03	9.2	A	
	Northbound	LR	0.06	12.5	B	LR	0.06	12.6	B	LR	0.14	26.2	D	LR	0.20	31.8	D	6	LR	0.03	11.3	B	LR	0.03	11.4	B	LR	0.12	17.5	C	LR	0.11	15.0	B	
33 [2]	**Peninsula Way and Beach 53rd Street**																																
	Westbound	LR	0.07	10.5	B	LR	0.07	10.7	B	LR	0.10	15.3	C	LR	0.10	15.5	C		LR	0.03	10.4	B	LR	0.04	10.7	B	LR	0.11	14.1	B	LR	0.09	11.8	B	
	Southbound	LT	0.00	7.8	A	LT	0.00	7.9	A	LT	0.02	9.2	A	LT	0.02	9.3	A		LT	0.00	7.9	A	LT	0.00	7.9	A	LT	0.01	8.8	A	LT	0.01	8.1	A	
34 [2]	**Peninsula Way and Beach 52nd Street**																																
	Eastbound	LTR	0.00	7.7	A	LTR	0.00	7.7	A	LTR	0.00	8.4	A	LTR	0.00	8.5	A		LTR	0.00	7.8	A	LTR	0.00	7.8	A	LTR	0.00	8.5	A	LTR	0.00	7.9	A	
	Westbound	LTR	0.00	7.5	A	LTR	0.00	7.6	A	LTR	0.00	8.3	A	LTR	0.00	8.4	A		LTR	0.00	7.7	A	LTR	0.00	7.8	A	LTR	0.01	8.4	A	LTR	0.00	7.8	A	
	Northbound	LTR	0.01	10.6	B	LTR	0.01	11.0	B	LTR	0.16	19.3	C	LTR	0.19	20.9	C		LTR	0.04	12.0	B	LTR	0.04	12.5	B	LTR	0.15	21.7	C	LTR	0.09	13.2	B	
	Southbound	LTR	0.02	11.7	B	LTR	0.03	12.0	B	LTR	0.30	36.3	E	LTR	0.34	42.4	E	6	LTR	0.04	14.1	B	LTR	0.06	14.5	B	LTR	0.25	37.0	E	LTR	0.11	16.8	C	
35 [3]	**Peninsula Way and Beach 50th Street**																																
	Eastbound																																
	Northbound																																
36	**Beach Channel Drive and Beach 47th Street**																																
	Eastbound	LT	0.00	8.4	A	LT	0.00	8.5	A	LT	0.00	9.2	A	LT	0.00	9.2	A		LT	0.00	7.9	A	LT	0.00	8.0	A	LT	0.00	7.9	A	LT	0.00	8.8	A	
	Northbound	LTR	0.02	12.3	B	LTR	0.02	12.6	B	LTR	0.13	26.7	D	LTR	0.14	27.8	D		LTR	0.04	11.8	B	LTR	0.04	12.2	B	LTR	0.04	11.8	B	LTR	0.16	21.5	C	
37	**Arverne Boulevard/Rockaway Beach Boulevard and Beach 47th Street**																																
	Eastbound	LTR	0.00	7.6	A	LTR	0.00	7.6	A	LTR	0.01	8.1	A	LTR	0.01	8.1	A		LTR	0.00	7.6	A	LTR	0.01	7.6	A	LTR	0.00	7.6	A	LTR	0.01	8.0	A	
	Westbound	LTR	0.01	8.3	A	LTR	0.01	8.4	A	LTR	0.02	11.2	B	LTR	0.02	11.3	B		LTR	0.01	8.4	A	LTR	0.01	8.5	A	LTR	0.01	8.4	A	LTR	0.03	10.8	B	
	Northbound	LTR	0.02	12.1	B	LTR	0.03	12.3	B	LTR	0.22	33.9	D	LTR	0.23	35.1	E		LTR	0.05	13.1	B	LTR	0.05	13.4	B	LTR	0.05	13.1	B	LTR	0.25	29.9	D	
38	**Rockaway Beach Boulevard and Beach 44th Street**																																
	Westbound	LT	0.00	8.0	A	LT	0.00	8.0	A	LT	0.01	9.1	A	LT	0.01	9.1	A		LT	0.00	7.6	A	LT	0.00	7.6	A	LT	0.00	7.6	A	LT	0.01	8.1	A	
	Northbound	LR	0.03	12.2	B	LR	0.05	12.9	B	LR	0.24	35.4	E	LR	0.25	35.6	E		LR	0.03	12.0	B	LR	0.04	11.5	B	LR	0.03	12.0	B	LR	0.14	21.9	C	
	Southbound	LTR	0.05	12.0	B	LTR	0.05	12.0	B	LTR	0.18	22.9	C	LTR	0.18	23.1	C		LTR	0.02	10.9	B	LTR	0.02	10.7	B	LTR	0.02	10.9	B	LTR	0.07	15.5	C	
40 [1,4]	**Beach Channel Drive and Seagirt Boulevard**																																
	Westbound	R	0.01	10.2	B	R	0.01	10.3	B	R	0.15	13.5	B	R	0.15	13.8	B		R	0.04	9.7	A	R	0.04	9.8	A	R	0.12	12.1	B	R	0.12	12.1	B	
48	**Beach Channel Drive and Birdsall Avenue**																																
	Eastbound	LTR	0.01	11.2	B	LTR	0.01	11.5	B	LTR	0.40	122.5	F	LTR	0.42	134.2	F	6	LTR	0.01	13.7	B	LTR	0.02	14.2	B	LTR	0.01	13.7	B	LTR	0.19	82.7	F	6
	Westbound	LTR	0.00	13.1	B	LTR	0.00	13.3	B	LTR	0.27	111.9	F	LTR	0.29	125.7	F	6	LTR	0.01	14.6	B	LTR	0.01	15.3	C	LTR	0.01	14.6	B	LTR	0.14	153.9	F	6
	Northbound	LTR	0.00	8.3	A	LTR	0.00	8.4	A	LTR	0.01	11.1	B	LTR	0.01	11.1	B		LTR	0.00	8.2	A	LTR	0.00	8.3	A	LTR	0.00	8.2	A	LTR	0.01	10.7	B	
	Southbound	LTR	0.00	8.4	A	LTR	0.00	8.4	A	LTR	0.01	9.9	A	LTR	0.01	10.1	B		LTR	0.00	8.0	A	LTR	0.00	8.0	A	LTR	0.00	8.0	A	LTR	0.01	9.6	A	
51 [3]	**Rockaway Freeway and Beach 52nd Street**																																
	Southbound																																

Notes: L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recorded during this peak hour. "+" denotes significant adverse impact.

1. Stop-controlled approach at signalized intersection.
2. Intersection created as part of the Proposed Project.
3. Intersection under construction/not built during Q3 2027.
4. Due to complex geometry and per NYCDOT request, LOS results were calculated using Synchro 10.
5. Driveway to parking garage/parking lot created as part of the Proposed Project.
6. Minor approach has fewer than 90 PCEs.

Table 18-22 (continued): Q3 2027 No-Action vs. Peak Construction Period Condition Level of Service Analysis – Unsignalized Intersections

#	Intersection & Approach	Weekday AM Peak Hour								Weekday PM Peak Hour								Saturday AM Peak Hour								Saturday PM Peak Hour							
		Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction				Q3 2027 No-Action				Q3 2027 Peak Construction			
		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
P1a[5]	**Parking Lot 1 driveway, via Beach Channel Drive**																																
	Westbound	LT	0.00	8.8	A	LT	0.02	10.1	B	LT	0.03	13.9	B	LT	0.03	14.1	B	LT	0.01	9.0	A	LT	0.01	9.1	A	LT	0.01	9.0	A	LT	0.03	13.3	B
	Northbound	LR	0.01	12.5	B	LR	0.06	17.5	C	LR	0.12	29.3	D	LR	0.12	30.0	D	LR	0.02	12.9	B	LR	0.02	13.1	B	LR	0.02	12.9	B	LR	0.12	26.0	D
P1b[5]	**Parking Lot 1 driveway, via Beach 53rd Street**																																
	Westbound	LR	0.01	10.0	B	LR	0.01	11.0	B	LR	0.04	12.9	B	LR	0.04	13.3	B	LR	0.03	10.1	B	LR	0.03	10.4	B	LR	0.03	10.1	B	LR	0.05	12.8	B
	Southbound	LT	0.00	7.7	A	LT	0.00	7.9	A	LT	0.00	8.5	A	LT	0.00	8.6	A	LT	0.00	7.7	A	LT	0.00	7.8	A	LT	0.00	7.7	A	LT	0.00	8.5	A
P2[5]	**Parking Garage 2 driveway, via Beach 53rd Street**																																
	Westbound	LR	0.07	9.9	A	LR	0.06	10.9	B	LR	0.07	12.7	B	LR	0.08	12.9	B	LR	0.04	9.8	A	LR	0.04	10.1	B	LR	0.04	9.8	A	LR	0.10	12.4	B
	Southbound	LT	0.00	7.7	A	LT	0.03	8.0	A	LT	0.04	8.6	A	LT	0.04	8.7	A	LT	0.01	7.7	A	LT	0.01	7.8	A	LT	0.01	7.7	A	LT	0.02	8.5	A
P3[5]	**Parking Garage 3 driveway, via Beach 53rd Street**																																
	Westbound	LR	0.06	11.1	B	LR	0.05	12.8	B	LR	0.09	18.5	C	LR	0.09	18.6	C	LR	0.03	10.8	B	LR	0.03	11.0	B	LR	0.03	10.8	B	LR	0.10	16.1	C
	Southbound	LT	0.00	8.1	A	LT	0.03	8.6	A	LT	0.04	10.5	B	LT	0.04	10.5	B	LT	0.01	8.1	A	LT	0.01	8.2	A	LT	0.01	8.1	A	LT	0.02	9.6	A
P4[5]	**Parking Garage 4 driveway, via Rockaway Beach Boulevard**																																
	Eastbound	LT	0.00	8.0	A	LT	0.02	8.6	A	LT	0.03	9.9	A	LT	0.03	10.4	B	LT	0.01	8.3	A	LT	0.01	8.5	A	LT	0.01	8.3	A	LT	0.02	10.6	B
	Southbound	LR	0.03	10.7	B	LR	0.03	14.3	B	LR	0.05	19.1	C	LR	0.05	20.9	C	LR	0.02	11.4	B	LR	0.02	12.0	B	LR	0.02	11.4	B	LR	0.07	20.1	C
P5[5]	**Parking Garage 5 driveway, via Peninsula Way**																																
	Eastbound	LT	0.01	7.2	A	LT	0.07	7.4	A	LT	0.07	7.4	A	LT	0.07	7.4	A	LT	0.02	7.3	A	LT	0.02	7.3	A	LT	0.02	7.3	A	LT	0.04	7.3	A
	Southbound	LR	0.07	8.6	A	LR	0.04	8.5	A	LR	0.04	8.5	A	LR	0.04	8.5	A	LR	0.03	8.4	A	LR	0.03	8.4	A	LR	0.03	8.4	A	LR	0.06	8.5	A
P6[5]	**Parking Lot 6 driveway, via Beach Channel Drive**																																
	Westbound	LT	0.00	8.4	A	LT	0.01	9.6	A	LT	0.02	11.1	B	LT	0.02	11.3	B	LT	0.01	8.4	A	LT	0.01	8.6	A	LT	0.01	8.4	A	LT	0.02	10.8	B
	Northbound	LR	0.01	13.1	B	LR	0.11	24.3	C	LR	0.16	34.2	D	LR	0.17	36.0	E	LR	0.02	12.8	B	LR	0.02	13.1	B	LR	0.02	12.8	B	LR	0.14	27.9	D
P7[3]	**Parking Garage 7 driveway, via Beach 52nd Street**																																
	Westbound																																
	Southbound																																
P8[3]	**Parking Garage 8 driveway, via Peninsula Way**																																
	Westbound																																
	Northbound																																

Notes: L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recorded during this peak hour. "+" denotes significant adverse impact.
1. Stop-controlled approach at signalized intersection.
2. Intersection created as part of the Proposed Project.
3. Intersection under construction/not built during Q3 2027.
4. Due to complex geometry and per NYCDOT request, LOS results were calculated using Synchro 10.
5. Driveway to parking garage/parking lot created as part of the Proposed Project.
6. Minor approach has fewer than 90 PCEs.

Transit

As shown in **Table 18-23: Q3 2027 Peak Construction Period Condition – Bus Line-Haul,** there would be no construction-related significant adverse impacts to the Q22 or Q52-SBS buses.

Table 18-23: Q3 2027 Peak Construction Period Condition – Bus Line-Haul

Route	Peak Direction	Maximum Load Point	Peak Hour Buses [1]	Peak Hour Passengers [2]	Average Passengers Per Bus	Total Capacity Per Bus [3]	Available Capacity Per Bus [3]	Impact [4]
Weekday AM								
Q22	EB	Beach Channel Dr and Beach 35th St	7	196	28	54	26	No
Q22	WB	Rockaway Beach Blvd and Beach 91st St	5	247	49	54	5	No
Q52-SBS	NB	Woodhaven Blvd and Atlantic Ave	2	168	84	85	1	No
Q52-SBS	SB	Woodhaven Blvd and Jamaica Ave	4	109	27	85	58	No
Weekday PM								
Q22	EB	Seagirt Blvd and Crest Rd	6	279	46	54	8	No
Q22	WB	Beach Channel Dr and Beach 36th St	7	349	50	54	4	No
Q52-SBS	NB	Woodhaven Blvd and Myrtle Ave	4	193	48	85	37	No
Q52-SBS	SB	Woodhaven Blvd and Metropolitan Ave	4	346	86	85	-1	No [5]

Notes:
(1) NYCT provided updated peak hour bus numbers for the future condition.
(2) Based on most currently available data from NYCT. Bus volumes generated by the Proposed Project were distributed based on trip assignment assumptions described in the TDF Memorandum.
(3) Available capacity based on a maximum of 54 passengers per bus (40-foot standard bus) for Q22 buses and 85 passengers per bus (60-foot articulated bus) for Q52-SBS buses.
(4) Determination of significant impacts based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual.*
(5) The bus would operate above capacity in the No-Action condition and no construction trips were added, so it would not result a significant impact due to construction activities.

Pedestrian

As shown in **Table 18-24: Q3 2027 Peak Construction Period Condition – Sidewalks**, there would be no construction-related significant adverse impacts at sidewalks.

Table 18-24: Q3 2027 Peak Construction Period Condition – Sidewalks

Location	Total Width (ft) [1]	Obstruction Width (ft)	Effective Width (ft)	Available Circulation Space (ft^2/p)				Non-Platoon Conditions LOS				Platoon Conditions LOS			
				Weekday		Saturday		Weekday		Saturday		Weekday		Saturday	
				AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Beach 59th St and Arverne Blvd (E leg, N sidewalk)	5.8	3.0	2.8	116	57	120	58	A	B	A	B	B	C	B	C
Beach 59th St and Rockaway Fwy (W leg, N sidewalk)	8.0	3.0	5.0	144	86	213	102	A	A	A	A	B	C	B	B
Beach 54th St and Beach Channel Dr (W leg, N sidewalk)	7.0	3.0	4.0	168	120	153	81	A	A	A	A	B	B	B	C
Beach 54th St and Arverne Blvd (E leg, N sidewalk)	8.0	3.0	5.0	104	59	65	34	A	B	A	C	B	C	C	D
Beach 54th St and Arverne Blvd (W leg, N sidewalk)	10.0	3.0	7.0	150	77	129	66	A	A	A	A	B	C	B	C
Beach 53rd St and Beach Channel Dr (E leg, S sidewalk) [2]	18.3	3.0	15.3	567	274	349	176	A	A	A	A	A	B	B	B
Beach 53rd St and Beach Channel Dr (W leg, S sidewalk)	10.0	3.0	7.0	82	51	58	29	A	B	B	C	C	C	C	D
Beach 53rd St and Rockaway Beach Blvd (N leg, E sidewalk) [2]	6.5	3.5	3.0	65	48	118	58	A	B	A	B	C	C	B	C
Beach 53rd St and Rockaway Beach Blvd (E leg, N sidewalk) [2]	9.0	3.5	5.5	137	103	179	93	A	A	A	A	B	B	B	B
Beach 50th St and Rockaway Beach Blvd (E leg, S sidewalk)	7.0	3.0	4.0	150	62	102	51	A	A	A	B	B	C	B	C
Beach 47th St and Rockaway Beach Blvd (E leg, S sidewalk)	7.8	3.0	4.8	151	61	208	105	A	A	A	A	B	C	B	B
Beach 44th St and Rockaway Fwy (N leg, W sidewalk)	5.5	3.0	2.5	126	34	133	67	A	C	A	A	B	D	B	C
Beach 44th St and Rockaway Fwy (W leg, N sidewalk)	14.3	3.0	11.3	363	90	477	242	A	A	A	A	B	C	B	B
Beach 56th St and Arverne Blvd (W leg, N sidewalk)	10.0	3.0	7.0	87	112	188	95	A	A	A	A	C	B	B	B
Beach 57th St and Arverne Blvd (E leg, N sidewalk)	10.0	3.0	7.0	224	170	351	170	A	A	A	A	B	B	B	B
Beach 52nd St and Beach Channel Dr (E leg, S sidewalk) [2]	10.5	5.5	5.0	278	142	169	89	A	A	A	A	B	B	B	C
Beach 53rd St and Peninsula Way (N leg, E sidewalk) [2]	6.0	3.5	2.5	110	75	166	85	A	A	A	A	B	C	B	C
Beach 52nd St and Peninsula Way (N leg, W sidewalk) [2]	6.5	3.5	3.0	263	95	175	87	A	A	A	A	B	B	B	C
Beach 52nd St and Peninsula Way (W leg, N sidewalk) [2]	6.5	3.5	3.0	261	114	231	116	A	A	A	A	B	B	B	B
Beach 52nd St and Peninsula Way (N leg, E sidewalk) [2]	6.0	3.5	2.5	139	59	112	58	A	B	A	B	B	C	B	C
Beach 52nd St and Peninsula Way (E leg, N sidewalk) [2]	5.0	3.5	1.5	476	134	232	114	A	A	A	A	B	B	B	B
Beach 52nd St and Peninsula Way (S leg, E sidewalk) [2]	8.0	3.5	4.5	679	225	362	191	A	A	A	A	A	B	B	B
Beach 52nd St and Peninsula Way (E leg, S sidewalk) [2]	14.5	3.5	11.0	1004	424	721	379	A	A	A	A	A	B	A	B
Beach 52nd St and Peninsula Way (S leg, W sidewalk) [2]	8.5	3.5	5.0	550	195	370	183	A	A	A	A	A	B	B	B
Beach 52nd St and Peninsula Way (W leg, S sidewalk) [2]	5.0	3.5	1.5	248	90	170	86	A	A	A	A	B	B	B	C
Beach 52nd St and Rockaway Beach Blvd (E leg, N sidewalk) [2]	10.0	3.5	6.5	151	62	127	65	A	A	A	A	B	C	B	C
Beach 51st St and Rockaway Beach Blvd (N leg, E sidewalk) [2]	25.0	3.0	22.0	2295	893	1473	777	A	A	A	A	A	A	A	A
Beach 51st St and Rockaway Beach Blvd (E leg, S sidewalk) [2]	21.0	3.0	18.0	1352	541	219	108	A	A	A	A	A	A	B	B

Notes:
"+" denotes signinficant adverse impact.
(1) The total width was measured at the narrowest point along the sidewalk.
(2) The total width was measured from the site plan at narrowest point along the sidewalk.

As shown in **Table 18-25: Q3 2027 Peak Construction Period Condition – Signalized Crosswalks** and **Table 18-26: Q3 2027 Peak Construction Period Condition – Unsignalized Crosswalks**, there would be no construction-related significant adverse impacts at signalized or unsignalized crosswalks.

Table 18-25: Q3 2027 Peak Construction Period Condition – Signalized Crosswalks

Location	Length (ft)	Width (ft)	Available Circulation Space (ft^2/p)				Crosswalk Circulation LOS							
			Weekday		Saturday		Weekday				Saturday			
			AM	PM	AM	PM	AM		PM		AM		PM	
Beach 54th St and Beach Channel Dr (S leg)	33.8	14.5	77	22	59	28	A		D		B		C	
Beach 54th St and Arverne Blvd (N leg)	40.0	12.2	80	24	60	31	A		C		A		C	

Notes:
"+" denotes significant adverse impact.

Table 18-26: Q3 2027 Peak Construction Period Condition – Unsignalized Crosswalks

Location	Length (ft)	Width (ft)	Average Pedestrian Delay (s)				Crosswalk Circulation LOS							
			Weekday		Saturday		Weekday				Saturday			
			AM	PM	AM	PM	AM		PM		AM		PM	
Beach 53rd St and Beach Channel Dr (S leg)	30.0	10.0	1.6	2.4	1.4	2.6	A		A		A		A	
Beach 53rd St and Rockaway Beach Blvd (N leg) [1]	35.0	12.0	3.1	3.3	2.2	4.0	A		A		A		A	
Beach 47th St and Rockaway Beach Blvd (S leg)	30.0	11.3	0.2	0.6	0.4	0.8	A		A		A		A	
Beach 56th St and Arverne Blvd (N leg) [2]	40.6	12.7	0.6	0.4	0.9	0.9	A		A		A		A	
Beach 57th St and Arverne Blvd (N leg) [2]	42.0	13.6	1.6	1.2	2.5	2.5	A		A		A		A	
Beach 52nd St and Beach Channel Dr (S leg) [1]	23.0	10.0	0.4	0.4	0.2	0.5	A		A		A		A	
Beach 53rd St and Peninsula Way (E leg) [3]	23.0	10.0	5.0	12.0	3.3	8.5	A		C		A		B	
Beach 52nd St and Peninsula Way (N leg) [1]	23.0	10.0	0.2	0.6	0.3	0.5	A		A		A		A	
Beach 52nd St and Peninsula Way (E leg) [1]	23.0	10.0	0.9	0.6	0.4	0.8	A		A		A		A	
Beach 52nd St and Peninsula Way (S leg) [1]	23.0	10.0	0.1	0.7	0.2	0.5	A		A		A		A	
Beach 52nd St and Peninsula Way (W leg) [1]	23.0	10.0	0.1	0.6	0.2	0.4	A		A		A		A	
Beach 52nd St and Rockaway Beach Blvd (N leg) [1]	23.0	10.0	0.2	0.2	0.2	0.2	A		A		A		A	
Beach 52nd St and Rockaway Beach Blvd (E leg) [1]	40.0	12.0	6.5	13.6	4.4	11.8	B		C		A		C	
Beach 51st St and Rockaway Beach Blvd (E leg) [1]	23.0	10.0	3.1	4.7	2.4	4.2	A		A		A		A	

Notes: The east crosswalk at Beach 52nd Street and Rockaway Beach Boulevard is assumed to only be used by construction workers accessing the construction site. Existing pedestrians using crossing here were rerouted to the temporary west crosswalk at Beach 52nd Street and Rockaway Beach Boulevard.
"+" denotes significant adverse impact.
(1) Crosswalk length and width measured from the site plan.
(2) Spot counts were performed to capture conflicting vehicles, as traffic counts were not collected at this intersection.

As shown in **Table 18-27: Q3 2027 Peak Construction Period Condition – Corners,** there would be no construction-related significant adverse impacts at corners.

Table 18-27: Q3 2027 Peak Construction Period Condition – Corners

Location	Available Circulation Space (ft^2/p)				Corner Circulation LOS			
	Weekday		Saturday		Weekday		Saturday	
	AM	PM	AM	PM	AM	PM	AM	PM
Beach 59th St and Arverne Blvd (NE corner)	315	174	354	166	A	A	A	A
Beach 59th St and Arverne Blvd (SE corner)	81	48	105	49	A	B	A	B
Beach 59th St and Rockaway Fwy (NW corner)	175	133	374	176	A	A	A	A
Beach 54th St and Beach Channel Dr (NE corner)	1048	719	1136	579	A	A	A	A
Beach 54th St and Beach Channel Dr (SE corner)	321	128	259	124	A	A	A	A
Beach 54th St and Beach Channel Dr (SW corner)	613	209	537	265	A	A	A	A
Beach 54th St and Beach Channel Dr (NW corner)	193	110	238	119	A	A	A	A
Beach 54th St and Arverne Blvd (NE corner)	91	26	72	33	A	C	A	C
Beach 54th St and Arverne Blvd (NW corner)	289	87	190	97	A	A	A	A
Beach 53rd St and Beach Channel Dr (SE corner)	72	37	81	41	A	C	A	B
Beach 53rd St and Beach Channel Dr (SW corner)	113	55	133	68	A	B	A	A
Beach 51st St and Beach Channel Dr (SE corner)	216	134	303	155	A	A	A	A
Beach 47th St and Rockaway Beach Blvd (SW corner)	204	71	144	74	A	A	A	A
Beach 47th St and Rockaway Beach Blvd (SE corner)	146	52	106	54	A	B	A	B
Beach 44th St and Rockaway Beach Blvd (SW corner)	385	117	229	115	A	A	A	A
Beach 44th St and Rockaway Fwy (NW corner)	216	76	458	227	A	A	A	A
Beach 56th Pl and Arverne Blvd (NW corner)	271	87	306	156	A	A	A	A
Beach 56th Pl and Arverne Blvd (NE corner)	238	80	310	151	A	A	A	A
Beach 56th Pl and Arverne Blvd (SW corner) (1)	327	108	216	116	A	A	A	A
Beach 56th Pl and Arverne Blvd (SE corner) (1)	248	97	197	103	A	A	A	A
Beach 56th St and Arverne Blvd (NW corner)	339	159	392	200	A	A	A	A
Beach 56th St and Arverne Blvd (NE corner)	449	167	418	214	A	A	A	A
Beach 56th Pl and Rockaway Fwy (NW corner) (1)	503	183	525	314	A	A	A	A
Beach 56th Pl and Rockaway Fwy (NE corner) (1)	1104	593	1814	899	A	A	A	A
Beach 57th St and Arverne Blvd (NW corner)	500	212	393	196	A	A	A	A
Beach 57th St and Arverne Blvd (NE corner)	393	174	329	164	A	A	A	A
Beach 52nd St and Beach Channel Dr (SE corner)	1398	578	1043	550	A	A	A	A
Beach 52nd St and Beach Channel Dr (SW corner)	2797	1053	1992	1011	A	A	A	A
Beach 53rd St and Peninsula Way (NE corner)	363	236	517	257	A	A	A	A
Beach 53rd St and Peninsula Way (SE corner)	358	228	501	249	A	A	A	A
Beach 50th St and Peninsula Way (NW corner)	45087	36238	73038	36022	A	A	A	A

Notes: Unsignalized corners at two-way stop-controlled intersections with uncontrolled crosswalks across the major street cannot be analyzed. Therefore, the northeast and northwest corners at Beach 53rd Street and Rockaway Boulevard, the southwest corner at Beach 50th Street and Rockaway Beach Boulevard, northeast, northwest, southeast, and southwest corners at Beach 52nd Street and Peninsula Way and the northwest and northeast corners at Beach 52nd Street and Rockaway Beach Boulevard were not included in this table.
"+" denotes significant adverse impact.
(1) Median element that was analyzed at two adjacent corners.

Parking

As part of the construction activities, approximately 27 existing on-street parking spaces would be temporarily removed during Q3 2027 to provide space for construction staging adjacent to the construction sites. As no parking spaces would be provided for construction workers, the parking demand generated by the construction workers was assigned to on-street parking spaces (77, 96, 14, 0, and 96 parking spaces during the Weekday AM, Weekday MD, Weekday PM, Weekday Overnight, and Saturday MD peak hours, respectively). As a result, the utilization of on-street parking spaces in the study area is expected to increase due to the auto trips generated by the construction of the Proposed Project.

Table 18-28: Q3 2027 Peak Construction Condition On-Street Parking Utilization Summary shows the results of the Q3 2027 parking utilization analysis. The on-street parking utilization would increase to 76%, 66%, 61%, and 58% during the Weekday AM, Weekday MD, Weekday PM, and Weekday Overnight peak hours, respectively. The parking utilization for the Saturday MD peak hour would increase to 62%.

As shown in **Table 18-29: Q3 2027 Peak Construction Utilization of Available On-Street Parking Spaces**, the on-street parking demand generated by construction activities would represent less than half of the available on-street parking spaces for all peak hours. Therefore, there would be no significant adverse parking impacts.

Table 18-28: Q3 2027 Peak Construction Condition On-Street Parking Utilization Summary

Q3 2027 Peak Construction	Weekday AM	Weekday MD	Weekday PM	Weekday Overnight	Saturday MD
Capacity					
No Action Capacity	1,682	1,682	1,728	1,728	1,728
Net Change in Peak Construction On-Street Parking Supply [1]	-27	-27	-27	-27	-27
Total Peak Construction On-Street Capacity	1,655	1,655	1,701	1,701	1,701
Demand					
Total No Action Demand	1,154	1,004	1,017	991	961
Peak Construction Demand	96	96	14	0	96
Total Peak Construction On-Street Demand	1,250	1,100	1,032	991	1,057
Utilization					
Available Spaces	405	555	669	710	644
Peak Construction Utilization	**76%**	**66%**	**61%**	**58%**	**62%**

1. Reflects 27 on-street parking spaces on Rockaway Beach Boulevard and Beach 50th Street adjacent to the construction sites that would be temporarily removed for construction staging in Q3 2027.

Table 18-29: Q3 2027 Peak Construction Utilization of Available On-Street Parking Spaces

Q3 2027 Peak Construction Available Parking Spaces Utilization	Weekday AM	Weekday MD	Weekday PM	Weekday Overnight	Saturday MD
Available Parking Spaces					
No-Action On-Street Available Parking Spaces [1]	528	678	711	737	767
Net Change in Peak Construction On-Street Parking Supply [2]	-27	-27	-27	-27	-27
Total Available Peak Construction On-Street Parking Spaces	501	651	684	710	740
Demand					
Peak Construction Demand	96	96	14	0	96
Utilization					
Utilization of Available On-Street Parking Spaces by Peak Construction Demand	**19%**	**15%**	**2%**	**0%**	**13%**

1. For detailed calculations, see Table 18-18.
2. Reflects 27 on-street parking spaces on Rockaway Beach Boulevard and Beach 50th Street adjacent to the construction sites that would be temporarily removed for construction staging in Q3 2027.

A scenario where construction phasing is adjusted to advance the delivery of community facility space in Building E1/E2 and the open space between buildings D and E would not substantially alter the conclusions of the construction analysis. In this scenario, worst-case development periods based on construction activity would remain unchanged because buildings C1, C2, D1, D2, E1 and E2 would require similar construction equipment and duration. The same number of buildings would be under construction in each phase and overall construction activities would similar in intensity. For purposes of the construction-period transportation analysis, the third quarter of 2027 would remain as the peak construction period. Construction staging and sidewalks closures would remain substantially the same. Therefore, construction-period transportation-related effects of the modified construction phasing scenario would be substantially unchanged with a reduction in vehicle trips and nominal increase in pedestrian trips.

Air Quality

Methodology

Based on the results of the preliminary assessment included in Section V, "Preliminary Assessment," of this chapter, a detailed analysis of construction air quality impacts was completed for on-site equipment and trucks. As stated in the *CEQR Technical Manual*, the determination of significance for construction-related air quality impacts is based on the same criteria applicable to operational air quality impacts (see Chapter 13, "Air Quality"). The pollutants of concern are carbon monoxide (CO), Sulfur Dioxide (SO_2), PM_{10}, $PM_{2.5}$, and nitrogen oxides (NO_2) from construction-related trucks and equipment. **Table 18-30: National Ambient Air Quality Standards and De Minimis Guidelines** shows the relevant NAAQS, as well pertinent DEP *de minimis* guidelines, used for the construction analysis.

Table 18-30: National Ambient Air Quality Standards and De Minimis Guidelines

Pollutant	Averaging Period	Standard	NYC De Minimis
Sulfur Dioxide	1-hour average[e]	197 µg/m^3	NA
Inhalable Particulates (PM_{10})	24-hour average	150 µg/m^3	NA
Inhalable Particulates ($PM_{2.5}$)	3-yr average annual mean	12 µg/m^3	0.3 µg/m^3
	24-hr. 3-yr. average.[c]	35 µg/m^3	8.7 µg/m^3 [b]
Carbon Monoxide	8-hour average[a]	10,000 µg/m^3	Increase > 1/2 the difference between No-Action concentration and 10,000 µg/m^3
	1-hour average[a]	40,000 µg/m^3	NA
Nitrogen Dioxide	12-month arithmetic mean	100 µg/m^3	NA
	1-hr average[d]	188 µg/m^3	NA

Notes: ppm = parts per million; µg/m^3 = micrograms per cubic meter.
a. Not to be exceeded more than once a year.
b. Increase > 1/2 the difference between background concentration of 17.7 µg/m^3 and 35 µg/m^3.
c. Not to be exceeded by the 98th percentile of 24-hour $PM_{2.5}$ concentrations in a year (averaged over 3 years).
d. Three-year average of the 98th percentile of the daily maximum 1-hour average, effective January 22, 2010.
e. Three-year average of the 99th percentile of the daily maximum 1-hour average, final rule signed June 2, 2010.

Sources: New York State Department of Environmental Conservation; New York State Ambient Air Quality Development Report, 2018; *NYC CEQR Technical Manual,* 2014.

The *CEQR Technical Manual* states that the significance of an effect should be based on its context, probability of occurrence, duration, irreversibility, geographic scope, magnitude, and the number of people affected. In terms of the magnitude of air quality impacts, an action predicted to increase the concentrations of a criteria air pollutant to a level that would exceed the NAAQS or increase the concentration of $PM_{2.5}$ above the *de minimis* criteria could have an adverse impact of significant magnitude. The factors identified above would then be considered to determine the overall significance of the potential impact.

Background Concentrations

Background concentrations for SO_2, NO_2, CO, and PM were derived from the NYSDEC annual report for 2018, the most recent year for which data is available, and are summarized in Table 18-31: Background Air Pollutant Concentrations.

Table 18-31: Background Air Pollutant Concentrations

Pollutant	Averaging Period	Background Concentrations (ug/m^3)	Monitoring Station
SO_2	1-Hour	14.8	Queens College 2
NO_2	Annual	27.1	Queens College 2
NO_2	1-Hour	105.7	Queens College 2
PM_{10}	24-Hour[a]	31	Queens College 2
$PM_{2.5}$	24-Hour	17.7	Queens College 2
$PM_{2.5}$	Annual	7.0	Queens College 2
CO	1-Hour	2,280	Queens College 2
CO	8-Hour	1,482	Queens College 2

Notes:

a. Second highest during past year

Sources: New York State Department of Environmental Conservation; New York State Ambient Air Quality Development Report, 2018

Construction Emission Factors

Exhaust emission factors for PM, SO_2, and NO_2 for gasoline-powered on-site equipment and diesel-powered on-site equipment under 50 horsepower (HP) were obtained from the EPA *MOVES2014b Model* (2018). Exhaust emission factors for diesel-fueled trucks and equipment of 50 HP or higher were assumed to meet EPA's Tier 4 standards. Estimates of fugitive dust from materials transfer were completed using equations in the EPA publication *AP-42, Fifth Edition, Compilation of Air Pollutant Emissions Factors*, *Chapter 13.2.4, Aggregate Handling and Storage Piles*.

Sensitive Receptors

Land uses within 400 feet north of the Project Site include the Bay School (P.S. 105) and residential buildings at 51-23 Beach Channel Drive that are owned by the NYC Housing Authority (NYCHA) as part of the Bayside development. Land uses to the east of the Project Site include the Peninsula Nursing and Rehabilitation Center on Beach 50th Street and parking lots, including the Far Rockaway Bus Depot between Beach 50th Street and Beach 49th Street. Land uses to the south of the Project Site primarily consist of parking, transportation, and industrial uses except for a church at the corner of Beach 52nd Street and Rockaway Beach Boulevard and a home at 53-08 Rockaway Beach Boulevard. Land uses within 400 feet of the Project Site to the west of the Project Site consist of commercial, residential, library, and medical buildings on Beach 53rd and Beach 54th Streets, which includes the NYCHA buildings (Oceanside) on the west side of Beach 54th Street.

Worst-case receptor locations were selected to represent the land uses and neighborhoods mentioned above. In general, buildings that did not have a direct line of sight from their windows to the Project Site were excluded as worst-case receptors. This includes two one-story commercial buildings at 360 and 366 Beach 54th Street, two one-story medical buildings at 338 and 342 Beach 54th Street, the library at 320 Beach 54th Street, and a residential building at 53-08 Rockaway Beach Boulevard. Although the Lawrence Nursing Care Center on Beach 53rd Street has no windows facing the Project Site, the windows on its northern and southern facades had sight lines facing the construction areas, and it was therefore included in the assessment of potential impacts. The selected worst-case sites are listed below and shown in **Figure 18-15: Worst-Case Air Quality Receptor Locations.** Sites 9, 10, and 11 were evaluated between the DEIS and FEIS. Based on their locations and distances relative to the Project Site, they would have lower concentrations of pollutants than the eight receptors modeled for the DEIS. Therefore, since no potential air quality impacts were identified for the receptors in the DEIS, there would be no significant adverse impacts at the additional three receptor locations.

1. P.S. 105, 420 Beach 51st Street (Lot 15974, Lot 3)
2. Three multifamily residential buildings (nine stories each) at 51-32 Beach Channel Drive between Beach 51st Street and Beach 53rd Street (Block 16001, Lot 2)
3. Peninsula Nursing and Rehabilitation Center (four stories) at 51-15 Beach Channel Drive (Block 15842, Lot 100)
4. Seventh Day Adventist Church at 52-05 Rockaway Beach Boulevard (Block 15891, Lot 21)
5. Lawrence Nursing Care Center (six stories) at 3-57 Beach 53rd Street (Block 15890, Lot 42)
6. Multifamily residence (four stories) at 3-34 Beach 53rd Street (Block 15890, Lot 30)
7. Multifamily residence (four stories) at 3-09 Beach 53rd Street (Block 15890, Lot 97)
8. NYCHA Oceanside residences (Block 15892, Lot 1)
9. Ocean Bay Retail Center (planned) at 53-05 Beach Channel Drive (Block 15890, Lots 54, 55, 58, 62, 64, 66 and 69)
10. Library (one story) at 320 Beach 54th Street (Block 15890, Lot 18)
11. Residence (2.5 stories) at 53-08 Rockaway Beach Boulevard (Block 15890, Lot 16).

Source: GoogleEarth Pro 2017

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Project Site

① Worst-Case Receptor Locations

WORST-CASE AIR QUALITY RECEPTOR LOCATIONS

Figure 18-15

AERMOD Modeling

The construction phasing over the ten-year construction period shows six worst-case development periods for the surrounding receptors and the on-site buildings.

- The first development period would extend from the first quarter of 2020 to the fourth quarter of 2022. During this period, Buildings A1, B1, A2, and B2 are under construction, and no other buildings have been completed.
- The second development period would extend from the first quarter in 2023 to the first quarter in 2024. Buildings A2, B2, C1, and D1 would be in construction, and Buildings A1 and B1 would be completed and operational.
- The third development period would occur during the second and third quarters of 2024, when Building A2 would be operational while Buildings B2, C1, and D1 would be under construction.
- The next development period would extend from the fourth quarter of 2024 through the second quarter of 2026, Buildings C1, D1, C2, and D2 would all be under construction, and Building B2 would be added to the operational buildings.
- The fifth development period would extend from the third quarter in 2026 through the first quarter in 2028. Building C1 would move from the construction category to the operational category, and Buildings E1, E2, and F would be under construction along with Buildings C2, and D2.
- The sixth development period would extend from the second quarter of 2028 through the fourth quarter of 2029. During this period, Buildings E1, E2, and F would be under construction and all other on-site buildings would be operational.

Pollutant concentrations for on-site sources were modeled with the EPA AERMOD model using five years of meteorological data from JFK Airport. AERMOD is a steady-state Gaussian plume model with three separate components: AERMOD (a dispersion model), AERMAP (a terrain preprocessor), and AERMET (a meteorological preprocessor). AERMOD can model emissions from point, line, area, and volume sources. Sensitive receptors (locations in the model where concentrations are predicted) were identified at residential and institutional buildings with windows facing the construction sites.

The total emissions generated by construction activities were calculated for each quarter. For short-term averaging periods, two worst-case quarters were selected for detailed analysis. The quarter with the highest emissions near the start of the construction period was selected for its effect on the nursing home and sensitive receptors along Beach Channel Drive and the northern half of Beach 53rd Street. A quarter with the highest emissions towards the end of the construction period was selected for its effect on receptors on the southern half of Beach 53rd Street and Rockaway Beach Boulevard. For the annual averaging period for $PM_{2.5}$, multiple quarters with relatively high daily emissions were selected for modeling. For the selected quarters, the total daily emissions for each construction site were converted to gram/second/square meter for use as area sources in AERMOD.

Results

Results of the AERMOD modeling are summarized below and shown in **Table 18-32: Maximum Pollutant Concentrations from the Proposed Project**.

NO_2. No exceedances at existing or future sensitive receptors were projected for the annual NAAQS of 100 ug/m^3.

CO. No exceedances at existing or future sensitive receptors were projected for the annual NAAQS of 40,000 ug/m^3 for the one-hour average or 10,000 ug/m3 for the eight-hour average.

PM_{10}. No exceedances at existing or future sensitive receptors were projected for the 24-hour NAAQS of 150 ug/m^3.

$PM_{2.5}$. No exceedances at existing or proposed development site sensitive receptors were projected for $PM_{2.5}$ for the 24-hour de minimis of 8.7 ug/$m^3$and the 24-hour NAAQS of 35 of ug/m^3, or for the annual de minimis of 0.3 ug/m^3 and annual NAAQS of 12 ug/m^3. For the 24-hour average, the highest modeled value was compared with the de minimis of 8.7 ug/m^3, and the 8th highest modeled value was added to the background value for comparison to the NAAQS.

Table 18-32: Maximum Pollutant Concentrations from the Proposed Project (ug/m3)

Pollutant	Averaging Period	Maximum Modeled Concentration	De Minimis	Background Concentration[a]	Total Concentration	NAAQS
NO_2	Annual	4.9	N/A	27.1	32.0	100[b]
CO	1-hour	15,164	N/A	2,280	17,444	40,000[b]
	8-hour	3,964	N/A	1,482	5,446	10,000[b]
PM_{10}	24-hour	5.1[f]	N/A	31	36.1	150[b]
$PM_{2.5}$	24-hour	1.58/1.00[e]	8.7[c]	17.7	18.7	35[b]
	Annual (local)	0.27	0.3[d]	7.0	7.27	12[b]
	Annual (neighborhood)	0.09	0.1[d]	N/A	N/A	N/A

***Notes**:* N/A: Not Applicable
[a] The background levels are based on the most representative 2018 concentrations monitored at NYSDEC ambient air monitoring stations (see **Table 13-2** in Chapter 13, "Air Quality").
[b] NAAQS.
[c] $PM_{2.5}$ de minimis criterion: 24-hour average, not to exceed more than half the difference between the background concentration and the 24-hour standard of 35 ug/m^3.
[d] $PM_{2.5}$ de minimis criterion: annual average (local and neighborhood scale).
[e] 1st high/8th high.
[f] 6th high

Measures to Avoid Potential Significant Adverse Impacts

To minimize pollutant emissions and ensure that construction of the Proposed Project the Applicant would implement the following measures that will be included in a Restrictive Declaration for the project:

1. **Diesel Equipment Reduction.** Construction would minimize the use of diesel engines and maximize the use of electric engines where practical.

2. **Best Available Tailpipe Reduction Technologies.** In the event nonroad construction equipment for the Proposed Project does not meet EPA Tier 4 or newer emissions standards, nonroad diesel engines with a power rating of 50 hp or greater and controlled truck fleets (i.e., truck fleets under long-term contract, such as concrete mixing and pumping trucks) would utilize the best available tailpipe reduction technology for reducing diesel particulate matter (DPM) emissions, such as diesel particle filters (DPFs). Construction contracts would specify that all diesel nonroad engines rated at 50 hp or greater would utilize DPFs, either installed on the engine by the original equipment manufacturer or a retrofit DPF verified by the EPA or the California Air Resources Board, and may include active DPFs, if necessary or other technology proven to achieve equivalent emissions reduction. Stationary equipment would be fitted with devices to reduce NO_2.

3. **Dust Control.** Fugitive dust control plans would be required as part of contract specifications. For example, stabilized truck exit areas would be established for washing off the wheels of all trucks that exit the construction site. Tracking pads would be established at construction exits to prevent dirt from being tracked onto roadways. Any truck routes within the Project Site would be either watered or, in cases where such routes would remain in the same place for an extended duration, the routes would be stabilized, covered with gravel, or temporarily paved to avoid the re-suspension of dust. All trucks hauling loose material would be equipped with tight fitting tailgates and their loads securely covered prior to leaving the sites. To minimize fugitive dust emissions, vehicles on-site

could be limited to a speed of five mph. Water sprays and or misting systems would be used for all excavation, and transfer of spoils to ensure that materials are dampened as necessary to avoid the suspension of dust into the air. Loose materials would be watered, stabilized with a biodegradable suppressing agent, or covered. In addition, all necessary measures would be implemented to comply with the NYC Air Pollution Control Code regulating construction-related dust emissions. Construction areas would also be surrounded by perimeter fencing to contain fugitive dust emissions. In addition, the effects of wind on fugitive dust during truck loading would be minimized through the use of screens to block the wind or by carrying out the loading when winds are less than 10 mph.

4. **Idle Times.** In addition to adhering to the local law restricting unnecessary idling on roadways, on-site vehicle idle time will also be restricted to three minutes for all equipment and vehicles that are not using their engines to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) or otherwise required for the proper operation of the engine.

5. **Utilization of Newer Equipment.** The EPA's Tier 1 through 4 standards for nonroad engines regulate the emission of criteria pollutants from new engines, including PM, CO, NO_x, and hydrocarbons (HC). All nonroad construction equipment for the Proposed Project would meet Tier 4 or newer emissions standards. This would be included in the bid documents and contracts.

6. **Source Location**. To reduce the resulting concentration increments, stationary equipment would be located at least 50 feet away from nearby sensitive receptors (i.e., residential buildings and publicly-accessible open spaces) and at least 30 feet away from sidewalks, to the extent practicable and feasible.

7. **Ultra-Low Sulfur Fuel.** To reduce sulfur oxide emissions, all diesel engines used in construction would use ultra-low sulfur fuel (ULSD). With the use of ULSD, emissions of sulfur oxides would be negligible.

8. **Construction Fencing.** The NYC Construction Code requires that a construction fence be at least 8 feet high. The fence between the Building B1 and B2 sites and the Peninsula Nursing Home would be at least 16 feet high.

Access to the Project Site would be controlled during construction of the Proposed Project. The work areas would be fenced off, and limited access points would be provided for workers and trucks. Security guards and flaggers would be posted as necessary to secure the site. After work hours, the gates would be closed and locked. Security guards may patrol the construction sites after work hours to prevent unauthorized access.

Material deliveries to the site would be controlled and scheduled. Unscheduled or haphazard deliveries would be minimized. To aid in adhering to the delivery schedules, as is normal for building construction in New York City, flaggers would be employed at each of the gates. The flaggers could be supplied by the subcontractor on-site at the time or by the construction manager. The flaggers would control trucks entering and exiting the site so that they would not interfere with one another. In addition, they would provide an additional traffic aid as the trucks enter and exit the on-street traffic streams.

Measures to reduce pollutant emissions during construction of the Proposed Project will be in accordance with all applicable laws, regulations, and building codes. The proposed emission reduction program would significantly reduce DPM emissions consistent with the goals of the currently best available control technologies under NYC Local Law 77, which are required only for publicly funded City projects.

A scenario where construction phasing is adjusted to advance the delivery of community facility space in Building E1/E2 and the open space between buildings D and E would not substantially alter the conclusions of the construction analysis. In this scenario, worst-case development periods based on construction activity

would remain unchanged because buildings C1, C2, D1, D2, E1 and E2 would require similar construction equipment and duration. The same number of buildings would be under construction in each phase and overall construction activities would similar in intensity. Therefore, pollutant concentrations from construction activities would be substantially the same under both construction phasing scenarios. The same measures to minimize pollutant emissions due to construction activities would be implemented in both scenarios.

Noise and Vibration

Potential impacts on community noise levels during construction of the Proposed Project could result from the operation of construction equipment and from construction vehicles and delivery vehicles traveling to and from the Project Site. Noise levels at a given location are dependent on the type and number of construction equipment being operated, the acoustical utilization factor of the equipment (i.e., the percentage of time a piece of equipment is operating), the distance between the Project Site and noise-sensitive land uses, and any shielding effects from intervening structures such as buildings, walls, or barriers. Noise levels caused by construction activities would vary widely, depending on the phase of construction (i.e., excavation, superstructure, interior fit-outs, etc.) and the location of the construction activities relative to noise-sensitive receptor locations.

As outlined in the *CEQR Technical Manual,* construction noise analysis modeling methodologies have been developed by a variety of Federal agencies, including the Federal Highway Administration (FHWA), the Federal Transit Administration, and the EPA. To determine potential significant impacts caused by the construction activity, construction noise levels were compared to existing noise levels and to applicable standards.

Between the Draft and Final EIS, a more refined construction noise analysis was undertaken to more precisely determine the magnitude and duration of the elevated noise levels resulting from construction at locations adjacent to the construction site. The refined analysis also examined: 1) the practicality and feasibility of relocating some equipment within the construction sites to increase the distance to nearby sensitive receptors, and 2) the incorporation of shielding to reduce source noise levels.

Methodology

Off-Site Mobile Sources

Consistent with *CEQR Technical Manual* guidelines, the assessment of the impact of construction vehicles traveling to and from the Project Site was based on PCEs, where one medium-duty truck (with a gross weight between 9,900 and 26,400 pounds) would generate the noise equivalent of 13 cars, one bus (capable of carrying more than nine passengers) would generate the noise equivalent of 18 cars, and one heavy-duty truck (having a gross weight of more than 26,400 pounds) would to generate the noise equivalent of 47 cars, as summarized below from the *CEQR Technical Manual*:

- autos and light trucks = 1 passenger car
- medium trucks = 13 passenger cars
- heavy trucks = 47 passenger cars
- buses = 18 passenger cars

Thus, PCEs are the numbers of autos that would generate the same noise level as the observed vehicular mix of autos, medium trucks, and heavy trucks. The change in future noise levels is calculated using the following proportionality equation:

FNL=ENL + 10 × log10 (FPCE/EPCE), where:

FNL= Future Noise Level

ENL= Existing Noise Level

FPCE= Future PCEs

EPCE= Existing PCEs

Based on the peak construction traffic, an assessment of potential noise impacts from construction traffic was carried out for the construction peak hours of 7:00 AM to 8:00 AM for the worst-case construction traffic period, the third quarter of 2027.

On-Site Sources of Noise

The CadnaA (Computer Aided Noise Abatement) model was used to assess the noise impact of on-site construction equipment. The model assesses the noise impact of industrial and construction noise sources using the International Environmental Noise Directive and ISO guidelines to accurately describe ambient noise in community environments. CadnaA has the ability to:

- Incorporate reflections from building surfaces in the calculations:
- Account for refractive noise over barriers;
- Accurately calculate noise levels at the higher stories of a building;
- Provide spectral data for calculating the effects of barriers made from different types of material; and
- Accurately calculate the cumulative noise levels from a site with multiple dispersed sources and boundary walls at different heights.

Equipment utilization factors supplied by the project construction manager and noise levels at a reference distance of 50 feet were used as inputs to the CadnaA model. **Table 18-33: Construction Equipment Noise Emission Levels at 50 Feet (Lmax in dBA)**, summarizes the typical noise levels for the applicable construction equipment used in the analysis. A commitment will be included in the Restrictive Declaration for the Proposed Project of the methods to be implemented to achieve the noise levels shown in **Table 18-33**.

Calculation of Noise Levels

The calculation of noise levels is based on changes in L_{eq}, The L_{max} values presented in **Table 18-31** were converted to L_{eq} using the following equation:[2]

L_{max} + 10 x log (% acoustical usage factor, i.e. operating time/project time)

For example, if the equipment has an L_{max} of 85 dBA at 50 feet, and it operates 40% of the time at full power over a one-hour period, then the $L_{eq(1)}$ at 50 feet would be about four decibels less, or 85 – 4 = 81 dBA. Beyond 50 feet, the noise level would attenuate at a rate of 6 dBA per distance doubling. Thus, at 100 feet, the L_{eq} would be 75 dBA (81 – 6 = 75).

Baseline noise levels were determined by running the CadnaA model using traffic volumes for existing conditions and comparing the results with the existing noise levels at the noise monitoring sites. The difference was used to adjust the CadnaA results for the receptor points (windows) on nearby buildings.

The total noise energy for each three-month construction quarter was calculated to determine the quarters with the highest potential construction noise levels. The quarters with the highest noise energy were further

[2] *Noise and Vibration Control Engineering: Principles and Applications*, edited by Leo L. Beranek and Istvan L. Ver, John Wiley & Sons, 1992, p. 652.

evaluated with the CadnaA model. The resulting noise levels calculated by the CadnaA model were then logarithmically added to the adjusted existing ambient noise levels for the windows on the surrounding buildings.

Table 18-33: Construction Equipment Noise Emission Levels at 50 Feet (Lmax in dBA)

Equipment	DEP & FHWA Typical Lmax Noise Levels	Developer-Committed Noise Levels
Stationary Equipment		
Air Compressor (< 350 cfm)	75-80	67[1]
Chain Saws	85	75[1]
Circular Saws	76[2]	76[1]
Concrete Pump	N.L.	82
Concrete Saw	90	90
Crane: Manitowoc 999	85	77[1]
Cut-Off Saw	76	76[1]
Drum Mixer	80	76[1]
Electric Hoist	N.L.	74.1[1]
Generators	70-82	68[1]
Jackhammer	85	85
Manlift	85	75[1]
Mortar Mixer	N.L.	85
Pile Rig	95	85[1]
Pumps (Grout)	77	77
Rebar Bending Machine	80	80
Vibratory Plate Compactor	80	80
Welder/Torch	73	73
Mobile Equipment		
Bobcat	N.L.	75[1]
Concrete Mixer Truck	85	85
Concrete Pump Truck	82	82
Delivery Truck	N.L.	84
Excavators	85	77[1]
Front End Loader	80	80
Gradall	85	85
Loader	80	80
Paver (asphalt)	85	85
Roller	85	85
Rolloff/Dumpster	84	84

Notes:
[1] Noise levels achieved by using quieter equipment, better engine mufflers, refinements in fan design, and improved hydraulic systems will be incorporated into a Restrictive Declaration.
[2] N.L. - not listed by DEP or in RCNM

Noise Control Measures

Construction pursuant to the Proposed Project would conform to the NYC Noise Control Code (Chapter 24) and NYCDEP's Citywide Construction Noise Mitigation (Chapter 28). The requirements dictate the application of specific construction noise control measures. The noise control measures would include a variety of source and path controls to be incorporated into a project noise mitigation plan as summarized below.

Path Controls

Path controls are placed between the equipment and the sensitive receptors to block noise. Greater noise attenuation occurs when the path controls are placed as close as possible to the noise source. The following path controls would be implemented to the extent feasible and practicable.

- Noise barriers shall be erected around the perimeter of the construction areas where construction activities are taking place to minimize construction noise consistent with reasonable construction procedures. Noise barriers shall be a solid fence with a minimum height of eight feet, with such fence at a height of up to 16 feet, if feasible, when located adjacent to residential and other sensitive locations.
- Where feasible, noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptors.
- Where feasible, truck deliveries would take place behind noise barriers.
- The construction sites that border the nursing home would have a sixteen-foot high chain link fence with a sound barrier matting attached to one side of it.

Source Controls

Source controls, shown in **Table 18-33**, reduce noise levels at the source of the noise. Equipment noise levels quieter than typical noise levels generated by construction equipment could be achieved through a range of source controls including better engine mufflers, refinements in fan design, improved hydraulic systems, and/or newer equipment with specific manufacture noise levels. The following source controls would be implemented to the extent feasible and practicable.

- Equipment shall be properly installed and, where practicable, quality mufflers must be installed and maintained.
- Where feasible and practicable, construction sites would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than three minutes per Title 24, Chapter 1, Subchapter 7, Section 24-163 of the NYC Administrative Code.
- Where feasible and practicable, equipment with noise levels quieter than typical noise levels generated by construction equipment would be used.

Sensitive Receptors

The CEQR Technical Manual indicates that a noise-sensitive “receptor” is usually defined as an area where human activity may be adversely affected when noise levels exceed predefined thresholds of acceptability or when noise levels increase by an amount exceeding predefined thresholds of change. Receptors can either currently exist or would be introduced by a project. These locations may be indoors or outdoors. Indoor receptors include, but are not limited to, residences, hotels, motels, health care facilities, nursing homes, schools, houses of worship, court houses, public meeting facilities, museums, libraries, and theaters. Outdoor receptors include, but are not limited to, parks, outdoor theaters, golf courses, zoos, campgrounds, and beaches.

Sensitive receptor locations within approximately 400 feet of one or more of the building sites or along the roadway corridors where construction traffic would be concentrated were selected as noise receptor sites for the stationary source construction noise analysis. Sensitive receptors beyond 400 feet were not included as worst-case receptors since they would be protected by intervening buildings and would have lower construction noise levels due to distance attenuation. The sensitive receptor locations used for the noise analysis are listed below and shown in **Figure 18-16: Worst-Case Noise Receptor Locations**.

1. P.S. 105 (three stories), 420 Beach 51st Street (Lot 15974, Lot 3)
2. Three multifamily residential buildings (nine stories each) at 51-32 Beach Channel Drive between Beach 51st Street and Beach 53rd Street (Block 16001, Lot 2), part of NYCHA's Bayside Houses
3. Peninsula Nursing and Rehabilitation Center (four stories) at 51-15 Beach Channel Drive (Block 15842, Lot 100)
4. Seventh Day Adventist Church (one story) at 52-05 Rockaway Beach Boulevard (Block 15891, Lot 21)
5. Lawrence Nursing Care Center (six stories) at 3-57 Beach 53rd Street (Block 15890, Lot 42)
6. Multifamily residence (four stories) at 3-34 Beach 53rd Street (Block 15890, Lot 30)
7. Multifamily residence (four stories) at 3-09 Beach 53rd Street (Block 15890, Lot 97)
8. NYCHA Oceanside residences (six stories) (Block 15892, Lot 1)
9. Ocean Bay Retail Center (one story) planned at 53-05 Beach Channel Drive (Block 15890, Lots 54,55,58,62, 64,66, and 69)
10. Library (one story) at 320 Beach 54th Street (Block 15890, Lot 18)
11. Residence (2.5 stories) at 53-08 Rockaway Beach Boulevard (Block 15890, Lot 16).

Source: GoogleEarth Pro 2017

EDGEMERE, QUEENS

Project Site

① Worst-Case Receptor Locations

WORST-CASE NOISE RECEPTOR LOCATIONS

Figure 18-16

Construction Vehicles

Off-Site Truck Movements

Based on guidance from the project construction manager, truck movements would be expected to be greatest between 7:00 AM and 8:00 AM but would occur throughout the day between the hours of 6:00 AM and 4:00 PM, depending on the construction stage. Although some street lanes and sidewalks would be closed temporarily to allow for construction activities, no rerouting of traffic is anticipated. Pedestrian circulation and access to sidewalks would generally be maintained throughout construction, although sidewalk closures would occur immediately adjacent to construction activities. Consistent with the construction-period transportation analysis, the construction noise analysis assumed that all trucks were heavy trucks.

Number of Construction Workers and Material Deliveries

Based on guidance from the project construction manager, it is estimated that the number of workers and the number of truck trips associated with material deliveries would vary with the general construction task. It is estimated that approximately 42% of the workers would drive to the work site. **Table 18-34: Average Number of Daily Workers, Commutation Vehicles, and Trucks by Quarter** shows the estimated number of workers and deliveries to the Project Site by calendar quarter for all construction years, as well as the calculated noise PCEs if the workers and construction vehicles all arrived within the same hour.

The daily number of workers and trucks would peak in the third quarter of 2027, as would the equivalent number of PCEs. During this time, Buildings C2, D2, E1, E2, and F would be under construction while Buildings A1, A2, B1, and B2 would be completed and operational. The average daily numbers of workers and trucks would not arrive and depart all at the same time but would be spread out over the construction work day. The distribution of trips throughout the day is summarized in **Table 18-35: Hourly Distribution of Construction Trips, Third Quarter, 2027.** The noisiest time period for construction traffic would be from 7:00 AM to 8:00 AM hour, and this hour was used for the detailed analysis.

Table 18-34: Average Number of Daily Workers, Commutation Vehicles, and Trucks by Quarter

Quarter		Workers	Worker Vehicles	Concrete Pour and Pump Trucks	Other Trucks	Total Trucks	Total Vehicles
2020	1	60	25	0	15	40	40
	2	60	25	55	10	65	90
	3	160	**67**	75	12	87	154
	4	160	67	35	48	83	150
2021	1	200	84	0	44	44	128
	2	120	50	0	33	33	84
	3	120	50	0	28	28	78
	4	120	50	0	28	28	78
2022	1	140	59	0	31	31	89
	2	200	84	0	31	31	115
	3	180	76	0	51	51	127
	4	160	67	0	35	35	103
2023	1	120	50	0	30	30	80
	2	130	55	0	33	33	87
	3	163	69	0	36	36	105
	4	170	71	55	31	86	157
2024	1	203	85	75	**26**	**101**	186
	2	180	76	35	40	75	151
	3	200	84	0	33	33	117
	4	120	50	0	33	33	84
2025	1	130	55	0	33	33	87
	2	150	63	0	35	35	98
	3	170	71	55	37	92	163
	4	203	85	75	**39**	**114**	199
2026	1	180	76	35	49	84	160
	2	200	84	0	37	37	121
	3	120	50	0	33	33	84
	4	135	57	0	34	34	91
2027	1	165	69	0	37	37	106
	2	185	78	55	38	93	171
	3	**228**	**96**	**75**	**41**	**116**	**212**
	4	220	92	35	58	93	186
2028	1	240	101	0	**47**	**47**	148
	2	160	67	0	47	47	114
	3	153	64	0	40	40	104
	4	160	67	0	40	40	107
2029	1	190	80	0	43	43	122
	2	190	80	0	40	40	120
	3	147	62	0	26	26	87
	4	110	46	0	14	14	60

Table 18-35: Hourly Distribution of Construction Trips, Third Quarter, 2027

Time	Worker Cars	Total Trucks	Concrete Pour and Pump Trucks	Other Trucks	Noise PCEs*
5-6 am	0	0	0	0	0
6-7 am	77	17	17	0	860
7-8 am	19	37	17	21	1,766
8-9 am	0	33	17	16	1,554
9-10 am	0	25	17	8	1,169
10-11 am	0	25	17	8	1,169
11 am-12 pm	0	25	17	8	1,169
12-1 pm	0	25	17	8	1,169
1-2 pm	0	21	17	4	976
2-3 pm	0	21	17	4	976
3-4 pm	5	4	0	4	197
4—5 pm	77	0	0	0	77
5-6 pm	14	0	0	0	14
6-7 pm	0	0	0	0	-
Daily Avg	96	116	75	41	

*Assumes all traffic is on one roadway link instead of disbursed on links around the site.

Off-Site Mobile Source Noise

Traffic noise was analyzed using the proportionality equation as described previously. Construction vehicles were assigned to the adjacent existing roadways according to the distribution shown on Figure 18-1. Based on this distribution, all of the trucks would travel on Rockaway Beach Boulevard. No trucks would travel on Beach Channel Drive between Beach 53rd Street and Beach 50th Street. Fifty percent of the trucks would travel on Beach 53rd Street and on Beach 50th Street to reach the site. Approximately 42% of the workers would use Rockaway Beach Boulevard to reach the site. Forty-one percent would travel westbound on Beach Channel Drive and southbound on Beach 50th Street. The remainder would travel eastbound on Beach Channel Drive and then southbound on either Beach 53rd Street or Beach 52nd Street. **Table 18-36: Receptor Groups and Maximum Construction Traffic Noise (dBA) (Q3 2027, 7:00 AM – 8:00 AM)** shows the results of the analysis, which is summarized below.

Beach Channel Drive

No significant adverse impacts due to construction traffic are projected for sensitive receptors with frontage on Beach Channel Drive due to the relatively high number of vehicles and PCEs under baseline. The peak noise level increment is 0.0 dBA. Applying the same distribution of traffic to other construction quarters also shows a noise level increment of 0.0.

Beach 50th Street

The relative increase of 6.2 dBA in **Table 18-36** could constitute a significant adverse impact. The permissible increase is 5 dBA, and the projected increase exceeds this value. Noise level increments calculated for other quarters using the same distribution of traffic range from 2.1 to 6.2 dBA. However,

increments of 5.0 dBA or more are isolated and do not occur for more than three consecutive quarters, and resulting elevated noise levels were estimated to occur for less than two years. In addition, the incremental change in noise levels would not reach 15 dBA, and the cumulative noise levels would not reach 85 dBA. Consequently, no significant adverse noise impact would occur.

Table 18-36: Receptor Groups and Maximum Construction Traffic Noise (dBA) (Q3 2027, 7:00 AM – 8:00 AM)

Recep-tor ID	Receptor Group Description	Monitor ID	Existing AM Peak Leq	Existing AM PCEs	Construction Traffic PCEs	Maximum Projected Noise Increase	Comments
1	P.S. 105	1	70.0	3,603	12	0	No impact
2	Bayside residences	1	70.0	3,603	12	0	No impact
3	Peninsula Nursing and Rehabilitation Center (Beach Channel Drive)	1	70.0	3,603	12	0	No impact
3	Peninsula Nursing and Rehabilitation Center (Beach 50th Street)	8	59.2	140	445	6.2	No significant impact. Duration is less than two years.
4	7th Day Adventist Church	3	71.2	1,327	881	2.2	No impact
5	Lawrence Nursing Care Center	2	63.4	64	439	9.0	Relatively high due to low PCEs. No impact
6	Residential building at 334 Beach 53rd Street	2	63.4	64	439	9.0	Relatively high due to low PCEs. No impact.
7	Residential building at 3-09 Beach 53rd Street	2	63.4	64	439	9.0	Relatively high due to low PCEs. No impact.

Rockaway Beach Boulevard

The noise level increment of 2.2 dBA during the peak AM hour in the third quarter of 2027 at sensitive receptors along Rockaway Beach Boulevard would not constitute a significant adverse impact. Noise level increments calculated for other quarters using the same distribution of traffic range from 1.1 to 2.2 dBA. Thus, no significant adverse construction traffic noise impacts are projected.

Beach 53rd Street

Receptors on Beach 53rd Street would experience the highest relative increases in traffic noise. As shown on Table 18-36, the highest noise level increment due to construction traffic would be 9.0 dBA. Noise level increments calculated for other quarters are estimated to range from 3.6 dBA to 8.9 dBA. These noise increases in noise level would constitute a significant adverse impact due to the magnitude of the elevated noise levels if sustained for sufficient period of time.

On-Site Equipment Noise

The analysis was based on the application of source controls (construction equipment with noise levels quieter than typical noise levels for such equipment), as well as path controls (such as enclosures or temporary noise walls) placed between the noise-generating construction equipment and sensitive receptors. Specifically, the analysis assumed the application of source and/or path controls on the following equipment during construction of the Proposed Project:

- air compressors (source and path controls);
- chain saws (source and path controls);
- circular saws (source and path controls);
- cut-off saws (source controls);
- Manitowoc crane (source and path controls);
- drum mixer (source and path controls);
- electric hoist (source controls);
- generators (source and path controls);
- jackhammers (path controls);
- manlift (source controls);
- mortar mixers (path controls);
- grout pumps (path controls);
- rebar bending machines (path controls);
- bobcat (source controls); and
- excavators (source controls).

In addition, the construction area would have an 8-foot high plywood fence along adjacent roadways, which would provide approximately 10 to 12 dBA of noise attenuation for the first floors of affected sensitive receptors. Additional noise controls are planned for the nursing home. The construction sites that border the nursing home would have a sixteen-foot high chain link fence with a sound barrier matting attached to one side of it. Implementation of noise source and path control measures, including the committed use of construction equipment with noise levels quieter than typical noise levels for such equipment and erection of temporary noise walls, would avoid or minimize increases in noise levels at sensitive receptors in the surrounding areas.

Existing Noise Levels

To account for varying ambient sound levels at different receptor locations, CadnaA was used to model existing conditions for comparison with the modeled noise levels during construction operations. The existing traffic and vehicular mix were used as input to the model.

Where the CadnaA results varied from the monitored values, an adjustment factor was calculated. The modeled noise level at each existing receptor location was then modified based on the adjustment factor of the receptor's associated monitoring site to calculate an adjusted L_{eq} noise level at each receptor location. The average of the monitored L_{90} at all monitoring locations is considered to be the lower limit for a

receptor's baseline noise level. Therefore, if the adjusted L_{eq} value is lower than the averaged L_{90} value, the averaged L_{90} value was used to represent the receptor's existing (baseline) noise level.

Table 18-37 shows the resulting adjustment factors for the AM period for the construction analysis.

Table 18-37: Existing AM Hour Noise Levels (dBA) for Construction Analysis

ID	Noise Monitor Location	L_{90}	L_{eq}	CadnaA L_{eq}	L_{eq} Adjustment Factor	Associated Receptors
1	Beach Channel Drive between Beach 53rd and Beach 51st Sts.	55.9	70.0	68.4	1.6	1 – P.S. 105; 2 – NYCHA Bayside homes 3 – Peninsula Nursing home (north façade)
2	Beach 53rd Street between Beach Channel Drive and Rockaway Beach Blvd.	53.9	63.4	58.7	4.7	5 – Lawrence Nursing Care 6 - 334 Beach 53rd Street 7 – 3-09 Beach 53rd Street 8 – NYCHA Oceanside homes 9 – Ocean Bay development 10 – Library at 320 Beach 54h Street
3	Rockaway Beach Blvd. between Beach 52nd and Beach 51st Sts.	55.6	71.2	68.8	2.4	4 – Church (north façade) 11 – 53-08 Rockaway Beach Boulevard C1 – southern façade C2 – southern façade D2 - southern façade E2 – southern facade
4	Beach 51st St. at Rockaway Freeway	62.2	71.5	70.4	1.1	4 – Church (south, east, and west façades) F1 – Western facade
5	Beach 50th St. at Rockaway Beach Blvd.	54.4	66.5	68.2	-1.7	E1 – Eastern façade E2 - Eastern facade
8	Beach 50th St. between Rockaway Beach Blvd. and Beach Channel Dr	54.3	59.2	59.2	0.0	3 – Peninsula Nursing Home (eastern and western facades)
9	Center of site	54.6	58.8	56.1	2.7	Buildings A, B, C, D, and E facades on Beach 52nd Street and Peninsula Way
	L_{90} Average	55.8				

Cumulative Noise Levels

Open windows provide approximately 5 dBA of noise attenuation between outdoor and indoor noise levels. Closing the windows provides greater noise attenuation. Windows in the northeast portion of the United States typically provide 25 dBA of noise attenuation when closed[3]. Therefore, single-glazed windows were assumed to provide a minimum noise attenuation of 25 dBA when closed. Double-glazed windows, based on guidance from DEP, typically provide at least 28 dBA of noise attenuation when closed. Residents typically close their windows during cold weather. Residents who desire to close their windows during warm weather must have an alternate means of ventilation, such as air conditioning. Otherwise, based on the *CEQR Technical Manual*, the noise reduction afforded by the closed windows cannot be considered in the analysis.

Field observations indicate that the NYCHA buildings on Beach Channel Drive and Beach 54th Street, P.S. 105, the Lawrence Nursing Care Center, and the residential buildings on Beach 53rd Street have air conditioning for individual units. The Peninsula Nursing and Rehabilitation Center has central air conditioning and double-glazed windows. The Seventh Day Adventist Church is assumed to have central air conditioning since a new heating, ventilation, and air conditioning system was installed in 2009 and can be seen behind the building on aerial photos. A potentially affected building at 53-08 Rockaway Beach Boulevard also showed evidence of window air conditioners. Consequently, all sensitive receptors near the Project Site can maintain a closed window condition during warm weather.

Construction phasing over the ten-year construction period shows six clearly defined development periods as described in the Air Quality subsection of Section VI, Detailed Assessment. For each construction quarter over the ten-year construction period, the total noise energy was calculated for each site under construction based on the loudness of the equipment in use on that site, the equipment utilization, and the number of pieces of equipment in operation during an average construction day during that quarter. Representative quarters with high noise energy were selected for further analysis at different periods throughout the construction period. They include: 1) fourth quarter of 2020, 2) first quarter of 2024, and 3) fourth quarter of 2027. Construction noise levels in the initial years of construction would have the greatest effect on sensitive receptors near the northern section of the Project Site. This includes buildings along Beach Channel Drive, Beach 53rd Street, and the Peninsula Nursing Home. Noise levels in the subsequent construction years would have the greatest effect on sensitive receptors near the southern section of the Project Site, which includes buildings along Rockaway Beach Boulevard, Beach 53rd Street, the Peninsula Nursing Home, and newly constructed buildings on the site.

In completing the noise impact assessment, noise levels from on-site trucks and equipment were identified as point sources and placed within the construction footprints for each building. In addition to on-site equipment, construction trucks passing on adjacent streets were also incorporated into CadnaA. The resulting CadnaA analysis showed both the total resulting noise levels at each receptor and the contributing noise levels from each item of equipment.

Receptor points were placed at windows on all floors on nearby existing and future buildings around the Project Site. Receptor points also were placed on buildings on the Project Site that were completed and likely to be operational during the construction quarter being modeled.

Measures to minimize noise were incorporated into the modeling. An 8-foot high plywood construction fence was assumed where a construction was adjacent to a public road or sidewalk. A higher fence of 16 feet was incorporated between the Peninsula Nursing Home and the construction site for Buildings B1 and B2. No additional credit was taken for the potential use of sound reduction matting. The results of the CadnaA modeling are summarized in **Table 18-38: Construction Equipment Noise Levels and Increments**.

[3] NCHRP Report 117, Highway Noise – A Design Guide for Highway Engineers, National Research Council, 1971.

Interior L_{eq} noise levels for the receptor buildings were calculated assuming that their windows would provide at least 28 dBA of attenuation. The L_{10} noise levels were assumed to be 3 dBA higher than the L_{eq}. Noise levels at each receptor location are discussed below.

Table 18-38: Construction Noise Levels and Increments

Receptor Group		Existing AM Leq (dBA)		Total Leq (dBA)		Exterior L10	Noise Level Increases		Maximum Projected Interior Noise (dBA)	
ID	Description	Minimum	Maximum	Minimum	Maximum	Maximum	Minimum	Maximum	L_{eq}*	L_{10}**
2020, Quarter 4 (A2, B2, C1, D1)		-	-	-	-	-	-	-	-	-
1	P.S. 105	60.0	68.1	69.4	72.6	75.6	3.6	10.0	44.6	47.6
2	NYCHA Bayside	64.4	66.5	73.0	75.9	78.9	8.3	10.0	47.9	50.9
3	Peninsula Nursing Home	55.8	59.3	57.7	81.4	84.2	1.9	25.1	53.2	56.2
4	7th Day Adventist Church	63.9	67.5	68.1	71.3	74.3	3.8	4.5	43.3	46.3
5	Lawrence Nursing Care	56.2	60.1	68.8	76.6	79.6	12.6	16.8	48.6	51.6
6	334 Beach 54th Street	56.3	61.4	72.1	73.9	76.9	11.0	16.8	45.9	48.9
7	3-09 Beach 53rd Street	57.3	65.5	69.2	72.2	75.2	6.1	13.5	44.2	47.2
8	NYCHA Oceanside	56.8	65.1	64.3	71.8	74.8	1.3	9.6	43.8	46.8
9	Ocean Bay retail	63.8	65.9	74.3	76.6	79.6	10.5	10.7	48.6	51.6
10	Library	55.8	61.8	61.8	64.9	67.9	0.7	9.1	36.9	39.9
11	53-08 Rockaway Beach Blvd.	64.5	69.7	65.3	70.2	73.2	0.4	1.0	42.2	45.2
2024, Quarter 1 (B2, C1, D1)		-	-	-	-	-	-	-	-	-
1	P.S. 105	60.0	68.1	60.7	68.2	71.2	0.1	0.9	40.2	43.2
2	NYCHA Bayside	64.4	66.5	64.5	70.8	73.8	0.1	4.7	42.8	45.8
3	Peninsula Nursing Home	55.8	59.3	56.9	76.1	79.1	1.1	20.3	48.1	51.1
4	7th Day Adventist Church	63.9	67.5	69.6	75.0	78.0	5.7	7.5	47.0	50.0
5	Lawrence Nursing Care	56.2	60.1	63.9	73.7	76.7	5.3	15.6	45.7	48.7
6	334 Beach 54th Street	56.3	61.4	72.9	77.9	80.9	14.6	19.8	49.9	52.9
7	3-09 Beach 53rd Street	57.3	65.5	73.8	77.7	80.7	10.5	19.0	49.7	52.7

8	NYCHA Oceanside	56.8	65.1	63.0	70.7	73.7	2.1	12.5	42.7	45.7
9	Ocean Bay retail	63.8	65.9	66.6	68.1	71.1	2.2	2.8	40.1	43.1
10	Library	55.8	61.8	62.6	69.7	72.7	0.8	13.9	41.7	44.7
11	53-08 Rockaway Beach Blvd.	64.5	69.7	67.4	71.0	74.0	0.8	3.5	43.0	46.0
A1	Building A1	58.8	58.8	59.3	81.2	84.2	-	-	53.2	56.2
B1	Building B1	58.8	58.8	59.2	76.3	79.3	-	-	48.3	51.3
2027, Quarter 4 (E1, E2, F)		-	-	-	-	-	-	-	-	-
1	P.S. 105	60	68.1	60.0	68.3	71.3	0.1	0.4	40.3	43.3
2	NYCHA Bayside	64.4	66.5	64.4	66.6	69.6	0.1	0.2	38.6	41.6
3	Peninsula Nursing Home	55.8	59.3	59.0	75.9	78.9	1.8	20.1	47.9	50.9
4	7th Day Adventist Church	63.9	67.5	73.4	83.6	86.6	7.1	17.8	55.6	58.6
5	Lawrence Nursing Care	56.2	60.1	57.2	60.6	63.6	0.5	1.0	32.6	35.6
6	334 Beach 54th Street	56.3	61.4	57.5	62.6	65.6	1.2	2.2	34.6	37.6
7	3-09 Beach 53rd Street	57.3	65.5	58.9	66.3	69.3	0.8	2.5	38.3	41.3
8	NYCHA Oceanside	56.8	65.1	58.1	65.9	68.9	0.1	1.8	37.9	40.9
9	Ocean Bay retail	63.8	65.9	65.0	66.7	69.7	0.8	1.2	38.7	41.7
10	Library	55.8	61.8	56.6	62.4	65.4	0.6	1.1	34.4	37.4
11	53-08 Rockaway Beach Blvd.	64.5	69.7	66.1	71.1	74.1	0.9	2.5	43.1	46.1
A1	Building A1	58.8	58.8	59.3	62.7	65.7	-	-	34.7	37.7
B1	Building B1	58.8	58.8	59.2	69.2	72.2	-	-	41.2	44.2
A2	Building A2	58.8	58.8	59.8	68.4	71.4	-	-	40.4	43.4
B2	Building B2	58.8	58.8	65.2	74.4	77.4	-	-	46.4	49.4
C1	Building C1	58.8	58.8	60.3	74.2	77.2	-	-	46.2	49.2
D1	Building D1	58.8	58.8	58.8	65.5	68.5	-	-	37.5	40.5

Notes: Assumes minimum window/wall attenuation of 28 dBA; Assumes L_{10} 3 dBA higher than L_{eq}.

P.S. 105 (Bay School)

No significant adverse noise impacts would occur at P.S. 105 based on the magnitude and duration of noise level increases. The highest L_{eq} would be 72.6 dBA during the fourth quarter of 2020 when Buildings A1, B1, A2, and B2 would be under construction simultaneously, which is below 85 dBA impact criterion. In addition, the interior L_{10} noise level at the school would be 47.6 dBA, which is close to the desired interior L_{10} noise level of 45 dBA. Maximum noise levels in subsequent quarters would be lower because only two buildings would be under construction at the same time during the subsequent 18 months in 2021 and 2022. With the completion of Buildings A1 and B1 at the end of 2022, the active construction locations would move further south on the site, and the L_{10} exterior noise levels would be below 70 dBA.

The highest noise increase during construction would be 10 dBA, also during the fourth quarter of 2020. This would not be considered a significant impact since the increase would not exceed 12 months and would not reach an increment of 15 dBA. Construction increments during the last half of the ten-year construction period would be less than 3.0 dBA since the construction activities would move further from P.S. 105 and completed buildings would provide shielding.

NYCHA Bayside Houses

The three NYCHA buildings on Beach Channel Drive, across from the construction site, would not experience significant adverse noise impacts based on the magnitude and duration of noise level increases. The highest L_{eq} would be 75.9, during the fourth quarter of 2020, which is less than the 85 dBA impact criterion. Subsequent quarters would have lower noise levels because fewer buildings would be under construction at the same time and construction activities would move further from the NYCHA buildings. The highest noise level increment would be 10 dBA, also during the fourth quarter of 2020. This does not reach the impact criterion of 15 dBA and would not occur for a sustained period. Construction increments during the last half of the ten-year construction period would be less than 3.0 dBA since the construction activities would move further away, and completed buildings would provide shielding.

Peninsula Nursing Home

Due to its proximity to the construction sites, the Peninsula Nursing Home would experience significant adverse impacts due to the duration and magnitude of high construction noise levels, particularly on the western facade. The worst case would be the first quarter of 2024, when the highest L_{eq} of 81.4 dBA would occur as well as he highest noise level increment of 25.1 dBA. Noise levels would not reach the impact criterion of an L_{eq} of 85 dBA. However, noise level increments of 15 dBA may occur for more than 12 consecutive months, and increments exceeding 20 dBA may occur for more than three consecutive months, which would constitute a significant impact. This is discussed further in the Mitigation chapter. No significant impacts are projected for the building's eastern façade.

7th Day Adventist Church

The church conducts some of its services on Saturdays and, since construction of the Proposed Project would also occur on Saturdays, it would potentially experience significant adverse impacts due to the duration of construction noise levels that exceed the impact criteria.

The analysis conducted for this FEIS found that the maximum L_{eq} of 83.6 dBA would occur during the fourth quarter of 2027 when five buildings (C2, D2, E1, E2, and F) would be under construction simultaneously on the southern portion of the site, and this is below the 85 dBA impact criterion. The maximum increment of 17.8 dBA also occurs during this quarter. A review of the CadnaA partial tables shows that the concrete pumps and mixer trucks on the Building F site are a significant source of the high noise levels. They are active only in the 2nd, 3rd, 4th quarters of a building's construction. Noise levels would drop with the completion of Buildings C2 and D2 in early 2028. Therefore, noise level increments of 15 dBA are not projected to last for 12 months. However, as high noise levels would occur during church services for some

weeks or months at a time and potentially interfering with its primary function, it was determined that construction of the Proposed Project would constitute a significant noise impact.

Lawrence Nursing Care Center

This building could experience significant adverse impacts as noise levels would be high during the first half of the ten-year construction period of the Proposed Project. The maximum L_{eq} of 76.6 dBA would occur during the fourth quarter of 2020. The maximum noise level increment would be 16.8 dBA, which also would occur during the fourth quarter of 2020. Significant sources of noise are the concrete pump trucks for Building C1 and the pavers for Buildings A2 and B2. The noise level increments of 15 dBA or more are not expected to last for 12 months because the use of concrete pumps and rollers would occur for only 9 months. With the completion of Building B2 in 2024, the construction activities would move further south. At that point, the noise level increments would fall below 3 dBA, and the L_{eq}s would fall below 65 dBA.

334 Beach 54th Street

Significant noise impacts are projected for this building, which has frontage on Beach 53rd Street. It would have relatively high noise levels during the first half of the 10-year construction period with a maximum L_{eq} of 77.9 dBA in the first quarter of 2024. The maximum noise level increase of 19.8 dBA would also occur during the first quarter of 2024. A review of the partial noise tables in CadnaA shows that the activities on the C1 and A2 sites are a significant source of noise, especially the concrete pumps. Although noise increments of more than 15 dBA were projected for construction quarters in both 2020 and 2024, they are not expected to last for twelve consecutive months based on the total daily sound energy and equipment used in intervening quarters. The concrete pumps and trucks on the site for Building C1 would be a significant source noise for approximately for nine months from the third quarter of 2023 to the first quarter of 2024. During the last few years of the ten-year construction period, the L_{eq}s would be below 70 dBA and the noise level increments would be below 3 dBA.

3-09 Beach 53rd Street

Significant impacts are projected for this building. Relatively high noise levels would occur during the first half of the 10-year construction period, but the maximum L_{eq} of 77.7 dBA in the first quarter of 2024 would not meet the impact criterion of 85 dBA. The maximum noise level increase of 19.0 dBA would occur during the first quarter of 2024. The noise sources and durations are similar to those for 334 Beach 54th Street, and noise level increments of more than 15 dBA are not expected to last for twelve consecutive months. During the last few years of the ten-year construction period, the L_{eq}s would be below 70 dBA and the noise level increments would be below 3 dBA.

NYCHA Oceanside Houses

Noise levels at the NYCHA buildings on Beach 54th Street would not meet the criteria for significant adverse impacts. The maximum L_{eq} of 71.8 dBA would occur in the fourth quarter of 2020, and the maximum noise level increment of 12.5 would occur in the first quarter of 2024. After 2024, construction activities would move further east, and the L_{eq}s would be below 70 dBA and the noise level increments would fall below 3 dBA.

Ocean Bay Retail Center

This building would not experience significant adverse impacts. The worst case would be during the fourth quarter of 2020, when the building would experience a maximum L_{eq} of 76.6 and an increment of 10.7 dBA, which do not meet the impact criteria. Maximum magnitude of noise levels in subsequent quarters would be lower because only two buildings would be under construction at the same time during the subsequent 18 months in 2021 and 2022. With the completion of Buildings A1 and B1 at the end of 2022, the active

construction locations would move further south on the site, and the L_{10} exterior noise levels would be below 70 dBA.

Library

No significant adverse construction period impacts are projected for this building. The projected L_{eq}s are below 85 dBA. The maximum noise level increment, 13.9 dBA, would occur during the first quarter of 2024, but interior noise levels during this quarter and all other quarters would be lower than the desired interior noise level of 45 dBA.

53-08 Rockaway Beach Boulevard

No significant adverse construction period impacts are projected for this building. The maximum L_{eq} would be 71.0 dBA during the first quarter of 2024. With the exception of the first quarter of 2024, when the projected noise increment would be 3.5 dBA, all increments would be less than 3 dBA.

New Buildings On-Site

Buildings that are completed and operational would experience high construction noise levels in the 70s and 80s, but they would not reach 85 dBA. Source and paths controls to reduce or eliminate potential significant adverse construction-period impacts are listed in the "On-Site Stationary Sources" section of this chapter. However, there may be periods during construction where use of select controls would not be feasible; therefore, construction of the Proposed Project would have the potential to result in significant adverse noise impacts at one or more of the completed buildings while construction continues for the other buildings.

In summary, significant adverse noise impact due to construction of the Proposed Project would occur to those sensitive receptors located adjacent to the Project Site on Beach 53rd Street plus the Proposed Project's completed buildings while construction continues for the other buildings. Source and paths controls to reduce or eliminate potential significant adverse construction noise impacts would be employed by the Applicant. However, there may be periods during construction where use of select controls would not be feasible; therefore, construction of the Proposed Project would have the potential to result in significant adverse noise impacts at one or more sensitive receptors. Mitigation measures to address these impacts are identified in Chapter 20, "Mitigation."

A scenario where construction phasing is adjusted to advance the delivery of community facility space in Building E1/E2 and the open space between buildings D and E would not substantially alter the conclusions of the construction noise analysis. In this scenario, worst-case development periods based on construction activity would remain unchanged because buildings C1, C2, D1, D2, E1 and E2 would require similar construction equipment and duration. Therefore, the same number of buildings would be under construction in each phase and overall construction activities would be similar in intensity.

Effects on receptors located along Beach Channel Drive would remain substantially unchanged because the phasing for proposed buildings (A1, A2, B1 and B2) along Beach Channel Drive would remain unchanged. Receptors located along the middle and southern portions of Beach 53rd Street (Lawrence Nursing Care, 334 Beach 54th Street, and 3-09 Beach 53rd Street) would continue to experience high construction noise levels, with a possible reduction in duration because of the approximately 27-month gap between the completion of Building A2 in September 2024 and the start of construction of Building C1/C2 in December 2026. The 7th Day Adventist Church located on Rockaway Beach Boulevard would be directly affected by the construction of Buildings C, D, and F1, and would experience substantially the same noise level increments. Proposed buildings that are completed and operational would continue to experience high construction noise levels with L_{eq}s in the 70s and 80s dBA.