# Chapter 12 : Transportation

## I. INTRODUCTION

This chapter examines the potential traffic, transit, pedestrian, safety, and parking impacts associated with the proposed redevelopment of the former Peninsula Hospital Center on the Project Site located in the Rockaway neighborhood in Queens Community District 14 based on guidelines provided in the *City Environmental Quality Review (CEQR) Technical Manual*.

As described in Chapter 1, "Project Description," the Applicant is seeking a set of Proposed Actions in the form of discretionary approvals that include zoning map and text amendments, a large-scale general development (LSGD) 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 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 residential 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 270 DUs set aside for senior housing, 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, and approximately 24,000 square feet (sf) of publicly-accessible open space. Approximately 973 parking spaces would be provided as part of the Proposed Project, including 744 spaces for residential use, 83 spaces for retail use, 75 spaces for community facility medical office use, and 71 on-street parking spaces.

As described in Chapter 1, "Project Description," the Project Site is divided into North and South Parcels. The North Parcel of the Project Site is bounded by Beach Channel Drive to the north, Rockaway Beach Boulevard to the south, Beach 53rd Street to the west, and Beach 50th Street to the east and would be occupied by ten of the eleven buildings proposed for the Project Site. The South Parcel of the Project Site is bounded by Rockaway Beach Boulevard to the north, Rockaway Freeway to the south, and Beach 52nd Street to the west and would be occupied by the last of the proposed buildings. The Proposed Project includes a privately owned, publicly accesible internal street network with two new 60-foot wide publicly-accessible private streets: 1) the extension of Beach 52nd Street would proceed northward from Rockaway Beach Boulevard, cut through the center of the Project Site and terminate to Beach Channel Drive; and 2) a new east-west street named Peninsula Way would extend between Beach 50th Street and Beach 53rd Street.

Four peak hours were considered for the transportation analysis: Weekday AM (7:30 AM to 8:30 AM), Weekday Midday (MD) (1:00 PM to 2:00 PM), Weekday PM (5:00 PM to 6:00 PM), and Saturday MD (2:30 PM to 3:30 PM). Given the seasonal effects of beach traffic in the Rockaways during the summer, the Weekday MD, Weekday PM, and Saturday MD peak hour analyses were based on counts collected during the summer months, and the Weekday AM peak hour analyses were based on counts collected during the non-summer months. The study area includes 35 existing signalized intersections, 11 existing unsignalized intersections, five proposed unsignalized intersections, nine proposed driveways, 49 existing pedestrian elements, 39 proposed pedestrian elements, and 15 transit elements (one subway line, nine subway stairs, three subway control areas, and two bus routes).

# II. PRINCIPAL CONCLUSIONS

Detailed transportation analyses were conducted and found that the Proposed Project would result in significant adverse traffic, pedestrians, and public transit impacts as detailed below.

## Traffic Flow and Operating Conditions

**Table 12-1: Significant Adverse Traffic Impacts at Signalized Intersections** shows the signalized intersections that would experience significant adverse traffic impacts in 2034 ("analysis year"). As shown in **Table 12-1**, the Proposed Project would result in significant adverse impacts at 21, 16, 18, and 11 signalized intersections during the Weekday AM, Weekday MD, Weekday PM, and Saturday MD peak hours, respectively.

**Table 12-1: Significant Adverse Traffic Impacts at Signalized Intersections**

| # | Intersection | Weekday AM Peak Hour | Weekday MD Peak Hour | Weekday PM Peak Hour | Saturday MD Peak Hour |
|---|---|---|---|---|---|
| 1 | Beach Channel Drive & Beach 116th Street | X | X | X | X |
| 3 | Rockaway Beach Boulevard & Beach 116th Street | X | X | X | |
| 4 | Beach Channel Drive & Rockaway Freeway | X | X | X | X |
| 5 | Beach Channel Drive & Beach 108th Street | X | | | |
| 7 | Rockaway Beach Boulevard & Beach 108th Street | X | | | |
| 8 | Beach Channel Drive & Beach 92nd Street/Beach 94th Street | X | X | X | X |
| 13 | Beach Channel Drive & Beach 73rd Street | X | X | X | |
| 15 | Beach Channel Drive & Beach 62nd Street | X | X | X | X |
| 16 | Rockaway Beach Boulevard & Beach 62nd Street | X | X | X | X |
| 19 | Arverne Boulevard & Beach 59th Street | X | | X | |
| 20 | Rockaway Freeway & Beach 59th Street | X | X | X | X |
| 21 | Rockaway Beach Boulevard & Beach 59th Street | X | X | X | X |
| 23 | Arverne Boulevard & Beach 54th Street | X | X | X | |
| 24 | Rockaway Freeway & Beach 54th Street | | | X | |
| 25 | Edgemere Avenue & Beach 54th Street | X | X | X | X |
| 42 | Rockaway Freeway & Seagirt Boulevard | X | X | | |
| 44 | Rockaway Freeway & Cornaga Avenue | X | | | |
| 46 | Beach Channel Drive & Mott Avenue | X | X | X | X |
| 47 | Beach Channel Drive & Dix Avenue | X | X | X | |
| 48 | Beach Channel Drive & Birdsall Avenue | X | | X | |
| 49 | Beach Channel Drive & Nameoke Avenue | X | X | X | X |
| 50 | Beach Channel Drive & Hassock Street | X | X | X | X |
| | **Total Number of Impacted Intersections:** | **21** | **16** | **18** | **11** |
| | **Total Number of Impacted Lane Groups:** | **30** | **22** | **31** | **17** |

*X - denotes intersection significantly impacted in the peak hour*

**Table 12-2: Significant Adverse Traffic Impacts at Unsignalized Intersections** shows the unsignalized intersections that would experience significant adverse traffic impacts due in the analysis year. As shown in **Table 12-2**, the Proposed Project would result in significant adverse impacts at three, five, three, and two unsignalized intersections during the Weekday AM, Weekday MD, Weekday PM, and Saturday MD peak hours, respectively.

**Table 12-2: Significant Adverse Traffic Impacts at Unsignalized Intersections**

| # | Intersection | Weekday AM Peak Hour | Weekday MD Peak Hour | Weekday PM Peak Hour | Saturday MD Peak Hour |
|---|---|---|---|---|---|
| **26** | Beach Channel Drive & Beach 53rd Street | X | X | X | X |
| **27** | Rockaway Beach Boulevard & Beach 53rd Street | X | X | X | X |
| **28** | Rockaway Beach Boulevard & Beach 52nd Street | | X | | |
| **30** | Beach Channel Drive & Beach 50th Street | | X | | |
| **P8** | Parking Garage 8 driveway, via Peninsula Way | X | X | X | |
| | **Total Number of Impacted Intersections:** | **3** | **5** | **3** | **2** |
| | **Total Number of Impacted Lane Groups:** | **3** | **5** | **5** | **2** |

*X - denotes intersection significantly impacted in the peak hour*

## Transit Facilities

### *Subway Stations*

Under the With-Action condition, all analyzed subway station stairways and turnstile elements would operate at Level of Service (LOS) A during the Weekday AM and Weekday PM peak hours. Therefore, there would be no stairway- or control area-related significant adverse impacts associated with the Proposed Project.

### *Subway Line-Haul*

Under the With-Action condition, the A train would operate below guideline capacity in the peak direction during the Weekday AM, Weekday PM, Saturday MD, and Sunday MD peak hours. Therefore, there would be no subway line-haul-related significant adverse impact associated with the Proposed Project.

### *Bus*

Under the With-Action condition, the Q22 bus would operate above capacity in the westbound direction in the Weekday AM and Weekday PM peak hours, and the Q52-Select Bus Service (SBS) bus would operate above capacity in the southbound direction in the Weekday PM peak hour. Therefore, there would be significant adverse bus line-haul-related impacts on the Q22 and Q52-SBS buses during the Weekday AM and Weekday PM peak hours.

## Pedestrian Facilities

### *Sidewalks*

Under the With-Action condition, all sidewalk elements are expected to operate at LOS C or better during all peak hours for the platoon condition except for the following four locations, which would experience significant adverse impacts due to the Proposed Project:

- The north sidewalk on the east leg of the intersection of Beach 54th Street and Arverne Boulevard in the Weekday MD, Weekday PM, and Saturday MD peak hours.
- The south sidewalk on the west leg of Beach 53rd Street and Beach Channel Drive in the Weekday AM, Weekday MD, Weekday PM, and Saturday MD peak hours.
- The west sidewalk on the north leg of Beach 44th Street and Rockaway Freeway in the Weekday PM peak hour.
- The north sidewalk on the west leg of Beach 56th Street and Arverne Boulevard in the Weekday AM peak hour.

### *Crosswalks*

Under the With-Action condition, all crosswalk elements would operate at LOS C or better during all peak hours except for the following two locations, which would experience significant adverse impacts due to the Proposed Project:

- The south crosswalk at Beach 54th Street and Beach Channel Drive during the Weekday MD, Weekday PM, and Saturday MD peak hours.
- The north crosswalk at Beach 54th Street and Arverne Boulevard during the Weekday PM and Saturday MD peak hours.

### *Corners*

Under the With-Action condition, all corner locations would operate at LOS C or better during all peak hours except for the following location, which would experience significant adverse impacts due to the Proposed Project:

- The northeast corner at Beach 54th Street and Arverne Boulevard during the Weekday PM and Saturday MD peak hours.

## Parking Conditions

The Proposed Project would provide approximately 973 parking spaces, including 744 spaces for residential use, 83 spaces for retail use, 75 spaces for community facility medical office use, with approximately 50 of the 75 medical office designated spaces in building E parking garage available overnight for residential use. Signage in building E parking garage would be installed to specify which parking spaces would be designated for overnight residential parking use and during which hours. There would be an additional 71 on-street parking spaces within the streets internal to the Project Site. The remainder of the parking demand generated by the Proposed Project would be accommodated on-street. As less than half of the available on-street parking spaces would be used by the Proposed Project, there would not be a parking-related significant adverse impact.

## Vehicular and Pedestrian Safety Assessments

There was one study intersection identified as a high vehicular or pedestrian/bicycle crash location as per *CEQR Technical Manual* thresholds. The intersection of Beach Channel Drive and Mott Avenue had five of more pedestrian/bike crashes in 2015 and 2016. It has been identified as a Priority Intersection in the *Vision Zero Queens Pedestrian Safety Action Plan* and is included in the Downtown Far Rockaway Urban Design and Streetscape Reconstruction Project. Measures identified as part of those efforts are expected to address pedestrian safety issues at this intersection. With those measures, the projected increase in vehicle and pedestrian trips associated with the Proposed Project would not result in a significant adverse safety impact at this location.

# III. SCREENING METHODOLOGY

Transportation impact analysis methodologies for proposed projects in New York City (NYC) are defined in the *CEQR Technical Manual*, which outlines a two-tiered screening process. The Level 1 screening assessment includes a trip generation analysis to determine whether the Proposed Project would result in more than 50 vehicle trips, 200 subway/rail or bus riders, or 200 pedestrian trips in a peak hour. The Level 2 screening is a trip assignment review that identifies intersections with 50 or more vehicle trips, pedestrian elements with 200 or more pedestrian trips, 50 bus trips in a single direction on a single route, or 200 passengers at a subway station or line during any analysis peak hour which would require detailed analyses. The results of the screening analysis are described below.

## Traffic

According to *CEQR Technical Manual* guidelines, traffic analyses are generally required at intersections where more than 50 new vehicle trips would be generated by a proposed project during an individual peak hour based on the results of the vehicle trip assignment. The Proposed Project peak period generated trips were overlaid on the representative peak hours for the study area, which were determined based on the review of turning moving counts and Automated Traffic Recorder (ATR) counts collected during peak periods when background traffic is typically greatest and/or when the Proposed Project is projected to generate the greatest number of trips that would be added to the roadway network (as described further in Section VI, “Existing Conditions”). The four critical traffic peak hours are as follows:

- Weekday AM peak hour: 7:30 AM to 8:30 AM
- Weekday MD peak hour: 1:00 PM to 2:00 PM
- Weekday PM peak hour: 5:00 PM to 6:00 PM
- Saturday MD peak hour: 2:30 PM to 3:30 PM

Detailed intersection analyses were conducted for all four peak hours at 51 study intersections within the study area that exceeded the 50 new vehicle trip threshold in the *CEQR Technical Manual*. Specifically, 46 existing intersections were analyzed under the Existing and No-Action conditions and 51 intersections (which includes five proposed intersections that would be created as part of the Proposed Project) were analyzed under the With-Action condition.

## Transit

*CEQR Technical Manual* guidelines and thresholds established by NYC Transit (NYCT) and the Metropolitan Transportation Authority (MTA) were used to determine which subway/rail and bus routes in the study area would be analyzed. According to the criteria, if a proposed project is projected to result in fewer than 200 peak hour subway/rail passengers assigned to a single subway station or on a single subway line or 50 bus passengers assigned to a single bus line (in one direction), further transit analyses are not typically required as a proposed project is considered unlikely to create a significant transit impact. Transit peak hours were determined by element based on existing count data.

### *Subway Transit*

It was determined that the number of new subway trips generated by the Proposed Project would exceed the *CEQR Technical Manual* thresholds at Beach 60$^{th}$ Street Station and Beach 44$^{th}$ Street Station during the Weekday AM and Weekday PM peak hours; therefore, analyses of subway station elements were conducted. Based on information provided by NYCT for the station element assignment, a detailed subway analysis was performed for eight subway elements at the 60$^{th}$ Street station during the Weekday AM and Weekday PM peak hours and four subway elements at the 44$^{th}$ Street station during the Weekday PM peak hour. Per discussion with NYCT, a subway line-haul analysis for the A train was performed during the

Saturday MD and Sunday MD peak hours in addition to the Weekday AM and Weekday PM commuter peak hours as subway service is less frequent on weekends. For purposes of this analysis, it was assumed that the same number of project-generated trips would occur during the Saturday and Sunday peak hours.

### *Bus Transit*

It was determined that the number of new bus trips generated by the Proposed Project would exceed the *CEQR Technical Manual* thresholds for the Q22 bus route in the eastbound and westbound directions and the Q52-SBS bus route in the northbound and southbound directions during the Weekday AM and Weekday PM peak hours; therefore, analyses of the Q22 and Q52-SBS bus routes were conducted during the Weekday AM and Weekday PM peak hours.

## Pedestrians

Based on criteria specified in the *CEQR Technical Manual*, projected pedestrian volume increases of more than 200 pedestrians per hour at any sidewalk, crosswalk, or intersection corner would be considered a location with the potential for significant impacts, and would require a detailed analysis. As the Proposed Project would generate more than 200 peak hour pedestrian trips at 49 existing pedestrian locations and 30 proposed pedestrian elements during at least one peak hour based on a combination of walk, subway, and bus trips, a detailed pedestrian analysis was conducted for those elements during the four peak hours, which were determined based on the review of pedestrian counts collected during peak periods. The four critical pedestrian peak hours are as follows:

- Weekday AM peak hour: 7:45 AM to 8:45 AM
- Weekday MD peak hour: 1:00 PM to 2:00 PM
- Weekday PM peak hour: 4:30 PM to 5:30 PM
- Saturday MD peak hour: 2:00 PM to 3:00 PM

In addition to the 79 pedestrian elements analyzed based on the results of the screening analyses (49 existing pedestrian elements and 30 proposed pedestrian elements), the With-Action condition analyses also includes an additional nine proposed pedestrian elements internal to the Project Site.

## Parking Conditions

According to the *CEQR Technical Manual*, if the need for a detailed traffic analysis is triggered, it is likely that a parking assessment is also warranted. Since the Proposed Project is expected to generate more than 50 new vehicle trips at an individual intersection during any of the peak hours, a detailed traffic analysis was conducted, and, as such, a parking assessment was conducted. A parking analysis identifies the extent to which on-street and off-street parking is available and utilized under Existing, No-Action, and With-Action conditions. Typically, this analysis encompasses a study area within 0.25-mile of the Proposed Project. If the analysis identifies a shortfall in parking in the 0.25-mile study area, the study area could be extended to 0.5-mile to identify additional parking supply. The analysis, which takes into consideration anticipated changes in area parking supply, provides a comparison of parking needs versus availability to determine if a parking shortfall is likely to result from additional demand generated by the Proposed Project. Parking demand for the Proposed Project would be accommodated in on-site parking facilities and any shortfall would be accommodated on-street. An on-street parking utilization survey was conducted in the 0.25-mile study area to estimate available on-street parking spaces and considered as part of the detailed parking assessment.

## Vehicular and Pedestrian Safety Assessment

An evaluation of traffic safety is necessary for locations within the study area that have been identified as high-crash locations as specified in the *CEQR Technical Manual*. These locations are defined as those with

more than 48 total reportable and non-reportable crashes or five or more pedestrian/bicycle injury crashes that occur during any consecutive 12 months of the most recent three-year period for which data is available. Crash histories are reviewed to determine whether projected vehicular and pedestrian traffic would further impact safety as these locations or whether existing conditions could adversely impact the flow of the projected new vehicular or pedestrian/bicycle trips.

# IV. STUDY AREA

To assess the potential transportation impacts associated with the Proposed Project, the study area was defined based on principal access routes to and from the Project Site, traffic conditions in the surrounding area, and key intersections likely to be affected by trips generated by the Proposed Project. In total, 35 existing signalized intersections, 11 existing unsignalized intersections, and five proposed intersections and nine driveways that would be created as part of the Proposed Project were selected for the vehicular analyses. A total of 50 existing pedestrian elements and 36 proposed pedestrian elements were selected for the pedestrian analysis. The safety assessment was conducted for all vehicular and pedestrian study locations. The geographic locations of these intersections are depicted on **Figure 12-1: Proposed Project Vehicular Study Locations**.

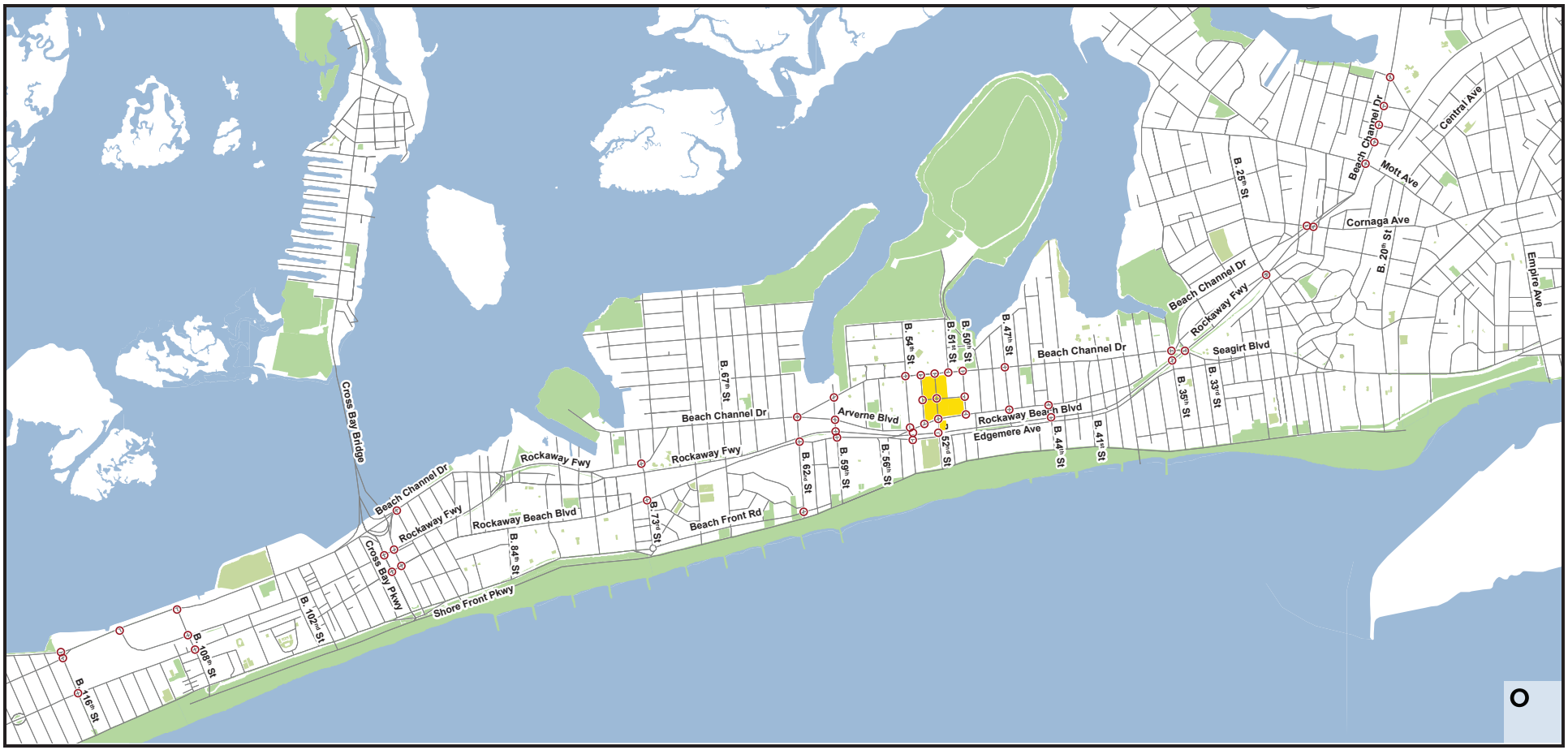
## Study Area Intersection and Roadway Characteristics

As shown in **Figure 12-1**, the study area includes the following 35 existing signalized intersections, 11 existing unsignalized intersections, five proposed unsignalized intersections, and nine proposed driveways:

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 (proposed intersection, unsignalized)
33. Peninsula Way and Beach 53rd Street (proposed intersection, unsignalized)
34. Peninsula Way and Beach 52nd Street (proposed intersection, unsignalized)
35. Peninsula Way and Beach 50th Street (proposed intersection, unsignalized)
36. Beach Channel Drive and Beach 47th Street (unsignalized)
37. Arverne Blvd/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 (proposed intersection, unsignalized)
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
60. Parking Garage 8 driveway, via Peninsula Way




Project Site

Study Locations

# PROPOSED PROJECT VEHICULAR STUDY LOCATIONS

Figure 12-1

The physical and operational characteristics of the major roadways in the study area are as follows:

- Beach Channel Drive is a two-way eastbound/westbound roadway that traverses most of the Rockaway peninsula with one travel lane in each direction and curbside parking on both sides of the street. West of the Cross Bay Veterans Memorial Bridge, Beach Channel Drive has two to three lanes in each direction. Between Beach 69th Street and Bay 32nd Street, there is a Class II bicycle lane in each direction. The Q22 and QM17 eastbound and westbound bus routes travel on Beach Channel Drive between Beach 73rd and Beach 35th streets and is the northernmost eastbound/westbound street in the study area.

- Edgemere Avenue is a two-way eastbound/westbound roadway with one travel lane in each direction and no curbside parking. Edgemere Avenue extends between Beach 54th Street and Beach 32nd Street. It is the southernmost eastbound/westbound street in the study area.

- Rockaway Freeway is a two-way eastbound/westbound roadway with one travel lane in each direction and no curbside parking. Rockaway Freeway is generally located below the elevated subway tracks (for the A train); subway columns separate the eastbound and westbound travel lanes.

- Arverne Boulevard is a two-way eastbound/westbound roadway with one travel lane in each direction and curbside parking on both sides of the street. The western end of Arverne Boulevard intersections with Beach Channel Drive at Beach 62nd Street, and the eastern end of Arverne Boulevard turns into Rockaway Beach Boulevard at Beach 54th Street. The Q52-SBS bus route travels in both directions on Arverne Boulevard.

- Rockaway Beach Boulevard is a two-way eastbound/westbound roadway that traverses the majority of the Rockaway peninsula with one to two travel lanes in each direction and generally provides curbside parking in both directions. The Q16, Q22, Q52-SBS, and Q53-SBS bus routes travel on portions of Rockaway Beach Boulevard in the eastbound and westbound directions.

- Cross Bay Parkway/Beach 94th Street are a pair of one-way northbound/southbound roadways that provide access to the Cross Bay Veterans Memorial Bridge and connect to Shore Front Parkway. Cross Bay Parkway is a one-way southbound roadway with a two-lane mainline exiting from the Cross Bay Veterans Memorial Bridge and a two-lane service road to the west coming from Beach Channel Drive. Beach 94th Street is one-way northbound roadway with a two-lane mainline providing access to the Cross Bay Veterans Memorial Bridge and a two-lane service road to the east providing access to Beach Channel Drive. The Q16, QM17, Q52-SBS, and Q53-SBS bus routes travel on Cross Bay Parkway/Beach 94th Street.

- Beach 54th Street is a two-way northbound/southbound roadway that operates with one travel lane and curbside parking in both directions south of Beach Channel Drive. It operates as a one-way southbound roadway north of Beach Channel Drive. The Q52-SBS southbound bus route travels on Beach 54th Street.

- Beach 53rd Street is a two-way northbound/southbound roadway that operates with one travel lane and curbside parking on the west side of the street.

- Beach 50th Street is a two-way northbound/southbound roadway that operates with one travel lane and curbside parking in both directions.

## Transit Service

Transit service in the study area includes one subway line and three bus routes, as shown on **Figure 12-2: Transit Map.**

### *Subway Lines*

The A train operates within the study area and serves two subway stations located near the Project Site, as shown on **Figure 12-2:**

- Beach 60th Street Station located at Beach 59th Street and Rockaway Freeway
- Beach 44th Street Station located at Beach 44th Street and Rockaway Freeway

### *Subway Station Elements*

Subway station elements at the Beach 60th Street Station and Beach 44th Street Station are included in the transit analysis. Both subway stations are elevated stations above Rockaway Freeway that serve the A train.

Pedestrians access the Beach 60th station via four staircases on the northwest and southwest corners of Rockaway Freeway and Beach 59th Street. From the street-level stairs, passengers pass through the control area on the mezzanine level/head house. Past the control area, passengers reach the platforms via four staircases connecting the head house and the platform level, with two staircases leading to each platform. There is an additional exit-only control area and staircase from the platform level to the street-level servicing the southbound platform that exits on the south side of Rockaway Freeway between Beach 59th Street and Beach 56th Street. Detailed analyses were conducted at the northeast street-to-head house staircase, four head house-to-platform stairs, fare array elements within the control area, and southbound platform exit-only control area and staircase.

Pedestrians access the Beach 44th Street station via four staircases on the northwest and southwest corners of Rockaway Freeway and Beach 44th Street. From the street-level stairs, passengers pass through the control area on the mezzanine level/head house. Past the control area, passengers reach the platforms via four staircases connecting the head house and the platform level, with two staircases leading to each platform. Detailed analyses were conducted at the northwest street-to-head house staircase, two head house-to-platform stairs (southbound platform), and fare array elements within the control area.

### *Bus Routes*

Two NYCT/MTA local bus routes, Q22 and Q52-SBS, provide regular bus service to the study area. One NYCT/MTA express bus route, QM17, provides express service to the study area. Each bus route is briefly described below and shown on **Figure 12-2.**

- *Q22* operates between Rockaway Point Boulevard/Beach 169th Street in Roxbury and Mott Avenue/Beach 20th Street in Far Rockaway. The Q22 route provides daily services between approximately 5:00 AM and 2:00 AM. Headways on the Q22 are generally between eight to ten minutes during the weekday peak periods and ten minutes during the Saturday peak period.
- *Q52-SBS* operates between Roosevelt Avenue/61st Street in Woodside and Beach Channel Drive/Beach 54th Street in Rockaway Park. The Q52-SBS route provides daily service between approximately 6:00 AM and 1:00 AM. Headways on the Q52-SBS are generally between 15 and 20 minutes during the weekday peak periods and 20 minutes during the Saturday peak period.
- *QM17* operates between Mott Avenue/Beach 20th Street in Far Rockaway, Queens and Third Avenue/East 59th Street in Midtown, Manhattan. The QM17 route provides weekday express services to Manhattan between approximately 5:45 AM and 9:40 AM and to Far Rockaway between

approximately 3:30 PM and 8:30 PM. Headways on the QM17 are 20 minutes in the Weekday AM peak period and 30 minutes in the Weekday PM peak period.

The Q22 and Q52-SBS bus routes are included in the detailed transit analysis.

## Pedestrian Elements

A total of 50 existing pedestrian elements (16 sidewalks, seven crosswalks, 25 corner reservoirs, and two median elements) and 36 proposed pedestrian elements (14 sidewalks, nine crosswalks, and 13 corner reservoirs) were assessed at key intersections near the Proposed Project. The pedestrian elements are located along key routes to the Project Site entrances and represent locations where most of the pedestrian trips generated by the Proposed Project are anticipated. These locations are shown on **Figure 12-3: Proposed Project Pedestrian Study Locations**.

## Parking Supply and Inventory

Existing study area parking conditions for on-street and off-street parking were evaluated through site visits. On-street parking regulations are shown on **Figure 12-4: On-Street Parking Regulation Map** and summarized in **Table 12-3: On-Street Parking Regulation Legend**. Parking utilization surveys for off-street parking facilities were not conducted since there are no off-street parking facilities located within a 0.25-mile radius of the Project Site.

**Table 12-3: On-Street Parking Regulation Legend**

| Map # | Parking Regulation |
|---|---|
| 1 | No Parking (Street Cleaning) 9:30AM - 11AM Monday |
| 2 | No Parking (Street Cleaning) 9:30AM - 11AM Wednesday |
| 3 | No Parking (Street Cleaning) 8:30AM - 10AM Wednesday |
| 4 | No Parking (Street Cleaning) 8:30AM - 10AM Monday |
| 5 | No Parking 7AM - 4PM School Days |
| 6 | Bus Stop No Standing |
| 7 | No Standing Anytime |
| 8 | Back in 90 Degree Parking Only |
| 9 | Back in Angle Parking Only |
| 10 | No Parking Anytime |
| 11 | Bus Layover- No Engine Idling |
| 12 | AVO Police Department |
| 13 | No Stopping Anytime |




Source: 2017 PLUTO, NYCDCP

Project Site

1/4-Mile Radius

A Subway Line (with Station)

Q22 Bus Route

# TRANSIT MAP

Figure 12-2




Source: 2016 Pluto, NYCDCP

Project Site

Sidewalk

Corner

Median

Crosswalk

Future Element

# PROPOSED PROJECT PEDESTRIAN STUDY LOCATIONS

Figure 12-3

Peninsula Hospital Site Redevelopment




Source: 2016 Pluto, NYCDCP

Project Site

1/4-Mile Radius

# = Posted Parking Regulation

## ON-STREET PARKING REGULATION MAP

Figure 12-4

Peninsula Hospital Site Redevelopment

# V. OPERATIONAL ANALYSIS METHODOLOGY

The following sections summarize the operational analysis methodologies and significant impact criteria in accordance with the *CEQR Technical Manual* guidelines for the assessment of traffic, transit, pedestrians, parking, and safety.

## Traffic Operations

The operations of the study area intersections were analyzed in accordance with the *CEQR Technical Manual* guidelines by applying the methodologies presented in the *2000 Highway Capacity Manual* (HCM 2000) using the Highway Capacity Software (HCS+ 5.5) and Synchro 10. A description of these methodologies is provided below.

### *Signalized Intersections*

The LOS of a signalized intersection is defined in terms of control delay per vehicle (seconds per vehicle). Control delay is the portion of total delay experienced by a motorist that is attributed to the traffic signal. Several factors contribute to the delay at a signalized intersection including cycle length, pedestrian crossing times, progression/signal coordination, and volume-to-capacity (v/c) ratios. For signalized intersections, LOS A describes operations with minimal delays, up to 10 seconds per vehicle, while LOS F describes operations with delays in excess of 80 seconds per vehicle. Delays experienced at LOS A, B, C or mid-D (less than or equal to 45.0 seconds per vehicle) are generally considered "acceptable" operating conditions according to the *CEQR Technical Manual*. Conversely, LOS E and F are generally considered "unacceptable" operating conditions. The LOS criteria for signalized intersections, as defined in the HCM 2000, are provided in **Table 12-4: LOS Criteria for Signalized Intersections**.

**Table 12-4: LOS Criteria for Signalized Intersections**

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

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

### *Unsignalized Intersections*

For unsignalized intersections, the total delay is defined as the total elapsed time from which a vehicle stops at the end of the queue until the vehicle departs from the stop line. This includes the time required for the vehicle to travel from the last-in-queue to the first-in-queue position. The average control total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation. The LOS thresholds for unsignalized intersections are different from those for signalized intersections and are summarized in **Table 12-5: LOS Criteria for Unsignalized Intersections** as follows:

**Table 12-5: LOS Criteria for Unsignalized Intersections**

| LOS | Average Delay |
|---|---|
| **A** | ≤ 10.0 seconds |
| **B** | > 10.0 and ≤ 15.0 seconds |
| **C** | > 15.0 and ≤ 25.0 seconds |
| **D** | > 25.0 and ≤ 35.0 seconds |
| **E** | > 35.0 and ≤ 50.0 seconds |
| **F** | > 50.0 seconds |

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

### *Significant Impact Criteria: Traffic Operations*

According to the criteria presented in the *CEQR Technical Manual* for signalized intersections, a lane group under the With-Action condition operating within LOS A, B, or C, or mid-LOS D up to a maximum average control delay of 45.0 seconds/vehicle is not considered significant. However, if a lane group under the No-Action condition is within LOS A, B, or C, then deterioration under the With-Action condition to worse than mid-LOS D (delay greater than 45.0 seconds/vehicle) is considered a significant impact.

For lane groups operating at LOS D, E, or F under the No-Action condition, then deterioration under the With-Action condition that meet the following criteria are considered significant impacts:

- For a lane group operating at LOS D under the No-Action condition, an increase in projected average control delay of five or more seconds is considered significant if the With-Action condition delay exceeds mid-LOS D.
- For a lane group operating at LOS E under the No-Action condition, an increase in projected average control delay of four or more seconds is considered significant when compared with the With-Action condition delay.
- For a lane group operating at LOS F under the No-Action condition, impacts are considered significant and require examination of mitigation if they result in an increase of three or more seconds when compared with the With-Action condition.

The same criteria for signalized intersections apply to unsignalized intersections (mid-LOS D for unsignalized intersections is a 30-second delay); however, for the minor approach to trigger a significant impact, 90 passenger-car-equivalents (PCEs) must be identified in the With-Action condition in any peak hour.

## Transit Operations

One subway route, 12 subway station elements, and two bus routes were analyzed in conformance to *CEQR Technical Manual* guidelines. A description of these methodologies is provided below.

Subway station elements, including stairs and control areas, were considered for this analysis as well as a line-haul for the A train and bus line-hauls for the Q22 and Q52-SBS buses.

### *Subway Line-Haul*

The analysis of subway line-haul capacity is based on practical subway car capacity guidelines provided by NYCT. The capacity varies by the type of subway cars in operation. Line-haul capacity is based on the guideline capacity per subway car multiplied by the number of subway cars crossing the maximum load point in the peak hour. The maximum peak-period loading guideline capacities are provided in the *CEQR Technical Manual* for each car class:

- 51-foot subway/rail car (guideline capacity of 110 passengers/car)
- 60-foot subway/rail car (guideline capacity of 145 passengers/car)
- 75-foot subway/rail car (guideline capacity of 175 passengers/car)

The line-haul analysis for the A train is based on a guideline capacity of 175 passengers/car for the Weekday MA and Weekday PM peak hours (non-summer) and 88 passengers/car for the Saturday MD and Sunday MD peak hours (summer), as provided by NYCT.

The volume of passengers per subway car at the maximum load point on the line is quantified using methods outlined in the *CEQR Technical Manua*l and is compared to the guideline capacities to determine if there is capacity available to accommodate additional project-generated trips. The *CEQR Technical Manual* does not define LOS thresholds for the subway line-haul analysis.

### *Subway Stairs*

The v/c ratio and LOS for subway stairs are based on the peak 15-minute passenger volume divided by stair capacity. The NYCT guideline capacity for stairs is 10 pedestrians per foot per minute (PFM). This rate is based on the Volume/SVCD (Service Volume between LOS C and D) capacity ratio. The breakpoint between LOS C and LOS D at a v/c ratio of 1.00 has been established by NYCT as the minimum acceptable standard for pedestrian conditions. Therefore, the v/c ratio is used to determine the design capacity of the critical stair locations in a station during each peak 15-minute period.

To calculate the service level of a subway stair, the v/c ratio of the entering flow is calculated separately from the v/c ratio of the exiting flow. These ratios are added together to generate the overall v/c ratio of the stair. The data needed to derive the capacity of a stair include the effective width of the stair, 15-minute passenger volumes, SVCD (based on NYCT capacity guidelines), surge factor, and friction factor. The effective width of a stair is adjusted by reducing its width at the narrowest point by six inches on each side of the stair, and an additional three inches if a center handrail is present. Exiting passenger flows within subway stations can be "surged" which reduces the calculated capacity because there is a disproportionate number of pedestrians concentrated within portions of the 15-minute period. Circulation elements closest to the platform level have the highest reduction in capacity (25%) due to surging. Surging factors decrease for each level above the platform level as a result of passenger volumes dissipating each level towards the street. The effect of surging is also less for elements that serve three or more tracks. It is estimated by NYCT that the capacity on stairs is reduced by 10% due to friction if opposing flows are less than 95% in one direction. The LOS criteria for subway stairs and control area elements (see next section) are defined in **Table 12-6: LOS Criteria for Subway Station Stairs and Control Areas.**

**Table 12-6: LOS Criteria for Subway Station Stairs and Control Areas**

| LOS | Description | Volume/SVCD Ratio |
|---|---|---|
| A | Free Flow | 0.00 to 0.45 |
| B | Fluid Flow | 0.45 to 0.70 |
| C | Fluid, somewhat restricted | 0.70 to 1.00 |
| D | Crowded, walking speed restricted | 1.00 to 1.33 |
| E | Congested, some shuffling and queuing | 1.33 to 1.67 |
| F | Severely congested, queued | > 1.67 |

**Source:** *CEQR Technical Manual (2014).*

### *Control Areas*

Station control areas separate the unpaid and paid areas of the station and are comprised of regular (low) turnstiles, High Entrance/Exit Turnstiles (HEETs), High Exit Turnstiles (HXT), and Emergency Gates. Regular and HEET turnstiles and Emergency Gates are bi-directional, where HXT turnstiles only serve exiting passengers. The v/c ratios of these fare control elements providing access to the station are based on the peak 15-minute passenger volume divided by the 15-minute capacity. The NYCT guideline capacities are 420 entries and 645 exits at regular turnstiles, 255 entries and 540 exits at HEETs, and 555 exits at HXTs. Emergency Gates are not included in control area capacity calculations. While passengers may make use of these gates, these passengers are assigned to turnstiles. For control area elements, overall capacity is measured by the number of elements, the NYCT guideline capacity per element, surging factors, and friction factors. The application of surging and friction factors to calculate capacity is the same as for stairs. The LOS criteria for control area elements are defined in **Table 12-6**.

### *Bus Line-Haul*

Bus line-haul is analyzed in terms of passengers carried per bus in the peak direction at the peak load point. This is calculated as the number of passengers on each route divided by the number of buses operating on that route during the peak hours and then compared to NYCT bus capacity guidelines. A 40-ft standard bus has a capacity of 54 passengers, a 60-ft articulated bus has a capacity of 85 passengers, and a 45-ft over-the-road coach bus has a capacity of 55 passengers. The Q22 and the Q52-SBS bus routes both operate with 40-ft standard buses and therefore have guideline capacities of 54 passengers per bus.

### *Significant Impact Criteria: Transit Operations*

For subway line-haul capacity, any increases in average per car load levels that remain within the guideline capacity limits are not defined as significant impacts. If the No-Action condition is within guideline capacity limits but the With-Action condition exceeds guideline capacity and the Proposed Action is generating five or more transit riders per car, the impact is considered significant.

NYCT has defined significant stair impacts in terms of the width increment threshold (WIT). The WIT is used only to determine significant impact and is not the actual widening that would be required to mitigate a significant impact. For stairs, the WIT is calculated using the formulas provided in the *CEQR Technical Manual* if the With-Action condition v/c ratio is greater than 1.00. Significant impacts are typically considered to occur once the WIT levels for stairs have reached or exceeded the thresholds provided in the *CEQR Technical Manual*.

For regular turnstiles, HEETs, and HXTs, if the No-Action condition v/c ratio is less than 1.00 but the With-Action condition v/c ratio increases to 1.00 or greater, the impact is considered significant. If both the No-Action and With-Action condition v/c ratios are 1.00 or greater, a 0.01 change in v/c ratio is considered significant.

According to MTA bus operating guidelines, increases in bus load levels to above their maximum capacity at any load point as a result of a project is defined as a significant impact since it necessitates adding more bus service along that route.

## Pedestrian Operations

The pedestrian crosswalk, corner, and sidewalk elements were analyzed in accordance with the *CEQR Technical Manual* guidelines. A description of these methodologies is provided below.

### *Crosswalk/Corner*

Crosswalk and corner analyses are conducted at signalized intersections using the analytical procedures described in the *2010 Highway Capacity Manual* (*HCM 2010*). The capacity of crosswalks and corners are evaluated based on pedestrian space measured in terms of square feet (sf) per pedestrian ($ft^2$/p). To calculate pedestrian space, effective crosswalk widths and corner areas, hourly pedestrian volumes (crosswalk, corner, and sidewalk), conflicting hourly turning vehicles, average walking speed (3.5 feet/second or 3.0 feet/second if 20% of pedestrians are seniors and/or school children or the intersection is in a Senior Pedestrian Focus Area), and signal timing are required. **Table 12-7: LOS Criteria for Crosswalks and Corners** shows the LOS criteria for crosswalks and corners based on pedestrian space.

**Table 12-7: LOS Criteria for Crosswalks and Corners (Signalized intersections)**

| LOS | Pedestrian Space ($ft^2$/p) |
|---|---|
| **A** | > 60 |
| **B** | 60 to > 40 |
| **C** | 40 to > 24 |
| **D** | 24 to > 15 |
| **E** | 15 to > 8 |
| **F** | ≤ 8 |

***Source***: Transportation Research Board. *Highway Capacity Manual*, 2010.

Crosswalk analyses are conducted at unsignalized intersections using the analytical procedures described in the *HCM 2000*. The capacity of crosswalks at unsignalized intersections are evaluated based on the average delay per pedestrian in terms of seconds. To calculate average delay per pedestrian, effective crosswalk widths, crosswalk lengths, hourly pedestrian volumes, conflicting hourly vehicles, average walking speed (3.5 feet/second), and pedestrian start-up and end clearance time (3.0 seconds) are required. **Table 12-8: LOS Criteria for Crosswalks and Corners (Unsignalized intersections)** shows the LOS criteria for crosswalks at unsignalized intersections based on average pedestrian delay.

**Table 12-8: LOS Criteria for Crosswalks and Corners (Unsignalized intersections)**

| LOS | Pedestrian delay Per Pedestrian (s) |
|---|---|
| **A** | < 5 |
| **B** | 5 to <10 |
| **C** | 10 to <20 |
| **D** | 20 to <30 |
| **E** | 30 to ≤45 |
| **F** | > 45 |

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

### *Sidewalk*

As identified in the *HCM 2010*, pedestrian unit flow rate is the primary performance measure used to evaluate sidewalks. This measure is based on PFM which is calculated by dividing the average per minute two-way pedestrian volume (during the peak hour) by the effective sidewalk width in feet (incorporating a buffer between walls, curbs, and obstructions). To accurately calculate sidewalk LOS, it is important to determine whether the pedestrian flow is generally “platoon” (with surges from a bus stop, subway station, or a crosswalk) or “non-platoon” (uniform) within the peak period being analyzed. Accounting for platoons generally results in a poorer LOS. **Table 12-9: LOS Criteria for Sidewalks** shows the non-platoon and platoon LOS criteria for sidewalks based on PFM.

**Table 12-9: LOS Criteria for Sidewalks**

| LOS | Non-Platoon Flow ($ft^2$/p) | Platoon Flow ($ft^2$/p) |
|---|---|---|
| **A** | > 60 | > 530 |
| **B** | > 40 to 60 | > 90 to 530 |
| **C** | > 24 to 40 | > 40 to 90 |
| **D** | > 15 to 24 | > 23 to 40 |
| **E** | > 8 to 15 | > 11 to 23 |
| **F** | ≤ 8 | ≤ 11 |

***Source:*** Transportation Research Board. *Highway Capacity Manual*, 2010.

### *Significant Impact Criteria: Pedestrian Operations*

The *CEQR Technical Manual* provides guidance on the impact criteria for pedestrian facilities based on the general comfort of and convenience levels for pedestrians, according to the location of the study area. Pedestrians in central business district (CBD) areas have become accustomed to higher pedestrian volumes and generally are more tolerant of restricted LOS conditions that might not be acceptable in other less congested (non-CBD) locations. An acceptable LOS for CBD areas is generally a mid-LOS D or better while an acceptable LOS for non-CBD areas is generally the upper limit of LOS C or better. For purposes of the pedestrian operations analysis, the pedestrian elements in the study area were not considered to be part of a CBD area.

For corners and crosswalks at signalized intersections in non-CBD areas, the average pedestrian space that is considered acceptable ranges between LOS A and LOS C. If the pedestrian space deteriorates to worse than LOS C (less than 24.0 $ft^2$/p), significant impacts are determined based on the following sliding scale:

- If the average pedestrian space under the No-Action condition is greater than 26.6 $ft^2$/p, then a decrease to 24.0 $ft^2$/p or less under the With-Action condition is considered a significant impact.
- If the average pedestrian space under the No-Action condition is between 5.1 and 26.6 $ft^2$/p, a decrease in space under the With-Action condition should be considered significant if it is greater than or equal to ((No-Action pedestrian space $ft^2$/p / 9.0) – 0.31). The With-Action condition increments are provided in Table 16-12 in the *CEQR Technical Manual*.
- If the average pedestrian space under the No-Action condition is less than 5.1 $ft^2$/p, then a decrease in pedestrian space greater than or equal to 0.2 $ft^2$/p under the With-Action condition is considered a significant impact.

For crosswalks at unsignalized intersections in non-CBD areas, the average pedestrian delay that is considered acceptable is to be determined in coordination with NYCDOT.

For sidewalks in non-CBD areas, the average pedestrian space that is considered acceptable ranges from LOS A to LOS C. If the pedestrian flow rate deteriorates to worse than LOS C (less than 24.0 $ft^2$/p for non-platoon flow and less than 40.0 $ft^2$/p for platoon flow), significant impacts are determined based on the following sliding scale:

<u>Non-platoon flow</u>

- If the average pedestrian space under the No-Action condition is greater than 26.6 $ft^2$/p, then a decrease in pedestrian space under the With-Action condition to 24.0 $ft^2$/p or less (LOS C or worse) should be considered a significant impact. If the average pedestrian space under the With-Action condition is greater than 24.0 $ft^2$/p, the impact should not be considered significant.

- If the average pedestrian space under the No-Action condition is between 5.1 and 26.6 $ft^2$/p, a decrease in pedestrian space under the With-Action condition should be considered significant if it is greater than or equal to ((No-Action pedestrian space $ft^2$/p / 9.0) – 0.31). The With-Action increments are provided in Table 16-14 in the *CEQR Technical Manual*.
- If the average pedestrian space under the No-Action condition is less than 5.1 $ft^2$/p, then a decrease in pedestrian space greater than or equal to 0.2 $ft^2$/p should be considered significant.

Platoon flow

- If the average pedestrian space under the No-Action condition is greater than 44.3 $ft^2$/p, then a decrease in pedestrian space under the With-Action condition to 40.0 $ft^2$/p or less (LOS C or worse) should be considered a significant impact. If the average pedestrian space under the With-Action condition is greater than 40.0 $ft^2$/p, the impact should not be considered significant.
- If the average pedestrian space under the No-Action condition is between 6.4 and 44.3 $ft^2$/p, a decrease in pedestrian space under the With-Action condition should be considered significant if it is greater than or equal to ((No-Action pedestrian space $ft^2$/p) / (9.5-0.321)). The With-Action increments are provided in Table 16-16 in the *CEQR Technical Manual*.
- If the average pedestrian space under the No-Action condition is less than 6.4 $ft^2$/p, then a decrease in pedestrian space greater than or equal to 0.3 $ft^2$/p should be considered significant.

## Parking Conditions Assessment

The parking analysis identifies the extent to which on-street parking and off-street parking is available and utilized under Existing, No-Action, and With-Action conditions. Typically, this analysis encompasses a study area within 0.25-mile radius of the Project Site. If the analysis identifies a shortfall in parking in the 0.25-mile study area, the study area could be extended to 0.5-mile to identify additional parking supply. The analysis, which takes into consideration anticipated changes in area parking supply, provides a comparison of parking needs versus availability to determine if a parking shortfall is likely to result from additional demand generated by the Proposed Project.

### *Determination of Significant Parking Shortfalls*

According to the *CEQR Technical Manual*, if the Proposed Project generates more parking demand than it supplies, this shortfall may be considered significant. However, the available parking supply should consider the parking spaces within a 0.25-mile radius of the Project Site. If the project-generated parking demand can be accommodated with the on-site project parking supply and on-street/off-street parking spaces within a 0.25-mile radius of the Project Site, then the shortfall would not be considered significant depending on the location of the project. For projects in locations outside the *CEQR Technical Manual* parking zones one and two, which applies to the Proposed Project, as it is in Parking Zone 5, a parking shortfall may be considered significant if the parking demand a project generates would consume more than half the available on-street and off-street parking spaces within a 0.25-mile radius of the Project Site.

## Vehicular and Pedestrian Safety Assessment

Crash data is collected for the most recent three-year period from NYCDOT and classified as Reportable, Non-Reportable, or Property Damage Only. For locations that are identified as a high-crash location, the safety assessment should include accident type and severity (including pedestrian and bicycle crashes), type of intersection control, and discernible patterns of crashes. Other factors should be also considered, such as high volumes of at-risk pedestrian age groups (children or the elderly), crossing locations with difficult sight lines, or uncontrolled locations. High-crash locations are defined as those with more than 48 total reportable and non-reportable crashes or five or more pedestrian/bicycle injury crashes during any consecutive 12 months of the most recent three-year period for which data is available. The vehicular and

pedestrian safety assessment will consider the projected vehicular and pedestrian traffic that would be added to each study intersection identified as a high crash location and/or whether the existing design and operations at the high crash locations would impact the flow of the projected new vehicular or pedestrian/bicycle trips.

### *Assessment of Vehicular and Safety Issues*

The assessment of safety impacts is often subjective and depends largely on the location of the Proposed Project and the circumstances under which historic crashes took place. It is the goal of this analysis to determine whether the Proposed Project would increase the potential for pedestrian and bicycle crashes at study intersections that are considered high-crash locations. If the assessment identifies potential for significant pedestrian and/or bicycle impacts due to the Proposed Actions, possible remedies to improve pedestrian and bicycle safety should be identified and coordinated with NYCDOT.

# VI. EXISTING CONDITIONS

Once the project characteristics have been defined, baseline conditions (the "Existing Conditions") are established for traffic, transit, pedestrian data, parking, and other physical and operational characteristics.

## Traffic Operations

Existing study area traffic volumes were based on traffic data collected in August 2016, August 2017, and November 2017 during peak periods when background traffic is typically greatest and/or when the Proposed Project is projected to generate the greatest number of trips that would be added to the roadway network. The field programs included manual turning movement counts at study area intersections during the Weekday AM, Weekday MD, Weekday PM, and Saturday MD peak periods. Crosswalk counts were collected during all peak periods for all intersections.

Turning movement counts and vehicle classification counts were performed at each study intersection. Traffic volumes were balanced between intersections where appropriate. ATR were placed at 81 locations for continuous, nine-day periods in August 2016, August 2017, and November 2017 to collect 24-hour counts for both summer and non-summer conditions. The ATR counts were used to identify daily and temporal traffic variations. The ATR volumes indicated that Weekday AM peak period traffic volumes were higher during the non-summer season and that traffic volumes during the Weekday MD, Weekday PM, and Saturday MD peak periods were higher during the summer season. Therefore, Weekday AM peak period counts collected in August 2016 and August 2017 were adjusted using a seasonal growth factor to reflect non-summer conditions. Similarly, Weekday MD, Weekday PM, and Saturday MD peak period counts collected in November 2017 were adjusted using a seasonal growth factor to reflect summer conditions.

An inventory of the study intersections was performed to determine intersection control, traffic signal timing, phasing, and cycle length; street and curbside signage; pavement markings; and lane dimensions to be used in the calculation of street capacities. Official signal timings were obtained from NYCDOT to confirm field observations and for incorporation into the capacity analysis. **Figure 12-5** through **Figure 12-8** show the Existing Conditions traffic volumes for the four peak hours. The representative peak hours of background traffic in the study area were determined to be:

- Weekday AM peak hour: 7:30 AM to 8:30 AM (non-summer)
- Weekday MD peak hour: 1:00 PM to 2:00 PM (summer)
- Weekday PM peak hour: 5:00 PM to 6:00 PM (summer)
- Saturday MD peak hour: 2:30 PM to 3:30 PM (summer)

### *Level of Service – Signalized Intersections*

**Table 12-12: 2016 Existing Conditions Level of Service Analysis – Signalized Intersections** presents the capacity analysis results for the signalized intersections included in the study area. Most of the analyzed intersection approaches and lane groups operate at an acceptable level of mid-LOS D or better (45.0 seconds or less of delay for signalized intersections) during the four analysis peak hours. The lane groups that operate worse than mid-LOS D are summarized by peak hour in **Table 12-10: Signalized Lane Groups Operating Worse than Mid-LOS D – Existing Conditions**.

**Table 12-10: Signalized Lane Groups Operating Worse than Mid-LOS D – Existing Conditions**

| # | Intersection | Weekday AM Peak Hour | Weekday MD Peak Hour | Weekday PM Peak Hour | Saturday MD Peak Hour |
|---|---|---|---|---|---|
| 1 | Beach Channel Drive & Beach 116th Streetreet | WB-LTR, SB-LTR | SB-LTR | WB-LTR, SB-LTR | SB-LTR |
| 2 | Newport Avenue & Beach 116th Streetreet | | NB-LT | NB-LT | NB-LT |
| 4 | Beach Channel Drive & Rockaway Freeway | | | EB-LTR | |
| 15 | Beach Channel Drive & Beach 62nd Street | WB (Beach Channel Drive)-T, SB-L | | | |
| 20 | Rockaway Freeway & Beach 59th Street | WB-L | WB-L | WB-L | WB-L |
| 25 | Edgemere Avenue & Beach 54th Street | | | EB-LTR | |
| 40 | Beach Channel Drive/Seagirt Boulevard & Beach 35th Street | SWB-LR | | SWB-LR | SWB-LR |
| 42 | Rockaway Freeway & Seagirt Boulevard | EB-L, EB-TR | EB-L, EB-TR | EB-L, EB-TR | EB-L |
| 46 | Beach Channel Drive & Mott Avenue | EB-LTR, NB-TR | | NB-TR | NB-TR |
| 47 | Beach Channel Drive & Dix Avenue | | SB-LTR | SB-LTR | SB-LTR |
| 50 | Beach Channel Drive & Hassock Street | NB-LT | NB-LT | | NB-LT, SB-T |
| | **Total Number of Impacted Lane Groups:** | **11** | **7** | **11** | **9** |

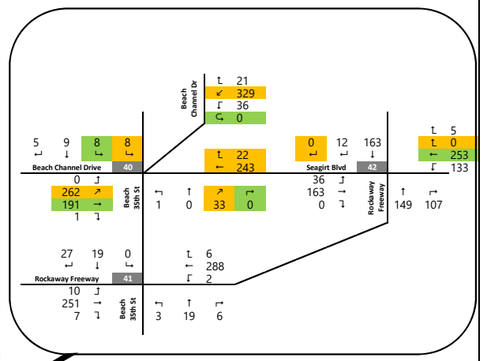
### *Level of Service – Unsignalized Intersections*

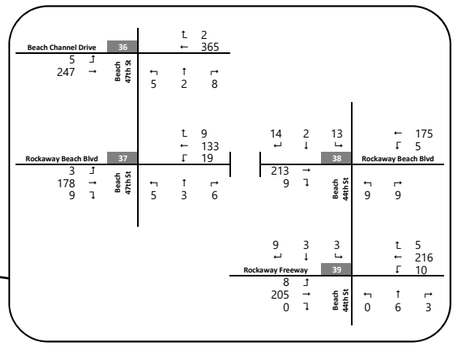
**Table 12-13: 2016 Existing Conditions Level of Service Analysis – Unsignalized Intersections** presents the capacity analysis results for the unsignalized intersections included in the study area. Most of the analyzed intersection approaches and lane groups operate at an acceptable level of mid-LOS D or better (30.0 seconds or less of delay for unsignalized intersections) during the four analysis peak hours. The lane groups that operate worse than mid-LOS D are summarized by peak hour in **Table 12-11: Unsignalized Lane Groups Operating Worse than Mid-LOS D – Existing Conditions**.

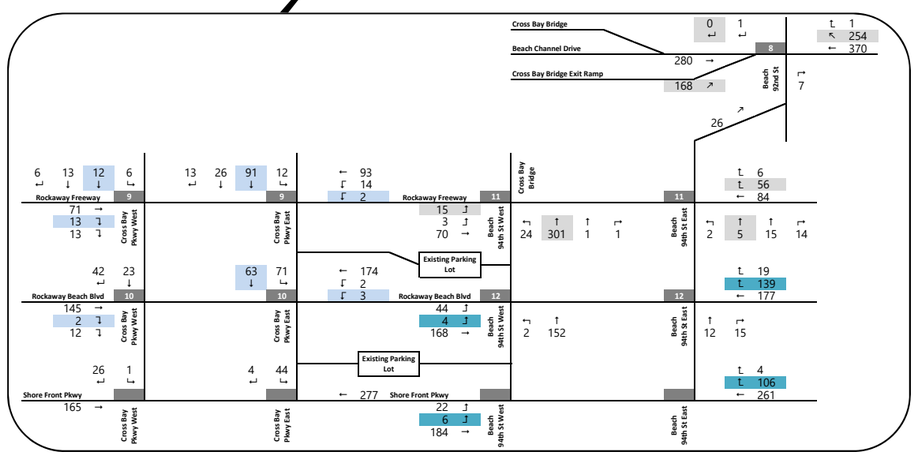
**Table 12-11: Unsignalized Lane Groups Operating Worse than Mid-LOS D – Existing Conditions**

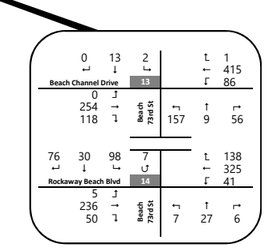
| # | Intersection | Weekday AM Peak Hour | Weekday MD Peak Hour | Weekday PM Peak Hour | Saturday MD Peak Hour |
|---|---|---|---|---|---|
| 48 | Beach Channel Drive & Birdsail Avenue | | EB-LTR, WB-LTR | EB-LTR, WB-LTR | EB-LTR, WB-LTR |
| | **Total Number of Impacted Lane Groups:** | **0** | **2** | **2** | **2** |

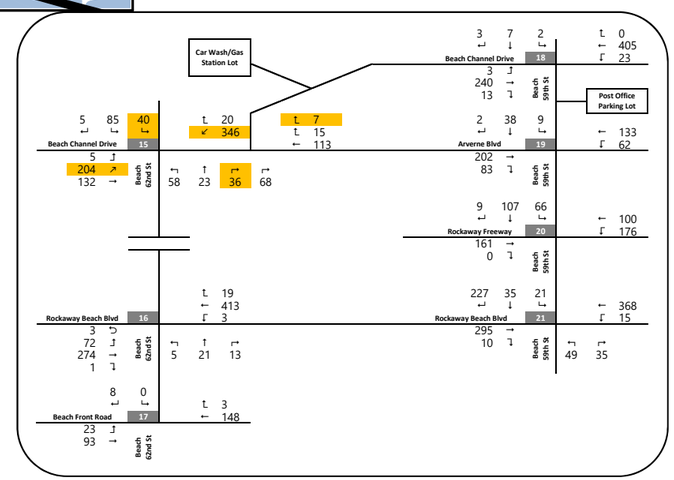


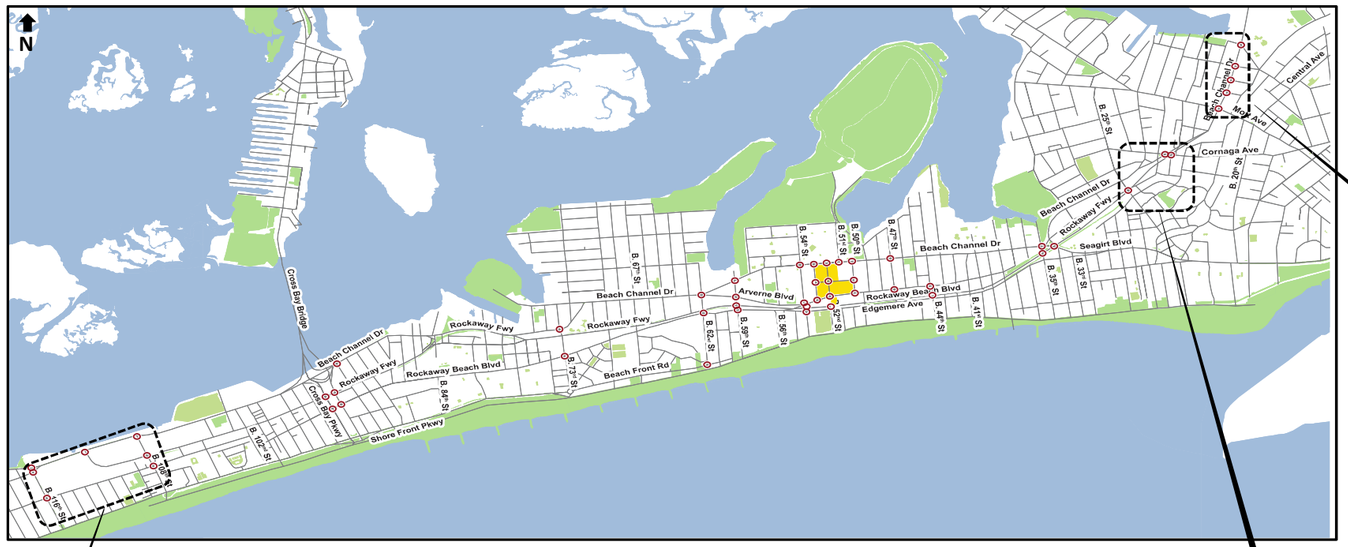



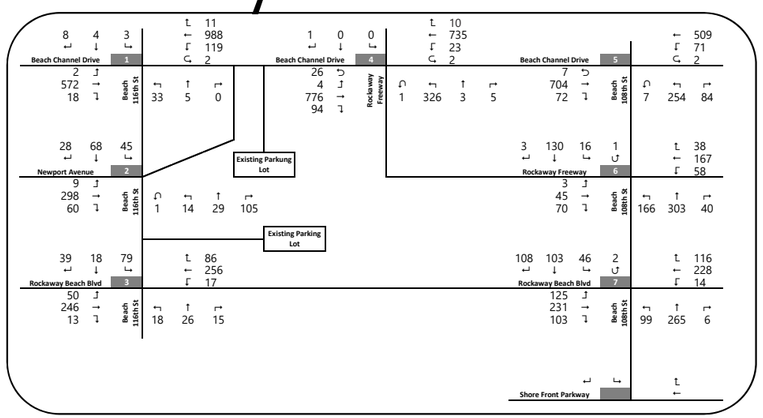

| Legend |
|---|
| To Cross Bay Parkway East |
| To/From Beach Channel Drive |
| To/From Cross Bay Bridge |
| To/From Seagirt Blvd |
| To/From Beach 94th St West |

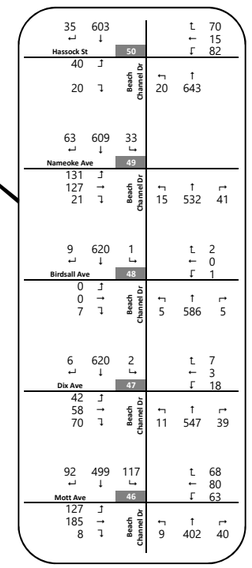
NOT TO SCALE

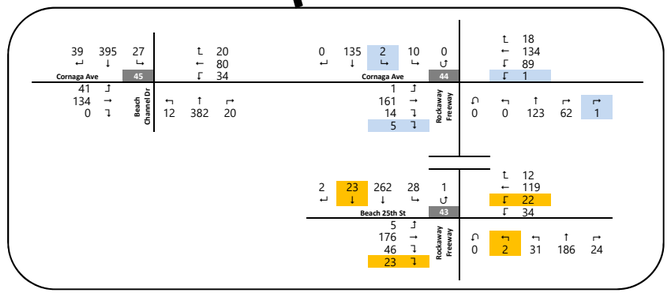
**Peninsula Hospital Site Redevelopment**

**2016 Existing Conditions Traffic Volumes**
**Weekday AM Peak Hour**
**Figure 12-5A**



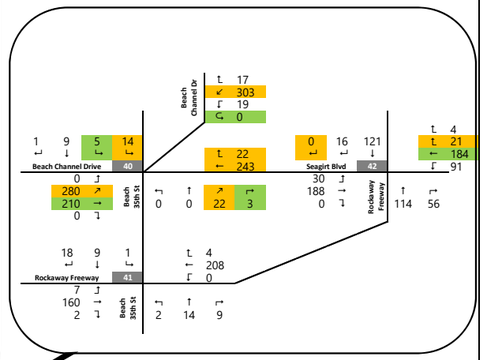

Legend
To Nasby Pl
To Far Rockaway Blvd

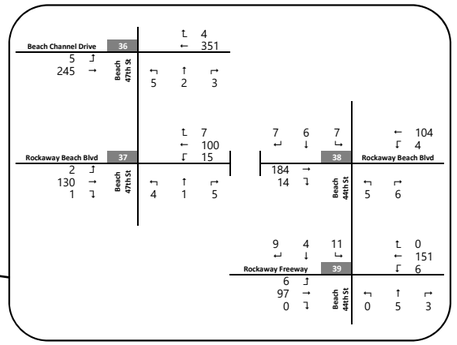
NOT TO SCALE

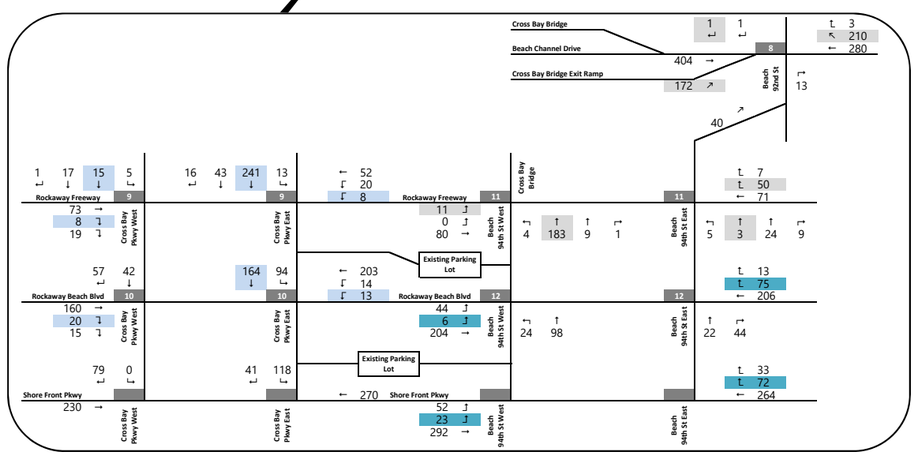
Peninsula Hospital EIS

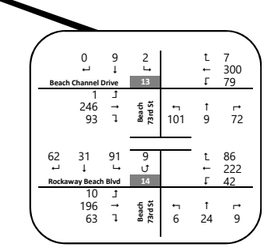
**2016 Existing Conditions Traffic Volumes**
**Weekday AM Peak Hour**
**Figure 12-5B**



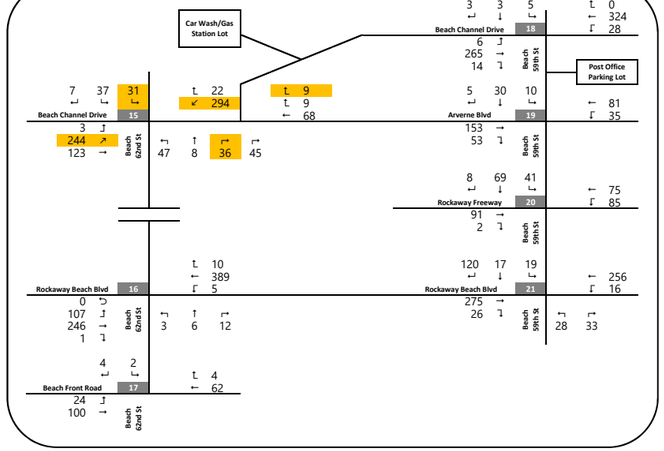



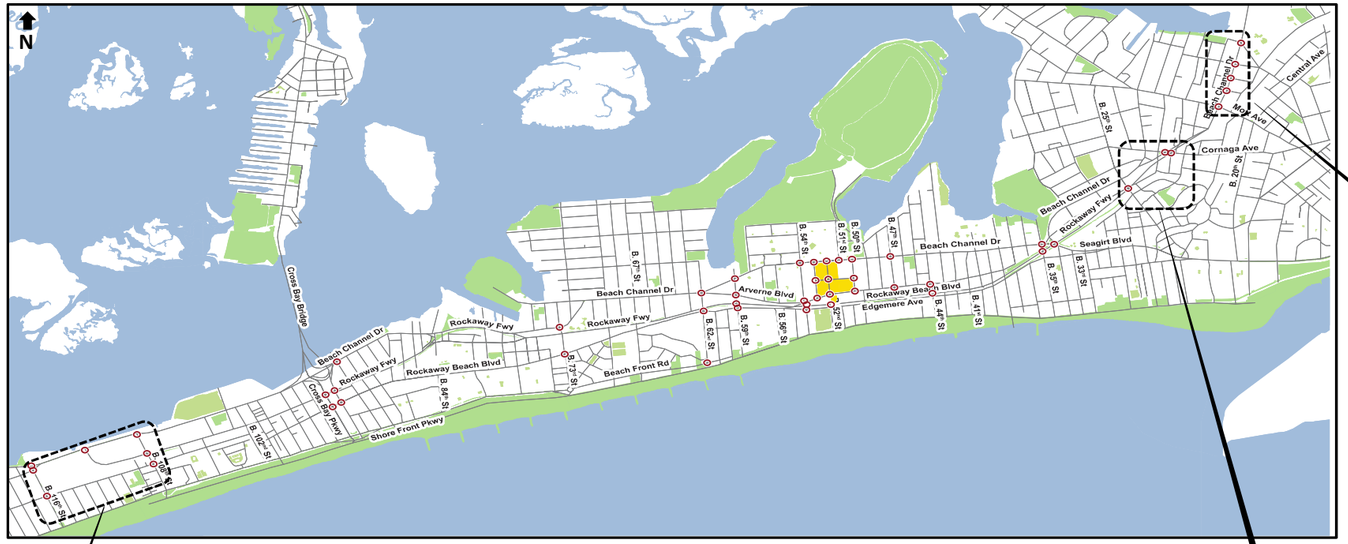

| Legend |
|---|
| To Cross Bay Parkway East |
| To/From Beach Channel Drive |
| To/From Cross Bay Bridge |
| To/From Seagirt Blvd |
| To/From Beach 94th St West |

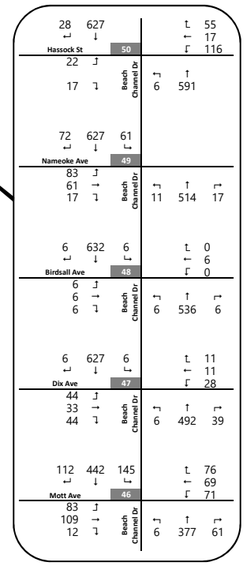


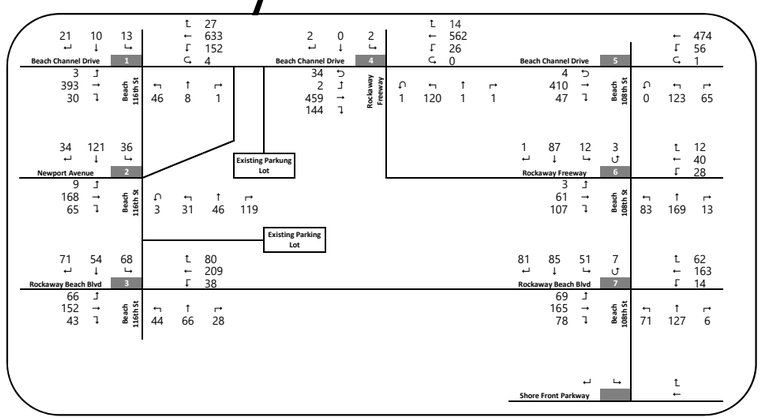

NOT TO SCALE

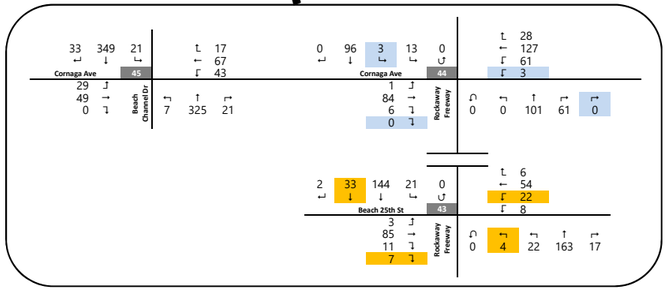
**Peninsula Hospital Site Redevelopment**

**2016 Existing Conditions Traffic Volumes**
**Weekday MD Peak Hour**
**Figure 12-6A**



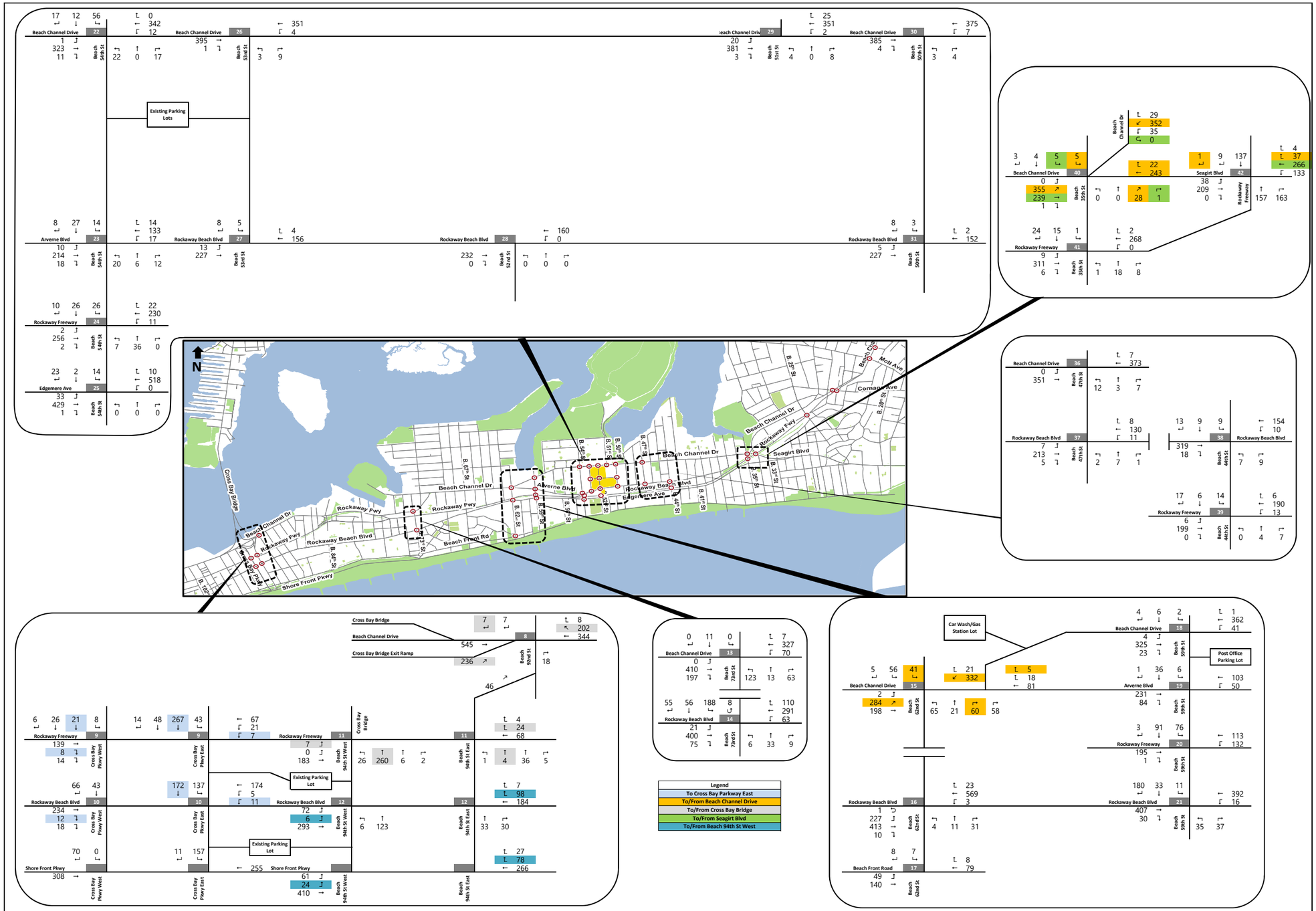




Legend
To Nasby Pl
To Far Rockaway Blvd

NOT TO SCALE

**Peninsula Hospital EIS**

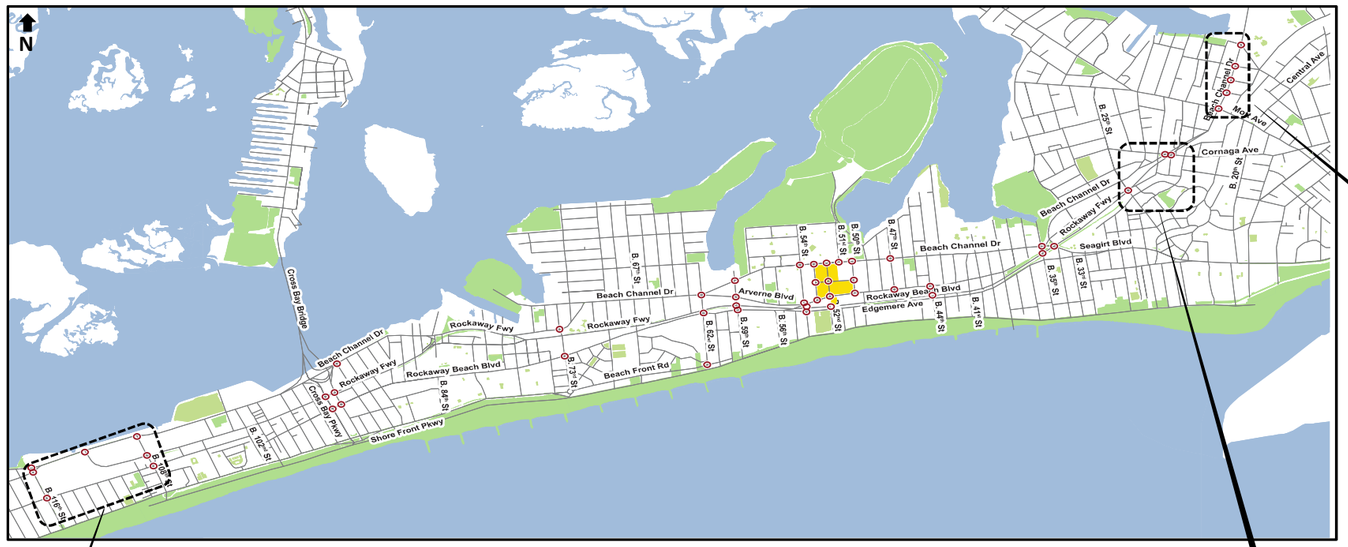
**2016 Existing Conditions Traffic Volumes**
**Weekday MD Peak Hour**
**Figure 12-6B**

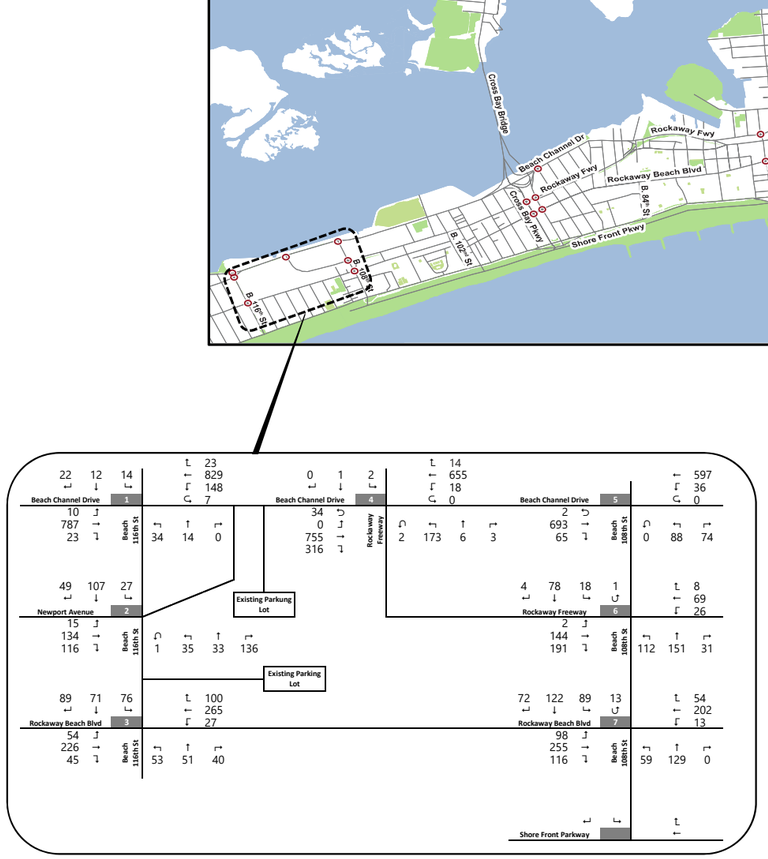


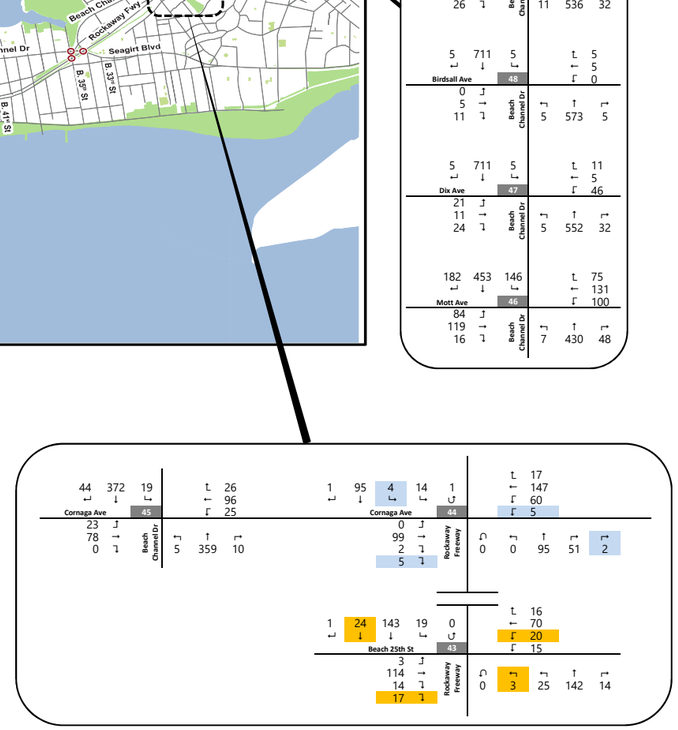

NOT TO SCALE

**Peninsula Hospital Site Redevelopment**

**2016 Existing Conditions Traffic Volumes**
**Weekday PM Peak Hour**
**Figure 12-7A**





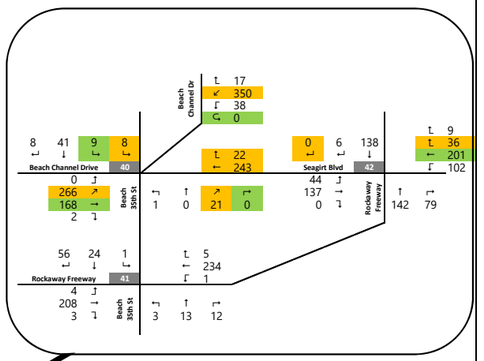


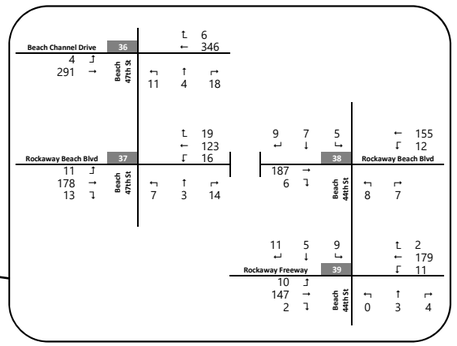
NOT TO SCALE

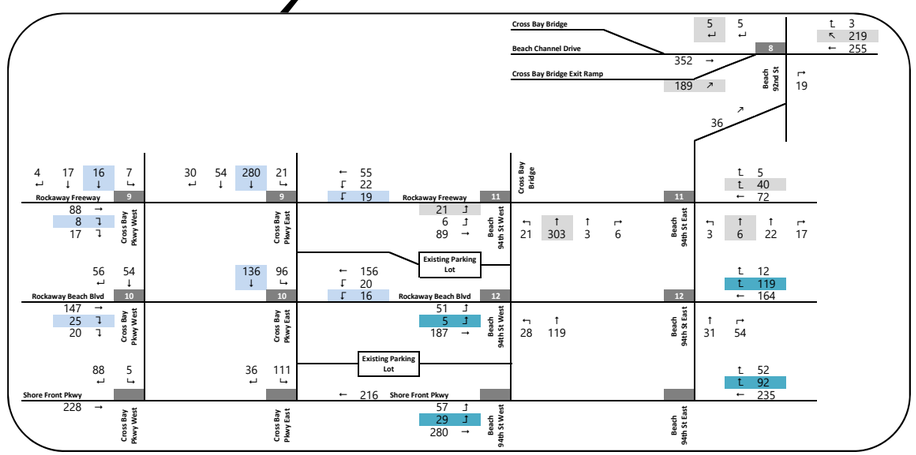
**Peninsula Hospital EIS**

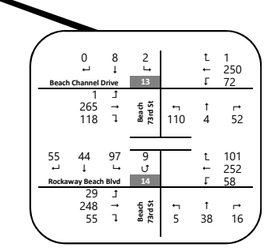
**2016 Existing Conditions Traffic Volumes**
**Weekday PM Peak Hour**
**Figure 12-7B**



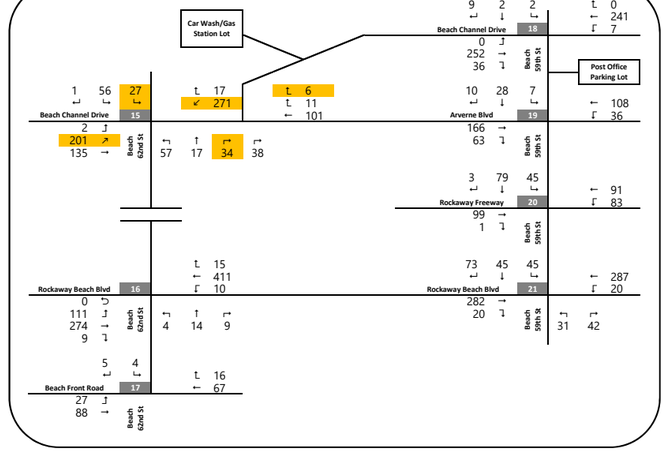



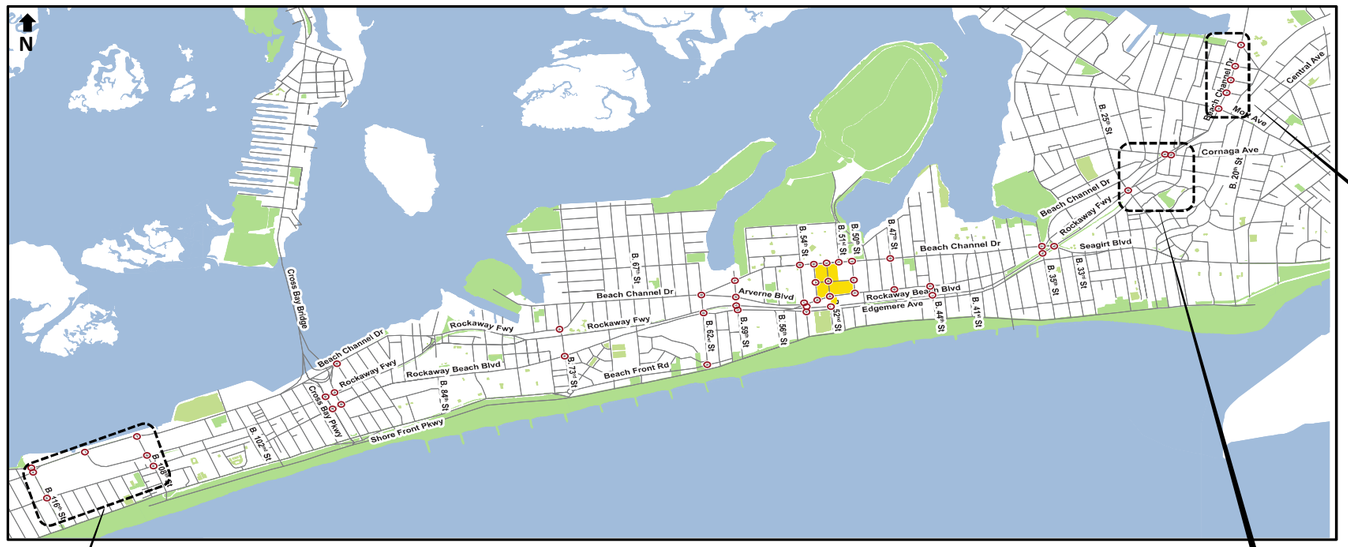

| Legend |
|---|
| To Cross Bay Parkway East |
| To/From Beach Channel Drive |
| To/From Cross Bay Bridge |
| To/From Seagirt Blvd |
| To/From Beach 94th St West |

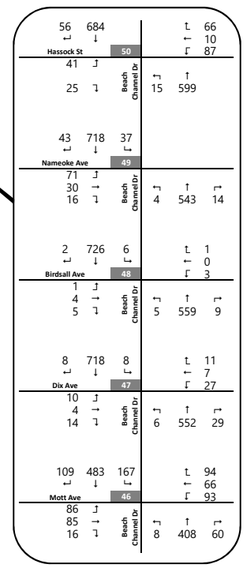


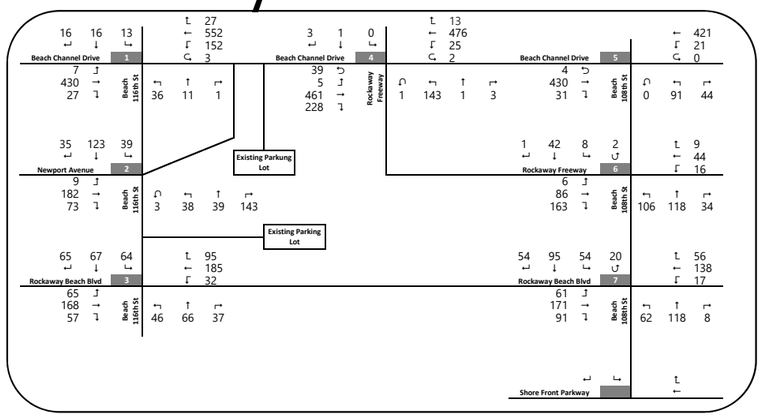

NOT TO SCALE

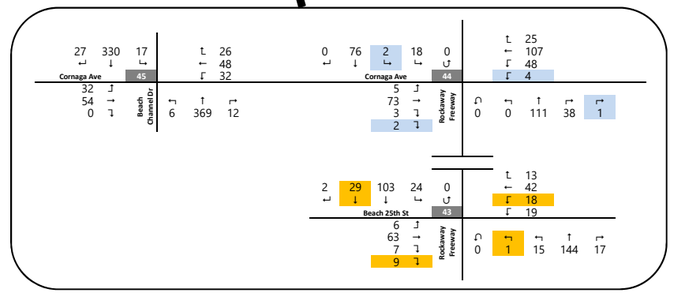
**Peninsula Hospital Site Redevelopment**

**2016 Existing Conditions Traffic Volumes**
**Saturday MD Peak Hour**
**Figure 12-8A**




| Legend |
|---|
| To Nasby Pl |
| To Far Rockaway Blvd |

NOT TO SCALE

**Peninsula Hospital EIS**

**2016 Existing Conditions Traffic Volumes**
**Saturday MD Peak Hour**
**Figure 12-8B**

**Table 12-12: 2016 Existing Conditions Level of Service Analysis – Signalized Intersections**

| # | Intersection & Approach | Weekday AM Peak Hour | | | | Weekday MD Peak Hour | | | | Weekday PM Peak Hour | | | | Saturday 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 |
| | **Beach Channel Drive and Beach 116th Street** | | | | | | | | | | | | | | | | |
| 1 | Eastbound | LTR | 0.52 | 27.5 | C | LTR | 0.38 | 25.1 | C | LTR | 0.65 | 30.3 | C | LTR | 0.39 | 25.2 | C |
| | Westbound | LTR | 1.03 | 61.6 | E | LTR | 0.70 | 22.6 | C | LTR | 1.04 | 63.3 | E | LTR | 0.64 | 20.6 | C |
| | Northbound | LTR | 0.17 | 43.3 | D | LTR | 0.22 | 44.0 | D | LTR | 0.18 | 43.4 | D | LTR | 0.16 | 43.0 | D |
| | Southbound | LTR | 0.09 | 45.6 | D | LTR | 0.23 | 47.9 | D | LTR | 0.24 | 48.1 | D | LTR | 0.23 | 47.8 | D |
| | | Intersection | | 48.9 | D | Intersection | | 25.3 | C | Intersection | | 48.9 | D | Intersection | | 24.3 | C |
| | **Newport Avenue and Beach 116th Street** | | | | | | | | | | | | | | | | |
| 2 | Eastbound | LTR | 0.71 | 35.9 | D | LTR | 0.48 | 28.1 | C | LTR | 0.53 | 29.5 | C | LTR | 0.49 | 28.3 | C |
| | Northbound | LT | 0.22 | 44.4 | D | LT | 0.40 | 48.7 | D | LT | 0.34 | 47.0 | D | LT | 0.40 | 48.8 | D |
| | | R | 0.32 | 33.5 | C | R | 0.39 | 35.0 | D | R | 0.38 | 34.6 | C | R | 0.41 | 35.2 | D |
| | Southbound | LTR | 0.22 | 17.5 | B | LTR | 0.28 | 18.3 | B | LTR | 0.26 | 18.0 | B | LTR | 0.28 | 18.3 | B |
| | | Intersection | | 32.1 | C | Intersection | | 29.1 | C | Intersection | | 29.1 | C | Intersection | | 29.4 | C |
| | **Rockaway Beach Boulevard and Beach 116th Street** | | | | | | | | | | | | | | | | |
| 3 | Eastbound | LTR | 0.56 | 14.9 | B | LTR | 0.49 | 13.7 | B | LTR | 0.54 | 14.5 | B | LTR | 0.53 | 14.3 | B |
| | Westbound | LTR | 0.75 | 21.6 | C | LTR | 0.69 | 19.3 | B | LTR | 0.79 | 24.1 | C | LTR | 0.59 | 16.1 | B |
| | Northbound | L | 0.05 | 12.5 | B | L | 0.16 | 13.8 | B | L | 0.20 | 14.3 | B | L | 0.16 | 13.7 | B |
| | | TR | 0.12 | 13.2 | B | TR | 0.23 | 14.2 | B | TR | 0.25 | 14.7 | B | TR | 0.24 | 14.3 | B |
| | Southbound | L | 0.30 | 15.8 | B | L | 0.27 | 15.6 | B | L | 0.27 | 15.4 | B | L | 0.24 | 14.9 | B |
| | | TR | 0.15 | 13.5 | B | TR | 0.31 | 15.1 | B | TR | 0.40 | 16.6 | B | TR | 0.31 | 15.1 | B |
| | | Intersection | | 17.5 | B | Intersection | | 16.1 | B | Intersection | | 18.3 | B | Intersection | | 15.0 | B |
| | **Beach Channel Drive and Rockaway Freeway** | | | | | | | | | | | | | | | | |
| 4 | Eastbound | LTR | 0.83 | 35.1 | D | LTR | 0.63 | 27.4 | C | LTR | 0.97 | 50.8 | D | LTR | 0.72 | 29.8 | C |
| | Westbound | LTR | 0.72 | 30.0 | C | LTR | 0.53 | 24.9 | C | LTR | 0.63 | 27.1 | C | LTR | 0.47 | 23.6 | C |
| | Northbound | LT | 0.48 | 24.6 | C | LT | 0.19 | 19.8 | B | LT | 0.25 | 20.7 | C | LT | 0.20 | 20.0 | B |
| | | R | 0.01 | 17.8 | B | R | 0.00 | 17.6 | B | R | 0.01 | 17.7 | B | R | 0.01 | 17.7 | B |
| | | Intersection | | 31.3 | C | Intersection | | 25.6 | C | Intersection | | 39.3 | D | Intersection | | 26.5 | C |
| | **Beach Channel Drive and Beach 108th Street** | | | | | | | | | | | | | | | | |
| 5 | Eastbound | TR | 0.69 | 23.0 | C | TR | 0.40 | 17.8 | B | TR | 0.62 | 21.2 | C | TR | 0.41 | 17.8 | B |
| | Westbound | LT | 0.80 | 29.1 | C | LT | 0.52 | 19.7 | B | LT | 0.56 | 20.3 | C | LT | 0.35 | 17.1 | B |
| | Northbound | L | 0.39 | 18.3 | B | L | 0.19 | 15.7 | B | L | 0.13 | 15.1 | B | L | 0.14 | 15.2 | B |
| | | R | 0.20 | 16.1 | B | R | 0.13 | 15.3 | B | R | 0.15 | 15.4 | B | R | 0.08 | 14.7 | B |
| | | Intersection | | 24.0 | C | Intersection | | 18.3 | B | Intersection | | 20.2 | C | Intersection | | 17.2 | B |
| | **Rockaway Freeway and Beach 108th Street** | | | | | | | | | | | | | | | | |
| 6 | Eastbound | LTR | 0.11 | 14.8 | B | LTR | 0.16 | 15.2 | B | LTR | 0.28 | 16.4 | B | LTR | 0.23 | 15.9 | B |
| | Westbound | LTR | 0.26 | 16.2 | B | LTR | 0.08 | 14.5 | B | LTR | 0.11 | 14.7 | B | LTR | 0.07 | 14.4 | B |
| | Northbound | L | 0.40 | 19.2 | B | L | 0.15 | 15.5 | B | L | 0.23 | 16.4 | B | L | 0.21 | 16.1 | B |
| | | TR | 0.29 | 16.5 | B | TR | 0.16 | 15.2 | B | TR | 0.16 | 15.2 | B | TR | 0.14 | 15.0 | B |
| | Southbound | LTR | 0.30 | 17.2 | B | LTR | 0.21 | 16.1 | B | LTR | 0.19 | 15.7 | B | LTR | 0.10 | 14.9 | B |
| | | Intersection | | 16.8 | B | Intersection | | 15.3 | B | Intersection | | 15.9 | B | Intersection | | 15.5 | B |
| | **Rockaway Beach Boulevard and Beach 108th Street** | | | | | | | | | | | | | | | | |
| 7 | Eastbound | L | 0.59 | 28.0 | C | L | 0.21 | 16.5 | B | L | 0.31 | 18.3 | B | L | 0.17 | 15.8 | B |
| | | TR | 0.64 | 24.4 | C | TR | 0.45 | 19.5 | B | TR | 0.66 | 24.5 | C | TR | 0.46 | 19.6 | B |
| | Westbound | L | 0.06 | 14.7 | B | L | 0.05 | 14.4 | B | L | 0.06 | 14.7 | B | L | 0.06 | 14.5 | B |
| | | TR | 0.69 | 26.5 | C | TR | 0.38 | 18.4 | B | TR | 0.47 | 20.1 | C | TR | 0.35 | 17.9 | B |
| | Northbound | LTR | 0.72 | 27.9 | C | LTR | 0.40 | 18.9 | B | LTR | 0.36 | 18.2 | B | LTR | 0.38 | 18.6 | B |
| | Southbound | LTR | 0.57 | 22.8 | C | LTR | 0.49 | 21.0 | C | LTR | 0.63 | 24.6 | C | LTR | 0.49 | 20.7 | C |
| | | Intersection | | 25.7 | C | Intersection | | 19.2 | B | Intersection | | 22.1 | C | Intersection | | 19.0 | B |
| | **Rockaway Freeway and Cross Bay Parkway** | | | | | | | | | | | | | | | | |
| 9 | Eastbound | TR | 0.18 | 19.2 | B | TR | 0.17 | 19.2 | B | TR | 0.23 | 19.9 | B | TR | 0.20 | 19.5 | B |
| | Westbound | L | 0.01 | 35.7 | D | L | 0.05 | 36.2 | D | L | 0.05 | 36.2 | D | L | 0.13 | 37.5 | D |
| | | T | 0.13 | 10.3 | B | T | 0.09 | 10.0 | A | T | 0.11 | 10.1 | B | T | 0.10 | 10.1 | B |
| | Southbound (Cross Bay Bridge Off-Ramp) | LTR | 0.16 | 20.8 | C | LTR | 0.32 | 22.4 | C | LTR | 0.35 | 22.9 | C | LTR | 0.40 | 23.5 | C |
| | Southbound (Beach Channel Drive Off-Ramp) | LTR | 0.07 | 20.0 | C | LTR | 0.07 | 20.1 | C | LTR | 0.12 | 20.6 | C | LTR | 0.09 | 20.3 | C |
| | | Intersection | | 17.5 | B | Intersection | | 20.2 | C | Intersection | | 20.5 | C | Intersection | | 21.4 | C |
| | **Rockaway Beach Boulevard and Cross Bay Parkway** | | | | | | | | | | | | | | | | |
| 10 | Eastbound | TR | 0.31 | 9.7 | A | TR | 0.36 | 10.1 | B | TR | 0.46 | 11.3 | B | TR | 0.36 | 10.1 | B |
| | Westbound | LT | 0.24 | 8.7 | A | LT | 0.33 | 9.4 | A | LT | 0.27 | 9.0 | A | LT | 0.25 | 8.8 | A |
| | Southbound (Cross Bay Bridge Off-Ramp) | LT | 0.15 | 15.0 | B | LT | 0.27 | 15.9 | B | LT | 0.33 | 16.5 | B | LT | 0.28 | 16.0 | B |
| | Southbound (Beach Channel Drive Off-Ramp) | TR | 0.20 | 16.0 | B | TR | 0.26 | 16.6 | B | TR | 0.29 | 17.0 | B | TR | 0.28 | 16.9 | B |
| | | Intersection | | 11.5 | B | Intersection | | 12.3 | B | Intersection | | 13.2 | B | Intersection | | 12.5 | B |
| | **Rockaway Freeway and Beach 94th Street** | | | | | | | | | | | | | | | | |
| 11 | Eastbound | L | 0.12 | 37.6 | D | L | 0.10 | 37.5 | D | L | 0.05 | 36.2 | D | L | 0.13 | 37.5 | D |
| | | T | 0.11 | 10.2 | B | T | 0.12 | 10.2 | B | T | 0.20 | 10.9 | B | T | 0.13 | 10.3 | B |
| | Westbound | TR | 0.25 | 20.1 | C | TR | 0.22 | 19.7 | B | TR | 0.15 | 18.9 | B | | | | |
| | | | | | | | | | | | | | | T | 0.21 | 19.6 | B |
| | | | | | | | | | | | | | | R | 0.01 | 17.5 | B |
| | Northbound (Cross Bay Bridge On-Ramp) | LTR | 0.28 | 21.9 | C | LTR | 0.19 | 21.0 | C | LTR | 0.25 | 21.6 | C | LTR | 0.32 | 22.3 | C |
| | Northbound (Beach Channel Drive On-Ramp) | LTR | 0.04 | 19.7 | B | LTR | 0.05 | 19.8 | B | LTR | 0.05 | 19.8 | B | LTR | 0.06 | 19.9 | B |
| | | Intersection | | 20.1 | C | Intersection | | 18.8 | B | Intersection | | 18.0 | B | Intersection | | 20.0 | C |

**Notes:** L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recroded during this peak hour.
1. Signalized intersection with stop-controlled approach(es).
2. 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 12-12 (continued): 2016 Existing Conditions Level of Service Analysis – Signalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | Weekday MD Peak Hour | | | | Weekday PM Peak Hour | | | | Saturday 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 |
| | **Rockaway Beach Boulevard and Beach 94th Street** | | | | | | | | | | | | | | | | |
| 12 | Eastbound | LT | 0.29 | 9.2 | A | LT | 0.33 | 9.5 | A | LT | 0.48 | 11.1 | B | LT | 0.31 | 9.3 | A |
| | Westbound | TR | 0.53 | 12.4 | B | TR | 0.45 | 11.2 | B | TR | 0.42 | 10.6 | B | TR | 0.44 | 11.0 | B |
| | Northbound (Cross Bay Bridge On-Ramp) | LT | 0.15 | 14.9 | B | LT | 0.12 | 14.7 | B | LT | 0.13 | 14.8 | B | LT | 0.14 | 14.9 | B |
| | Northbound (Beach Channel Drive On-Ramp) | TR | 0.07 | 14.6 | B | TR | 0.17 | 15.5 | B | TR | 0.14 | 15.2 | B | TR | 0.24 | 16.4 | B |
| | | Intersection | | 12.1 | B | Intersection | | 11.6 | B | Intersection | | 11.8 | B | Intersection | | 11.8 | B |
| | **Beach Channel Drive and Beach 73rd Street** | | | | | | | | | | | | | | | | |
| 13[1] | Eastbound | L | 0.00 | 9.3 | A | L | 0.00 | 9.4 | A | L | 0.00 | 9.3 | A | L | 0.00 | 9.4 | A |
| | | T | 0.28 | 11.6 | B | T | 0.26 | 11.4 | B | T | 0.38 | 12.7 | B | T | 0.25 | 11.3 | B |
| | Westbound | L | 0.24 | 12.0 | B | L | 0.19 | 11.3 | B | L | 0.22 | 11.9 | B | L | 0.17 | 11.1 | B |
| | | TR | 0.56 | 16.3 | B | TR | 0.49 | 15.1 | B | TR | 0.52 | 15.5 | B | TR | 0.35 | 12.8 | B |
| | Northbound | LT | 0.39 | 24.7 | C | LT | 0.24 | 22.1 | C | LT | 0.29 | 22.9 | C | LT | 0.23 | 22.1 | C |
| | Southbound | LTR | 0.04 | 19.7 | B | LTR | 0.03 | 19.6 | B | LTR | 0.03 | 19.7 | B | LTR | 0.02 | 19.6 | B |
| | | Intersection | | 16.2 | B | Intersection | | 14.6 | B | Intersection | | 15.2 | B | Intersection | | 13.6 | B |
| | **Rockaway Beach Boulevard and Beach 73rd Street** | | | | | | | | | | | | | | | | |
| 14 | Eastbound | LT | 0.27 | 8.7 | A | LT | 0.21 | 8.2 | A | LT | 0.42 | 10.4 | B | LT | 0.30 | 9.0 | A |
| | | R | 0.09 | 7.5 | A | R | 0.11 | 7.6 | A | R | 0.12 | 7.7 | A | R | 0.09 | 7.4 | A |
| | Westbound | L | 0.08 | 7.5 | A | L | 0.08 | 7.4 | A | L | 0.14 | 8.0 | A | L | 0.13 | 7.8 | A |
| | | TR | 0.31 | 8.9 | A | TR | 0.20 | 8.0 | A | TR | 0.27 | 8.5 | A | TR | 0.23 | 8.2 | A |
| | Northbound | LT | 0.10 | 24.6 | C | LT | 0.08 | 24.4 | C | LT | 0.12 | 24.8 | C | LT | 0.12 | 24.8 | C |
| | | R | 0.02 | 23.8 | C | R | 0.03 | 23.9 | C | R | 0.03 | 23.9 | C | R | 0.06 | 24.3 | C |
| | Southbound | L | 0.35 | 28.8 | C | L | 0.36 | 28.9 | C | L | 0.64 | 37.0 | D | L | 0.34 | 28.6 | C |
| | | TR | 0.40 | 30.2 | C | TR | 0.32 | 28.1 | C | TR | 0.37 | 29.1 | C | TR | 0.32 | 27.9 | C |
| | | Intersection | | 13.4 | B | Intersection | | 13.6 | B | Intersection | | 15.7 | B | Intersection | | 13.4 | B |
| | **Beach Channel Drive/Arverne Boulevard and Beach 62nd Street** | | | | | | | | | | | | | | | | |
| 15 | Eastbound | LT | 0.67 | 29.1 | C | LT | 0.68 | 29.5 | C | LT | 0.85 | 38.8 | D | LT | 0.62 | 26.8 | C |
| | Westbound (Beach Channel Drive) | T | 1.04 | 80.9 | F | T | 0.60 | 26.0 | C | T | 0.58 | 25.4 | C | T | 0.45 | 22.4 | C |
| | Westbound (Arverne Blvd) | LR | 0.60 | 41.6 | D | LR | 0.29 | 31.1 | C | | | | | LR | 0.38 | 32.5 | C |
| | | | | | | | | | | L | 0.31 | 31.3 | C | | | | |
| | | | | | | | | | | R | 0.02 | 27.4 | C | | | | |
| | Northbound | LTR | 0.57 | 36.9 | D | LTR | 0.28 | 30.2 | C | LTR | 0.43 | 32.4 | C | LTR | 0.28 | 30.2 | C |
| | Southbound | L | 0.68 | 49.0 | D | L | 0.38 | 34.7 | C | L | 0.54 | 39.8 | D | L | 0.37 | 33.8 | C |
| | | R | 0.02 | 27.5 | C | R | 0.04 | 27.8 | C | R | 0.02 | 27.5 | C | R | 0.00 | 27.3 | C |
| | | Intersection | | 53.5 | D | Intersection | | 28.2 | C | Intersection | | 32.9 | C | Intersection | | 26.0 | C |
| | **Rockaway Beach Boulevard and Beach 62nd Street** | | | | | | | | | | | | | | | | |
| 16 | Eastbound | L | 0.23 | 26.3 | C | L | 0.30 | 27.3 | C | L | 0.61 | 34.9 | C | L | 0.30 | 27.4 | C |
| | | TR | 0.31 | 7.5 | A | TR | 0.28 | 7.3 | A | TR | 0.46 | 9.1 | A | TR | 0.30 | 7.4 | A |
| | Westbound | LTR | 0.53 | 27.0 | C | LTR | 0.42 | 25.2 | C | LTR | 0.73 | 31.8 | C | LTR | 0.47 | 25.9 | C |
| | Northbound | LTR | 0.15 | 28.4 | C | LTR | 0.08 | 27.5 | C | LTR | 0.18 | 28.8 | C | LTR | 0.09 | 27.5 | C |
| | | Intersection | | 20.6 | C | Intersection | | 19.6 | B | Intersection | | 25.1 | C | Intersection | | 20.0 | B |
| | **Beach Channel Drive and Beach 59th Street** | | | | | | | | | | | | | | | | |
| 18 | Eastbound | LT | 0.34 | 12.5 | B | LT | 0.32 | 12.2 | B | LT | 0.36 | 12.7 | B | LT | 0.29 | 11.8 | B |
| | | R | 0.02 | 9.5 | A | R | 0.02 | 9.5 | A | R | 0.04 | 9.7 | A | R | 0.06 | 9.8 | A |
| | Westbound | LTR | 0.51 | 15.1 | B | LTR | 0.48 | 14.5 | B | LTR | 0.56 | 16.2 | B | LTR | 0.26 | 11.5 | B |
| | Southbound | LTR | 0.02 | 19.5 | B | LTR | 0.02 | 19.5 | B | LTR | 0.02 | 19.5 | B | LTR | 0.02 | 19.6 | B |
| | | Intersection | | 14.1 | B | Intersection | | 13.6 | B | Intersection | | 14.6 | B | Intersection | | 11.7 | B |
| | **Arverne Boulevard and Beach 59th Street** | | | | | | | | | | | | | | | | |
| 19 | Eastbound | TR | 0.41 | 10.4 | B | TR | 0.27 | 9.0 | A | TR | 0.38 | 9.9 | A | TR | 0.31 | 9.2 | A |
| | Westbound | LT | 0.32 | 9.6 | A | LT | 0.19 | 8.4 | A | LT | 0.28 | 9.2 | A | LT | 0.22 | 8.5 | A |
| | Southbound | LTR | 0.11 | 15.0 | B | LTR | 0.11 | 14.9 | B | LTR | 0.10 | 14.9 | B | LTR | 0.12 | 15.1 | B |
| | | Intersection | | 10.5 | B | Intersection | | 9.6 | A | Intersection | | 10.1 | B | Intersection | | 9.6 | A |
| | **Rockaway Freeway and Beach 59th Street** | | | | | | | | | | | | | | | | |
| 20 | Eastbound | TR | 0.25 | 18.2 | B | TR | 0.13 | 16.9 | B | TR | 0.27 | 18.4 | B | TR | 0.14 | 17.0 | B |
| | Westbound | L | 1.04 | 116.7 | F | L | 0.56 | 49.3 | D | L | 0.92 | 87.9 | F | L | 0.54 | 48.6 | D |
| | | T | 0.10 | 8.7 | A | T | 0.08 | 8.6 | A | T | 0.12 | 8.9 | A | T | 0.10 | 8.7 | A |
| | Southbound | LTR | 0.45 | 27.8 | C | LTR | 0.29 | 25.0 | C | LTR | 0.44 | 27.8 | C | LTR | 0.32 | 25.5 | C |
| | | Intersection | | 45.9 | D | Intersection | | 25.3 | C | Intersection | | 35.1 | D | Intersection | | 24.4 | C |
| | **Rockaway Beach Boulevard and Beach 59th Street** | | | | | | | | | | | | | | | | |
| 21 | Eastbound | TR | 0.50 | 22.4 | C | TR | 0.56 | 23.7 | C | TR | 0.75 | 30.3 | C | TR | 0.51 | 22.6 | C |
| | Westbound | LT | 0.60 | 24.5 | C | LT | 0.41 | 20.4 | C | LT | 0.59 | 24.1 | C | LT | 0.49 | 21.9 | C |
| | Northbound | LR | 0.37 | 27.9 | C | LR | 0.22 | 24.3 | C | LR | 0.27 | 25.2 | C | LR | 0.26 | 25.0 | C |
| | Southbound | LTR | 0.52 | 19.1 | B | LTR | 0.25 | 14.7 | B | LTR | 0.34 | 15.9 | B | LTR | 0.24 | 14.6 | B |
| | | Intersection | | 22.7 | C | Intersection | | 20.9 | C | Intersection | | 24.9 | C | Intersection | | 20.9 | C |
| | **Beach Channel Drive and Beach 54th Street** | | | | | | | | | | | | | | | | |
| 22 | Eastbound | T | 0.34 | 12.5 | B | T | 0.37 | 12.8 | B | T | 0.36 | 12.6 | B | T | 0.31 | 12.0 | B |
| | | R | 0.01 | 9.4 | A | R | 0.01 | 9.4 | A | R | 0.02 | 9.5 | A | R | 0.02 | 9.5 | A |
| | Westbound | LT | 0.55 | 16.4 | B | LT | 0.49 | 15.0 | B | LT | 0.51 | 15.4 | B | LT | 0.46 | 14.3 | B |
| | Northbound | LR | 0.14 | 21.2 | C | LR | 0.13 | 21.0 | C | LR | 0.13 | 21.0 | C | LR | 0.09 | 20.5 | C |
| | Southbound | LTR | 0.24 | 22.1 | C | LTR | 0.21 | 21.7 | C | LTR | 0.19 | 21.5 | C | LTR | 0.16 | 21.1 | C |
| | | Intersection | | 16.2 | B | Intersection | | 15.3 | B | Intersection | | 15.2 | 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 recroded during this peak hour.
1. Signalized intersection with stop-controlled approach(es).
2. 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 12-12 (continued): 2016 Existing Conditions Level of Service Analysis – Signalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | Weekday MD Peak Hour | | | | Weekday PM Peak Hour | | | | Saturday 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 |
| | **Arverne Boulevard and Beach 54th Street** | | | | | | | | | | | | | | | | |
| 23 | Eastbound | LTR | 0.34 | 19.6 | B | LTR | 0.28 | 18.7 | B | LTR | 0.38 | 20.1 | C | LTR | 0.35 | 19.5 | B |
| | Westbound | LTR | 0.26 | 18.3 | B | LTR | 0.19 | 17.6 | B | LTR | 0.29 | 18.8 | B | LTR | 0.22 | 17.9 | B |
| | Northbound | LTR | 0.06 | 12.7 | B | LTR | 0.04 | 12.6 | B | LTR | 0.06 | 12.8 | B | LTR | 0.07 | 12.9 | B |
| | Southbound | LTR | 0.11 | 22.6 | C | LTR | 0.11 | 22.7 | C | LTR | 0.13 | 22.8 | C | LTR | 0.10 | 22.4 | C |
| | | Intersection | | 18.8 | B | Intersection | | 18.3 | B | Intersection | | 19.3 | B | Intersection | | 18.5 | B |
| | **Rockaway Freeway and Beach 54th Street** | | | | | | | | | | | | | | | | |
| 24 | Eastbound | LTR | 0.29 | 18.6 | B | LTR | 0.19 | 17.5 | B | LTR | 0.37 | 19.7 | B | LTR | 0.23 | 17.9 | B |
| | Westbound | L | 0.09 | 36.8 | D | L | 0.03 | 35.9 | D | L | 0.07 | 36.5 | D | L | 0.03 | 36.0 | D |
| | | TR | 0.27 | 10.2 | B | TR | 0.20 | 9.4 | A | TR | 0.29 | 10.3 | B | TR | 0.21 | 9.6 | A |
| | Northbound | LTR | 0.09 | 22.2 | C | LTR | 0.07 | 22.0 | C | LTR | 0.08 | 22.2 | C | LTR | 0.10 | 22.4 | C |
| | Southbound | LTR | 0.08 | 22.2 | C | LTR | 0.12 | 22.7 | C | LTR | 0.13 | 22.7 | C | LTR | 0.16 | 23.2 | C |
| | | Intersection | | 15.7 | B | Intersection | | 15.3 | B | Intersection | | 16.7 | B | Intersection | | 16.0 | B |
| | **Edgemere Avenue and Beach 54th Street** | | | | | | | | | | | | | | | | |
| 25 | Eastbound | LTR | 0.51 | 22.1 | C | LTR | 0.52 | 22.5 | C | LTR | 0.91 | 45.4 | D | LTR | 0.57 | 23.8 | C |
| | Westbound | LTR | 0.51 | 21.9 | C | LTR | 0.36 | 19.4 | B | LTR | 0.71 | 27.0 | C | LTR | 0.43 | 20.6 | 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 | 0.04 | 12.6 | B | LTR | 0.16 | 14.6 | B | LTR | 0.18 | 14.8 | B | LTR | 0.17 | 14.8 | B |
| | | Intersection | | 21.6 | C | Intersection | | 20.8 | C | Intersection | | 34.9 | C | Intersection | | 21.9 | C |
| | **Beach Channel Drive and Beach 51st Street** | | | | | | | | | | | | | | | | |
| 29 | Eastbound | L | 0.14 | 10.8 | B | L | 0.15 | 10.9 | B | L | 0.06 | 9.9 | A | L | 0.05 | 9.8 | A |
| | | TR | 0.51 | 15.8 | B | TR | 0.51 | 15.5 | B | TR | 0.54 | 15.9 | B | TR | 0.43 | 13.9 | B |
| | Westbound | LT | 0.47 | 14.5 | B | LT | 0.47 | 14.4 | B | LT | 0.42 | 13.5 | B | LT | 0.37 | 12.8 | B |
| | | R | 0.07 | 9.9 | B | R | 0.04 | 9.7 | B | R | 0.04 | 9.7 | B | R | 0.02 | 9.5 | B |
| | Northbound | LTR | 0.01 | 19.5 | B | LTR | 0.03 | 19.6 | B | LTR | 0.02 | 19.6 | B | LTR | 0.03 | 19.6 | B |
| | | Intersection | | 14.6 | B | Intersection | | 14.6 | B | Intersection | | 14.5 | B | Intersection | | 13.3 | B |
| | **Rockaway Freeway and Beach 44th Street** | | | | | | | | | | | | | | | | |
| 39 | Eastbound | L | 0.05 | 36.3 | D | L | 0.04 | 36.1 | D | L | 0.04 | 36.1 | D | L | 0.06 | 36.5 | D |
| | | TR | 0.31 | 19.0 | B | TR | 0.15 | 17.0 | B | TR | 0.31 | 18.9 | B | TR | 0.21 | 17.7 | B |
| | Westbound | L | 0.02 | 9.6 | A | L | 0.01 | 8.1 | A | L | 0.02 | 9.7 | A | L | 0.02 | 8.4 | A |
| | | TR | 0.29 | 18.6 | B | TR | 0.21 | 17.7 | B | TR | 0.29 | 18.6 | B | TR | 0.25 | 18.1 | B |
| | Northbound | LTR | 0.02 | 21.5 | C | LTR | 0.02 | 21.5 | C | LTR | 0.02 | 21.6 | C | LTR | 0.01 | 21.5 | C |
| | Southbound | LTR | 0.05 | 21.9 | C | LTR | 0.07 | 22.2 | C | LTR | 0.11 | 22.7 | C | LTR | 0.07 | 22.2 | C |
| | | Intersection | | 19.1 | B | Intersection | | 18.2 | B | Intersection | | 19.1 | B | Intersection | | 18.5 | B |
| | **Beach Channel Drive/Seagirt Boulevard and Beach 35th Street** | | | | | | | | | | | | | | | | |
| 40[1,2] | Eastbound | L | 0.67 | 26.3 | C | L | 0.63 | 24.6 | C | L | 0.75 | 28.7 | C | L | 0.60 | 23.2 | C |
| | | TR | 0.30 | 11.4 | B | TR | 0.32 | 11.6 | B | TR | 0.38 | 12.2 | B | TR | 0.28 | 11.2 | B |
| | Westbound (from Seagirt Boulevard) | TR | 0.54 | 11.0 | B | TR | 0.38 | 12.4 | B | TR | 0.48 | 10.3 | B | TR | 0.36 | 8.6 | A |
| | Southwestbound (from Beach Channel Drive) | LR | 0.97 | 68.3 | E | LR | 0.81 | 44.6 | D | LR | 0.98 | 69.3 | E | LR | 0.94 | 61.6 | E |
| | Southbound | LTR | 0.08 | 21.4 | C | LTR | 0.09 | 21.4 | C | LTR | 0.05 | 21.0 | C | LTR | 0.17 | 22.5 | C |
| | Northbound | LT | 0.00 | 21.0 | C | LT | 0.00 | 0.0 | - | LT | 0.00 | 0.0 | - | LT | 0.00 | 17.0 | B |
| | | TR | 0.07 | 19.1 | B | TR | 0.05 | 19.8 | B | TR | 0.06 | 18.6 | B | TR | 0.04 | 16.3 | B |
| | | Intersection | | 36.3 | D | Intersection | | 24.8 | C | Intersection | | 35.1 | D | Intersection | | 34.2 | C |
| | **Rockaway Freeway and Beach 35th Street** | | | | | | | | | | | | | | | | |
| 41[2] | Eastbound | L | 0.06 | 35.1 | D | L | 0.05 | 34.9 | C | L | 0.05 | 34.8 | C | L | 0.02 | 34.2 | C |
| | | TR | 0.36 | 18.8 | B | TR | 0.22 | 16.8 | B | TR | 0.45 | 20.2 | C | TR | 0.28 | 17.6 | B |
| | Westbound | L | 0.01 | 35.0 | C | L | 0.00 | 0.0 | - | L | 0.00 | 0.0 | - | L | 0.00 | 39.0 | D |
| | | TR | 0.43 | 11.4 | B | TR | 0.29 | 8.9 | A | TR | 0.36 | 11.2 | B | TR | 0.33 | 10.4 | B |
| | Southbound | LTR | 0.15 | 26.2 | C | LTR | 0.10 | 21.2 | C | LTR | 0.13 | 26.4 | C | LTR | 0.26 | 21.8 | C |
| | Northbound | LTR | 0.09 | 25.7 | C | LTR | 0.08 | 25.4 | C | LTR | 0.08 | 25.6 | C | LTR | 0.09 | 25.6 | C |
| | | Intersection | | 16.5 | B | Intersection | | 14.1 | B | Intersection | | 17.6 | B | Intersection | | 15.8 | B |
| | **Rockaway Freeway and Seagirt Boulevard** | | | | | | | | | | | | | | | | |
| 42[2] | Eastbound | L | 0.11 | 50.8 | D | L | 0.10 | 47.4 | D | L | 0.12 | 51.2 | D | L | 0.14 | 55.7 | E |
| | | TR | 0.19 | 48.7 | D | TR | 0.23 | 69.3 | E | TR | 0.20 | 66.9 | E | TR | 0.14 | 29.8 | C |
| | Westbound | LTR | 0.55 | 32.6 | C | LTR | 0.40 | 30.2 | C | LTR | 0.59 | 33.3 | C | LTR | 0.45 | 30.8 | C |
| | Southbound | TR | 0.31 | 22.1 | C | TR | 0.25 | 21.1 | C | TR | 0.26 | 21.3 | C | TR | 0.23 | 20.8 | C |
| | Northbound | TR | 0.42 | 10.7 | B | TR | 0.31 | 12.0 | B | TR | 0.62 | 13.4 | B | TR | 0.36 | 11.3 | B |
| | | Intersection | | 28.9 | C | Intersection | | 34.7 | C | Intersection | | 32.1 | C | Intersection | | 25.8 | C |
| | **Rockaway Freeway and Beach 25th Street** | | | | | | | | | | | | | | | | |
| 43 | Eastbound | LTR | 0.56 | 30.0 | C | LTR | 0.23 | 23.9 | C | LTR | 0.32 | 25.2 | C | LTR | 0.18 | 23.3 | C |
| | Westbound | LTR | 0.46 | 28.3 | C | LTR | 0.21 | 23.8 | C | LTR | 0.28 | 24.7 | C | LTR | 0.21 | 23.8 | C |
| | Northbound | L | 0.19 | 37.4 | D | L | 0.16 | 37.0 | D | L | 0.17 | 37.2 | D | L | 0.09 | 35.9 | D |
| | | TR | 0.33 | 20.0 | B | TR | 0.31 | 19.7 | B | TR | 0.25 | 18.8 | B | TR | 0.26 | 18.9 | B |
| | Southbound | L | 0.16 | 37.1 | D | L | 0.13 | 36.5 | D | L | 0.10 | 36.1 | D | L | 0.15 | 36.8 | D |
| | | TR | 0.44 | 21.4 | C | TR | 0.27 | 19.0 | B | TR | 0.22 | 18.3 | B | TR | 0.18 | 18.0 | B |
| | | Intersection | | 25.6 | C | Intersection | | 22.3 | C | Intersection | | 22.8 | C | Intersection | | 21.8 | C |

**Notes:** L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recroded during this peak hour.
1. Signalized intersection with stop-controlled approach(es).
2. 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 12-12 (continued): 2016 Existing Conditions Level of Service Analysis – Signalized Intersections**

| # | Intersection & Approach | Weekday AM Peak Hour | | | | Weekday MD Peak Hour | | | | Weekday PM Peak Hour | | | | Saturday 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 |
| | **Rockaway Freeway and Cornaga Avenue** | | | | | | | | | | | | | | | | |
| 44 | Eastbound | LTR | 0.29 | 20.5 | C | LTR | 0.15 | 19.0 | B | LTR | 0.16 | 19.0 | B | LTR | 0.14 | 18.8 | B |
| | Westbound | LTR | 0.65 | 30.5 | C | LTR | 0.57 | 27.1 | C | LTR | 0.52 | 25.6 | C | LTR | 0.42 | 23.2 | C |
| | Northbound | TR | 0.40 | 25.9 | C | TR | 0.35 | 25.0 | C | TR | 0.30 | 24.2 | C | TR | 0.30 | 24.1 | C |
| | Southbound | L | 0.08 | 36.6 | D | L | 0.11 | 37.3 | D | L | 0.13 | 37.5 | D | L | 0.13 | 37.4 | D |
| | | TR | 0.20 | 13.5 | B | TR | 0.14 | 12.9 | B | TR | 0.13 | 12.9 | B | TR | 0.11 | 12.6 | B |
| | | Intersection | | 24.0 | C | Intersection | | 23.2 | C | Intersection | | 22.3 | C | Intersection | | 21.7 | C |
| | **Beach Channel Drive and Cornaga Avenue** | | | | | | | | | | | | | | | | |
| 45 | Eastbound | LTR | 0.32 | 21.2 | C | LTR | 0.14 | 18.8 | B | LTR | 0.17 | 19.1 | B | LTR | 0.16 | 19.1 | B |
| | Westbound | LTR | 0.29 | 20.9 | C | LTR | 0.28 | 20.7 | C | LTR | 0.29 | 20.7 | C | LTR | 0.22 | 19.9 | B |
| | Northbound | L | 0.05 | 12.3 | B | L | 0.03 | 12.2 | B | L | 0.02 | 12.0 | B | L | 0.02 | 12.0 | B |
| | | TR | 0.50 | 17.4 | B | TR | 0.44 | 16.6 | B | TR | 0.44 | 16.4 | B | TR | 0.43 | 16.2 | B |
| | Southbound | L | 0.10 | 13.0 | B | L | 0.10 | 13.1 | B | L | 0.06 | 12.4 | B | L | 0.06 | 12.4 | B |
| | | TR | 0.54 | 18.3 | B | TR | 0.45 | 16.7 | B | TR | 0.49 | 17.3 | B | TR | 0.41 | 16.1 | B |
| | | Intersection | | 18.6 | B | Intersection | | 17.3 | B | Intersection | | 17.6 | B | Intersection | | 16.8 | B |
| | **Beach Channel Drive and Mott Avenue** | | | | | | | | | | | | | | | | |
| 46 | Eastbound | LTR | 0.87 | 46.9 | D | LTR | 0.50 | 25.3 | C | LTR | 0.72 | 35.6 | D | LTR | 0.55 | 27.3 | C |
| | Westbound | LT | 0.41 | 23.5 | C | LT | 0.38 | 22.9 | C | LT | 0.60 | 28.1 | C | LT | 0.45 | 24.4 | C |
| | | R | 0.14 | 10.6 | B | R | 0.14 | 10.6 | B | R | 0.14 | 10.6 | B | R | 0.16 | 10.7 | B |
| | Northbound | L | 0.07 | 20.6 | C | L | 0.04 | 19.9 | B | L | 0.06 | 20.6 | C | L | 0.05 | 20.2 | C |
| | | TR | 0.90 | 48.5 | D | TR | 0.87 | 43.9 | D | TR | 0.94 | 53.8 | D | TR | 0.90 | 47.8 | D |
| | Southbound | L | 0.58 | 25.2 | C | L | 0.57 | 23.6 | C | L | 0.65 | 28.3 | C | L | 0.74 | 32.9 | C |
| | | TR | 0.73 | 22.1 | C | TR | 0.66 | 19.6 | B | TR | 0.76 | 23.3 | C | TR | 0.66 | 19.5 | B |
| | | Intersection | | 33.2 | C | Intersection | | 27.1 | C | Intersection | | 33.1 | C | Intersection | | 29.5 | C |
| | **Beach Channel Drive and Dix Avenue** | | | | | | | | | | | | | | | | |
| 47 | Eastbound | LTR | 0.57 | 30.5 | C | LTR | 0.43 | 26.7 | C | LTR | 0.20 | 22.2 | C | LTR | 0.09 | 20.4 | C |
| | Westbound | LTR | 0.09 | 20.4 | C | LTR | 0.15 | 21.2 | C | LTR | 0.17 | 21.5 | C | LTR | 0.13 | 20.9 | C |
| | Northbound | LTR | 0.90 | 35.3 | D | LTR | 0.89 | 34.8 | C | LTR | 0.87 | 31.4 | C | LTR | 0.84 | 27.8 | C |
| | Southbound | LTR | 0.90 | 33.6 | C | LTR | 0.99 | 51.4 | D | LTR | 1.03 | 61.1 | E | LTR | 1.05 | 65.3 | E |
| | | Intersection | | 33.6 | C | Intersection | | 41.2 | D | Intersection | | 45.3 | D | Intersection | | 47.3 | D |
| | **Beach Channel Drive and Nameoke Avenue** | | | | | | | | | | | | | | | | |
| 49 | Eastbound | LTR | 0.72 | 35.7 | D | LTR | 0.45 | 26.3 | C | LTR | 0.32 | 23.7 | C | LTR | 0.32 | 23.6 | C |
| | Northbound | L | 0.11 | 11.1 | B | L | 0.09 | 10.8 | B | L | 0.10 | 11.4 | B | L | 0.04 | 10.0 | B |
| | | TR | 0.70 | 19.6 | B | TR | 0.78 | 23.6 | C | TR | 0.67 | 19.0 | B | TR | 0.65 | 18.0 | B |
| | Southbound | L | 0.16 | 11.6 | B | L | 0.38 | 17.2 | B | L | 0.16 | 11.5 | B | L | 0.17 | 11.6 | B |
| | | TR | 0.84 | 27.0 | C | TR | 0.93 | 38.0 | D | TR | 0.92 | 35.0 | D | TR | 0.90 | 32.8 | C |
| | | Intersection | | 25.4 | C | Intersection | | 30.0 | C | Intersection | | 27.1 | C | Intersection | | 25.8 | C |
| | **Beach Channel Drive and Hassock Avenue** | | | | | | | | | | | | | | | | |
| 50 | Eastbound | LR | 0.16 | 19.3 | B | LR | 0.12 | 18.9 | B | LR | 0.12 | 18.8 | B | LR | 0.18 | 19.5 | B |
| | Westbound | L | 0.18 | 19.5 | B | L | 0.26 | 20.5 | C | L | 0.25 | 20.4 | C | L | 0.20 | 19.7 | B |
| | | TR | 0.20 | 19.7 | B | TR | 0.18 | 19.5 | B | TR | 0.35 | 22.2 | C | TR | 0.17 | 19.4 | B |
| | Northbound | LT | 1.05 | 70.9 | E | LT | 1.04 | 66.5 | E | LT | 0.94 | 43.8 | D | LT | 1.03 | 65.0 | E |
| | Southbound | T | 0.89 | 34.0 | C | T | 0.94 | 40.9 | D | T | 0.91 | 36.7 | D | T | 0.98 | 50.3 | D |
| | | R | 0.08 | 11.5 | B | R | 0.05 | 11.2 | B | R | 0.19 | 12.6 | B | R | 0.13 | 12.0 | B |
| | | Intersection | | 46.5 | D | Intersection | | 47.7 | D | Intersection | | 34.7 | C | Intersection | | 49.9 | D |

**Notes:** L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recroded during this peak hour.
1. Signalized intersection with stop-controlled approach(es).
2. 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 12-13: 2016 Existing Conditions Level of Service Analysis – Unsignalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | Weekday MD Peak Hour | | | | Weekday PM Peak Hour | | | | Saturday 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 |
| 8 | **Beach Channel Drive and Beach 92nd Street/Beach 94th Street** | | | | | | | | | | | | | | | | |
| | Southbound | R | 0.00 | 10.2 | B | R | 0.00 | 12.1 | B | R | 0.03 | 12.6 | B | R | 0.02 | 12.7 | B |
| | Northbound (Cross Bay Bridge) | R | 0.28 | 12.2 | B | R | 0.36 | 14.6 | B | R | 0.52 | 19.6 | C | R | 0.36 | 14.0 | B |
| | Northbound (Beach 94th Street) | R | 0.05 | 11.5 | B | R | 0.11 | 14.2 | B | R | 0.16 | 17.0 | C | R | 0.10 | 13.6 | B |
| | Northbound (Beach 92nd Street) | R | 0.01 | 11.4 | B | R | 0.04 | 14.0 | B | R | 0.07 | 17.8 | C | R | 0.05 | 14.0 | B |
| 13[1] | **Beach Channel Drive and Beach 73rd Street** | | | | | | | | | | | | | | | | |
| | Eastbound | R | 0.14 | 9.7 | A | R | 0.11 | 9.3 | A | R | 0.26 | 10.2 | B | R | 0.15 | 9.5 | A |
| | Northbound | R | 0.09 | 10.4 | B | R | 0.11 | 10.2 | B | R | 0.12 | 11.4 | B | R | 0.08 | 10.2 | B |
| 17[2] | **Beach Front Road and Beach 62nd Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.02 | 7.3 | A | LT | 0.02 | 7.3 | A | LT | 0.04 | 7.3 | A | LT | 0.02 | 7.3 | A |
| | Westbound | TR | 0.21 | 11.0 | B | TR | 0.11 | 10.8 | B | TR | 0.17 | 12.5 | B | TR | 0.15 | 11.1 | B |
| | Southbound | LR | 0.01 | 8.4 | A | LR | 0.01 | 8.9 | A | LR | 0.02 | 9.7 | A | LR | 0.01 | 9.4 | A |
| 26 | **Beach Channel Drive and Beach 53rd Street** | | | | | | | | | | | | | | | | |
| | Westbound | LT | 0.01 | 8.3 | A | LT | 0.01 | 8.2 | A | LT | 0.00 | 8.6 | A | LT | 0.00 | 8.0 | A |
| | Northbound | LR | 0.02 | 12.3 | B | LR | 0.03 | 11.3 | B | LR | 0.03 | 12.4 | B | LR | 0.01 | 11.6 | B |
| 27 | **Rockaway Beach Boulevard and Beach 53rd Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.01 | 7.8 | A | LT | 0.01 | 7.5 | A | LT | 0.01 | 7.7 | A | LT | 0.00 | 7.6 | A |
| | Southbound | LR | 0.01 | 10.3 | B | LR | 0.01 | 9.8 | A | LR | 0.02 | 10.5 | B | LR | 0.01 | 10.0 | A |
| 28 | **Rockaway Beach Boulevard and Beach 52nd Street** | | | | | | | | | | | | | | | | |
| | Westbound | LT | 0.00 | 7.7 | A | LT | 0.00 | 7.6 | A | LT | 0.00 | 7.7 | A | LT | 0.00 | 7.8 | A |
| | Northbound | LR | 0.00 | 0.0 | - | LR | 0.00 | 0.0 | - | LR | 0.00 | 0.0 | - | LR | 0.00 | 9.6 | A |
| 30 | **Beach Channel Drive and Beach 50th Street** | | | | | | | | | | | | | | | | |
| | Westbound | LT | 0.01 | 8.3 | A | LT | 0.01 | 8.1 | A | LT | 0.01 | 8.3 | A | LT | 0.01 | 8.1 | A |
| | Northbound | LR | 0.02 | 15.0 | B | LR | 0.03 | 11.6 | B | LR | 0.02 | 13.4 | B | LR | 0.02 | 13.0 | B |
| 31 | **Rockaway Beach Boulevard and Beach 50th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.00 | 7.8 | A | LT | 0.01 | 7.4 | A | LT | 0.00 | 7.6 | A | LT | 0.01 | 7.5 | A |
| | Southbound | LR | 0.02 | 9.6 | A | LR | 0.02 | 9.5 | A | LR | 0.02 | 9.9 | A | LR | 0.02 | 9.3 | A |
| 36 | **Beach Channel Drive and Beach 47th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.01 | 8.6 | A | LT | 0.01 | 8.4 | A | LT | 0.00 | 8.2 | A | LT | 0.00 | 8.1 | A |
| | Northbound | LTR | 0.04 | 12.9 | B | LTR | 0.02 | 13.0 | B | LTR | 0.06 | 14.7 | B | LTR | 0.08 | 13.0 | B |
| 37 | **Arverne Boulevard/Rockaway Beach Boulevard and Beach 47th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.00 | 7.5 | A | LTR | 0.00 | 7.5 | A | LTR | 0.01 | 7.7 | A | LTR | 0.01 | 7.6 | A |
| | Westbound | LTR | 0.02 | 7.9 | A | LTR | 0.01 | 7.6 | A | LTR | 0.01 | 7.9 | A | LTR | 0.01 | 7.7 | A |
| | Northbound | LTR | 0.02 | 10.8 | B | LTR | 0.02 | 10.1 | B | LTR | 0.02 | 12.0 | B | LTR | 0.04 | 10.6 | B |
| 38 | **Rockaway Beach Boulevard and Beach 44th Street** | | | | | | | | | | | | | | | | |
| | Westbound | LT | 0.01 | 8.1 | A | LT | 0.00 | 7.8 | A | LT | 0.01 | 8.2 | A | LT | 0.01 | 7.7 | A |
| | Northbound | LR | 0.04 | 12.1 | B | LR | 0.02 | 11.0 | B | LR | 0.04 | 12.9 | B | LR | 0.03 | 11.3 | B |
| | Southbound | LTR | 0.07 | 12.6 | B | LTR | 0.04 | 11.4 | B | LTR | 0.08 | 13.7 | B | LTR | 0.04 | 11.7 | B |
| 40[1,3] | **Beach Channel Drive and Seagirt Boulevard** | | | | | | | | | | | | | | | | |
| | Westbound | R | 0.00 | 0.0 | A | R | 0.04 | 10.6 | B | R | 0.08 | 11.3 | B | R | 0.07 | 10.8 | B |
| 48 | **Beach Channel Drive and Birdsall Avenue** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.02 | 13.5 | B | LTR | 0.21 | 49.8 | E | LTR | 0.15 | 39.2 | E | LTR | 0.10 | 40.3 | E |
| | Westbound | LTR | 0.01 | 15.6 | C | LTR | 0.09 | 56.4 | F | LTR | 0.11 | 42.1 | E | LTR | 0.06 | 65.0 | F |
| | Northbound | LTR | 0.01 | 9.3 | A | LTR | 0.01 | 9.9 | A | LTR | 0.01 | 9.9 | A | LTR | 0.01 | 10.1 | B |
| | Southbound | LTR | 0.00 | 9.3 | A | LTR | 0.01 | 9.5 | A | LTR | 0.01 | 10.0 | A | LTR | 0.01 | 9.4 | A |

**Notes:** L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recroded during this peak hour.
1. Signalized intersection with stop-controlled approach(es).
2. Analyzed westbound approach in HCS as a stop-controlled northbound approach, as there are a stop signs on the southbound and westbound approaches.
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).

## Transit Operations

The transit elements within the study area were assessed for the Weekday AM and PM peak hours. Based on discussions with NYCT, a subway line-haul analysis was also performed for the Saturday MD and Sunday MD peak hours during the summer season as subway service is less frequent and ridership peaks due to recreational activities at the beach. A total of one subway line, nine stairs (six platform and three street-level), three control areas, and two bus routes were included in the transit analysis.

### *Subway Line-Haul*

A detailed subway line-haul analysis was conducted for the A train for the peak direction during the Weekday AM, Weekday PM, Saturday MD, and Sunday MD peak hours. Summary data for the peak load points on the A train for the four peak hours were provided by NYCT in April 2018. The data included the average number of passengers at the maximum load points, capacity-related information (train/cars per hour), and v/c ratios for A train service in the peak direction during the peak travel hours.

The results of the analyses presented in **Table 12-14: 2016 Existing Conditions Level of Service Analysis – Subway Line-Haul** indicate that the A train is currently operating below loading capacity in the peak directions during the four peak hours.

**Table 12-14: 2016 Existing Conditions Level of Service Analysis – Subway Line-Haul**

| Peak Direction | Route | Maximum Load Point Station | Average Passengers Per Hour | Average Trains Per Hour | Average Cars Per Hour | Average Passengers Per Car | Guideline Passengers Per Car [2] | V/C ratio [3] |
|---|---|---|---|---|---|---|---|---|
| **Weekday AM [1]** | | | | | | | | |
| Northbound | A | Nostrand Av | 17,539 | 16.7 | 134 | 131 | 175 | 0.75 |
| **Weekday PM [1]** | | | | | | | | |
| Southbound | A | Jay St-MetroTech | 14,678 | 15.2 | 122 | 120 | 175 | 0.69 |
| **Saturday MD (Summer) [4]** | | | | | | | | |
| Northbound | A | Aqueduct Racetrack | 1,579 | 8 | 64 | 24 | 88 | 0.27 |
| **Sunday MD (Summer) [4]** | | | | | | | | |
| Northbound | A | Aqueduct Racetrack | 2,808 | 6 | 48 | 58 | 88 | 0.66 |

**Notes:**
(1) Based on 2015-2016 ridership and train throughput data from NYCT.
(2) Guideline capacities are based on NYCT rush hour loading guidelines, which vary by car type, line, and location based on frequency and type of service.
(3) Volume to guideline capacity ratio.
(4) Based on 2012-2017 ridership and train throughput data from NYCT. The Summer Saturday and Sunday MD peak hours were included in the line haul analysis as subway service is less frequent on weekends and weekend ridership peaks due to recreational activities at the beach.

### *Subway Stairs*

Stairway analyses were conducted for two street-level stairs and four platform stairs at the Beach 60th Street station as well as one street stair and two platform stairs at the Beach 44th Street station. Counts of the vertical elements and control areas were conducted in August 2016 and January 2018 during the Weekday AM and Weekday PM peak transit periods and summarized into 15-minute intervals. Measurements were taken of the total width at the street-level and platform stairways. The effective stairway widths were calculated in accordance with *CEQR Technical* guidelines.

As shown in **Table 12-15: 2016 Existing Conditions Level of Service Analysis – Stairs,** the street-level and platform stairs at both stations operate at LOS A during both peak hours.

**Table 12-15: 2016 Existing Conditions Level of Service Analysis – Stairs**

| Location | Vertical Element | ID | 15-Minute Entering Volume [1] | 15-Minute Exiting Volume [1] | Total Stair Width (feet) [2] | Number of Intermediate Handrails | Effective Width (feet) | Friction Factor [3] | Surge Factor (onto platform level) [3] | Surge Factor (off of platform level) [3] | 15 Minute Entering Capacity [4] | 15 Minute Exiting Capacity [4] | V/C [5] | LOS [5] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Weekday AM** | | | | | | | | | | | | | | |
| Beach 60 St Station | NE Stair (b/w street level and head house) | M3A, M3B, S3A, S3B | 59 | 16 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.80 | 979 | 783 | 0.08 | A |
| | NE Stair (b/w head house and platform level) | P7A, P7B, P9A, P9B | 87 | 10 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.75 | 979 | 734 | 0.10 | A |
| | SE Stair (b/w head house and platform level) | P6A, P6B, P8A, P8B | 12 | 8 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.03 | A |
| | NW Stair (b/w head house and platform level) | P1A, P1B, P3A, P3B | 37 | 4 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.75 | 979 | 734 | 0.04 | A |
| | SW Stair (b/w head house and platform level) | P2A, P2B, P4A, P4B | 12 | 11 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.03 | A |
| | SE Stair (b/w street level and platform level) | - | n/a | 6 | 8.0 | 1 | 6.75 | 1.0 | n/a | 0.75 | n/a | 759 | 0.01 | A |
| **Weekday PM** | | | | | | | | | | | | | | |
| Beach 60 St Station | NE Stair (b/w street level and head house) | M3A, M3B, S3A, S3B | 18 | 76 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.80 | 979 | 783 | 0.11 | A |
| | NE Stair (b/w head house and platform level) | P7A, P7B, P9A, P9B | 17 | 19 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.75 | 979 | 734 | 0.04 | A |
| | SE Stair (b/w head house and platform level) | P6A, P6B, P8A, P8B | 4 | 64 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.10 | A |
| | NW Stair (b/w head house and platform level) | P1A, P1B, P3A, P3B | 5 | 5 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.75 | 979 | 734 | 0.01 | A |
| | SW Stair (b/w head house and platform level) | P2A, P2B, P4A, P4B | 0 | 24 | 8.0 | 1 | 6.75 | 1.0 | 1 | 0.75 | 1013 | 759 | 0.03 | A |
| | SE Stair (b/w street level and platform level) | - | n/a | 28 | 8.0 | 1 | 6.75 | 1.0 | n/a | 0.75 | n/a | 759 | 0.04 | A |
| Beach 44 St Station | NW Stair (b/w street level and head house) | M3A, M3B, S1A, S1B | 4 | 3 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.80 | 911 | 729 | 0.01 | A |
| | SE Stair (b/w head house and platform level) | P8A, P8B, P10A, P10B | 2 | 8 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.01 | A |
| | SW Stair (b/w head house and platform level) | P4A, P4B, P6A, P6B | 0 | 14 | 8.0 | 1 | 6.75 | 1.0 | 1 | 0.75 | 1013 | 759 | 0.02 | A |

**Notes:**
(1) Source: August 2016 and January 2018 field counts adjusted using seasonal adjustment factors provided by NYCT to reflect typical peak month ridership.
(2) Vertical elements measured at the narrowest location.
(3) Friction and surge factors based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* .
(4) Stair capacity based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* .
(5) v/c ratios and LOS ratings were calculated based on rates presented in the *2014 CEQR Technical Manual* .

### *Control Areas*

The subway control areas at the Beach 60th Street and Beach 44th Street stations were analyzed. The turnstile counts for the control area analysis were conducted simultaneous with subway stair counts. In conformance to the *CEQR Technical Manual*, control array capacity was based on NYCT guidelines.

For the control area elements, the quantity, volume, friction and surge factors, capacity, and calculated v/c and LOS results are shown in **Table 12-16: 2016 Existing Conditions Level of Service Analysis – Control Areas**. All control area elements operate at LOS A during both peak hours.

**Table 12-16: 2016 Existing Conditions Level of Service Analysis – Control Areas**

| Station | Station Elements | Quantity (Entry) | Quantity (Exit) | 15-Minute Entering Volume [1] | 15-Minute Exiting Volume [1] | Friction Factor [2] | Surge Factor (onto platform) [2] | Surge Factor (off of platform) [2] | 15-Minute Entering Capacity [3] | 15-Minute Exiting Capacity [3] | V/C [4] | LOS [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Weekday AM** | | | | | | | | | | | | |
| Beach 60 St Station (head house) | Turnstile | 3 | 3 | 149 | 33 | 0.9 | 1 | 0.8 | 1260 | 1935 | **0.15** | **A** |
| | HEET | 0 | 0 | | | | | | | | | |
| | HXT | 0 | 0 | | | | | | | | | |
| Beach 60 St Station (southbound platform) | Turnstile | 0 | 0 | n/a | 6 | 1 | n/a | 0.75 | n/a | 555 | **0.02** | **A** |
| | HEET | 0 | 0 | | | | | | | | | |
| | HXT | 0 | 1 | | | | | | | | | |
| **Weekday PM** | | | | | | | | | | | | |
| Beach 60 St Station (head house) | Turnstile | 3 | 3 | 26 | 112 | 0.9 | 1 | 0.8 | 1260 | 1935 | **0.10** | **A** |
| | HEET | 0 | 0 | | | | | | | | | |
| | HXT | 0 | 0 | | | | | | | | | |
| Beach 60 St Station (southbound platform) | Turnstile | 0 | 0 | n/a | 28 | 1 | n/a | 0.75 | n/a | 555 | **0.07** | **A** |
| | HEET | 0 | 0 | | | | | | | | | |
| | HXT | 0 | 1 | | | | | | | | | |
| Beach 44 St Station | Turnstile | 3 | 3 | 15 | 38 | 0.9 | 1 | 0.8 | 1260 | 1935 | **0.04** | **A** |
| | HEET | 0 | 0 | | | | | | | | | |
| | HXT | 0 | 0 | | | | | | | | | |

**Notes:**
(1) Source: August 2016 and January 2018 field counts adjusted using seasonal adjustment factors provided by NYCT to reflect typical peak month ridership.
(2) Friction and surge factors based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* .
(3) Fare array capacity based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* .
(4) v/c ratios and LOS ratings were calculated based on rates presented in the *2014 CEQR Technical Manual* .

### *Bus Line-Haul*

Bus line-haul data was provided for the Q22 and the Q52-SBS bus routes by NYCT in March 2018. The data included the number of passengers on the Q22 and Q52-SBS at peak load points throughout the day.

The number of buses during the peak hours were derived from the current bus schedules published by MTA/NYCT.

**Table 12-17: 2016 Existing Conditions Level of Service Analysis – Bus Line-Haul** summarizes the results of the existing bus conditions, including the number of buses per peak hour, the peak hour passenger volumes, average passengers per bus, total route capacity, and available capacity for each of the analyzed bus routes by direction during the two peak hours. The results of the analysis indicate that the Q22 and Q52-SBS bus routes currently operate within capacity at their peak load points in both directions during both peak hours.

**Table 12-17: 2016 Existing Conditions Level of Service Analysis – Bus Line-Haul**

| Route | Peak Direction | Maximum Load Point | Peak Hour Buses [1] | Peak Hour Passengers [1] | Average Passengers Per Bus | Total Capacity Per Bus [2] | Available Capacity Per Bus |
|---|---|---|---|---|---|---|---|
| **Weekday AM** | | | | | | | |
| Q22 | EB | Beach Channel Dr and Beach 35th St | 8 | 231 | 29 | 54 | 25 |
| Q22 | WB | Rockaway Beach Blvd and Beach 91st St | 8 | 251 | 31 | 54 | 23 |
| Q52-SBS | NB | Woodhaven Blvd and Atlantic Ave | 4 | 199 | 50 | 54 | 4 |
| Q52-SBS | SB | Woodhaven Blvd and Jamaica Ave | 4 | 114 | 29 | 54 | 26 |
| **Weekday PM** | | | | | | | |
| Q22 | EB | Seagirt Blvd and Crest Rd | 6 | 174 | 29 | 54 | 25 |
| Q22 | WB | Beach Channel Dr and Beach 36th St | 7 | 222 | 32 | 54 | 22 |
| Q52-SBS | NB | Woodhaven Blvd and Myrtle Ave | 5 | 111 | 22 | 54 | 32 |
| Q52-SBS | SB | Woodhaven Blvd and Metropolitan Ave | 5 | 254 | 51 | 54 | 3 |

**Notes:**
(1) Based on most currently available data from NYCT.
(2) Available capacity based on a maximum of 54 passengers per bus (40-foot standard bus).

## Pedestrian Operations

The existing operations of the study area's sidewalks, corner reservoirs, and crosswalks were assessed during four peak hours (Weekday AM, Weekday MD, Weekday PM, and Saturday MD). The specific elements analyzed were selected based on meeting the criteria of a projected pedestrian volume increase of more than 200 pedestrians per hour at any sidewalk, crosswalk, or corner reservoir during at least one of the four peak hours. The existing condition analyses were performed at a total of 50 locations within the study area, comprised of 16 sidewalks, seven crosswalks, 25 corner reservoirs, and two medians (with each median analyzed as two adjacent corners).

Pedestrian (sidewalk, crosswalk, and corner reservoir) counts were conducted within the study area in August 2016 and August 2017 during the four peak periods. These counts were summarized into one-hour intervals.

### *Sidewalks*

A total of 16 sidewalk locations within the study area were analyzed. As presented in **Table 12-18: 2016 Existing Conditions Level of Service Analysis – Sidewalks**, all sidewalk locations operate at LOS A for the non-platoon conditions and at LOS B or better for platoon conditions during the four peak hours.

**Table 12-18: 2016 Existing Conditions Level of Service Analysis – 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 | | | Sat | Weekday | | | Sat | Weekday | | | Sat |
| | | | | AM | MD | PM | MD | AM | MD | PM | MD | AM | MD | PM | MD |
| Beach 59th St and Arverne Blvd (E leg, N sidewalk) | 5.8 | 3.0 | 2.8 | 332 | 1080 | 540 | 630 | A | A | A | A | B | A | A | A |
| Beach 59th St and Rockaway Fwy (W leg, N sidewalk) | 8.0 | 3.0 | 5.0 | 194 | 275 | 281 | 307 | 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 | 422 | 1350 | 450 | 1350 | A | A | A | A | B | A | B | A |
| Beach 54th St and Arverne Blvd (E leg, N sidewalk) | 8.0 | 3.0 | 5.0 | 1898 | 1038 | 2700 | 3375 | A | A | A | A | A | A | A | A |
| Beach 54th St and Arverne Blvd (W leg, N sidewalk) | 10.0 | 3.0 | 7.0 | 886 | 1454 | 1112 | 675 | A | A | A | A | A | A | A | A |
| Beach 53rd St and Beach Channel Dr (E leg, S sidewalk) | 5.0 | 3.0 | 2.0 | 542 | 675 | 600 | 771 | A | A | A | A | A | A | A | A |
| Beach 53rd St and Beach Channel Dr (W leg, S sidewalk) | 5.0 | 3.0 | 2.0 | 759 | 900 | 1800 | 1800 | A | A | A | A | A | A | A | A |
| Beach 53rd St and Rockaway Beach Blvd (N leg, E sidewalk) | 3.5 | 3.0 | 0.5 | 135 | 169 | 104 | 270 | A | A | A | A | B | B | B | B |
| Beach 53rd St and Rockaway Beach Blvd (E leg, N sidewalk) | 4.9 | 3.0 | 1.9 | 601 | 513 | 855 | 733 | A | A | A | A | A | B | A | A |
| Beach 50th St and Rockaway Beach Blvd (E leg, S sidewalk) | 7.0 | 3.0 | 4.0 | 1085 | 5400 | 1800 | 5400 | A | A | A | A | A | A | A | A |
| Beach 47th St and Rockaway Beach Blvd (E leg, S sidewalk) [2] | 7.8 | 3.0 | 4.8 | 2278 | | 12960 | | A | | A | | A | | A | |
| Beach 44th St and Rockaway Fwy (N leg, W sidewalk) | 5.5 | 3.0 | 2.5 | 216 | 397 | 211 | 422 | A | A | A | A | B | B | B | B |
| Beach 44th St and Rockaway Fwy (W leg, N sidewalk) | 14.3 | 3.0 | 11.3 | 932 | 2347 | 678 | 2179 | A | A | A | A | A | A | A | A |
| Beach 56th St and Arverne Blvd (W leg, N sidewalk) | 10.0 | 3.0 | 7.0 | 207 | 900 | 497 | 540 | A | A | A | A | B | A | B | A |
| Beach 57th St and Arverne Blvd (E leg, N sidewalk) | 10.0 | 3.0 | 7.0 | 900 | 2100 | 1454 | 1575 | A | A | A | A | A | A | A | A |
| Beach 52nd St and Beach Channel Dr (E leg, S sidewalk) | 4.8 | 3.0 | 1.8 | 474 | 591 | 525 | 675 | A | A | A | A | B | A | B | A |

*Notes:*
*(1) The total width was measured at the narrowest point along the sidewalk.*
*(2) No pedestrian volumes were observed on the south sidewalk of Rockaway Beach Blvd between Beach 47th St and Beach 44th St during the Weekday MD and Saturday MD peak hours.*

### *Crosswalks*

Seven crosswalk locations (two at signalized intersections and five at unsignalized intersections) within the study area were analyzed. As presented in **Table 12-19: 2016 Existing Conditions Level of Service Analysis – Signalized Crosswalks** and **Table 12-20: 2016 Existing Conditions Level of Service Analysis – Unsignalized Crosswalks**, all crosswalk locations operate at LOS A during the four peak hours.

**Table 12-19: 2016 Existing Conditions Level of Service Analysis – Signalized Crosswalks**

| Location | Length (ft) | Width (ft) | Available Circulation Space ($ft^2/p$) | | | | Crosswalk Circulation LOS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Weekday | | | Sat | Weekday | | | Sat |
| | | | AM | MD | PM | MD | AM | MD | PM | MD |
| Beach 54th St and Beach Channel Dr (S leg) | 33.8 | 14.5 | 286 | 507 | 458 | 772 | A | A | A | A |
| Beach 54th St and Arverne Blvd (N leg) | 40.0 | 12.2 | 2517 | 2991 | 2979 | 2974 | A | A | A | A |

**Table 12-20: 2016 Existing Conditions Level of Service Analysis – Unsignalized Crosswalks**

| Location | Length (ft) | Width (ft) | Average Pedestrian Delay (s) | | | | Crosswalk Circulation LOS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Weekday | | | Sat | Weekday | | | Sat |
| | | | AM | MD | PM | MD | AM | MD | PM | MD |
| Beach 53rd St and Beach Channel Dr (S leg) | 30.0 | 9.0 | 0.2 | 0.3 | 0.2 | 0.1 | A | A | A | A |
| Beach 53rd St and Rockaway Beach Blvd (N leg) [1] | 35.0 | 10.0 | 0.2 | 0.2 | 0.3 | 0.1 | A | A | A | A |
| Beach 47th St and Rockaway Beach Blvd (S leg) | 30.0 | 11.3 | 0.3 | 0.2 | 0.2 | 0.5 | A | A | A | A |
| Beach 56th St and Arverne Blvd (N leg) [2] | 40.6 | 12.7 | 0.6 | 0.9 | 0.4 | 0.9 | A | A | A | A |
| Beach 57th St and Arverne Blvd (N leg) [2] | 42.0 | 13.6 | 1.6 | 2.5 | 1.2 | 2.5 | A | A | A | A |

*Notes:*
*(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.*

### *Corners and Medians*

A total of 29 corner reservoir locations (25 corner reservoirs and two medians, with each median analyzed as two adjacent corners) was analyzed. As presented in **Table 12-21: 2016 Existing Conditions Level of Service Analysis – Corners and Medians,** all corner reservoirs and medians operate at LOS A during all four peak hours.

**Table 12-21: 2016 Existing Conditions Level of Service Analysis – Corners and Medians**

| Location | Available Circulation Space ($ft^2$/p) | | | | Corner Circulation LOS | | | |
|---|---|---|---|---|---|---|---|---|
| | Weekday | | | Sat | Weekday | | | Sat |
| | AM | MD | PM | MD | AM | MD | PM | MD |
| Beach 59th St and Arverne Blvd (NE corner) | 492 | 633 | 628 | 653 | A | A | A | A |
| Beach 59th St and Arverne Blvd (SE corner) | 556 | 682 | 725 | 764 | A | A | A | A |
| Beach 59th St and Rockaway Fwy (NW corner) | 186 | 303 | 294 | 410 | A | A | A | A |
| Beach 54th St and Beach Channel Dr (NE corner) | 2935 | 4822 | 3581 | 5015 | A | A | A | A |
| Beach 54th St and Beach Channel Dr (SE corner) | 918 | 1952 | 1744 | 2170 | A | A | A | A |
| Beach 54th St and Beach Channel Dr (SW corner) | 1307 | 1917 | 1247 | 2259 | A | A | A | A |
| Beach 54th St and Beach Channel Dr (NW corner) | 411 | 667 | 410 | 563 | A | A | A | A |
| Beach 54th St and Arverne Blvd (NE corner) | 1280 | 752 | 980 | 652 | A | A | A | A |
| Beach 54th St and Arverne Blvd (NW corner) | 4882 | 4623 | 6317 | 2573 | A | A | A | A |
| Beach 53rd St and Beach Channel Dr (SE corner) | 553 | 825 | 510 | 525 | A | A | A | A |
| Beach 53rd St and Beach Channel Dr (SW corner) | 1658 | 1851 | 997 | 1518 | A | A | A | A |
| Beach 51st St and Beach Channel Dr (SE corner) | 1355 | 923 | 692 | 2110 | A | A | A | A |
| Beach 47th St and Rockaway Beach Blvd (SW corner) | 1731 | 4320 | 3846 | 3840 | A | A | A | A |
| Beach 47th St and Rockaway Beach Blvd (SE corner) | 855 | 2567 | 1974 | 1714 | A | A | A | A |
| Beach 44th St and Rockaway Beach Blvd (SW corner) | 821 | 1013 | 1199 | 934 | A | A | A | A |
| Beach 44th St and Rockaway Fwy (NW corner) | 964 | 1848 | 741 | 2054 | A | A | A | A |
| Beach 56th Pl and Arverne Blvd (NW corner) | 1493 | 1947 | 1354 | 1698 | A | A | A | A |
| Beach 56th Pl and Arverne Blvd (NE corner) | 1118 | 2230 | 906 | 1377 | A | A | A | A |
| Beach 56th Pl and Arverne Blvd (SW corner) (1) | 1228 | 1490 | 1225 | 2046 | A | A | A | A |
| Beach 56th Pl and Arverne Blvd (SE corner) (1) | 765 | 1571 | 637 | 1247 | A | A | A | A |
| Beach 56th St and Arverne Blvd (NW corner) | 553 | 2220 | 1010 | 916 | A | A | A | A |
| Beach 56th St and Arverne Blvd (NE corner) | 1655 | 2414 | 1640 | 1500 | A | A | A | A |
| Beach 56th Pl and Rockaway Fwy (NW corner) (1) | 1152 | 1440 | 1031 | 1248 | A | A | A | A |
| Beach 56th Pl and Rockaway Fwy (NE corner) (1) | 762 | 1328 | 700 | 1326 | A | A | A | A |
| Beach 57th St and Arverne Blvd (NW corner) | 1563 | 4299 | 1743 | 1842 | A | A | A | A |
| Beach 57th St and Arverne Blvd (NE corner) | 958 | 3125 | 1042 | 1236 | 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 and the southwest corner at Beach 50th Street and Rockaway Beach Boulevard were not included in this table.*
*(1) Median element that was analyzed at two adjacent corners.*

## Parking Conditions

### *On-Street Parking*

Existing study area on-street parking conditions were evaluated by performing a field inventory of parking regulations and utilization within a 0.25-mile radius of the Project Site. On-street parking regulations within 0.25-mile of the study area are summarized in **Figure 12-4** and Error! Reference source not found.. Parking spaces are largely unrestricted except for certain sanitation-related regulations.

Parking utilization surveys were conducted in the study area under typical weekday and Saturday conditions in August 2016 during the four peak hours as well as the weekday overnight condition, when residential parking demand is expected to be the greatest. Individual street capacities and an hourly assessment of on-street parking utilization were collected for each street in the study area. **Table 12-22: 2016 Existing Conditions On-Street Parking Utilization Summary** presents a summary of the survey results in terms of the average percentage of available on-street spaces utilized during each peak hour.

The results of the survey indicate that within 0.25-mile radius of the Project Site, on-street parking utilization is 66%, 55%, 57%, and 55% of available spaces during the Weekday AM, Weekday MD, Weekday PM,

and Weekday Overnight periods, respectively. The on-street parking utilization is 52% for the Saturday MD period.

**Table 12-22: 2016 Existing Conditions On-Street Parking Utilization Summary**

| 2016 Existing | Weekday AM | Weekday MD | Weekday PM | Weekday Overnight | Saturday MD |
|---|---|---|---|---|---|
| Capacity | 1,668 | 1,668 | 1,668 | 1,668 | 1,668 |
| Demand | 1,098 | 926 | 957 | 919 | 875 |
| Available Spaces | 570 | 743 | 711 | 750 | 793 |
| **Utilization** | **66%** | **55%** | **57%** | **55%** | **52%** |

**Note:** On-street parking utilization data was collected in August 2016 and was adjusted to reflect non-summer conditions during the Weekday AM period.

### *Off-Street Parking*

There are no off-site parking facilities within a 0.25-mile radius of the Project Site.

# VII. FUTURE WITHOUT THE PROPOSED ACTIONS

The future without the Proposed Actions ("No-Action" condition) builds on the Existing Conditions analysis by incorporating background growth, other nearby projects expected to be completed by the analysis year, trips generated by the Project Site under the current zoning, and anticipated changes in the transportation network. The No-Action condition analysis focuses on conditions in 2034, when the Proposed Project is expected to be complete. The analysis of the No-Action condition serves as the baseline against which the future condition with the project will be compared to identify potential impacts.

The *CEQR Technical Manual* guidelines (Table 16-4) provide 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 18 years, to the 2016 Existing Conditions, volumes to develop the 2034 No-Action conditions background traffic, transit, pedestrian, and parking volumes.

Under the No-Action condition, the Project Site would remain under the existing zoning designations. Market-rate residential development, along with supporting retail space, would be feasible on the Project Site and would be constructed as-of-right in conformance to existing zoning designations. Absent the Proposed Actions, development on the Project Site would include 568 DUs, 21,659 gsf of local retail space, 800 gsf of community facility space, and 557 accessory parking spaces.

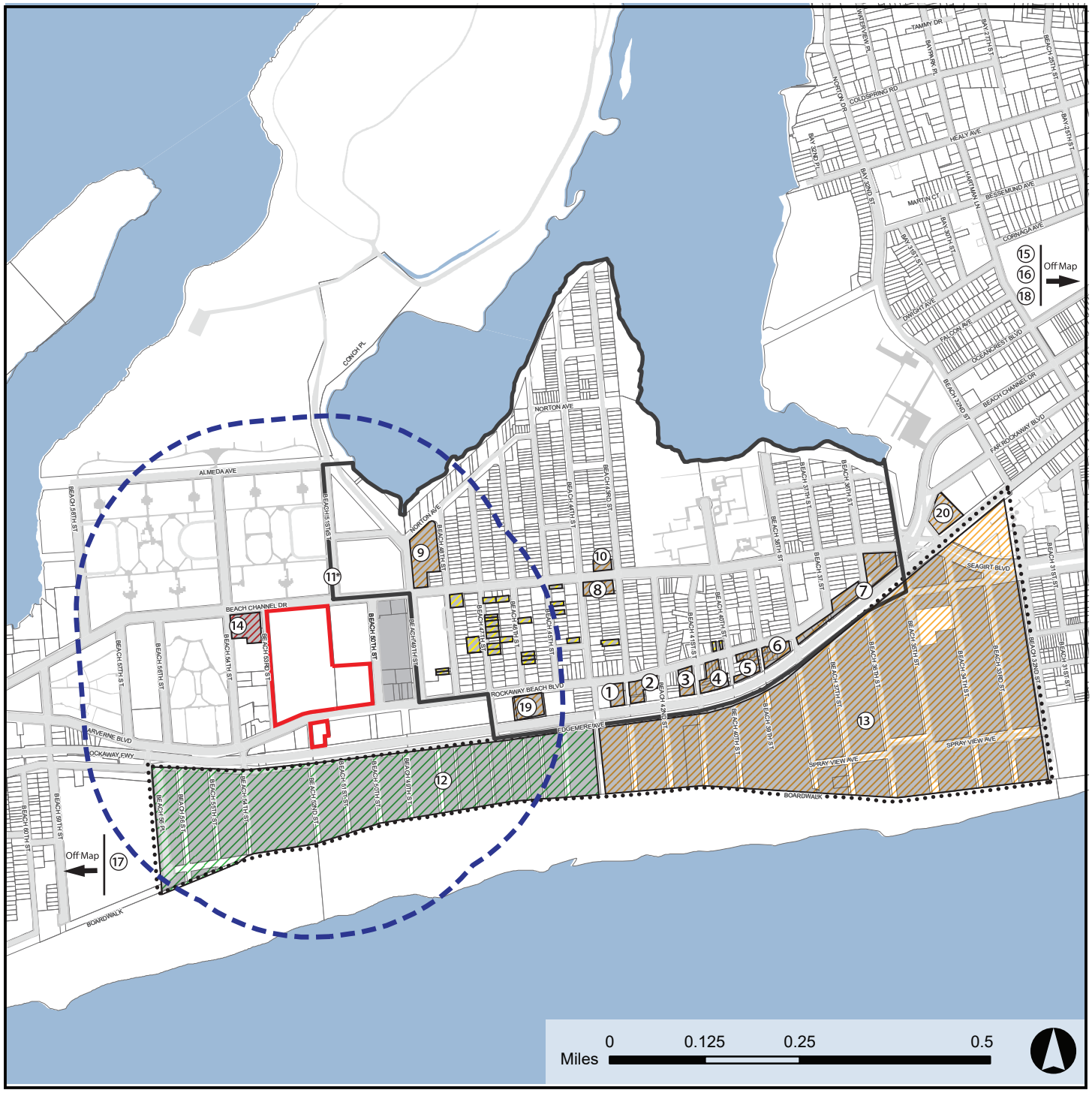
In addition to the background growth and No-Action development on the Project Site, the development projects expected to be completed by 2034 located within and adjacent to the 0.25-mile were considered to forecast the No-Action condition volumes, as shown in **Table 12-23: No-Action Projects** and **Figure 12-9: Known No-Action Sites in the Vicinity of Project Site**, and described below.

**Table 12-23: No-Action Projects**

| Map No. | Project Name | Block-Lot | Future Use | Build Year |
|---|---|---|---|---|
| 1 | Edgemere Site #1 | 15852- 64, 68 | Mixed-use residential and commercial development with 44 residential units, 25,911 gsf of local retail, and 44 parking spaces | 2021 - 2028 |
| 2 | Edgemere Site #2 | 15851-33, 35, 40 ,42, 44, 58, 59 | Residential development with 19 residential units and 19 parking spaces | 2021 - 2028 |
| 3 | Edgemere Site #3 | 15850-6 | Residential development with 16 residential units and 16 parking spaces | 2021 - 2028 |
| 4 | Edgemere Site #4 | 15849-6, 8, 9, 10, 17, 18, 19, 20, 27, 28, 29 | Residential development with 24 residential units and 24 parking spaces | 2021 - 2028 |
| 5 | Edgemere Site #5 | 15848-52, 54, 55, 57, 58, 60, 62, 63, 65, 67 | Residential development with 18 residential units and 18 parking spaces | 2018 - 2019 |
| 6 | Edgemere Site #6 | 15847-79, 80, 81, 82, 83, 82, 84, 85, 86, 87, 88, 89 | Residential development with 18 residential units and 18 parking spaces | 2018 - 2019 |
| 7 | Edgemere Site #7 | 15845-1, 4, 8, 10, 13, 14, 15, 21, 28, 29, 30, 32, 35; 15823-1, 7, 9; 15826-31 | Mixed-use residential and commercial development with 202 residential units, 74,089 gsf of local retail, and 202 parking spaces | 2021 - 2028 |
| 8 | Edgemere Site #8 | 15834-30, 38, 42 | Residential development with 18 residential units and 18 parking spaces | 2019 - 2021 |
| 9 | Edgemere Site #9 | 15973-1 | Residential development with 60 residential units and 60 parking spaces | 2019 - 2021 |
| 10 | Edgemere Site #10 | 15965-115 | Residential development with 7 residential units and 7 parking spaces | 2019 - 2021 |
| 11 | Edgemere (Small Sites) | Various | Residential development with 71 residential units and 71 parking spaces | 2018 - 2028 |

| | | | | |
|---|---|---|---|---|
| 12 | Central Arverne[1] | 15877-1, 15888-1 | 722,919 sf of open space | Unkn-own |
| 13 | Arverne East | Various | Mixed-use residential and commercial development with 1,200 residential units, 100,000 gsf of local retail, 100,000 gsf of destination retail, and 1,300 parking spaces | 2021 - 2028 |
| 14 | Ocean Bay Retail EAS | 15890-54, 55, 58, 62, 64, 66, 69 | Mixed-use commercial development 9,999 gsf of supermarket, 21,664 gsf of office space, 5,214 gsf of local retail, a 9,577 gsf community facility, and 10 parking spaces | 2020 |
| 15 | Downtown Far Rockaway FEIS | Various | Mixed-use residential and commercial development with 3,131 residential units, a 6,305 gsf day care center, a 36,295 gsf community center, a 20,500 gsf house of worship, a 17,847 gsf medical office building, 189,275 gsf of local retail, 30,000 gsf of open space, and a reduction of 24,680 gsf of auto repair shop | 2032 |
| 16 | 15-20 Central Avenue Private Charter School | 15537-133 | 500-seat PS (75,400 gsf) charter school | 2019 - 2020 |
| 17 | Arverne West / Arvene by the Sea Private Charter School | 15905-1, 500, 501 | 200-seat IS charter school | 2019 - 2020 |
| 18 | 22-06 Cornaga Avenue | 15706-1 | Residential development with 113 residential units and 113 parking spaces | 2032 |
| 19 | Beach Green Dunes Phase II | 15853-40 | Mixed-use residential and commercial development with 127 residential units and 3,000 gsf of local retail, 50 parking spaces | 2019 |
| 20 | Beach Channel Senior Residences | 15950-7501 | Mixed-use residential and medical facility with 154 residential units and 10,911 gsf of medical facility, 33 parking spaces | 2019 |

[1] No-Action development site would be a native dune preserve that would not be publicly accessible. No access for recreational purposes would be allowed.




Source: Resilient Edgemere Community Plan, 2016 Pluto DCP
Note: *Site 11 consits of small sites with varied Blocks and Lots

**EDGEMERE, QUEENS**

Project Site

Study Area

Edgemere URA

Arverne URA

① Map ID Number (See Table 12-23)

No-Action Residential Developments

Commercial Developments

Mixed-Use Developments

Nature Preserve and Passive Recreation Area

# KNOWN NO-ACTION SITES IN THE VICINITY OF PROJECT SITE

Figure 12-9

Peninsula Hospital Site Redevelopment

The background growth and trips generated by the development project under existing zoning were added to the Existing Conditions volumes to estimate No-Action conditions volumes.

## Roadway Improvements

In addition to the development projects noted above, the following roadway improvements expected to be implemented by 2034 were included in the analysis:

- In response to damage sustained by Hurricane Sandy in 2012, NYCDOT is currently implementing improvements on Beach Channel Drive between Beach 116th Street and Beach 108th Street including new medians, sidewalks, and bicycle lanes. At Beach Channel Drive and Beach 116th Street, Beach Channel Drive and Rockaway Freeway, and Beach Channel Drive and Beach 108th Street, the lane widths will be narrowed to 10 feet wide. An "After Stop Right Turn on Red" sign will be added at the intersections of Beach Channel Drive with Rockaway Freeway and Beach 108th Street.
- Ten-foot left-turn lanes will be added to the northbound and southbound approaches at the intersection of Rockaway Beach Boulevard and Beach 108th Street.
- NYCDOT will be installing a northbound bicycle facility on Beach 94th Street from Beach Channel Drive to Shore Front Parkway. The Beach 94th Street service road will be restriped as a 12-foot travel lane with parking on the east curb. The Beach 94th Street main road will be restriped as13-foot travel lane with parking on the east curb. NYCDOT will be closing the northbound service road at Rockaway Freeway. Vehicles on the service road may turn right at Rockaway Freeway or merge onto the main road prior to the intersection. In conjunction with this street improvement, the intersection of Beach 92nd Street, Beach 94th Street, Cross Bay Bridge Exit Ramp, and Beach Channel Drive will be signalized and pedestrian crossings will be added.
- NYCDOT is recommending modifications on Rockaway Beach Boulevard between Beach 56th Street and Beach 74th Street and on Edgemere Avenue between Beach 32nd Street and Beach 56th Street. NYCDOT plans to close these sections of roadway to vehicular traffic and provide pedestrian and bicycle space to improve access to the A train. Rockaway Freeway will be closed to eastbound vehicular traffic east of 59th Street prior to the build year. Existing eastbound traffic volumes were diverted from Rockway Freeway and 59th Street to the surrounding intersections based on sample counts performed in October 2018.
- The intersection of Beach Front Road and Beach 62nd Street will be converted from a two-way stop-controlled intersection to an all-way stop-controlled intersection.
- A curb extension will be added to the southeast corner of Rockaway Beach Boulevard and Beach 59th Street but will not affect the northbound lane.
- NYCDOT will be modifying the intersection of Beach Channel Drive/Seagirt Boulevard and Beach 35th St. to create a cul-de-sac at the southbound approach of Beach 35th Street, thus removing that leg of the intersection. NYCDOT will re-align the remaining four approaches of the intersection. The channelized right-turn at the southwest approach of Beach Channel Drive will be removed and the approach will be modified to include a right-turn bay and a left-through shared lane. The channelized right-turn and the median at the northbound approach of Beach 35th Street will be removed, and the approach will be modified to include one shared left-through-right lane. Crosswalks will be striped at all approaches.
- As part of the Downtown Far Rockaway Redevelopment project, mitigation measures were proposed to improve intersection operations on Beach Channel Drive between Dix Avenue and Hassock Street, as well as Cornaga Avenue between Rockaway Freeway and Beach Channel Drive:

- At the intersections of Cornaga Avenue with Rockaway Freeway and Beach Channel Drive, one second of green time will be shifted from the northbound/southbound phase to the eastbound/westbound phase during the Weekday PM peak hour.
- At the intersection of Beach Channel Drive and Mott Avenue, one second of green time will be shifted from the eastbound/westbound phase to the northbound/southbound phase during the Weekday MD peak hour.
- At the intersection of Beach Channel Drive and Dix Avenue, the southbound approach will be restriped as one 11-foot wide left-through shared lane and one 100-foot long, 13.5-foot wide through-right turn bay.
- The intersection of Birdsall Avenue and Beach Channel Drive will become signalized. In addition, Birdsall Avenue between Beach Channel Drive and Redfern Avenue will be converted to one-way westbound. The southbound approach at the intersection of Beach Channel Drive and Birdsall Avenue will be restriped to have one 12.5-foot wide through lane and one 100-foot long, 12-foot wide right-turn bay. One second of green time will be shifted from the eastbound/westbound phase to the northbound/southbound phase in the Weekday MD and Weekday PM peak hours.
- At the intersection of Beach Channel Drive and Nameoke Street, the northbound and southbound lane widths will be narrowed to 11 feet. Three seconds of green time will be shifted from the eastbound/westbound phase to the northbound/southbound phase in the Weekday MD peak hour. One second of green time will be shifted from the eastbound/westbound phase to the northbound/southbound phase in the Saturday MD peak hour.
- At the intersection of Beach Channel Drive and Hassock Street, the northbound approach will be restriped to have one 12.5-foot wide left-through shared lane and one 100-foot long, 12.5-foot wide through lane. The southbound approach will be restriped to have one 15-foot southbound through lane and one 70-foot long, 11-foot right-turn bay (in the bus stop). The westbound approach will be restriped to have one 12-foot wide left-turn lane and one 12-foot wide through lane. Three seconds of green time will be shifted from the eastbound/westbound phase to the northbound/southbound phase in the Weekday MD peak hour.

## Traffic Operations

**Figure 12-10** through **Figure 12-13** show the 2034 No-Action traffic volumes for the four peak hours. **Table 12-26: 2034 No-Action Conditions Level of Service Analysis – Signalized Intersections** presents the 2034 No-Action condition for the signalized study intersections, and **Table 12-27: 2034 No-Action Conditions Level of Service Analysis – Unsignalized Intersections** presents the 2034 No-Action condition for the unsignalized study intersections. The results of the analysis indicate that a significant number of approaches/lane groups would deteriorate compared to Existing Conditions. The signalized lane groups that would operate worse than mid-LOS D are summarized by peak hour in **Table 12-24: Signalized Lane Groups Operating Worse than Mid-LOS D – No-Action Conditions.** The unsignalized lane groups that would operate worse than mid-LOS D are summarized by peak hour in **Table 12-25: Unsignalized Lane Groups Operating Worse than Mid-LOS D – No-Action Conditions**.

**Table 12-24: Signalized Lane Groups Operating Worse than Mid-LOS D – No-Action Conditions**

| # | Intersection | Weekday AM Peak Hour | Weekday MD Peak Hour | Weekday PM Peak Hour | Saturday MD Peak Hour |
|---|---|---|---|---|---|
| 1 | Beach Channel Drive & Beach 116th Street | WB-LTR, NB-LTR, SB-LTR | WB-LTR, SB-LTR | EB-LTR, WB-L, WB-TR, SB-LTR | SB-LTR |
| 2 | Newport Avenue & Beach 116th Streetreet | NB-LT | NB-LT | 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, WB-LTR | |
| 5 | Beach Channel Drive & Beach 108th Street | WB-LT | | | |
| 7 | Rockaway Beach Boulevard & Beach 108th Street | EB-L, WB-TR | | | |
| 8 | Beach Channel Drive & Beach 92nd Street/Beach 94th Street | WB-TR | WB-TR | EB (Beach Channel Drive)-T, WB-TR | WB-TR |
| 15 | Beach Channel Drive & Beach 62nd Street | EB-LT, WB (Beach Channel Drive)-T, WB (Arverne Boulevard)-LR, SB-L | EB-LT, 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 | WB-LTR | |
| 19 | Arverne Boulevard & Beach 59th Street | | | WB-LT | |
| 20 | Rockaway Freeway & Beach 59th Street | WB-L | WB-L | WB-L | WB-L |
| 21 | Rockaway Beach Boulevard & Beach 59th Street | EB-TR, WB-LT | EB-TR | EB-TR, WB-LT | EB-TR |
| 23 | Arverne Boulevard & Beach 54th Street | | | EB-LTR | |
| 25 | Edgemere Avenue & Beach 54th Street | EB-LTR | EB-LTR, WB-LTR, SB-LTR | EB-LTR, WB-LTR, SB-LTR | EB-LTR, SB-LTR |
| 41 | Rockaway Freeway & Beach 35th Street | | | | WB-L |
| 42 | Rockaway Freeway & Seagirt Boulevard | | EB-TR | EB-TR | |
| 44 | Rockaway Freeway & Cornaga Avenue | WB-LTR | | | |
| 46 | Beach Channel Drive & Mott Avenue | EB-LTR, NB-TR, SB-L | NB-TR, SB-L | EB-LTR, NB-TR, SB-L, SB-TR | NB-TR, SB-L |
| 47 | Beach Channel Drive & Dix Avenue | NB-LTR | WB-LTR, NB-LTR | NB-LTR | |
| 49 | Beach Channel Drive & Nameoke Avenue | NB-TR, SB-L, SB-TR | NB-TR, SB-L, SB-TR | NB-TR, SB-L, SB-TR | NB-TR, SB-TR |
| 50 | Beach Channel Drive & Hassock Street | SB-T | SB-T | SB-T | SB-T |
| | **Total Number of Impacted Lane Groups:** | **27** | **21** | **32** | **15** |

**Table 12-25: Unsignalized Lane Groups Operating Worse than Mid-LOS D – No-Action Conditions**

| # | Intersection | Weekday AM Peak Hour | Weekday MD Peak Hour | Weekday PM Peak Hour | Saturday MD Peak Hour |
|---|---|---|---|---|---|
| 26 | Beach Channel Drive & Beach 53rd Street | | NB-LR | | |
| 27 | Rockaway Beach Boulevard & Beach 53rd Street | | | SB-LR | |
| 38 | Rockaway Beach Boulevard & Beach 44th Street | | | NB-LR | |
| | **Total Number of Impacted Lane Groups:** | **0** | **1** | **2** | **0** |

Lane groups that deteriorate from better than mid-LOS D to worse than mid-LOS D are detailed below.

### *Level of Service – Signalized Intersections*

*Beach Channel Drive and Beach 116th Street*

- During the **Weekday AM Peak Hour**, the northbound left-through-right lane group would deteriorate within LOS D from an average delay of 43.3 seconds and a v/c ratio of 0.17 to an average delay of 45.9 seconds and a v/c ratio of 0.30.
- During the **Weekday MD Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS C with an average delay of 22.6 seconds and a v/c ratio of 0.70 to LOS D with an average delay of 54.6 seconds and a v/c ratio of 1.00.

- During the **Weekday PM Peak Hour**, the eastbound left-through-right lane group would deteriorate from LOS C with an average delay of 30.3 seconds and a v/c ratio of 0.65 to LOS D with an average delay of 48.0 seconds and a v/c ratio of 0.94.

*Newport Avenue and Beach 116th Street*

- During the **Weekday AM Peak Hour**, the northbound left-turn/through lane group would deteriorate within LOS D from an average delay of 44.4 seconds and a v/c ratio of 0.22 to an average delay of 47.1 seconds and a v/c ratio of 0.35.

*Rockaway Beach Boulevard and Beach 116th Street*

- During the **Weekday PM Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS C with an average delay of 24.1 seconds and a v/c ratio of 0.79 to LOS D with an average delay of 54.1 seconds and a v/c ratio of 1.00.

*Beach Channel Drive and Rockaway Freeway*

- During the **Weekday AM Peak Hour**, the eastbound left-through-right lane group would deteriorate from LOS D with an average delay of 35.1 seconds and a v/c ratio of 0.83 to LOS F with an average delay of 90.5 seconds and a v/c ratio of 1.10. The westbound left-through-right lane group would deteriorate from LOS C with an average delay of 30.0 seconds and a v/c ratio of 0.72 to LOS E with an average delay of 68.7 seconds and a v/c ratio of 1.03.
- During the **Weekday PM Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS C with an average delay of 27.1 seconds and a v/c ratio of 0.63 to LOS D with an average delay of 46.2 seconds and a v/c ratio of 0.93.

*Beach Channel Drive and Beach 108th Street*

- During the **Weekday AM Peak Hour**, the westbound left-turn/through lane group would deteriorate from LOS C with an average delay of 29.1 seconds and a v/c ratio of 0.80 to LOS F with an average delay of 111.0 seconds and a v/c ratio of 1.16.

*Rockaway Beach Boulevard and Beach 108th Street*

- During the **Weekday AM Peak Hour**, the eastbound left-turn lane group would deteriorate from LOS C with an average delay of 28.0 seconds and a v/c ratio of 0.59 to LOS F with an average delay of 81.6 seconds and a v/c ratio of 0.95. The westbound through/right-turn lane group would deteriorate from LOS C with an average delay of 26.5 seconds and a v/c ratio of 0.69 to LOS D with an average delay of 48.1 seconds and a v/c ratio of 0.94.

*Beach Channel Drive/Arverne Boulevard and Beach 62nd Street*

- During the **Weekday AM Peak Hour**, the eastbound left-turn/through lane group would deteriorate from LOS C with an average delay of 29.1 seconds and a v/c ratio of 0.67 to LOS F with an average delay of 127.1 seconds and a v/c ratio of 1.18. The westbound (Arverne Boulevard) left-turn/right-turn lane group would deteriorate from LOS D with an average delay of 41.6 seconds and a v/c ratio of 0.60 to LOS F with an average delay of 289.2 seconds and a v/c ratio of 1.52.
- During the **Weekday MD Peak Hour**, the eastbound left-turn/through lane group would deteriorate from LOS C with an average delay of 29.5 seconds and a v/c ratio of 0.68 to LOS F with an average delay of 167.2 seconds and a v/c ratio of 1.28. The westbound (Arverne Boulevard) left-turn/right-turn lane

group would deteriorate from LOS C with an average delay of 31.1 seconds and a v/c ratio of 0.29 to LOS F with an average delay of 116.5 seconds and a v/c ratio of 1.11.

- During the **Weekday PM Peak Hour**, the eastbound left-turn/through lane group would deteriorate from LOS D with an average delay of 38.8 seconds and a v/c ratio of 0.85 to LOS F with an average delay of 377.0 seconds and a v/c ratio of 1.76. The westbound (Arverne Boulevard) left-turn lane group would deteriorate from LOS C with an average delay of 31.3 seconds and a v/c ratio of 0.31 to LOS E with an average delay of 78.2 seconds and a v/c ratio of 0.99. The southbound left-turn lane group would deteriorate within LOS D from an average delay of 39.8 seconds and a v/c ratio of 0.54 to an average delay of 48.4 seconds and a v/c ratio of 0.66.
- During the **Saturday MD Peak Hour**, the eastbound left-turn/through lane group would deteriorate from LOS C with an average delay of 26.8 seconds and a v/c ratio of 0.62 to LOS F with an average delay of 104.1 seconds and a v/c ratio of 1.13. The westbound (Arverne Boulevard) left-turn/right-turn lane group would deteriorate from LOS C with an average delay of 32.5 seconds and a v/c ratio of 0.38 to LOS E with an average delay of 69.5 seconds and a v/c ratio of 0.95.

*Rockaway Beach Boulevard and Beach 62nd Street*

- During the **Weekday MD Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS C with an average delay of 25.2 seconds and a v/c ratio of 0.42 to LOS E with an average delay of 61.2 seconds and a v/c ratio of 0.99.
- During the **Weekday PM Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS C with an average delay of 31.8 seconds and a v/c ratio of 0.73 to LOS F with an average delay of 333.6 seconds and a v/c ratio of 1.66.

*Arverne Boulevard and Beach 59th Street*

- During the **Weekday PM Peak Hour**, the westbound left-turn/through lane group would deteriorate from LOS A with an average delay of 9.2 seconds and a v/c ratio of 0.28 to LOS D with an average delay of 50.8 seconds and a v/c ratio of 0.98.

*Rockaway Beach Boulevard and Beach 59th Street*

- During the **Weekday AM Peak Hour**, the eastbound through/right-turn lane group would deteriorate from LOS C with an average delay of 22.4 seconds and a v/c ratio of 0.50 to LOS D with an average delay of 47.9 seconds and a v/c ratio of 0.94. The westbound left-turn/through lane group would deteriorate from LOS C with an average delay of 24.5 seconds and a v/c ratio of 0.60 to LOS D with an average delay of 45.2 seconds and a v/c ratio of 0.93.
- During the **Weekday MD Peak Hour**, the eastbound through/right-turn lane group would deteriorate from LOS C with an average delay of 23.7 seconds and a v/c ratio of 0.56 to LOS F with an average delay of 105.2 seconds and a v/c ratio of 1.13.
- During the **Weekday PM Peak Hour**, the eastbound through/right-turn lane group would deteriorate from LOS C with an average delay of 30.3 seconds and a v/c ratio of 0.75 to LOS F with an average delay of 194.6 seconds and a v/c ratio of 1.35. The westbound left-turn/through lane group would deteriorate from LOS C with an average delay of 24.1 seconds and a v/c ratio of 0.59 to LOS F with an average delay of 129.7 seconds and a v/c ratio of 1.19.
- During the **Saturday MD Peak Hour**, the eastbound through/right-turn lane group would deteriorate from LOS C with an average delay of 22.6 seconds and a v/c ratio of 0.51 to LOS E with an average delay of 55.2 seconds and a v/c ratio of 0.97.

*Arverne Boulevard and Beach 54th Street*

- During the **Weekday PM Peak Hour**, the eastbound left-through-right lane group would deteriorate from LOS C with an average delay of 20.1 seconds and a v/c ratio of 0.38 to LOS F with an average delay of 96.6 seconds and a v/c ratio of 1.11.

*Edgemere Avenue and Beach 54th Street*

- During the **Weekday AM Peak Hour**, the eastbound left-through-right lane group would deteriorate from LOS C with an average delay of 22.1 seconds and a v/c ratio of 0.51 to LOS F with an average delay of 420.1 seconds and a v/c ratio of 1.85.
- During the **Weekday MD Peak Hour**, the eastbound left-through-right lane group would deteriorate from LOS C with an average delay of 22.5 seconds and a v/c ratio of 0.52 to LOS F with an average delay of 732.7 seconds and a v/c ratio of 2.55. The westbound left-through-right lane group would deteriorate from LOS B with an average delay of 19.4 seconds and a v/c ratio of 0.36 to LOS E with an average delay of 73.9 seconds and a v/c ratio of 1.05. The southbound left-through-right lane group would deteriorate from LOS B with an average delay of 14.6 seconds and a v/c ratio of 0.16 to LOS F with an average delay of 169.8 seconds and a v/c ratio of 1.27.
- During the **Weekday PM Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS C with an average delay of 27.0 seconds and a v/c ratio of 0.71 to LOS F with an average delay of 153.0 seconds and a v/c ratio of 1.26. The southbound left-through-right lane group would deteriorate from LOS B with an average delay of 14.8 seconds and a v/c ratio of 0.18 to LOS F with an average delay of 165.5 seconds and a v/c ratio of 1.26.
- During the **Saturday MD Peak Hour**, the eastbound left-through-right lane group would deteriorate from LOS C with an average delay of 23.8 seconds and a v/c ratio of 0.57 to LOS F with an average delay of 581.5 seconds and a v/c ratio of 2.21. The southbound left-through-right lane group would deteriorate from LOS B with an average delay of 14.8 seconds and a v/c ratio of 0.17 to LOS F with an average delay of 84.4 seconds and a v/c ratio of 1.02.

*Rockaway Freeway and Beach 35th Street*

- During the **Saturday MD Peak Hour**, the westbound left-turn lane group would deteriorate within LOS D from an average delay of 39.0 seconds and a v/c ratio of 0.00 to an average delay of 49.0 seconds and a v/c ratio of 0.00.

*Rockaway Freeway and Cornaga Avenue*

- During the **Weekday AM Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS C with an average delay of 30.5 seconds and a v/c ratio of 0.65 to LOS E with an average delay of 67.8 seconds and a v/c ratio of 0.98.

*Beach Channel Drive and Mott Avenue*

- During the **Weekday AM Peak Hour**, the southbound left-turn lane group would deteriorate from LOS C with an average delay of 25.2 seconds and a v/c ratio of 0.58 to LOS F with an average delay of 125.7 seconds and a v/c ratio of 1.14.
- During the **Weekday MD Peak Hour**, the northbound through/right-turn lane group would deteriorate from LOS D with an average delay of 43.9 seconds and a v/c ratio of 0.87 to LOS F with an average delay of 149.3 seconds and a v/c ratio of 1.24. The southbound left-turn lane group would deteriorate from LOS C with an average delay of 23.6 seconds and a v/c ratio of 0.57 to LOS F with an average delay of 134.1 seconds and a v/c ratio of 1.16.

- During the **Weekday PM Peak Hour**, the eastbound left-through-right lane group would deteriorate within LOS D from an average delay of 35.6 seconds and a v/c ratio of 0.72 to an average delay of 53.6 seconds and a v/c ratio of 0.89. The southbound left-turn lane group would deteriorate from LOS C with an average delay of 28.3 seconds and a v/c ratio of 0.65 to LOS F with an average delay of 235.7 seconds and a v/c ratio of 1.42. The southbound through/right-turn lane group would deteriorate from LOS C with an average delay of 23.3 seconds and a v/c ratio of 0.76 to LOS E with an average delay of 76.9 seconds and a v/c ratio of 1.09.
- During the **Saturday MD Peak Hour**, the southbound left-turn lane group would deteriorate from LOS C with an average delay of 32.9 seconds and a v/c ratio of 0.74 to LOS F with an average delay of 207.8 seconds and a v/c ratio of 1.35.

*Beach Channel Drive and Dix Avenue*

- During the **Weekday AM Peak Hour**, the northbound left-through-right lane group would deteriorate from LOS D with an average delay of 35.3 seconds and a v/c ratio of 0.90 to LOS F with an average delay of 127.1 seconds and a v/c ratio of 1.21.
- During the **Weekday MD Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS C with an average delay of 21.2 seconds and a v/c ratio of 0.15 to LOS D with an average delay of 47.8 seconds and a v/c ratio of 0.81. The northbound left-through-right lane group would deteriorate from LOS C with an average delay of 34.8 seconds and a v/c ratio of 0.89 to LOS F with an average delay of 96.8 seconds and a v/c ratio of 1.13.
- During the **Weekday PM Peak Hour**, the northbound left-through-right lane group would deteriorate from LOS C with an average delay of 31.4 seconds and a v/c ratio of 0.87 to LOS F with an average delay of 83.3 seconds and a v/c ratio of 1.10.

*Beach Channel Drive and Nameoke Avenue*

- During the **Weekday AM Peak Hour**, the northbound through/right-turn lane group would deteriorate from LOS B with an average delay of 19.6 seconds and a v/c ratio of 0.70 to LOS F with an average delay of 165.7 seconds and a v/c ratio of 1.30. The southbound left-turn lane group would deteriorate from LOS B with an average delay of 11.6 seconds and a v/c ratio of 0.16 to LOS D with an average delay of 52.0 seconds and a v/c ratio of 0.68. The southbound through/right-turn lane group would deteriorate from LOS C with an average delay of 27.0 seconds and a v/c ratio of 0.84 to LOS F with an average delay of 109.6 seconds and a v/c ratio of 1.17.
- During the **Weekday MD Peak Hour**, the northbound through/right-turn lane group would deteriorate from LOS C with an average delay of 23.6 seconds and a v/c ratio of 0.78 to LOS F with an average delay of 136.7 seconds and a v/c ratio of 1.24. The southbound left-turn lane group would deteriorate from LOS B with an average delay of 17.2 seconds and a v/c ratio of 0.38 to LOS F with an average delay of 222.8 seconds and a v/c ratio of 1.31. The southbound through/right-turn lane group would deteriorate from LOS D with an average delay of 38.0 seconds and a v/c ratio of 0.93 to LOS F with an average delay of 155.9 seconds and a v/c ratio of 1.28.
- During the **Weekday PM Peak Hour**, the northbound through/right-turn lane group would deteriorate from LOS B with an average delay of 19.0 seconds and a v/c ratio of 0.67 to LOS F with an average delay of 106.9 seconds and a v/c ratio of 1.16. The southbound left-turn lane group would deteriorate from LOS B with an average delay of 11.5 seconds and a v/c ratio of 0.16 to LOS F with an average delay of 95.1 seconds and a v/c ratio of 0.95. The southbound through/right-turn lane group would deteriorate from LOS D with an average delay of 35.0 seconds and a v/c ratio of 0.92 to LOS F with an average delay of 239.9 seconds and a v/c ratio of 1.47.
- During the **Saturday MD Peak Hour**, the northbound through/right-turn lane group would deteriorate from LOS B with an average delay of 18.0 seconds and a v/c ratio of 0.65 to LOS F with an average

delay of 91.3 seconds and a v/c ratio of 1.12. The southbound through/right-turn lane group would deteriorate from LOS C with an average delay of 32.8 seconds and a v/c ratio of 0.90 to LOS F with an average delay of 139.9 seconds and a v/c ratio of 1.24.

*Beach Channel Drive and Hassock Avenue*

- During the **Weekday AM Peak Hour**, the southbound through lane group would deteriorate from LOS C with an average delay of 34.0 seconds and a v/c ratio of 0.89 to LOS D with an average delay of 45.9 seconds and a v/c ratio of 0.97.
- During the **Weekday MD Peak Hour**, the southbound through lane group would deteriorate from LOS D with an average delay of 40.9 seconds and a v/c ratio of 0.94 to LOS E with an average delay of 58.8 seconds and a v/c ratio of 1.03.
- During the **Weekday PM Peak Hour**, the southbound through lane group would deteriorate from LOS D with an average delay of 36.7 seconds and a v/c ratio of 0.91 to LOS F with an average delay of 132.6 seconds and a v/c ratio of 1.22.

### *Level of Service – Unsignalized Intersections*

*Beach Channel Drive and Beach 53rd Street*

- During the **Weekday MD Peak Hour**, the northbound left-turn/right-turn lane group would deteriorate from LOS B with an average delay of 11.3 seconds and a v/c ratio of 0.03 to LOS E with an average delay of 45.8 seconds and a v/c ratio of 0.53.

*Rockaway Beach Boulevard and Beach 53rd Street*

- During the **Weekday PM Peak Hour**, the southbound left-turn/right-turn lane group would deteriorate from LOS B with an average delay of 10.5 seconds and a v/c ratio of 0.02 to LOS D with an average delay of 33.1 seconds and a v/c ratio of 0.39.

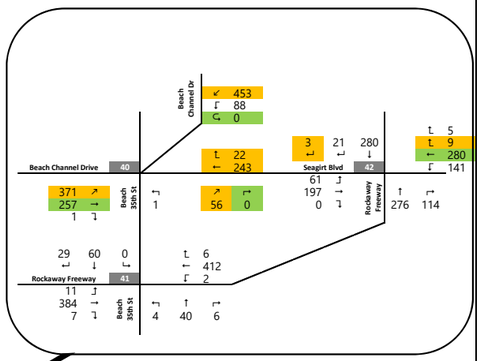
*Rockaway Beach Boulevard and Beach 44th Street*

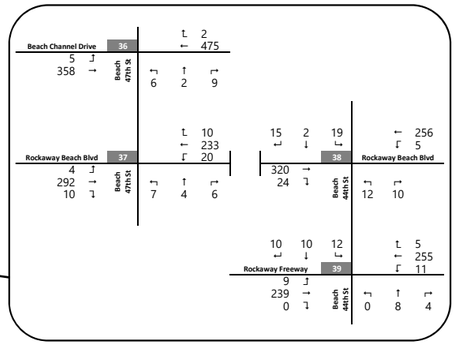
- During the **Weekday PM Peak Hour**, the northbound left-turn/right-turn lane group would deteriorate from LOS B with an average delay of 12.9 seconds and a v/c ratio of 0.04 to LOS D with an average delay of 31.8 seconds and a v/c ratio of 0.17.

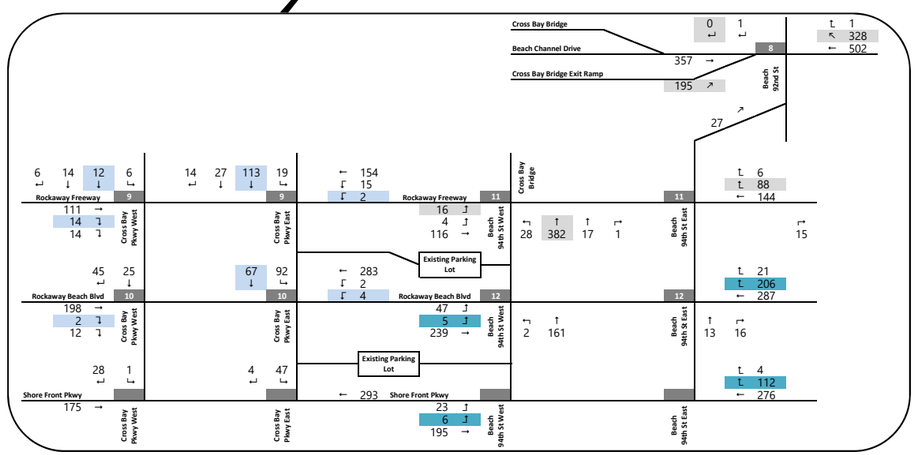


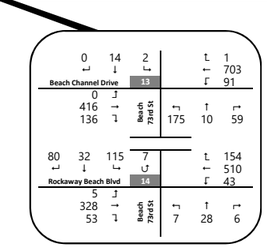




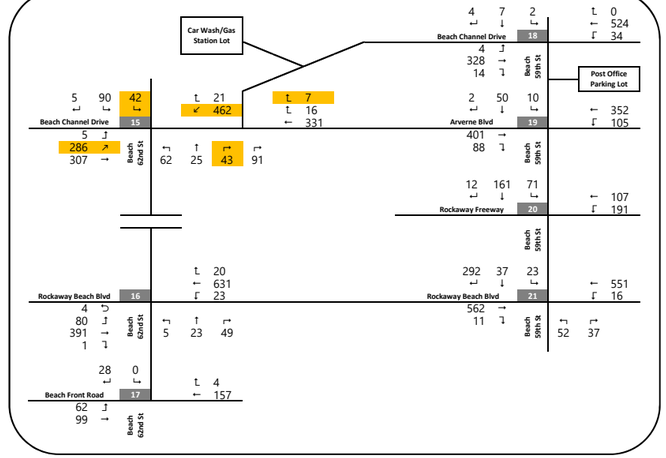


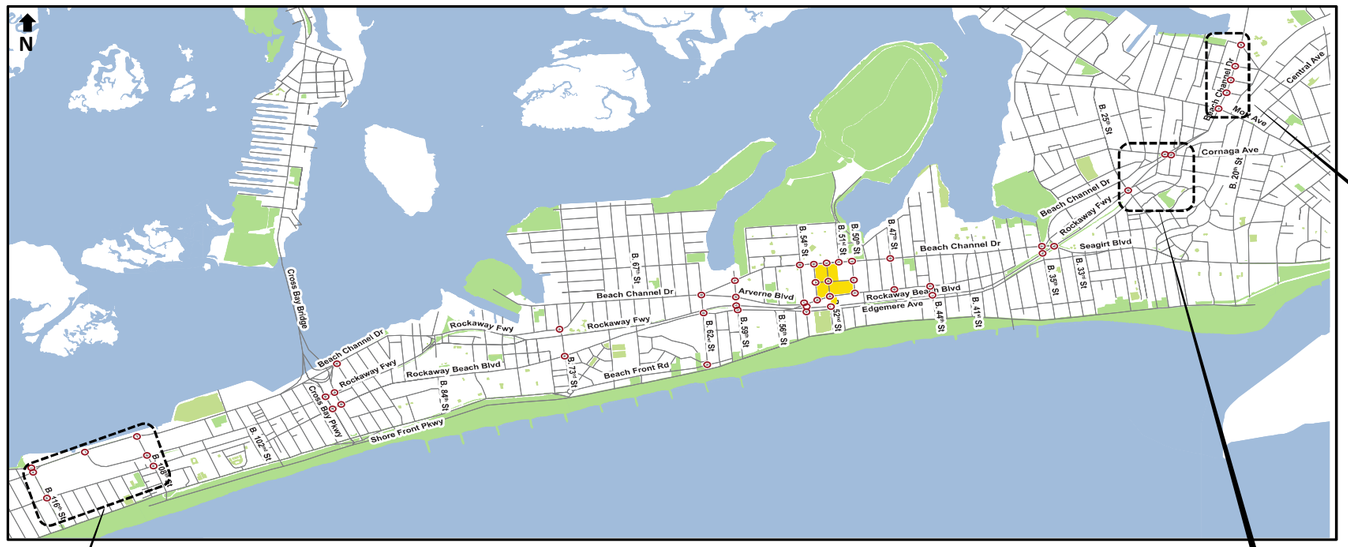

Legend
- To Cross Bay Parkway East
- To/From Beach Channel Drive
- To/From Cross Bay Bridge
- To/From Seagirt Blvd
- To/From Beach 94th St West

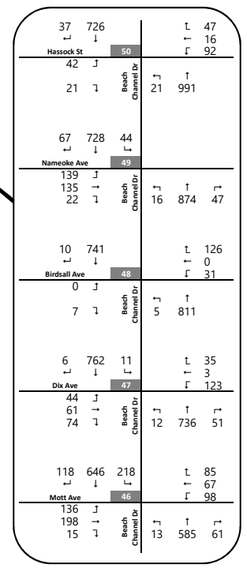


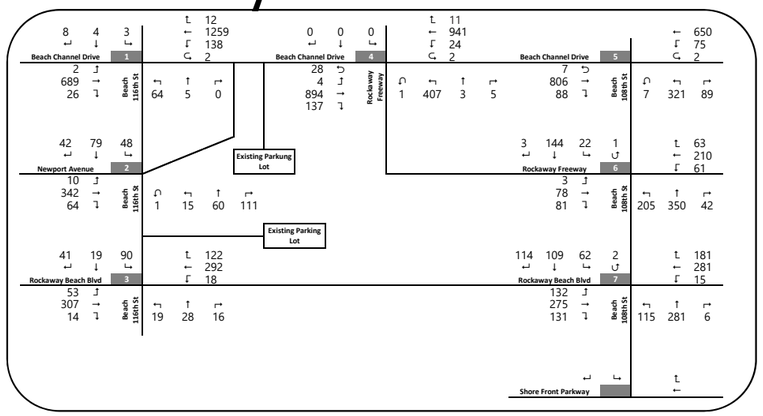

NOT TO SCALE

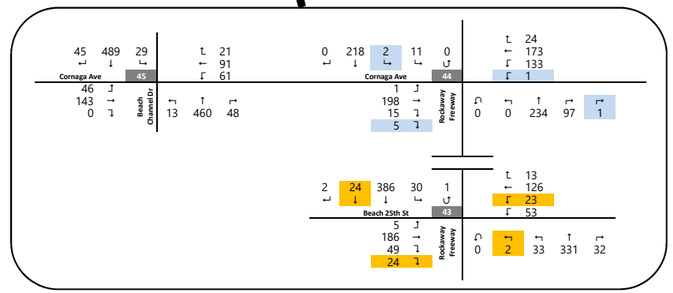
**Peninsula Hospital Site Redevelopment**

**2034 No-Action Conditions Traffic Volumes**
**Weekday AM Peak Hour**
**Figure 12-10A**



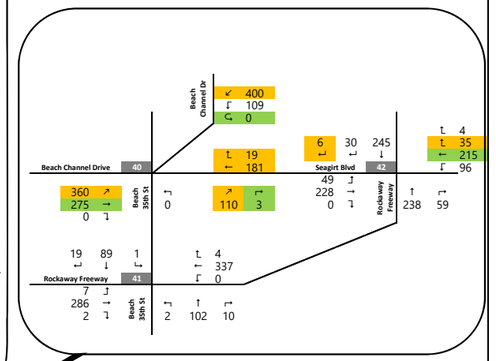

| Legend |
|---|
| To Nasby Pl |
| To Far Rockaway Blvd |

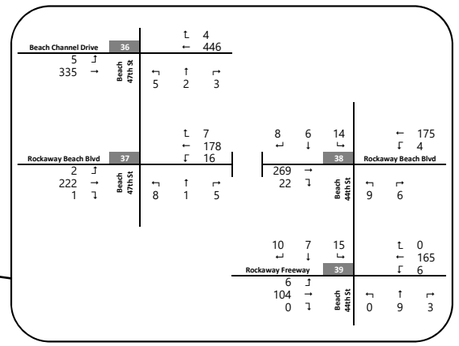
NOT TO SCALE

Peninsula Hospital EIS

**2034 No-Action Conditions Traffic Volumes**
**Weekday AM Peak Hour**
**Figure 12-10B**

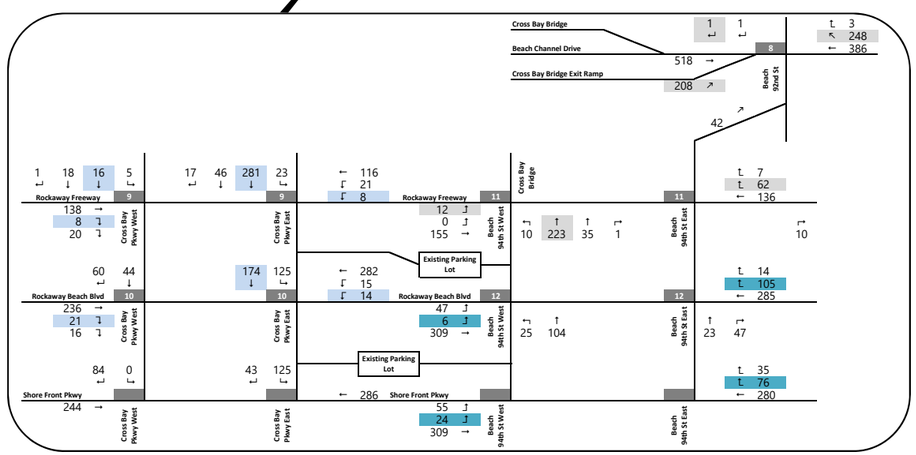


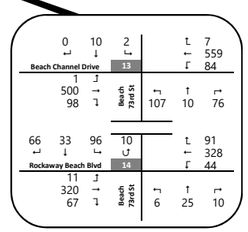










| Legend |
|---|
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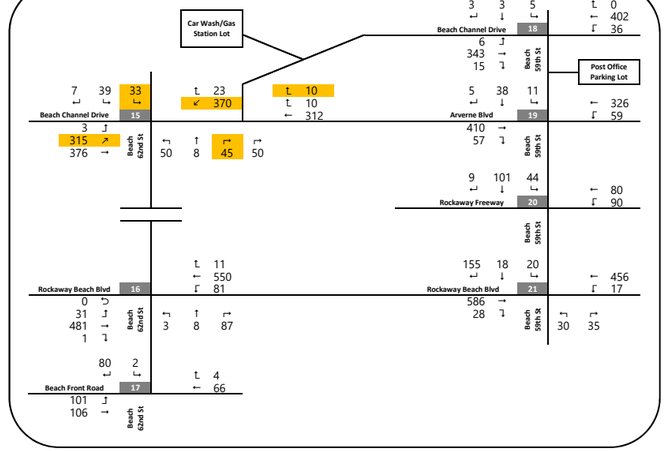
| To/From Beach Channel Drive |
| To/From Cross Bay Bridge |
| To/From Seagirt Blvd |
| To/From Beach 94th St West |

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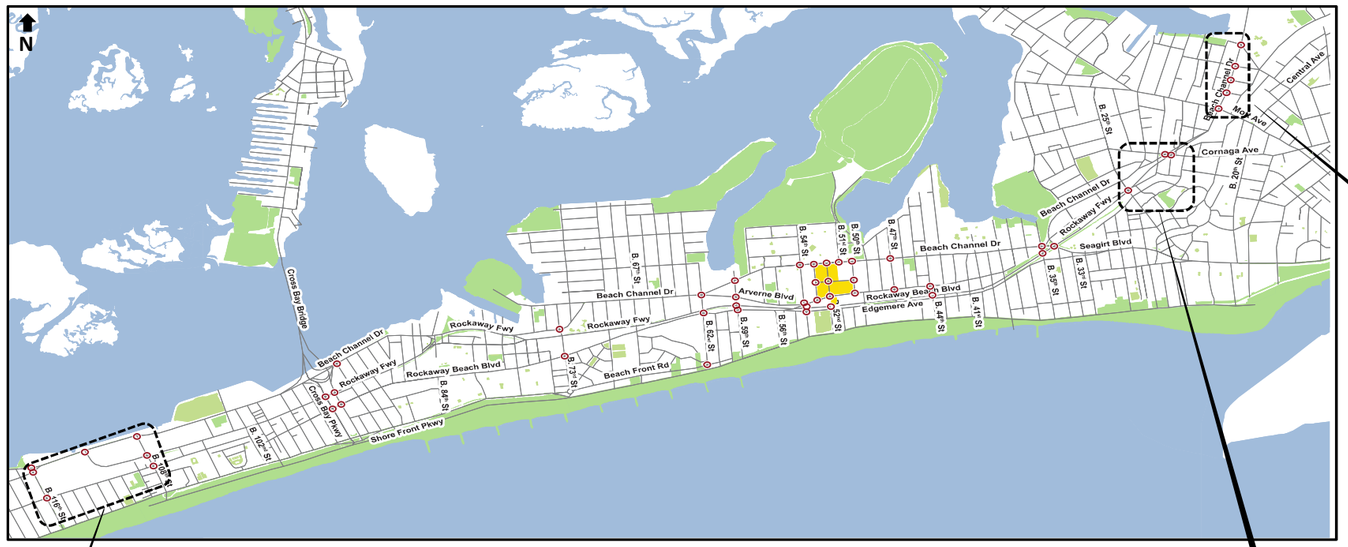
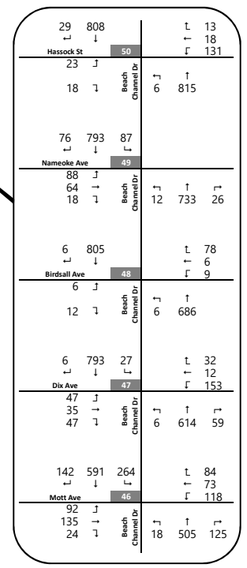
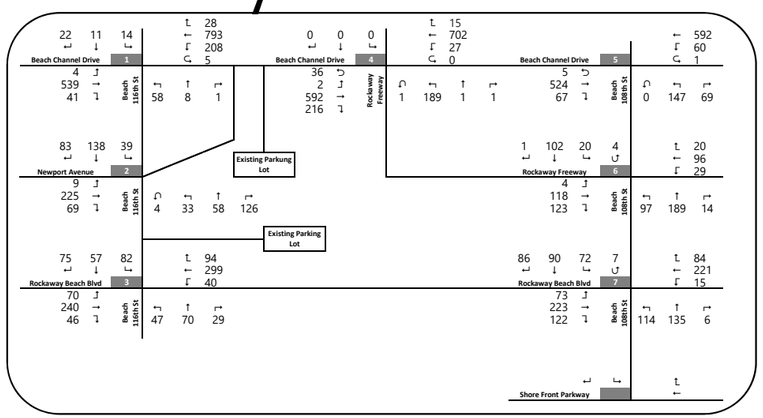
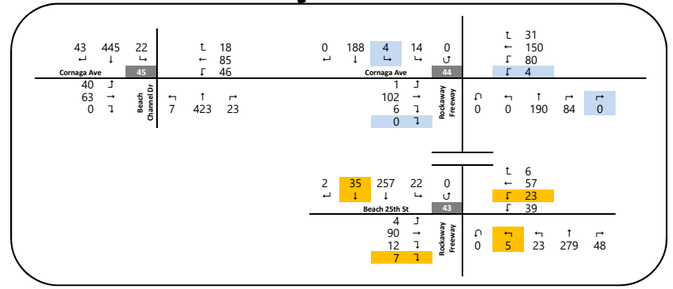
**Peninsula Hospital Site Redevelopment**

**2034 No-Action Conditions Traffic Volumes**
**Weekday MD Peak Hour**
**Figure 12-11A**



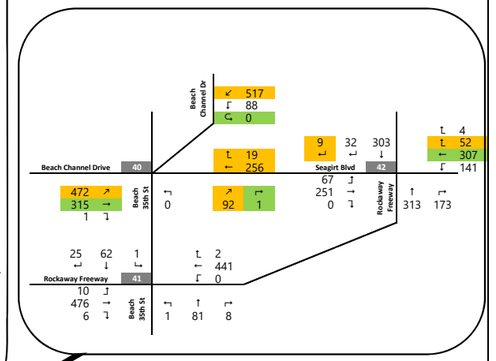

| Legend |
|---|
| To Nasby Pl |
| To Far Rockaway Blvd |

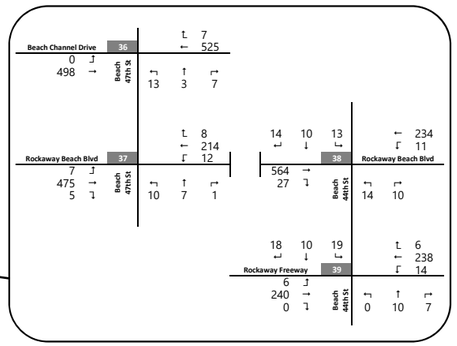
NOT TO SCALE

**Peninsula Hospital EIS**

**2034 No-Action Conditions Traffic Volumes**
**Weekday MD Peak Hour**
**Figure 12-11B**

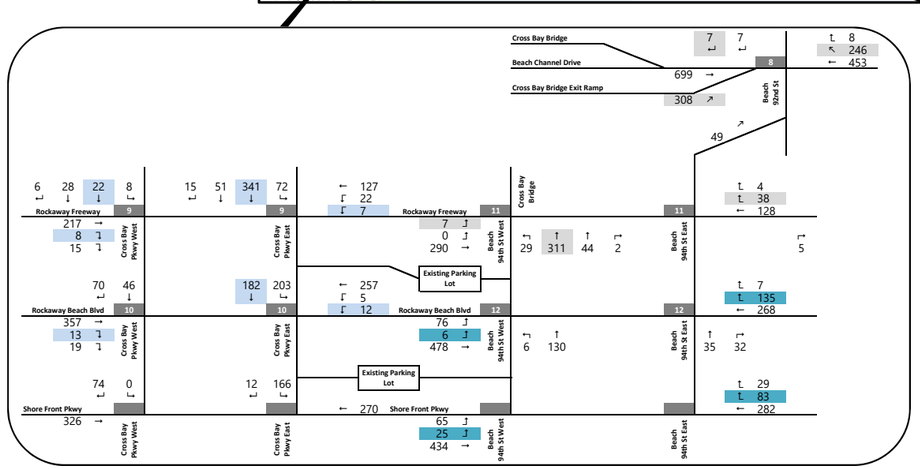


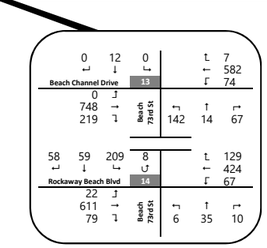



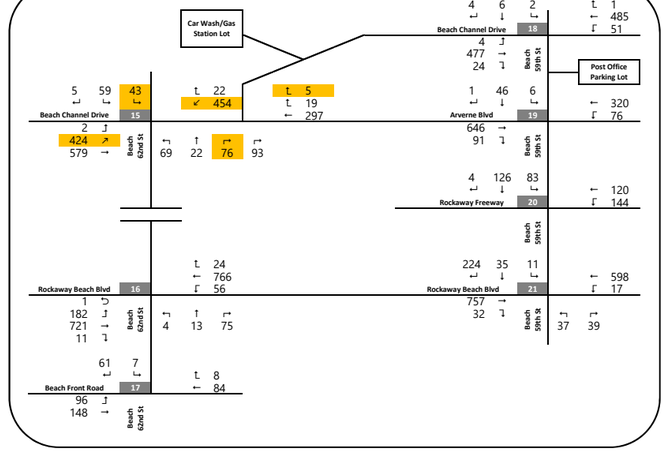







Legend
- To Cross Bay Parkway East
- To/From Beach Channel Drive
- To/From Cross Bay Bridge
- To/From Seagirt Blvd
- To/From Beach 94th St West

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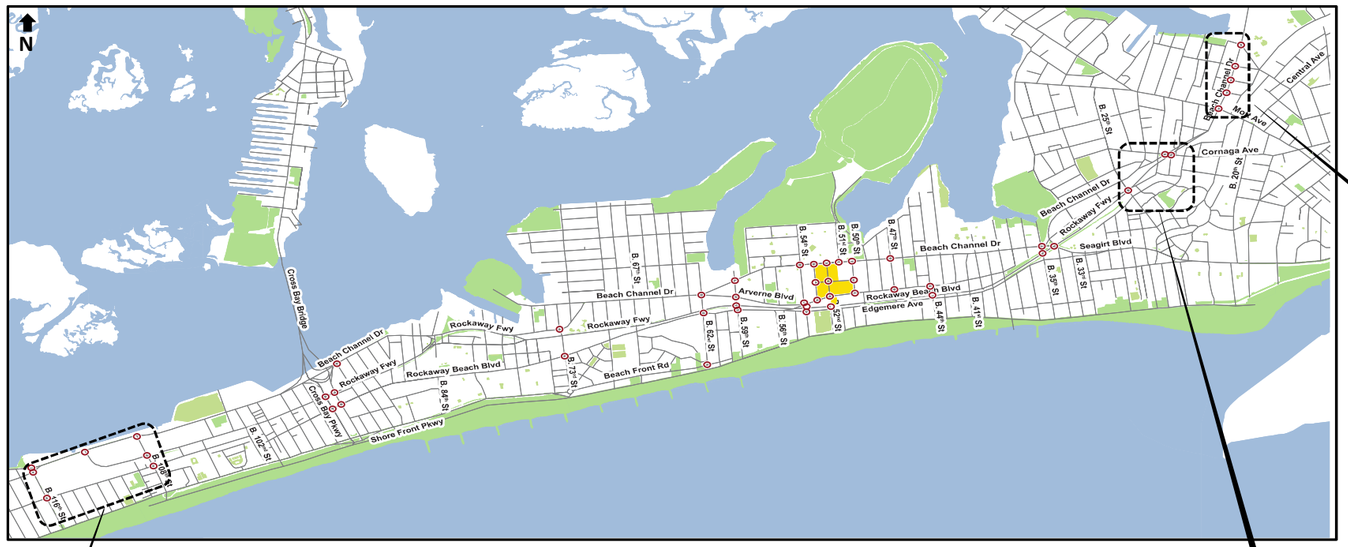
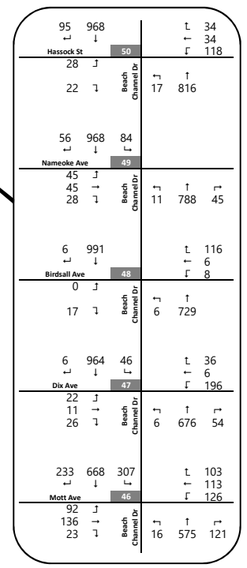
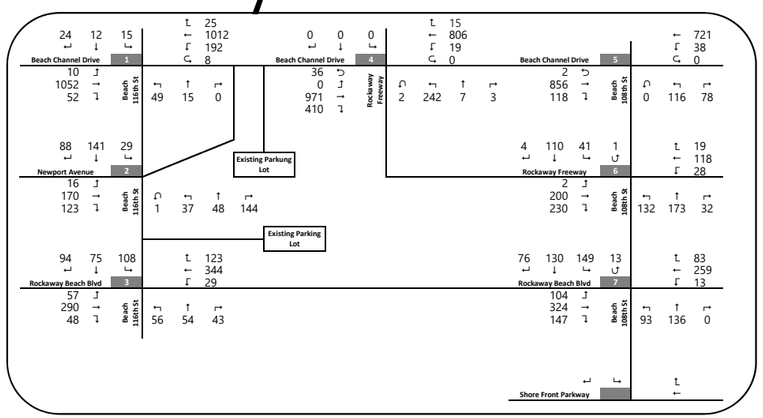
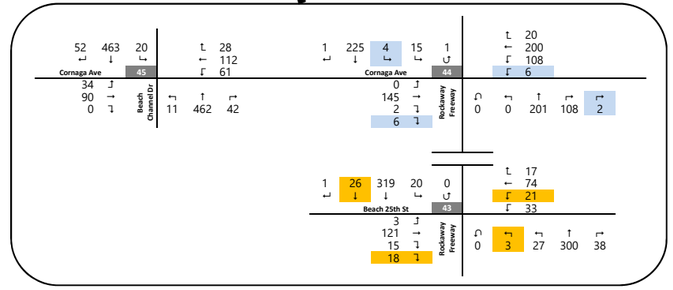
**Peninsula Hospital Site Redevelopment**

**2034 No-Action Conditions Traffic Volumes**
**Weekday PM Peak Hour**
**Figure 12-12A**



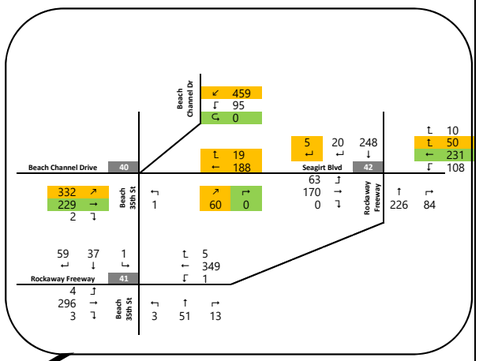

| Legend |
|---|
| To Nasby Pl |
| To Far Rockaway Blvd |

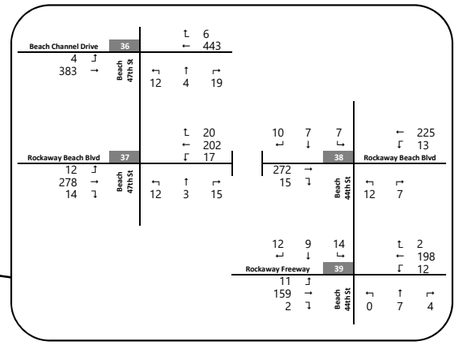
NOT TO SCALE

**Peninsula Hospital EIS**

**2034 No-Action Conditions Traffic Volumes**
**Weekday PM Peak Hour**
**Figure 12-12B**

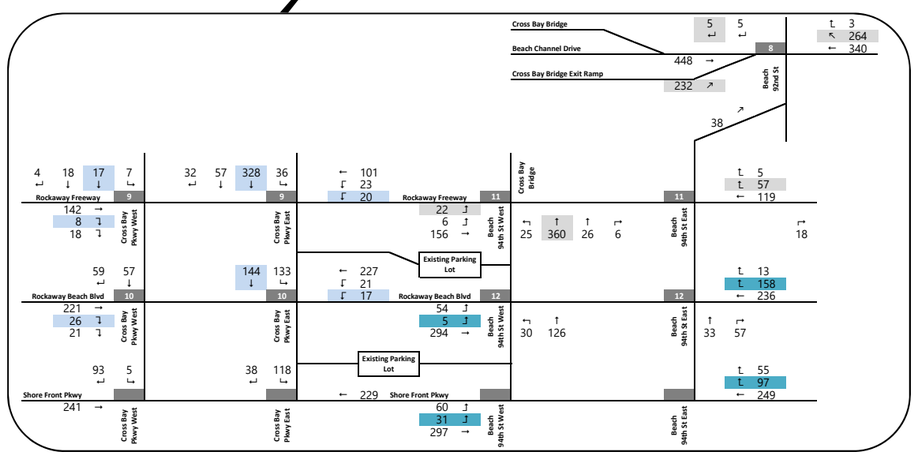


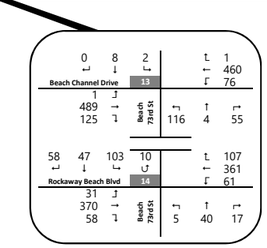



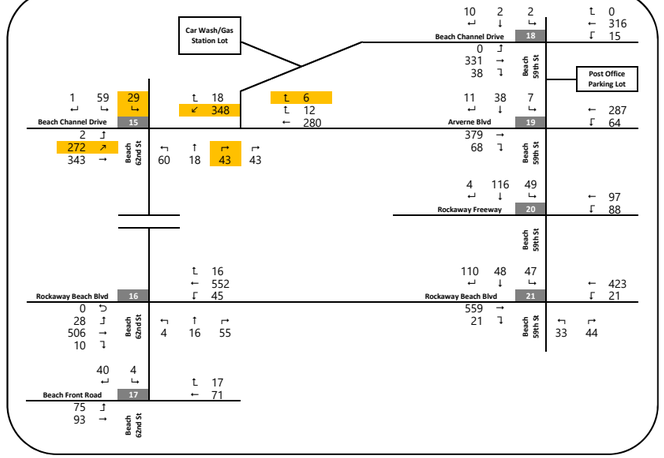






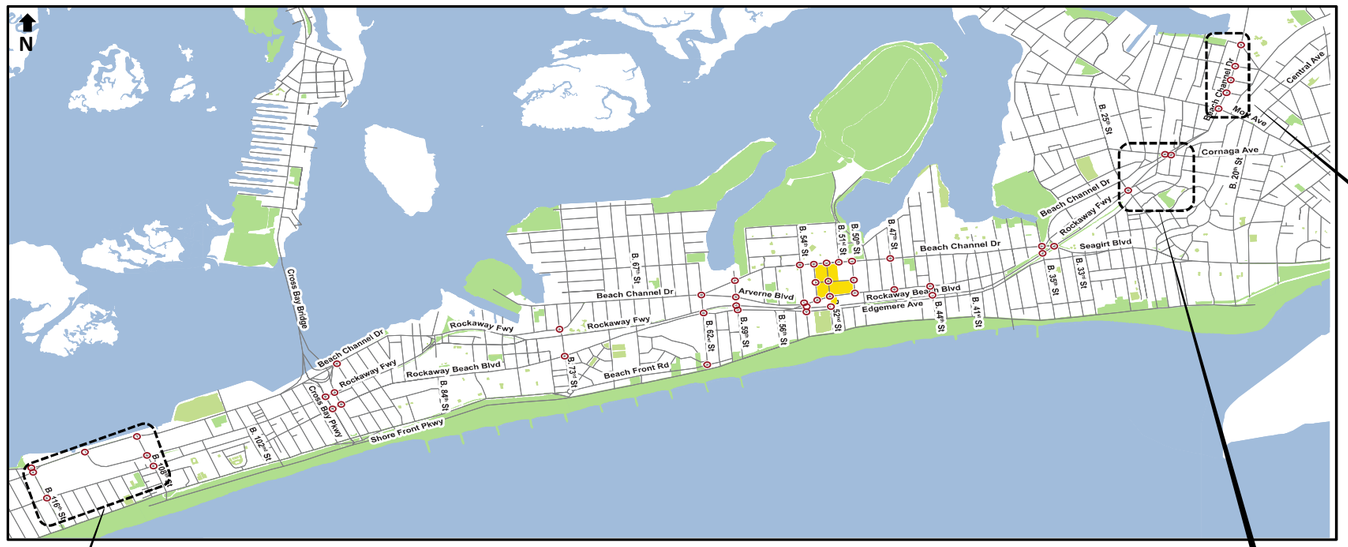

| Legend |
|---|
| To Cross Bay Parkway East |
| To/From Beach Channel Drive |
| To/From Cross Bay Bridge |
| To/From Seagirt Blvd |
| To/From Beach 94th St West |

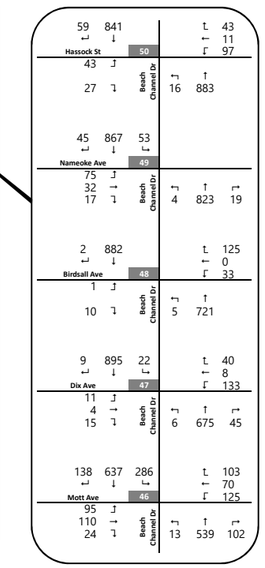


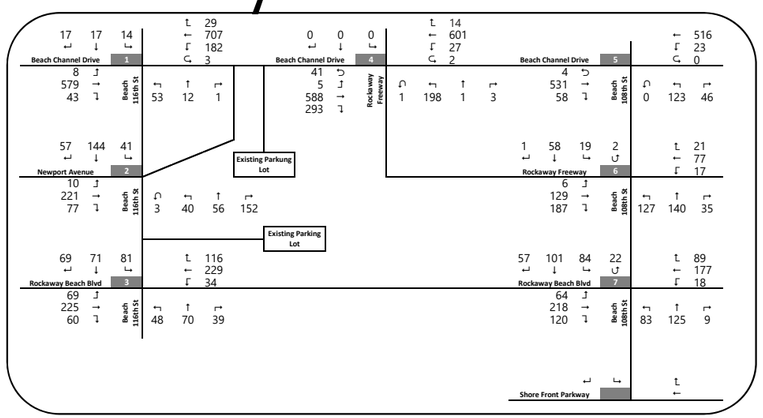

NOT TO SCALE

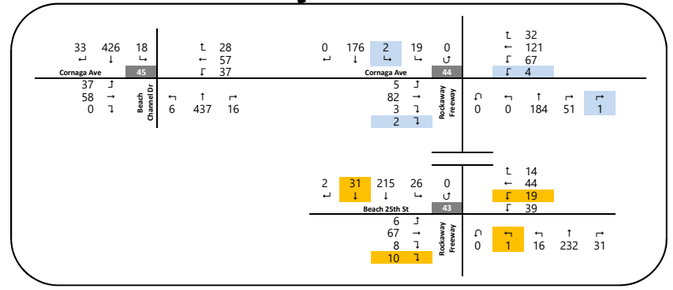
**Peninsula Hospital Site Redevelopment**

**2034 No-Action Conditions Traffic Volumes**
**Saturday MD Peak Hour**
**Figure 12-13A**




| Legend |
|---|
| To Nasby Pl |
| To Far Rockaway Blvd |

NOT TO SCALE

**Peninsula Hospital EIS**

**2034 No-Action Conditions Traffic Volumes**
**Saturday MD Peak Hour**
**Figure 12-13B**

## Table 12-26: 2034 No-Action Conditions Level of Service Analysis – Signalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | Weekday MD Peak Hour | | | | Weekday PM Peak Hour | | | | Saturday 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 | 0.68 | 31.3 | C | LTR | 0.56 | 28.4 | C | LTR | 0.94 | 48.0 | D | LTR | 0.57 | 28.6 | C |
| | Westbound | LTR | 1.44 | 230.9 | F | LTR | 1.00 | 54.6 | D | | | | | LTR | 0.89 | 33.8 | C |
| | | | | | | | | | | DefL | 1.07 | 116.2 | F | | | | |
| | | | | | | | | | | TR | 1.41 | 219.2 | F | | | | |
| | Northbound | LTR | 0.30 | 45.9 | D | LTR | 0.27 | 44.9 | D | LTR | 0.25 | 44.5 | D | LTR | 0.22 | 43.9 | D |
| | Southbound | LTR | 0.09 | 45.6 | D | LTR | 0.24 | 48.2 | D | LTR | 0.26 | 48.5 | D | LTR | 0.24 | 48.1 | D |
| | | Intersection | | 154.8 | F | Intersection | | 44.7 | D | Intersection | | 126.7 | F | Intersection | | 32.7 | C |
| 2 | **Newport Avenue and Beach 116th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.81 | 41.6 | D | LTR | 0.59 | 31.1 | C | LTR | 0.61 | 32.0 | C | LTR | 0.56 | 30.3 | C |
| | Northbound | LT | 0.35 | 47.1 | D | LT | 0.48 | 51.2 | D | LT | 0.43 | 49.6 | D | LT | 0.49 | 51.5 | D |
| | | R | 0.34 | 33.9 | C | R | 0.42 | 35.7 | D | R | 0.41 | 35.2 | D | R | 0.44 | 35.9 | D |
| | Southbound | LTR | 0.28 | 18.4 | B | LTR | 0.40 | 20.2 | C | LTR | 0.39 | 20.0 | C | LTR | 0.36 | 19.6 | B |
| | | Intersection | | 35.9 | D | Intersection | | 30.8 | C | Intersection | | 30.5 | C | Intersection | | 30.9 | C |
| 3 | **Rockaway Beach Boulevard and Beach 116th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.67 | 17.5 | B | LTR | 0.66 | 17.6 | B | LTR | 0.66 | 17.2 | B | LTR | 0.64 | 16.6 | B |
| | Westbound | LTR | 0.92 | 36.9 | D | LTR | 0.91 | 35.1 | D | LTR | 1.00 | 54.1 | D | LTR | 0.72 | 20.2 | C |
| | Northbound | L | 0.05 | 12.5 | B | L | 0.18 | 14.0 | B | L | 0.21 | 14.5 | B | L | 0.17 | 13.9 | B |
| | | TR | 0.13 | 13.3 | B | TR | 0.24 | 14.3 | B | TR | 0.28 | 14.9 | B | TR | 0.26 | 14.4 | B |
| | Southbound | L | 0.34 | 16.6 | B | L | 0.34 | 16.7 | B | L | 0.39 | 17.8 | B | L | 0.31 | 16.1 | B |
| | | TR | 0.16 | 13.6 | B | TR | 0.33 | 15.4 | B | TR | 0.43 | 17.1 | B | TR | 0.33 | 15.3 | B |
| | | Intersection | | 25.2 | C | Intersection | | 23.5 | C | Intersection | | 30.8 | C | Intersection | | 17.2 | B |
| 4 | **Beach Channel Drive and Rockaway Freeway** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 1.10 | 90.5 | F | LTR | 0.86 | 38.3 | D | LTR | 1.28 | 166.5 | F | LTR | 0.91 | 43.2 | D |
| | Westbound | LTR | 1.03 | 68.7 | E | LTR | 0.73 | 30.6 | C | LTR | 0.93 | 46.2 | D | LTR | 0.66 | 28.3 | C |
| | Northbound | LT | 0.60 | 27.7 | C | LT | 0.30 | 21.4 | C | LT | 0.35 | 22.2 | C | LT | 0.28 | 21.0 | C |
| | | R | 0.01 | 17.8 | B | R | 0.00 | 17.6 | B | R | 0.01 | 17.7 | B | R | 0.01 | 17.7 | B |
| | | Intersection | | 70.5 | E | Intersection | | 33.1 | C | Intersection | | 106.9 | F | Intersection | | 35.0 | C |
| 5 | **Beach Channel Drive and Beach 108th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | TR | 0.80 | 26.7 | C | TR | 0.51 | 19.5 | B | TR | 0.80 | 26.6 | C | TR | 0.53 | 19.6 | B |
| | Westbound | LT | 1.16 | 111.0 | F | LT | 0.73 | 25.2 | C | LT | 0.82 | 29.1 | C | LT | 0.47 | 18.9 | B |
| | Northbound | L | 0.50 | 20.1 | C | L | 0.23 | 16.2 | B | L | 0.17 | 15.5 | B | L | 0.19 | 15.7 | B |
| | | R | 0.21 | 16.3 | B | R | 0.14 | 15.4 | B | R | 0.16 | 15.5 | B | R | 0.08 | 14.7 | B |
| | | Intersection | | 55.7 | E | Intersection | | 21.5 | C | Intersection | | 26.4 | C | Intersection | | 18.8 | B |
| 6 | **Rockaway Freeway and Beach 108th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.15 | 15.1 | B | LTR | 0.20 | 15.6 | B | LTR | 0.31 | 16.7 | B | LTR | 0.25 | 16.0 | B |
| | Westbound | LTR | 0.33 | 16.9 | B | LTR | 0.14 | 15.0 | B | LTR | 0.17 | 15.3 | B | LTR | 0.11 | 14.8 | B |
| | Northbound | L | 0.51 | 21.8 | C | L | 0.18 | 15.9 | B | L | 0.29 | 17.4 | B | L | 0.25 | 16.7 | B |
| | | TR | 0.33 | 16.9 | B | TR | 0.18 | 15.4 | B | TR | 0.18 | 15.4 | B | TR | 0.16 | 15.2 | B |
| | Southbound | LTR | 0.35 | 18.1 | B | LTR | 0.26 | 16.8 | B | LTR | 0.31 | 17.3 | B | LTR | 0.17 | 15.6 | B |
| | | Intersection | | 17.7 | B | Intersection | | 15.7 | B | Intersection | | 16.4 | B | Intersection | | 15.7 | B |
| 7 | **Rockaway Beach Boulevard and Beach 108th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.95 | 81.6 | F | L | 0.26 | 17.6 | B | L | 0.42 | 21.5 | C | L | 0.21 | 16.6 | B |
| | | TR | 0.79 | 30.9 | C | TR | 0.64 | 24.1 | C | TR | 0.84 | 33.7 | C | TR | 0.60 | 22.7 | C |
| | Westbound | L | 0.09 | 15.2 | B | L | 0.07 | 14.8 | B | L | 0.09 | 15.3 | B | L | 0.07 | 14.8 | B |
| | | TR | 0.94 | 48.1 | D | TR | 0.51 | 20.9 | C | TR | 0.64 | 24.1 | C | TR | 0.48 | 20.2 | C |
| | Northbound | L | 0.40 | 20.2 | C | L | 0.34 | 18.6 | B | L | 0.31 | 18.2 | B | L | 0.24 | 16.8 | B |
| | | TR | 0.41 | 18.7 | B | TR | 0.22 | 16.0 | B | TR | 0.20 | 15.8 | B | TR | 0.22 | 16.1 | B |
| | Southbound | L | 0.27 | 18.2 | B | L | 0.25 | 17.1 | B | L | 0.46 | 21.0 | C | L | 0.31 | 18.1 | B |
| | | TR | 0.43 | 19.2 | B | TR | 0.33 | 17.7 | B | TR | 0.36 | 17.9 | B | LTR | 0.28 | 16.9 | B |
| | | Intersection | | 34.9 | C | Intersection | | 20.1 | C | Intersection | | 24.6 | C | Intersection | | 19.3 | B |
| 8[1] | **Beach Channel Drive and Beach 92nd Street/Beach 94th Street** | | | | | | | | | | | | | | | | |
| | Eastbound (Beach Channel Drive) | T | 0.61 | 26.1 | C | T | 0.89 | 42.2 | D | T | 1.06 | 79.6 | E | T | 0.77 | 32.1 | C |
| | Eastbound (Cross Bay Bridge Off-Ramp/Beach 94th St) | T | 0.42 | 33.5 | C | T | 0.44 | 33.7 | C | T | 0.54 | 35.3 | D | T | 0.47 | 34.2 | C |
| | Westbound | TR | 1.57 | 292.5 | F | TR | 1.23 | 143.6 | F | TR | 1.29 | 171.4 | F | TR | 1.13 | 103.6 | F |
| | Northbound | R | 0.02 | 25.9 | C | R | 0.04 | 26.2 | C | R | 0.06 | 26.4 | C | R | 0.06 | 26.3 | C |
| | Southbound | R | 0.00 | 25.7 | C | R | 0.00 | 25.7 | C | R | 0.04 | 26.1 | C | R | 0.03 | 26.0 | C |
| | | Intersection | | 183.3 | F | Intersection | | 86.0 | F | Intersection | | 105.9 | F | Intersection | | 64.4 | E |
| 9 | **Rockaway Freeway and Cross Bay Parkway** | | | | | | | | | | | | | | | | |
| | Eastbound | TR | 0.27 | 20.4 | C | TR | 0.31 | 20.9 | C | TR | 0.37 | 21.8 | C | TR | 0.31 | 20.9 | C |
| | Westbound | L | 0.01 | 35.7 | D | L | 0.05 | 36.2 | D | L | 0.05 | 36.2 | D | L | 0.13 | 37.6 | D |
| | | T | 0.21 | 11.0 | B | T | 0.17 | 10.6 | B | T | 0.18 | 10.7 | B | T | 0.16 | 10.5 | B |
| | Southbound (Cross Bay Bridge Off-Ramp) | LTR | 0.20 | 21.2 | C | LTR | 0.37 | 23.0 | C | LTR | 0.45 | 24.2 | C | LTR | 0.47 | 24.4 | C |
| | Southbound (Beach Channel Drive Off-Ramp) | LTR | 0.08 | 20.1 | C | LTR | 0.08 | 20.1 | C | LTR | 0.14 | 20.8 | C | LTR | 0.10 | 20.3 | C |
| | | Intersection | | 17.7 | B | Intersection | | 20.1 | C | Intersection | | 21.3 | C | Intersection | | 21.6 | C |
| 10 | **Rockaway Beach Boulevard and Cross Bay Parkway** | | | | | | | | | | | | | | | | |
| | Eastbound | TR | 0.40 | 10.9 | B | TR | 0.50 | 12.2 | B | TR | 0.67 | 15.8 | B | TR | 0.50 | 12.1 | B |
| | Westbound | LT | 0.38 | 10.1 | B | LT | 0.44 | 10.7 | B | LT | 0.40 | 10.2 | B | LT | 0.35 | 9.6 | A |
| | Southbound (Cross Bay Bridge Off-Ramp) | LT | 0.18 | 15.2 | B | LT | 0.33 | 16.5 | B | LT | 0.43 | 17.5 | B | LT | 0.34 | 16.7 | B |
| | Southbound (Beach Channel Drive Off-Ramp) | TR | 0.21 | 16.2 | B | TR | 0.27 | 16.8 | B | TR | 0.31 | 17.3 | B | TR | 0.30 | 17.1 | B |
| | | Intersection | | 12.1 | B | Intersection | | 13.4 | B | Intersection | | 15.2 | B | Intersection | | 13.3 | B |
| 11[2] | **Rockaway Freeway and Beach 94th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.13 | 37.7 | D | L | 0.11 | 37.7 | D | L | 0.05 | 36.2 | D | L | 0.14 | 37.6 | D |
| | | T | 0.17 | 10.7 | B | T | 0.21 | 11.1 | B | T | 0.32 | 12.1 | B | T | 0.22 | 11.1 | B |
| | Westbound | TR | 0.43 | 22.8 | C | TR | 0.37 | 21.9 | C | TR | 0.28 | 20.5 | C | TR | 0.34 | 21.3 | C |
| | Northbound (Cross Bay Bridge On-Ramp) | LTR | 0.37 | 23.0 | C | LTR | 0.26 | 21.7 | C | LTR | 0.35 | 22.8 | C | LTR | 0.40 | 23.4 | C |
| | | Intersection | | 20.9 | C | Intersection | | 19.1 | B | Intersection | | 18.7 | B | Intersection | | 20.1 | C |

**Notes:** L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recroded 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 12-26 (continued): 2034 No-Action Conditions Level of Service Analysis – Signalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | Weekday MD Peak Hour | | | | Weekday PM Peak Hour | | | | Saturday 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 |
| | **Rockaway Beach Boulevard and Beach 94th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.40 | 10.3 | B | LT | 0.47 | 11.0 | B | LT | 0.73 | 16.6 | B | LT | 0.45 | 10.8 | B |
| 12 | Westbound | TR | 0.81 | 21.4 | C | TR | 0.62 | 14.2 | B | TR | 0.59 | 13.4 | B | TR | 0.60 | 13.9 | B |
| | Northbound (Cross Bay Bridge On-Ramp) | LT | 0.35 | 17.6 | B | LT | 0.28 | 16.6 | B | LT | 0.31 | 17.0 | B | LT | 0.34 | 17.4 | B |
| | Northbound (Beach Channel Drive On-Ramp) | TR | 0.08 | 14.7 | B | TR | 0.20 | 16.0 | B | TR | 0.17 | 15.6 | B | TR | 0.28 | 17.2 | B |
| | | Intersection | | 17.3 | B | Intersection | | 13.5 | B | Intersection | | 15.5 | B | Intersection | | 13.6 | B |
| | **Beach Channel Drive and Beach 73rd Street** | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.00 | 9.3 | A | L | 0.00 | 9.4 | A | L | 0.00 | 9.3 | A | L | 0.00 | 9.4 | A |
| | | T | 0.45 | 13.8 | B | T | 0.52 | 14.9 | B | T | 0.69 | 18.4 | B | T | 0.46 | 13.8 | B |
| 13 [2] | Westbound | L | 0.35 | 14.5 | B | L | 0.35 | 14.9 | B | L | 0.59 | 29.5 | C | L | 0.28 | 13.3 | B |
| | | TR | 0.95 | 40.8 | D | TR | 0.91 | 35.1 | D | TR | 0.91 | 35.3 | D | TR | 0.65 | 18.4 | B |
| | Northbound | LT | 0.44 | 25.5 | C | LT | 0.25 | 22.3 | C | LT | 0.33 | 23.5 | C | LT | 0.25 | 22.2 | C |
| | Southbound | LTR | 0.04 | 19.7 | B | LTR | 0.03 | 19.6 | B | LTR | 0.04 | 19.7 | B | LTR | 0.02 | 19.6 | B |
| | | Intersection | | 28.2 | C | Intersection | | 24.9 | C | Intersection | | 26.2 | C | Intersection | | 16.5 | B |
| | **Rockaway Beach Boulevard and Beach 73rd Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.37 | 9.7 | A | LT | 0.33 | 9.4 | A | LT | 0.63 | 13.8 | B | LT | 0.42 | 10.4 | B |
| | | R | 0.10 | 7.5 | A | R | 0.11 | 7.6 | A | R | 0.13 | 7.7 | A | R | 0.09 | 7.4 | A |
| | Westbound | L | 0.10 | 7.7 | A | L | 0.10 | 7.6 | A | L | 0.23 | 9.6 | A | L | 0.16 | 8.3 | A |
| | | T | 0.57 | 12.7 | B | T | 0.34 | 9.4 | A | T | 0.47 | 11.1 | B | T | 0.38 | 9.9 | A |
| 14 | | R | 0.24 | 8.7 | B | R | 0.15 | 7.9 | A | R | 0.19 | 8.3 | B | R | 0.17 | 8.0 | A |
| | Northbound | LT | 0.10 | 24.6 | C | LT | 0.09 | 24.4 | C | LT | 0.12 | 24.9 | C | LT | 0.12 | 24.9 | C |
| | | R | 0.02 | 23.8 | C | R | 0.04 | 23.9 | C | R | 0.04 | 23.9 | C | R | 0.07 | 24.3 | C |
| | Southbound | L | 0.40 | 30.0 | C | L | 0.38 | 29.5 | C | L | 0.71 | 40.7 | D | L | 0.36 | 29.1 | C |
| | | TR | 0.44 | 31.2 | C | TR | 0.34 | 28.6 | C | TR | 0.41 | 29.9 | C | TR | 0.35 | 28.5 | C |
| | | Intersection | | 14.5 | B | Intersection | | 13.4 | B | Intersection | | 17.1 | B | Intersection | | 13.6 | B |
| | **Beach Channel Drive/Arverne Boulevard and Beach 62nd Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 1.18 | 127.1 | F | LT | 1.28 | 167.2 | F | LT | 1.76 | 377.0 | F | LT | 1.13 | 104.1 | F |
| | Westbound (Beach Channel Drive) | T | 1.37 | 208.2 | F | T | 0.74 | 31.3 | C | T | 0.79 | 33.1 | C | T | 0.57 | 24.9 | C |
| | Westbound (Arverne Blvd) | LR | 1.52 | 289.2 | F | LR | 1.11 | 116.5 | F | | | | | LR | 0.95 | 69.5 | E |
| 15 | | | | | | | | | | L | 0.99 | 78.2 | E | | | | |
| | | | | | | | | | | R | 0.02 | 27.4 | C | | | | |
| | Northbound | LTR | 0.68 | 41.3 | D | LTR | 0.31 | 30.7 | C | LTR | 0.55 | 34.8 | C | LTR | 0.32 | 30.7 | C |
| | Southbound | L | 0.80 | 61.8 | E | L | 0.41 | 35.8 | D | L | 0.66 | 48.4 | D | L | 0.40 | 34.8 | C |
| | | R | 0.02 | 27.5 | C | R | 0.04 | 27.8 | C | R | 0.02 | 27.5 | C | R | 0.00 | 27.3 | C |
| | | Intersection | | 165.4 | F | Intersection | | 105.6 | F | Intersection | | 199.9 | F | Intersection | | 66.6 | E |
| | **Rockaway Beach Boulevard and Beach 62nd Street** | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.25 | 26.7 | C | L | 0.09 | 24.4 | C | L | 0.49 | 31.3 | C | L | 0.08 | 24.3 | C |
| 16 | | TR | 0.45 | 9.0 | A | TR | 0.56 | 10.5 | B | TR | 0.79 | 17.5 | B | TR | 0.55 | 10.3 | B |
| | Westbound | LTR | 0.84 | 37.4 | D | LTR | 0.99 | 61.2 | E | LTR | 1.66 | 333.6 | F | LTR | 0.82 | 36.8 | D |
| | Northbound | LTR | 0.31 | 31.2 | C | LTR | 0.42 | 33.8 | C | LTR | 0.37 | 32.2 | C | LTR | 0.27 | 30.2 | C |
| | | Intersection | | 27.2 | C | Intersection | | 37.6 | D | Intersection | | 168.8 | F | Intersection | | 24.9 | C |
| | **Beach Channel Drive and Beach 59th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.46 | 14.2 | B | LT | 0.41 | 13.4 | B | LT | 0.53 | 15.2 | B | LT | 0.38 | 12.9 | B |
| 18 | | R | 0.02 | 9.5 | A | R | 0.03 | 9.6 | A | R | 0.05 | 9.7 | A | R | 0.07 | 9.9 | A |
| | Westbound | LTR | 0.68 | 19.2 | B | LTR | 0.60 | 17.0 | B | LTR | 0.77 | 23.1 | C | LTR | 0.36 | 12.6 | B |
| | Southbound | LTR | 0.02 | 19.6 | B | LTR | 0.02 | 19.5 | B | LTR | 0.02 | 19.5 | B | LTR | 0.02 | 19.6 | B |
| | | Intersection | | 17.1 | B | Intersection | | 15.5 | B | Intersection | | 19.3 | B | Intersection | | 12.7 | B |
| | **Arverne Boulevard and Beach 59th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | TR | 0.70 | 15.7 | B | TR | 0.62 | 13.9 | B | TR | 0.86 | 23.2 | C | TR | 0.59 | 13.0 | B |
| 19 | Westbound | LT | 0.95 | 41.7 | D | LT | 0.67 | 15.7 | B | LT | 0.98 | 50.8 | D | LT | 0.58 | 13.2 | B |
| | Southbound | LTR | 0.15 | 15.3 | B | LTR | 0.14 | 15.2 | B | LTR | 0.13 | 15.1 | B | LTR | 0.15 | 15.4 | B |
| | | Intersection | | 27.2 | C | Intersection | | 14.8 | B | Intersection | | 33.0 | C | Intersection | | 13.2 | B |
| | **Rockaway Freeway and Beach 59th Street** | | | | | | | | | | | | | | | | |
| | Westbound | L | 1.13 | 145.8 | F | L | 0.59 | 50.9 | D | L | 1.00 | 107.5 | F | L | 0.57 | 50.1 | D |
| 20 | | T | 0.11 | 8.7 | A | T | 0.09 | 8.6 | A | T | 0.13 | 8.9 | A | T | 0.11 | 8.7 | A |
| | Southbound | LTR | 0.59 | 31.5 | C | LTR | 0.38 | 26.5 | C | LTR | 0.56 | 30.7 | C | LTR | 0.42 | 27.3 | C |
| | | Intersection | | 65.8 | E | Intersection | | 28.8 | C | Intersection | | 48.8 | D | Intersection | | 27.8 | C |
| | **Rockaway Beach Boulevard and Beach 59th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | TR | 0.94 | 47.9 | D | TR | 1.13 | 105.2 | F | TR | 1.35 | 194.6 | F | TR | 0.97 | 55.2 | E |
| 21 | Westbound | LT | 0.93 | 45.2 | D | LT | 0.81 | 34.4 | C | LT | 1.19 | 129.7 | F | LT | 0.80 | 33.5 | C |
| | Northbound | LR | 0.42 | 29.5 | C | LR | 0.24 | 24.8 | C | LR | 0.29 | 25.8 | C | LR | 0.28 | 25.5 | C |
| | Southbound | LTR | 0.67 | 23.3 | C | LTR | 0.31 | 15.6 | B | LTR | 0.42 | 17.0 | B | LTR | 0.31 | 15.5 | B |
| | | Intersection | | 39.9 | D | Intersection | | 64.5 | E | Intersection | | 136.0 | F | Intersection | | 39.4 | D |
| | **Beach Channel Drive and Beach 54th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | T | 0.46 | 14.2 | B | T | 0.48 | 14.4 | B | T | 0.53 | 15.2 | B | T | 0.41 | 13.2 | B |
| | | R | 0.01 | 9.5 | A | R | 0.01 | 9.4 | A | R | 0.03 | 9.6 | A | R | 0.03 | 9.6 | A |
| 22 | Westbound | LT | 0.75 | 22.8 | C | LT | 0.63 | 18.4 | B | LT | 0.70 | 20.6 | C | LT | 0.60 | 17.3 | B |
| | Northbound | LR | 0.19 | 22.1 | C | LR | 0.33 | 25.2 | C | LR | 0.26 | 23.4 | C | LR | 0.18 | 21.8 | C |
| | Southbound | LTR | 0.32 | 23.4 | C | LTR | 0.34 | 23.8 | C | LTR | 0.29 | 23.1 | C | LTR | 0.25 | 22.3 | C |
| | | Intersection | | 19.8 | B | Intersection | | 18.1 | B | Intersection | | 18.7 | B | Intersection | | 16.5 | B |

**Notes:** L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recroded 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 12-26 (continued): 2034 No-Action Conditions Level of Service Analysis – Signalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | Weekday MD Peak Hour | | | | Weekday PM Peak Hour | | | | Saturday 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 |
| 23 | **Arverne Boulevard and Beach 54th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.71 | 28.5 | C | LTR | 0.81 | 34.7 | C | LTR | 1.11 | 96.6 | F | LTR | 0.73 | 29.0 | C |
| | Westbound | LTR | 0.60 | 24.9 | C | LTR | 0.43 | 21.3 | C | LTR | 0.62 | 26.5 | C | LTR | 0.49 | 22.6 | C |
| | Northbound | LTR | 0.34 | 15.9 | B | LTR | 0.58 | 20.7 | C | LTR | 0.52 | 18.8 | B | LTR | 0.41 | 17.0 | B |
| | Southbound | LTR | 0.16 | 23.2 | C | LTR | 0.22 | 24.1 | C | LTR | 0.19 | 23.6 | C | LTR | 0.15 | 23.1 | C |
| | | Intersection | | 24.3 | C | Intersection | | 26.8 | C | Intersection | | 59.0 | E | Intersection | | 24.0 | C |
| 24 | **Rockaway Freeway and Beach 54th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.07 | 16.2 | B | LTR | 0.05 | 16.1 | B | LTR | 0.10 | 16.6 | B | LTR | 0.09 | 16.4 | B |
| | Westbound | L | 0.21 | 38.8 | D | L | 0.03 | 36.0 | D | L | 0.23 | 39.2 | D | L | 0.05 | 36.2 | D |
| | | TR | 0.30 | 10.4 | B | TR | 0.21 | 9.5 | A | TR | 0.31 | 10.6 | B | TR | 0.23 | 9.7 | A |
| | Northbound | LTR | 0.44 | 27.0 | C | LTR | 0.62 | 31.0 | C | LTR | 0.66 | 32.0 | C | LTR | 0.50 | 28.2 | C |
| | Southbound | LTR | 0.43 | 26.9 | C | LTR | 0.68 | 33.3 | C | LTR | 0.61 | 30.8 | C | LTR | 0.52 | 28.7 | C |
| | | Intersection | | 21.2 | C | Intersection | | 26.8 | C | Intersection | | 25.2 | C | Intersection | | 22.7 | C |
| 25 | **Edgemere Avenue and Beach 54th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 1.85 | 420.1 | F | LTR | 2.55 | 732.7 | F | LTR | 8.79 | 3549.0 | F | LTR | 2.21 | 581.5 | F |
| | Westbound | LTR | 0.90 | 39.8 | D | LTR | 1.05 | 73.9 | E | LTR | 1.26 | 153.0 | F | LTR | 0.81 | 31.8 | 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 | 0.34 | 15.8 | B | LTR | 1.27 | 169.8 | F | LTR | 1.26 | 165.5 | F | LTR | 1.02 | 84.4 | F |
| | | Intersection | | 194.0 | F | Intersection | | 356.6 | F | Intersection | | 1555.0 | F | Intersection | | 281.9 | F |
| 29 | **Beach Channel Drive and Beach 51st Street** | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.18 | 11.7 | B | L | 0.19 | 11.7 | B | L | 0.08 | 10.3 | B | L | 0.07 | 10.0 | B |
| | | TR | 0.69 | 20.5 | C | TR | 0.65 | 18.9 | B | TR | 0.74 | 22.1 | C | TR | 0.55 | 16.1 | B |
| | Westbound | LT | 0.62 | 17.6 | B | LT | 0.60 | 16.9 | B | LT | 0.57 | 16.2 | B | LT | 0.47 | 14.3 | B |
| | | R | 0.07 | 9.9 | B | R | 0.04 | 9.7 | B | R | 0.05 | 9.7 | B | R | 0.02 | 9.5 | B |
| | Northbound | LTR | 0.01 | 19.5 | B | LTR | 0.03 | 19.7 | B | LTR | 0.02 | 19.6 | B | LTR | 0.03 | 19.6 | B |
| | | Intersection | | 18.2 | B | Intersection | | 17.3 | B | Intersection | | 18.8 | B | Intersection | | 15.0 | B |
| 39 | **Rockaway Freeway and Beach 44th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.06 | 36.4 | D | L | 0.04 | 36.1 | D | L | 0.04 | 36.1 | D | L | 0.07 | 36.6 | D |
| | | TR | 0.37 | 19.7 | B | TR | 0.16 | 17.1 | B | TR | 0.37 | 19.8 | B | TR | 0.23 | 17.9 | B |
| | Westbound | L | 0.02 | 10.4 | B | L | 0.01 | 8.1 | A | L | 0.03 | 10.7 | B | L | 0.02 | 8.6 | A |
| | | TR | 0.34 | 19.3 | B | TR | 0.23 | 18.0 | B | TR | 0.36 | 19.6 | B | TR | 0.28 | 18.5 | B |
| | Northbound | LTR | 0.03 | 21.7 | C | LTR | 0.03 | 21.7 | C | LTR | 0.04 | 21.8 | C | LTR | 0.02 | 21.6 | C |
| | Southbound | LTR | 0.12 | 22.9 | C | LTR | 0.11 | 22.8 | C | LTR | 0.17 | 23.7 | C | LTR | 0.11 | 22.6 | C |
| | | Intersection | | 19.9 | B | Intersection | | 18.5 | B | Intersection | | 20.0 | C | Intersection | | 18.9 | B |
| 40[2,3] | **Beach Channel Drive/Seagirt Boulevard and Beach 35th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.61 | 19.3 | B | LTR | 0.57 | 18.1 | B | LTR | 0.88dl | 22.7 | C | LTR | 0.50 | 16.1 | B |
| | Westbound | LT | 0.65 | 16.4 | B | LT | 0.50 | 15.1 | B | LT | 0.63 | 20.7 | C | LT | 0.46 | 12.7 | B |
| | Southbound | LT | 0.16 | 22.0 | C | LT | 0.20 | 22.4 | C | LT | 0.17 | 22.1 | C | LT | 0.18 | 22.3 | C |
| | | R | 0.59 | 10.3 | B | R | 0.64 | 11.6 | B | R | 0.70 | 12.5 | B | R | 0.62 | 10.6 | B |
| | Northbound | LTR | 0.13 | 17.3 | B | LTR | 0.22 | 11.7 | B | LTR | 0.19 | 12.9 | B | LTR | 0.12 | 11.6 | B |
| | | Intersection | | 20.1 | C | Intersection | | 19.4 | B | Intersection | | 22.0 | C | Intersection | | 18.3 | B |
| 41[3] | **Rockaway Freeway and Beach 35th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.07 | 35.2 | D | L | 0.05 | 34.9 | C | L | 0.06 | 34.9 | C | L | 0.02 | 34.2 | C |
| | | TR | 0.54 | 22.1 | C | TR | 0.38 | 19.0 | B | TR | 0.69 | 26.3 | C | TR | 0.40 | 19.2 | B |
| | Westbound | L | 0.01 | 40.5 | D | L | 0.00 | 0.0 | - | L | 0.00 | 0.0 | - | L | 0.00 | 49.0 | D |
| | | TR | 0.61 | 10.2 | B | TR | 0.47 | 6.9 | A | TR | 0.58 | 9.1 | A | TR | 0.49 | 8.6 | A |
| | Southbound | LTR | 0.27 | 8.9 | A | LTR | 0.36 | 10.1 | B | LTR | 0.25 | 8.2 | A | LTR | 0.31 | 10.3 | B |
| | Northbound | LTR | 0.16 | 26.7 | C | LTR | 0.32 | 29.1 | C | LTR | 0.26 | 28.0 | C | LTR | 0.20 | 27.1 | C |
| | | Intersection | | 16.0 | B | Intersection | | 14.5 | B | Intersection | | 18.6 | B | Intersection | | 14.3 | B |
| 42[3] | **Rockaway Freeway and Seagirt Boulevard** | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.19 | 38.8 | D | L | 0.16 | 38.3 | D | L | 0.21 | 38.3 | D | L | 0.20 | 41.0 | D |
| | | TR | 0.23 | 42.3 | D | TR | 0.28 | 62.1 | E | TR | 0.24 | 84.8 | F | TR | 0.17 | 24.9 | C |
| | Westbound | LTR | 0.62 | 34.1 | C | LTR | 0.51 | 32.1 | C | LTR | 0.71 | 37.1 | D | LTR | 0.56 | 32.9 | C |
| | Southbound | TR | 0.55 | 26.7 | C | TR | 0.56 | 27.0 | C | TR | 0.65 | 29.8 | C | TR | 0.46 | 24.7 | C |
| | Northbound | TR | 0.63 | 12.2 | B | TR | 0.54 | 13.5 | B | TR | 0.94 | 34.5 | C | TR | 0.50 | 12.1 | B |
| | | Intersection | | 28.1 | C | Intersection | | 32.4 | C | Intersection | | 41.4 | D | Intersection | | 25.4 | C |
| 43 | **Rockaway Freeway and Beach 25th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.59 | 30.9 | C | LTR | 0.24 | 24.1 | C | LTR | 0.34 | 25.5 | C | LTR | 0.19 | 23.4 | C |
| | Westbound | LTR | 0.62 | 33.5 | C | LTR | 0.33 | 25.6 | C | LTR | 0.36 | 26.2 | C | LTR | 0.27 | 24.7 | C |
| | Northbound | L | 0.20 | 37.6 | D | L | 0.17 | 37.1 | D | L | 0.18 | 37.3 | D | L | 0.10 | 36.0 | D |
| | | TR | 0.57 | 24.3 | C | TR | 0.58 | 24.5 | C | TR | 0.54 | 23.8 | C | TR | 0.42 | 21.3 | C |
| | Southbound | L | 0.17 | 37.2 | D | L | 0.13 | 36.6 | D | L | 0.11 | 36.2 | D | L | 0.16 | 36.9 | D |
| | | TR | 0.63 | 25.4 | C | TR | 0.45 | 21.6 | C | TR | 0.44 | 21.4 | C | TR | 0.34 | 19.9 | B |
| | | Intersection | | 28.1 | C | Intersection | | 24.4 | C | Intersection | | 24.3 | C | Intersection | | 22.5 | C |
| 44 | **Rockaway Freeway and Cornaga Avenue** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.35 | 21.3 | C | LTR | 0.18 | 19.3 | B | LTR | 0.22 | 19.0 | B | LTR | 0.15 | 18.9 | B |
| | Westbound | LTR | 0.98 | 67.8 | E | LTR | 0.71 | 32.8 | C | LTR | 0.86 | 44.4 | D | LTR | 0.53 | 25.8 | C |
| | Northbound | TR | 0.72 | 34.3 | C | TR | 0.59 | 29.8 | C | TR | 0.64 | 32.6 | C | TR | 0.46 | 26.9 | C |
| | Southbound | L | 0.08 | 36.7 | D | L | 0.12 | 37.4 | D | L | 0.13 | 37.6 | D | L | 0.14 | 37.6 | D |
| | | TR | 0.32 | 14.9 | B | TR | 0.27 | 14.3 | B | TR | 0.32 | 15.4 | B | TR | 0.24 | 14.0 | B |
| | | Intersection | | 37.8 | D | Intersection | | 26.2 | C | Intersection | | 30.5 | C | Intersection | | 22.7 | C |

**Notes:** L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recroded 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 12-26 (continued): 2034 No-Action Conditions Level of Service Analysis – Signalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | Weekday MD Peak Hour | | | | Weekday PM Peak Hour | | | | Saturday 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 |
| 45 | **Beach Channel Drive and Cornaga Avenue** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.36 | 21.8 | C | LTR | 0.19 | 19.4 | B | LTR | 0.22 | 19.8 | B | LTR | 0.18 | 19.4 | B |
| | Westbound | LTR | 0.42 | 23.2 | C | LTR | 0.32 | 21.4 | C | LTR | 0.45 | 23.6 | C | LTR | 0.25 | 20.3 | C |
| | Northbound | L | 0.07 | 12.8 | B | L | 0.04 | 12.4 | B | L | 0.06 | 12.6 | B | L | 0.02 | 12.1 | B |
| | | TR | 0.64 | 20.5 | C | TR | 0.57 | 18.9 | B | TR | 0.61 | 19.7 | B | TR | 0.51 | 17.6 | B |
| | Southbound | L | 0.17 | 14.4 | B | L | 0.14 | 14.1 | B | L | 0.10 | 13.2 | B | L | 0.07 | 12.7 | B |
| | | TR | 0.66 | 21.3 | C | TR | 0.58 | 19.0 | B | TR | 0.61 | 19.6 | B | TR | 0.53 | 18.1 | B |
| | | Intersection | | 21.1 | C | Intersection | | 19.2 | B | Intersection | | 20.1 | C | Intersection | | 18.1 | B |
| 46 | **Beach Channel Drive and Mott Avenue** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 1.02 | 78.7 | E | LTR | 0.74 | 37.0 | D | LTR | 0.89 | 53.6 | D | LTR | 0.74 | 36.5 | D |
| | Westbound | LT | 0.59 | 29.9 | C | LT | 0.68 | 34.7 | C | LT | 0.72 | 34.6 | C | LT | 0.63 | 30.4 | C |
| | | R | 0.19 | 11.2 | C | R | 0.16 | 11.3 | C | R | 0.22 | 11.5 | C | R | 0.18 | 10.9 | C |
| | Northbound | L | 0.20 | 26.3 | C | L | 0.28 | 29.0 | C | L | 0.25 | 28.5 | C | L | 0.20 | 26.3 | C |
| | | TR | 1.33 | 188.4 | F | TR | 1.24 | 149.3 | F | TR | 1.41 | 223.3 | F | TR | 1.25 | 156.0 | F |
| | Southbound | L | 1.14 | 125.7 | F | L | 1.16 | 134.1 | F | L | 1.42 | 235.7 | F | L | 1.35 | 207.8 | F |
| | | TR | 0.95 | 40.6 | D | TR | 0.85 | 27.3 | C | TR | 1.09 | 76.9 | E | TR | 0.86 | 28.6 | C |
| | | Intersection | | 93.9 | F | Intersection | | 75.0 | E | Intersection | | 126.3 | F | Intersection | | 88.4 | F |
| 47 | **Beach Channel Drive and Dix Avenue** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.59 | 31.5 | C | LTR | 0.53 | 30.1 | C | LTR | 0.23 | 22.8 | C | LTR | 0.10 | 20.6 | C |
| | Westbound | LTR | 0.65 | 35.0 | C | LTR | 0.81 | 47.8 | D | LTR | 0.75 | 39.4 | D | LTR | 0.60 | 31.3 | C |
| | Northbound | LTR | 1.21 | 127.1 | F | LTR | 1.13 | 96.8 | F | LTR | 1.10 | 83.3 | F | LTR | 0.52 | 14.4 | B |
| | Southbound | LTR | 0.55 | 14.8 | B | LTR | 0.64 | 16.5 | B | LTR | 0.74 | 19.0 | B | LTR | 0.67 | 17.0 | B |
| | | Intersection | | 64.3 | E | Intersection | | 50.6 | D | Intersection | | 44.6 | D | Intersection | | 17.6 | B |
| 48 [1] | **Beach Channel Drive and Birdsall Avenue** | | | | | | | | | | | | | | | | |
| | Eastbound | LR | 0.02 | 19.6 | B | LR | 0.05 | 20.6 | C | LR | 0.05 | 20.6 | C | LR | 0.03 | 19.7 | B |
| | Westbound | LTR | 0.40 | 24.8 | C | LTR | 0.22 | 22.7 | C | LTR | 0.35 | 24.7 | C | LTR | 0.42 | 25.4 | C |
| | Northbound | LT | 0.90 | 31.6 | C | LT | 0.84 | 25.3 | C | LT | 0.80 | 22.7 | C | LT | 0.80 | 23.2 | C |
| | Southbound | T | 0.79 | 22.5 | C | T | 0.87 | 26.9 | C | T | 0.98 | 43.0 | D | T | 0.90 | 30.7 | C |
| | | R | 0.02 | 9.5 | A | R | 0.01 | 9.0 | A | R | 0.01 | 9.0 | A | R | 0.00 | 9.4 | A |
| | | Intersection | | 26.8 | C | Intersection | | 25.8 | C | Intersection | | 33.2 | C | Intersection | | 27.0 | C |
| 49 | **Beach Channel Drive and Nameoke Avenue** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.77 | 38.5 | D | LTR | 0.53 | 30.8 | C | LTR | 0.36 | 24.4 | C | LTR | 0.35 | 24.9 | C |
| | Northbound | L | 0.20 | 15.0 | B | L | 0.19 | 14.1 | B | L | 0.17 | 15.0 | B | L | 0.06 | 10.7 | B |
| | | TR | 1.30 | 165.7 | F | TR | 1.24 | 136.7 | F | TR | 1.16 | 106.9 | F | TR | 1.12 | 91.3 | F |
| | Southbound | L | 0.68 | 52.0 | D | L | 1.31 | 222.8 | F | L | 0.95 | 95.1 | F | L | 0.66 | 43.2 | D |
| | | TR | 1.17 | 109.6 | F | TR | 1.28 | 155.9 | F | TR | 1.47 | 239.9 | F | TR | 1.24 | 139.9 | F |
| | | Intersection | | 121.1 | F | Intersection | | 138.8 | F | Intersection | | 164.9 | F | Intersection | | 107.4 | F |
| 50 | **Beach Channel Drive and Hassock Avenue** | | | | | | | | | | | | | | | | |
| | Eastbound | LR | 0.17 | 19.3 | B | LR | 0.13 | 21.0 | C | LR | 0.13 | 18.8 | B | LR | 0.18 | 19.5 | B |
| | Westbound | L | 0.22 | 20.0 | C | L | 0.34 | 23.9 | C | L | 0.30 | 21.3 | C | L | 0.23 | 20.1 | C |
| | | TR | 0.16 | 19.2 | B | TR | 0.08 | 20.3 | C | TR | 0.17 | 19.4 | B | TR | 0.13 | 18.8 | B |
| | Northbound | LT | 0.88 | 29.1 | C | LT | 0.71 | 17.6 | B | LT | 0.88 | 30.0 | C | LT | 0.92 | 33.4 | C |
| | Southbound | T | 0.97 | 45.9 | D | T | 1.03 | 58.8 | E | T | 1.22 | 132.6 | F | T | 1.10 | 83.6 | F |
| | | R | 0.08 | 11.5 | B | R | 0.05 | 9.7 | A | R | 0.19 | 12.6 | B | R | 0.13 | 12.0 | B |
| | | Intersection | | 33.8 | C | Intersection | | 35.4 | D | Intersection | | 74.8 | E | Intersection | | 51.6 | D |

**Notes:** L = Left Turn, T= Through, R = Right Turn, DefL = Defacto Left Turn; LOS = Level of Service. - = Approach has no volume recroded 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 12-27: 2034 No-Action Conditions Level of Service Analysis – Unsignalized Intersections**

| # | Intersection & Approach | Weekday AM Peak Hour | | | | Weekday MD Peak Hour | | | | Weekday PM Peak Hour | | | | Saturday 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 | 0.05 | 9.2 | A | T | 0.06 | 9.3 | A | T | 0.07 | 9.3 | A | T | 0.07 | 9.3 | A |
| 13 [1] | **Beach Channel Drive and Beach 73rd Street** | | | | | | | | | | | | | | | | |
| | Eastbound | R | 0.14 | 9.1 | A | R | 0.10 | 8.8 | A | R | 0.26 | 9.7 | A | R | 0.15 | 9.1 | A |
| | Northbound | R | 0.12 | 12.0 | B | R | 0.17 | 12.9 | B | R | 0.21 | 16.5 | C | R | 0.12 | 12.2 | B |
| 17 | **Beach Front Road and Beach 62nd Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.25 | 11.1 | B | LT | 0.32 | 11.8 | B | LT | 0.39 | 12.7 | B | LT | 0.27 | 11.6 | B |
| | Westbound | TR | 0.20 | 10.3 | B | TR | 0.11 | 10.3 | B | TR | 0.14 | 10.4 | B | TR | 0.13 | 10.1 | B |
| | Southbound | LTR | 0.00 | 7.2 | A | LTR | 0.00 | 7.3 | A | LTR | 0.01 | 7.3 | A | LTR | 0.00 | 7.5 | A |
| 26 | **Beach Channel Drive and Beach 53rd Street** | | | | | | | | | | | | | | | | |
| | Westbound | LT | 0.04 | 9.9 | A | LT | 0.07 | 11.3 | B | LT | 0.05 | 9.4 | A | LT | 0.04 | 8.4 | A |
| | Northbound | LR | 0.33 | 29.3 | D | LR | 0.53 | 45.8 | E | LR | 0.42 | 29.3 | D | LR | 0.25 | 17.2 | C |
| 27 | **Rockaway Beach Boulevard and Beach 53rd Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.04 | 9.4 | A | LT | 0.06 | 10.3 | B | LT | 0.11 | 10.4 | B | LT | 0.06 | 10.0 | A |
| | Southbound | LR | 0.20 | 15.5 | C | LR | 0.21 | 21.6 | C | LR | 0.39 | 33.1 | D | LR | 0.25 | 20.3 | C |
| 28 | **Rockaway Beach Boulevard and Beach 52nd Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.01 | 8.5 | A | LTR | 0.01 | 9.3 | A | LTR | 0.02 | 9.0 | A | LTR | 0.01 | 9.0 | A |
| | Westbound | LTR | 0.00 | 8.1 | A | LTR | 0.00 | 8.4 | A | LTR | 0.00 | 9.0 | A | LTR | 0.00 | 8.6 | A |
| | Northbound | LR | 0.01 | 16.1 | C | LR | 0.01 | 23.8 | C | LR | 0.01 | 22.3 | C | LR | 0.02 | 18.8 | C |
| | Southbound | LTR | 0.01 | 14.6 | B | LTR | 0.01 | 28.5 | D | LTR | 0.02 | 21.9 | C | LTR | 0.01 | 21.5 | C |
| 30 | **Beach Channel Drive and Beach 50th Street** | | | | | | | | | | | | | | | | |
| | Westbound | LT | 0.02 | 8.9 | A | LT | 0.03 | 9.5 | A | LT | 0.04 | 10.0 | A | LT | 0.03 | 9.3 | A |
| | Northbound | LR | 0.09 | 16.0 | C | LR | 0.07 | 15.3 | C | LR | 0.07 | 17.9 | C | LR | 0.07 | 16.1 | C |
| 31 | **Rockaway Beach Boulevard and Beach 50th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.01 | 8.3 | A | LT | 0.01 | 8.2 | A | LT | 0.01 | 8.2 | A | LT | 0.01 | 8.2 | A |
| | Southbound | LR | 0.05 | 12.3 | B | LR | 0.06 | 13.3 | B | LR | 0.06 | 14.2 | B | LR | 0.05 | 13.2 | B |
| 36 | **Beach Channel Drive and Beach 47th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.01 | 9.1 | A | LT | 0.01 | 9.0 | A | LT | 0.00 | 8.9 | A | LT | 0.00 | 8.6 | A |
| | Northbound | LTR | 0.06 | 16.8 | C | LTR | 0.04 | 18.1 | C | LTR | 0.12 | 23.9 | C | LTR | 0.13 | 18.2 | C |
| 37 | **Arverne Boulevard/Rockaway Beach Boulevard and Beach 47th Street** | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.00 | 7.9 | A | LTR | 0.00 | 7.9 | A | LTR | 0.01 | 8.1 | A | LTR | 0.01 | 8.0 | A |
| | Westbound | LTR | 0.03 | 8.9 | A | LTR | 0.02 | 10.4 | B | LTR | 0.02 | 10.6 | B | LTR | 0.03 | 9.8 | A |
| | Northbound | LTR | 0.05 | 15.1 | C | LTR | 0.07 | 22.6 | C | LTR | 0.12 | 27.5 | D | LTR | 0.13 | 20.6 | C |
| 38 | **Rockaway Beach Boulevard and Beach 44th Street** | | | | | | | | | | | | | | | | |
| | Westbound | LT | 0.01 | 8.5 | A | LT | 0.00 | 8.1 | A | LT | 0.01 | 9.1 | A | LT | 0.01 | 8.0 | A |
| | Northbound | LR | 0.08 | 17.0 | C | LR | 0.09 | 24.7 | C | LR | 0.17 | 31.8 | D | LR | 0.09 | 20.8 | C |
| | Southbound | LTR | 0.13 | 17.3 | C | LTR | 0.10 | 17.2 | C | LTR | 0.19 | 23.9 | C | LTR | 0.08 | 16.0 | C |
| 40 [1,3] | **Beach Channel Drive and Seagirt Boulevard** | | | | | | | | | | | | | | | | |
| | Westbound | R | 0.03 | 11.9 | B | R | 0.09 | 12.3 | B | R | 0.15 | 13.8 | B | R | 0.12 | 12.0 | B |

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

## Transit Operations

The future No-Action subway and bus volumes reflect annual background growth rates of 0.50% per year from 2016 to 2021 and 0.25% per year from 2021 to 2034, as recommended in the *CEQR Technical Manual*, as well as increases in volumes associated with No-Action projects and the as-of-right development plan for the Project Site under current zoning.

### Subway Line-Haul

The average passengers per hour, trains/cars per hour, capacity per car, and v/c ratios under No-Action condition is shown in **Table 12-28: 2034 No-Action Condition Level of Service Analysis – Subway Line-Haul** for the A train at the max load points. As indicated in **Table 12-28**, the A train would operate within capacity during the four peak hours in the No-Action condition.

**Table 12-28: 2034 No-Action Condition Level of Service Analysis – Subway Line-Haul**

| Peak Direction | Route | Maximum Load Point Station | Average Passengers Per Hour [1] | Average Trains Per Hour | Average Cars Per Hour | Average Passengers Per Car | Guideline Passengers Per Car [3] | V/C ratio [4] |
|---|---|---|---|---|---|---|---|---|
| **Weekday AM [2]** | | | | | | | | |
| Northbound | A | Nostrand Av | 19,541 | 16.7 | 134 | 146 | 175 | 0.83 |
| **Weekday PM [2]** | | | | | | | | |
| Southbound | A | Jay St-MetroTech | 16,643 | 15.2 | 122 | 136 | 175 | 0.78 |
| **Saturday MD (Summer) [5]** | | | | | | | | |
| Northbound | A | Aqueduct Racetrack | 2,271 | 8 | 64 | 35 | 88 | 0.40 |
| **Sunday MD (Summer) [5]** | | | | | | | | |
| Northbound | A | Aqueduct Racetrack | 3,572 | 6 | 48 | 74 | 88 | 0.85 |

**Notes:**
(1) Hourly A-Train volumes associated with general background growth and No-Action Projects were distributed proportionally based on existing ridership.
(2) Based on 2015-2016 ridership and train throughput data from NYCT.
(3) Guideline capacities are based on NYCT rush hour loading guidelines, which vary by car type, line, and location based on frequency and type of service.
(4) Volume to guideline capacity ratio.
(5) Based on 2012-2017 ridership and train throughput data from NYCT. The Summer Saturday and Sunday MD peak hours were included in the line haul analysis as subway service is less frequent on weekends and weekend ridership peaks due to recreational activities at the beach.

### *Subway Stairs*

As shown in **Table 12-29: 2034 No-Action Condition Level of Service Analysis – Stairs,** the street-level and platform stairs would operate at LOS A during both peak hours in the No-Action condition.

**Table 12-29: 2034 No-Action Condition Level of Service Analysis – Stairs**

| Location | Vertical Element | ID | 15-Minute Entering Volume [1] | 15-Minute Exiting Volume [1] | Total Stair Width (feet) [2] | Number of Intermediate Handrails | Effective Width (feet) | Friction Factor [3] | Surge Factor (onto platform level) [3] | Surge Factor (off of platform level) [3] | 15 Minute Entering Capacity [4] | 15 Minute Exiting Capacity [4] | V/C [5] | LOS [5] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Weekday AM** | | | | | | | | | | | | | | |
| Beach 60 St Station | NE Stair (b/w street level and head house) | M3A, M3B, S3A, S3B | 98 | 22 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.80 | 979 | 783 | 0.13 | A |
| | NE Stair (b/w head house and platform level) | P7A, P7B, P9A, P9B | 109 | 11 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.75 | 979 | 734 | 0.13 | A |
| | SE Stair (b/w head house and platform level) | P6A, P6B, P8A, P8B | 13 | 11 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.03 | A |
| | NW Stair (b/w head house and platform level) | P1A, P1B, P3A, P3B | 56 | 5 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.75 | 979 | 734 | 0.06 | A |
| | SW Stair (b/w head house and platform level) | P2A, P2B, P4A, P4B | 14 | 13 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.03 | A |
| | SE Stair (b/w street level and platform level) | - | n/a | 18 | 8.0 | 1 | 6.75 | 1.0 | n/a | 0.75 | n/a | 759 | 0.02 | A |
| **Weekday PM** | | | | | | | | | | | | | | |
| Beach 60 St Station | NE Stair (b/w street level and head house) | M3A, M3B, S3A, S3B | 52 | 95 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.80 | 979 | 783 | 0.18 | A |
| | NE Stair (b/w head house and platform level) | P7A, P7B, P9A, P9B | 30 | 25 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.75 | 979 | 734 | 0.06 | A |
| | SE Stair (b/w head house and platform level) | P6A, P6B, P8A, P8B | 9 | 71 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.11 | A |
| | NW Stair (b/w head house and platform level) | P1A, P1B, P3A, P3B | 18 | 10 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.75 | 979 | 734 | 0.03 | A |
| | SW Stair (b/w head house and platform level) | P2A, P2B, P4A, P4B | 5 | 28 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.05 | A |
| | SE Stair (b/w street level and platform level) | - | n/a | 61 | 8.0 | 1 | 6.75 | 1.0 | n/a | 0.75 | n/a | 759 | 0.08 | A |
| Beach 44 St Station | NW Stair (b/w street level and head house) | M3A, M3B, S1A, S1B | 58 | 91 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.80 | 911 | 729 | 0.19 | A |
| | SE Stair (b/w head house and platform level) | P8A, P8B, P10A, P10B | 15 | 25 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.05 | A |
| | SW Stair (b/w head house and platform level) | P4A, P4B, P6A, P6B | 13 | 31 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.06 | A |

**Notes:**
(1) New stairway volumes associated with the general background growth were distributed proportionally based on the existing counts.
(2) Vertical elements measured at the narrowest location.
(3) Friction and surge factors based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* . Note, friction factors may change due to increase in opposing passenger flow between Existing and No-Action conditions.
(4) Stair capacity based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* .
(5) v/c ratios and LOS ratings were calculated based on rates presented in the *2014 CEQR Technical Manual* .

### *Control Areas*

For the control area elements, the quantity, volume, friction and surge factors, capacity, and calculated v/c and LOS results under No-Action condition is shown in **Table 12-30: 2034 No-Action Condition Level of Service Analysis – Control Areas.** As shown in **Table 12-30,** all control area elements would operate at LOS A during both peak hours in the No-Action condition.

**Table 12-30: 2034 No-Action Condition Level of Service Analysis – Control Areas**

| Station | Station Elements | Quantity (Entry) | Quantity (Exit) | 15-Minute Entering Volume [1] | 15-Minute Exiting Volume [1] | Friction Factor [2] | Surge Factor (onto platform) | Surge Factor (off of platform) | 15-Minute Entering Capacity [3] | 15-Minute Exiting Capacity [3] | V/C [4] | LOS [4] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Weekday AM** | | | | | | | | | | | | |
| Beach 60 St Station (head house) | Turnstile<br>HEET<br>HXT | 3<br>0<br>0 | 3<br>0<br>0 | 193 | 40 | 0.9 | 1 | 0.8 | 1260 | 1935 | **0.20** | **A** |
| Beach 60 St Station (southbound platform) | Turnstile<br>HEET<br>HXT | 0<br>0<br>0 | 0<br>0<br>1 | n/a | 18 | 1 | n/a | 0.75 | n/a | 555 | **0.04** | **A** |
| **Weekday PM** | | | | | | | | | | | | |
| Beach 60 St Station (head house) | Turnstile<br>HEET<br>HXT | 3<br>0<br>0 | 3<br>0<br>0 | 62 | 133 | 0.9 | 1 | 0.8 | 1260 | 1935 | **0.15** | **A** |
| Beach 60 St Station (southbound platform) | Turnstile<br>HEET<br>HXT | 0<br>0<br>0 | 0<br>0<br>1 | n/a | 61 | 1 | n/a | 0.75 | n/a | 555 | **0.15** | **A** |
| Beach 44 St Station | Turnstile<br>HEET<br>HXT | 3<br>0<br>0 | 3<br>0<br>0 | 70 | 128 | 0.9 | 1 | 0.8 | 1260 | 1935 | **0.15** | **A** |

**Notes:**
(1) New turnstile volumes associated with the general background growth were distributed proportionally based on the existing counts.
(2) Friction and surge factors based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* .
(3) Fare array capacity based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* .
(4) v/c ratios and LOS ratings were calculated based on rates presented in the *2014 CEQR Technical Manual* .

### *Bus Line-Haul*

**Table 12-31: 2034 No-Action Condition Level of Service Analysis – Bus Line-Haul** summarizes the bus line-haul under 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 presented in **Table 12-31**, the Q22 and Q52-SBS buses would operate within capacity except where noted below:

- The Q22 bus in the westbound direction during the Weekday AM peak hour

**Table 12-31: 2034 No-Action Condition Level of Service Analysis – 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 | 8 | 308 | 39 | 54 | 15 |
| Q22 | WB | Rockaway Beach Blvd and Beach 91st St | 8 | 506 | 63 | 54 | -9 |
| Q52-SBS | NB | Woodhaven Blvd and Atlantic Ave | 5 | 242 | 48 | 85 | 37 |
| Q52-SBS | SB | Woodhaven Blvd and Jamaica Ave | 4 | 139 | 35 | 85 | 50 |
| **Weekday PM** | | | | | | | |
| Q22 | EB | Seagirt Blvd and Crest Rd | 6 | 261 | 43 | 54 | 11 |
| Q22 | WB | Beach Channel Dr and Beach 36th St | 7 | 327 | 47 | 54 | 7 |
| Q52-SBS | NB | Woodhaven Blvd and Myrtle Ave | 4 | 154 | 38 | 85 | 47 |
| Q52-SBS | SB | Woodhaven Blvd and Metropolitan Ave | 4 | 313 | 78 | 85 | 7 |

**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 Operations

Pedestrian volumes for the No-Action conditions were developed by increasing existing volumes by 0.50% per year from 2016 and 2021 and 0.25% per year from 2021 to 2034 to account for background growth, plus the addition of pedestrian trips generated by development projects planned for 2034. The No-Action condition analyses were performed at a total of 50 locations within the study area, comprised of 16 sidewalks, seven crosswalks, 25 corner reservoirs, and two medians (with each median analyzed as two adjacent corners).

### *Sidewalks*

As presented in **Table 12-32: 2034 No-Action Condition Level of Service Analysis – Sidewalks**, the majority of sidewalk locations included in the transportation analysis are projected to operate at LOS C of better for both non-platoon and platoon conditions during the four peak hours in the No-Action condition except at the following locations:

- Non-Platoon Conditions
  - The east sidewalk on the north leg of Beach 53rd Street and Rockaway Beach Boulevard would operate at LOS D during the Weekday AM peak hour.
  - The north sidewalk on the east leg of Beach 53rd Street and Rockaway Beach Boulevard would operate at LOS D during the Weekday MD peak hour.
- Platoon Conditions
  - The south sidewalk on the west leg of Beach 53rd Street and Beach Channel Drive would operate at LOS D during the Saturday MD peak hour.
  - The east sidewalk on the north leg of Beach 53rd Street and Rockaway Beach Boulevard would operate at LOS E during the Weekday AM peak hour and at LOS D during the Weekday MD, Weekday PM, and Saturday MD peak hours.
  - The north sidewalk on the east leg of Beach 53rd Street and Rockaway Beach Boulevard would operate at LOS D during the Weekday MD and Saturday MD peak hours.

**Table 12-32: 2034 No-Action Condition Level of Service Analysis – 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 | | | Sat | Weekday | | | Sat | Weekday | | | Sat |
| | | | | AM | MD | PM | MD | AM | MD | PM | MD | AM | MD | PM | MD |
| Beach 59th St and Arverne Blvd (E leg, N sidewalk) | 5.8 | 3.0 | 2.8 | 110 | 87 | 77 | 77 | A | A | A | A | B | C | C | C |
| Beach 59th St and Rockaway Fwy (W leg, N sidewalk) | 8.0 | 3.0 | 5.0 | 121 | 138 | 122 | 143 | 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 | 174 | 222 | 168 | 133 | A | A | A | A | B | B | B | B |
| Beach 54th St and Arverne Blvd (E leg, N sidewalk) | 8.0 | 3.0 | 5.0 | 136 | 69 | 102 | 56 | A | A | A | B | B | C | B | C |
| Beach 54th St and Arverne Blvd (W leg, N sidewalk) | 10.0 | 3.0 | 7.0 | 168 | 113 | 118 | 94 | A | A | A | A | B | B | B | B |
| Beach 53rd St and Beach Channel Dr (E leg, S sidewalk) | 5.0 | 3.0 | 2.0 | 119 | 62 | 83 | 58 | A | A | A | B | B | C | C | C |
| Beach 53rd St and Beach Channel Dr (W leg, S sidewalk) | 10.0 | 3.0 | 7.0 | 79 | 51 | 66 | 37 | A | B | A | C | C | C | C | D |
| Beach 53rd St and Rockaway Beach Blvd (N leg, E sidewalk) | 3.5 | 3.0 | 0.5 | 22 | 26 | 25 | 33 | D | C | C | C | E | D | D | D |
| Beach 53rd St and Rockaway Beach Blvd (E leg, N sidewalk) | 4.9 | 3.0 | 1.9 | 44 | 24 | 45 | 39 | B | D | B | C | C | D | C | D |
| Beach 50th St and Rockaway Beach Blvd (E leg, S sidewalk) | 7.0 | 3.0 | 4.0 | 150 | 72 | 87 | 75 | A | A | A | A | B | C | C | C |
| Beach 47th St and Rockaway Beach Blvd (E leg, S sidewalk) | 7.8 | 3.0 | 4.8 | 124 | 106 | 74 | 129 | A | A | A | A | B | B | C | B |
| Beach 44th St and Rockaway Fwy (N leg, W sidewalk) | 5.5 | 3.0 | 2.5 | 97 | 75 | 45 | 94 | A | A | B | A | B | C | C | B |
| Beach 44th St and Rockaway Fwy (W leg, N sidewalk) | 14.3 | 3.0 | 11.3 | 238 | 178 | 95 | 306 | A | A | A | A | B | B | B | B |
| Beach 56th St and Arverne Blvd (W leg, N sidewalk) | 10.0 | 3.0 | 7.0 | 84 | 162 | 155 | 130 | A | A | A | A | C | B | B | B |
| Beach 57th St and Arverne Blvd (E leg, N sidewalk) | 10.0 | 3.0 | 7.0 | 232 | 219 | 238 | 233 | A | A | A | A | B | B | B | B |
| Beach 52nd St and Beach Channel Dr (E leg, S sidewalk) | 4.8 | 3.0 | 1.8 | 124 | 61 | 84 | 56 | A | A | A | B | B | C | C | C |

*Notes:*
*(1) The total width was measured at the narrowest point along the sidewalk.*

### *Crosswalks*

As presented in **Table 12-33: 2034 No-Action Condition Level of Service Analysis – Signalized Crosswalks**, the signalized crosswalks included in the transportation analysis are projected to operate at LOS C or better during the No-Action condition for all peak hours. As presented in **Table 12-34: 2034 No-Action Condition Level of Service Analysis – Unsignalized Crosswalks**, the unsignalized crosswalks included in the transportation analysis are projected to operate at LOS A in the four peak hours in the No-Action condition for all peak hours.

**Table 12-33: 2034 No-Action Condition Level of Service Analysis – Signalized Crosswalks**

| Location | Length (ft) | Width (ft) | Available Circulation Space ($ft^2$/p) | | | | Crosswalk Circulation LOS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Weekday | | | Sat | Weekday | | | Sat |
| | | | AM | MD | PM | MD | AM | MD | PM | MD |
| Beach 54th St and Beach Channel Dr (S leg) | 33.8 | 14.5 | 70 | 38 | 31 | 37 | A | C | C | C |
| Beach 54th St and Arverne Blvd (N leg) | 40.0 | 12.2 | 103 | 49 | 43 | 49 | A | B | B | B |

**Table 12-34: 2034 No-Action Condition Level of Service Analysis – Unsignalized Crosswalks**

| Location | Length (ft) | Width (ft) | Average Pedestrian Delay (s) | | | | Crosswalk Circulation LOS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Weekday | | | Sat | Weekday | | | Sat |
| | | | AM | MD | PM | MD | AM | MD | PM | MD |
| Beach 53rd St and Beach Channel Dr (S leg) | 30.0 | 9.0 | 1.2 | 1.6 | 1.7 | 1.6 | A | A | A | A |
| Beach 53rd St and Rockaway Beach Blvd (N leg) [(1)] | 35.0 | 10.0 | 1.8 | 1.3 | 1.7 | 1.6 | A | A | A | A |
| Beach 47th St and Rockaway Beach Blvd (S leg) | 30.0 | 11.3 | 0.3 | 0.3 | 0.3 | 0.6 | A | A | A | A |
| Beach 56th St and Arverne Blvd (N leg) [(2)] | 40.6 | 12.7 | 0.6 | 0.9 | 0.4 | 0.9 | A | A | A | A |
| Beach 57th St and Arverne Blvd (N leg) [(2)] | 42.0 | 13.6 | 1.6 | 2.5 | 1.2 | 2.5 | A | A | A | A |

*Notes:*
*(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.*

### *Corners and Medians*

As presented in **Table 12-35: 2034 No-Action Condition Level of Service Analysis – Corner and Medians,** the corner reservoirs are projected to operate at LOS C or better in the No-Action condition for all peak hours.

**Table 12-35: 2034 No-Action Condition Level of Service Analysis – Corner and Medians**

| Location | Available Circulation Space ($ft^2$/p) | | | | Corner Circulation LOS | | | |
|---|---|---|---|---|---|---|---|---|
| | Weekday | | | Sat | Weekday | | | Sat |
| | AM | MD | PM | MD | AM | MD | PM | MD |
| Beach 59th St and Arverne Blvd (NE corner) | 260 | 145 | 216 | 206 | A | A | A | A |
| Beach 59th St and Arverne Blvd (SE corner) | 293 | 220 | 274 | 265 | A | A | A | A |
| Beach 59th St and Rockaway Fwy (NW corner) | 134 | 167 | 172 | 233 | A | A | A | A |
| Beach 54th St and Beach Channel Dr (NE corner) | 1127 | 1247 | 1024 | 876 | A | A | A | A |
| Beach 54th St and Beach Channel Dr (SE corner) | 288 | 168 | 168 | 166 | A | A | A | A |
| Beach 54th St and Beach Channel Dr (SW corner) | 515 | 349 | 274 | 348 | A | A | A | A |
| Beach 54th St and Beach Channel Dr (NW corner) | 190 | 208 | 155 | 175 | A | A | A | A |
| Beach 54th St and Arverne Blvd (NE corner) | 113 | 53 | 49 | 55 | A | B | B | B |
| Beach 54th St and Arverne Blvd (NW corner) | 352 | 160 | 148 | 146 | A | A | A | A |
| Beach 53rd St and Beach Channel Dr (SE corner) | 97 | 70 | 69 | 78 | A | A | A | A |
| Beach 53rd St and Beach Channel Dr (SW corner) | 146 | 90 | 90 | 109 | A | A | A | A |
| Beach 51st St and Beach Channel Dr (SE corner) | 276 | 201 | 205 | 275 | A | A | A | A |
| Beach 47th St and Rockaway Beach Blvd (SW corner) | 188 | 58 | 92 | 96 | A | B | A | A |
| Beach 47th St and Rockaway Beach Blvd (SE corner) | 132 | 43 | 67 | 70 | A | B | A | A |
| Beach 44th St and Rockaway Beach Blvd (SW corner) | 276 | 106 | 134 | 134 | A | A | A | A |
| Beach 44th St and Rockaway Fwy (NW corner) | 126 | 136 | 77 | 262 | A | A | A | A |
| Beach 56th Pl and Arverne Blvd (NW corner) | 306 | 160 | 143 | 232 | A | A | A | A |
| Beach 56th Pl and Arverne Blvd (NE corner) | 259 | 135 | 130 | 220 | A | A | A | A |
| Beach 56th Pl and Arverne Blvd (SW corner) (1) | 354 | 152 | 178 | 175 | A | A | A | A |
| Beach 56th Pl and Arverne Blvd (SE corner) (1) | 254 | 109 | 145 | 146 | A | A | A | A |
| Beach 56th St and Arverne Blvd (NW corner) | 296 | 278 | 230 | 267 | A | A | A | A |
| Beach 56th St and Arverne Blvd (NE corner) | 473 | 273 | 250 | 299 | A | A | A | A |
| Beach 56th Pl and Rockaway Fwy (NW corner) (1) | 520 | 597 | 282 | 431 | A | A | A | A |
| Beach 56th Pl and Rockaway Fwy (NE corner) (1) | 694 | 990 | 619 | 1031 | A | A | A | A |
| Beach 57th St and Arverne Blvd (NW corner) | 484 | 318 | 283 | 254 | A | A | A | A |
| Beach 57th St and Arverne Blvd (NE corner) | 369 | 272 | 232 | 214 | 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 and the southwest corner at Beach 50th Street and Rockaway Beach Boulevard were not included in this table.*
*(1) Median element that was analyzed at two adjacent corners.*

## Parking Supply and Utilization

The utilization of on-street parking facilities in the study area is expected to increase due to the area's background growth by an annual growth rate of 0.50% between 2016 and 2021, and 0.25% per year between 2021 and 2034. All No-Action projects within a 0.25-mile radius of the Project Site, 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 (No-Action site 19), are assumed to provide on-site parking to meet their respective parking demands. Therefore, the projected peak hour parking demands for these three projects were included as additional demands for on-street parking spaces. The as-of-right development of the Project Site is not expected to generate on-street parking demand as up to 557 parking spaces would be provided, accommodating the demand generated by the site.

### *On-Street Parking*

**Table 12-36: 2034 No-Action Condition On-Street Parking Utilization Summary** presents the expected on-street parking utilization in 2034. The results indicate that within 0.25-mile radius of the Project Site, on-street parking utilization is expected to increase to 70%, 61%, 62%, and 59% during the Weekday AM, Weekday MD, Weekday PM, and Weekday Overnight periods, respectively. The on-street parking utilization is expected to increase to 59% for the Saturday MD period.

**Table 12-36: 2034 No-Action Condition On-Street Parking Utilization Summary**

| 2034 No-Action | Weekday AM | Weekday MD | Weekday PM | Weekday Overnight | Saturday MD |
|---|---|---|---|---|---|
| **Capacity** | | | | | |
| Existing Capacity | 1,668 | 1,668 | 1,668 | 1,668 | 1,668 |
| Net Change in No-Action On-Street Parking Supply [1] | 0 | 0 | 0 | 0 | 0 |
| ***Total No-Action On-Street Capacity*** | 1,668 | 1,668 | 1,668 | 1,668 | 1,668 |
| **Demand** | | | | | |
| 2016 Existing Demand | 1,098 | 926 | 957 | 919 | 875 |
| Background Growth Increment [2] | 65 | 55 | 57 | 54 | 52 |
| As-of-Right On-Street Parking Demand Generated by the Project Site [3] | 0 | 0 | 0 | 0 | 0 |
| No-Action On-Street Parking Demand Generated by Other No-Action Projects [4] | 12 | 41 | 21 | 7 | 51 |
| ***Total No-Action On-Street Demand*** | 1,175 | 1,021 | 1,035 | 979 | 977 |
| **Utilization** | | | | | |
| Available Spaces | 493 | 647 | 633 | 689 | 691 |
| ***No-Action Utilization*** | **70%** | **61%** | **62%** | **59%** | **59%** |

**Notes:**
1. No loss or addition of on-street parking was identified due to No-Action Projects and/or oradway improvements.
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 (2021-2034) (*CEQR Technical Manual* , Table 16-4).
3. All of the No-Action/As-of-Right demand generated by the Project Site would be accommodated on-site.
4. Considers only on-street parking demand that would not be accommodated on-site.

# VIII. DESCRIPTION OF THE PROPOSED PROJECT

The Proposed Project would result in the redevelopment of the former Peninsula Hospital Center in the Rockaway Beach neighborhood of Queens, New York. As shown on Error! Reference source not found. in Chapter 1, "Project Description," the North Parcel of the Project Site is bounded by Beach Channel Drive to the north, Rockaway Beach Boulevard to the south, Beach 53rd Street to the west, and Beach 50th Street to the east and would be occupied by buildings A1, A2, B1, B2, C1, C2, D1, D2, E1, and E2. The South Parcel of the Project Site is bounded by Rockaway Beach Boulevard to the north, Rockaway Freeway to the south, and Beach 52nd Street to the west and would be occupied by Building F1. The project would include the creating of a new street grid and the extension of Beach 52nd Street to Rockaway Freeway, as described in Chapter 1, "Project Description."

The Proposed Project would include the following land uses:

- 2,200 DUs
- 40,000 gsf of local retail space
- 13,000 gsf of destination retail space
- 19,000 gsf of supermarket space
- 77,000 gsf of medical office space
- 24,000 sf (0.55 acres) of open space

In the absence of the Proposed Project, 568 residential DUs, 21,659 sf of local retail space, and 800 sf of medical office space can be built as-of-right under existing zoning for the Project Site. Therefore, the total increment analyzed for the Proposed Project would include:

- 1,632 DUs
- 18,341 gsf of local retail space
- 13,000 gsf of destination retail space
- 19,000 gsf of supermarket space
- 76,200 gsf of medical office space
- 24,000 sf (0.55 acres) of open space

## Analysis Scenarios

The trip generation and assignment estimates were prepared for four peak hours:

- Weekday AM peak hour: 7:30 AM to 8:30 AM (non-summer)
- Weekday MD peak hour: 1:00 PM to 2:00 PM (summer)
- Weekday PM peak hour: 5:00 PM to 6:00 PM (summer)
- Saturday MD peak hour: 2:30 PM to 3:30 PM (summer)

## Trip Generation

The following section describes the assumptions used to develop the trip generation and trip distribution characteristics of the Proposed Project, which are described in greater detail in the Transportation Demand Factors Memo, included in **Appendix 11-2.**

### *Local Retail*

The Proposed Project would include 18,341 gsf of local retail use. The daily trip generation rates, temporal distribution, daily truck trip generation rates, truck temporal distribution, and truck directional distribution were obtained from the *CEQR Technical Manual*, Table 16-2. Modal split percentages, auto and taxi vehicle occupancy, and directional distribution were obtained from the *Downtown Far Rockaway Rezoning FEIS (2017)*, Table 14-6, for the Local Retail land use.

### *Destination Retail*

The Proposed Project would include 13,000 gsf of destination retail use. The daily trip generation rates and temporal distribution were obtained from the *CEQR Technical Manual*, Table 16-2. The modal split percentages, directional distribution, daily truck generation rates, truck temporal distribution, and truck directional distribution were obtained from the *Coney Island Rezoning FEIS (2009)*, Tables 16-12 and 16-14, for the Destination Retail land use. The auto and taxi vehicle occupancy were obtained from the *Gateway Estates II FEIS (2009)*, Table 16-16.

### *Supermarket*

The Proposed Project would include 19,000 gsf of supermarket use. The daily trip generation rates and temporal distribution were obtained from the *CEQR Technical Manual*, Table 16-2. The taxi, subway, and bus modal split percentages, auto and taxi vehicle occupancy, directional distribution, daily truck generation rates, truck temporal distribution, and truck directional distribution were obtained from the *East New York Rezoning Proposal FEIS (2016)*, Table 13-8, for the Food Retail Expansion to Support Health (Supermarket) land use. The auto and walk modal split percentages were obtained from information provided by NYCDOT for a project adjacent to the Project Site.

### *Medical Office*

The Proposed Project would include 76,200 gsf of medical office use. The daily truck generation rates, truck temporal distribution, directional distribution and truck directional distribution were obtained from the *Downtown Far Rockaway Rezoning FEIS (2017)*, Table 14-6, for the Medical Office land use. The daily trip generation rates, modal split, Saturday auto and taxi vehicle occupancy, and temporal distribution were obtained from information provided by NYCDOT and based on a survey performed at three comparable medical office sites located in Queens. The weekday auto and taxi vehicle occupancy was obtained from information provided by NYCDOT.

### *Active Open Space*

The Proposed Project would include 24,000 sf, or 0.55 acres, of open space, which was conservatively analyzed as active open space. The daily trip generation rates and temporal distribution were obtained from the *CEQR Technical Manual*, Table 16-2. Modal split, auto and taxi vehicle occupancy, and directional distribution were obtained from the *Arverne Urban Renewal Area/Arverne By the Sea FEIS (2003)*, Table 2.13-13, for the Passive Parkland land use. The daily truck trip generation rate, truck temporal distribution, and truck directional distribution were obtained from the *Brooklyn Bridge Park FEIS (2005)*, Table 14-6, for the Park Land use.

### *Residential*

The Proposed Project would include 1,632 residential DUs. The daily trip generation rates, temporal distribution, daily truck trip generation rates, truck temporal distribution, and truck directional distribution were obtained from the *CEQR Technical Manual*, Table 16-2. Modal split and auto vehicle occupancy were calculated from the 2011-2015 American Community Survey (ACS) 5-year estimates: Sex of Workers by

Means of Transportation to Work (Table 08006) for average of census tracts 964, 972.02, 972.03, 972.04, and 992 in Queens. The directional distribution and taxi vehicle occupancy were obtained from the *Downtown Far Rockaway Rezoning FEIS (2017)*, Table 14-6, for the Residential land use. Due to the recent implementation of city ferry service between the Rockaways, Sunset Park, and Lower Manhattan, the ferry mode share is not yet captured by the latest census data. Furthermore, while New York City Economic Development Corporation (NYCEDC) has started to survey ferry riders, no survey results are currently available. However, NYCEDC has indicated that because a ferry shuttle bus is provided for the Rockaway ferry stop, this ferry location does draw ridership beyond the walk radius. It was assumed that five percent of the residents would travel by ferry, and that those residents would shift from the subway (three percent) and auto (two percent). It was conservatively assumed that residents traveling by ferry would use the Q22 bus route, rather than the existing free shuttle service to travel from the Project Site to the Rockaway ferry landing located at Beach 108th Street and Beach Channel Drive.

### *Linked Trips*

Linked trips are those that have multiple destinations within the Project Site and are typical of sites that include multiple uses. Based on *CEQR Technical Manual*, a 25% linked trip reduction was applied to the trip generation for the local retail land use to account for trips generated by the medical office, residential, destination retail, supermarket, and open space uses that would visit the local retail use without leaving the Project Site.

### *Trip Generation Results*

The estimated number of vehicle, subway, bus, bike/walk, ferry, and total pedestrian trips that would be generated by the Proposed Project during the four peak hours are summarized in **Table 12-37: Peninsula Hospital Site – Proposed Project Trip Generation Estimate Summary** for the Proposed Development. Complete transportation demand factors are shown in **Table 12-38: Peninsula Hospital Site – Transportation Demand Factors,** with detailed trip generation estimates shown in **Table 12-39: Peninsula Hospital Site – Proposed Project Detailed Trip Generation Estimates** for the Proposed Project.

**Table 12-37: Peninsula Hospital Site – Proposed Project Trip Generation Estimate Summary**

| Peak Hour | Vehicle (Auto + Taxi + Truck) | Subway | Bus | Bike/Walk Only | Ferry | Total Pedestrian |
|---|---|---|---|---|---|---|
| Weekday AM | 879 | 501 | 356 | 455 | 67 | 1,379 |
| Weekday MD | 747 | 342 | 292 | 794 | 36 | 1,464 |
| Weekday PM | 950 | 570 | 390 | 676 | 72 | 1,708 |
| Saturday MD | 827 | 473 | 296 | 601 | 66 | 1,436 |

## Trip Assignment

Vehicular trips were assigned to the study area along main streets and arterials. Additional information regarding the vehicular trip assignments are provided in the Transportation Demand Factors Memo, included in **Appendix 11-2**.

**Figure 12-14** through **Figure 12-17** show the trips generated by the Proposed Project for each peak hour.

## Parking Accumulation

**Table 12-40: 2034 With-Action Condition Weekday Project Parking Accumulation** and **Table 12-41: 2034 With-Action Condition Saturday Project Parking Accumulation** show the parking accumulation for a typical Weekday and a typical Saturday for the Proposed Project. The total parking demand during a

typical weekday would peak at 886 spaces at 8:00 PM. The parking demand during a typical Saturday would peak at 967 spaces at 3:00 PM. The parking demand generated by the Proposed Project would be accommodated by a combination of the 973 proposed on-site parking spaces and available on-street parking.

**Table 12-38: Peninsula Hospital Site –Transportation Demand Factors**

| | Land Use | Local Retail | | Destination Retail | | Supermarket | | Medical Office | | Active Open Space | | Residential | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size | 18,341 | | 13,000 | | 19,000 | | 76,200 | | 0.55 | | 1,632 | |
| | Unit | gsf | | gsf | | gsf | | gsf | | acre | | Dwelling Units | |
| Daily Person Trip Generation | | (1) | | (1) | | (1) | | (6) | | (1) | | (1) | |
| | Weekday | 205.0 | | 78.2 | | 175.0 | | 103.3 | | 139.0 | | 8.075 | |
| | Saturday | 240.0 | | 92.5 | | 231.0 | | 51.3 | | 196.0 | | 9.600 | |
| | Unit | per 1,000 gsf | | per 1,000 gsf | | per 1,000 gsf | | per 1,000 gsf | | per acre | | per dwelling unit | |
| Daily Truck Trip Generation | | (1) | | (3) | | (4) | | (2) | | (8) | | (1) | |
| | Weekday | 0.35 | | 0.70 | | 0.35 | | 0.29 | | 0.01 | | 0.06 | |
| | Saturday | 0.04 | | 0.04 | | 0.04 | | 0.29 | | 0.01 | | 0.02 | |
| | Unit | per 1,000 gsf | | per 1,000 gsf | | per 1,000 gsf | | per 1,000 gsf | | per acre | | per dwelling unit | |
| | | Weekday | Saturday | Weekday | Saturday | Weekday | Saturday | Weekday | Saturday | Weekday | Saturday | AM / PM | MD / Saturday |
| Modal Split | | (2) | | (3) | | (4, 5) | | (6) | | (9) | | (10) | |
| | Auto | 11.0% | 8.0% | 59.0% | 59.0% | 30.0% | 30.0% | 47.0% | 82.0% | 33.0% | 43.0% | 36.6% | 36.6% |
| | Taxi | 0.0% | 0.0% | 3.0% | 5.0% | 3.0% | 3.0% | 7.0% | 6.0% | 2.0% | 2.0% | 2.0% | 2.0% |
| | Subway | 9.0% | 7.0% | 15.0% | 13.0% | 5.0% | 5.0% | 6.0% | 1.0% | 2.0% | 2.0% | 32.8% | 32.8% |
| | Bus | 5.0% | 5.0% | 18.0% | 18.0% | 5.0% | 5.0% | 14.0% | 6.0% | 3.0% | 3.0% | 17.2% | 17.2% |
| | Walk/Other | 75.0% | 80.0% | 5.0% | 5.0% | 57.0% | 57.0% | 26.0% | 5.0% | 60.0% | 50.0% | 6.4% | 6.4% |
| | Ferry (via Q22 Bus) | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 5.0% | 5.0% |
| | | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% | 100.0% |
| Vehicle Occupancy | | (2) | | (11) | | (4) | | (6, 7) | | (9) | | (2, 10) | |
| | Auto | 2.00 | 2.00 | 1.40 | 1.72 | 1.65 | 1.65 | 1.50 | 1.60 | 1.60 | 1.60 | 1.08 | 1.08 |
| | Taxi | 2.00 | 2.00 | 1.65 | 1.75 | 1.40 | 1.40 | 1.50 | 1.60 | 1.60 | 1.60 | 1.40 | 1.30 |
| Linked Trips (1) | | 25% | 25% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Temporal Distribution | | (1) | | (1) | | (1) | | (6) | | (1) | | (1) | |
| | AM | 3.0% | | 3.0% | | 5.0% | | 10.3% | | 3.0% | | 10.0% | |
| | MD | 19.0% | | 9.0% | | 6.0% | | 11.4% | | 5.0% | | 5.0% | |
| | PM | 10.0% | | 9.0% | | 10.0% | | 8.6% | | 6.0% | | 11.0% | |
| | Sat MD | 10.0% | | 11.0% | | 9.0% | | 8.8% | | 6.0% | | 8.0% | |
| Truck Temporal Distribution | | (1) | | (3) | | (4) | | (2) | | (8) | | (1) | |
| | AM | 8.0% | | 7.7% | | 10.0% | | 3.0% | | 6.0% | | 12.0% | |
| | MD | 11.0% | | 11.0% | | 8.0% | | 11.0% | | 6.0% | | 9.0% | |
| | PM | 2.0% | | 1.0% | | 5.0% | | 1.0% | | 1.0% | | 2.0% | |
| | Sat MD | 11.0% | | 11.0% | | 10.0% | | 0.0% | | 0.0% | | 9.0% | |
| | | In | Out | In | Out | In | Out | In | Out | In | Out | In | Out |
| Directional Distribution | | (2) | | (3) | | (4) | | (2) | | (9) | | (2) | |
| | AM | 50.0% | 50.0% | 61.0% | 39.0% | 45.0% | 55.0% | 89.0% | 11.0% | 70.0% | 30.0% | 15.0% | 85.0% |
| | MD | 50.0% | 50.0% | 55.0% | 45.0% | 46.0% | 54.0% | 51.0% | 49.0% | 60.0% | 40.0% | 50.0% | 50.0% |
| | PM | 50.0% | 50.0% | 47.0% | 53.0% | 47.0% | 53.0% | 48.0% | 52.0% | 40.0% | 60.0% | 70.0% | 30.0% |
| | Sat MD | 55.0% | 45.0% | 55.0% | 45.0% | 46.0% | 54.0% | 51.0% | 49.0% | 60.0% | 40.0% | 50.0% | 50.0% |
| Truck Directional Distribution | | (1) | | (3) | | (4) | | (2) | | (8) | | (1) | |
| | AM | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |
| | MD | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |
| | PM | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |
| | Sat MD | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% | 50.0% |

1. CEQR Technical Manual (March 2014), Table 16-2.
2. Downtown Far Rockaway Rezoning FEIS (2017), Table 14-6.
3. Coney Island Rezoning FEIS (2009), Tables 16-12 and 16-14.
4. East New York Rezoning Proposal FEIS (2016), Table 13-8.
5. Auto and walk mode share assumptions (30 percent and 57 percent, respectively) provided by NYCDOT via e-mail on July 26, 2017 for the Ocean Bay Retail EAS (53-05 Beach Channel Drive, adjacent to the Peninsula Hospital site).
6. Daily person trip generation rates, modal split, Saturday vehicle occupancy, and temporal distribution provided by NYCDOT via e-mail in October 2017 and based on a survey peformed at three comparable medical office sites located in Queens.
7. Weekday vehicle occupancy provided by NYCDOT via conference call in October 2017.
8. Brooklyn Bridge Park FEIS, Table 14-6, Park land use.
9. Arverne Urban Renewal Area/Arverne By the Sea FEIS (CEQR 02HPD004Q), Table 2.13-13. Assumed WMD directional distribution same as SMD.
10. U.S. Census Data. 2011-2015 American Community Survey. Table 08006: Sex of workers by means of transportation to work. Queens census tracts 964, 972.02, 972.03, 972.04, and 992. Ferry mode share assumed to detract from subway mode share by 3 percent and from auto mode share by 2 percent.
11. Gateway Estates II FEIS (2009), Table 16-16.

## Table 12-39: Peninsula Hospital Site – Proposed Project Detailed Trip Generation Estimates

**Travel Demand Forecast (Person Trips)**

| | | Local Retail | | Destination Retail | | Supermarket | | Medical Office | | Active Open Space | | Residential | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Daily Trips | Weekday | 2,819 | | 1,017 | | 3,325 | | 7,871 | | 76 | | 13,179 | | 28,287 | | |
| | Saturday | 3,301 | | 1,203 | | 4,389 | | 3,909 | | 108 | | 15,667 | | 28,577 | | |
| Peak Hour Trips | AM | 85 | | 31 | | 166 | | 811 | | 4 | | 1,317 | | 2,414 | | |
| | MD | 536 | | 92 | | 200 | | 897 | | 4 | | 660 | | 2,389 | | |
| | PM | 281 | | 92 | | 333 | | 677 | | 4 | | 1,449 | | 2,836 | | |
| | Sat MD | 331 | | 132 | | 395 | | 344 | | 8 | | 1,252 | | 2,462 | | |
| | | In | Out | In | Out | In | Out | In | Out | In | Out | In | Out | In | Out | TOTAL |
| AM | Auto | 5 | 5 | 11 | 7 | 22 | 27 | 339 | 42 | 0 | 0 | 74 | 410 | 451 | 491 | 942 |
| | Taxi | 0 | 0 | 1 | 0 | 2 | 3 | 50 | 6 | 0 | 0 | 1 | 21 | 54 | 30 | 84 |
| | Subway | 4 | 4 | 3 | 2 | 4 | 5 | 43 | 6 | 0 | 0 | 64 | 366 | 118 | 383 | 501 |
| | Bus | 1 | 1 | 3 | 2 | 4 | 5 | 101 | 12 | 0 | 0 | 34 | 193 | 143 | 213 | 356 |
| | Walk/Other | 32 | 32 | 1 | 1 | 43 | 52 | 187 | 23 | 0 | 0 | 12 | 72 | 275 | 180 | 455 |
| | Ferry (via Q22 Bus) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 57 | 10 | 57 | 67 |
| | Total | 42 | 42 | 19 | 12 | 75 | 92 | 720 | 89 | 0 | 0 | 195 | 1119 | 1,051 | 1,354 | 2,405 |
| MD | Auto | 29 | 29 | 30 | 24 | 28 | 32 | 215 | 206 | 0 | 0 | 123 | 123 | 425 | 414 | 839 |
| | Taxi | 0 | 0 | 2 | 1 | 3 | 3 | 32 | 31 | 0 | 0 | 8 | 8 | 45 | 43 | 88 |
| | Subway | 24 | 24 | 8 | 6 | 5 | 5 | 27 | 27 | 0 | 0 | 108 | 108 | 172 | 170 | 342 |
| | Bus | 13 | 13 | 9 | 7 | 5 | 5 | 64 | 62 | 0 | 0 | 57 | 57 | 148 | 144 | 292 |
| | Walk/Other | 200 | 200 | 3 | 2 | 52 | 62 | 119 | 114 | 0 | 0 | 21 | 21 | 395 | 399 | 794 |
| | Ferry (via Q22 Bus) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 18 | 18 | 18 | 36 |
| | Total | 266 | 266 | 52 | 40 | 93 | 107 | 457 | 440 | 0 | 0 | 335 | 335 | 1,203 | 1,188 | 2,391 |
| PM | Auto | 16 | 16 | 26 | 29 | 47 | 53 | 152 | 165 | 0 | 0 | 374 | 160 | 615 | 423 | 1,038 |
| | Taxi | 0 | 0 | 1 | 1 | 5 | 5 | 23 | 25 | 0 | 0 | 20 | 9 | 49 | 40 | 89 |
| | Subway | 13 | 13 | 6 | 7 | 8 | 9 | 19 | 21 | 0 | 0 | 332 | 142 | 378 | 192 | 570 |
| | Bus | 7 | 7 | 8 | 9 | 8 | 9 | 46 | 50 | 0 | 0 | 172 | 74 | 241 | 149 | 390 |
| | Walk/Other | 106 | 106 | 2 | 2 | 89 | 101 | 85 | 92 | 0 | 0 | 64 | 29 | 346 | 330 | 676 |
| | Ferry (via Q22 Bus) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 51 | 21 | 51 | 21 | 72 |
| | Total | 142 | 142 | 43 | 48 | 157 | 177 | 325 | 353 | 0 | 0 | 1013 | 435 | 1,680 | 1,155 | 2,835 |
| SAT MD | Auto | 15 | 11 | 43 | 35 | 55 | 64 | 144 | 138 | 0 | 0 | 229 | 229 | 486 | 477 | 963 |
| | Taxi | 0 | 0 | 4 | 3 | 5 | 6 | 10 | 10 | 0 | 0 | 12 | 12 | 31 | 31 | 62 |
| | Subway | 13 | 11 | 9 | 8 | 9 | 11 | 2 | 2 | 0 | 0 | 204 | 204 | 237 | 236 | 473 |
| | Bus | 9 | 7 | 13 | 11 | 9 | 11 | 10 | 10 | 0 | 0 | 108 | 108 | 149 | 147 | 296 |
| | Walk/Other | 147 | 120 | 4 | 3 | 104 | 122 | 9 | 8 | 4 | 0 | 40 | 40 | 308 | 293 | 601 |
| | Ferry (via Q22 Bus) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 33 | 33 | 33 | 66 |
| | Total | 184 | 149 | 73 | 60 | 182 | 214 | 175 | 168 | 4 | 0 | 626 | 626 | 1,244 | 1,217 | 2,461 |

**Travel Demand Forecast (Vehicle Trips)**

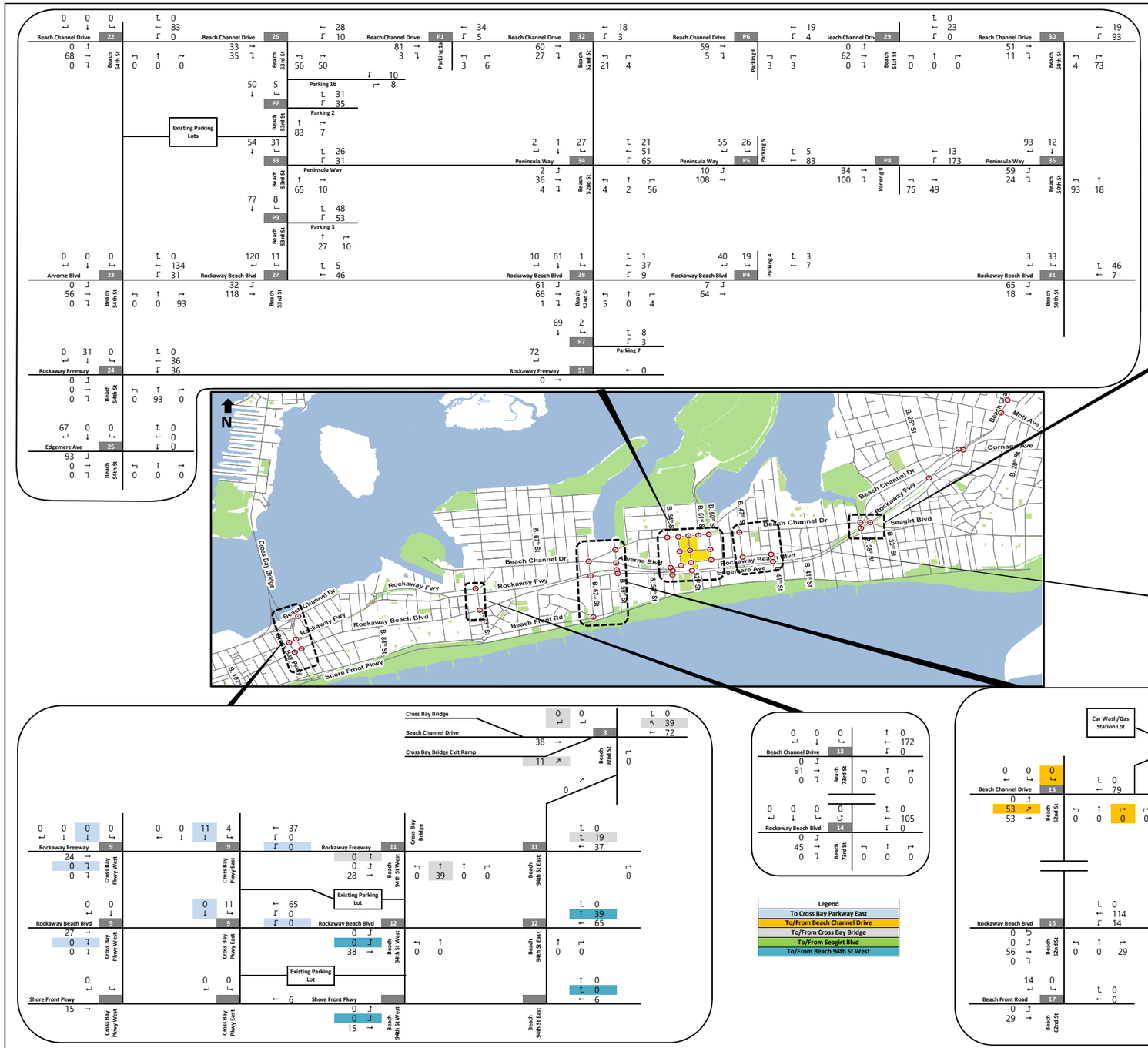
| | | Local Retail | | Destination Retail | | Supermarket | | Medical Office | | Active Open Space | | Residential | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | In | Out | In | Out | In | Out | In | Out | In | Out | In | Out | In | Out | TOTAL |
| AM | Auto | 5 | 5 | 8 | 5 | 13 | 16 | 226 | 28 | 0 | 0 | 67 | 378 | 319 | 432 | 751 |
| | Taxi | 0 | 0 | 1 | 0 | 1 | 2 | 33 | 4 | 0 | 0 | 1 | 13 | 36 | 19 | 55 |
| | Taxi (Balanced)[1] | 0 | 0 | 1 | 1 | 3 | 3 | 37 | 37 | 0 | 0 | 14 | 14 | 55 | 55 | 110 |
| | Truck | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 7 | 7 | 9 | 9 | 18 |
| | Total | 5 | 5 | 9 | 6 | 16 | 19 | 265 | 67 | 0 | 0 | 88 | 399 | 383 | 496 | 879 |
| MD | Auto | 16 | 16 | 21 | 17 | 17 | 19 | 144 | 137 | 0 | 0 | 113 | 113 | 311 | 302 | 613 |
| | Taxi | 0 | 0 | 1 | 1 | 2 | 2 | 21 | 21 | 0 | 0 | 8 | 8 | 32 | 32 | 64 |
| | Taxi (Balanced)[1] | 0 | 0 | 2 | 2 | 4 | 4 | 42 | 42 | 0 | 0 | 16 | 16 | 64 | 64 | 128 |
| | Truck | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 3 | 6 |
| | Total | 16 | 16 | 24 | 20 | 21 | 23 | 186 | 179 | 0 | 0 | 131 | 131 | 378 | 369 | 747 |
| PM | Auto | 9 | 9 | 19 | 21 | 28 | 32 | 102 | 110 | 0 | 0 | 345 | 149 | 503 | 321 | 824 |
| | Taxi | 0 | 0 | 1 | 1 | 4 | 4 | 15 | 17 | 0 | 0 | 12 | 9 | 32 | 31 | 63 |
| | Taxi (Balanced)[1] | 0 | 0 | 2 | 2 | 8 | 8 | 32 | 32 | 0 | 0 | 21 | 21 | 63 | 63 | 126 |
| | Truck | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 9 | 9 | 21 | 23 | 36 | 40 | 134 | 142 | 0 | 0 | 366 | 170 | 566 | 384 | 950 |
| Sat MD | Auto | 9 | 7 | 25 | 20 | 33 | 39 | 90 | 86 | 0 | 0 | 211 | 211 | 368 | 363 | 731 |
| | Taxi | 0 | 0 | 2 | 2 | 4 | 4 | 6 | 6 | 0 | 0 | 12 | 12 | 24 | 24 | 48 |
| | Taxi (Balanced)[1] | 0 | 0 | 4 | 4 | 8 | 8 | 12 | 12 | 0 | 0 | 24 | 24 | 48 | 48 | 96 |
| | Truck | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | Total | 9 | 7 | 29 | 24 | 41 | 47 | 102 | 98 | 0 | 0 | 235 | 235 | 416 | 411 | 827 |

Notes
(1) A 0% taxi overlap rate was assumed, based on the *CEQR 2014 Technical Manual* .

**Travel Demand Forecast (Total Walk Trips)**

| | | Local Retail | | Destination Retail | | Supermarket | | Medical Office | | Active Open Space | | Residential | | TOTAL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | In | Out | In | Out | In | Out | In | Out | In | Out | In | Out | In | Out | TOTAL |
| AM | Total Walk Trips[1] | 37 | 37 | 7 | 5 | 51 | 62 | 331 | 41 | 0 | 0 | 120 | 688 | 546 | 833 | 1,379 |
| MD | Total Walk Trips[1] | 237 | 237 | 20 | 15 | 62 | 72 | 210 | 203 | 0 | 0 | 204 | 204 | 733 | 731 | 1,464 |
| PM | Total Walk Trips[1] | 126 | 126 | 16 | 18 | 105 | 119 | 150 | 163 | 0 | 0 | 619 | 266 | 1,016 | 692 | 1,708 |
| SAT MD | Total Walk Trips[1] | 169 | 138 | 26 | 22 | 122 | 144 | 21 | 20 | 4 | 0 | 385 | 385 | 727 | 709 | 1,436 |

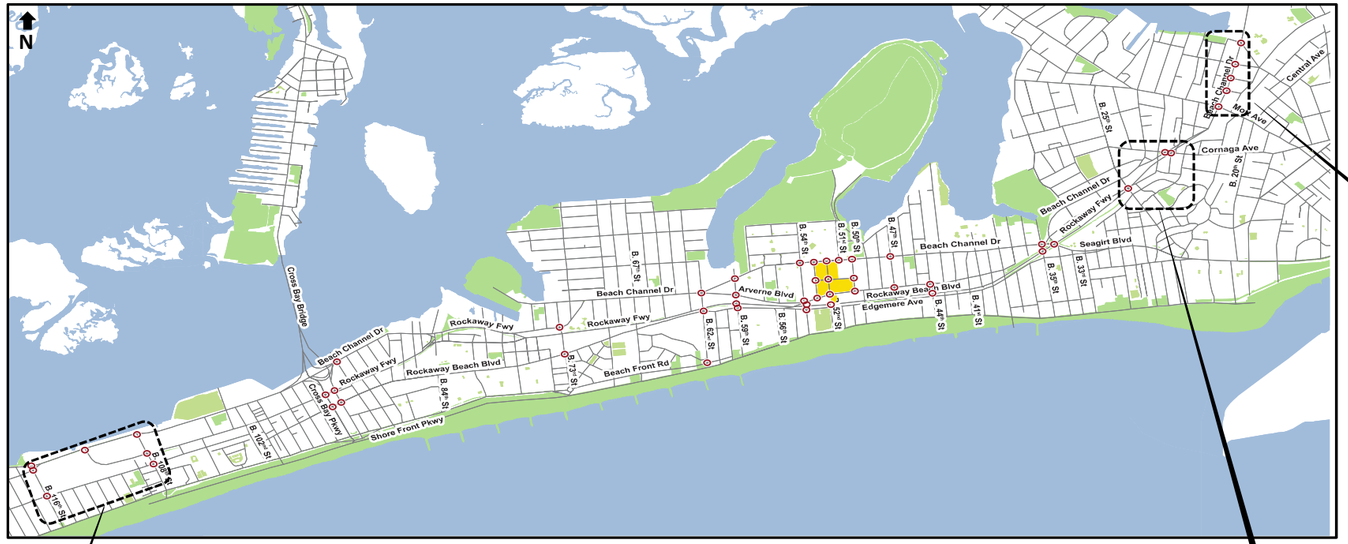
Notes
(1) Total walk trips includes all trips via transit plus walk only trips.

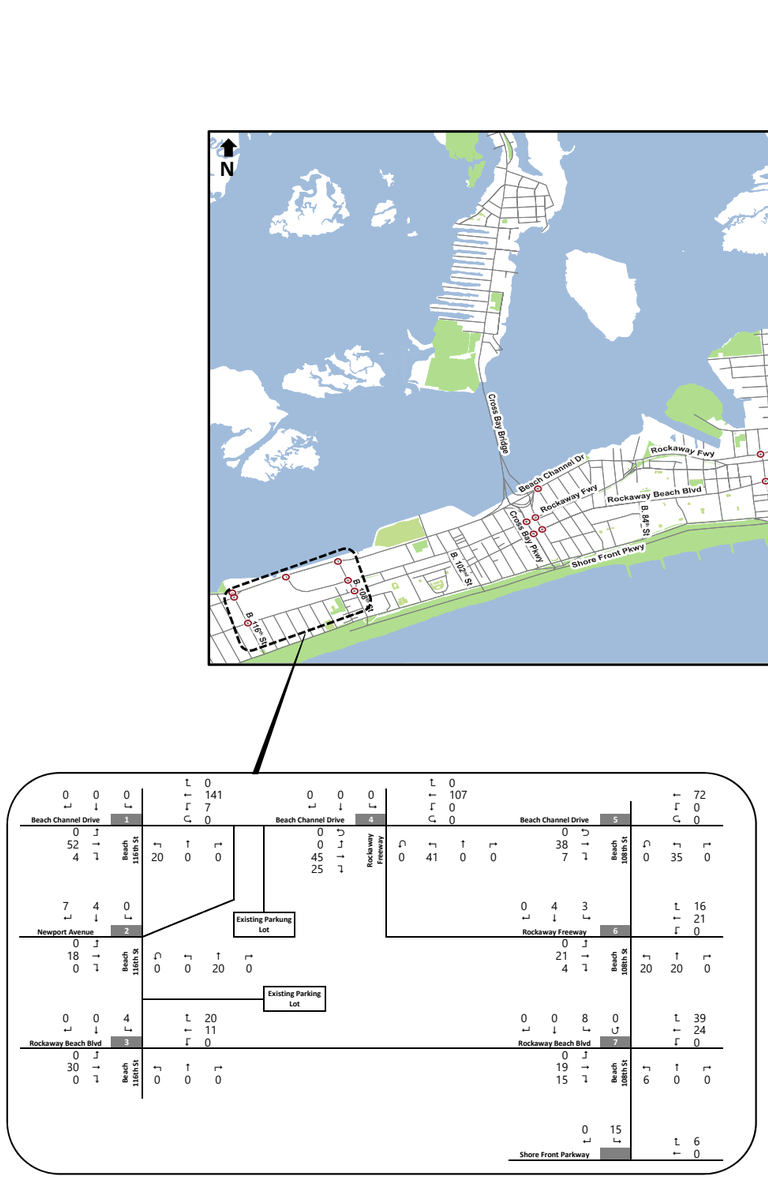



NOT TO SCALE

**Peninsula Hospital EIS**

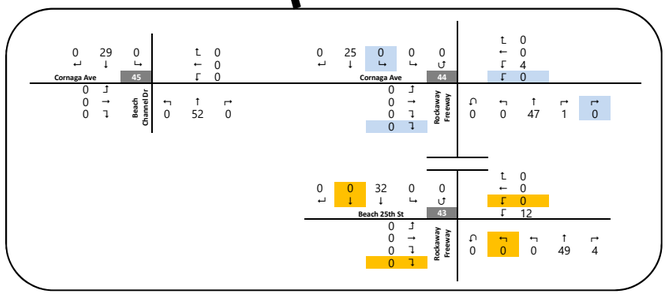
**Project Increment Traffic Volumes**
**Weekday AM Peak Hour**
**Figure 12-14A**







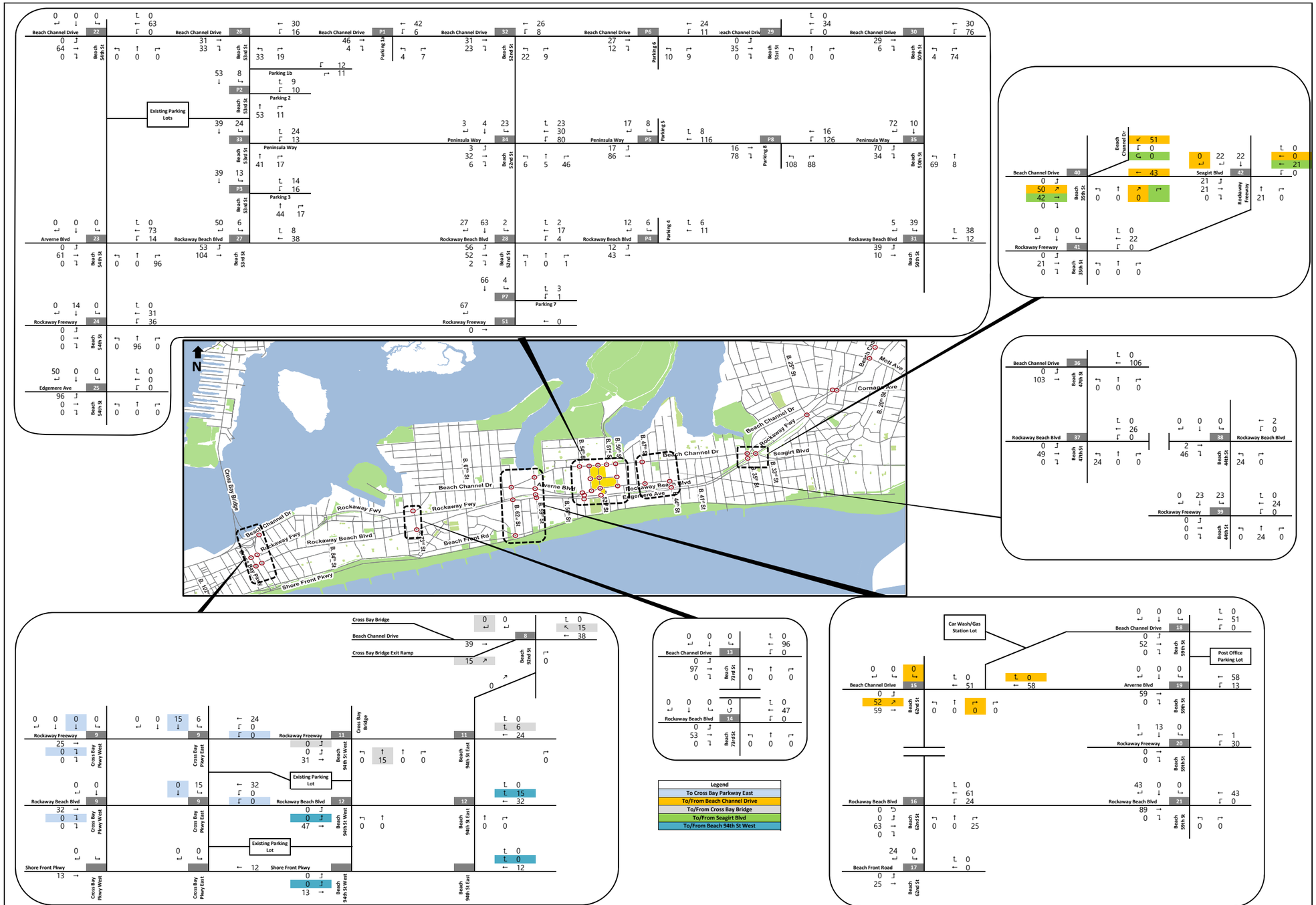



Legend
To Nasby Pl
To Far Rockaway Blvd

NOT TO SCALE

**Peninsula Hospital EIS**

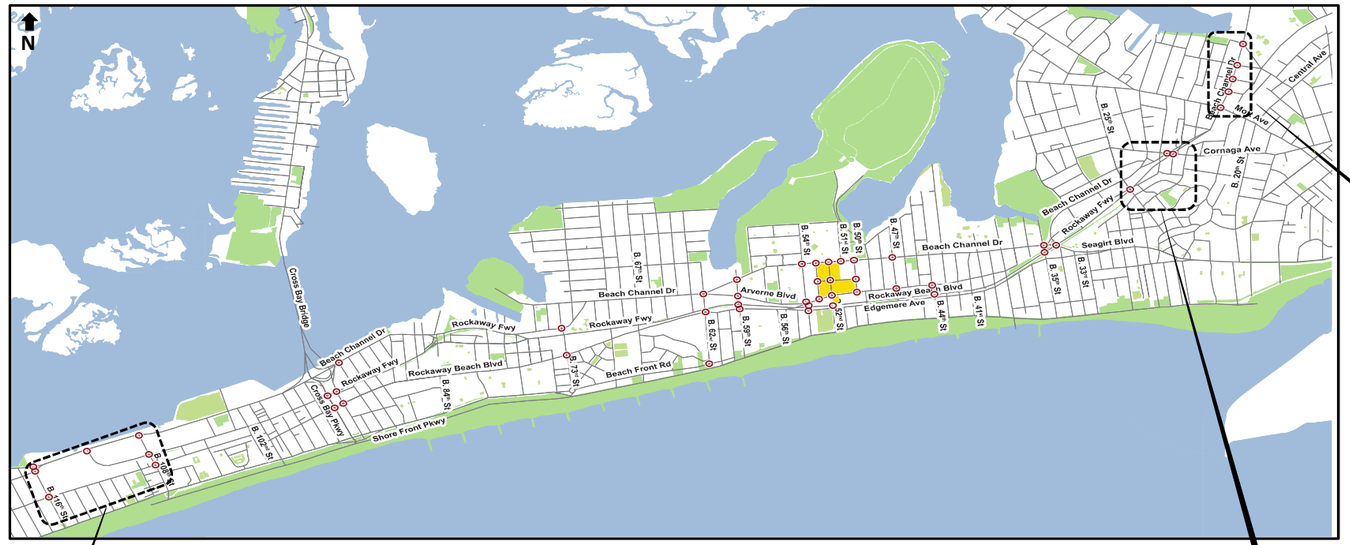
**Project Increment Traffic Volumes**
**Weekday AM Peak Hour**
**Figure 12-14B**

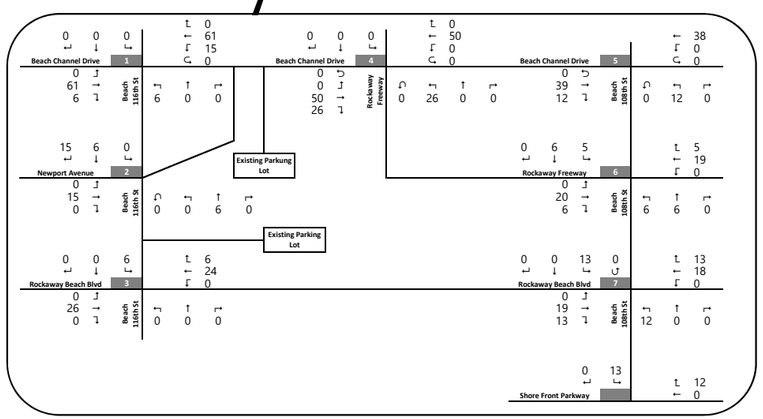


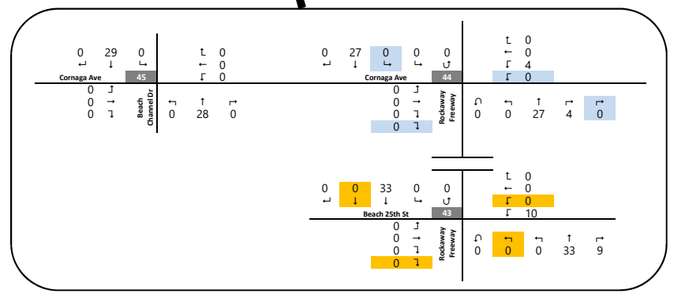

NOT TO SCALE

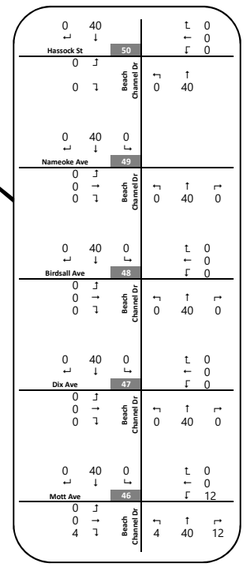
**Peninsula Hospital EIS**

**Project Increment Traffic Volumes**
**Weekday MD Peak Hour**
**Figure 12-15A**



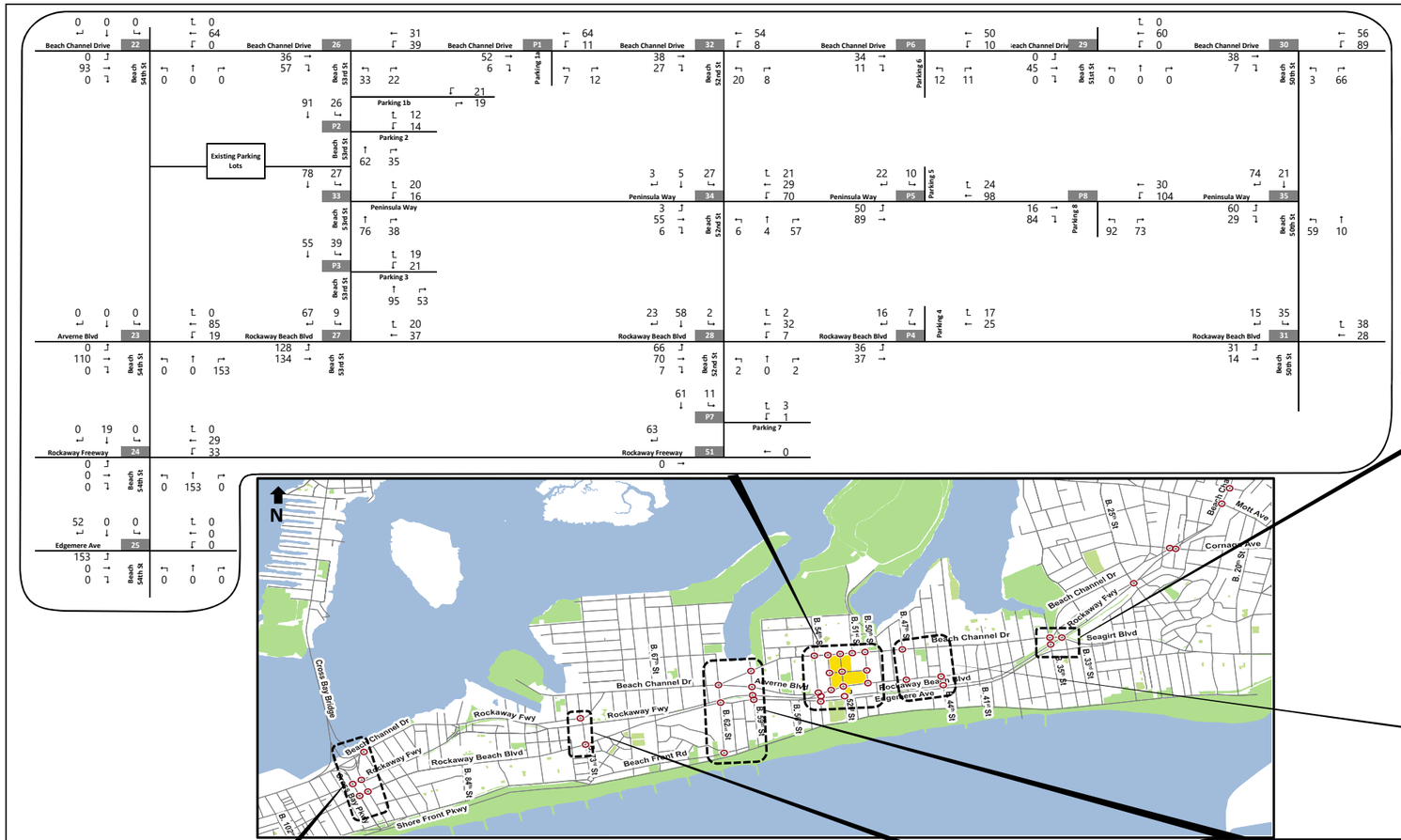



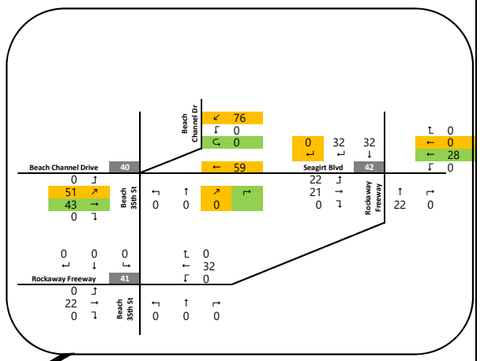

Legend
To Nasby Pl
To Far Rockaway Blvd

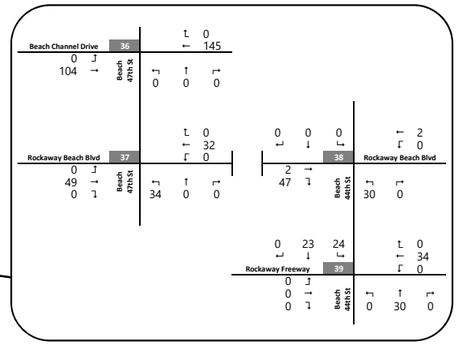
NOT TO SCALE

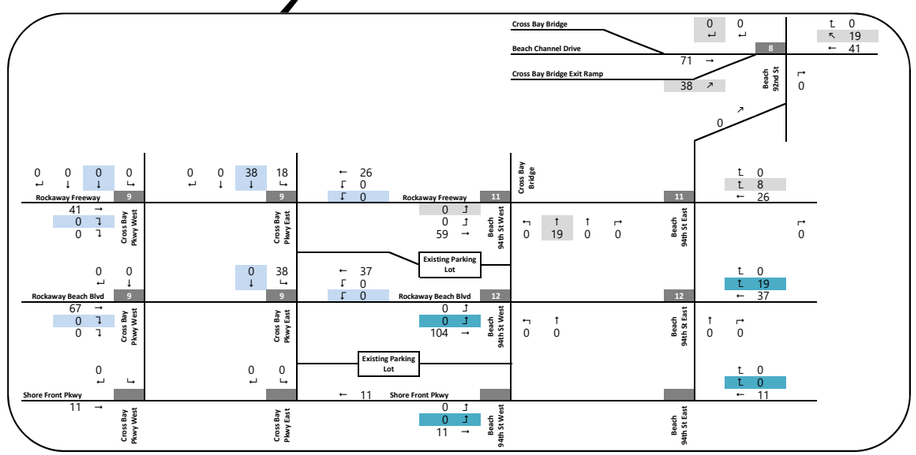
Peninsula Hospital EIS

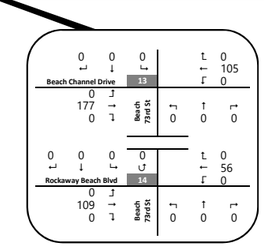
**Project Increment Traffic Volumes**
**Weekday MD Peak Hour**
**Figure 12-15B**



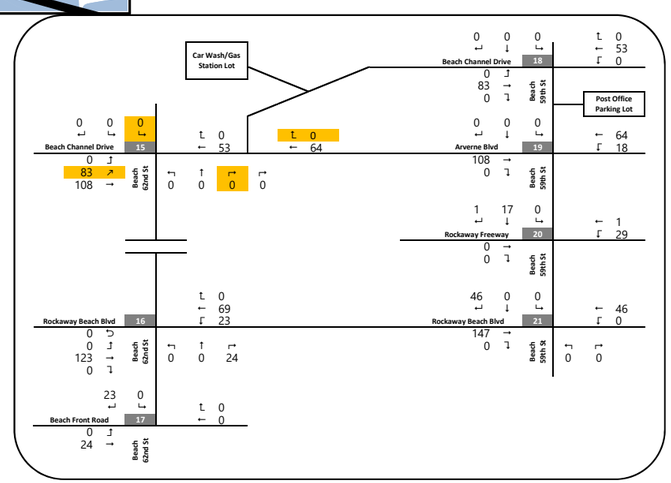




Legend

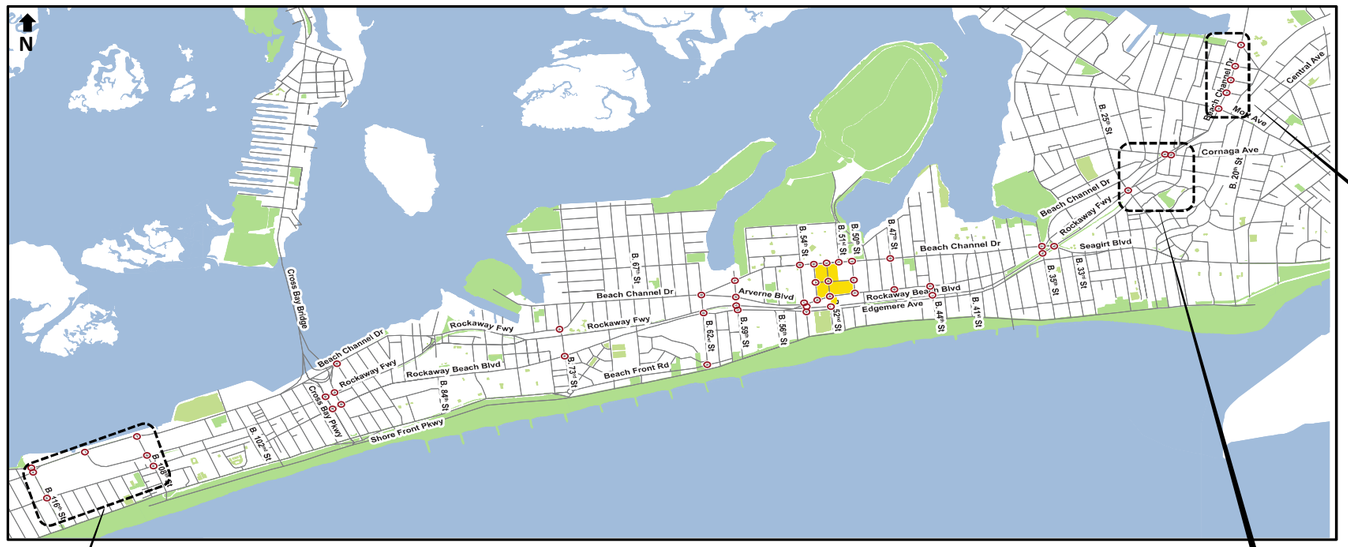
- To Cross Bay Parkway East
- To/From Beach Channel Drive
- To/From Cross Bay Bridge
- To/From Seagirt Blvd
- To/From Beach 94th St West

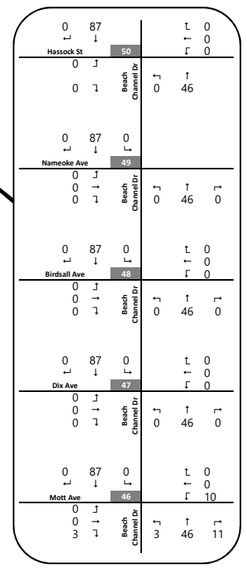


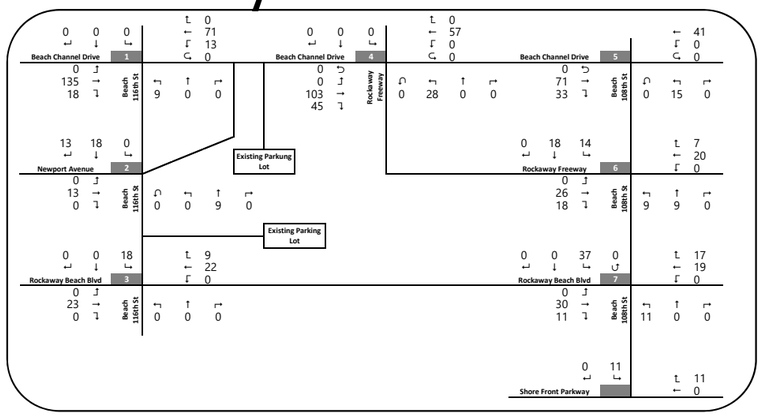

NOT TO SCALE

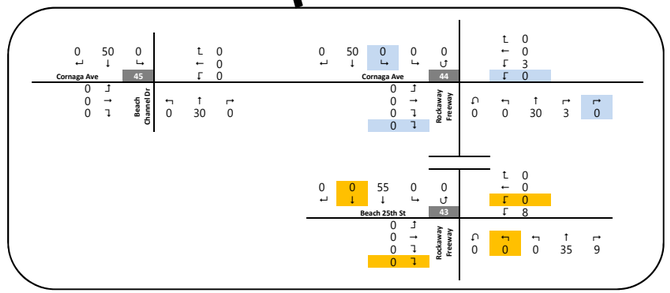
**Peninsula Hospital EIS**

**Project Increment Traffic Volumes**
**Weekday PM Peak Hour**
**Figure 12-16A**



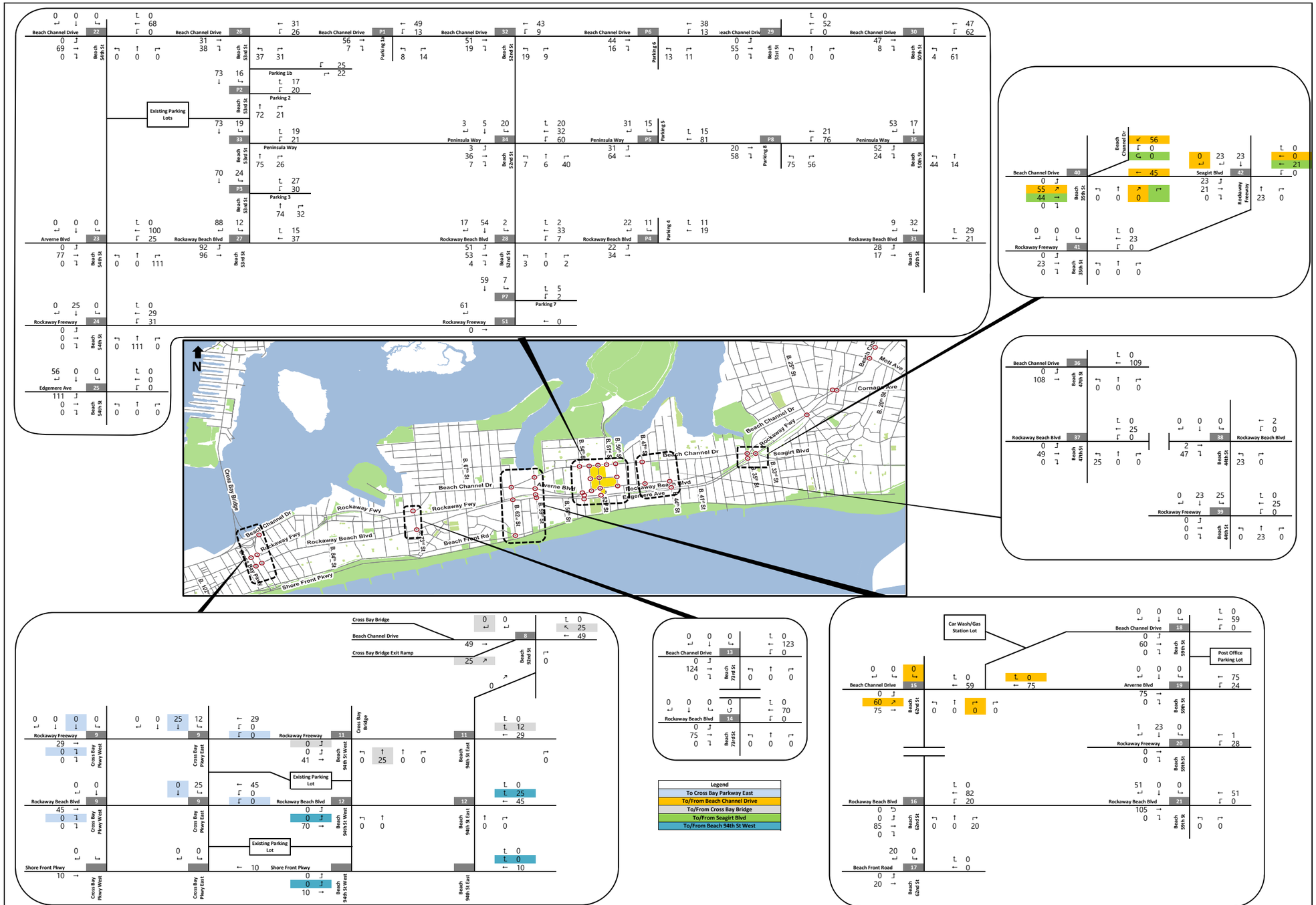




| Legend |
| --- |
| To Nasby Pl |
| To Far Rockaway Blvd |

NOT TO SCALE

**Peninsula Hospital EIS**

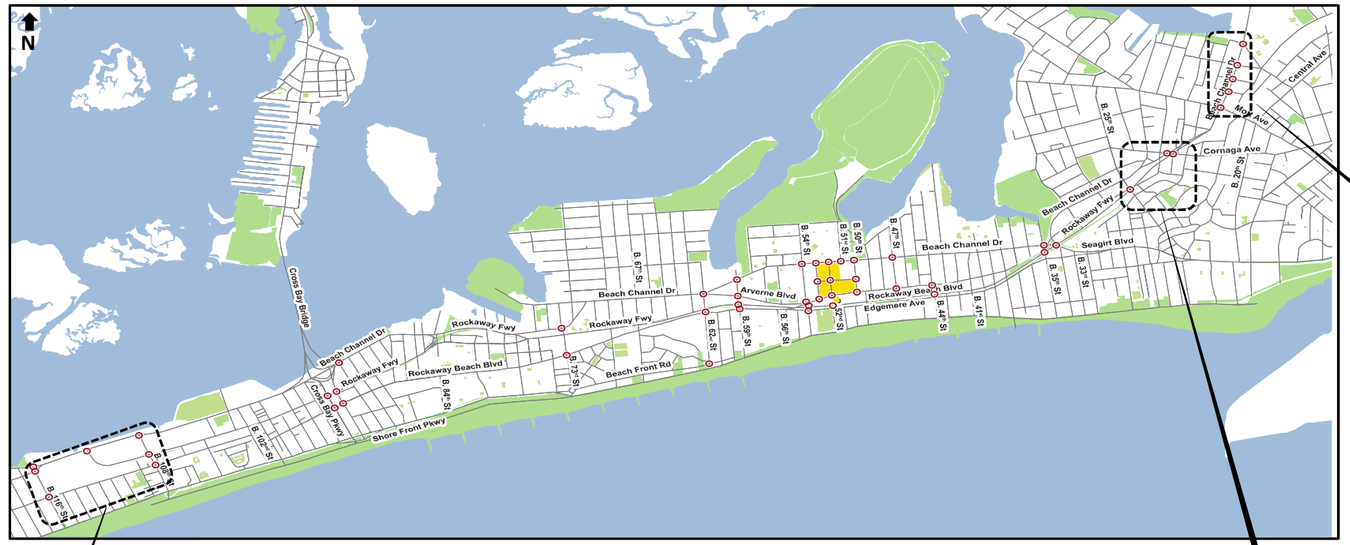
**Project Increment Traffic Volumes**
**Weekday PM Peak Hour**
**Figure 12-16B**




NOT TO SCALE

**Peninsula Hospital EIS**

**Project Increment Traffic Volumes**
**Saturday MD Peak Hour**
**Figure 12-17A**




NOT TO SCALE

**Peninsula Hospital EIS**

**Project Increment Traffic Volumes**
**Saturday MD Peak Hour**
**Figure 12-17B**

**Table 12-40: 2034 With-Action Condition Weekday Project Parking Accumulation**

| Hour | Local Retail | | | Destination Retail | | | Supermarket | | | Medical Office | | | Active Open Space | | | Residential | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | IN | OUT | Accumulation | IN | OUT | Accumulation | IN | OUT | Accumulation | IN | OUT | Accumulation | IN | OUT | Accumulation | IN | OUT | Accumulation | IN | OUT | Accumulation |
| **Before 12** | | | | | | | | | | | | | | | | | | 818 | | | 818 |
| **12-1 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 39 | 818 | 39 | 39 | 818 |
| **1-2 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 18 | 818 | 18 | 18 | 818 |
| **2-3 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 11 | 818 | 11 | 11 | 818 |
| **3-4 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 818 | 7 | 7 | 818 |
| **4-5 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 818 | 7 | 7 | 818 |
| **5-6 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 7 | 818 | 7 | 7 | 818 |
| **6-7 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 21 | 804 | 7 | 21 | 804 |
| **7-8 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 11 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 137 | 699 | 46 | 148 | 702 |
| **8-9 AM** | 5 | 5 | 0 | 8 | 5 | 3 | 13 | 16 | 0 | 226 | 28 | 198 | 0 | 0 | 0 | 67 | 378 | 388 | 319 | 432 | 589 |
| **9-10 AM** | 1 | 1 | 0 | 15 | 15 | 3 | 15 | 8 | 7 | 65 | 64 | 199 | 0 | 0 | 0 | 69 | 189 | 268 | 165 | 277 | 477 |
| **10-11 AM** | 3 | 3 | 0 | 17 | 15 | 5 | 11 | 10 | 8 | 103 | 106 | 196 | 4 | 4 | 0 | 89 | 132 | 225 | 227 | 270 | 434 |
| **11-12 PM** | 6 | 6 | 0 | 17 | 19 | 3 | 16 | 13 | 11 | 139 | 156 | 179 | 4 | 4 | 0 | 99 | 99 | 225 | 281 | 297 | 418 |
| **12-1 PM** | 11 | 11 | 0 | 17 | 17 | 3 | 18 | 18 | 11 | 79 | 93 | 165 | 0 | 0 | 0 | 96 | 92 | 229 | 221 | 231 | 408 |
| **1-2 PM** | 16 | 16 | 0 | 21 | 17 | 7 | 17 | 19 | 9 | 144 | 137 | 172 | 0 | 0 | 0 | 113 | 113 | 229 | 311 | 302 | 417 |
| **2-3 PM** | 8 | 8 | 0 | 17 | 18 | 6 | 22 | 20 | 11 | 108 | 131 | 149 | 0 | 0 | 0 | 95 | 94 | 230 | 250 | 271 | 396 |
| **3-4 PM** | 6 | 6 | 0 | 21 | 21 | 6 | 28 | 26 | 13 | 120 | 102 | 167 | 0 | 0 | 0 | 144 | 96 | 278 | 319 | 251 | 464 |
| **4-5 PM** | 8 | 8 | 0 | 20 | 22 | 4 | 29 | 24 | 18 | 142 | 174 | 135 | 0 | 0 | 0 | 210 | 102 | 386 | 409 | 330 | 543 |
| **5-6 PM** | 9 | 9 | 0 | 19 | 21 | 2 | 28 | 32 | 14 | 102 | 110 | 127 | 0 | 0 | 0 | 345 | 149 | 582 | 503 | 321 | 725 |
| **6-7 PM** | 5 | 5 | 0 | 17 | 19 | 0 | 31 | 23 | 22 | 6 | 133 | 0 | 0 | 0 | 0 | 270 | 136 | 716 | 329 | 316 | 738 |
| **7-8 PM** | 1 | 1 | 0 | 12 | 12 | 0 | 26 | 29 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 237 | 129 | 824 | 276 | 171 | 843 |
| **8-9 PM** | 0 | 0 | 0 | 9 | 8 | 1 | 15 | 22 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 110 | 61 | 873 | 134 | 91 | 886 |
| **9-10 PM** | 0 | 0 | 0 | 4 | 5 | 0 | 10 | 15 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 96 | 811 | 48 | 116 | 818 |
| **10-11 PM** | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 11 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 74 | 73 | 812 | 80 | 84 | 814 |
| **11-12 PM** | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 47 | 818 | 56 | 52 | 818 |

**Sources:**

| | |
|---|---|
| Local Retail | Flushing Commons FEIS (2005), Tables 14-37 and 14-38 |
| Destination Retail | Flushing Commons FEIS (2005), Tables 14-37 and 14-38 |
| Supermarket | Domino Sugar Rezoning FEIS (2010), Table 17-19. |
| Medical Office | Parking temporal rates based on data from New York City Department of Transportation (NYCDOT). |
| Active Open Space | St. George Redevelopment FEIS (2013), Table 14-45 and 14-46. |
| Residential | Overnight parking based 2015 American Community Survey 5-year estimates. Table B08201: Household size by vehicles, Queens census tracts 972.03.Temporal and directional distribution based on Flushing Commons FEIS (2005), Tables 14-37 and 14-38. |

**Table 12-41: 2034 With-Action Condition Saturday Project Parking Accumulation**

| Hour | Local Retail | | | Destination Retail | | | Supermarket | | | Medical Office | | | Active Open Space | | | Residential | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | IN | OUT | Accumulation | IN | OUT | Accumulation | IN | OUT | Accumulation | IN | OUT | Accumulation | IN | OUT | Accumulation | IN | OUT | Accumulation | IN | OUT | Accumulation |
| **Before 12** | | | | | | | | | | | | | | | | | | 818 | | | 818 |
| **12-1 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 74 | 43 | 849 | 74 | 43 | 849 |
| **1-2 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | 33 | 872 | 56 | 33 | 872 |
| **2-3 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 29 | 886 | 43 | 29 | 886 |
| **3-4 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 18 | 901 | 33 | 18 | 901 |
| **4-5 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 11 | 929 | 39 | 11 | 929 |
| **5-6 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 18 | 944 | 33 | 18 | 944 |
| **6-7 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 61 | 56 | 949 | 61 | 56 | 949 |
| **7-8 AM** | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 77 | 89 | 937 | 86 | 93 | 942 |
| **8-9 AM** | 0 | 0 | 0 | 6 | 6 | 0 | 16 | 12 | 9 | 71 | 9 | 62 | 0 | 0 | 0 | 77 | 180 | 834 | 170 | 207 | 905 |
| **9-10 AM** | 0 | 0 | 0 | 9 | 9 | 0 | 16 | 15 | 10 | 134 | 66 | 130 | 0 | 0 | 0 | 123 | 166 | 791 | 282 | 256 | 931 |
| **10-11 AM** | 1 | 1 | 0 | 14 | 12 | 2 | 25 | 19 | 16 | 114 | 86 | 158 | 0 | 0 | 0 | 145 | 162 | 774 | 299 | 280 | 950 |
| **11-12 PM** | 5 | 5 | 0 | 18 | 18 | 2 | 24 | 24 | 16 | 113 | 127 | 144 | 4 | 4 | 0 | 162 | 172 | 764 | 326 | 350 | 926 |
| **12-1 PM** | 8 | 8 | 0 | 19 | 18 | 3 | 26 | 31 | 11 | 65 | 75 | 134 | 4 | 4 | 0 | 166 | 166 | 764 | 288 | 302 | 912 |
| **1-2 PM** | 12 | 12 | 0 | 20 | 21 | 2 | 39 | 36 | 14 | 112 | 108 | 138 | 0 | 0 | 0 | 178 | 166 | 776 | 361 | 343 | 930 |
| **2-3 PM** | 9 | 7 | 2 | 25 | 20 | 7 | 33 | 39 | 8 | 90 | 86 | 142 | 0 | 0 | 0 | 211 | 211 | 776 | 368 | 363 | 935 |
| **3-4 PM** | 11 | 13 | 0 | 21 | 20 | 8 | 29 | 19 | 18 | 98 | 102 | 138 | 0 | 0 | 0 | 193 | 166 | 803 | 352 | 320 | 967 |
| **4-5 PM** | 10 | 10 | 0 | 19 | 21 | 6 | 35 | 35 | 18 | 115 | 130 | 123 | 4 | 4 | 0 | 172 | 156 | 819 | 355 | 356 | 966 |
| **5-6 PM** | 8 | 8 | 0 | 19 | 16 | 9 | 34 | 35 | 17 | 82 | 137 | 68 | 4 | 4 | 0 | 145 | 151 | 813 | 292 | 351 | 907 |
| **6-7 PM** | 3 | 3 | 0 | 15 | 17 | 7 | 31 | 30 | 18 | 7 | 75 | 0 | 0 | 0 | 0 | 140 | 151 | 802 | 196 | 276 | 827 |
| **7-8 PM** | 0 | 0 | 0 | 10 | 12 | 5 | 29 | 30 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 129 | 131 | 800 | 168 | 173 | 822 |
| **8-9 PM** | 0 | 0 | 0 | 7 | 8 | 4 | 24 | 26 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 118 | 131 | 787 | 149 | 165 | 806 |
| **9-10 PM** | 0 | 0 | 0 | 4 | 8 | 0 | 15 | 24 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 107 | 129 | 765 | 126 | 161 | 771 |
| **10-11 PM** | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 12 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 85 | 67 | 783 | 95 | 79 | 787 |
| **11-12 PM** | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 85 | 50 | 818 | 89 | 58 | 818 |

**Sources:**

| | |
|---|---|
| Local Retail | Flushing Commons FEIS (2005), Tables 14-37 and 14-38 |
| Destination Retail | Flushing Commons FEIS (2005), Tables 14-37 and 14-38 |
| Supermarket | Domino Sugar Rezoning FEIS (2010), Table 17-19. |
| Medical Office | Parking temporal rates based on data from New York City Department of Transportation (NYCDOT). |
| Active Open Space | St. George Redevelopment FEIS (2013), Table 14-45 and 14-46. |
| Residential | Overnight parking based 2015 American Community Survey 5-year estimates. Table B08201: Household size by vehicles, Queens census tracts 972.03.Temporal and directional distribution based on Flushing Commons FEIS (2005), Tables 14-37 and 14-38. |

# IX. FUTURE WITH THE PROPOSED ACTIONS

The No-Action Conditions analysis forms the future baseline to which projected trip increments associated with the Proposed Project are added to formulate the "With-Action" conditions. The *CEQR Technical Manual* defines how impacts to traffic, pedestrians, safety, and parking are to be determined. Furthermore, the *CEQR Techncal Manual* indicates that if the analysis results show that the Proposed Project would result in significant transportation-related impacts, then mitigation measures should be advanced to the greatest extent practicable to address these impacts.

## Traffic Conditions

**Figure 12-18** through **Figure 12-21** show the 2034 With-Action condition traffic volumes for the four peak hours. **Table 12-44: 2034 No-Action and With-Action Conditions Level of Service Analysis – Signalized Intersections** presents a comparison of No-Action and With-Action conditions for the signalized study intersections, and **Table 12-45: 2034 No-Action and With-Action Conditions Level of Service Analysis – Unsignalized Intersections** presents a comparison of No-Action and With-Action conditions for the unsignalized study intersections. Based on the significance criteria described in the *CEQR Technical Manual*, the lane groups at which significant adverse impacts would occur are summarized in **Table 12-42: Significantly Impacted Lane Groups at Signalized Intersections** for the signalized intersections and **Table 12-43: Significantly Impacted Lane Groups at Unsignalized Intersections** for the unsignalized intersections.

**Table 12-42: Significantly Impacted Lane Groups at Signalized Intersections**

| # | Intersection | Weekday AM Peak Hour | Weekday MD Peak Hour | Weekday PM Peak Hour | Saturday MD Peak Hour |
|---|---|---|---|---|---|
| 1 | Beach Channel Drive & Beach 116th Street | WB-LTR | WB-LTR | EB-LTR, WB-L, WB-TR | WB-LTR |
| 3 | Rockaway Beach Boulevard & Beach 116th Street | WB-LTR | WB-LTR | WB-LTR | |
| 4 | Beach Channel Drive & Rockaway Freeway | EB-LTR, WB-LTR | EB-LTR | EB-LTR, WB-LTR | EB-LTR |
| 5 | Beach Channel Drive & Beach 108th Street | WB-LT | | | |
| 7 | Rockaway Beach Boulevard & Beach 108th Street | EB-L, WB-TR | | | |
| 8 | Beach Channel Drive & Beach 92nd Street/Beach 94th Street | WB-TR | EB (Beach Channel Drive)-T, WB-TR | EB (Beach Channel Drive)-T, WB-TR | WB-TR |
| 13 | Beach Channel Drive & Beach 73rd Street | WB-TR | WB-TR | WB-L, WB-TR | |
| 15 | Beach Channel Drive & Beach 62nd Street | EB-LT, WB (Beach Channel Drive)-T, WB (Arverne Boulevard)-LR | EB-LT, WB (Arverne Boulevard)-LR | EB-LT, WB (Arverne Boulevard)-L | EB-LT, WB (Arverne Boulevard)-LR |
| 16 | Rockaway Beach Boulevard & Beach 62nd Street | WB-LTR | WB-LTR | WB-LTR | WB-LTR |
| 19 | Arverne Boulevard & Beach 59th Street | WB-LT | | WB-LT | |
| 20 | Rockaway Freeway & Beach 59th Street | WB-L | WB-L | WB-L | WB-L |
| 21 | Rockaway Beach Boulevard & Beach 59th Street | EB-TR, WB-LT | EB-TR, WB-LT | EB-TR, WB-LT | EB-TR, WB-LT |
| 23 | Arverne Boulevard & Beach 54th Street | WB-LTR | EB-LTR | EB-LTR, WB-LTR | |
| 24 | Rockaway Freeway & Beach 54th Street | | | NB-LTR | |
| 25 | Edgemere Avenue & Beach 54th Street | EB-LTR | EB-LTR, SB-LTR | EB-LTR, SB-LTR | EB-LTR, SB-LTR |
| 42 | Rockaway Freeway & Seagirt Boulevard | EB-TR | EB-TR | | |
| 44 | Rockaway Freeway & Cornaga Avenue | WB-LTR | | | |
| 46 | Beach Channel Drive & Mott Avenue | EB-LTR, NB-TR, SB-TR | NB-TR | EB-LTR, NB-TR, SB-TR | NB-TR |
| 47 | Beach Channel Drive & Dix Avenue | NB-LTR | NB-LTR | NB-LTR | |
| 48 | Beach Channel Drive & Birdsall Avenue | NB-LT | | SB-T | |
| 49 | Beach Channel Drive & Nameoke Avenue | NB-TR, SB-TR | NB-TR, SB-L, SB-TR | NB-TR, SB-L, SB-TR | NB-TR, SB-L, SB-TR |
| 50 | Beach Channel Drive & Hassock Street | NB-LT, SB-T | SB-T | SB-T | NB-LT, SB-T |
| | **Total Number of Impacted Lane Groups:** | **30** | **22** | **31** | **17** |
| | **Total Number of Impacted Intersections:** | **21** | **16** | **18** | **11** |

**Table 12-43: Significantly Impacted Lane Groups at Unsignalized Intersections**

| # | Intersection | Weekday AM Peak Hour | Weekday MD Peak Hour | Weekday PM Peak Hour | Saturday MD Peak Hour |
|---|---|---|---|---|---|
| 26 | Beach Channel Drive & Beach 53rd Street | NB-LR | NB-LR | WB-LT, NB-LR | NB-LR |
| 27 | Rockaway Beach Boulevard & Beach 53rd Street | SB-LR | SB-LR | EB-LT, SB-LR | SB-LR |
| 28 | Rockaway Beach Boulevard & Beach 52nd Street | | SB-LTR | | |
| 30 | Beach Channel Drive & Beach 50th Street | | NB-LR | | |
| P8 | Parking Garage 8 driveway, via Peninsula Way | NB-LR | NB-LR | NB-LR | |
| | **Total Number of Impacted Lane Groups:** | **3** | **5** | **5** | **2** |
| | **Total Number of Impacted Intersections:** | **3** | **5** | **3** | **2** |

Significantly impacted lane groups are denoted with a "+" sign in the **Table 12-44** and **Table 12-45** and are detailed below.

### *Level of Service – Signalized Intersections*

#### *Traffic Impacts*

*Beach Channel Drive and Beach 116th Street*

- During the **Weekday AM Peak Hour**, the westbound left-through-right lane group would deteriorate within LOS F from an average delay of 230.9 seconds and a v/c ratio of 1.44 to an average delay of 313.2 seconds and a v/c ratio of 1.63.
- During the **Weekday MD Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS D with an average delay of 54.6 seconds and a v/c ratio of 1.00 to LOS F with an average delay of 89.1 seconds and a v/c ratio of 1.11.
- During the **Weekday PM Peak Hour**, the eastbound left-through-right lane group would deteriorate from LOS D with an average delay of 48 seconds and a v/c ratio of 0.94 to LOS F with an average delay of 82.4 seconds and a v/c ratio of 1.07. The westbound defacto-left-turn lane group would deteriorate within LOS F from an average delay of 116.2 seconds and a v/c ratio of 1.07 to an average delay of 143 seconds and a v/c ratio of 1.15. The westbound through/right-turn lane group would deteriorate within LOS F from an average delay of 219.2 seconds and a v/c ratio of 1.41 to an average delay of 261.9 seconds and a v/c ratio of 1.51.
- During the **Saturday MD Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS C with an average delay of 33.8 seconds and a v/c ratio of 0.89 to LOS E with an average delay of 60.2 seconds and a v/c ratio of 1.02.

*Rockaway Beach Boulevard and Beach 116th Street*

- During the **Weekday AM Peak Hour**, the westbound left-through-right lane group would deteriorate within LOS D from an average delay of 36.9 seconds and a v/c ratio of 0.92 to an average delay of 51.5 seconds and a v/c ratio of 0.99.
- During the **Weekday MD Peak Hour**, the westbound left-through-right lane group would deteriorate within LOS D from an average delay of 35.1 seconds and a v/c ratio of 0.91 to an average delay of 45.6 seconds and a v/c ratio of 0.97.
- During the **Weekday PM Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS D with an average delay of 54.1 seconds and a v/c ratio of 1.00 to LOS E with an average delay of 71.8 seconds and a v/c ratio of 1.07.

*Beach Channel Drive and Rockaway Freeway*

- During the **Weekday AM Peak Hour**, the eastbound left-through-right lane group would deteriorate within LOS F from an average delay of 90.5 seconds and a v/c ratio of 1.10 to an average delay of 148.7 seconds and a v/c ratio of 1.24. The westbound left-through-right lane group would deteriorate from LOS E with an average delay of 68.7 seconds and a v/c ratio of 1.03 to LOS F with an average delay of 123.9 seconds and a v/c ratio of 1.18.
- During the **Weekday MD Peak Hour**, the eastbound left-through-right lane group would deteriorate within LOS D from an average delay of 38.3 seconds and a v/c ratio of 0.86 to an average delay of 51.7 seconds and a v/c ratio of 0.96.
- During the **Weekday PM Peak Hour**, the eastbound left-through-right lane group would deteriorate within LOS F from an average delay of 166.5 seconds and a v/c ratio of 1.28 to an average delay of 245.6 seconds and a v/c ratio of 1.46. The westbound left-through-right lane group would deteriorate

from LOS D with an average delay of 46.2 seconds and a v/c ratio of 0.93 to LOS F with an average delay of 87.7 seconds and a v/c ratio of 1.09.
- During the **Saturday MD Peak Hour**, the eastbound left-through-right lane group would deteriorate from LOS D with an average delay of 43.2 seconds and a v/c ratio of 0.91 to LOS E with an average delay of 73.9 seconds and a v/c ratio of 1.05.

*Beach Channel Drive and Beach 108th Street*

- During the **Weekday AM Peak Hour**, the westbound left-turn/through lane group would deteriorate within LOS F from an average delay of 111.0 seconds and a v/c ratio of 1.16 to an average delay of 166.1 seconds and a v/c ratio of 1.29.

*Rockaway Beach Boulevard and Beach 108th Street*

- During the **Weekday AM Peak Hour**, the eastbound left-turn lane group would deteriorate within LOS F from an average delay of 81.6 seconds and a v/c ratio of 0.95 to an average delay of 212.4 seconds and a v/c ratio of 1.31. The westbound through/right-turn lane group would deteriorate from LOS D with an average delay of 48.1 seconds and a v/c ratio of 0.94 to LOS F with an average delay of 82.4 seconds and a v/c ratio of 1.07.

*Beach Channel Drive and Beach 92nd Street/Beach 94th Street*

- During the **Weekday AM Peak Hour**, the westbound through/right-turn lane group would deteriorate within LOS F from an average delay of 292.5 seconds and a v/c ratio of 1.57 to an average delay of 385.9 seconds and a v/c ratio of 1.78.
- During the **Weekday MD Peak Hour**, the eastbound (Beach Channel Drive) through lane group would deteriorate within LOS D from an average delay of 42.2 seconds and a v/c ratio of 0.89 to an average delay of 52.4 seconds and a v/c ratio of 0.96. The westbound through/right-turn lane group would deteriorate within LOS F from an average delay of 143.6 seconds and a v/c ratio of 1.23 to an average delay of 186.7 seconds and a v/c ratio of 1.33.
- During the **Weekday PM Peak Hour**, the eastbound (Beach Channel Drive) through lane group would deteriorate from LOS E with an average delay of 79.6 seconds and a v/c ratio of 1.06 to LOS F with an average delay of 118.6 seconds and a v/c ratio of 1.17. The westbound through/right-turn lane group would deteriorate within LOS F from an average delay of 171.4 seconds and a v/c ratio of 1.29 to an average delay of 218.6 seconds and a v/c ratio of 1.40.
- During the **Saturday MD Peak Hour**, the westbound through/right-turn lane group would deteriorate within LOS F from an average delay of 103.6 seconds and a v/c ratio of 1.13 to an average delay of 158.4 seconds and a v/c ratio of 1.26.

*Beach Channel Drive and Beach 73rd Street*

- During the **Weekday AM Peak Hour**, the westbound through/right-turn lane group would deteriorate from LOS D with an average delay of 40.8 seconds and a v/c ratio of 0.95 to LOS F with an average delay of 113.3 seconds and a v/c ratio of 1.18.
- During the **Weekday MD Peak Hour**, the westbound through/right-turn lane group would deteriorate from LOS D with an average delay of 35.1 seconds and a v/c ratio of 0.91 to LOS E with an average delay of 70.8 seconds and a v/c ratio of 1.06.
- During the **Weekday PM Peak Hour**, the westbound left-turn lane group would deteriorate from LOS C with an average delay of 29.5 seconds and a v/c ratio of 0.59 to LOS F with an average delay of

154.9 seconds and a v/c ratio of 1.11. The westbound through/right-turn lane group would deteriorate from LOS D with an average delay of 35.3 seconds and a v/c ratio of 0.91 to LOS E with an average delay of 74.6 seconds and a v/c ratio of 1.07.

*Beach Channel Drive/Arverne Boulevard and Beach 62nd Street*

- During the **Weekday AM Peak Hour**, the eastbound left-turn/through lane group would deteriorate within LOS F from an average delay of 127.1 seconds and a v/c ratio of 1.18 to an average delay of 215.2 seconds and a v/c ratio of 1.39. The westbound (Beach Channel Drive) through lane group would deteriorate within LOS F from an average delay of 208.2 seconds and a v/c ratio of 1.37 to an average delay of 305.2 seconds and a v/c ratio of 1.59. The westbound (Arverne Boulevard) left-turn/right-turn lane group would deteriorate within LOS F from an average delay of 289.2 seconds and a v/c ratio of 1.52 to an average delay of 477.7 seconds and a v/c ratio of 1.95.
- During the **Weekday MD Peak Hour**, the eastbound left-turn/through lane group would deteriorate within LOS F from an average delay of 167.2 seconds and a v/c ratio of 1.28 to an average delay of 255.9 seconds and a v/c ratio of 1.49. The westbound (Arverne Boulevard) left-turn/right-turn lane group would deteriorate within LOS F from an average delay of 116.5 seconds and a v/c ratio of 1.11 to an average delay of 191.6 seconds and a v/c ratio of 1.31.
- During the **Weekday PM Peak Hour**, the eastbound left-turn/through lane group would deteriorate within LOS F from an average delay of 377 seconds and a v/c ratio of 1.76 to an average delay of 527.1 seconds and a v/c ratio of 2.10. The westbound (Arverne Boulevard) left-turn lane group would deteriorate from LOS E with an average delay of 78.2 seconds and a v/c ratio of 0.99 to LOS F with an average delay of 143.4 seconds and a v/c ratio of 1.19.
- During the **Saturday MD Peak Hour**, the eastbound left-turn/through lane group would deteriorate within LOS F from an average delay of 104.1 seconds and a v/c ratio of 1.13 to an average delay of 205.3 seconds and a v/c ratio of 1.37. The westbound (Arverne Boulevard) left-turn/right-turn lane group would deteriorate from LOS E with an average delay of 69.5 seconds and a v/c ratio of 0.95 to LOS F with an average delay of 144.4 seconds and a v/c ratio of 1.19.

*Rockaway Beach Boulevard and Beach 62nd Street*

- During the **Weekday AM Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS D with an average delay of 37.4 seconds and a v/c ratio of 0.84 to LOS E with an average delay of 78.0 seconds and a v/c ratio of 1.06.
- During the **Weekday MD Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS E with an average delay of 61.2 seconds and a v/c ratio of 0.99 to LOS F with an average delay of 149.1 seconds and a v/c ratio of 1.23.
- During the **Weekday PM Peak Hour**, the westbound left-through-right lane group would deteriorate within LOS F from an average delay of 333.6 seconds and a v/c ratio of 1.66 to an average delay of 544.9 seconds and a v/c ratio of 2.13.
- During the **Saturday MD Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS D with an average delay of 36.8 seconds and a v/c ratio of 0.82 to LOS F with an average delay of 116 seconds and a v/c ratio of 1.15.

*Arverne Boulevard and Beach 59th Street*

- During the **Weekday AM Peak Hour**, the westbound left-turn/through lane group would deteriorate from LOS D with an average delay of 41.7 seconds and a v/c ratio of 0.95 to LOS F with an average delay of 230.5 seconds and a v/c ratio of 1.45.
- During the **Weekday PM Peak Hour**, the westbound left-turn/through lane group would deteriorate from LOS D with an average delay of 50.8 seconds and a v/c ratio of 0.98 to LOS F with an average delay of 227.1 seconds and a v/c ratio of 1.44.

*Rockaway Freeway and Beach 59th Street*

- During the **Weekday AM Peak Hour**, the westbound left-turn lane group would deteriorate within LOS F from an average delay of 145.8 seconds and a v/c ratio of 1.13 to an average delay of 221.5 seconds and a v/c ratio of 1.33.
- During the **Weekday MD Peak Hour**, the westbound left-turn lane group would deteriorate from LOS D with an average delay of 50.9 seconds and a v/c ratio of 0.59 to LOS E with an average delay of 65.9 seconds and a v/c ratio of 0.78.
- During the **Weekday PM Peak Hour**, the westbound left-turn lane group would deteriorate within LOS F from an average delay of 107.5 seconds and a v/c ratio of 1.00 to an average delay of 172.3 seconds and a v/c ratio of 1.20.
- During the **Saturday MD Peak Hour**, the westbound left-turn lane group would deteriorate from LOS D with an average delay of 50.1 seconds and a v/c ratio of 0.57 to LOS E with an average delay of 63.0 seconds and a v/c ratio of 0.75.

*Rockaway Beach Boulevard and Beach 59th Street*

- During the **Weekday AM Peak Hour**, the eastbound through/right-turn lane group would deteriorate from LOS D with an average delay of 47.9 seconds and a v/c ratio of 0.94 to LOS F with an average delay of 83.0 seconds and a v/c ratio of 1.07. The westbound left-turn/through lane group would deteriorate from LOS D with an average delay of 45.2 seconds and a v/c ratio of 0.93 to LOS F with an average delay of 94.5 seconds and a v/c ratio of 1.11.
- During the **Weekday MD Peak Hour**, the eastbound through/right-turn lane group would deteriorate within LOS F from an average delay of 105.2 seconds and a v/c ratio of 1.13 to an average delay of 170.8 seconds and a v/c ratio of 1.30. The westbound left-turn/through lane group would deteriorate from LOS C with an average delay of 34.4 seconds and a v/c ratio of 0.81 to LOS E with an average delay of 56.3 seconds and a v/c ratio of 0.97.
- During the **Weekday PM Peak Hour**, the eastbound through/right-turn lane group would deteriorate within LOS F from an average delay of 194.6 seconds and a v/c ratio of 1.35 to an average delay of 303.1 seconds and a v/c ratio of 1.60. The westbound left-turn/through lane group would deteriorate within LOS F from an average delay of 129.7 seconds and a v/c ratio of 1.19 to an average delay of 261.9 seconds and a v/c ratio of 1.50.
- During the **Saturday MD Peak Hour**, the eastbound through/right-turn lane group would deteriorate from LOS E with an average delay of 55.2 seconds and a v/c ratio of 0.97 to LOS F with an average delay of 110.9 seconds and a v/c ratio of 1.15. The westbound left-turn/through lane group would deteriorate from LOS C with an average delay of 33.5 seconds and a v/c ratio of 0.80 to LOS E with an average delay of 59.6 seconds and a v/c ratio of 0.98.

*Arverne Boulevard and Beach 54th Street*

- During the **Weekday AM Peak Hour**, the westbound left-through-right lane group would deteriorate from LOS C with an average delay of 24.9 seconds and a v/c ratio of 0.60 to LOS E with an average delay of 79.6 seconds and a v/c ratio of 1.05.
- During the **Weekday MD Peak Hour**, the eastbound left-through-right lane group would deteriorate from LOS C with an average delay of 34.7 seconds and a v/c ratio of 0.81 to LOS D with an average delay of 45.3 seconds and a v/c ratio of 0.92.
- During the **Weekday PM Peak Hour**, the eastbound left-through-right lane group would deteriorate within LOS F from an average delay of 96.6 seconds and a v/c ratio of 1.11 to an average delay of 165.3 seconds and a v/c ratio of 1.28. The westbound left-through-right lane group would deteriorate from LOS C with an average delay of 26.5 seconds and a v/c ratio of 0.62 to LOS F with an average delay of 87.1 seconds and a v/c ratio of 1.06.

*Rockaway Freeway and Beach 54th Street*

- During the **Weekday PM Peak Hour**, the northbound left-through-right lane group would deteriorate from LOS C with an average delay of 32.0 seconds and a v/c ratio of 0.66 to LOS D with an average delay of 53.5 seconds and a v/c ratio of 0.94.

*Edgemere Avenue and Beach 54th Street*

- During the **Weekday AM Peak Hour**, the eastbound left-through-right lane group would deteriorate within LOS F from an average delay of 420.1 seconds and a v/c ratio of 1.85 to an average delay of 1182 seconds and a v/c ratio of 3.54.
- During the **Weekday MD Peak Hour**, the eastbound left-through-right lane group would deteriorate within LOS F from an average delay of 732.7 seconds and a v/c ratio of 2.55 to an average delay of 1589 seconds and a v/c ratio of 4.45. The southbound left-through-right lane group would deteriorate within LOS F from an average delay of 169.8 seconds and a v/c ratio of 1.27 to an average delay of 316 seconds and a v/c ratio of 1.61.
- During the **Weekday PM Peak Hour**, the eastbound left-through-right lane group would deteriorate from LOS F with an average delay of 3549 seconds and a v/c ratio of 8.79 to a delay and/or v/c ratio that exceeds the maximum reportable delay and/or v/c ratio in the analysis software. The southbound left-through-right lane group would deteriorate within LOS F from an average delay of 165.5 seconds and a v/c ratio of 1.26 to an average delay of 305.2 seconds and a v/c ratio of 1.59.
- During the **Saturday MD Peak Hour**, the eastbound left-through-right lane group would deteriorate within LOS F from an average delay of 581.5 seconds and a v/c ratio of 2.21 to an average delay of 1158 seconds and a v/c ratio of 3.49. The southbound left-through-right lane group would deteriorate within LOS F from an average delay of 84.4 seconds and a v/c ratio of 1.02 to an average delay of 194.2 seconds and a v/c ratio of 1.32.

*Rockaway Freeway and Seagirt Boulevard*

- During the **Weekday AM Peak Hour**, the eastbound through/right-turn lane group would deteriorate from LOS D with an average delay of 42.3 seconds and a v/c ratio of 0.23 to LOS E with an average delay of 75.9 seconds and a v/c ratio of 0.25.
- During the **Weekday MD Peak Hour**, the eastbound through/right-turn lane group would deteriorate from LOS E with an average delay of 62.1 seconds and a v/c ratio of 0.28 to LOS F with an average delay of 83.8 seconds and a v/c ratio of 0.31.

*Rockaway Freeway and Cornaga Avenue*

- During the **Weekday AM Peak Hour**, the westbound left-through-right lane group would deteriorate within LOS E from an average delay of 67.8 seconds and a v/c ratio of 0.98 to an average delay of 72.2 seconds and a v/c ratio of 1.00.

*Beach Channel Drive and Mott Avenue*

- During the **Weekday AM Peak Hour**, the eastbound left-through-right lane group would deteriorate from LOS E with an average delay of 78.7 seconds and a v/c ratio of 1.02 to LOS F with an average delay of 94.3 seconds and a v/c ratio of 1.07. The northbound through/right-turn lane group would deteriorate within LOS F from an average delay of 188.4 seconds and a v/c ratio of 1.33 to an average delay of 272.4 seconds and a v/c ratio of 1.52. The southbound through/right-turn lane group would deteriorate within LOS D from an average delay of 40.6 seconds and a v/c ratio of 0.95 to an average delay of 49.8 seconds and a v/c ratio of 1.00.
- During the **Weekday MD Peak Hour**, the northbound through/right-turn lane group would deteriorate within LOS F from an average delay of 149.3 seconds and a v/c ratio of 1.24 to an average delay of 193.6 seconds and a v/c ratio of 1.34.
- During the **Weekday PM Peak Hour**, the eastbound left-through-right lane group would deteriorate from LOS D with an average delay of 53.6 seconds and a v/c ratio of 0.89 to LOS E with an average delay of 58.7 seconds and a v/c ratio of 0.91. The northbound through/right-turn lane group would deteriorate within LOS F from an average delay of 223.3 seconds and a v/c ratio of 1.41 to an average delay of 273.7 seconds and a v/c ratio of 1.52. The southbound through/right-turn lane group would deteriorate from LOS E with an average delay of 76.9 seconds and a v/c ratio of 1.09 to LOS F with an average delay of 114.1 seconds and a v/c ratio of 1.18.
- During the **Saturday MD Peak Hour**, the northbound through/right-turn lane group would deteriorate within LOS F from an average delay of 156.0 seconds and a v/c ratio of 1.25 to an average delay of 211.7 seconds and a v/c ratio of 1.38.

*Beach Channel Drive and Dix Avenue*

- During the **Weekday AM Peak Hour**, the northbound left-through-right lane group would deteriorate within LOS F from an average delay of 127.1 seconds and a v/c ratio of 1.21 to an average delay of 184.5 seconds and a v/c ratio of 1.34.
- During the **Weekday MD Peak Hour**, the northbound left-through-right lane group would deteriorate within LOS F from an average delay of 96.8 seconds and a v/c ratio of 1.13 to an average delay of 122.1 seconds and a v/c ratio of 1.19.
- During the **Weekday PM Peak Hour**, the northbound left-through-right lane group would deteriorate within LOS F from an average delay of 83.3 seconds and a v/c ratio of 1.10 to an average delay of 109.0 seconds and a v/c ratio of 1.16.

*Beach Channel Drive and Birdsall Avenue*

- During the **Weekday AM Peak Hour**, the northbound left-turn/through lane group would deteriorate from LOS C with an average delay of 31.6 seconds and a v/c ratio of 0.90 to LOS D with an average delay of 50.3 seconds and a v/c ratio of 1.00.
- During the **Weekday PM Peak Hour**, the southbound through lane group would deteriorate from LOS D with an average delay of 43.0 seconds and a v/c ratio of 0.98 to LOS E with an average delay of 67.3 seconds and a v/c ratio of 1.07.

*Beach Channel Drive and Nameoke Avenue*

- During the **Weekday AM Peak Hour**, the northbound through/right-turn lane group would deteriorate within LOS F from an average delay of 165.7 seconds and a v/c ratio of 1.30 to an average delay of 220.9 seconds and a v/c ratio of 1.43. The southbound through/right-turn lane group would deteriorate within LOS F from an average delay of 109.6 seconds and a v/c ratio of 1.17 to an average delay of 129.8 seconds and a v/c ratio of 1.22.
- During the **Weekday MD Peak Hour**, the northbound through/right-turn lane group would deteriorate within LOS F from an average delay of 136.7 seconds and a v/c ratio of 1.24 to an average delay of 164.5 seconds and a v/c ratio of 1.30. The southbound left-turn lane group would deteriorate within LOS F from an average delay of 222.8 seconds and a v/c ratio of 1.31 to an average delay of 243.6 seconds and a v/c ratio of 1.36. The southbound through/right-turn lane group would deteriorate within LOS F from an average delay of 155.9 seconds and a v/c ratio of 1.28 to an average delay of 181.7 seconds and a v/c ratio of 1.34.
- During the **Weekday PM Peak Hour**, the northbound through/right-turn lane group would deteriorate within LOS F from an average delay of 106.9 seconds and a v/c ratio of 1.16 to an average delay of 131.6 seconds and a v/c ratio of 1.22. The southbound left-turn lane group would deteriorate within LOS F from an average delay of 95.1 seconds and a v/c ratio of 0.95 to an average delay of 202.5 seconds and a v/c ratio of 1.25. The southbound through/right-turn lane group would deteriorate within LOS F from an average delay of 239.9 seconds and a v/c ratio of 1.47 to an average delay of 294.3 seconds and a v/c ratio of 1.59.
- During the **Saturday MD Peak Hour**, the northbound through/right-turn lane group would deteriorate within LOS F from an average delay of 91.3 seconds and a v/c ratio of 1.12 to an average delay of 122.6 seconds and a v/c ratio of 1.20. The southbound left-turn lane group would deteriorate from LOS D with an average delay of 43.2 seconds and a v/c ratio of 0.66 to LOS E with an average delay of 74.0 seconds and a v/c ratio of 0.81. The southbound through/right-turn lane group would deteriorate within LOS F from an average delay of 139.9 seconds and a v/c ratio of 1.24 to an average delay of 172.8 seconds and a v/c ratio of 1.32.

*Beach Channel Drive and Hassock Avenue*

- During the **Weekday AM Peak Hour**, the northbound left-turn/through lane group would deteriorate from LOS C with an average delay of 29.1 seconds and a v/c ratio of 0.88 to LOS D with an average delay of 49.2 seconds and a v/c ratio of 1.00. The southbound through lane group would deteriorate from LOS D with an average delay of 45.9 seconds and a v/c ratio of 0.97 to LOS E with an average delay of 57.3 seconds and a v/c ratio of 1.02.
- During the **Weekday MD Peak Hour**, the southbound through lane group would deteriorate within LOS E from an average delay of 58.8 seconds and a v/c ratio of 1.03 to an average delay of 75.5 seconds and a v/c ratio of 1.08.
- During the **Weekday PM Peak Hour**, the southbound through lane group would deteriorate within LOS F from an average delay of 132.6 seconds and a v/c ratio of 1.22 to an average delay of 179.8 seconds and a v/c ratio of 1.33.
- During the **Saturday MD Peak Hour**, the northbound left-turn/through lane group would deteriorate from LOS C with an average delay of 33.4 seconds and a v/c ratio of 0.92 to LOS E with an average delay of 59.8 seconds and a v/c ratio of 1.04. The southbound through lane group would deteriorate within LOS F from an average delay of 83.6 seconds and a v/c ratio of 1.10 to an average delay of 113.1 seconds and a v/c ratio of 1.17.

### *Level of Service – Unsignalized Intersections*

#### *Traffic Impacts*

*Beach Channel Drive and Beach 53rd Street*

- During the **Weekday AM Peak Hour**, the northbound left-turn/right-turn lane group would deteriorate from LOS D with an average delay of 29.3 seconds and a v/c ratio of 0.33 to LOS F with an average delay of 1381.0 seconds and a v/c ratio of 3.73.
- During the **Weekday MD Peak Hour**, the northbound left-turn/right-turn lane group would deteriorate from LOS E with an average delay of 45.8 seconds and a v/c ratio of 0.53 to LOS F with an average delay of 1740.0 seconds and a v/c ratio of 4.38.
- During the **Weekday PM Peak Hour**, the westbound left-turn/through lane group would deteriorate from LOS A with an average delay of 9.4 seconds and a v/c ratio of 0.05 to LOS F with an average delay of 58.7 seconds and a v/c ratio of 0.57. The northbound left-turn/right-turn lane group would deteriorate from LOS D with an average delay of 29.3 seconds and a v/c ratio of 0.42 to LOS F with an average delay of 9057.0 seconds and a v/c ratio of 19.33.
- During the **Saturday MD Peak Hour**, the northbound left-turn/right-turn lane group would deteriorate from LOS C with an average delay of 17.2 seconds and a v/c ratio of 0.25 to LOS F with an average delay of 1609.0 seconds and a v/c ratio of 4.16.

*Rockaway Beach Boulevard and Beach 53rd Street*

- During the **Weekday AM Peak Hour**, the southbound left-turn/right-turn lane group would deteriorate from LOS C with an average delay of 15.5 seconds and a v/c ratio of 0.20 to LOS F with an average delay of 621.1 seconds and a v/c ratio of 2.18.
- During the **Weekday MD Peak Hour**, the southbound left-turn/right-turn lane group would deteriorate from LOS C with an average delay of 21.6 seconds and a v/c ratio of 0.21 to LOS F with an average delay of 449.5 seconds and a v/c ratio of 1.65.
- During the **Weekday PM Peak Hour**, the eastbound left-turn/through lane group would deteriorate from LOS B with an average delay of 10.4 seconds and a v/c ratio of 0.11 to LOS F with an average delay of 127.6 seconds and a v/c ratio of 1.08. The southbound left-turn/right-turn lane group would deteriorate from LOS D with an average delay of 33.1 seconds and a v/c ratio of 0.39 to a delay and/or v/c ratio that exceeds the maximum reportable delay and/or v/c ratio in the analysis software.
- During the **Saturday MD Peak Hour**, the southbound left-turn/right-turn lane group would deteriorate from LOS C with an average delay of 20.3 seconds and a v/c ratio of 0.25 to LOS F with an average delay of 1209.0 seconds and a v/c ratio of 3.37.

*Rockaway Beach Boulevard and Beach 52nd Street*

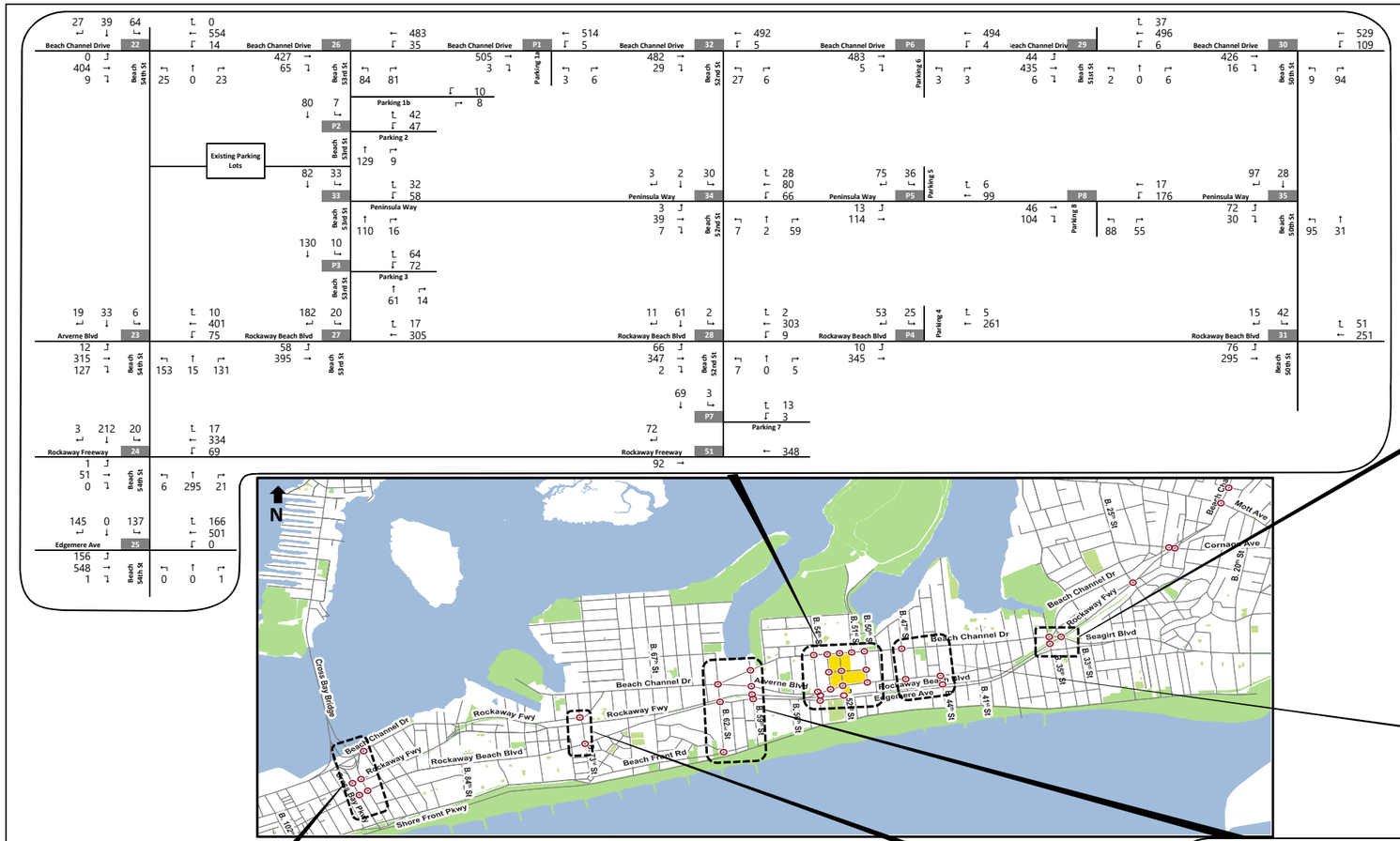
- During the **Weekday MD Peak Hour**, the southbound left-through-right lane group would deteriorate from LOS D with an average delay of 28.5 seconds and a v/c ratio of 0.01 to LOS F with an average delay of 417.9 seconds and a v/c ratio of 1.55.

*Beach Channel Drive and Beach 50th Street*

- During the **Weekday MD Peak Hour**, the northbound left-turn/right-turn lane group would deteriorate from LOS C with an average delay of 15.3 seconds and a v/c ratio of 0.07 to LOS D with an average delay of 31.4 seconds and a v/c ratio of 0.48.

*Parking Garage 8 driveway, via Peninsula Way*

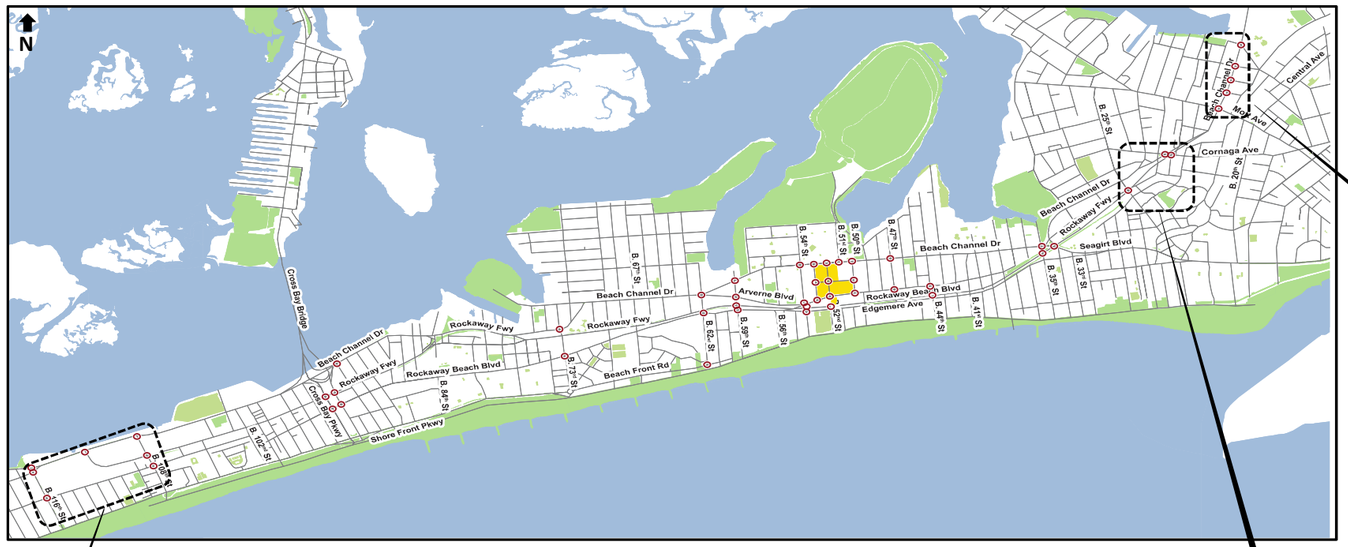
- During the **Weekday AM Peak Hour**, the northbound left-turn/right-turn lane group would experience LOS F with an average delay of 71.8 seconds and a v/c ratio of 0.80.
- During the **Weekday MD Peak Hour**, the northbound left-turn/right-turn lane group would experience LOS F with an average delay of 259.4 seconds and a v/c ratio of 1.38.
- During the **Weekday PM Peak Hour**, the northbound left-turn/right-turn lane group would experience LOS F with an average delay of 88.4 seconds and a v/c ratio of 0.91.

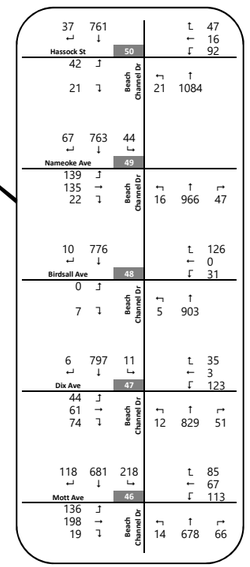


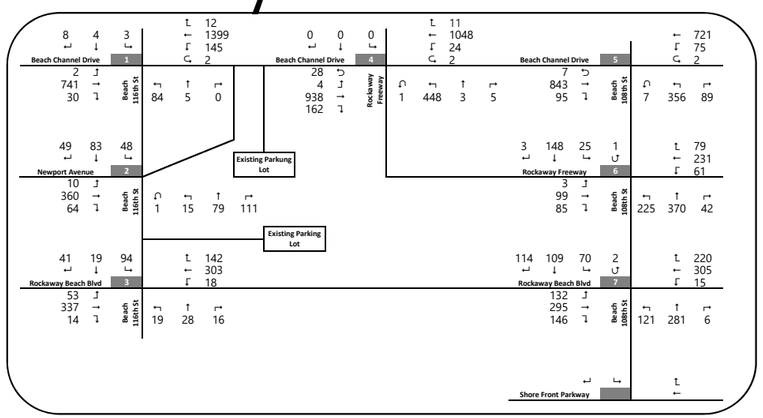

NOT TO SCALE

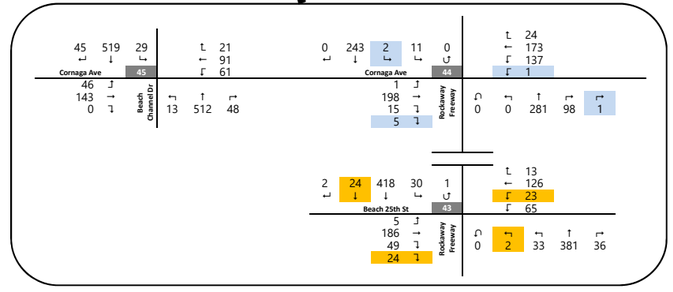
**Peninsula Hospital Site Redevelopment**

**2034 With-Action Conditions Traffic Volumes**
**Weekday AM Peak Hour**
**Figure 12-18A**



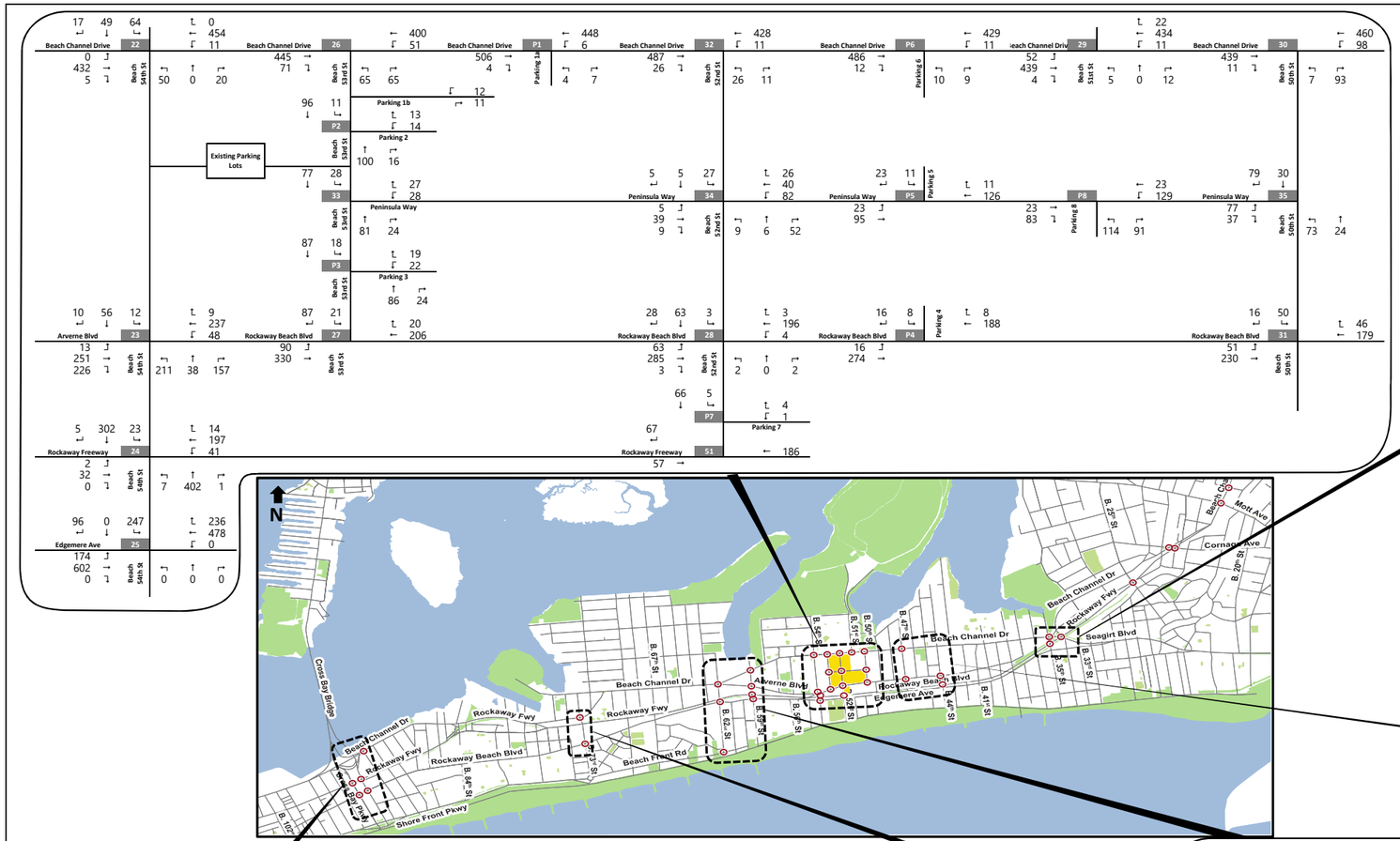




Legend
To Nasby Pl
To Far Rockaway Blvd

NOT TO SCALE

Peninsula Hospital EIS

**2034 With-Action Conditions Traffic Volumes**
**Weekday AM Peak Hour**
**Figure 12-18B**

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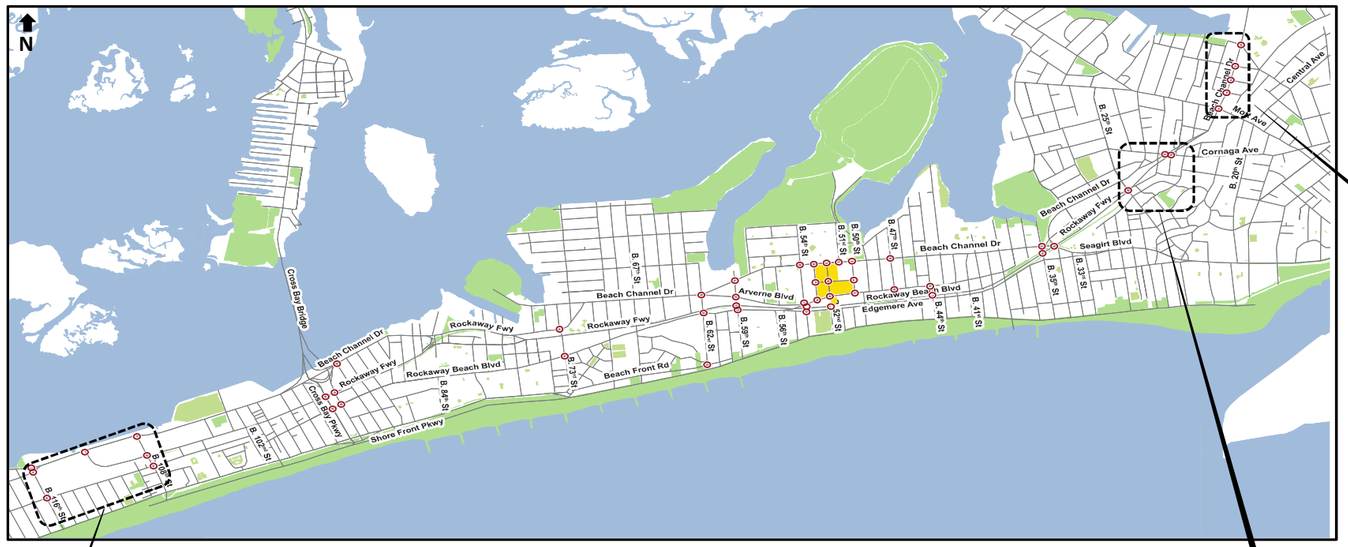
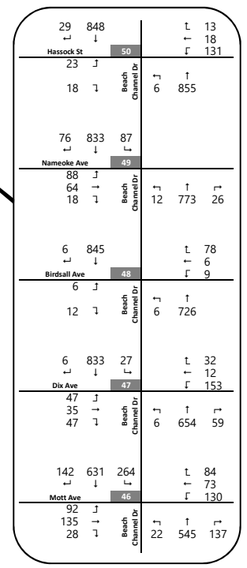
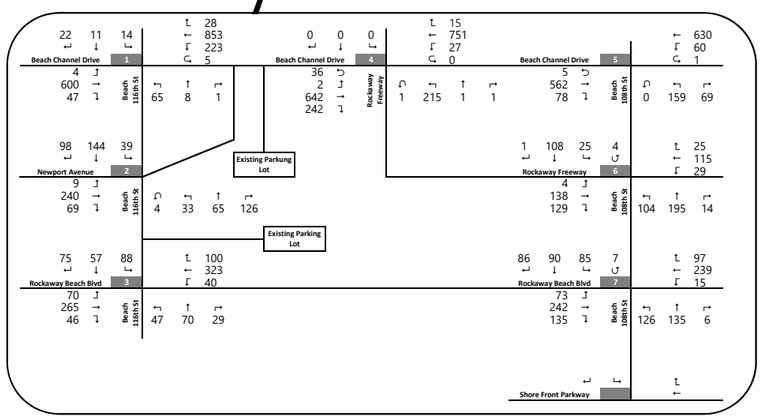
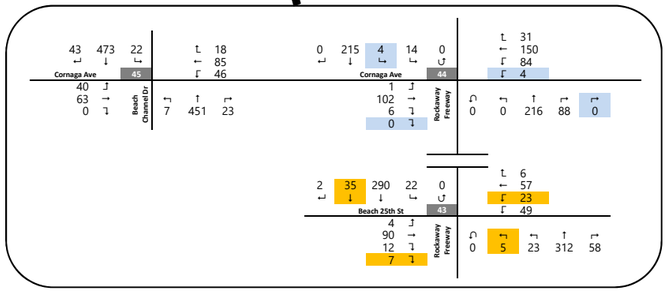
**Peninsula Hospital Site Redevelopment**

**2034 With-Action Conditions Traffic Volumes**
**Weekday MD Peak Hour**
**Figure 12-19A**



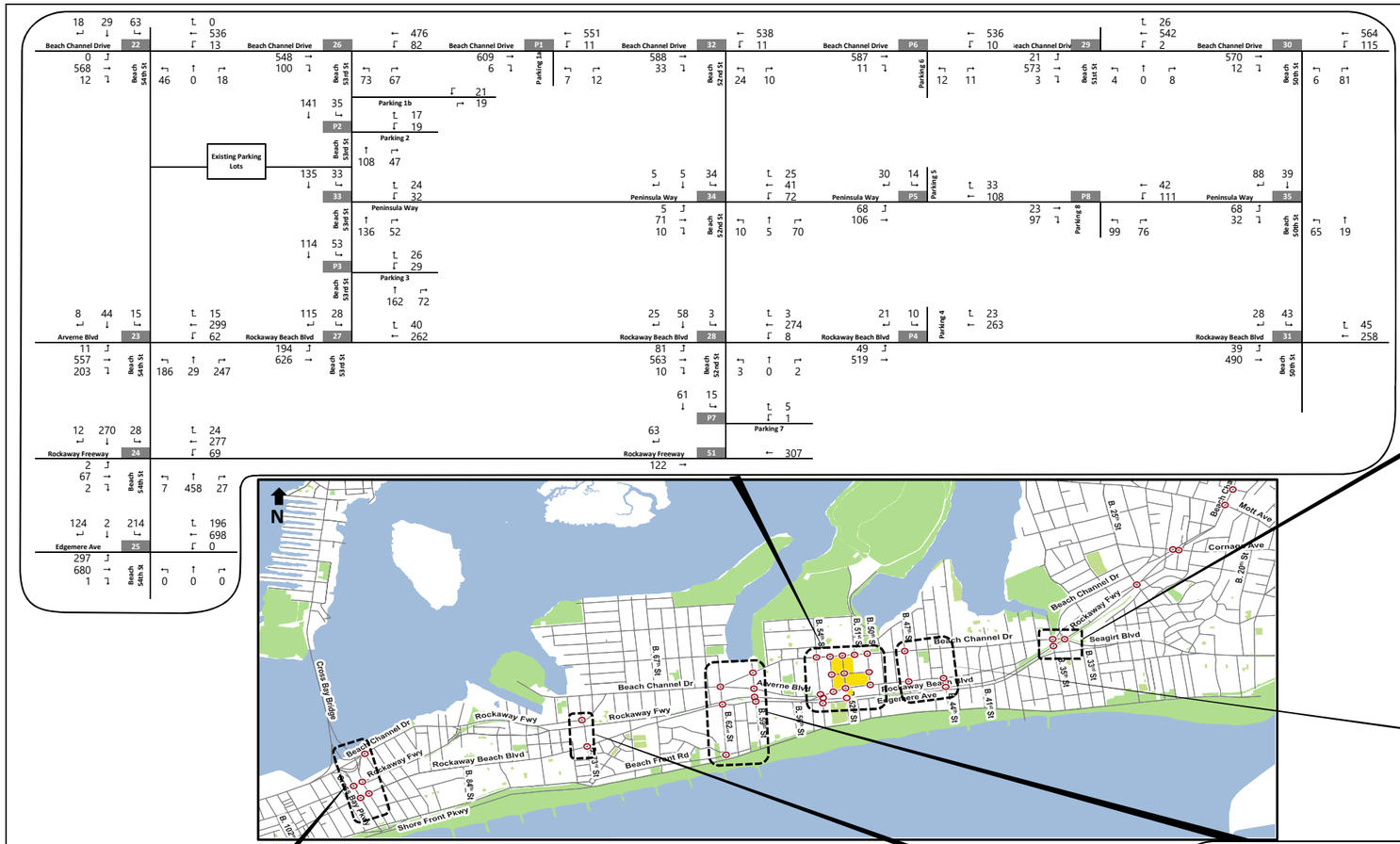




Legend
To Nasby Pl
To Far Rockaway Blvd

NOT TO SCALE

Peninsula Hospital EIS

**2034 With-Action Conditions Traffic Volumes**
**Weekday MD Peak Hour**
**Figure 12-19B**







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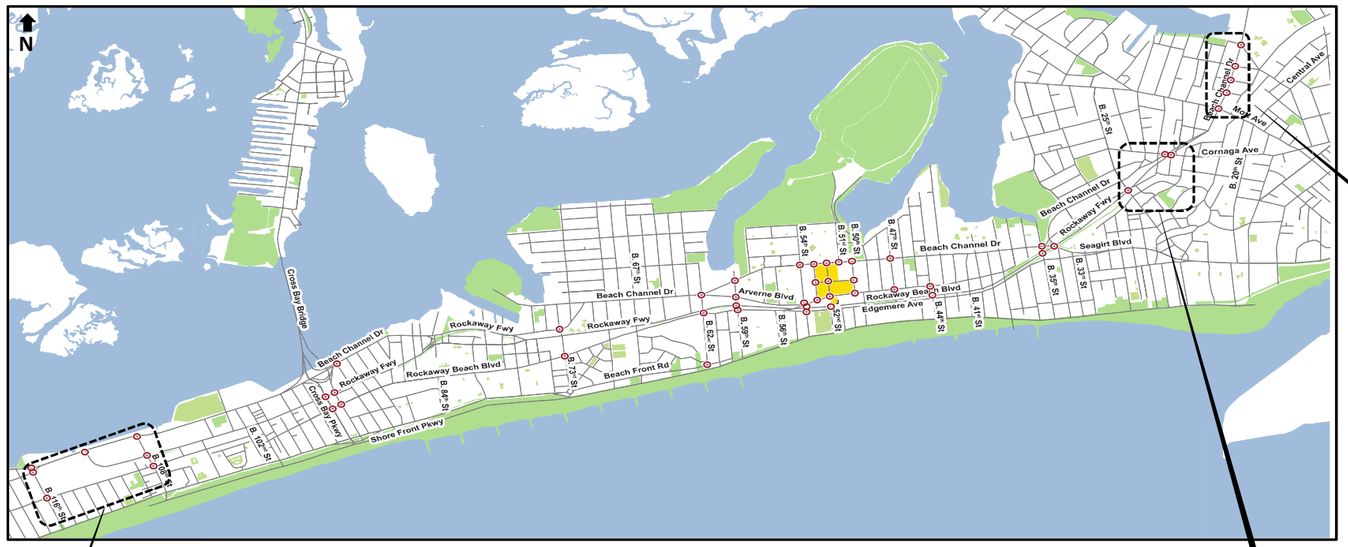
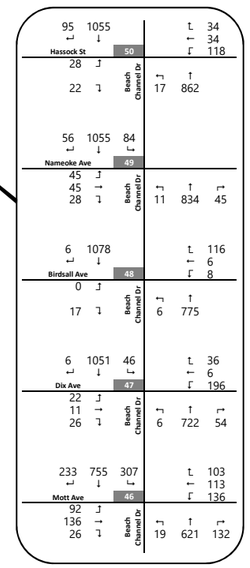
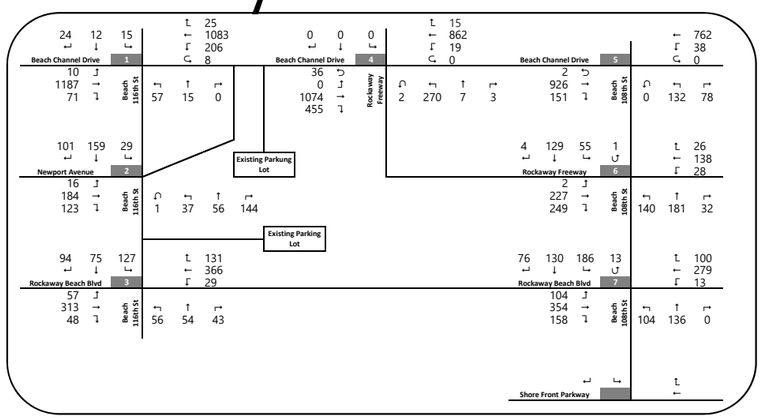
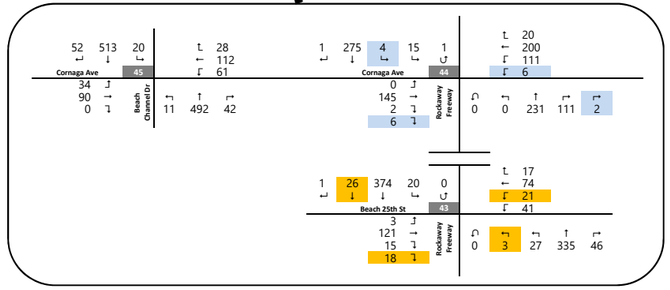
**Peninsula Hospital Site Redevelopment**

**2034 With-Action Conditions Traffic Volumes**
**Weekday PM Peak Hour**
**Figure 12-20A**



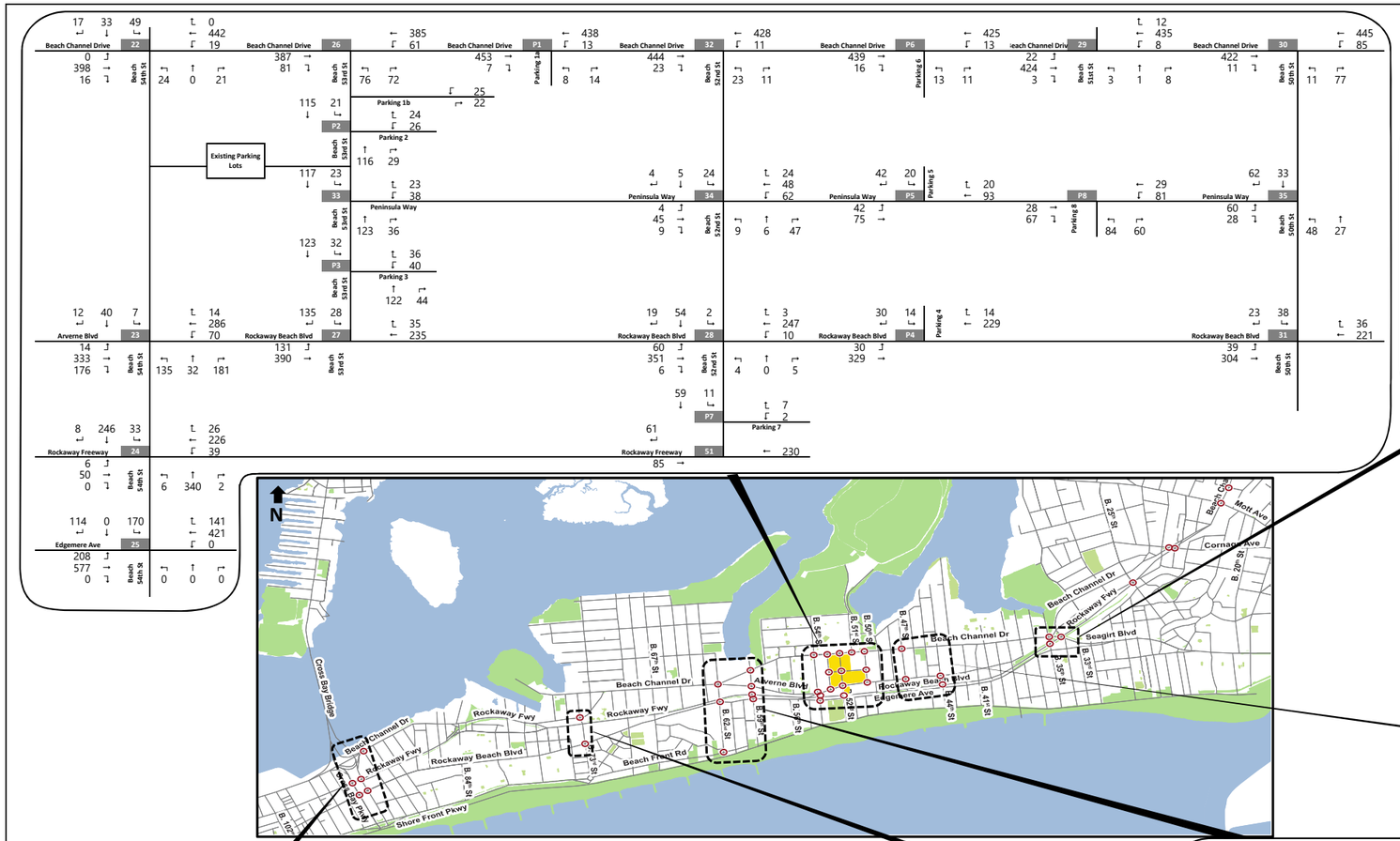




| Legend |
|---|
| To Nasby Pl |
| To Far Rockaway Blvd |

NOT TO SCALE

**Peninsula Hospital EIS**

**2034 With-Action Conditions Traffic Volumes**
**Weekday PM Peak Hour**
**Figure 12-20B**

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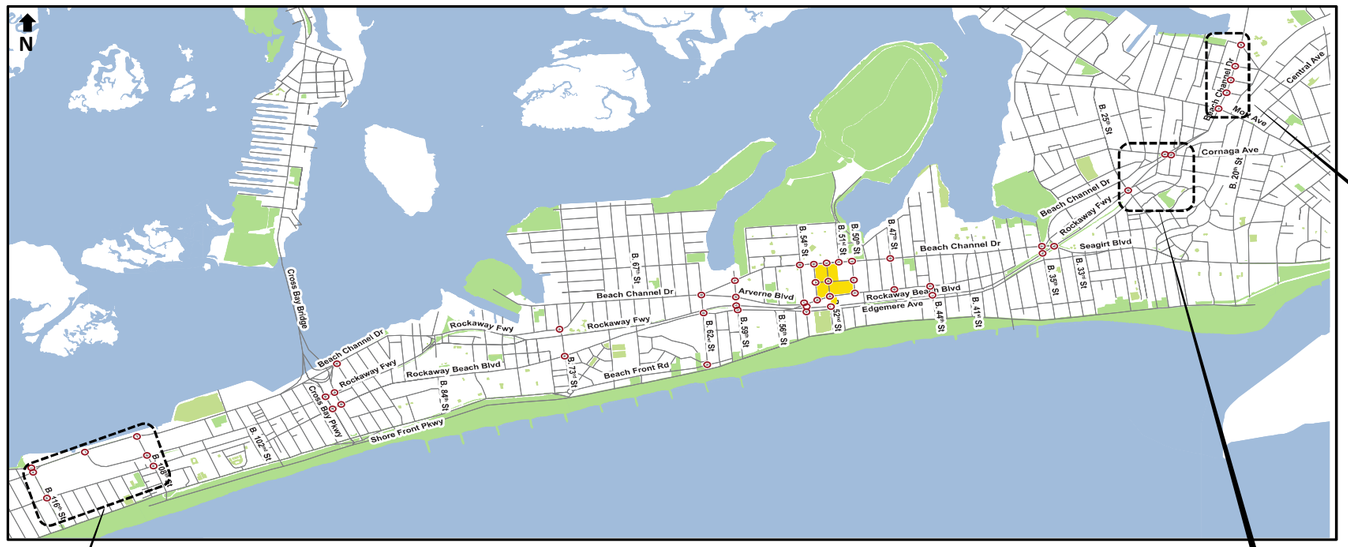
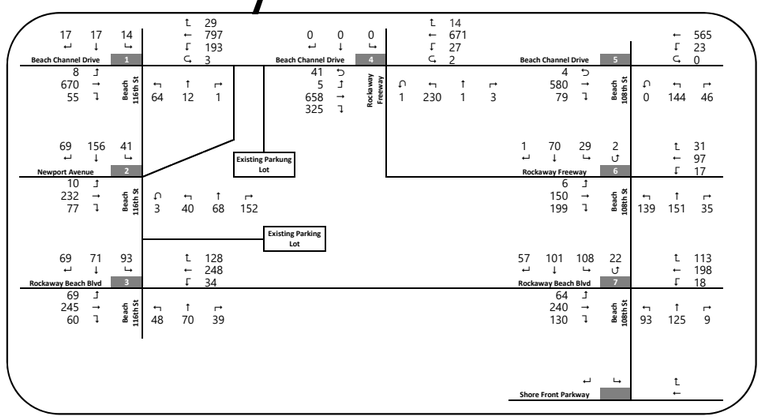
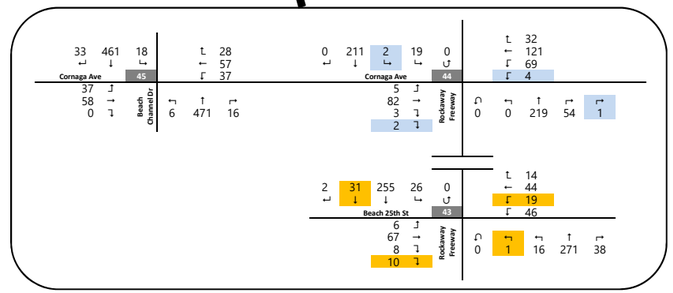
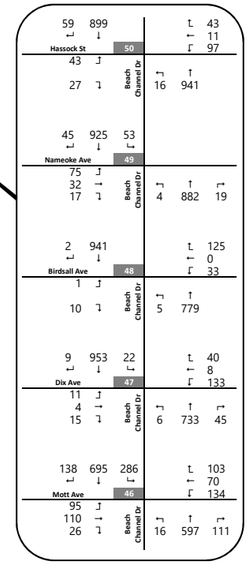
**Peninsula Hospital Site Redevelopment**

**2034 With-Action Conditions Traffic Volumes**
**Saturday MD Peak Hour**
**Figure 12-21A**

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| Legend | |
| To Nasby Pl | |
| To Far Rockaway Blvd | |

NOT TO SCALE

**Peninsula Hospital EIS**

**2034 With-Action Conditions Traffic Volumes**
**Saturday MD Peak Hour**
**Figure 12-21B**

## Table 12-44: 2034 No-Action and With-Action Conditions Level of Service Analysis – Signalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | | | | | | Weekday MD Peak Hour | | | | | | | | | Weekday PM Peak Hour | | | | | | | | | Saturday MD Peak Hour | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | |
| | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | 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 | 0.68 | 31.3 | C | LTR | 0.73 | 33.1 | C | | LTR | 0.56 | 28.4 | C | LTR | 0.62 | 29.9 | C | | LTR | 0.94 | 48.0 | D | LTR | 1.07 | 82.4 | F | + | LTR | 0.57 | 28.6 | C | LTR | 0.66 | 30.9 | C | |
| | Westbound | LTR | 1.44 | 230.9 | F | LTR | 1.63 | 313.2 | F | + | LTR | 1.00 | 54.6 | D | LTR | 1.11 | 89.1 | F | + | | | | | | | | | | LTR | 0.89 | 33.8 | C | LTR | 1.02 | 60.2 | E | + |
| | | | | | | | | | | | | | | | | | | | | DefL | 1.07 | 116.2 | F | DefL | 1.15 | 143.0 | F | + | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | TR | 1.41 | 219.2 | F | TR | 1.51 | 261.9 | F | + | | | | | | | | | |
| | Northbound | LTR | 0.30 | 45.9 | D | LTR | 0.40 | 48.1 | D | | LTR | 0.27 | 44.9 | D | LTR | 0.29 | 45.4 | D | | LTR | 0.25 | 44.5 | D | LTR | 0.28 | 45.1 | D | | LTR | 0.22 | 43.9 | D | LTR | 0.26 | 44.6 | D | |
| | Southbound | LTR | 0.09 | 45.6 | D | LTR | 0.09 | 45.6 | D | | LTR | 0.24 | 48.2 | D | LTR | 0.24 | 48.2 | D | | LTR | 0.26 | 48.5 | D | LTR | 0.26 | 48.5 | D | | LTR | 0.24 | 48.1 | D | LTR | 0.24 | 48.1 | D | |
| | | Intersection | | 154.8 | F | Intersection | | 206.7 | F | | Intersection | | 44.7 | D | Intersection | | 64.5 | E | | Intersection | | 126.7 | F | Intersection | | 159.8 | F | | Intersection | | 32.7 | C | Intersection | | 47.5 | D | |
| 2 | **Newport Avenue and Beach 116th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.81 | 41.6 | D | LTR | 0.84 | 44.4 | D | | LTR | 0.59 | 31.1 | C | LTR | 0.62 | 32.0 | C | | LTR | 0.61 | 32.0 | C | LTR | 0.64 | 32.9 | C | | LTR | 0.56 | 30.3 | C | LTR | 0.58 | 30.9 | C | |
| | Northbound | LT | 0.35 | 47.1 | D | LT | 0.43 | 49.2 | D | | LT | 0.48 | 51.2 | D | LT | 0.51 | 52.3 | D | | LT | 0.43 | 49.6 | D | LT | 0.47 | 50.8 | D | | LT | 0.49 | 51.5 | D | LT | 0.54 | 53.3 | D | |
| | | R | 0.34 | 33.9 | C | R | 0.34 | 33.9 | C | | R | 0.42 | 35.7 | D | R | 0.42 | 35.7 | D | | R | 0.41 | 35.2 | D | R | 0.41 | 35.2 | D | | R | 0.44 | 35.9 | D | R | 0.44 | 35.9 | D | |
| | Southbound | LTR | 0.28 | 18.4 | B | LTR | 0.31 | 18.9 | B | | LTR | 0.40 | 20.2 | C | LTR | 0.43 | 20.9 | C | | LTR | 0.39 | 20.0 | C | LTR | 0.44 | 21.0 | C | | LTR | 0.36 | 19.6 | B | LTR | 0.41 | 20.4 | C | |
| | | Intersection | | 35.9 | D | Intersection | | 38.0 | D | | Intersection | | 30.8 | C | Intersection | | 31.4 | C | | Intersection | | 30.5 | C | Intersection | | 31.2 | C | | Intersection | | 30.9 | C | Intersection | | 31.6 | C | |
| 3 | **Rockaway Beach Boulevard and Beach 116th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.67 | 17.5 | B | LTR | 0.72 | 19.3 | B | | LTR | 0.66 | 17.6 | B | LTR | 0.71 | 19.2 | B | | LTR | 0.66 | 17.2 | B | LTR | 0.70 | 18.4 | B | | LTR | 0.64 | 16.6 | B | LTR | 0.67 | 17.5 | B | |
| | Westbound | LTR | 0.92 | 36.9 | D | LTR | 0.99 | 51.5 | D | + | LTR | 0.91 | 35.1 | D | LTR | 0.97 | 45.6 | D | + | LTR | 1.00 | 54.1 | D | LTR | 1.07 | 71.8 | E | + | LTR | 0.72 | 20.2 | C | LTR | 0.77 | 23.0 | C | |
| | Northbound | L | 0.05 | 12.5 | B | L | 0.05 | 12.5 | B | | L | 0.18 | 14.0 | B | L | 0.18 | 14.0 | B | | L | 0.21 | 14.5 | B | L | 0.21 | 14.5 | B | | L | 0.17 | 13.9 | B | L | 0.17 | 13.9 | B | |
| | | TR | 0.13 | 13.3 | B | TR | 0.13 | 13.3 | B | | TR | 0.24 | 14.3 | B | TR | 0.24 | 14.3 | B | | TR | 0.28 | 14.9 | B | TR | 0.28 | 14.9 | B | | TR | 0.26 | 14.4 | B | TR | 0.26 | 14.4 | B | |
| | Southbound | L | 0.34 | 16.6 | B | L | 0.36 | 16.9 | B | | L | 0.34 | 16.7 | B | L | 0.36 | 17.2 | B | | L | 0.39 | 17.8 | B | L | 0.46 | 19.4 | B | | L | 0.31 | 16.1 | B | L | 0.36 | 16.9 | B | |
| | | TR | 0.16 | 13.6 | B | TR | 0.16 | 13.6 | B | | TR | 0.33 | 15.4 | B | TR | 0.33 | 15.4 | B | | TR | 0.43 | 17.1 | B | TR | 0.43 | 17.1 | B | | TR | 0.33 | 15.3 | B | TR | 0.33 | 15.3 | B | |
| | | Intersection | | 25.2 | C | Intersection | | 32.1 | C | | Intersection | | 23.5 | C | Intersection | | 28.2 | C | | Intersection | | 30.8 | C | Intersection | | 38.1 | D | | Intersection | | 17.2 | B | Intersection | | 18.5 | B | |
| 4 | **Beach Channel Drive and Rockaway Freeway** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 1.10 | 90.5 | F | LTR | 1.24 | 148.7 | F | + | LTR | 0.86 | 38.3 | D | LTR | 0.96 | 51.7 | D | + | LTR | 1.28 | 166.5 | F | LTR | 1.46 | 245.6 | F | + | LTR | 0.91 | 43.2 | D | LTR | 1.05 | 73.9 | E | + |
| | Westbound | LTR | 1.03 | 68.7 | E | LTR | 1.18 | 123.9 | F | + | LTR | 0.73 | 30.6 | C | LTR | 0.81 | 34.2 | C | | LTR | 0.93 | 46.2 | D | LTR | 1.09 | 87.7 | F | + | LTR | 0.66 | 28.3 | C | LTR | 0.77 | 32.3 | C | |
| | Northbound | LT | 0.60 | 27.7 | C | LT | 0.66 | 29.6 | C | | LT | 0.30 | 21.4 | C | LT | 0.34 | 22.0 | C | | LT | 0.35 | 22.2 | C | LT | 0.39 | 22.9 | C | | LT | 0.28 | 21.0 | C | LT | 0.32 | 21.7 | C | |
| | | R | 0.01 | 17.8 | B | R | 0.01 | 17.8 | 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 | | R | 0.01 | 17.7 | B | R | 0.01 | 17.7 | B | |
| | | Intersection | | 70.5 | E | Intersection | | 117.1 | F | | Intersection | | 33.1 | C | Intersection | | 40.8 | D | | Intersection | | 106.9 | F | Intersection | | 165.1 | F | | Intersection | | 35.0 | C | Intersection | | 52.1 | D | |
| 5 | **Beach Channel Drive and Beach 108th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | TR | 0.80 | 26.7 | C | TR | 0.84 | 28.9 | C | | TR | 0.51 | 19.5 | B | TR | 0.56 | 20.3 | C | | TR | 0.80 | 26.6 | C | TR | 0.89 | 32.4 | C | | TR | 0.53 | 19.6 | B | TR | 0.59 | 20.8 | C | |
| | Westbound | LT | 1.16 | 111.0 | F | LT | 1.29 | 166.1 | F | + | LT | 0.73 | 25.2 | C | LT | 0.79 | 27.7 | C | | LT | 0.82 | 29.1 | C | LT | 0.91 | 37.4 | D | | LT | 0.47 | 18.9 | B | LT | 0.52 | 19.6 | B | |
| | Northbound | L | 0.50 | 20.1 | C | L | 0.55 | 21.2 | C | | L | 0.23 | 16.2 | B | L | 0.25 | 16.4 | B | | L | 0.17 | 15.5 | B | L | 0.19 | 15.7 | B | | L | 0.19 | 15.7 | B | L | 0.22 | 16.1 | B | |
| | | R | 0.21 | 16.3 | B | R | 0.21 | 16.3 | B | | R | 0.14 | 15.4 | B | R | 0.14 | 15.4 | B | | R | 0.16 | 15.5 | B | R | 0.16 | 15.5 | B | | R | 0.08 | 14.7 | B | R | 0.08 | 14.7 | B | |
| | | Intersection | | 55.7 | E | Intersection | | 77.8 | E | | Intersection | | 21.5 | C | Intersection | | 22.9 | C | | Intersection | | 26.4 | C | Intersection | | 32.6 | C | | Intersection | | 18.8 | B | Intersection | | 19.6 | B | |
| 6 | **Rockaway Freeway and Beach 108th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.15 | 15.1 | B | LTR | 0.17 | 15.3 | B | | LTR | 0.20 | 15.6 | B | LTR | 0.22 | 15.8 | B | | LTR | 0.31 | 16.7 | B | LTR | 0.34 | 17.1 | B | | LTR | 0.25 | 16.0 | B | LTR | 0.28 | 16.3 | B | |
| | Westbound | LTR | 0.33 | 16.9 | B | LTR | 0.36 | 17.4 | B | | LTR | 0.14 | 15.0 | B | LTR | 0.16 | 15.2 | B | | LTR | 0.17 | 15.3 | B | LTR | 0.20 | 15.6 | B | | LTR | 0.11 | 14.8 | B | LTR | 0.14 | 15.0 | B | |
| | Northbound | L | 0.51 | 21.8 | C | L | 0.57 | 23.4 | C | | L | 0.18 | 15.9 | B | L | 0.20 | 16.1 | B | | L | 0.29 | 17.4 | B | L | 0.33 | 18.1 | B | | L | 0.25 | 16.7 | B | L | 0.28 | 17.1 | B | |
| | | TR | 0.33 | 16.9 | B | TR | 0.34 | 17.1 | B | | TR | 0.18 | 15.4 | B | TR | 0.19 | 15.4 | B | | TR | 0.18 | 15.4 | B | TR | 0.19 | 15.5 | B | | TR | 0.16 | 15.2 | B | TR | 0.17 | 15.3 | B | |
| | Southbound | LTR | 0.35 | 18.1 | B | LTR | 0.37 | 18.4 | B | | LTR | 0.26 | 16.8 | B | LTR | 0.29 | 17.2 | B | | LTR | 0.31 | 17.3 | B | LTR | 0.38 | 18.6 | B | | LTR | 0.17 | 15.6 | B | LTR | 0.22 | 16.2 | B | |
| | | Intersection | | 17.7 | B | Intersection | | 18.2 | B | | Intersection | | 15.7 | B | Intersection | | 15.9 | B | | Intersection | | 16.4 | B | Intersection | | 16.9 | B | | Intersection | | 15.7 | B | Intersection | | 16.0 | B | |
| 7 | **Rockaway Beach Boulevard and Beach 108th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.95 | 81.6 | F | L | 1.31 | 212.4 | F | + | L | 0.26 | 17.6 | B | L | 0.28 | 18.2 | B | | L | 0.42 | 21.5 | C | L | 0.48 | 23.7 | C | | L | 0.21 | 16.6 | B | L | 0.24 | 17.2 | B | |
| | | TR | 0.79 | 30.9 | C | TR | 0.86 | 36.5 | D | | TR | 0.64 | 24.1 | C | TR | 0.70 | 26.2 | C | | TR | 0.84 | 33.7 | C | TR | 0.91 | 41.6 | D | | TR | 0.60 | 22.7 | C | TR | 0.66 | 24.4 | C | |
| | Westbound | L | 0.09 | 15.2 | B | L | 0.10 | 15.6 | B | | L | 0.07 | 14.8 | B | L | 0.08 | 15.0 | B | | L | 0.09 | 15.3 | B | L | 0.10 | 15.9 | B | | L | 0.07 | 14.8 | B | L | 0.08 | 15.0 | B | |
| | | TR | 0.94 | 48.1 | D | TR | 1.07 | 82.4 | F | + | TR | 0.51 | 20.9 | C | TR | 0.56 | 22.1 | C | | TR | 0.64 | 24.1 | C | TR | 0.71 | 26.6 | C | | TR | 0.48 | 20.2 | C | TR | 0.57 | 22.1 | C | |
| | Northbound | L | 0.40 | 20.2 | C | L | 0.42 | 20.7 | C | | L | 0.34 | 18.6 | B | L | 0.37 | 19.3 | B | | L | 0.31 | 18.2 | B | L | 0.34 | 18.8 | B | | L | 0.24 | 16.8 | B | L | 0.27 | 17.3 | B | |
| | | TR | 0.41 | 18.7 | B | TR | 0.41 | 18.7 | B | | TR | 0.22 | 16.0 | B | TR | 0.22 | 16.0 | B | | TR | 0.20 | 15.8 | B | TR | 0.20 | 15.8 | B | | TR | 0.22 | 16.1 | B | TR | 0.22 | 16.1 | B | |
| | Southbound | L | 0.27 | 18.2 | B | L | 0.31 | 18.9 | B | | L | 0.25 | 17.1 | B | L | 0.29 | 17.8 | B | | L | 0.46 | 21.0 | C | L | 0.57 | 23.9 | C | | L | 0.31 | 18.1 | B | L | 0.38 | 19.4 | B | |
| | | TR | 0.43 | 19.2 | B | TR | 0.43 | 19.2 | B | | TR | 0.33 | 17.7 | B | TR | 0.33 | 17.7 | B | | TR | 0.36 | 17.9 | B | TR | 0.36 | 17.9 | B | | LTR | 0.28 | 16.9 | B | LTR | 0.28 | 16.9 | B | |
| | | Intersection | | 34.9 | C | Intersection | | 56.4 | E | | Intersection | | 20.1 | C | Intersection | | 21.2 | C | | Intersection | | 24.6 | C | Intersection | | 28.3 | C | | Intersection | | 19.3 | B | Intersection | | 20.5 | C | |
| 8 | **Beach Channel Drive and Beach 92nd Street/Beach 94th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound (Beach Channel Drive) | T | 0.61 | 26.1 | C | T | 0.67 | 28.0 | C | | T | 0.89 | 42.2 | D | T | 0.96 | 52.4 | D | + | T | 1.06 | 79.6 | E | T | 1.17 | 118.6 | F | + | T | 0.77 | 32.1 | C | T | 0.86 | 37.9 | D | |
| | Eastbound (Cross Bay Bridge Off-Ramp/Beach 94th St) | T | 0.42 | 33.5 | C | T | 0.44 | 33.8 | C | | T | 0.44 | 33.7 | C | T | 0.47 | 34.2 | C | | T | 0.54 | 35.3 | D | T | 0.59 | 36.4 | D | | T | 0.47 | 34.2 | C | T | 0.51 | 34.7 | C | |
| | Westbound | TR | 1.57 | 292.5 | F | TR | 1.78 | 385.9 | F | + | TR | 1.23 | 143.6 | F | TR | 1.33 | 186.7 | F | + | TR | 1.29 | 171.4 | F | TR | 1.40 | 218.6 | F | + | TR | 1.13 | 103.6 | F | TR | 1.26 | 158.4 | F | + |
| | Northbound | R | 0.02 | 25.9 | C | R | 0.02 | 25.9 | C | | R | 0.04 | 26.2 | C | R | 0.04 | 26.2 | C | | R | 0.06 | 26.4 | C | R | 0.06 | 26.4 | C | | R | 0.06 | 26.3 | C | R | 0.06 | 26.3 | C | |
| | Southbound | R | 0.00 | 25.7 | C | R | 0.00 | 25.7 | C | | R | 0.00 | 25.7 | C | R | 0.00 | 25.7 | C | | R | 0.04 | 26.1 | C | R | 0.04 | 26.1 | C | | R | 0.03 | 26.0 | C | R | 0.03 | 26.0 | C | |
| | | Intersection | | 183.3 | F | Intersection | | 242.5 | F | | Intersection | | 86.0 | F | Intersection | | 109.7 | F | | Intersection | | 105.9 | F | Intersection | | 139.5 | F | | Intersection | | 64.4 | E | Intersection | | 91.6 | F | |
| 9 | **Rockaway Freeway and Cross Bay Parkway** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | TR | 0.27 | 20.4 | C | TR | 0.31 | 21.0 | C | | TR | 0.31 | 20.9 | C | TR | 0.35 | 21.6 | C | | TR | 0.37 | 21.8 | C | TR | 0.43 | 22.8 | C | | TR | 0.31 | 20.9 | C | TR | 0.36 | 21.7 | C | |
| | Westbound | L | 0.01 | 35.7 | D | L | 0.01 | 35.7 | D | | L | 0.05 | 36.2 | D | L | 0.05 | 36.2 | D | | L | 0.05 | 36.2 | D | L | 0.05 | 36.2 | D | | L | 0.13 | 37.6 | D | L | 0.13 | 37.6 | D | |
| | | T | 0.21 | 11.0 | B | T | 0.26 | 11.5 | B | | T | 0.17 | 10.6 | B | T | 0.20 | 10.9 | B | | T | 0.18 | 10.7 | B | T | 0.21 | 11.0 | B | | T | 0.16 | 10.5 | B | T | 0.19 | 10.9 | B | |
| | Southbound (Cross Bay Bridge Off-Ramp) | LTR | 0.20 | 21.2 | C | LTR | 0.22 | 21.4 | C | | LTR | 0.37 | 23.0 | C | LTR | 0.38 | 23.2 | C | | LTR | 0.45 | 24.2 | C | LTR | 0.50 | 24.9 | C | | LTR | 0.47 | 24.4 | C | LTR | 0.50 | 25.0 | C | |
| | Southbound (Beach Channel Drive Off-Ramp) | LTR | 0.08 | 20.1 | C | LTR | 0.08 | 20.1 | C | | LTR | 0.08 | 20.1 | C | LTR | 0.08 | 20.1 | C | | LTR | 0.14 | 20.8 | C | LTR | 0.14 | 20.8 | C | | LTR | 0.10 | 20.3 | C | LTR | 0.10 | 20.3 | C | |
| | | Intersection | | 17.7 | B | Intersection | | 17.9 | B | | Intersection | | 20.1 | C | Intersection | | 20.3 | C | | Intersection | | 21.3 | C | Intersection | | 21.9 | C | | Intersection | | 21.6 | C | Intersection | | 21.9 | 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. Err = v/c or delay exceeds the maximum limit reportable in the analysis software. "+" denotes significant adverse impact.
1. Stop-controlled approach at signalized intersection.
2. Future intersection created as part of the Proposed Project.
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 12-44 (continued): 2034 No-Action and With-Action Conditions Level of Service Analysis – Signalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | | | | | | Weekday MD Peak Hour | | | | | | | | | Weekday PM Peak Hour | | | | | | | | | Saturday MD Peak Hour | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | |
| | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | 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 | 0.40 | 10.9 | B | TR | 0.46 | 11.8 | B | | TR | 0.50 | 12.2 | B | TR | 0.56 | 13.3 | B | | TR | 0.67 | 15.8 | B | TR | 0.78 | 20.4 | C | | TR | 0.50 | 12.1 | B | TR | 0.58 | 13.7 | B | |
| | Westbound | LT | 0.38 | 10.1 | B | LT | 0.47 | 11.2 | B | | LT | 0.44 | 10.7 | B | LT | 0.48 | 11.3 | B | | LT | 0.40 | 10.2 | B | LT | 0.45 | 10.9 | B | | LT | 0.35 | 9.6 | A | LT | 0.41 | 10.3 | B | |
| | Southbound (Cross Bay Bridge Off-Ramp) | LT | 0.18 | 15.2 | B | LT | 0.19 | 15.3 | B | | LT | 0.33 | 16.5 | B | LT | 0.36 | 16.7 | B | | LT | 0.43 | 17.5 | B | LT | 0.48 | 18.0 | B | | LT | 0.34 | 16.7 | B | LT | 0.38 | 17.1 | B | |
| | Southbound (Beach Channel Drive Off-Ramp) | TR | 0.21 | 16.2 | B | TR | 0.21 | 16.2 | B | | TR | 0.27 | 16.8 | B | TR | 0.27 | 16.8 | B | | TR | 0.31 | 17.3 | B | TR | 0.31 | 17.3 | B | | TR | 0.30 | 17.1 | B | TR | 0.30 | 17.1 | B | |
| | | Intersection | | 12.1 | B | Intersection | | 12.7 | B | | Intersection | | 13.4 | B | Intersection | | 13.9 | B | | Intersection | | 15.2 | B | Intersection | | 17.1 | B | | Intersection | | 13.3 | B | Intersection | | 14.1 | B | |
| 11[1] | **Rockaway Freeway and Beach 94th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.13 | 37.7 | D | L | 0.13 | 37.7 | D | | L | 0.11 | 37.7 | D | L | 0.11 | 37.7 | D | | L | 0.05 | 36.2 | D | L | 0.05 | 36.2 | D | | L | 0.14 | 37.6 | D | L | 0.14 | 37.6 | D | |
| | | T | 0.17 | 10.7 | B | T | 0.21 | 11.0 | B | | T | 0.21 | 11.1 | B | T | 0.25 | 11.5 | B | | T | 0.32 | 12.1 | B | T | 0.38 | 12.8 | B | | T | 0.22 | 11.1 | B | T | 0.27 | 11.6 | B | |
| | Westbound | TR | 0.43 | 22.8 | C | TR | 0.54 | 24.9 | C | | TR | 0.37 | 21.9 | C | TR | 0.43 | 22.8 | C | | TR | 0.28 | 20.5 | C | TR | 0.34 | 21.3 | C | | TR | 0.34 | 21.3 | C | TR | 0.41 | 22.5 | C | |
| | Northbound (Cross Bay Bridge On-Ramp) | LTR | 0.37 | 23.0 | C | LTR | 0.40 | 23.4 | C | | LTR | 0.26 | 21.7 | C | LTR | 0.27 | 21.9 | C | | LTR | 0.35 | 22.8 | C | LTR | 0.37 | 23.0 | C | | LTR | 0.40 | 23.4 | C | LTR | 0.42 | 23.7 | C | |
| | | Intersection | | 20.9 | C | Intersection | | 21.7 | C | | Intersection | | 19.1 | B | Intersection | | 19.4 | B | | Intersection | | 18.7 | B | Intersection | | 18.9 | B | | Intersection | | 20.1 | C | Intersection | | 20.4 | C | |
| 12 | **Rockaway Beach Boulevard and Beach 94th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.40 | 10.3 | B | LT | 0.46 | 11.3 | B | | LT | 0.47 | 11.0 | B | LT | 0.53 | 11.9 | B | | LT | 0.73 | 16.6 | B | LT | 0.89 | 26.4 | C | | LT | 0.45 | 10.8 | B | LT | 0.53 | 12.0 | B | |
| | Westbound | TR | 0.81 | 21.4 | C | TR | 0.97 | 40.5 | D | | TR | 0.62 | 14.2 | B | TR | 0.69 | 16.1 | B | | TR | 0.59 | 13.4 | B | TR | 0.67 | 15.4 | B | | TR | 0.60 | 13.9 | B | TR | 0.71 | 16.8 | B | |
| | Northbound (Cross Bay Bridge On-Ramp) | LT | 0.35 | 17.6 | B | LT | 0.35 | 17.6 | B | | LT | 0.28 | 16.6 | B | LT | 0.28 | 16.6 | B | | LT | 0.31 | 17.0 | B | LT | 0.31 | 17.0 | B | | LT | 0.34 | 17.4 | B | LT | 0.34 | 17.4 | B | |
| | Northbound (Beach Channel Drive On-Ramp) | TR | 0.08 | 14.7 | B | TR | 0.08 | 14.7 | B | | TR | 0.20 | 16.0 | B | TR | 0.20 | 16.0 | B | | TR | 0.17 | 15.6 | B | TR | 0.17 | 15.6 | B | | TR | 0.28 | 17.2 | B | TR | 0.28 | 17.2 | B | |
| | | Intersection | | 17.3 | B | Intersection | | 28.1 | C | | Intersection | | 13.5 | B | Intersection | | 14.5 | B | | Intersection | | 15.5 | B | Intersection | | 21.1 | C | | Intersection | | 13.6 | B | Intersection | | 15.1 | 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 | 9.4 | A | L | 0.01 | 9.4 | 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 | |
| | | T | 0.45 | 13.8 | B | T | 0.55 | 15.4 | B | | T | 0.52 | 14.9 | B | T | 0.62 | 16.9 | B | | T | 0.69 | 18.4 | B | T | 0.86 | 25.8 | C | | T | 0.46 | 13.8 | B | T | 0.58 | 15.8 | B | |
| | Westbound | L | 0.35 | 14.5 | B | L | 0.44 | 17.7 | B | | L | 0.35 | 14.9 | B | L | 0.46 | 19.5 | B | | L | 0.59 | 29.5 | C | L | 1.11 | 154.9 | F | + | L | 0.28 | 13.3 | B | L | 0.39 | 16.8 | B | |
| | | TR | 0.95 | 40.8 | D | TR | 1.18 | 113.3 | F | + | TR | 0.91 | 35.1 | D | TR | 1.06 | 70.8 | E | + | TR | 0.91 | 35.3 | D | TR | 1.07 | 74.6 | E | + | TR | 0.65 | 18.4 | B | TR | 0.82 | 25.8 | C | |
| | Northbound | LT | 0.44 | 25.5 | C | LT | 0.44 | 25.5 | C | | LT | 0.25 | 22.3 | C | LT | 0.25 | 22.3 | C | | LT | 0.33 | 23.5 | C | LT | 0.33 | 23.5 | C | | LT | 0.25 | 22.2 | C | LT | 0.25 | 22.2 | C | |
| | Southbound | LTR | 0.04 | 19.7 | B | LTR | 0.04 | 19.7 | B | | LTR | 0.03 | 19.6 | B | LTR | 0.03 | 19.6 | B | | LTR | 0.04 | 19.7 | B | LTR | 0.04 | 19.7 | B | | LTR | 0.02 | 19.6 | B | LTR | 0.02 | 19.6 | B | |
| | | Intersection | | 28.2 | C | Intersection | | 65.2 | E | | Intersection | | 24.9 | C | Intersection | | 42.7 | D | | Intersection | | 26.2 | C | Intersection | | 50.6 | D | | Intersection | | 16.5 | B | Intersection | | 20.7 | C | |
| 14 | **Rockaway Beach Boulevard and Beach 73rd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.37 | 9.7 | A | LT | 0.42 | 10.3 | B | | LT | 0.33 | 9.4 | A | LT | 0.39 | 9.9 | A | | LT | 0.63 | 13.8 | B | LT | 0.74 | 16.8 | B | | LT | 0.42 | 10.4 | B | LT | 0.50 | 11.5 | B | |
| | | R | 0.10 | 7.5 | A | R | 0.10 | 7.5 | A | | R | 0.11 | 7.6 | A | R | 0.11 | 7.6 | A | | R | 0.13 | 7.7 | A | R | 0.13 | 7.7 | A | | R | 0.09 | 7.4 | A | R | 0.09 | 7.4 | A | |
| | Westbound | L | 0.10 | 7.7 | A | L | 0.11 | 7.8 | A | | L | 0.10 | 7.6 | A | L | 0.11 | 7.7 | A | | L | 0.23 | 9.6 | A | L | 0.31 | 12.0 | B | | L | 0.16 | 8.3 | A | L | 0.19 | 8.8 | A | |
| | | T | 0.57 | 12.7 | B | T | 0.69 | 15.5 | B | | T | 0.34 | 9.4 | A | T | 0.39 | 10.0 | A | | T | 0.47 | 11.1 | B | T | 0.54 | 12.0 | B | | T | 0.38 | 9.9 | A | T | 0.46 | 10.8 | B | |
| | | R | 0.24 | 8.7 | B | R | 0.24 | 8.7 | B | | R | 0.15 | 7.9 | A | R | 0.15 | 7.9 | A | | R | 0.19 | 8.3 | B | R | 0.19 | 8.3 | B | | R | 0.17 | 8.0 | A | R | 0.17 | 8.0 | B | |
| | Northbound | LT | 0.10 | 24.6 | C | LT | 0.10 | 24.6 | C | | LT | 0.09 | 24.4 | C | LT | 0.09 | 24.4 | C | | LT | 0.12 | 24.9 | C | LT | 0.12 | 24.9 | C | | LT | 0.12 | 24.9 | C | LT | 0.12 | 24.9 | C | |
| | | R | 0.02 | 23.8 | C | R | 0.02 | 23.8 | C | | R | 0.04 | 23.9 | C | R | 0.04 | 23.9 | C | | R | 0.04 | 23.9 | C | R | 0.04 | 23.9 | C | | R | 0.07 | 24.3 | C | R | 0.07 | 24.3 | C | |
| | Southbound | L | 0.40 | 30.0 | C | L | 0.40 | 30.0 | C | | L | 0.38 | 29.5 | C | L | 0.38 | 29.5 | C | | L | 0.71 | 40.7 | D | L | 0.71 | 40.7 | D | | L | 0.36 | 29.1 | C | L | 0.36 | 29.1 | C | |
| | | TR | 0.44 | 31.2 | C | TR | 0.44 | 31.2 | C | | TR | 0.34 | 28.6 | C | TR | 0.34 | 28.6 | C | | TR | 0.41 | 29.9 | C | TR | 0.41 | 29.9 | C | | TR | 0.35 | 28.5 | C | TR | 0.35 | 28.5 | C | |
| | | Intersection | | 14.5 | B | Intersection | | 15.5 | B | | Intersection | | 13.4 | B | Intersection | | 13.4 | B | | Intersection | | 17.1 | B | Intersection | | 18.2 | B | | Intersection | | 13.6 | B | Intersection | | 13.9 | B | |
| 15 | **Beach Channel Drive/Arverne Boulevard and Beach 62nd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 1.18 | 127.1 | F | LT | 1.39 | 215.2 | F | + | LT | 1.28 | 167.2 | F | LT | 1.49 | 255.9 | F | + | LT | 1.76 | 377.0 | F | LT | 2.10 | 527.1 | F | + | LT | 1.13 | 104.1 | F | LT | 1.37 | 205.3 | F | + |
| | Westbound (Beach Channel Drive) | T | 1.37 | 208.2 | F | T | 1.59 | 305.2 | F | + | T | 0.74 | 31.3 | C | T | 0.84 | 37.5 | D | | T | 0.79 | 33.1 | C | T | 0.87 | 40.0 | D | | T | 0.57 | 24.9 | C | T | 0.66 | 27.5 | C | |
| | Westbound (Arverne Boulevard) | LR | 1.52 | 289.2 | F | LR | 1.95 | 477.7 | F | + | LR | 1.11 | 116.5 | F | LR | 1.31 | 191.6 | F | + | | | | | | | | | | LR | 0.95 | 69.5 | E | LR | 1.19 | 144.4 | F | + |
| | | | | | | | | | | | | | | | | | | | | L | 0.99 | 78.2 | E | L | 1.19 | 143.4 | F | + | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | R | 0.02 | 27.4 | C | R | 0.02 | 27.4 | C | | | | | | | | | | |
| | Northbound | LTR | 0.68 | 41.3 | D | LTR | 0.68 | 41.3 | D | | LTR | 0.31 | 30.7 | C | LTR | 0.31 | 30.7 | C | | LTR | 0.55 | 34.8 | C | LTR | 0.55 | 34.8 | C | | LTR | 0.32 | 30.7 | C | LTR | 0.32 | 30.7 | C | |
| | Southbound | L | 0.80 | 61.8 | E | L | 0.80 | 61.8 | E | + | L | 0.41 | 35.8 | D | L | 0.41 | 35.8 | D | | L | 0.66 | 48.4 | D | L | 0.66 | 48.4 | D | | L | 0.40 | 34.8 | C | L | 0.40 | 34.8 | C | |
| | | R | 0.02 | 27.5 | C | R | 0.02 | 27.5 | C | | R | 0.04 | 27.8 | C | R | 0.04 | 27.8 | 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 | |
| | | Intersection | | 165.4 | F | Intersection | | 258.2 | F | | Intersection | | 105.6 | F | Intersection | | 159.5 | F | | Intersection | | 199.9 | F | Intersection | | 280.4 | F | | Intersection | | 66.6 | E | Intersection | | 122.5 | F | |
| 16 | **Rockaway Beach Boulevard and Beach 62nd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.25 | 26.7 | C | L | 0.25 | 26.7 | C | | L | 0.09 | 24.4 | C | L | 0.09 | 24.4 | C | | L | 0.49 | 31.3 | C | L | 0.49 | 31.3 | C | | L | 0.08 | 24.3 | C | L | 0.08 | 24.3 | C | |
| | | TR | 0.45 | 9.0 | A | TR | 0.51 | 9.9 | A | | TR | 0.56 | 10.5 | B | TR | 0.63 | 12.0 | B | | TR | 0.79 | 17.5 | B | TR | 0.93 | 29.0 | C | | TR | 0.55 | 10.3 | B | TR | 0.64 | 12.0 | B | |
| | Westbound | LTR | 0.84 | 37.4 | D | LTR | 1.06 | 78.0 | E | + | LTR | 0.99 | 61.2 | E | LTR | 1.23 | 149.1 | F | + | LTR | 1.66 | 333.6 | F | LTR | 2.13 | 544.9 | F | + | LTR | 0.82 | 36.8 | D | LTR | 1.15 | 116.0 | F | + |
| | Northbound | LTR | 0.31 | 31.2 | C | LTR | 0.44 | 34.0 | C | | LTR | 0.42 | 33.8 | C | LTR | 0.53 | 37.0 | D | | LTR | 0.37 | 32.2 | C | LTR | 0.46 | 34.5 | C | | LTR | 0.27 | 30.2 | C | LTR | 0.35 | 31.6 | C | |
| | | Intersection | | 27.2 | C | Intersection | | 50.5 | D | | Intersection | | 37.6 | D | Intersection | | 81.2 | F | | Intersection | | 168.8 | F | Intersection | | 268.8 | F | | Intersection | | 24.9 | C | Intersection | | 64.2 | E | |
| 18 | **Beach Channel Drive and Beach 59th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.46 | 14.2 | B | LT | 0.54 | 15.5 | B | | LT | 0.41 | 13.4 | B | LT | 0.47 | 14.4 | B | | LT | 0.53 | 15.2 | B | LT | 0.62 | 17.2 | B | | LT | 0.38 | 12.9 | B | LT | 0.45 | 13.8 | B | |
| | | R | 0.02 | 9.5 | A | R | 0.02 | 9.5 | A | | R | 0.03 | 9.6 | A | R | 0.03 | 9.6 | A | | R | 0.05 | 9.7 | A | R | 0.05 | 9.7 | A | | R | 0.07 | 9.9 | A | R | 0.07 | 9.9 | A | |
| | Westbound | LTR | 0.68 | 19.2 | B | LTR | 0.78 | 23.0 | C | | LTR | 0.60 | 17.0 | B | LTR | 0.67 | 19.0 | B | | LTR | 0.77 | 23.1 | C | LTR | 0.88 | 32.1 | C | | LTR | 0.36 | 12.6 | B | LTR | 0.42 | 13.4 | B | |
| | Southbound | LTR | 0.02 | 19.6 | B | LTR | 0.02 | 19.6 | B | | LTR | 0.02 | 19.5 | B | LTR | 0.02 | 19.5 | B | | LTR | 0.02 | 19.5 | B | LTR | 0.02 | 19.5 | B | | LTR | 0.02 | 19.6 | B | LTR | 0.02 | 19.6 | B | |
| | | Intersection | | 17.1 | B | Intersection | | 19.8 | B | | Intersection | | 15.5 | B | Intersection | | 16.9 | B | | Intersection | | 19.3 | B | Intersection | | 24.6 | C | | Intersection | | 12.7 | B | Intersection | | 13.6 | B | |
| 19 | **Arverne Boulevard and Beach 59th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | TR | 0.70 | 15.7 | B | TR | 0.78 | 18.8 | B | | TR | 0.62 | 13.9 | B | TR | 0.70 | 16.1 | B | | TR | 0.86 | 23.2 | C | TR | 0.99 | 41.8 | D | | TR | 0.59 | 13.0 | B | TR | 0.69 | 15.3 | B | |
| | Westbound | LT | 0.95 | 41.7 | D | LT | 1.45 | 230.5 | F | + | LT | 0.67 | 15.7 | B | LT | 0.89 | 30.2 | C | | LT | 0.98 | 50.8 | D | LT | 1.44 | 227.1 | F | + | LT | 0.58 | 13.2 | B | LT | 0.90 | 31.6 | C | |
| | Southbound | LTR | 0.15 | 15.3 | B | LTR | 0.15 | 15.4 | B | | LTR | 0.14 | 15.2 | B | LTR | 0.14 | 15.3 | B | | LTR | 0.13 | 15.1 | B | LTR | 0.13 | 15.2 | B | | LTR | 0.15 | 15.4 | B | LTR | 0.16 | 15.5 | B | |
| | | Intersection | | 27.2 | C | Intersection | | 121.0 | F | | Intersection | | 14.8 | B | Intersection | | 22.6 | C | | Intersection | | 33.0 | C | Intersection | | 111.5 | F | | Intersection | | 13.2 | B | Intersection | | 22.5 | 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. Err = v/c or delay exceeds the maximum limit reportable in the analysis software. "+" denotes significant adverse impact.
1. Stop-controlled approach at signalized intersection.
2. Future intersection created as part of the Proposed Project.
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 12-44 (continued): 2034 No-Action and With-Action Conditions Level of Service Analysis – Signalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | | | | | | Weekday MD Peak Hour | | | | | | | | | Weekday PM Peak Hour | | | | | | | | | Saturday MD Peak Hour | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | |
| | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | 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 | 1.13 | 145.8 | F | L | 1.33 | 221.5 | F | + | L | 0.59 | 50.9 | D | L | 0.78 | 65.9 | E | + | L | 1.00 | 107.5 | F | L | 1.20 | 172.3 | F | + | L | 0.57 | 50.1 | D | L | 0.75 | 63.0 | E | + |
| | | T | 0.11 | 8.7 | A | T | 0.11 | 8.7 | A | | T | 0.09 | 8.6 | A | T | 0.09 | 8.6 | A | | T | 0.13 | 8.9 | A | T | 0.13 | 8.9 | A | | T | 0.11 | 8.7 | A | T | 0.11 | 8.7 | A | |
| | Southbound | LTR | 0.59 | 31.5 | C | LTR | 0.67 | 34.2 | C | | LTR | 0.38 | 26.5 | C | LTR | 0.42 | 27.2 | C | | LTR | 0.56 | 30.7 | C | LTR | 0.62 | 32.6 | C | | LTR | 0.42 | 27.3 | C | LTR | 0.49 | 28.7 | C | |
| | | Intersection | | 65.8 | E | Intersection | | 96.5 | F | | Intersection | | 28.8 | C | Intersection | | 35.6 | D | | Intersection | | 48.8 | D | Intersection | | 74.0 | E | | Intersection | | 27.8 | C | Intersection | | 33.5 | C | |
| 21 | **Rockaway Beach Boulevard and Beach 59th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | TR | 0.94 | 47.9 | D | TR | 1.07 | 83.0 | F | + | TR | 1.13 | 105.2 | F | TR | 1.30 | 170.8 | F | + | TR | 1.35 | 194.6 | F | TR | 1.60 | 303.1 | F | + | TR | 0.97 | 55.2 | E | TR | 1.15 | 110.9 | F | + |
| | Westbound | LT | 0.93 | 45.2 | D | LT | 1.11 | 94.5 | F | + | LT | 0.81 | 34.4 | C | LT | 0.97 | 56.3 | E | + | LT | 1.19 | 129.7 | F | LT | 1.50 | 261.9 | F | + | LT | 0.80 | 33.5 | C | LT | 0.98 | 59.6 | E | + |
| | Northbound | LR | 0.42 | 29.5 | C | LR | 0.45 | 30.6 | C | | LR | 0.24 | 24.8 | C | LR | 0.25 | 25.0 | C | | LR | 0.29 | 25.8 | C | LR | 0.31 | 26.2 | C | | LR | 0.28 | 25.5 | C | LR | 0.29 | 25.8 | C | |
| | Southbound | LTR | 0.67 | 23.3 | C | LTR | 0.80 | 30.1 | C | | LTR | 0.31 | 15.6 | B | LTR | 0.39 | 16.7 | B | | LTR | 0.42 | 17.0 | B | LTR | 0.50 | 18.4 | B | | LTR | 0.31 | 15.5 | B | LTR | 0.41 | 16.8 | B | |
| | | Intersection | | 39.9 | D | Intersection | | 70.9 | E | | Intersection | | 64.5 | E | Intersection | | 103.2 | F | | Intersection | | 136.0 | F | Intersection | | 230.9 | F | | Intersection | | 39.4 | D | Intersection | | 72.7 | E | |
| 22 | **Beach Channel Drive and Beach 54th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | T | 0.46 | 14.2 | B | T | 0.55 | 15.9 | B | | T | 0.48 | 14.4 | B | T | 0.57 | 16.0 | B | | T | 0.53 | 15.2 | B | T | 0.63 | 17.4 | B | | T | 0.41 | 13.2 | B | T | 0.49 | 14.5 | B | |
| | | R | 0.01 | 9.5 | A | R | 0.02 | 9.5 | A | | R | 0.01 | 9.4 | A | R | 0.01 | 9.5 | A | | R | 0.03 | 9.6 | A | R | 0.04 | 9.7 | A | | R | 0.03 | 9.6 | A | R | 0.04 | 9.8 | A | |
| | Westbound | LT | 0.75 | 22.8 | C | LT | 0.88 | 32.4 | C | | LT | 0.63 | 18.4 | B | LT | 0.73 | 21.9 | C | | LT | 0.70 | 20.6 | C | LT | 0.79 | 25.1 | C | | LT | 0.60 | 17.3 | B | LT | 0.71 | 20.6 | C | |
| | Northbound | LR | 0.19 | 22.1 | C | LR | 0.24 | 23.3 | C | | LR | 0.33 | 25.2 | C | LR | 0.38 | 27.1 | C | | LR | 0.26 | 23.4 | C | LR | 0.31 | 24.9 | C | | LR | 0.18 | 21.8 | C | LR | 0.21 | 22.7 | C | |
| | Southbound | LTR | 0.32 | 23.4 | C | LTR | 0.38 | 24.8 | C | | LTR | 0.34 | 23.8 | C | LTR | 0.39 | 25.1 | C | | LTR | 0.29 | 23.1 | C | LTR | 0.35 | 24.5 | C | | LTR | 0.25 | 22.3 | C | LTR | 0.28 | 23.1 | C | |
| | | Intersection | | 19.8 | B | Intersection | | 25.0 | C | | Intersection | | 18.1 | B | Intersection | | 20.2 | C | | Intersection | | 18.7 | B | Intersection | | 21.5 | C | | Intersection | | 16.5 | B | Intersection | | 18.4 | B | |
| 23 | **Arverne Boulevard and Beach 54th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.71 | 28.5 | C | LTR | 0.81 | 34.0 | C | | LTR | 0.81 | 34.7 | C | LTR | 0.92 | 45.3 | D | + | LTR | 1.11 | 96.6 | F | LTR | 1.28 | 165.3 | F | + | LTR | 0.73 | 29.0 | C | LTR | 0.84 | 35.9 | D | |
| | Westbound | LTR | 0.60 | 24.9 | C | LTR | 1.05 | 79.6 | E | + | LTR | 0.43 | 21.3 | C | LTR | 0.67 | 28.0 | C | | LTR | 0.62 | 26.5 | C | LTR | 1.06 | 87.1 | F | + | LTR | 0.49 | 22.6 | C | LTR | 0.87 | 43.1 | D | |
| | Northbound | LTR | 0.34 | 15.9 | B | LTR | 0.49 | 18.3 | B | | LTR | 0.58 | 20.7 | C | LTR | 0.76 | 27.1 | C | | LTR | 0.52 | 18.8 | B | LTR | 0.76 | 26.2 | C | | LTR | 0.41 | 17.0 | B | LTR | 0.60 | 20.9 | C | |
| | Southbound | LTR | 0.16 | 23.2 | C | LTR | 0.16 | 23.3 | C | | LTR | 0.22 | 24.1 | C | LTR | 0.23 | 24.2 | C | | LTR | 0.19 | 23.6 | C | LTR | 0.19 | 23.8 | C | | LTR | 0.15 | 23.1 | C | LTR | 0.16 | 23.2 | C | |
| | | Intersection | | 24.3 | C | Intersection | | 46.7 | D | | Intersection | | 26.8 | C | Intersection | | 33.9 | C | | Intersection | | 59.0 | E | Intersection | | 101.9 | F | | Intersection | | 24.0 | C | Intersection | | 33.0 | C | |
| 24 | **Rockaway Freeway and Beach 54th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.07 | 16.2 | B | LTR | 0.07 | 16.2 | B | | LTR | 0.05 | 16.1 | B | LTR | 0.05 | 16.1 | B | | LTR | 0.10 | 16.6 | B | LTR | 0.10 | 16.6 | B | | LTR | 0.09 | 16.4 | B | LTR | 0.09 | 16.4 | B | |
| | Westbound | L | 0.21 | 38.8 | D | L | 0.44 | 44.3 | D | | L | 0.03 | 36.0 | D | L | 0.26 | 39.8 | D | | L | 0.23 | 39.2 | D | L | 0.44 | 44.3 | D | | L | 0.05 | 36.2 | D | L | 0.25 | 39.6 | D | |
| | | TR | 0.30 | 10.4 | B | TR | 0.33 | 10.7 | B | | TR | 0.21 | 9.5 | A | TR | 0.24 | 9.9 | A | | TR | 0.31 | 10.6 | B | TR | 0.35 | 10.9 | B | | TR | 0.23 | 9.7 | A | TR | 0.26 | 10.0 | A | |
| | Northbound | LTR | 0.44 | 27.0 | C | LTR | 0.62 | 31.0 | C | | LTR | 0.62 | 31.0 | C | LTR | 0.81 | 39.1 | D | | LTR | 0.66 | 32.0 | C | LTR | 0.94 | 53.5 | D | + | LTR | 0.50 | 28.2 | C | LTR | 0.73 | 35.2 | D | |
| | Southbound | LTR | 0.43 | 26.9 | C | LTR | 0.50 | 28.2 | C | | LTR | 0.68 | 33.3 | C | LTR | 0.74 | 36.5 | D | | LTR | 0.61 | 30.8 | C | LTR | 0.72 | 35.9 | D | | LTR | 0.52 | 28.7 | C | LTR | 0.61 | 31.4 | C | |
| | | Intersection | | 21.2 | C | Intersection | | 24.4 | C | | Intersection | | 26.8 | C | Intersection | | 31.5 | C | | Intersection | | 25.2 | C | Intersection | | 36.3 | D | | Intersection | | 22.7 | C | Intersection | | 27.2 | C | |
| 25 | **Edgemere Avenue and Beach 54th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 1.85 | 420.1 | F | LTR | 3.54 | 1182.0 | F | + | LTR | 2.55 | 732.7 | F | LTR | 4.45 | 1589.0 | F | + | LTR | 8.79 | 3549.0 | F | LTR | Err | Err | Err | + | LTR | 2.21 | 581.5 | F | LTR | 3.49 | 1158.0 | F | + |
| | Westbound | LTR | 0.90 | 39.8 | D | LTR | 0.90 | 39.8 | D | | LTR | 1.05 | 73.9 | E | LTR | 1.05 | 73.9 | E | | LTR | 1.26 | 153.0 | F | LTR | 1.26 | 153.0 | F | | LTR | 0.81 | 31.8 | C | LTR | 0.81 | 31.8 | 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 | 0.34 | 15.8 | B | LTR | 0.45 | 17.5 | B | | LTR | 1.27 | 169.8 | F | LTR | 1.61 | 316.0 | F | + | LTR | 1.26 | 165.5 | F | LTR | 1.59 | 305.2 | F | + | LTR | 1.02 | 84.4 | F | LTR | 1.32 | 194.2 | F | + |
| | | Intersection | | 194.0 | F | Intersection | | 529.8 | F | | Intersection | | 356.6 | F | Intersection | | 762.8 | F | | Intersection | | 1555.0 | F | Intersection | | 0.0 | 0.00 | | Intersection | | 281.9 | F | Intersection | | 586.0 | F | |
| 29 | **Beach Channel Drive and Beach 51st Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.18 | 11.7 | B | L | 0.19 | 11.9 | B | | L | 0.19 | 11.7 | B | L | 0.21 | 12.1 | B | | L | 0.08 | 10.3 | B | L | 0.09 | 10.5 | B | | L | 0.07 | 10.0 | B | L | 0.07 | 10.1 | B | |
| | | TR | 0.69 | 20.5 | C | TR | 0.80 | 26.1 | C | | TR | 0.65 | 18.9 | B | TR | 0.71 | 20.9 | C | | TR | 0.74 | 22.1 | C | TR | 0.80 | 25.5 | C | | TR | 0.55 | 16.1 | B | TR | 0.63 | 18.2 | B | |
| | Westbound | LT | 0.62 | 17.6 | B | LT | 0.65 | 18.4 | B | | LT | 0.60 | 16.9 | B | LT | 0.64 | 18.2 | B | | LT | 0.57 | 16.2 | B | LT | 0.64 | 17.9 | B | | LT | 0.47 | 14.3 | B | LT | 0.53 | 15.3 | B | |
| | | R | 0.07 | 9.9 | B | R | 0.07 | 9.9 | 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 | 0.02 | 9.5 | B | R | 0.02 | 9.5 | B | |
| | Northbound | LTR | 0.01 | 19.5 | B | LTR | 0.02 | 19.5 | B | | LTR | 0.03 | 19.7 | B | LTR | 0.04 | 19.7 | B | | LTR | 0.02 | 19.6 | B | LTR | 0.03 | 19.6 | B | | LTR | 0.03 | 19.6 | B | LTR | 0.03 | 19.6 | B | |
| | | Intersection | | 18.2 | B | Intersection | | 21.3 | C | | Intersection | | 17.3 | B | Intersection | | 18.9 | B | | Intersection | | 18.8 | B | Intersection | | 21.2 | C | | Intersection | | 15.0 | B | Intersection | | 16.5 | B | |
| 39 | **Rockaway Freeway and Beach 44th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.06 | 36.4 | D | L | 0.06 | 36.4 | D | | L | 0.04 | 36.1 | D | L | 0.04 | 36.1 | D | | L | 0.04 | 36.1 | D | L | 0.04 | 36.1 | D | | L | 0.07 | 36.6 | D | L | 0.07 | 36.6 | D | |
| | | TR | 0.37 | 19.7 | B | TR | 0.37 | 19.7 | B | | TR | 0.16 | 17.1 | B | TR | 0.16 | 17.1 | B | | TR | 0.37 | 19.8 | B | TR | 0.37 | 19.8 | B | | TR | 0.23 | 17.9 | B | TR | 0.23 | 17.9 | B | |
| | Westbound | L | 0.02 | 10.4 | B | L | 0.02 | 10.4 | B | | L | 0.01 | 8.1 | A | L | 0.01 | 8.1 | A | | L | 0.03 | 10.7 | B | L | 0.03 | 10.7 | B | | L | 0.02 | 8.6 | A | L | 0.02 | 8.6 | A | |
| | | TR | 0.34 | 19.3 | B | TR | 0.37 | 19.8 | B | | TR | 0.23 | 18.0 | B | TR | 0.27 | 18.4 | B | | TR | 0.36 | 19.6 | B | TR | 0.41 | 20.3 | C | | TR | 0.28 | 18.5 | B | TR | 0.31 | 18.9 | B | |
| | Northbound | LTR | 0.03 | 21.7 | C | LTR | 0.09 | 22.2 | C | | LTR | 0.03 | 21.7 | C | LTR | 0.08 | 22.2 | C | | LTR | 0.04 | 21.8 | C | LTR | 0.10 | 22.3 | C | | LTR | 0.02 | 21.6 | C | LTR | 0.06 | 22.0 | C | |
| | Southbound | LTR | 0.12 | 22.9 | C | LTR | 0.33 | 26.5 | C | | LTR | 0.11 | 22.8 | C | LTR | 0.29 | 25.5 | C | | LTR | 0.17 | 23.7 | C | LTR | 0.36 | 27.2 | C | | LTR | 0.11 | 22.6 | C | LTR | 0.26 | 24.9 | C | |
| | | Intersection | | 19.9 | B | Intersection | | 20.9 | C | | Intersection | | 18.5 | B | Intersection | | 19.9 | B | | Intersection | | 20.0 | C | Intersection | | 21.2 | C | | Intersection | | 18.9 | B | Intersection | | 20.0 | 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. Err = v/c or delay exceeds the maximum limit reportable in the analysis software. "+" denotes significant adverse impact.
1. Stop-controlled approach at signalized intersection.
2. Future intersection created as part of the Proposed Project.
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 12-44 (continued): 2034 No-Action and With-Action Conditions Level of Service Analysis – Signalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | | | | | | Weekday MD Peak Hour | | | | | | | | | Weekday PM Peak Hour | | | | | | | | | Saturday MD Peak Hour | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | |
| | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | 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 | |
| 40[1,3] | **Beach Channel Drive/Seagirt Boulevard and Beach 35th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.61 | 19.3 | B | LTR | 1.01dl | 24.0 | C | | LTR | 0.57 | 18.1 | B | LTR | 0.66 | 22.3 | C | | LTR | 0.88dl | 22.7 | C | LTR | 1.01dl | 32.1 | C | | LTR | 0.50 | 16.1 | B | LTR | 0.59 | 18.7 | B | |
| | Westbound | LT | 0.65 | 16.4 | B | LT | 0.75 | 23.5 | C | | LT | 0.50 | 15.1 | B | LT | 0.58 | 19.1 | B | | LT | 0.63 | 20.7 | C | LT | 0.75 | 30.2 | C | | LT | 0.46 | 12.7 | B | LT | 0.54 | 17.8 | B | |
| | Southbound | LT | 0.16 | 22.0 | C | LT | 0.16 | 22.0 | C | | LT | 0.20 | 22.4 | C | LT | 0.20 | 22.4 | C | | LT | 0.17 | 22.1 | C | LT | 0.17 | 22.1 | C | | LT | 0.18 | 22.3 | C | LT | 0.18 | 22.3 | C | |
| | | R | 0.59 | 10.3 | B | R | 0.66 | 12.0 | B | | R | 0.64 | 11.6 | B | R | 0.72 | 14.7 | B | | R | 0.70 | 12.5 | B | R | 0.80 | 17.3 | B | | R | 0.62 | 10.6 | B | R | 0.70 | 12.5 | B | |
| | Northbound | LTR | 0.13 | 17.3 | B | LTR | 0.13 | 17.2 | B | | LTR | 0.22 | 11.7 | B | LTR | 0.22 | 11.6 | B | | LTR | 0.19 | 12.9 | B | LTR | 0.19 | 12.9 | B | | LTR | 0.12 | 11.6 | B | LTR | 0.12 | 11.5 | B | |
| | | Intersection | | 20.1 | C | Intersection | | 22.5 | C | | Intersection | | 19.4 | B | Intersection | | 21.8 | C | | Intersection | | 22.0 | C | Intersection | | 27.4 | C | | Intersection | | 18.3 | B | Intersection | | 19.7 | B | |
| 41[3] | **Rockaway Freeway and Beach 35th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.07 | 35.2 | D | L | 0.07 | 35.2 | D | | L | 0.05 | 34.9 | C | L | 0.05 | 34.9 | C | | L | 0.06 | 34.9 | C | L | 0.06 | 34.9 | C | | L | 0.02 | 34.2 | C | L | 0.02 | 34.2 | C | |
| | | TR | 0.54 | 22.1 | C | TR | 0.58 | 22.9 | C | | TR | 0.38 | 19.0 | B | TR | 0.41 | 19.5 | B | | TR | 0.69 | 26.3 | C | TR | 0.72 | 27.8 | C | | TR | 0.40 | 19.2 | B | TR | 0.43 | 19.7 | B | |
| | Westbound | L | 0.01 | 40.5 | D | L | 0.01 | 41.0 | D | | L | 0.00 | 0.0 | - | L | 0.00 | 0.0 | - | | L | 0.00 | 0.0 | - | L | 0.00 | 0.0 | - | | L | 0.00 | 49.0 | D | L | 0.00 | 49.0 | D | |
| | | TR | 0.61 | 10.2 | B | TR | 0.64 | 10.4 | B | | TR | 0.47 | 6.9 | A | TR | 0.50 | 7.0 | A | | TR | 0.58 | 9.1 | A | TR | 0.63 | 10.6 | B | | TR | 0.49 | 8.6 | A | TR | 0.52 | 8.7 | A | |
| | Southbound | LTR | 0.27 | 8.9 | A | LTR | 0.27 | 8.9 | A | | LTR | 0.36 | 10.1 | B | LTR | 0.36 | 10.1 | B | | LTR | 0.25 | 8.2 | A | LTR | 0.25 | 8.2 | A | | LTR | 0.31 | 10.3 | B | LTR | 0.31 | 10.3 | B | |
| | Northbound | LTR | 0.16 | 26.7 | C | LTR | 0.16 | 26.7 | C | | LTR | 0.32 | 29.1 | C | LTR | 0.32 | 29.1 | C | | LTR | 0.26 | 28.0 | C | LTR | 0.26 | 28.0 | C | | LTR | 0.20 | 27.1 | C | LTR | 0.20 | 27.1 | C | |
| | | Intersection | | 16.0 | B | Intersection | | 16.4 | B | | Intersection | | 14.5 | B | Intersection | | 14.6 | B | | Intersection | | 18.6 | B | Intersection | | 19.7 | B | | Intersection | | 14.3 | B | Intersection | | 14.5 | B | |
| 42[3] | **Rockaway Freeway and Seagirt Boulevard** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | L | 0.19 | 38.8 | D | L | 0.28 | 41.3 | D | | L | 0.16 | 38.3 | D | L | 0.23 | 39.4 | D | | L | 0.21 | 38.3 | D | L | 0.28 | 40.6 | D | | L | 0.20 | 41.0 | D | L | 0.28 | 43.4 | D | |
| | | TR | 0.23 | 42.3 | D | TR | 0.25 | 75.9 | E | + | TR | 0.28 | 62.1 | E | TR | 0.31 | 83.8 | F | + | TR | 0.24 | 84.8 | F | TR | 0.26 | 85.5 | F | | TR | 0.17 | 24.9 | C | TR | 0.19 | 32.1 | C | |
| | Westbound | LTR | 0.62 | 34.1 | C | LTR | 0.66 | 35.2 | D | | LTR | 0.51 | 32.1 | C | LTR | 0.54 | 32.6 | C | | LTR | 0.71 | 37.1 | D | LTR | 0.75 | 39.3 | D | | LTR | 0.56 | 32.9 | C | LTR | 0.59 | 33.4 | C | |
| | Southbound | TR | 0.55 | 26.7 | C | TR | 0.66 | 29.9 | C | | TR | 0.56 | 27.0 | C | TR | 0.67 | 31.0 | C | | TR | 0.65 | 29.8 | C | TR | 0.81 | 39.2 | D | | TR | 0.46 | 24.7 | C | TR | 0.57 | 27.5 | C | |
| | Northbound | TR | 0.63 | 12.2 | B | TR | 0.67 | 13.1 | B | | TR | 0.54 | 13.5 | B | TR | 0.58 | 13.7 | B | | TR | 0.94 | 34.5 | C | TR | 0.98 | 42.4 | D | | TR | 0.50 | 12.1 | B | TR | 0.54 | 12.2 | B | |
| | | Intersection | | 28.1 | C | Intersection | | 34.5 | C | | Intersection | | 32.4 | C | Intersection | | 37.9 | D | | Intersection | | 41.4 | D | Intersection | | 46.6 | D | | Intersection | | 25.4 | C | Intersection | | 27.5 | C | |
| 43 | **Rockaway Freeway and Beach 25th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.59 | 30.9 | C | LTR | 0.59 | 30.9 | C | | LTR | 0.24 | 24.1 | C | LTR | 0.24 | 24.1 | C | | LTR | 0.34 | 25.5 | C | LTR | 0.34 | 25.5 | C | | LTR | 0.19 | 23.4 | C | LTR | 0.19 | 23.4 | C | |
| | Westbound | LTR | 0.62 | 33.5 | C | LTR | 0.70 | 38.3 | D | | LTR | 0.33 | 25.6 | C | LTR | 0.36 | 26.2 | C | | LTR | 0.36 | 26.2 | C | LTR | 0.40 | 26.9 | C | | LTR | 0.27 | 24.7 | C | LTR | 0.30 | 25.1 | C | |
| | Northbound | L | 0.20 | 37.6 | D | L | 0.20 | 37.6 | D | | L | 0.17 | 37.1 | D | L | 0.17 | 37.1 | D | | L | 0.18 | 37.3 | D | L | 0.18 | 37.3 | D | | L | 0.10 | 36.0 | D | L | 0.10 | 36.0 | D | |
| | | TR | 0.57 | 24.3 | C | TR | 0.65 | 26.6 | C | | TR | 0.58 | 24.5 | C | TR | 0.65 | 26.7 | C | | TR | 0.54 | 23.8 | C | TR | 0.61 | 25.5 | C | | TR | 0.42 | 21.3 | C | TR | 0.50 | 22.7 | C | |
| | Southbound | L | 0.17 | 37.2 | D | L | 0.17 | 37.2 | D | | L | 0.13 | 36.6 | D | L | 0.13 | 36.6 | D | | L | 0.11 | 36.2 | D | L | 0.11 | 36.2 | D | | L | 0.16 | 36.9 | D | L | 0.16 | 36.9 | D | |
| | | TR | 0.63 | 25.4 | C | TR | 0.68 | 26.9 | C | | TR | 0.45 | 21.6 | C | TR | 0.50 | 22.5 | C | | TR | 0.44 | 21.4 | C | TR | 0.52 | 22.7 | C | | TR | 0.34 | 19.9 | B | TR | 0.40 | 20.7 | C | |
| | | Intersection | | 28.1 | C | Intersection | | 29.8 | C | | Intersection | | 24.4 | C | Intersection | | 25.5 | C | | Intersection | | 24.3 | C | Intersection | | 25.3 | C | | Intersection | | 22.5 | C | Intersection | | 23.2 | C | |
| 44 | **Rockaway Freeway and Cornaga Avenue** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.35 | 21.3 | C | LTR | 0.35 | 21.3 | C | | LTR | 0.18 | 19.3 | B | LTR | 0.18 | 19.3 | B | | LTR | 0.22 | 19.0 | B | LTR | 0.22 | 19.0 | B | | LTR | 0.15 | 18.9 | B | LTR | 0.15 | 18.9 | B | |
| | Westbound | LTR | 0.98 | 67.8 | E | LTR | 1.00 | 72.2 | E | + | LTR | 0.71 | 32.8 | C | LTR | 0.72 | 33.6 | C | | LTR | 0.86 | 44.4 | D | LTR | 0.87 | 45.8 | D | | LTR | 0.53 | 25.8 | C | LTR | 0.54 | 26.0 | C | |
| | Northbound | TR | 0.72 | 34.3 | C | TR | 0.81 | 40.0 | D | | TR | 0.59 | 29.8 | C | TR | 0.65 | 31.7 | C | | TR | 0.64 | 32.6 | C | TR | 0.71 | 35.0 | D | | TR | 0.46 | 26.9 | C | TR | 0.53 | 28.4 | C | |
| | Southbound | L | 0.08 | 36.7 | D | L | 0.08 | 36.7 | D | | L | 0.12 | 37.4 | D | L | 0.12 | 37.4 | D | | L | 0.13 | 37.6 | D | L | 0.13 | 37.6 | D | | L | 0.14 | 37.6 | D | L | 0.14 | 37.6 | D | |
| | | TR | 0.32 | 14.9 | B | TR | 0.36 | 15.4 | B | | TR | 0.27 | 14.3 | B | TR | 0.31 | 14.8 | B | | TR | 0.32 | 15.4 | B | TR | 0.39 | 16.4 | B | | TR | 0.24 | 14.0 | B | TR | 0.29 | 14.6 | B | |
| | | Intersection | | 37.8 | D | Intersection | | 40.4 | D | | Intersection | | 26.2 | C | Intersection | | 27.0 | C | | Intersection | | 30.5 | C | Intersection | | 31.2 | C | | Intersection | | 22.7 | C | Intersection | | 23.2 | C | |
| 45 | **Beach Channel Drive and Cornaga Avenue** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.36 | 21.8 | C | LTR | 0.36 | 21.8 | C | | LTR | 0.19 | 19.4 | B | LTR | 0.19 | 19.4 | B | | LTR | 0.22 | 19.8 | B | LTR | 0.22 | 19.8 | B | | LTR | 0.18 | 19.4 | B | LTR | 0.18 | 19.4 | B | |
| | Westbound | LTR | 0.42 | 23.2 | C | LTR | 0.42 | 23.2 | C | | LTR | 0.32 | 21.4 | C | LTR | 0.32 | 21.4 | C | | LTR | 0.45 | 23.6 | C | LTR | 0.45 | 23.6 | C | | LTR | 0.25 | 20.3 | C | LTR | 0.25 | 20.3 | C | |
| | Northbound | L | 0.07 | 12.8 | B | L | 0.08 | 13.0 | B | | L | 0.04 | 12.4 | B | L | 0.05 | 12.5 | B | | L | 0.06 | 12.6 | B | L | 0.07 | 12.9 | B | | L | 0.02 | 12.1 | B | L | 0.03 | 12.1 | B | |
| | | TR | 0.64 | 20.5 | C | TR | 0.70 | 22.4 | C | | TR | 0.57 | 18.9 | B | TR | 0.60 | 19.6 | B | | TR | 0.61 | 19.7 | B | TR | 0.64 | 20.6 | C | | TR | 0.51 | 17.6 | B | TR | 0.55 | 18.3 | B | |
| | Southbound | L | 0.17 | 14.4 | B | L | 0.21 | 15.7 | B | | L | 0.14 | 14.1 | B | L | 0.15 | 14.5 | B | | L | 0.10 | 13.2 | B | L | 0.11 | 13.5 | B | | L | 0.07 | 12.7 | B | L | 0.08 | 12.8 | B | |
| | | TR | 0.66 | 21.3 | C | TR | 0.70 | 22.4 | C | | TR | 0.58 | 19.0 | B | TR | 0.61 | 19.8 | B | | TR | 0.61 | 19.6 | B | TR | 0.66 | 21.1 | C | | TR | 0.53 | 18.1 | B | TR | 0.57 | 18.9 | B | |
| | | Intersection | | 21.1 | C | Intersection | | 22.2 | C | | Intersection | | 19.2 | B | Intersection | | 19.7 | B | | Intersection | | 20.1 | C | Intersection | | 21.0 | C | | Intersection | | 18.1 | B | Intersection | | 18.7 | B | |
| 46 | **Beach Channel Drive and Mott Avenue** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 1.02 | 78.7 | E | LTR | 1.07 | 94.3 | F | + | LTR | 0.74 | 37.0 | D | LTR | 0.78 | 39.9 | D | | LTR | 0.89 | 53.6 | D | LTR | 0.91 | 58.7 | E | + | LTR | 0.74 | 36.5 | D | LTR | 0.76 | 38.3 | D | |
| | Westbound | LT | 0.59 | 29.9 | C | LT | 0.69 | 35.1 | D | | LT | 0.68 | 34.7 | C | LT | 0.74 | 38.5 | D | | LT | 0.72 | 34.6 | C | LT | 0.76 | 37.9 | D | | LT | 0.63 | 30.4 | C | LT | 0.66 | 32.2 | C | |
| | | R | 0.19 | 11.2 | C | R | 0.19 | 11.2 | C | | R | 0.16 | 11.3 | C | R | 0.16 | 11.3 | C | | R | 0.22 | 11.5 | C | R | 0.22 | 11.5 | C | | R | 0.18 | 10.9 | C | R | 0.18 | 10.9 | C | |
| | Northbound | L | 0.20 | 26.3 | C | L | 0.21 | 26.8 | C | | L | 0.28 | 29.0 | C | L | 0.34 | 32.3 | C | | L | 0.25 | 28.5 | C | L | 0.30 | 30.9 | C | | L | 0.20 | 26.3 | C | L | 0.25 | 28.5 | C | |
| | | TR | 1.33 | 188.4 | F | TR | 1.52 | 272.4 | F | + | TR | 1.24 | 149.3 | F | TR | 1.34 | 193.6 | F | + | TR | 1.41 | 223.3 | F | TR | 1.52 | 273.7 | F | + | TR | 1.25 | 156.0 | F | TR | 1.38 | 211.7 | F | + |
| | Southbound | L | 1.14 | 125.7 | F | L | 1.14 | 125.7 | F | | L | 1.16 | 134.1 | F | L | 1.16 | 134.1 | F | | L | 1.42 | 235.7 | F | L | 1.42 | 235.7 | F | | L | 1.35 | 207.8 | F | L | 1.35 | 207.8 | F | |
| | | TR | 0.95 | 40.6 | D | TR | 1.00 | 49.8 | D | + | TR | 0.85 | 27.3 | C | TR | 0.90 | 31.2 | C | | TR | 1.09 | 76.9 | E | TR | 1.18 | 114.1 | F | + | TR | 0.86 | 28.6 | C | TR | 0.92 | 34.6 | C | |
| | | Intersection | | 93.9 | F | Intersection | | 127.1 | F | | Intersection | | 75.0 | E | Intersection | | 90.4 | F | | Intersection | | 126.3 | F | Intersection | | 154.5 | F | | Intersection | | 88.4 | F | Intersection | | 107.1 | F | |
| 47 | **Beach Channel Drive and Dix Avenue** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.59 | 31.5 | C | LTR | 0.59 | 31.5 | C | | LTR | 0.53 | 30.1 | C | LTR | 0.53 | 30.1 | C | | LTR | 0.23 | 22.8 | C | LTR | 0.23 | 22.8 | C | | LTR | 0.10 | 20.6 | C | LTR | 0.10 | 20.6 | C | |
| | Westbound | LTR | 0.65 | 35.0 | C | LTR | 0.65 | 35.0 | C | | LTR | 0.81 | 47.8 | D | LTR | 0.81 | 47.8 | D | | LTR | 0.75 | 39.4 | D | LTR | 0.75 | 39.4 | D | | LTR | 0.60 | 31.3 | C | LTR | 0.60 | 31.3 | C | |
| | Northbound | LTR | 1.21 | 127.1 | F | LTR | 1.34 | 184.5 | F | + | LTR | 1.13 | 96.8 | F | LTR | 1.19 | 122.1 | F | + | LTR | 1.10 | 83.3 | F | LTR | 1.16 | 109.0 | F | + | LTR | 0.52 | 14.4 | B | LTR | 0.56 | 15.1 | B | |
| | Southbound | LTR | 0.55 | 14.8 | B | LTR | 0.58 | 15.2 | B | | LTR | 0.64 | 16.5 | B | LTR | 0.67 | 17.2 | B | | LTR | 0.74 | 19.0 | B | LTR | 0.80 | 21.3 | C | | LTR | 0.67 | 17.0 | B | LTR | 0.71 | 18.0 | B | |
| | | Intersection | | 64.3 | E | Intersection | | 90.9 | F | | Intersection | | 50.6 | D | Intersection | | 60.5 | E | | Intersection | | 44.6 | D | Intersection | | 54.8 | D | | Intersection | | 17.6 | B | Intersection | | 18.3 | 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. Err = v/c or delay exceeds the maximum limit reportable in the analysis software. "+" denotes significant adverse impact.
1. Stop-controlled approach at signalized intersection.
2. Future intersection created as part of the Proposed Project.
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 12-44 (continued): 2034 No-Action and With-Action Conditions Level of Service Analysis – Signalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | | | | | | Weekday MD Peak Hour | | | | | | | | | Weekday PM Peak Hour | | | | | | | | | Saturday MD Peak Hour | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | |
| | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | 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 | |
| 48 | **Beach Channel Drive and Birdsall Avenue** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LR | 0.02 | 19.6 | B | LR | 0.02 | 19.6 | B | | LR | 0.05 | 20.6 | C | LR | 0.05 | 20.6 | C | | LR | 0.05 | 20.6 | C | LR | 0.05 | 20.6 | C | | LR | 0.03 | 19.7 | B | LR | 0.03 | 19.7 | B | |
| | Westbound | LTR | 0.40 | 24.8 | C | LTR | 0.40 | 24.8 | C | | LTR | 0.22 | 22.7 | C | LTR | 0.22 | 22.7 | C | | LTR | 0.35 | 24.7 | C | LTR | 0.35 | 24.6 | C | | LTR | 0.42 | 25.4 | C | LTR | 0.42 | 25.4 | C | |
| | Northbound | LT | 0.90 | 31.6 | C | LT | 1.00 | 50.3 | D | + | LT | 0.84 | 25.3 | C | LT | 0.89 | 29.3 | C | | LT | 0.80 | 22.7 | C | LT | 0.85 | 26.0 | C | | LT | 0.80 | 23.2 | C | LT | 0.86 | 27.4 | C | |
| | Southbound | T | 0.79 | 22.5 | C | T | 0.83 | 24.6 | C | | T | 0.87 | 26.9 | C | T | 0.91 | 31.2 | C | | T | 0.98 | 43.0 | D | T | 1.07 | 67.3 | E | + | T | 0.90 | 30.7 | C | T | 0.96 | 39.7 | D | |
| | | R | 0.02 | 9.5 | A | R | 0.02 | 9.5 | A | | R | 0.01 | 9.0 | A | R | 0.01 | 9.0 | A | | R | 0.01 | 9.0 | A | R | 0.01 | 9.0 | A | | R | 0.00 | 9.4 | A | R | 0.00 | 9.4 | A | |
| | | Intersection | | 26.8 | C | Intersection | | 36.6 | D | | Intersection | | 25.8 | C | Intersection | | 29.7 | C | | Intersection | | 33.2 | C | Intersection | | 47.3 | D | | Intersection | | 27.0 | C | Intersection | | 33.1 | C | |
| 49 | **Beach Channel Drive and Nameoke Avenue** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.77 | 38.5 | D | LTR | 0.77 | 38.5 | D | | LTR | 0.53 | 30.8 | C | LTR | 0.53 | 30.8 | C | | LTR | 0.36 | 24.4 | C | LTR | 0.36 | 24.4 | C | | LTR | 0.35 | 24.9 | C | LTR | 0.35 | 24.9 | C | |
| | Northbound | L | 0.20 | 15.0 | B | L | 0.25 | 18.2 | B | | L | 0.19 | 14.1 | B | L | 0.19 | 14.1 | B | | L | 0.17 | 15.0 | B | L | 0.17 | 15.0 | B | | L | 0.06 | 10.7 | B | L | 0.06 | 10.7 | B | |
| | | TR | 1.30 | 165.7 | F | TR | 1.43 | 220.9 | F | + | TR | 1.24 | 136.7 | F | TR | 1.30 | 164.5 | F | + | TR | 1.16 | 106.9 | F | TR | 1.22 | 131.6 | F | + | TR | 1.12 | 91.3 | F | TR | 1.20 | 122.6 | F | + |
| | Southbound | L | 0.68 | 52.0 | D | L | 0.68 | 52.0 | D | | L | 1.31 | 222.8 | F | L | 1.36 | 243.6 | F | + | L | 0.95 | 95.1 | F | L | 1.25 | 202.5 | F | + | L | 0.66 | 43.2 | D | L | 0.81 | 74.0 | E | + |
| | | TR | 1.17 | 109.6 | F | TR | 1.22 | 129.8 | F | + | TR | 1.28 | 155.9 | F | TR | 1.34 | 181.7 | F | + | TR | 1.47 | 239.9 | F | TR | 1.59 | 294.3 | F | + | TR | 1.24 | 139.9 | F | TR | 1.32 | 172.8 | F | + |
| | | Intersection | | 121.1 | F | Intersection | | 155.2 | F | | Intersection | | 138.8 | F | Intersection | | 163.0 | F | | Intersection | | 164.9 | F | Intersection | | 208.0 | F | | Intersection | | 107.4 | F | Intersection | | 137.8 | F | |
| 50 | **Beach Channel Drive and Hassock Avenue** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LR | 0.17 | 19.3 | B | LR | 0.17 | 19.3 | B | | LR | 0.13 | 21.0 | C | LR | 0.13 | 21.0 | C | | LR | 0.13 | 18.8 | B | LR | 0.13 | 18.8 | B | | LR | 0.18 | 19.5 | B | LR | 0.18 | 19.5 | B | |
| | Westbound | L | 0.22 | 20.0 | C | L | 0.22 | 20.0 | C | | L | 0.34 | 23.9 | C | L | 0.34 | 23.9 | C | | L | 0.30 | 21.3 | C | L | 0.30 | 21.3 | C | | L | 0.23 | 20.1 | C | L | 0.23 | 20.1 | C | |
| | | TR | 0.16 | 19.2 | B | TR | 0.16 | 19.2 | B | | TR | 0.08 | 20.3 | C | TR | 0.08 | 20.3 | C | | TR | 0.17 | 19.4 | B | TR | 0.17 | 19.4 | B | | TR | 0.13 | 18.8 | B | TR | 0.13 | 18.8 | B | |
| | Northbound | LT | 0.88 | 29.1 | C | LT | 1.00 | 49.2 | D | + | LT | 0.71 | 17.6 | B | LT | 0.79 | 20.4 | C | | LT | 0.88 | 30.0 | C | LT | 0.93 | 35.5 | D | | LT | 0.92 | 33.4 | C | LT | 1.04 | 59.8 | E | + |
| | Southbound | T | 0.97 | 45.9 | D | T | 1.02 | 57.3 | E | + | T | 1.03 | 58.8 | E | T | 1.08 | 75.5 | E | + | T | 1.22 | 132.6 | F | T | 1.33 | 179.8 | F | + | T | 1.10 | 83.6 | F | T | 1.17 | 113.1 | F | + |
| | | R | 0.08 | 11.5 | B | R | 0.08 | 11.5 | B | | R | 0.05 | 9.7 | A | R | 0.05 | 9.7 | A | | R | 0.19 | 12.6 | B | R | 0.19 | 12.6 | B | | R | 0.13 | 12.0 | B | R | 0.13 | 12.0 | B | |
| | | Intersection | | 33.8 | C | Intersection | | 48.1 | D | | Intersection | | 35.4 | D | Intersection | | 43.8 | D | | Intersection | | 74.8 | E | Intersection | | 100.3 | F | | Intersection | | 51.6 | D | Intersection | | 75.9 | E | |

**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. Err = v/c or delay exceeds the maximum limit reportable in the analysis software. "+" denotes significant adverse impact.
1. Stop-controlled approach at signalized intersection.
2. Future intersection created as part of the Proposed Project.
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 12-45: 2034 No-Action and With-Action Conditions Level of Service Analysis – Unsignalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | | | | | | Weekday MD Peak Hour | | | | | | | | | Weekday PM Peak Hour | | | | | | | | | Saturday MD Peak Hour | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | |
| | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | 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 | 0.05 | 9.2 | A | T | 0.05 | 9.2 | A | | T | 0.06 | 9.3 | A | T | 0.06 | 9.3 | A | | T | 0.07 | 9.3 | A | T | 0.07 | 9.3 | A | | T | 0.07 | 9.3 | A | T | 0.07 | 9.3 | A | |
| 13[1] | **Beach Channel Drive and Beach 73rd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | R | 0.14 | 9.1 | A | R | 0.14 | 9.1 | A | | R | 0.10 | 8.8 | A | R | 0.10 | 8.8 | A | | R | 0.26 | 9.7 | A | R | 0.26 | 9.7 | A | | R | 0.15 | 9.1 | A | R | 0.15 | 9.0 | A | |
| | Northbound | R | 0.12 | 12.0 | B | R | 0.13 | 13.2 | B | | R | 0.17 | 12.9 | B | R | 0.20 | 14.4 | B | | R | 0.21 | 16.5 | C | R | 0.29 | 22.6 | C | | R | 0.12 | 12.2 | B | R | 0.14 | 13.8 | B | |
| 17 | **Beach Front Road and Beach 62nd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.25 | 11.1 | B | LT | 0.30 | 11.8 | B | | LT | 0.32 | 11.8 | B | LT | 0.37 | 12.4 | B | | LT | 0.39 | 12.7 | B | LT | 0.44 | 13.5 | B | | LT | 0.27 | 11.6 | B | LT | 0.32 | 12.2 | B | |
| | Westbound | TR | 0.20 | 10.3 | B | TR | 0.21 | 10.5 | B | | TR | 0.11 | 10.3 | B | TR | 0.12 | 10.5 | B | | TR | 0.14 | 10.4 | B | TR | 0.14 | 10.6 | B | | TR | 0.13 | 10.1 | B | TR | 0.14 | 10.3 | B | |
| | Southbound | LTR | 0.00 | 7.2 | A | LTR | 0.00 | 7.2 | A | | LTR | 0.00 | 7.3 | A | LTR | 0.00 | 7.3 | A | | LTR | 0.01 | 7.3 | A | LTR | 0.01 | 7.3 | A | | LTR | 0.00 | 7.5 | A | LTR | 0.00 | 7.5 | A | |
| 26 | **Beach Channel Drive and Beach 53rd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | LT | 0.04 | 9.9 | A | LT | 0.13 | 17.9 | C | | LT | 0.07 | 11.3 | B | LT | 0.26 | 25.4 | D | | LT | 0.05 | 9.4 | A | LT | 0.57 | 58.7 | F | + | LT | 0.04 | 8.4 | A | LT | 0.28 | 23.5 | C | |
| | Northbound | LR | 0.33 | 29.3 | D | LR | 3.73 | 1381.0 | F | + | LR | 0.53 | 45.8 | E | LR | 4.38 | 1740.0 | F | + | LR | 0.42 | 29.3 | D | LR | 19.33 | 9057.0 | F | + | LR | 0.25 | 17.2 | C | LR | 4.16 | 1609.0 | F | + |
| 27 | **Rockaway Beach Boulevard and Beach 53rd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.04 | 9.4 | A | LT | 0.21 | 18.6 | C | | LT | 0.06 | 10.3 | B | LT | 0.33 | 21.3 | C | | LT | 0.11 | 10.4 | B | LT | 1.08 | 127.6 | F | + | LT | 0.06 | 10.0 | A | LT | 0.50 | 27.0 | D | |
| | Southbound | LR | 0.20 | 15.5 | C | LR | 2.18 | 621.1 | F | + | LR | 0.21 | 21.6 | C | LR | 1.65 | 449.5 | F | + | LR | 0.39 | 33.1 | D | LR | Err | Err | Err | + | LR | 0.25 | 20.3 | C | LR | 3.37 | 1209.0 | F | + |
| 28 | **Rockaway Beach Boulevard and Beach 52nd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.01 | 8.5 | A | LTR | 0.11 | 11.1 | B | | LTR | 0.01 | 9.3 | A | LTR | 0.13 | 13.0 | B | | LTR | 0.02 | 9.0 | A | LTR | 0.17 | 13.3 | B | | LTR | 0.01 | 9.0 | A | LTR | 0.11 | 11.7 | B | |
| | Westbound | LTR | 0.00 | 8.1 | A | LTR | 0.01 | 8.6 | A | | LTR | 0.00 | 8.4 | A | LTR | 0.00 | 8.8 | A | | LTR | 0.00 | 9.0 | A | LTR | 0.01 | 9.9 | A | | LTR | 0.00 | 8.6 | A | LTR | 0.01 | 9.2 | A | |
| | Northbound | LR | 0.01 | 16.1 | C | LR | 0.22 | 87.9 | F | 5 | LR | 0.01 | 23.8 | C | LR | Err | Err | Err | 5 | LR | 0.01 | 22.3 | C | LR | Err | Err | Err | 5 | LR | 0.02 | 18.8 | C | LR | 0.43 | 270.5 | F | 5 |
| | Southbound | LTR | 0.01 | 14.6 | B | LTR | 0.92 | 161.4 | F | 5 | LTR | 0.01 | 28.5 | D | LTR | 1.55 | 417.9 | F | + | LTR | 0.02 | 21.9 | C | LTR | 3.21 | 1278.0 | F | 5 | LTR | 0.01 | 21.5 | C | LTR | 1.16 | 261.9 | F | 5 |
| 30 | **Beach Channel Drive and Beach 50th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | LT | 0.02 | 8.9 | A | LT | 0.18 | 10.6 | B | | LT | 0.03 | 9.5 | A | LT | 0.19 | 12.0 | B | | LT | 0.04 | 10.0 | A | LT | 0.24 | 13.1 | B | | LT | 0.03 | 9.3 | A | LT | 0.15 | 11.1 | B | |
| | Northbound | LR | 0.09 | 16.0 | C | LR | 0.46 | 28.5 | D | | LR | 0.07 | 15.3 | C | LR | 0.48 | 31.4 | D | + | LR | 0.07 | 17.9 | C | LR | 0.52 | 39.6 | E | 5 | LR | 0.07 | 16.1 | C | LR | 0.40 | 26.8 | D | |
| 31 | **Rockaway Beach Boulevard and Beach 50th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.01 | 8.3 | A | LT | 0.09 | 9.0 | A | | LT | 0.01 | 8.2 | A | LT | 0.07 | 9.0 | A | | LT | 0.01 | 8.2 | A | LT | 0.05 | 8.9 | A | | LT | 0.01 | 8.2 | A | LT | 0.05 | 8.8 | A | |
| | Southbound | LR | 0.05 | 12.3 | B | LR | 0.23 | 20.7 | C | | LR | 0.06 | 13.3 | B | LR | 0.27 | 21.8 | C | | LR | 0.06 | 14.2 | B | LR | 0.36 | 27.6 | D | | LR | 0.05 | 13.2 | B | LR | 0.26 | 21.8 | C | |
| 32[2] | **Beach Channel Drive and Beach 52nd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | | | | | LT | 0.01 | 9.9 | A | | | | | | LT | 0.02 | 11.1 | B | | | | | | LT | 0.02 | 11.9 | B | | | | | | LT | 0.02 | 10.9 | B | |
| | Northbound | | | | | LR | 0.20 | 30.8 | D | 5 | | | | | LR | 0.25 | 36.4 | E | 5 | | | | | LR | 0.33 | 53.5 | F | 5 | | | | | LR | 0.13 | 20.7 | C | |
| 33[2] | **Peninsula Way and Beach 53rd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | | | | | LR | 0.23 | 15.8 | C | | | | | | LR | 0.12 | 13.2 | B | | | | | | LR | 0.19 | 19.0 | C | | | | | | LR | 0.17 | 16.3 | C | |
| | Southbound | | | | | LT | 0.04 | 9.0 | A | | | | | | LT | 0.03 | 8.7 | A | | | | | | LT | 0.05 | 10.0 | B | | | | | | LT | 0.03 | 9.3 | A | |
| 34[2] | **Peninsula Way and Beach 52nd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | | | | | LTR | 0.00 | 8.8 | A | | | | | | LTR | 0.01 | 10.1 | B | | | | | | LTR | 0.01 | 9.7 | A | | | | | | LTR | 0.00 | 9.4 | A | |
| | Westbound | | | | | LTR | 0.07 | 9.0 | A | | | | | | LTR | 0.13 | 11.1 | B | | | | | | LTR | 0.10 | 10.4 | B | | | | | | LTR | 0.08 | 9.7 | A | |
| | Northbound | | | | | LTR | 0.33 | 29.6 | D | | | | | | LTR | 1.34 | 365.6 | F | 5 | | | | | LTR | 1.02 | 187.0 | F | 5 | | | | | LTR | 0.62 | 81.9 | F | 5 |
| | Southbound | | | | | LTR | 0.49 | 90.9 | F | 5 | | | | | LTR | 5.57 | 3080.0 | F | 5 | | | | | LTR | 3.07 | 1450.0 | F | 5 | | | | | LTR | 0.95 | 294.0 | F | 5 |
| 35[2] | **Peninsula Way and Beach 50th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | | | | | LR | 0.21 | 13.7 | B | | | | | | LR | 0.24 | 14.1 | B | | | | | | LR | 0.19 | 13.0 | B | | | | | | LR | 0.14 | 11.4 | B | |
| | Northbound | | | | | LT | 0.09 | 8.4 | A | | | | | | LT | 0.07 | 8.6 | A | | | | | | LT | 0.06 | 8.4 | A | | | | | | LT | 0.04 | 8.0 | A | |
| 36 | **Beach Channel Drive and Beach 47th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LT | 0.01 | 9.1 | A | LT | 0.01 | 9.6 | A | | LT | 0.01 | 9.0 | A | LT | 0.01 | 9.4 | A | | LT | 0.00 | 8.9 | A | LT | 0.00 | 9.5 | A | | LT | 0.00 | 8.6 | A | LT | 0.00 | 8.9 | A | |
| | Northbound | LTR | 0.06 | 16.8 | C | LTR | 0.09 | 22.1 | C | | LTR | 0.04 | 18.1 | C | LTR | 0.05 | 22.7 | C | | LTR | 0.12 | 23.9 | C | LTR | 0.18 | 33.5 | D | 5 | LTR | 0.13 | 18.2 | C | LTR | 0.17 | 23.3 | C | |
| 37 | **Arverne Boulevard/Rockaway Beach Boulevard and Beach 47th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | LTR | 0.00 | 7.9 | A | LTR | 0.00 | 8.1 | A | | LTR | 0.00 | 7.9 | A | LTR | 0.00 | 8.3 | A | | LTR | 0.01 | 8.1 | A | LTR | 0.01 | 8.4 | A | | LTR | 0.01 | 8.0 | A | LTR | 0.01 | 8.2 | A | |
| | Westbound | LTR | 0.03 | 8.9 | A | LTR | 0.03 | 10.1 | B | | LTR | 0.02 | 10.4 | B | LTR | 0.04 | 12.7 | B | | LTR | 0.02 | 10.6 | B | LTR | 0.03 | 13.0 | B | | LTR | 0.03 | 9.8 | A | LTR | 0.04 | 12.3 | B | |
| | Northbound | LTR | 0.05 | 15.1 | C | LTR | 0.22 | 25.2 | D | | LTR | 0.07 | 22.6 | C | LTR | 0.41 | 58.7 | F | 5 | LTR | 0.12 | 27.5 | D | LTR | 0.57 | 75.9 | F | 5 | LTR | 0.13 | 20.6 | C | LTR | 0.53 | 61.3 | F | 5 |
| 38 | **Rockaway Beach Boulevard and Beach 44th Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | LT | 0.01 | 8.5 | A | LT | 0.01 | 8.7 | A | | LT | 0.00 | 8.1 | A | LT | 0.00 | 8.3 | A | | LT | 0.01 | 9.1 | A | LT | 0.02 | 9.3 | A | | LT | 0.01 | 8.0 | A | LT | 0.01 | 8.2 | A | |
| | Northbound | LR | 0.08 | 17.0 | C | LR | 0.24 | 24.7 | C | | LR | 0.09 | 24.7 | C | LR | 0.32 | 41.7 | E | 5 | LR | 0.17 | 31.8 | D | LR | 0.53 | 67.3 | F | 5 | LR | 0.09 | 20.8 | C | LR | 0.27 | 31.3 | D | 5 |
| | Southbound | LTR | 0.13 | 17.3 | C | LTR | 0.14 | 18.6 | C | | LTR | 0.10 | 17.2 | C | LTR | 0.11 | 18.8 | C | | LTR | 0.19 | 23.9 | C | LTR | 0.21 | 26.6 | D | | LTR | 0.08 | 16.0 | C | LTR | 0.09 | 17.1 | C | |
| 40[1,3] | **Beach Channel Drive and Seagirt Boulevard** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | R | 0.03 | 11.9 | B | R | 0.03 | 12.7 | B | | R | 0.09 | 12.3 | B | R | 0.10 | 12.9 | B | | R | 0.15 | 13.8 | B | R | 0.16 | 14.6 | B | | R | 0.12 | 12.0 | B | R | 0.13 | 12.8 | B | |
| 51 | **Rockaway Freeway and Beach 52nd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Southbound | | | | | R | 0.12 | 11.1 | B | | | | | | R | 0.09 | 9.7 | A | | | | | | R | 0.10 | 10.6 | B | | | | | | R | 0.08 | 10.0 | A | |

**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. Err = v/c or delay exceeds the maximum limit reportable in the analysis software. "+" denotes significant adverse impact.

1. Stop-controlled approach at signalized intersection.
2. Future intersection created as part of the Proposed Project.
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).
4. Future driveway to parking garage/parking lot created due to project development.
5. Minor approach has fewer than 90 PCEs.

## Table 12-45 (continued): 2034 No-Action and With-Action Conditions Level of Service Analysis – Unsignalized Intersections

| # | Intersection & Approach | Weekday AM Peak Hour | | | | | | | | | Weekday MD Peak Hour | | | | | | | | | Weekday PM Peak Hour | | | | | | | | | Saturday MD Peak Hour | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | | 2034 No-Action | | | | 2034 With-Action | | | | |
| | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | Lane Group | v/c Ratio | Delay (sec) | LOS | Lane Group | v/c Ratio | Delay (sec) | LOS | | 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** [4] | **Parking Lot 1 driveway, via Beach Channel Drive** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | | | | | LT | 0.01 | 12.0 | B | | | | | | LT | 0.02 | 14.4 | B | | | | | | LT | 0.04 | 17.7 | C | | | | | | LT | 0.04 | 15.6 | C | |
| | Northbound | | | | | LR | 0.04 | 21.9 | C | | | | | | LR | 0.07 | 29.2 | D | | | | | | LR | 0.18 | 43.6 | E | 5 | | | | | LR | 0.16 | 34.2 | D | 5 |
| **P1b** [4] | **Parking Lot 1 driveway, via Beach 53rd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | | | | | LR | 0.03 | 14.4 | B | | | | | | LR | 0.03 | 14.0 | B | | | | | | LR | 0.07 | 17.7 | C | | | | | | LR | 0.07 | 15.6 | C | |
| | Southbound | | | | | LT | 0.00 | 9.1 | A | | | | | | LT | 0.00 | 8.9 | A | | | | | | LT | 0.00 | 9.6 | A | | | | | | LT | 0.00 | 9.2 | A | |
| **P2** [4] | **Parking Garage 2 driveway, via Beach 53rd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | | | | | LR | 0.20 | 14.5 | B | | | | | | LR | 0.06 | 13.0 | B | | | | | | LR | 0.11 | 16.6 | C | | | | | | LR | 0.13 | 14.8 | B | |
| | Southbound | | | | | LT | 0.01 | 8.8 | A | | | | | | LT | 0.01 | 8.8 | A | | | | | | LT | 0.05 | 9.7 | A | | | | | | LT | 0.02 | 9.1 | A | |
| **P3** [4] | **Parking Garage 3 driveway, via Beach 53rd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | | | | | LR | 0.34 | 17.3 | C | | | | | | LR | 0.09 | 12.8 | B | | | | | | LR | 0.23 | 23.0 | C | | | | | | LR | 0.24 | 19.0 | C | |
| | Southbound | | | | | LT | 0.01 | 9.0 | A | | | | | | LT | 0.02 | 8.7 | A | | | | | | LT | 0.09 | 11.0 | B | | | | | | LT | 0.04 | 9.8 | A | |
| **P4** [4] | **Parking Garage 4 driveway, via Rockaway Beach Boulevard** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | | | | | LT | 0.01 | 9.4 | A | | | | | | LT | 0.03 | 10.8 | B | | | | | | LT | 0.08 | 10.9 | B | | | | | | LT | 0.04 | 10.1 | B | |
| | Southbound | | | | | LR | 0.24 | 18.8 | C | | | | | | LR | 0.10 | 20.3 | C | | | | | | LR | 0.15 | 25.5 | D | | | | | | LR | 0.16 | 19.7 | C | |
| **P5** [4] | **Parking Garage 5 driveway, via Peninsula Way** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Eastbound | | | | | LT | 0.01 | 7.9 | A | | | | | | LT | 0.02 | 8.4 | A | | | | | | LT | 0.07 | 8.4 | A | | | | | | LT | 0.04 | 8.2 | A | |
| | Southbound | | | | | LR | 0.17 | 11.2 | B | | | | | | LR | 0.06 | 11.7 | B | | | | | | LR | 0.08 | 12.0 | B | | | | | | LR | 0.10 | 11.4 | B | |
| **P6** [4] | **Parking Lot 6 driveway, via Beach Channel Drive** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | | | | | LT | 0.01 | 10.1 | B | | | | | | LT | 0.02 | 12.0 | B | | | | | | LT | 0.02 | 12.6 | B | | | | | | LT | 0.03 | 11.7 | B | |
| | Northbound | | | | | LR | 0.03 | 23.2 | C | | | | | | LR | 0.13 | 33.8 | D | 5 | | | | | LR | 0.22 | 46.6 | E | 5 | | | | | LR | 0.17 | 33.7 | D | 5 |
| **P7** [4] | **Parking Garage 7 driveway, via Beach 52nd Street** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | | | | | LR | 0.02 | 8.5 | A | | | | | | LR | 0.00 | 8.5 | A | | | | | | LR | 0.01 | 8.5 | A | | | | | | LR | 0.01 | 8.5 | A | |
| | Southbound | | | | | LT | 0.00 | 7.2 | A | | | | | | LT | 0.00 | 7.2 | A | | | | | | LT | 0.01 | 7.2 | A | | | | | | LT | 0.01 | 7.2 | A | |
| **P8** [4] | **Parking Garage 8 driveway, via Peninsula Way** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Westbound | | | | | LT | 0.28 | 12.3 | B | | | | | | LT | 0.27 | 14.4 | B | | | | | | LT | 0.20 | 12.5 | B | | | | | | LT | 0.11 | 10.0 | A | |
| | Northbound | | | | | LR | 0.80 | 71.8 | F | + | | | | | LR | 1.38 | 259.4 | F | + | | | | | LR | 0.91 | 88.4 | F | + | | | | | LR | 0.45 | 23.9 | 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. Err = v/c or delay exceeds the maximum limit reportable in the analysis software. "+" denotes significant adverse impact.
1. Stop-controlled approach at signalized intersection.
2. Future intersection created as part of the Proposed Project.
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).
4. Future driveway to parking garage/parking lot created due to project development.
5. Minor approach has fewer than 90 PCEs.

## Transit Conditions

Trips generated by the Proposed Project were added to the No-Action transit volumes to estimate With-Action peak hour volumes for the Weekday AM and PM peak hours for all transit study elements, as well as the Saturday MD and Sunday MD peak hours for the subway line-haul analysis.

### *Subway Line-Haul*

The average passengers per hour, trains/cars per hour, capacity per car, and v/c ratios under the 2034 With-Action condition are shown in **Table 12-46: 2034 With-Action Condition Level of Service Analysis – Subway Line-Haul** for the A train at the max load points. As indicated in **Table 12-46**, the A train would operate below the loading guideline capacity in both directions during the four peak hours. According to the significance criteria defined for subway line-haul in the *CEQR Technical Manual*, no significant adverse impacts are expected.

**Table 12-46: 2034 With-Action Condition Level of Service Analysis – Subway Line-Haul**

| Peak Direction | Route | Maximum Load Point Station | Average Passengers Per Hour [1] | Average Trains Per Hour | Average Cars Per Hour | Average Passengers Per Car | Guideline Passengers Per Car [3] | V/C ratio [4] | Impact [5] |
|---|---|---|---|---|---|---|---|---|---|
| **Weekday AM [2]** | | | | | | | | | |
| Northbound | A | Nostrand Av | 19,840 | 16.7 | 134 | 148 | 175 | 0.85 | No |
| **Weekday PM [2]** | | | | | | | | | |
| Southbound | A | Jay St-MetroTech | 16,927 | 15.2 | 122 | 139 | 175 | 0.79 | No |
| **Saturday MD (Summer) [5]** | | | | | | | | | |
| Northbound | A | Aqueduct Racetrack | 2,406 | 8 | 64 | 38 | 88 | 0.43 | No |
| **Sunday MD (Summer) [5]** | | | | | | | | | |
| Northbound | A | Aqueduct Racetrack | 3,708 | 6 | 48 | 77 | 88 | 0.88 | No |

**Notes:**
(1) Hourly A-Train volumes generated by the Proposed Project were distributed based on trip assignment assumptions described in the TDF Memorandum. Sunday MD volumes were assumed to be equal to Saturday MD volumes.
(2) Based on 2015-2016 ridership and train throughput data from NYCT.
(3) Guideline capacities are based on NYCT rush hour loading guidelines, which vary by car type, line, and location based on frequency and type of service.
(4) Volume to guideline capacity ratio.
(5) Based on 2012-2017 ridership and train throughput data from NYCT. The Summer Saturday and Sunday MD peak hours were included in the line haul analysis as subway service is less frequent on weekends and weekend ridership peaks due to recreational activities at the beach.

### *Subway Stairs*

As shown in **Table 12-47: 2034 With-Action Condition Level of Service Analysis – Stairs**, the street-level and platform stairs would operate at LOS A during both peak hours in the 2034 With-Action condition. According to the significance criteria defined for subway stairs in the *CEQR Technical Manual*, no significant adverse impacts are expected.

**Table 12-47: 2034 With-Action Condition Level of Service Analysis – Stairs**

| Location | Vertical Element | ID | 15-Minute Entering Volume [1] | 15-Minute Exiting Volume [1] | Total Stair Width (feet) [2] | Number of Intermediate Handrails | Effective Width (feet) | Friction Factor [3] | Surge Factor (onto platform level) [3] | Surge Factor (off of platform level) [3] | 15 Minute Entering Capacity [4] | 15 Minute Exiting Capacity [4] | V/C [5] | LOS [5] | Impact [6] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Weekday AM** | | | | | | | | | | | | | | | |
| Beach 60 St Station | NE Stair (b/w street level and head house) | M3A, M3B, S3A, S3B | 191 | 29 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.80 | 979 | 783 | 0.23 | A | No |
| | NE Stair (b/w head house and platform level) | P7A, P7B, P9A, P9B | 156 | 11 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.75 | 979 | 734 | 0.18 | A | No |
| | SE Stair (b/w head house and platform level) | P6A, P6B, P8A, P8B | 13 | 14 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.04 | A | No |
| | NW Stair (b/w head house and platform level) | P1A, P1B, P3A, P3B | 103 | 5 | 8.5 | 1 | 7.25 | 1.0 | 1 | 0.75 | 1088 | 816 | 0.10 | A | No |
| | SW Stair (b/w head house and platform level) | P2A, P2B, P4A, P4B | 14 | 17 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.04 | A | No |
| | SE Stair (b/w street level and platform level) | - | n/a | 32 | 8.0 | 1 | 6.75 | 1.0 | n/a | 0.75 | n/a | 759 | 0.04 | A | No |
| **Weekday PM** | | | | | | | | | | | | | | | |
| Beach 60 St Station | NE Stair (b/w street level and head house) | M3A, M3B, S3A, S3B | 94 | 123 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.8 | 979 | 783 | 0.25 | A | No |
| | NE Stair (b/w head house and platform level) | P7A, P7B, P9A, P9B | 51 | 25 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.75 | 979 | 734 | 0.09 | A | No |
| | SE Stair (b/w head house and platform level) | P6A, P6B, P8A, P8B | 9 | 85 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.13 | A | No |
| | NW Stair (b/w head house and platform level) | P1A, P1B, P3A, P3B | 39 | 10 | 8.5 | 1 | 7.25 | 0.9 | 1 | 0.75 | 979 | 734 | 0.05 | A | No |
| | SW Stair (b/w head house and platform level) | P2A, P2B, P4A, P4B | 5 | 41 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.07 | A | No |
| | SE Stair (b/w street level and platform level) | - | n/a | 116 | 8.0 | 1 | 6.75 | 1.0 | n/a | 0.75 | n/a | 759 | 0.15 | A | No |
| Beach 44 St Station | NW Stair (b/w street level and head house) | M3A, M3B, S1A, S1B | 77 | 126 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.8 | 911 | 729 | 0.26 | A | No |
| | SE Stair (b/w head house and platform level) | P8A, P8B, P10A, P10B | 24 | 28 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.07 | A | No |
| | SW Stair (b/w head house and platform level) | P4A, P4B, P6A, P6B | 23 | 34 | 8.0 | 1 | 6.75 | 0.9 | 1 | 0.75 | 911 | 683 | 0.07 | A | No |

**Notes:**
(1) New stairway volumes associated with the Proposed Project were distributed based on trip assignment assumptions described in the TDF Memorandum.
(2) Vertical elements measured at the narrowest location.
(3) Friction and surge factors based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* . Note, friction factors may change due to increase in opposing passenger flow between No-Action and With-Action conditions.
(4) Stair capacity based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* .
(5) v/c ratios and LOS ratings were calculated based on rates presented in the *2014 CEQR Technical Manual* .
(6) Determination of significant impacts based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* .

## *Control Areas*

For the control area elements, the quantity, volume, friction and surge factors, capacity, and calculated v/c and LOS results in the 2034 With-Action condition are shown in **Table 12-48: 2034 With-Action Condition Level of Service Analysis – Control Areas**. As shown in the table, all control area elements would operate at LOS A during both peak hours. According to the significance criteria defined for subway control areas in the *CEQR Technical Manual*, no significant adverse impacts are expected.

**Table 12-48: 2034 With-Action Condition Level of Service Analysis – Control Areas**

| Station | Station Elements | Quantity (Entry) | Quantity (Exit) | 15-Minute Entering Volume [1] | 15-Minute Exiting Volume [1] | Friction Factor [2] | Surge Factor (onto platform) | Surge Factor (off of platform) | 15-Minute Entering Capacity [3] | 15-Minute Exiting Capacity [3] | V/C [4] | LOS [4] | Impact [5] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Weekday AM** | | | | | | | | | | | | | |
| Beach 60 St Station (head house) | Turnstile | 3 | 3 | 286 | 61 | 0.9 | 1 | 0.8 | 1260 | 1935 | **0.30** | **A** | No |
| | HEET | 0 | 0 | | | | | | | | | | |
| | HXT | 0 | 0 | | | | | | | | | | |
| Beach 60 St Station (southbound platform) | Turnstile | 0 | 0 | n/a | 32 | 1 | n/a | 0.75 | 0 | 555 | **0.08** | **A** | No |
| | HEET | 0 | 0 | | | | | | | | | | |
| | HXT | 0 | 1 | | | | | | | | | | |
| **Weekday PM** | | | | | | | | | | | | | |
| Beach 60 St Station (head house) | Turnstile | 3 | 3 | 103 | 216 | 0.9 | 1 | 0.8 | 1260 | 1935 | **0.25** | **A** | No |
| | HEET | 0 | 0 | | | | | | | | | | |
| | HXT | 0 | 0 | | | | | | | | | | |
| Beach 60 St Station (southbound platform) | Turnstile | 0 | 0 | n/a | 116 | 1 | n/a | 0.75 | 0 | 555 | **0.28** | **A** | No |
| | HEET | 0 | 0 | | | | | | | | | | |
| | HXT | 0 | 1 | | | | | | | | | | |
| Beach 44 St Station | Turnstile | 3 | 3 | 88 | 163 | 0.9 | 1 | 0.8 | 1260 | 1935 | **0.19** | **A** | No |
| | HEET | 0 | 0 | | | | | | | | | | |
| | HXT | 0 | 0 | | | | | | | | | | |

**Notes:**
(1) New turnstiles volumes associated with the Proposed Project were distributed based on trip assignment assumptions described in the TDF Memorandum.
(2) Friction and surge factors based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* .
(3) Fare array capacity based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* .
(4) v/c ratios and LOS ratings were calculated based on rates presented in the *2014 CEQR Technical Manual* .
(5) Determination of significant impacts based on NYCT guidelines in accordance with the *2014 CEQR Technical Manual* .

### *Bus Line-Haul*

**Table 12-49: 2034 With-Action Condition Level of Service Analysis – Bus Line-Haul** summarizes the bus line-haul in the 2034 With-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 presented in **Table 12-49**, the Q22 and Q52-SBS buses would operate within capacity except where noted below:

- The Q22 bus in the westbound direction in the Weekday AM and Weekday PM peak hours
- The Q52-SBS bus in the southbound direction in the Weekday PM peak hour

**Table 12-49: 2034 With-Action Condition Level of Service Analysis – 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 | 8 | 353 | 44 | 54 | 10 | No |
| Q22 | WB | Rockaway Beach Blvd and Beach 91st St | 8 | 607 | 76 | 54 | -22 | Yes |
| Q52-SBS | NB | Woodhaven Blvd and Atlantic Ave | 5 | 327 | 65 | 85 | 20 | No |
| Q52-SBS | SB | Woodhaven Blvd and Jamaica Ave | 4 | 199 | 50 | 85 | 35 | No |
| **Weekday PM** | | | | | | | | |
| Q22 | EB | Seagirt Blvd and Crest Rd | 6 | 302 | 50 | 54 | 4 | No |
| Q22 | WB | Beach Channel Dr and Beach 36th St | 7 | 382 | 55 | 54 | -1 | Yes |
| Q52-SBS | NB | Woodhaven Blvd and Myrtle Ave | 4 | 221 | 55 | 85 | 30 | No |
| Q52-SBS | SB | Woodhaven Blvd and Metropolitan Ave | 4 | 410 | 102 | 85 | -17 | Yes |

**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.*

## Pedestrian Conditions

Pedestrian trips generated by the Proposed Project were added to the No-Action pedestrian network to develop With-Action peak hour volumes for the four peak hours. The With-Action condition analyses were performed at a total of 86 locations within the study area, comprised of 30 sidewalks (including 14 proposed sidewalks), 16 crosswalks (including nine proposed crosswalks), 38 corner reservoirs (including 13 proposed corners), and two medians.

### *Sidewalks*

The 2034 With-Action condition results for the sidewalk locations were compared with the No-Action condition results for all four peak hours. **Table 12-50: Significant Adverse Impacts at Existing and Proposed Sidewalks (Platoon Conditions)** summarizes the existing and proposed sidewalks that would experience significant adverse impacts in the analysis year based on Platoon Conditions.

**Table 12-50: Significant Adverse Impacts at Existing and Proposed Sidewalks (Platoon Conditions)**

| | Weekday AM Peak Hour | Weekday MD Peak Hour | Weekday PM Peak Hour | Saturday MD Peak Hour |
|---|---|---|---|---|
| Beach 59th St and Arverne Blvd (E leg, N sidewalk) | | | | |
| Beach 59th St and Rockaway Fwy (W leg, N sidewalk) | | | | |
| Beach 54th St and Beach Channel Dr (W leg, N sidewalk) | | | | |
| Beach 54th St and Arverne Blvd (E leg, N sidewalk) | | X | X | X |
| Beach 54th St and Arverne Blvd (W leg, N sidewalk) | | | | |
| Beach 53rd St and Beach Channel Dr (E leg, S sidewalk) | | | | |
| Beach 53rd St and Beach Channel Dr (W leg, S sidewalk) | X | X | X | X |
| Beach 53rd St and Rockaway Beach Blvd (N leg, E sidewalk) | | | | |
| Beach 53rd St and Rockaway Beach Blvd (E leg, N sidewalk) | | | | |
| Beach 50th St and Rockaway Beach Blvd (E leg, S sidewalk) | | | | |
| Beach 47th St and Rockaway Beach Blvd (E leg, S sidewalk) | | | | |
| Beach 44th St and Rockaway Fwy (N leg, W sidewalk) | | | X | |
| Beach 44th St and Rockaway Fwy (W leg, N sidewalk) | | | | |
| Beach 56th St and Arverne Blvd (W leg, N sidewalk) | X | | | |
| Beach 57th St and Arverne Blvd (E leg, N sidewalk) | | | | |
| Beach 52nd St and Beach Channel Dr (E leg, S sidewalk) | | | | |
| Beach 53rd St and Peninsula Way (N leg, E sidewalk) | | | | |
| Beach 52nd St and Peninsula Way (N leg, W sidewalk) | | | | |
| Beach 52nd St and Peninsula Way (W leg, N sidewalk) | | | | |
| Beach 52nd St and Peninsula Way (N leg, E sidewalk) | | | | |
| Beach 52nd St and Peninsula Way (E leg, N sidewalk) | | | | |
| Beach 52nd St and Peninsula Way (S leg, E sidewalk) | | | | |
| Beach 52nd St and Peninsula Way (E leg, S sidewalk) | | | | |
| Beach 52nd St and Peninsula Way (S leg, W sidewalk) | | | | |
| Beach 52nd St and Peninsula Way (W leg, S sidewalk) | | | | |
| Beach 50th St and Peninsula Way (W leg, S sidewalk) | | | | |
| Beach 50th St and Peninsula Way (S leg, W sidewalk) | | | | |
| Beach 52nd St and Rockaway Beach Blvd (E leg, N sidewalk) | | | | |
| Beach 52nd St and Rockaway Beach Blvd (E leg, S sidewalk) | | | | |
| Beach 51st St and Rockaway Beach Blvd (N leg, E sidewalk) | | | | |
| **Total Number of Impacted Sidewalks** | **2** | **2** | **3** | **2** |

*X - denotes sidewalks significantly impacted in peak hour during Platoon Conditions.*

As shown in **Table 12-51: 2034 With-Action Condition Level of Service Analysis – Existing Sidewalks**, the following sidewalks would experience a significant adverse impact based on the significance criteria and are denoted with a "+" sign in the table below:

- Non-Platoon Conditions
  - The south sidewalk on the west leg of Beach 53rd Street and Beach Channel Drive in the Saturday MD peak hour.
- Platoon Conditions
  - The north sidewalk on the east leg of the intersection of Beach 54th Street and Arverne Boulevard in the Weekday MD, Weekday PM, and Saturday MD peak hours.
  - The south sidewalk on the west leg of Beach 53rd Street and Beach Channel Drive in the Weekday AM, Weekday MD, Weekday PM, and Saturday MD peak hours.
  - The west sidewalk on the north leg of Beach 44th Street and Rockaway Freeway in the Weekday PM peak hour.

- The north sidewalk on the west leg of Beach 56th Street and Arverne Boulevard in the Weekday AM peak hour.

**Table 12-51: 2034 With-Action Condition Level of Service Analysis – Existing 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 | | | Sat | Weekday | | | Sat | Weekday | | | Sat |
| | | | | AM | MD | PM | MD | AM | MD | PM | MD | AM | MD | PM | MD |
| Beach 59th St and Arverne Blvd (E leg, N sidewalk) | 5.8 | 3.0 | 2.8 | 49 | 60 | 44 | 48 | B | B | B | B | C | C | C | C |
| Beach 59th St and Rockaway Fwy (W leg, N sidewalk) | 8.0 | 3.0 | 5.0 | 66 | 94 | 69 | 85 | A | A | A | A | C | B | C | C |
| Beach 54th St and Beach Channel Dr (W leg, N sidewalk) | 7.0 | 3.0 | 4.0 | 73 | 103 | 89 | 61 | A | A | A | A | C | B | C | C |
| Beach 54th St and Arverne Blvd (E leg, N sidewalk) | 8.0 | 3.0 | 5.0 | 42 | 37 | 39 | 25 | B | C | C | C | C + | D + | D + | D + |
| Beach 54th St and Arverne Blvd (W leg, N sidewalk) | 10.0 | 3.0 | 7.0 | 63 | 68 | 55 | 51 | A | A | B | B | C | C | C | C |
| Beach 53rd St and Beach Channel Dr (E leg, S sidewalk) | 18.3 [2] | 3.0 | 15.3 | 260 | 197 | 216 | 148 | A | A | A | A | B | B | B | B |
| Beach 53rd St and Beach Channel Dr (W leg, S sidewalk) | 10.0 | 3.0 | 7.0 | 35 | 33 | 40 | 24 | C | C | C | D + | D + | D + | D + | D + |
| Beach 53rd St and Rockaway Beach Blvd (N leg, E sidewalk) | 6.5 [2] | 3.5 | 3.0 | 40 | 59 | 49 | 59 | B | B | B | B | C | C | C | C |
| Beach 53rd St and Rockaway Beach Blvd (E leg, N sidewalk) | 9.0 [2] | 3.5 | 5.5 | 40 | 39 | 56 | 60 | B | C | B | B | C | D | C | C |
| Beach 50th St and Rockaway Beach Blvd (E leg, S sidewalk) | 7.0 | 3.0 | 4.0 | 65 | 48 | 49 | 42 | A | B | B | B | C | C | C | C |
| Beach 47th St and Rockaway Beach Blvd (E leg, S sidewalk) | 7.8 | 3.0 | 4.8 | 68 | 77 | 47 | 83 | A | A | B | A | C | C | C | C |
| Beach 44th St and Rockaway Fwy (N leg, W sidewalk) | 5.5 | 3.0 | 2.5 | 61 | 41 | 25 | 51 | A | B | C | B | C | C | D + | C |
| Beach 44th St and Rockaway Fwy (W leg, N sidewalk) | 14.3 | 3.0 | 11.3 | 183 | 131 | 72 | 188 | A | A | A | A | B | B | C | B |
| Beach 56th St and Arverne Blvd (W leg, N sidewalk) | 10.0 | 3.0 | 7.0 | 38 | 104 | 85 | 76 | C | A | A | A | D + | B | C | C |
| Beach 57th St and Arverne Blvd (E leg, N sidewalk) | 10.0 | 3.0 | 7.0 | 92 | 144 | 130 | 139 | A | A | A | A | B | B | B | B |
| Beach 52nd St and Beach Channel Dr (E leg, S sidewalk) | 10.5 | 5.5 | 5.0 | 136 | 84 | 107 | 71 | A | A | A | A | B | C | B | C |

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

In addition to the sidewalks analyzed above, 14 proposed sidewalks that would be created as part of the Proposed Project for internal pedestrian circulation were also analyzed. The widths of proposed sidewalks were measured from the site plan at the narrowest point along the sidewalks. As shown in **Table 12-52: 2034 With-Action Condition Level of Service Analysis – Proposed Sidewalks**, all proposed sidewalks would operate at LOS C or better during the four peak hours in the 2034 With-Action Condition.

**Table 12-52: 2034 With-Action Condition Level of Service Analysis – Proposed 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 | | | Sat | Weekday | | | Sat | Weekday | | | Sat |
| | | | | AM | MD | PM | MD | AM | MD | PM | MD | AM | MD | PM | MD |
| Beach 53rd St and Peninsula Way (N leg, E sidewalk) | 6.0 | 3.5 | 2.5 | 41 | 45 | 50 | 61 | B | B | B | A | C | C | C | C |
| Beach 52nd St and Peninsula Way (N leg, W sidewalk) | 6.5 | 3.5 | 3.0 | 98 | 53 | 62 | 63 | A | B | A | A | B | C | C | C |
| Beach 52nd St and Peninsula Way (W leg, N sidewalk) | 6.5 | 3.5 | 3.0 | 132 | 117 | 105 | 125 | A | A | A | A | B | B | B | B |
| Beach 52nd St and Peninsula Way (N leg, E sidewalk) | 6.0 | 3.5 | 2.5 | 62 | 40 | 43 | 45 | A | C | B | B | C | D | C | C |
| Beach 52nd St and Peninsula Way (E leg, N sidewalk) | 5.0 | 3.5 | 1.5 | 160 | 91 | 105 | 113 | A | A | A | A | B | B | B | B |
| Beach 52nd St and Peninsula Way (S leg, E sidewalk) | 8.0 | 3.5 | 4.5 | 166 | 80 | 101 | 100 | A | A | A | A | B | C | B | B |
| Beach 52nd St and Peninsula Way (E leg, S sidewalk) | 14.5 | 3.5 | 11.0 | 303 | 216 | 241 | 299 | A | A | A | A | B | B | B | B |
| Beach 52nd St and Peninsula Way (S leg, W sidewalk) | 8.5 | 3.5 | 5.0 | 126 | 72 | 81 | 80 | A | A | A | A | B | C | C | C |
| Beach 52nd St and Peninsula Way (W leg, S sidewalk) | 5.0 | 3.5 | 1.5 | 72 | 42 | 49 | 54 | A | B | B | B | C | C | C | C |
| Beach 50th St and Peninsula Way (W leg, S sidewalk) | 5.5 | 3.5 | 2.0 | 49 | 36 | 41 | 58 | B | C | B | B | C | D | C | C |
| Beach 50th St and Peninsula Way (S leg, W sidewalk) | 6.0 | 3.5 | 2.5 | 396 | 279 | 287 | 299 | A | A | A | A | B | B | B | B |
| Beach 52nd St and Rockaway Beach Blvd (E leg, N sidewalk) | 10.0 | 3.5 | 6.5 | 67 | 58 | 57 | 77 | A | B | B | A | C | C | C | C |
| Beach 52nd St and Rockaway Beach Blvd (E leg, S sidewalk) | 21.0 | 3.0 | 18.0 | 775 | 703 | 918 | 296 | A | A | A | A | A | A | A | B |
| Beach 51st St and Rockaway Beach Blvd (N leg, E sidewalk) | 25.0 | 3.0 | 22.0 | 748 | 546 | 591 | 736 | A | A | A | A | A | A | A | A |

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

## *Crosswalks*

The 2034 With-Action condition results for the crosswalk locations were compared with the No-Action condition results for all four peak hours. **Table 12-53: Significant Adverse Impacts at Existing Signalized Crosswalks** summarizes the existing signalized crosswalks that would experience significant adverse traffic impacts in the analysis year. None of the existing or proposed unsignalized crosswalks would experience significant adverse traffic impacts in the analysis year.

**Table 12-53: Significant Adverse Impacts at Existing Signalized Crosswalks**

| | Weekday AM Peak Hour | Weekday MD Peak Hour | Weekday PM Peak Hour | Saturday MD Peak Hour |
|---|---|---|---|---|
| Beach 54th St and Beach Channel Dr (S leg) | | X | X | X |
| Beach 54th St and Arverne Blvd (N leg) | | | X | X |
| **Total Number of Impacted Signalized Crosswalks** | **0** | **1** | **2** | **2** |

*X - denotes crosswalks significantly impacted in peak hour.*

As shown in **Table 12-54: 2034 With-Action Condition Level of Service Analysis – Existing Signalized Crosswalks**, the following crosswalks would experience a significant adverse impact based on the significance criteria and are denoted with a "+" sign in the table below:

- The south crosswalk at Beach 54th Street and Beach Channel Drive during the Weekday MD, Weekday PM, and Saturday MD peak hours.
- The north crosswalk at Beach 54th Street and Arverne Boulevard during the Weekday PM and Saturday MD peak hours.

**Table 12-54: 2034 With-Action Condition Level of Service Analysis – Existing Signalized Crosswalks**

| Location | Length (ft) | Width (ft) | Available Circulation Space ($ft^2$/p) | | | | Crosswalk Circulation LOS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Weekday | | | Sat | Weekday | | | | | | Sat | |
| | | | AM | MD | PM | MD | AM | | MD | | PM | | MD | |
| Beach 54th St and Beach Channel Dr (S leg) | 33.8 | 14.5 | 30 | 22 | 16 | 21 | C | | D | + | D | + | D | + |
| Beach 54th St and Arverne Blvd (N leg) | 40.0 | 12.2 | 29 | 25 | 15 | 22 | C | | C | | D | + | D | + |

*Notes:*
*"+" denotes significant adverse impact.*

As shown in **Table 12-55: 2034 With-Action Condition Level of Service Analysis – Existing Unsignalized Crosswalks**, all unsignalized crosswalks would operate at LOS B or better during the four peak hours in the 2034 With-Action condition. As a result, the Proposed Project would not cause a significant adverse impact any of the unsignalized crosswalk locations.

**Table 12-55: 2034 With-Action Condition Level of Service Analysis – Existing Unsignalized Crosswalks**

| Location | Length (ft) | Width (ft) | Average Pedestrian Delay (s) | | | | Crosswalk Circulation LOS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Weekday | | | Sat | Weekday | | | | | | Sat | |
| | | | AM | MD | PM | MD | AM | | MD | | PM | | MD | |
| Beach 53rd St and Beach Channel Dr (S leg) [1] | 30.0 | 10.0 | 3.7 | 2.8 | 3.0 | 3.3 | A | | A | | A | | A | |
| Beach 53rd St and Rockaway Beach Blvd (N leg) [2] | 35.0 | 10.0 | 6.1 | 2.9 | 4.0 | 4.7 | B | | A | | A | | A | |
| Beach 47th St and Rockaway Beach Blvd (S leg) | 30.0 | 11.3 | 0.8 | 0.7 | 1.0 | 1.1 | A | | A | | A | | A | |
| Beach 56th St and Arverne Blvd (N leg) [3] | 40.6 | 12.7 | 0.6 | 0.9 | 0.4 | 0.9 | A | | A | | A | | A | |
| Beach 57th St and Arverne Blvd (N leg) [3] | 42.0 | 13.6 | 1.6 | 2.5 | 1.2 | 2.5 | A | | A | | A | | A | |

*Notes:*
*"+" denotes significant adverse impact.*
*(1) Measured from the Proposed Project site plan.*
*(2) A width of 10 feet was assumed as the crosswalk is not marked.*
*(3) Spot counts were performed to capture conflicting vehicles, as traffic counts were not collected at this intersection.*

In addition to the existing crosswalks analyzed above, nine proposed crosswalks that would be created as a part of the Proposed Project (all of them at unsignalized intersections) were also analyzed. As shown in **Table 12-56: 2034 With-Action Condition Level of Service Analysis – Proposed Unsignalized Crosswalks**, all proposed unsignalized crosswalks would operate at LOS C or better during the four peak hours in the 2034 With-Action condition. Therefore, the Proposed Project would not cause a significant adverse impact any of the proposed unsignalized crosswalk locations.

**Table 12-56: 2034 With-Action Condition Level of Service Analysis – Proposed Unsignalized Crosswalks**

| Location | Length (ft) [1] | Width (ft) [1] | Average Pedestrian Delay (s) | | | | Crosswalk Circulation LOS | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Weekday | | | Sat | Weekday | | | Sat |
| | | | AM | MD | PM | MD | AM | MD | PM | MD |
| Beach 52nd St and Beach Channel Dr (S leg) | 23.0 | 10.0 | 0.4 | 0.5 | 0.5 | 0.4 | A | A | A | A |
| Beach 53rd St and Peninsula Way (E leg) | 23.0 | 10.0 | 10.4 | 8.6 | 12.1 | 8.6 | C | B | C | B |
| Beach 52nd St and Peninsula Way (N leg) | 23.0 | 10.0 | 0.4 | 0.5 | 0.6 | 0.4 | A | A | A | A |
| Beach 52nd St and Peninsula Way (E leg) | 23.0 | 10.0 | 2.6 | 2.2 | 2.0 | 1.9 | A | A | A | A |
| Beach 52nd St and Peninsula Way (S leg) | 23.0 | 10.0 | 0.9 | 0.9 | 1.2 | 0.8 | A | A | A | A |
| Beach 52nd St and Peninsula Way (W leg) | 23.0 | 10.0 | 0.7 | 0.7 | 1.2 | 0.8 | A | A | A | A |
| Beach 50th St and Peninsula Way (W leg) | 23.0 | 10.0 | 1.4 | 1.6 | 1.4 | 1.2 | A | A | A | A |
| Beach 52nd St and Rockaway Beach Blvd (N leg) | 23.0 | 10.0 | 1.0 | 1.3 | 1.2 | 1.0 | A | A | A | A |
| Beach 52nd St and Rockaway Beach Blvd (E leg) | 40.0 | 12.0 | 14.5 | 7.9 | 12.5 | 10.9 | C | B | C | C |

*Notes:*
*(1) Measured from the Proposed Project site plan.*

### *Corners and Medians*

The 2034 With-Action condition results for the corner reservoir locations were compared with the No-Action conditions results for all four peak hours. **Table 12-57: Significant Adverse Impacts at Existing and Proposed Corners and Medians** summarizes the corners that would experience significant adverse traffic impacts in the analysis year.

**Table 12-57: Significant Adverse Impacts at Existing and Proposed Corners and Medians**

| | Weekday AM Peak Hour | Weekday MD Peak Hour | Weekday PM Peak Hour | Saturday MD Peak Hour |
|---|---|---|---|---|
| Beach 59th St and Arverne Blvd (NE corner) | | | | |
| Beach 59th St and Arverne Blvd (SE corner) | | | | |
| Beach 59th St and Rockaway Fwy (NW corner) | | | | |
| Beach 54th St and Beach Channel Dr (NE corner) | | | | |
| Beach 54th St and Beach Channel Dr (SE corner) | | | | |
| Beach 54th St and Beach Channel Dr (SW corner) | | | | |
| Beach 54th St and Beach Channel Dr (NW corner) | | | | |
| Beach 54th St and Arverne Blvd (NE corner) | | | X | X |
| Beach 54th St and Arverne Blvd (NW corner) | | | | |
| Beach 53rd St and Beach Channel Dr (SE corner) | | | | |
| Beach 53rd St and Beach Channel Dr (SW corner) | | | | |
| Beach 51st St and Beach Channel Dr (SE corner) | | | | |
| Beach 47th St and Rockaway Beach Blvd (SW corner) | | | | |
| Beach 47th St and Rockaway Beach Blvd (SE corner) | | | | |
| Beach 44th St and Rockaway Beach Blvd (SW corner) | | | | |
| Beach 44th St and Rockaway Fwy (NW corner) | | | | |
| Beach 56th Pl and Arverne Blvd (NW corner) | | | | |
| Beach 56th Pl and Arverne Blvd (NE corner) | | | | |
| Beach 56th Pl and Arverne Blvd (SW corner) | | | | |
| Beach 56th Pl and Arverne Blvd (SE corner) | | | | |
| Beach 56th St and Arverne Blvd (NW corner) | | | | |
| Beach 56th St and Arverne Blvd (NE corner) | | | | |
| Beach 56th Pl and Rockaway Fwy (NW corner) | | | | |
| Beach 56th Pl and Rockaway Fwy (NE corner) | | | | |
| Beach 57th St and Arverne Blvd (NW corner) | | | | |
| Beach 57th St and Arverne Blvd (NE corner) | | | | |
| Beach 52nd St and Beach Channel Dr (SE corner) | | | | |
| Beach 52nd St and Beach Channel Dr (SW corner) | | | | |
| Beach 53rd St and Peninsula Way (NE corner) | | | | |
| Beach 53rd St and Peninsula Way (SE corner) | | | | |
| Beach 50th St and Peninsula Way (NW corner) | | | | |
| Beach 50th St and Peninsula Way (SW corner) | | | | |
| Beach 52nd St and Rockaway Beach Blvd (NW corner) | | | | |
| **Total Number of Impacted Corners** | **0** | **0** | **1** | **1** |

*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, the northeast, northwest, southeast, and southwest corners at Beach 52nd Street and Peninsula Way, and the northeast and southeast corners at Beach 52nd Street and Rockaway Beach Boulevard were not included in this table.*

As shown in **Table 12-58: 2034 With-Action Condition Level of Service Analysis – Existing Corners and Medians**, the following corner would experience a significant adverse impact based on the significance criteria and are denoted with a "+" sign in the table below:

- The northeast corner at Beach 54th Street and Arverne Boulevard during the Weekday PM and Saturday MD peak hours

**Table 12-58: 2034 With-Action Condition Level of Service Analysis – Existing Corners and Medians**

| Location | Available Circulation Space ($ft^2$/p) | | | | Corner Circulation LOS | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Weekday | | | Sat | Weekday | | | | | | Sat | |
| | AM | MD | PM | MD | AM | | MD | | PM | | MD | |
| Beach 59th St and Arverne Blvd (NE corner) | 138 | 104 | 143 | 142 | A | | A | | A | | A | |
| Beach 59th St and Arverne Blvd (SE corner) | 147 | 151 | 161 | 171 | A | | A | | A | | A | |
| Beach 59th St and Rockaway Fwy (NW corner) | 85 | 117 | 112 | 151 | A | | A | | A | | A | |
| Beach 54th St and Beach Channel Dr (NE corner) | 485 | 692 | 555 | 483 | A | | A | | A | | A | |
| Beach 54th St and Beach Channel Dr (SE corner) | 136 | 111 | 97 | 101 | A | | A | | A | | A | |
| Beach 54th St and Beach Channel Dr (SW corner) | 252 | 214 | 155 | 204 | A | | A | | A | | A | |
| Beach 54th St and Beach Channel Dr (NW corner) | 81 | 107 | 80 | 91 | A | | A | | A | | A | |
| Beach 54th St and Arverne Blvd (NE corner) | 27 | 25 | 16 | 23 | C | | C | | D | + | D | + |
| Beach 54th St and Arverne Blvd (NW corner) | 114 | 85 | 54 | 70 | A | | A | | B | | A | |
| Beach 53rd St and Beach Channel Dr (SE corner) | 135 | 143 | 122 | 152 | A | | A | | A | | A | |
| Beach 53rd St and Beach Channel Dr (SW corner) | 43 | 42 | 38 | 50 | B | | B | | C | | B | |
| Beach 51st St and Beach Channel Dr (SE corner) | 87 | 93 | 96 | 117 | A | | A | | A | | A | |
| Beach 47th St and Rockaway Beach Blvd (SW corner) | 88 | 40 | 52 | 57 | A | | B | | B | | B | |
| Beach 47th St and Rockaway Beach Blvd (SE corner) | 64 | 30 | 38 | 42 | A | | C | | C | | B | |
| Beach 44th St and Rockaway Beach Blvd (SW corner) | 190 | 83 | 92 | 94 | A | | A | | A | | A | |
| Beach 44th St and Rockaway Fwy (NW corner) | 111 | 112 | 62 | 181 | A | | A | | A | | A | |
| Beach 56th Pl and Arverne Blvd (NW corner) | 110 | 87 | 55 | 115 | A | | A | | B | | A | |
| Beach 56th Pl and Arverne Blvd (NE corner) | 84 | 70 | 54 | 114 | A | | A | | B | | A | |
| Beach 56th Pl and Arverne Blvd (SW corner) (1) | 151 | 84 | 67 | 81 | A | | A | | A | | A | |
| Beach 56th Pl and Arverne Blvd (SE corner) (1) | 111 | 60 | 64 | 74 | A | | B | | A | | A | |
| Beach 56th St and Arverne Blvd (NW corner) | 156 | 171 | 117 | 161 | A | | A | | A | | A | |
| Beach 56th St and Arverne Blvd (NE corner) | 192 | 166 | 121 | 169 | A | | A | | A | | A | |
| Beach 56th Pl and Rockaway Fwy (NW corner) (1) | 293 | 369 | 123 | 234 | A | | A | | A | | A | |
| Beach 56th Pl and Rockaway Fwy (NE corner) (1) | 610 | 739 | 538 | 784 | A | | A | | A | | A | |
| Beach 57th St and Arverne Blvd (NW corner) | 210 | 215 | 164 | 161 | A | | A | | A | | A | |
| Beach 57th St and Arverne Blvd (NE corner) | 167 | 182 | 135 | 135 | 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 and the southwest corner at Beach 50th 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.*

In addition to the existing corners analyzed above, 13 proposed corners would be created as part of the Proposed Project. As shown in **Table 12-59: 2034 With-Action Condition Level of Service Analysis – Proposed Corners,** all proposed corners would operate at LOS B or better during the four peak hours in the 2034 With-Action condition. Therefore, the Proposed Project would not cause a significant adverse impact any of the proposed corner locations.

**Table 12-59: 2034 With-Action Condition Level of Service Analysis – Proposed Corners**

| Location | Available Circulation Space ($ft^2$/p) | | | | Corner Circulation LOS | | | |
|---|---|---|---|---|---|---|---|---|
| | Weekday | | | Sat | Weekday | | | Sat |
| | AM | MD | PM | MD | AM | MD | PM | MD |
| Beach 52nd St and Beach Channel Dr (SE corner) | 673 | 438 | 436 | 443 | A | A | A | A |
| Beach 52nd St and Beach Channel Dr (SW corner) | 1179 | 773 | 754 | 779 | A | A | A | A |
| Beach 53rd St and Peninsula Way (NE corner) | 168 | 189 | 184 | 210 | A | A | A | A |
| Beach 53rd St and Peninsula Way (SE corner) | 178 | 203 | 196 | 221 | A | A | A | A |
| Beach 50th St and Peninsula Way (NW corner) | 1078 | 775 | 920 | 1370 | A | A | A | A |
| Beach 50th St and Peninsula Way (SW corner) | 769 | 573 | 661 | 910 | A | A | A | A |
| Beach 52nd St and Rockaway Beach Blvd (NW corner) | 108 | 69 | 53 | 53 | A | A | B | B |

*Notes: Unsignalized corners at two-way stop-controlled intersections with uncontrolled crosswalks across the major street cannot be analyzed. Therefore, the northeast, northwest, southeast, and southwest corners at Beach 52nd Street and Peninsula Way and the northeast and southeast corners at Beach 52nd Street and Rockaway Beach Boulevard were not included in this table.*

## Parking Occupancy and Utilization

Of the total 973 parking space provided as part of the Proposed Project, 902 on-site parking spaces would be provided in off-street parking facilities, including 744 parking spaces for the residential use, 83 parking spaces for the local retail, destination retail, and supermarket uses, and 75 parking spaces for the medical office use, with approximately 50 of the 75 medical office designated spaces in building E parking garage available overnight for residential use. Signage in building E parking garage would be installed to specify which parking spaces would be designated for overnight residential parking use and during which hours. An additional 71 parking spaces will be provided on-street within the development site for general use. Auto trips were assigned to on-site parking facilities based on their respective uses. The parking demand that would not be accommodated on-site in off-street parking facilities was assigned to on-street parking spaces (125, 97, 85, 432, and 371 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 Proposed Project.

**Table 12-60: 2034 With-Action Condition On-Street Parking Utilization Summary** shows the results of the With-Action Condition parking utilization analysis. The on-street parking utilization would increase to 75%, 64%, 64%, and 81% 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 78%.

As shown in **Table 12-61: 2034 With-Action Utilization of Available On-Street Parking Spaces**, the on-street parking demand would represent less than half of the available on-street parking spaces for all peak hours, with the exception of the Weekday Overnight. However, approximately 50 non-residential parking spaces in building E parking garage would be available to residents for overnight parking; therefore, there would be no significant adverse parking impacts.

**Table 12-60: 2034 With-Action Condition On-Street Parking Utilization Summary**

| 2034 With-Action | Weekday AM | Weekday MD | Weekday PM | Weekday Overnight | Saturday MD |
|---|---|---|---|---|---|
| **Capacity** | | | | | |
| No Action Capacity | 1,668 | 1,668 | 1,668 | 1,668 | 1,668 |
| Net Change in With-Action On-Street Parking Supply [1] | 71 | 71 | 71 | 71 | 71 |
| ***Total With-Action On-Street Capacity*** | 1,739 | 1,739 | 1,739 | 1,739 | 1,739 |
| **Demand** | | | | | |
| Total No Action Demand | 1,175 | 1,021 | 1,035 | 979 | 977 |
| With-Action Demand [2] | 125 | 97 | 85 | 432 | 371 |
| ***Total With-Action On-Street Demand*** | 1,300 | 1,118 | 1,119 | 1,411 | 1,348 |
| **Utilization** | | | | | |
| Available Spaces | 439 | 621 | 620 | 328 | 391 |
| ***With-Action Utilization*** | **75%** | **64%** | **64%** | **81%** | **78%** |

1. Reflects 71 on-street parking spaces from the With-Action Condition at the Project Development Site.
2. Project generated (including as-of-right development) parking demand that would not be accomondated in on-site, off-street parking facilities.

**Table 12-61: 2034 With-Action Utilization of Available On-Street Parking Spaces**

| 2034 With-Action 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] | 493 | 647 | 633 | 689 | 691 |
| Net Change in With-Action On-Street Parking Supply [2] | 71 | 71 | 71 | 71 | 71 |
| ***Total Available With-Action On-Street Parking Spaces*** | 564 | 718 | 704 | 760 | 762 |
| **Demand** | | | | | |
| With-Action Demand [3] | 125 | 97 | 85 | 432 | 371 |
| **Utilization** | | | | | |
| ***Utilization of Available On-Street Parking Spaces by With-Action Demand*** | **22%** | **14%** | **12%** | **57%** | **49%** |

1. For detailed calculations, see Table 12-36.
2. Reflects 71 on-street parking spaces from the With-Action Condition at the Project Development Site.
3. Project generated (including as-of-right development) parking demand that would not be accomondated in on-site, off-street parking facilities.

# X. SAFETY ASSESSMENT

Crash data for the study area intersections and pedestrian element locations were obtained from NYCDOT for the three-year time period between January 1, 2014 and December 31, 2016 and quantify the total number of reportable crashes (involving fatality, injury, or more than $1,000 in property damage), fatalities, and injuries during the study period, as well as a yearly breakdown of pedestrian- and bicycle-related crashes at each location. According to the *CEQR Technical Manual*, a high-crash location is one with more than 48 total reportable and non-reportable crashes or five or more pedestrian/bicycle injury crashes during any consecutive 12 months of the most recent three-year period for which data is available.

During this three-year period, 203 total crashes, including 21 pedestrian-related crashes and four bicycle-related crashes, occurred at the study area intersections. Based on crash data, the intersection of Beach Channel Drive and Mott Avenue would be classified as a high-crash location per the *CEQR Technical Manual,* as there were seven and five pedestrian/bicycle injury crashes in 2015 and 2016, respectively. **Table 12-62: Crash Data** depicts total crashes by intersection during the three-year period, as well as a breakdown of pedestrian and bicycle crashes by year and location.

*Beach Channel Drive and Mott Avenue*

This intersection was identified as a Priority Intersection in the *Vision Zero Queens Pedestrian Safety Action Plan*. Beach Channel Drive and Mott Avenue are both major corridors in the Downtown Far Rockaway area, and this intersection experiences a high volume of vehicular traffic. In addition, it is one block away from the Far Rockaway/Mott Avenue Subway station, with close proximity to several bus stops and restaurants, and therefore experiences a high volume of pedestrians. There are also northbound and southbound Class II bike lanes on Beach Channel Drive.

A total of zero, seven, and five pedestrian/bike crashes occurred at this intersection in 2014, 2015, and 2016, respectively. While additional information is required to understand the specific nature of these crashes, steps can be taken to improve the safety conditions at this intersection.

In addition to being identified at a Priority Intersection in the *Vision Zero Queens Pedestrian Safety Action Plan*, this intersection is included in the Downtown Far Rockaway Urban Design and Streetscape Reconstruction Project, which is expected to be completed by 2019. As part of this project, sidewalks are expected to be widened, which would increase pedestrian space at corners, and high visibility crosswalks will be installed. From the *Vision Zero Queens Pedestrian Safety Action Plan*, increased enforcement is expected at this intersection. As safety measures identified as part of these studies are expected to be completed by 2019 at Beach Channel Drive and Mott Avenue that are expected to address the safety issues at these intersections, no additional safety measures are recommended at this time.

## Table 12-62: Crash Data

| | Total Crashes | | | Pedestrian | | | Bicycle | | | Combined Ped/Bike | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Intersection** | **2014** | **2015** | **2016** | **2014** | **2015** | **2016** | **2014** | **2015** | **2016** | **2014** | **2015** | **2016** |
| Beach Channel Dr & Beach 116th St | 4 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Newport Ave and Beach 116th St | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Beach Blvd and Beach 116th St | 1 | 1 | 3 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 |
| Beach Channel Dr and Rockaway Fwy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Beach Channel Dr and Beach 108th St | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Fwy and Beach 108th St | 2 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Beach Blvd and Beach 108th St | 0 | 3 | 5 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| Beach Channel Dr & Beach 92nd St | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Fwy & Cross Bay Pwky | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Beach Blvd & Cross Bay Pkwy | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Fwy & Beach 94th St | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Beach Blvd & Beach 94th St | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Beach Channel Dr & Beach 73rd St | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Beach Blvd & Beach 73rd St | 1 | 1 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Beach Channel Dr & Beach 62nd St | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Beach Blvd & Beach 62nd St | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Beach Front Rd & Beach 62nd St | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Beach Channel Dr & Beach 59th St | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arverne Blvd & Beach 59th St | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Fwy & Beach 59th St | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Rockaway Beach Blvd & Beach 59th St | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Beach Channel Dr & Beach 54th St | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arverne Blvd & Beach 54th St | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Fwy & Beach 54th St | 0 | 4 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Edgemere Ave & Beach 54th St | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Beach Channel Dr & Beach 53rd St | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Beach Blvd & Beach 53rd St | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Beach Blvd & Beach 52nd St | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Beach Channel Dr & Beach 51st St | 0 | 3 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Beach Channel Dr & Beach 50th St | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Beach Blvd & Beach 50th St | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Beach Channel Dr & Beach 47th St | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arverne Blvd/Rockaway Beach Blvd & Beach 47th St | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Beach Blvd & Beach 44th St | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Fwy & Beach 44th St | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Beach Channel Dr/Seagirt Blvd & Beach 35th St | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Fwy & Beach 35th St | 1 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Fwy & Seagirt Blvd | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Fwy and Beach 25th St | 0 | 1 | 2 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Rockaway Fwy and Cornaga Ave | 1 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Beach Channel Dr and Cornaga Ave | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **Beach Channel Dr & Mott Ave** | 3 | 17 | 18 | 0 | 6 | 4 | 0 | 1 | 1 | 0 | 7 | 5 |
| Dix Ave and Beach Channel Dr | 1 | 3 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 |
| Birdsall Ave and Beach Channel Dr | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nameoke Ave and Beach Channel Dr | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Hassock St and Beach Channel Dr | 3 | 3 | 14 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 2 |
| Arverne Blvd & Beach 57th St | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arverne Blvd & Beach 56th Pl | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Arverne Blvd & Beach 56th St | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Rockaway Fwy & Beach 56th Pl | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Note: Intersections that are bolded reflect the occurrence of 48 or more total reportable and non-reportable crashes and/or five or more pedestrian/bicyclists injury crashes in a twelve-month period.
Source: NYSDMV/DOT January 1, 2014 to December 31, 2016 crash data.