

A. INTRODUCTION**ANALYSIS OVERVIEW**

This chapter addresses the potential traffic and parking impacts of the proposed actions. The proposed actions would occur on an approximately 47-acre area in the amusement and entertainment center of Coney Island bordered by West 8th Street to the east, West 24th Street to the west, Mermaid Avenue to the north and the Boardwalk to the south. Primary access to the project site is provided by the Belt Parkway via exits at Cropsey Avenue/Stillwell Avenue and Shell Road as well as via Ocean Parkway and other roadways that lead into and through the Coney Island peninsula. Access to the development parcels within the Coney Island peninsula is provided by Surf Avenue, Mermaid Avenue and Neptune Avenue. The roadways within the study area carry low to moderate traffic and are typically not congested. However, during minor league baseball games at KeySpan Park during the peak summer weekend periods, traffic and pedestrian activities are higher than that of “regular” conditions.

The traffic and parking analyses cover a study area that includes 30 intersections, the majority of which are within the grid network bordered by Neptune Avenue to the north, Surf Avenue to the south, Ocean Parkway to the east and West 30th Street to the west. Most of the analysis intersections are located within the boundaries of the project site. The traffic study area further extends to key intersections along Cropsey Avenue and Ocean Parkway. Due to the nature of the amusement and entertainment uses at Coney Island, the traffic and parking analyses were performed for summer conditions on days that had minor league baseball games at KeySpan Park. Analyses were performed for five peak hours—weekday AM, midday, PM and Saturday midday and PM peak hours—to determine whether the proposed actions would result in significant adverse traffic impacts. It was determined that non-summer volumes were higher just for the weekday AM peak period, so the non-summer condition was analyzed for the weekday AM peak hour so that all five analysis hours were analyzed in their respective peak seasons.

This analysis begins with an assessment of existing traffic and parking conditions in the study area. Next, it examines the future without the proposed actions—i.e., the future 2019 No Build scenario—but with a number of other development projects currently expected to be built and occupied, including projected as-of-right developments. The analysis then assesses the future Build scenario with the proposed actions in 2019 and identifies potential significant adverse traffic impacts in accordance with *City Environmental Quality Review (CEQR) Technical Manual* guidelines. The identification and evaluation of traffic capacity improvements needed to mitigate the proposed actions’ significant adverse traffic impacts are presented in Chapter 22, “Mitigation.”

B. EXISTING CONDITIONS

ROADWAY NETWORK AND TRAFFIC STUDY AREA

The roadway network around the project site is a grid network comprised of east-west Surf Avenue, Mermaid Avenue and Neptune Avenue and north-south numbered streets. The Belt Parkway is located approximately ½-mile north of the project sites and can be accessed via Cropsey Avenue, Stillwell Avenue, Shell Road and Ocean Parkway. These roadways are the key roadways that provide regional access to and from the Coney Island neighborhood.

The traffic study area includes 30 existing intersections that were analyzed for the weekday AM, midday and PM, and Saturday midday and PM peak hours. The intersections analyzed are as follows:

1. Surf Avenue and West 30th Street
2. Surf Avenue and West 29th Street
3. Surf Avenue and West 28th Street
4. Surf Avenue and West 25th Street
5. Surf Avenue and West 24th Street
6. Surf Avenue and West 23rd Street
7. Surf Avenue and West 21st Street
8. Surf Avenue and West 20th Street
9. Surf Avenue and West 19th Street
10. Surf Avenue and West 17th Street
11. Surf Avenue and West 16th Street
12. Surf Avenue and West 15th Street
13. Surf Avenue and Stillwell Avenue
14. Surf Avenue and West 12th Street
15. Surf Avenue and West 8th Street
16. Mermaid Avenue and West 30th Street
17. Mermaid Avenue and West 29th Street
18. Mermaid Avenue and West 20th Street
19. Mermaid Avenue and West 19th Street
20. Mermaid Avenue and West 17th Street
21. Mermaid Avenue and West 15th Street
22. Mermaid Avenue and Stillwell Avenue
23. Neptune Avenue and Cropsey Avenue/West 17th Street
24. Neptune Avenue and Stillwell Avenue
25. Neptune Avenue and West 8th Street/Shell Road
26. Ocean Parkway and Neptune Avenue
27. Cropsey Avenue and Bay 50th Street
28. Cropsey Avenue and Bay 52nd Street
29. Ocean Parkway and Shore Parkway South
30. Ocean Parkway and Shore Parkway North

Surf Avenue extends east-west between Sea Breeze Avenue and West 37th Street, transitioning into Ocean Parkway at Sea Breeze Avenue. Surf Avenue provides access to the amusement and entertainment center of Coney Island—KeySpan Park, the Coney Island amusement area, New York Aquarium and Asser Levy Park. During baseball games at KeySpan Park, Surf Avenue carries heavier traffic volumes due to vehicles accessing parking facilities along side streets. Surf Avenue generally consists of two travel lanes in each direction with curbside parking allowed on both sides. There are additional parking prohibitions during the summer on the south curb on Surf Avenue near the amusement and entertainment facilities. Surf Avenue is also characterized by an 11 foot wide striped median.

Neptune Avenue travels east-west between Shore Boulevard and West 37th Street, transitioning into Emmons Avenue at Shore Boulevard. Neptune Avenue is an important commuter route on the Coney Island peninsula and is designated as a New York City local truck route between Cropsey Avenue/West 17th Street and Coney Island Avenue. It generally consists of two travel lanes with parking on both sides. Class II bike lanes¹ are also provided in both directions along segments of Neptune Avenue between Ocean Parkway and West 32nd Street, and only in the eastbound direction from West 37th Street to West 32nd Street

Mermaid Avenue extends east-west between Stillwell Avenue and West 37th Street. At the eastern end, Mermaid Avenue leads to a MTA bus facility under the Stillwell Avenue-Coney Island subway station. Mermaid Avenue is characterized by a mixed-use area of commercial and residential land uses. It consists of one travel lane in each direction with curbside parking on both sides.

Cropsey Avenue travels north-south between 14th Avenue at the Dyker Beach Golf Course and Neptune Avenue. Within the study area, Cropsey Avenue typically consists of three travel lanes in each direction compared to two travel lanes outside the study area. The additional travel lane accommodates access to the Belt Parkway and large retail stores along Cropsey Avenue at Coney Island Creek. South of Neptune Avenue, Cropsey Avenue becomes West 17th Street and is much narrower with one northbound and two southbound travel lanes, and no on-street parking.

Ocean Parkway is a key north-south commuter route between Church Avenue, where it transitions into the Prospect Expressway, and Sea Breeze Avenue, where it transitions into Surf Avenue. Ocean Parkway has service roads that travel alongside the mainline terminating further north at Fort Hamilton Parkway. Ocean Parkway provides highway access for central Brooklyn neighborhoods. The mainline consists of three travel lanes in each direction with left turn bays at key intersections. The service roads generally consist of one travel lane in each direction with parking on one or both sides of the roadway.

Stillwell Avenue travels north-south between Avenue P and the Boardwalk. Stillwell Avenue generally consists of two travel lanes in each direction with parking on both sides. Between Neptune Avenue and Surf Avenue, Stillwell Avenue narrows into one lane in each direction near the Stillwell Avenue-Coney Island subway station. Stillwell Avenue is characterized by low traffic volumes but experiences heavy pedestrian volumes and livery car double parking activities associated with the subway station.

Shell Road extends north-south between 86th Street/Avenue X and Neptune Avenue. Shell Road transitions into McDonald Avenue at the northern end and into West 8th Street at the southern

¹ Class I Bikeway: Provides a completely separated right-of-way designated for the exclusive use of bicycles; Class II Bikeway: Provides a travel lane designated for the exclusive use of bicycles; Class III Bikeway: Provides a route designated by signs or permanent markings and shared with pedestrians or motorists.

end. Shell Road is designated as a New York City local truck route. It generally consists of two travel lanes with parking in each direction and a raised central median.

The grid roadway network which encompasses the remainder of the project site area are mostly one lane, one way north-south streets with curbside parking on both sides of the roadway. This grid network is characterized by residential and commercial uses with some underutilized or vacant parcels.

The overall traffic study area addressed in this EIS encompasses 30 intersections generally bounded by the Belt Parkway to the north, Ocean Parkway to the east, Surf Avenue to the south, and West 30th Street to the west. The specific traffic analysis locations are shown in **Figure 16-1**.

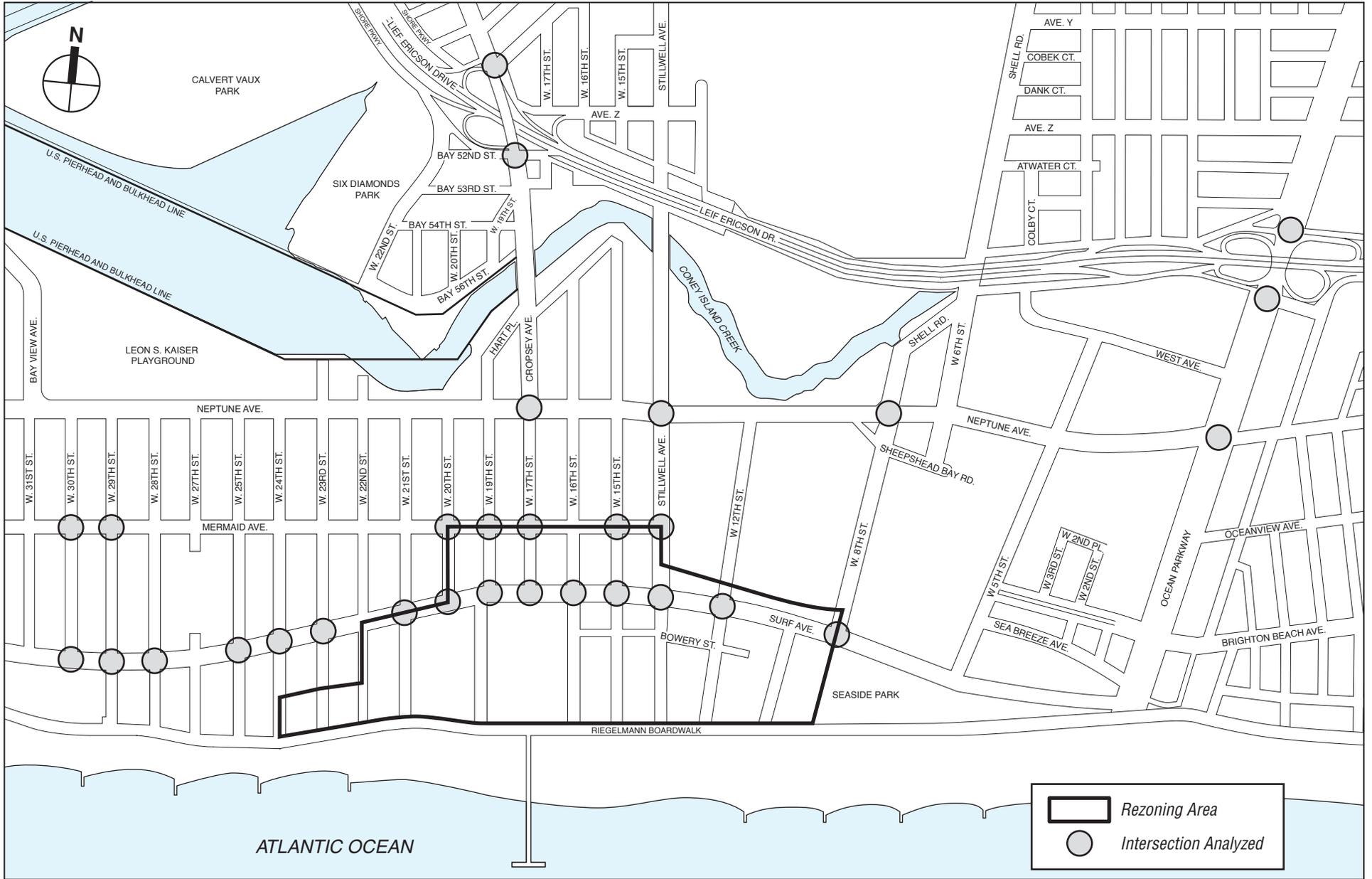
EXISTING TRAFFIC VOLUMES AND LEVELS OF SERVICE

Traffic counts were conducted for this EIS in August 2006 for weekday AM, midday, PM, and Saturday midday and PM peak periods using manual intersection counts and 24-hour Automatic Traffic Recorder (ATR) machine counts. All analyses were conducted for peak summer conditions when beach, amusement area and ballpark conditions are most pronounced. In addition, non-summer counts performed in May 2008 determined that non-summer volumes were higher (by approximately 18 percent) just for the weekday AM peak period so the non-summer condition was analyzed for just the weekday AM peak hour so that all five analysis hours were analyzed in their respective peak seasons. These volumes were used along with observations of traffic conditions to determine levels of service for the weekday 8 to 9 AM, 1 to 2 PM midday and 6 to 7 PM peak hours, and Saturday 1 to 2 PM midday and 5:15 to 6:15 PM peak hours.

Levels of service were determined using *2000 Highway Capacity Manual (HCM)* procedures, which is the analysis methodology approved for use by the New York City Department of Transportation (NYCDOT) and Department of City Planning (DCP).

For signalized intersections, levels of service (LOS) are defined in terms of average vehicle control delay, as follows:

- LOS A describes operations with very low delays, i.e., 10.0 seconds or less per vehicle. This occurs when signal progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all.
- LOS B describes operations with delays in the range of 10.1 to 20.0 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. Again, most vehicles do not stop at the intersection.
- LOS C describes operations with delays in the range of 20.1 to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. The number of vehicles stopping is noticeable at this level, although many still pass through the intersection without stopping.
- LOS D describes operations with delays in the range of 35.1 to 55.0 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines.
- LOS E describes operations with delays in the range of 55.1 to 80.0 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios.
- LOS F describes operations with delays in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high



v/c ratios with cycle failures. Poor progression and long cycle lengths may also contribute to such delays. Often, vehicles do not pass through the intersection in one signal cycle.

Based on guidance in the *CEQR Technical Manual*, LOS A, B, and C are considered acceptable, LOS D is generally considered marginally acceptable up to mid-LOS D (45 seconds of delay for signalized intersections) and unacceptable above mid-LOS D, and LOS E and F indicate congestion. These guidelines are applicable to individual traffic movements and overall intersection levels of service.

For unsignalized intersections, delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line: LOS A describes operations with very low delay, i.e., 10.0 seconds or less per vehicle; LOS B describes operations with delays in the range of 10.1 to 15.0 seconds; LOS C has delays in the range of 15.1 to 25.0 seconds; LOS D, 25.1 to 35.0 seconds per vehicle; and LOS E, 35.1 to 50.0 seconds per vehicle, which is considered to be the limit of acceptable delay. LOS F describes operation with delays in excess of 50.0 seconds per vehicle, which is considered problematic to most drivers. This condition exists when there are insufficient gaps of suitable duration to allow side street traffic to cross safely through a major vehicular traffic stream.

Table 16-1 provides an overview of the levels of service that characterize existing “overall” intersection conditions during the weekday AM, midday and PM peak hours, and the Saturday midday and PM peak hours. Overall levels of service of an intersection represent a weighted average of individual traffic movements’ levels of service.

Table 16-1
Existing Intersection Level of Service Summary

	Weekday AM Peak Hour	Weekday Midday Peak Hour	Weekday PM Peak Hour	Saturday Midday Peak Hour	Saturday PM Peak Hour
Overall LOS A/B/C	26	28	28	28	25
Overall LOS D	4	2	2	2	5
Overall LOS E	0	0	0	0	0
Overall LOS F	0	0	0	0	0
Number of movements at LOS E or F (of approximately 132 movements analyzed)	7	9	9	11	25
Note:	Includes the unsignalized intersection of Surf Avenue and West 20th Street which operates at LOS A during all traffic analysis hours.				

This summary overview of existing conditions indicates that:

- In the weekday AM peak hour, none of the 29 signalized intersections analyzed are operating at overall LOS E or F, and four intersections are operating at acceptable LOS D as shown in **Figure 16-2**. “Overall” LOS E or F means that serious congestion exists—either one specific traffic movement has severe delays or two or more of the specific traffic movements at the intersection are at LOS E or F with very significant delays (the overall intersection LOS is a weighted average of all the individual traffic movements). Seven individual traffic movements out of approximately 132 such movements analyzed are at LOS E or F (e.g., left turns from one street to another, through traffic on one street passing through the intersection, etc.).

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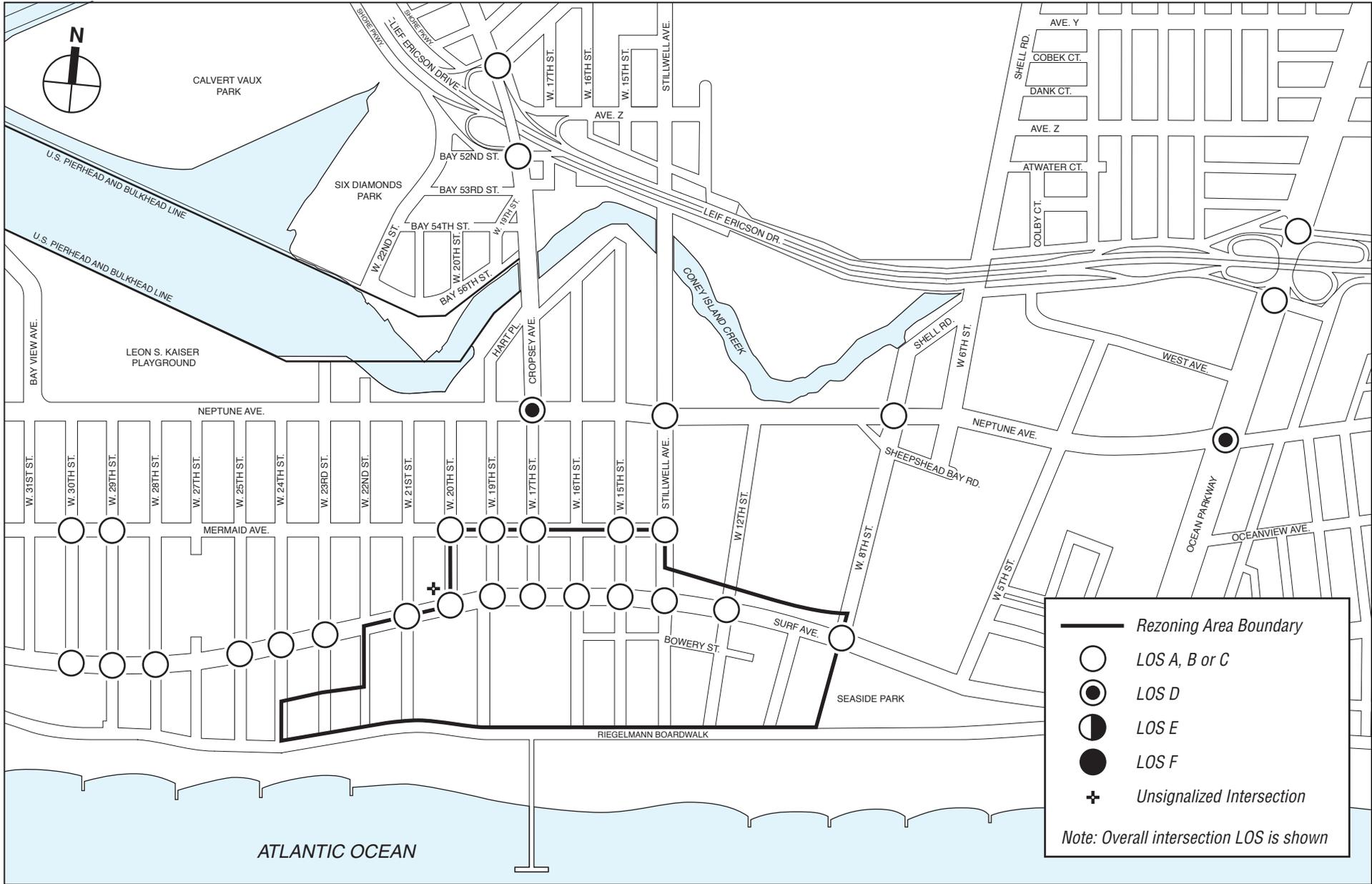
- In the weekday midday peak hour, none of the intersections operate at overall LOS E or F, and two intersections operate at marginally acceptable/unacceptable LOS D as shown in **Figure 16-3**. Nine individual traffic movements operate at LOS E or F.
- In the weekday PM peak hour, no intersection operates at overall LOS E or F, and two intersections operate at marginally acceptable/unacceptable LOS D as shown in **Figure 16-4**. Nine individual traffic movements operate at LOS E or F.
- In the Saturday midday peak hour, none of the intersections operate at overall LOS E or F. Two intersections operate at marginally acceptable/unacceptable LOS D as shown in **Figure 16-5** and eleven individual traffic movements operate at LOS E or F.
- In the Saturday PM peak hour, no intersection operates at overall LOS E or F. Five intersections operate at marginally acceptable/unacceptable LOS D as shown in **Figure 16-6** and 25 individual traffic movements operate at LOS E or F.
- The unsignalized intersection of Surf Avenue and West 20th Street operates at LOS A during all peak hours analyzed.

Detailed traffic levels of service, volume-to-capacity (v/c) ratios, and average vehicle delays for each traffic movement at each traffic analysis location are presented in Appendix F.

Within the amusement and entertainment section of the project site between West 17th Street and West 8th Street, Surf Avenue is traveled by approximately 380 to 460 vehicles per hour (vph) in each direction during the weekday AM peak hour. The volumes increase later in the day to approximately 450 to 500 vph in the eastbound direction and approximately 370 to 440 vph in the westbound direction during the weekday midday peak hour, and to approximately 420 to 500 vph in the eastbound direction and approximately 520 to 620 vph in the westbound direction during the weekday PM peak hour. During Saturdays, volumes along the amusement and entertainment stretch of Surf Avenue are generally heavier with approximately 550 to 600 vph traveling east and approximately 430 to 560 vph traveling west during the Saturday midday peak hour, and approximately 680 to 830 vph traveling east and approximately 600 to 680 vph traveling west during the Saturday PM peak hour. Traffic volumes at the intersection of Surf Avenue and West 15th Street are approximately 950 vph traveling east and approximately 530 vph traveling west. This volume disparity is due to vehicles being redirected by traffic enforcement agents at KeySpan Park during the period just prior to the start of baseball games.

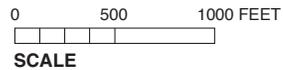
The section of Surf Avenue between West 17th Street and West 23rd Street is mostly residential with several vacant properties. Throughout the weekday, volumes are generally consistent with the exception of the intersection of West 19th Street which provides access to the KeySpan Park parking lot during a game. The volumes traveling along this stretch of Surf Avenue are approximately 400 to 530 vph in the eastbound direction and 350 to 520 vph in the westbound direction. At the intersection of Surf Avenue and West 19th Street, the westbound traffic volume is approximately 700 vph. During the Saturday peak hours, traffic volumes fluctuate more dramatically because of the redirection of traffic by traffic enforcement agents; approximately 440 to 540 vph travel eastbound and approximately 410 to 630 vph travel westbound along this section of Surf Avenue during this time.

Mermaid Avenue carries less traffic volume than Surf Avenue. During the weekday peak hours, Mermaid Avenue is traveled by 180 to 340 vph in each direction between West 16th Street and West 21st Street, with the peak direction of travel being eastbound during the AM peak hour and westbound during the PM peak hour. The volume is generally similar during the Saturday midday peak hour in this section. The volumes along Mermaid Avenue decrease near the



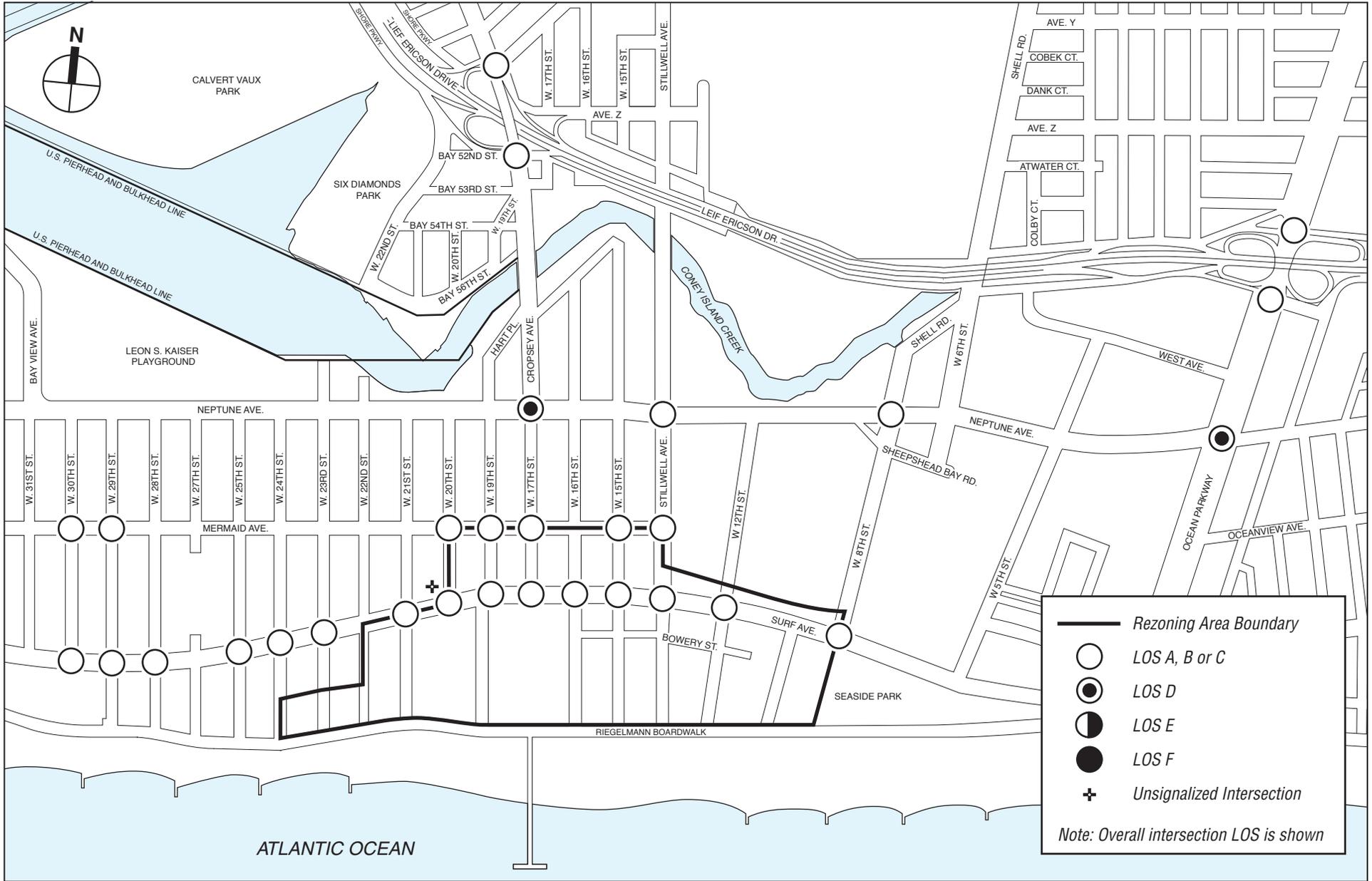
	Rezoning Area Boundary
	LOS A, B or C
	LOS D
	LOS E
	LOS F
	Unsignalized Intersection

Note: Overall intersection LOS is shown



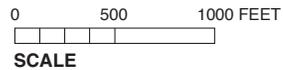
CONEY ISLAND REZONING

Existing Traffic Levels of Service
Weekday Midday Peak Hour
Figure 16-3



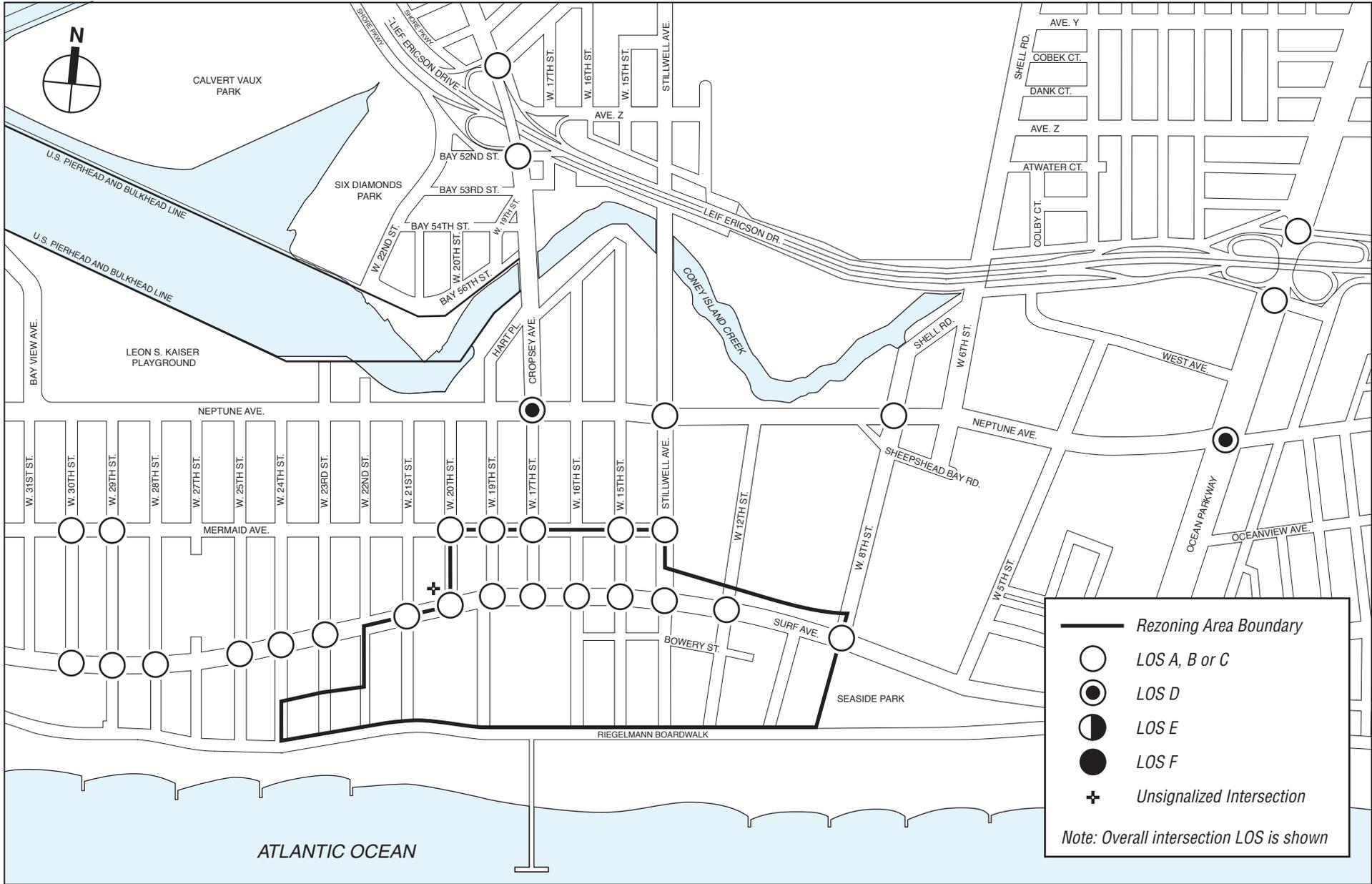
	Rezoning Area Boundary
	LOS A, B or C
	LOS D
	LOS E
	LOS F
	Unsignalized Intersection

Note: Overall intersection LOS is shown

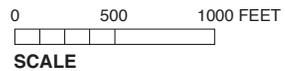
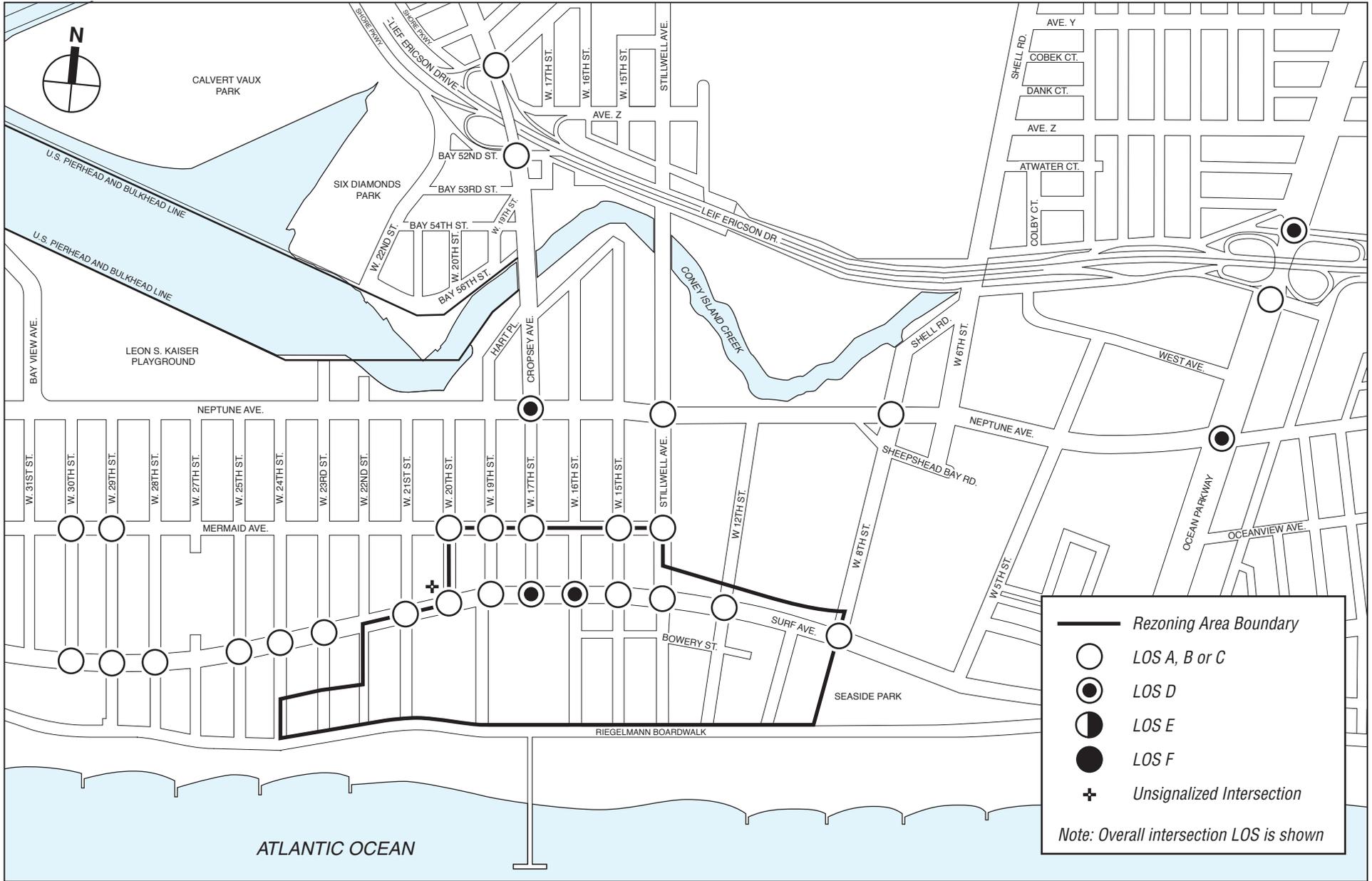


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Existing Traffic Levels of Service
Weekday PM Peak Hour
Figure 16-4



Existing Traffic Levels of Service
 Saturday Midday Peak Hour
Figure 16-5



CONEY ISLAND REZONING

Existing Traffic Levels of Service
Saturday PM Peak Hour
Figure 16-6

Stillwell Avenue-Coney Island subway station. Traffic volumes between West 16th Street and Stillwell Avenue are approximately 170 to 240 vph in the eastbound direction and 140 to 220 vph in the westbound direction. In this section, traffic volumes during the Saturday midday peak hour are approximately 210 to 230 vph in the eastbound direction and 160 to 240 vph in the westbound direction. Saturday PM peak hour volumes vary more significantly because of game day traffic patterns. Traffic volumes along Mermaid Avenue range from approximately 130 to 260 vph in the eastbound direction and 220 to 490 vph in the westbound direction.

Neptune Avenue is traveled by 520 to 650 vph in the eastbound direction and 560 to 690 vph in the westbound direction between Cropsey Avenue/West 17th Street and Shell Road/West 8th Street during all peak hours. Traffic volumes west of this section are generally heavier because of vehicles using the roadway to access the Belt Parkway.

Cropsey Avenue serves as one of the two main routes that provide direct access to the Belt Parkway from Coney Island carrying over 960 vph in each direction between the Belt Parkway and Neptune Avenue. Cropsey Avenue becomes West 17th Street south of Neptune Avenue and is characterized by a reduction in the width of the roadway as well as reduced traffic volumes. During the weekday AM peak hour, approximately 240 to 340 vph travel north and approximately 230 to 300 vph travel south along West 17th Street. Approximately 250 to 350 vph travel north and about 270 to 360 vph travel south during the weekday midday peak hour, and approximately 260 to 310 vph travel north and about 420 to 540 vph travel south in the weekday PM peak hour. During the Saturday midday peak hour, West 17th Street is traveled by approximately 310 to 410 vph in the northbound direction and 410 to 500 vph in the southbound direction. Traffic volumes along West 17th Street fluctuate greatly during the Saturday PM peak hour because of circulating game day traffic; approximately 190 to 420 vph travel in the northbound direction and 580 to 680 vph in the southbound direction during this peak hour.

Ocean Parkway is the second of the two main routes providing direct access to the Belt Parkway from Coney Island. Ocean Parkway functions as a major arterial through most of central Brooklyn carrying over 1,000 vph in each direction north of Neptune Avenue. The volume along Ocean Parkway decreases south of Neptune Avenue as it transitions into the narrower Surf Avenue.

Stillwell Avenue carries approximately 260 to 290 vph away from and approximately 270 to 410 vph into Coney Island. The Stillwell Avenue-Coney Island subway station is located along Stillwell Avenue between Surf and Mermaid Avenues. During the weekday peak hours, approximately 120 to 260 vph travel along Stillwell Avenue between Neptune Avenue and Surf Avenue in each direction. Traffic volumes are heavier during the Saturday peak hours with approximately 190 to 330 vph traveling in each direction along this section.

Traffic volumes along Shell Road traveling south to access Coney Island typically range between 430 to 520 vph. During the weekday peak hours, traffic volumes traveling north away from Coney Island generally range from 300 to 360 vph which is heavier than that of the Saturday peak hours, which generally range from about 240 to 280 vph.

Volumes on these roadways and all intersections analyzed as part of the EIS are presented in Appendix F.

PARKING

A detailed inventory of on-street parking and off-street public parking facilities within approximately one-quarter to ½-mile of the project site was conducted on a typical summer weekday and Saturday in August 2006. A ¼-mile distance (a five-minute walk) is considered as

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an acceptable walking distance between the project site and parking. Overall, there are five public parking facilities in the area, as shown in **Figure 16-7**. Of the five, two parking facilities along Surf Avenue are exclusive to serving game day traffic at KeySpan Park. The KeySpan Park parking lot is located on the south side of Surf Avenue at its intersection with West 19th Street, and provides parking for game day traffic as well as for other amusement and entertainment activities in Coney Island. The other public parking facilities are located further east—one lot is located south of Surf Avenue between West 15th Street and Stillwell Avenue, and the other lot is located north of Surf Avenue along West 12th Street. The survey data indicate that, on weekdays, these five parking facilities (aggregated) are occupied at an 11 percent level at 9 to 10 AM, 17 percent at 1 to 2 PM, and 66 percent at 6 to 7 PM, while on summer weekends, occupancy levels are much higher (80 percent Saturday at 1 to 2PM, and 99 percent Saturday at 6 to 7 PM). Weekday and Saturday parking occupancies of the public parking facilities are presented in **Table 16-2** and **Table 16-3**, respectively.

Table 16-2
Inventory of Existing Public Parking Facilities (Weekday)

Lot #	Location	Capacity	Occupancy at 9–10 AM	Occupancy at 1–2 PM	Occupancy at 6–7 PM
1	KeySpan Park Satellite Lot - South of Surf Avenue between West 22nd Street and West 21st Street	200	N/A ²	N/A ²	N/A
			N/A ²	N/A ²	N/A
2	KeySpan Park Main Lot - South of Surf Avenue between West 19th Street and West 16th Street	750	38 5%	93 12%	709 95%
3	Commercial Lot - North of Surf Avenue between West 17th Street and West 16th Street	145	0	0	29
			0%	0%	20%
4	Commercial Lot - South of Surf Avenue between West 15th Street and Stillwell Avenue	30	0	27	27
			0%	90%	90%
5	Commercial Lot - North of Surf Avenue between Stillwell Avenue and West 12th Street	130	104	98	65
			80%	75%	50%
Total Spaces		1,055	142	218	830
Percent Occupancy			11%	17%	66%

Notes:

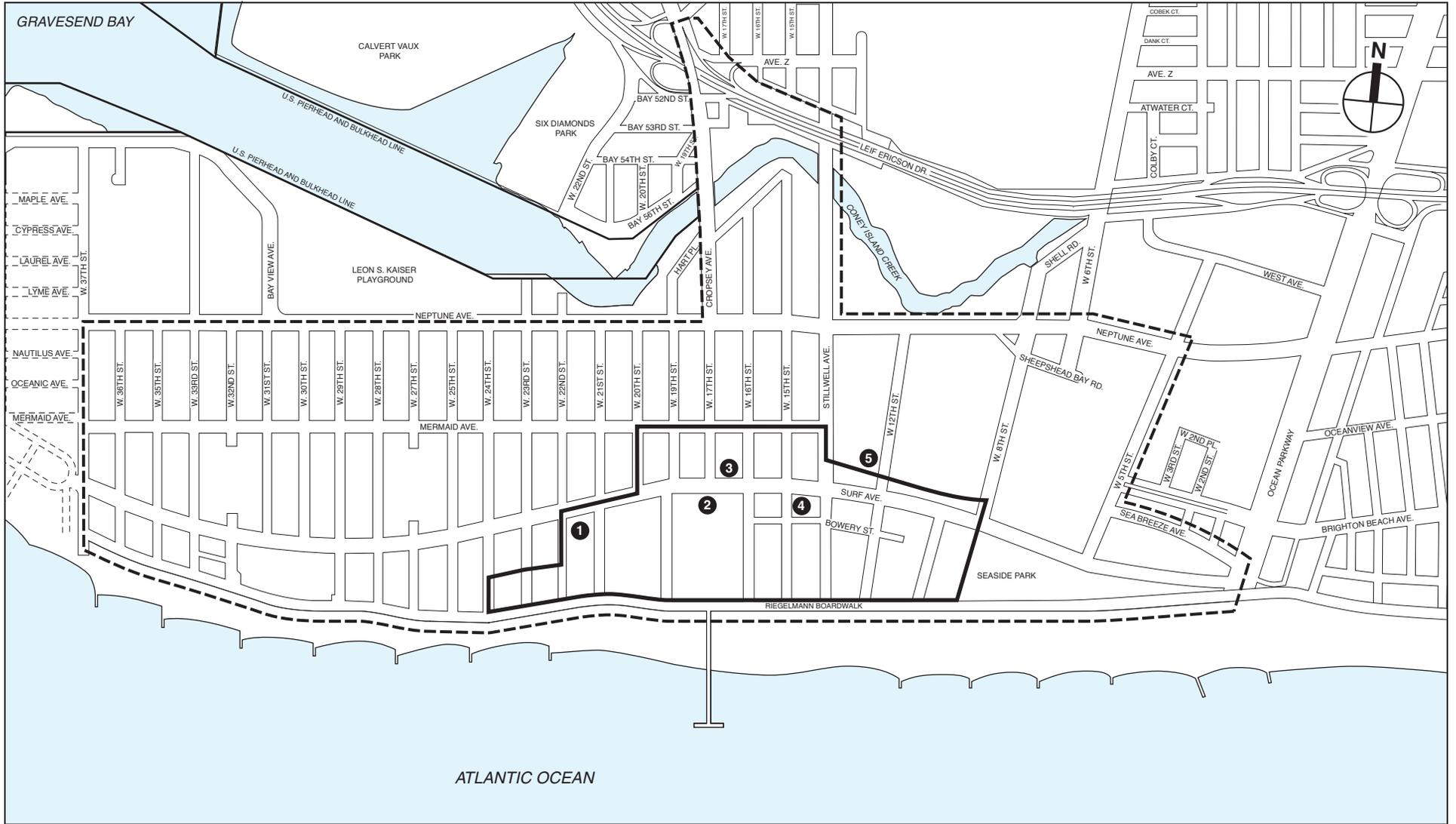
- Parking garages/lots at 95% capacity or greater in the existing conditions are considered at capacity and no additional vehicles would be assigned to them for future conditions analyses.
- Parking in the KeySpan Park Satellite is only available when there is insufficient parking supply at the main lot during Brooklyn Cyclone ball games.

Table 16-3
Inventory of Existing Public Parking Facilities (Saturday)

Lot #	Location	Capacity	Occupancy at 1–2 PM	Occupancy at 6–7 PM
1	KeySpan Park Satellite Lot - South of Surf Avenue between West 22nd Street and West 21st Street	200	N/A ²	198
			N/A ²	99%
2	KeySpan Park Main Lot - South of Surf Avenue between West 19th Street and West 16th Street	750	203	743
			27%	99%
3	Commercial Lot - North of Surf Avenue between West 17th Street and West 16th Street	145	0	116
			0%	80%
4	Commercial Lot - South of Surf Avenue between West 15th Street and Stillwell Avenue	30	30	30
			100%	100%
5	Commercial Lot - North of Surf Avenue between Stillwell Avenue and West 12th Street	130	104	129
			80%	99%
Total Spaces		1,255	337	1,215
Percent Occupancy			27%	97%

Note:

- Parking garages/lots at 95% capacity or greater in the existing conditions are considered at capacity and no additional vehicles would be assigned to them for future conditions analyses.
- Parking in the KeySpan Park Satellite is only available when there is insufficient parking supply at the main lot during Brooklyn Cyclone ball games.



- Rezoning Area Boundary
- - -** Parking Study Area Boundary
- ①** Off-Street Parking

NOTE: Parking study area generally 1/4 to 1/2 Mile from rezoning area, as per CEQR Technical Manual

On-street parking regulations, capacities, and occupancies were also inventoried for the same ¼-mile to ½-mile parking study area on a block-by-block basis. The capacities and occupancies of the on-street parking were obtained during the weekday peak periods of 7 to 10 AM, 11 AM to 2 PM, and 4 to 7 PM, and Saturday peak periods of 11 AM to 2 PM, and 4 to 7 PM. Metered parking exists within the study area but the majority of on-street parking spaces are non-metered. Street cleaning regulations are prevalent through the study area. Approximately 4,290 and 4,375 on-street spaces are available during weekdays and Saturdays, respectively, within the parking study area. On-street parking is sufficient during the weekday peak periods but is close to capacity during the (summertime) Saturday peak periods. On-street parking occupancy ranges from 61 to 70 percent, 77 to 82 percent and 74 to 79 percent during the weekday AM, midday and PM peak periods respectively. During the Saturday midday and PM peak periods, on-street parking occupancy ranges from 91 to 99 percent and 96 to 98 percent respectively. Illegal parking was observed within the parking study area predominantly in vacant areas or areas with auto repair shops such as sections of Cropsey Avenue between Hart Place and Neptune Avenue, and along Stillwell Avenue between the Coney Island Creek and Neptune Avenue.

C. THE FUTURE WITHOUT THE PROPOSED ACTIONS

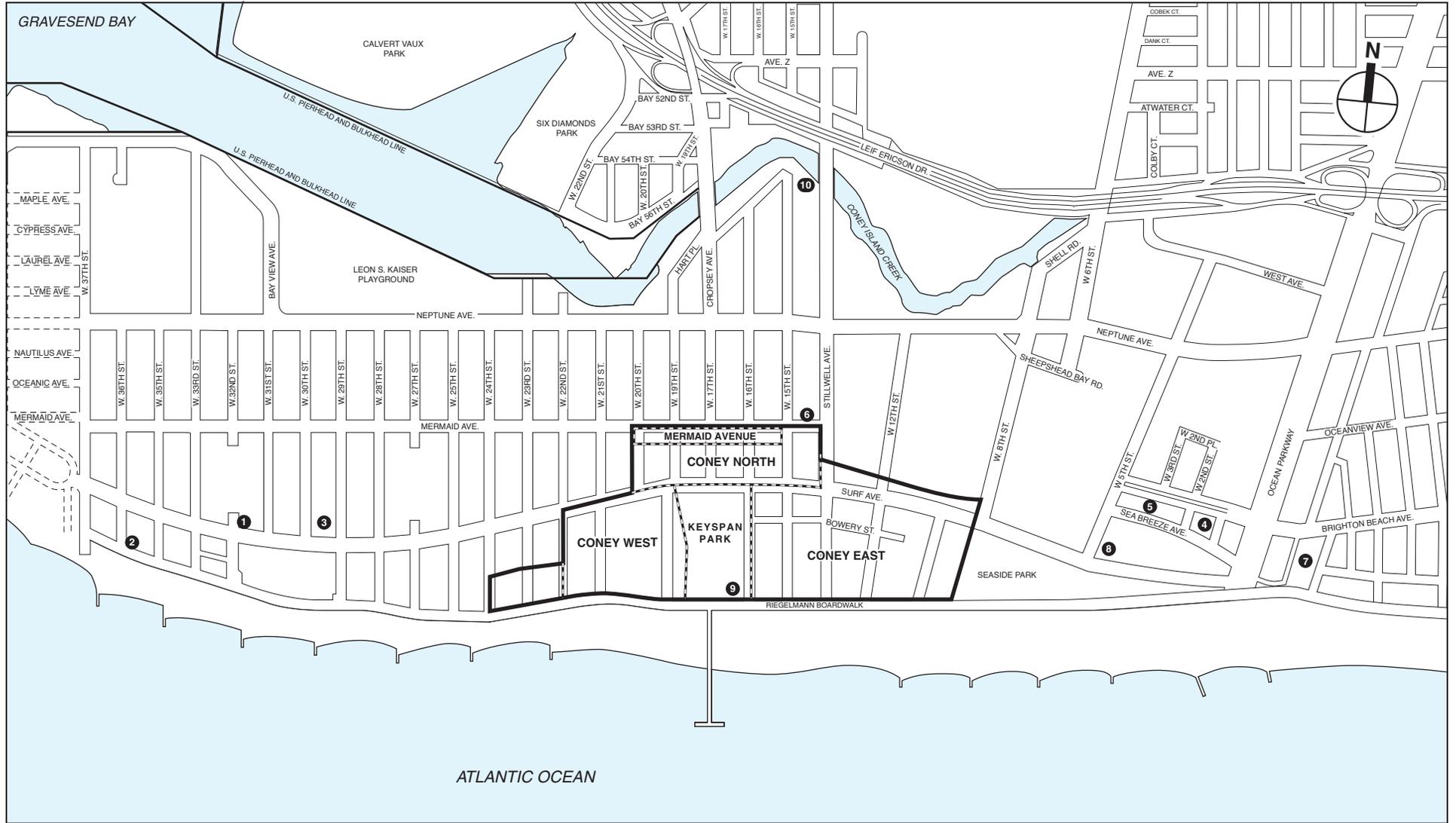
BACKGROUND DEVELOPMENTS AND TRIP GENERATION

Future conditions without the proposed actions, i.e., the No Build scenario, are established in order to provide the baseline against which the impacts of the proposed actions can be compared and to account for changes in traffic conditions between existing conditions and the future analysis year. Future year conditions were analyzed for 2019. Future No Build traffic volumes were developed by applying a background traffic growth rate of one percent per year, as stated in the *CEQR Technical Manual*, and by adding trips expected to be generated by study area development projects expected to be built and occupied by 2019.

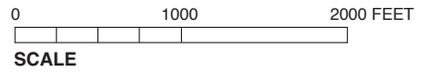
A list of background developments expected to be built in Coney Island by 2019 was developed in coordination with DCP (see **Table 16-4**). These background developments consist of projects that are expected to be built outside the project site as well as several as-of-right developments expected to be built in Coney North and Coney West. Trip generation and traffic assignments were developed for these background projects through the traffic study area. No Build project sites are shown in **Figure 16-8**, and a summary of vehicle trips generated by them is presented in **Table 16-5**.

Overall, approximately 1,313 dwelling units, 40,000 square feet (sf) of community facility space, 4,257 sf of restaurant space, 48,859 sf of medical office space, 8,000 amphitheater seats, 95,830 sf of amusement park space, 103,700 sf of local retail space and 56,000 space feet of office space are expected to be developed by the year 2019. This represents a substantial amount of new development in the 13-year period from 2006 to 2019. As a result of this development, 494, 622 and 981 vehicles are projected to be added to the street network during the weekday AM, midday, and PM peak hours, respectively. A projected volume of 660 and 892 vehicles are expected to be generated during the Saturday midday and PM peak hours, respectively.

The No Build project-generated trips were assigned to the roadway network and, together with the background traffic growth, constitute the 2019 No Build traffic volume baseline. Detailed No Build traffic volume maps are provided in Appendix F. A summary of traffic volume increases along selected streets within the study area is described below under “2019 No Build Volumes and Levels of Service.”



-  Rezoning Area Boundary
-  Special District Subdistrict Boundary
-  1 No Build Project (See Table 16-4)



Coney Island Rezoning

The traffic analyses for the 2019 No Build scenario also include several geometric and operational changes to the roadway network. These changes include converting the existing Class III bike lanes along Neptune Avenue to Class II lanes east of Ocean Parkway, restriping of Belt Parkway exit ramp intersections at Cropsey Avenue and Ocean Parkway, the addition of left turn lanes to West 19th Street (westbound direction only) and Stillwell Avenue (in both directions) along Surf Avenue, installation of a painted median along Mermaid Avenue between West 25th Street and West 31st Street, and restriping of Stillwell Avenue along the Stillwell Avenue-Coney Island subway station. These changes to the roadway network have been implemented as of 2008 after the traffic counts were conducted and have therefore been included as part of the 2019 No Build scenario. In addition to these changes, the New York City Bicycle Master Plan identifies a planned/proposed route along Surf Avenue. Although the type of facility for this route (Class II or Class III) is not determined at this time, for analysis purposes, a combination of Class II and Class III facilities were assumed. Removal of the painted median along Surf Avenue would be necessary to install the bike lanes.

NO BUILD VOLUMES AND LEVELS OF SERVICE

Projected traffic volume increases in the study area roadway network due to the cumulative effect of background projects and the annual growth of one percent in background traffic are quantified and discussed below.

Traffic volumes along the amusement section of Surf Avenue between West 17th Street and West 8th Street would be expected to increase by 110 to 140 vph in the eastbound direction and 60 to 80 vph in the westbound direction during the weekday AM peak hour. Traffic volumes traveling east would be expected to increase by 120 to 140 vph and 150 to 180 vph during the weekday midday and PM peak hours, respectively. The eastbound increment would be about 220 to 250 vph during the Saturday midday and PM peak hours. Traffic volumes traveling west would be expected to increase by 80 to 110 vph during the weekday midday peak hour. The westbound increment would be about 110 to 160 vph during the weekday PM, Saturday midday, and Saturday PM peak hours.

Along the section of Surf Avenue between West 17th and West 23rd Streets, traffic volumes would be expected to increase by 140 to 190 vph in the eastbound direction and 80 to 100 vph in the westbound direction during the weekday AM peak hour. Traffic volumes would be expected to increase by 90 to 150 vph in the eastbound direction and 90 to 180 in the westbound direction during the weekday midday and PM peak hours. During both Saturday peak hours, traffic volumes would be expected to increase by 100 to 230 vph in the eastbound direction and 90 to 170 vph in the westbound direction.

Traffic volumes along Mermaid Avenue within the project site would be expected to increase by about 30 to 80 vph in the eastbound and westbound directions during all peak hours.

Along Neptune Avenue between Cropsey Avenue/West 17th Street and West 8th Street/Shell Road, traffic volumes would be expected to increase by 120 to 160 vph in the eastbound direction during the weekday AM and midday peak hours, and by 100 to 160 vph during the weekday PM peak hour. Traffic volumes traveling westbound in this section would be expected to increase by 100 to 140 vph in the weekday AM peak hour, and 130 to 170 vph in the weekday midday and PM peak hours. During the Saturday peak hours, traffic volumes would be expected to increase by 110 to 140 vph in the eastbound direction and 140 to 170 vph in the westbound direction.

**Table 16-4
Background Development Projects**

Map ID No.	Project Name/Address	Status/Anticipated Completion Year	Residential (Units)	Community Facility (sf)	Restaurant (sf)	Medical Office (sf)	Amphitheater (seats)	Amusement Park (sf)	Local Retail (sf)	Office (sf)	Parking (spaces)
1	Surf Gardens Senior Housing	2012	77								
2	Ocean Dreams	Unknown	313								
3	Coney Island Commons	2011	188	40,000							
4	3080 West 1st Street	Unknown	34								
5	The Sochi (271 Sea Breeze Avenue)	2010	89								
6	1403 Mermaid Avenue	Unknown			4,257						5
7	128 Brighton Beach Avenue	Unknown				48,859					
8	Coney Island Center	2011					8,000				
9	Steeplechase Park	2010/2011						95,830			
10	Stillwell Office Building	2018							11,300	56,000	381
As-of-Right Developments Within Project Site											
-	Coney North & Mermaid Avenue	Unknown	612						32,400		884
-	Coney West	Unknown							60,000		
TOTAL			1,313	40,000	4,257	48,859	8,000	95,830	103,700	56,000	1,270

Source: AKRF Field Study 2006 and 2008; New York City Department of City Planning, 2008

**Table 16-5
Projected Vehicle Trip Generation from Background Development Projects**

Map ID No.	Project Name/Address	Weekday AM Peak Hour		Weekday Midday Peak Hour		Weekday PM Peak Hour		Saturday Midday Peak Hour		Saturday PM Peak Hour	
		In	Out	In	Out	In	Out	In	Out	In	Out
1	Surf Gardens Senior Housing	3	13	4	4	13	5	8	8	9	9
2	Ocean Dreams	12	56	18	18	53	24	37	37	37	37
3	Coney Island Commons	12	35	16	16	36	20	30	31	31	31
4	3080 West 1st Street	1	6	2	2	6	3	3	3	4	4
5	The Sochi (271 Sea Breeze Avenue)	4	16	4	4	15	7	10	10	10	10
6	1403 Mermaid Avenue	2	1	14	7	7	4	11	7	8	8
7	128 Brighton Beach Avenue	62	13	36	38	15	56	12	26	5	14
8	Coney Island Center	1	1	41	10	291	18	41	10	291	18
9	Steeplechase Park	4	4	15	11	36	37	54	39	39	54
10	Stillwell Office Building	65	10	42	42	14	70	16	19	10	13
As-of-Right Development Within Project Site											
-	Coney North & Mermaid Avenue	31	116	71	71	121	64	93	89	90	94
-	Coney West	13	13	68	68	33	33	36	30	30	36
TOTAL		210	284	331	291	640	341	351	309	564	328

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Traffic volumes along Cropsey Avenue between the Belt Parkway and Neptune Avenue would be expected to increase by 270 to 300 vph in the northbound direction during the weekday AM peak hour, and 190 to 260 during the weekday midday and PM peak hours. Traffic volumes traveling southbound along this section would be expected to increase by 220 to 240 vph during the weekday AM and midday peak hours, and 360 to 400 vph during the weekday PM peak hour. During the Saturday peak hours, traffic volumes traveling northbound would be expected to increase by 250 to 290 vph in this section. Southbound volumes would be expected to increase by 290 to 330 vph during the Saturday midday peak hour, increasing to 330 to 370 vph during the Saturday PM peak hour.

South of Neptune Avenue, where Cropsey Avenue transitions to West 17th Street, traffic volumes would be expected to increase by 80 to 130 vph in the northbound direction and 40 to 70 vph in the southbound direction during the weekday AM peak hour, and 70 to 110 vph in each direction during the weekday midday peak hour. Traffic volumes would be expected to increase by 100 to 190 vph in the northbound direction during the weekday PM peak hour, and 90 to 150 vph during the Saturday peak hours. The traffic volume increment would be 110 to 170 vph in the southbound direction during the Saturday midday peak hour, and 150 to 210 vph during the weekday and Saturday PM peak hours.

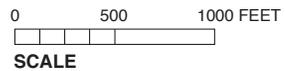
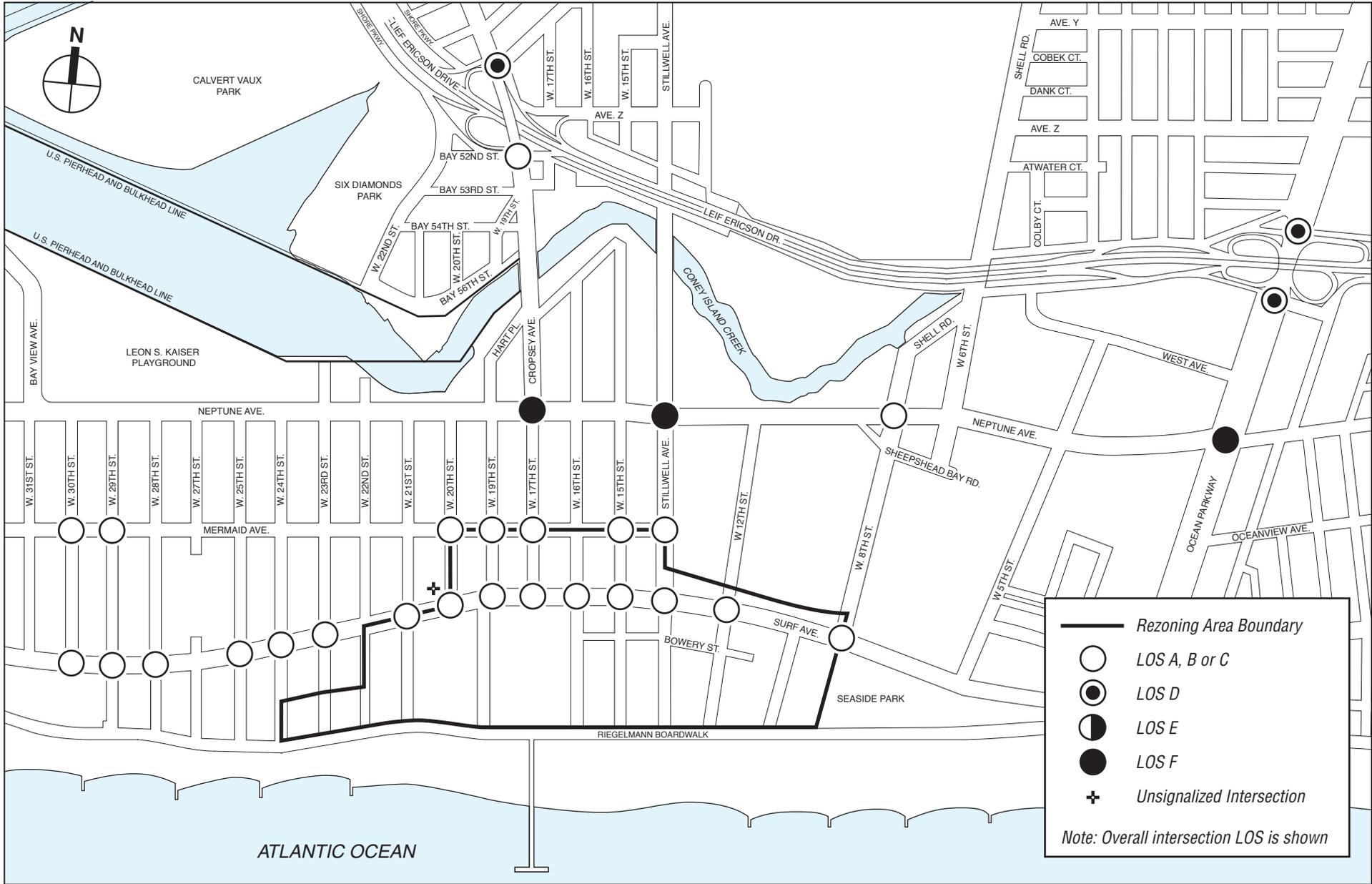
Traffic volumes along Ocean Parkway would be expected to increase by 140 to 230 vph in the northbound direction and by 180 to 230 vph in the southbound direction during the weekday AM and midday peak hours. During the Saturday midday peak hour, traffic volumes would increase by about 180 to 260 vph in the northbound direction and 230 to 250 vph in the southbound direction. The traffic volume increment would be 180 to 290 vph in the northbound direction and 410 to 510 in the southbound direction during the weekday and Saturday PM peak hours.

Along Stillwell Avenue and Shell Road, the traffic volume increment is expected to be consistent throughout all peak hours. Traffic volumes along both roadways are expected to increase by 30 to 90 vph in the northbound direction and 20 to 100 vph in the southbound direction.

Based on these traffic volume increases, future No Build traffic levels of service were determined for the 30 analysis locations. **Tables 16-6** and **16-7** show a comparison of traffic levels of service for existing conditions and future No Build scenario. **Figures 16-9** through **16-13** provide an illustrative overview of the overall intersection levels of service throughout the study area. In comparing overall intersection levels of service and individual traffic movement levels of service, some locations can be expected to deteriorate considerably and operate at LOS E or F under 2019 No Build, given the substantial volume of new traffic expected to be generated by the No Build development in the area.

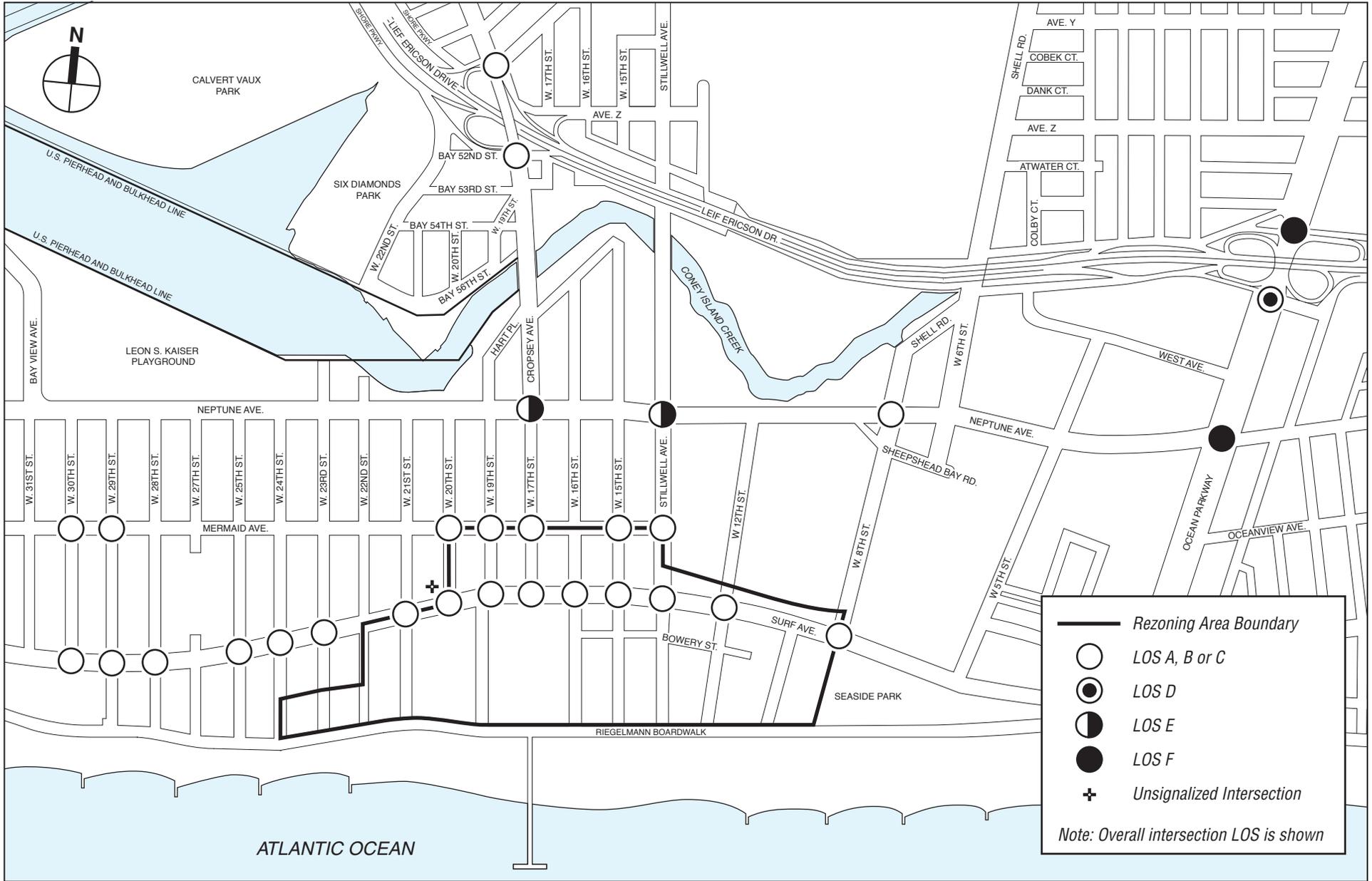
Table 16-6
Intersection Level of Service Summary Comparison
Existing Conditions vs. 2019 No Build Scenario (Weekday)

	Existing			2019 No Build		
	AM	Midday	PM	AM	Midday	PM
Overall LOS A/B/C	26	28	28	24	25	21
Overall LOS D	4	2	2	3	1	4
Overall LOS E	0	0	0	0	2	2
Overall LOS F	0	0	0	3	2	3
Number of movements at LOS E or F (of approximately 132 movements analyzed)	7	9	9	19	16	23
Note:	Includes the unsignalized intersection of Surf Avenue and West 20th Street which operates at LOS A during all traffic analysis hours in both conditions.					



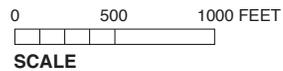
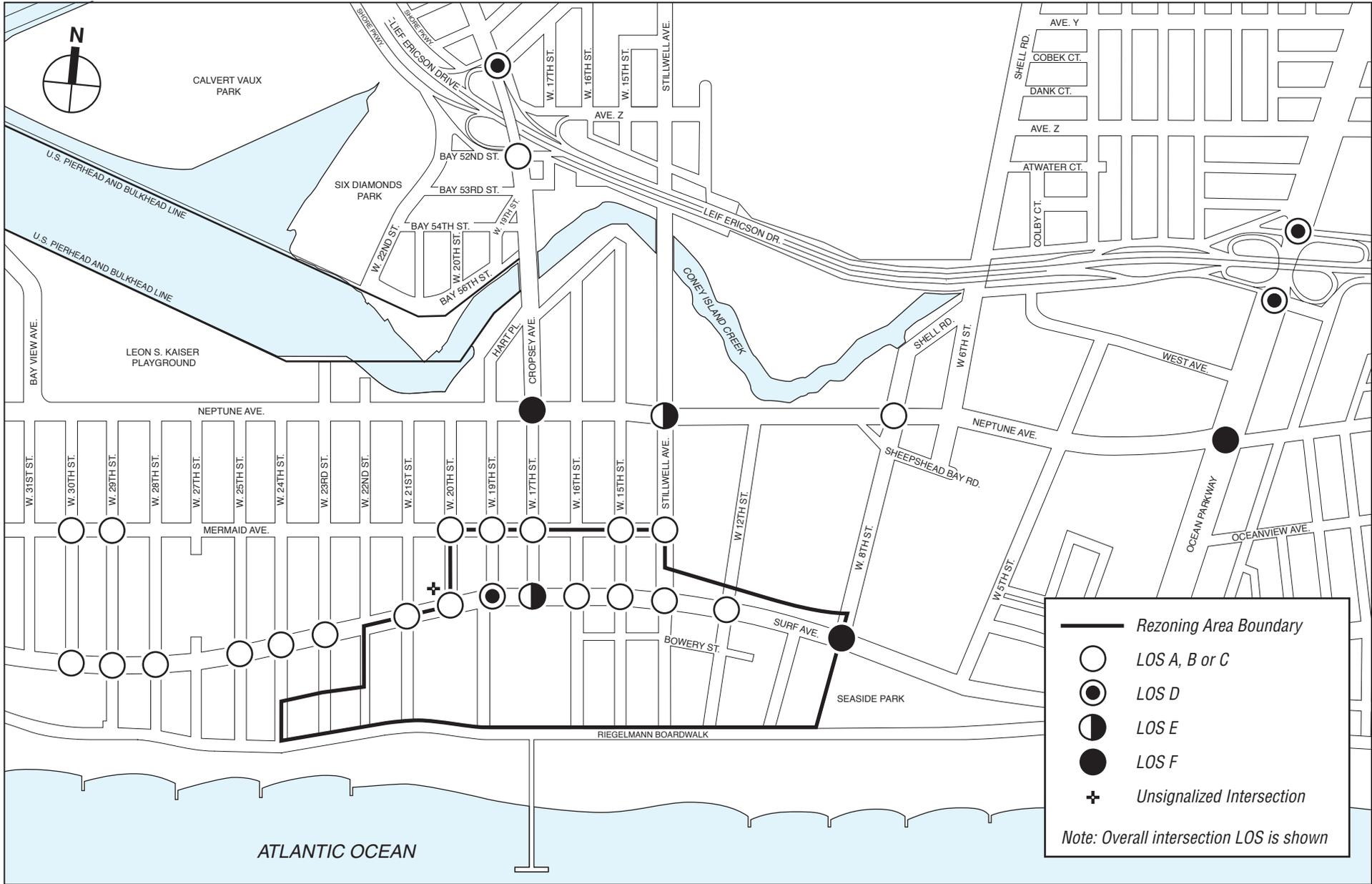
CONEY ISLAND REZONING

2019 No Build Traffic Levels of Service
Weekday AM Peak Hour
Figure 16-9



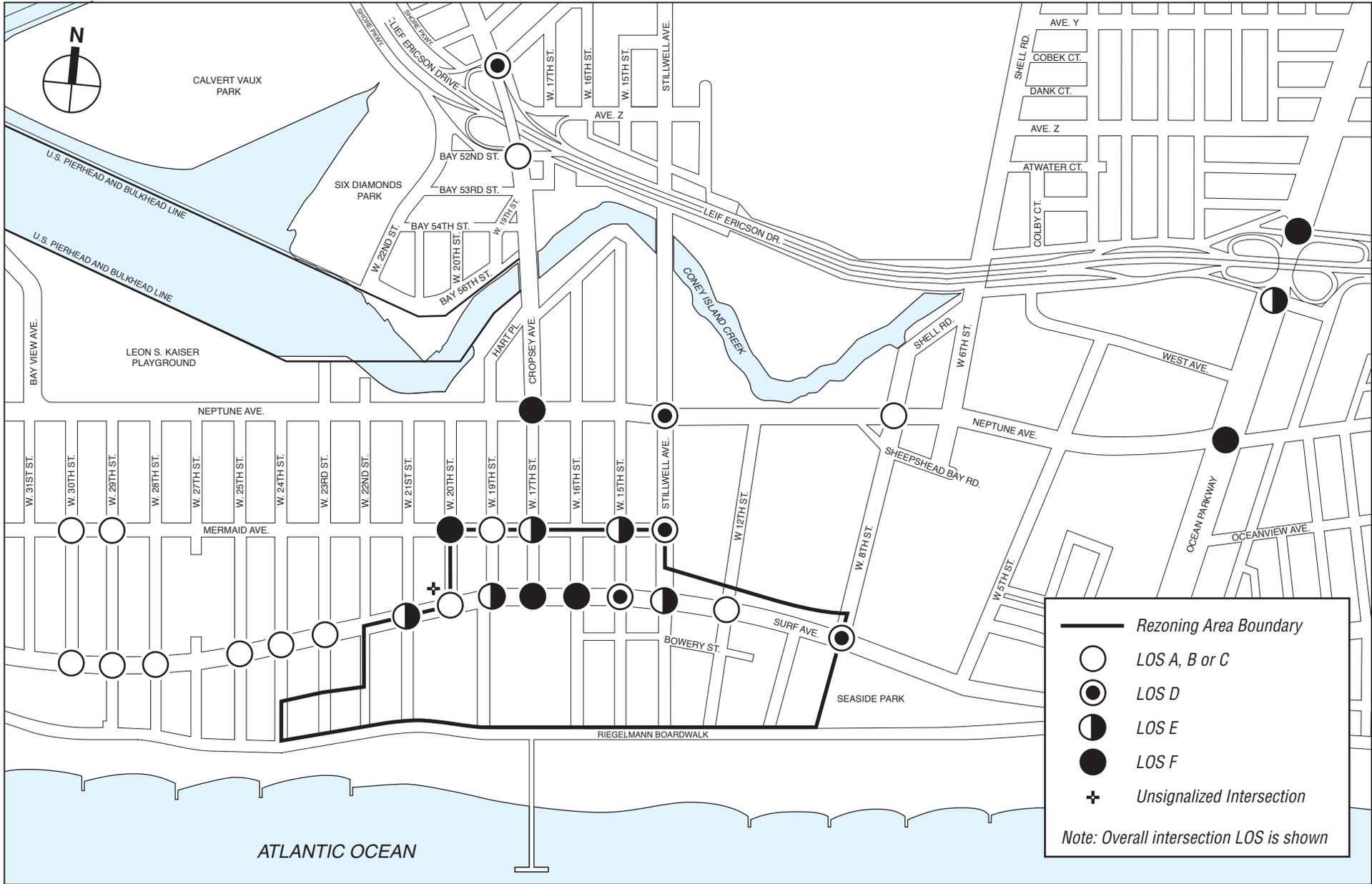
CONEY ISLAND REZONING

2019 No Build Traffic Levels of Service
Weekday Midday Peak Hour
Figure 16-10



CONEY ISLAND REZONING

2019 No Build Traffic Levels of Service
Weekday PM Peak Hour
Figure 16-11



0 500 1000 FEET
SCALE

CONEY ISLAND REZONING

2019 No Build Traffic Levels of Service
Saturday PM Peak Hour
Figure 16-13

Table 16-7

**Intersection Level of Service Summary Comparison
Existing Conditions vs. 2019 No Build Scenario (Saturday)**

	Existing		2019 No Build	
	Midday	PM	Midday	PM
Overall LOS A/B/C	28	25	24	13
Overall LOS D	2	5	4	5
Overall LOS E	0	0	0	6
Overall LOS F	0	0	2	6
Number of movements at LOS E or F (of approximately 132 movements analyzed)	11	25	22	38
Note: Includes the unsignalized intersection of Surf Avenue and West 20th Street which operates at LOS A during all traffic analysis hours in both conditions.				

This summary overview of the future No Build scenario indicates that:

- In the weekday AM peak hour, three of the 30 study area intersections analyzed would operate at overall LOS E or F, as compared to none under existing conditions, and three intersections would operate at marginally acceptable/unacceptable LOS D, as compared to four under existing conditions. As shown in **Figure 16-9**, these intersections are located along the key roadways of Neptune Avenue, Ocean Parkway and Cropsey Avenue, and include the intersections of Neptune Avenue with Cropsey Avenue/West 17th Street and with Stillwell Avenue, the intersections of Ocean Parkway with Neptune Avenue, Shore Parkway South, and Shore Parkway North, and the intersection of Cropsey Avenue and Bay 50th Street. Overall, 19 individual traffic movements out of approximately 132 such movements analyzed would be at LOS E or F (e.g., left turns from one street to another, through traffic on one street passing through the intersection, etc), as compared to seven under existing conditions.
- In the weekday midday peak hour, four intersections would operate at overall LOS E or F, as compared to none under existing conditions, and one intersection would operate at marginally acceptable/unacceptable LOS D, as compared to two under existing conditions. These intersections are located along the key roadways of Neptune Avenue and Ocean Parkway, and include the intersections of Neptune Avenue with Cropsey Avenue/West 17th Street and with Stillwell Avenue, and the intersections of Ocean Parkway with Neptune Avenue, Shore Parkway North, and Shore Parkway South. Sixteen individual traffic movements would operate at LOS E or F, as compared to nine under existing conditions. **Figure 16-10** illustrates the location of these intersections.
- In the weekday PM peak hour, five intersections analyzed would operate at overall LOS E or F, as compared to none under existing conditions, and four intersections would operate at marginally acceptable/unacceptable LOS D, as compared to two under existing conditions. These locations are the same as those in the weekday AM peak with the addition of the intersections of Surf Avenue with West 19th Street, West 17th Street and West 8th Street. Twenty-three individual traffic movements would operate at LOS E or F, as compared to nine under existing conditions. **Figure 16-11** illustrates the location of these intersections.
- In the Saturday midday peak hour, two intersections analyzed would operate at overall LOS E or F, as compared to none under existing conditions, and four intersections would operate at marginally acceptable/unacceptable LOS D, as compared to two under existing conditions. These locations are the same as those in the weekday midday peak with the addition of the intersection of Surf Avenue and West 17th Street. Twenty-two individual

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traffic movements would operate at LOS E or F, as compared to 11 under existing conditions. **Figure 16-12** illustrates the location of these intersections.

- In the Saturday PM peak hour, 12 intersections analyzed would operate at overall LOS E or F, as compared to none under existing conditions, and five intersections would operate at marginally acceptable/unacceptable LOS D, as compared to five under existing conditions. These locations are along the key roadways of Surf Avenue, Mermaid Avenue, Neptune Avenue and Ocean Parkway and include the intersections of: Surf Avenue with West 21st Street, West 19th Street, West 17th Street, West 16th Street, West 15th Street, Stillwell Avenue, and West 8th Street; Mermaid Avenue with West 20th Street, West 17th Street, West 15th Street and Stillwell Avenue; Neptune Avenue with Cropsey Avenue/West 17th Street, and Stillwell Avenue; the intersections of Ocean Parkway with Neptune Avenue, Shore Parkway South, and Shore Parkway North; and the intersection of Cropsey Avenue and Bay 50th Street. Thirty-eight individual traffic movements would operate at LOS E or F, as compared to 25 under existing conditions. **Figure 16-13** illustrates the location of these intersections.

PARKING

To estimate future parking conditions, existing occupancy at public parking facilities and on-street parking was increased by the background traffic growth rate of one percent per year. Vehicle trips generated by No Build project sites within the study area were assigned to park on-site or assumed to find parking nearby.

Tables 16-8 and **16-9** present the capacity and projected occupancy for the public parking facilities for the No Build scenario. All but one of the five public parking facilities (the commercial parking lot north of Surf Avenue between West 17th and West 16th Streets) are at least 95 percent occupied in existing conditions during the Saturday PM peak hour. Two facilities (KeySpan Park main lot and the commercial lot south of Surf Avenue between West 15th Street and Stillwell Avenue) are at least 95 percent occupied in existing conditions in the weekday PM and Saturday midday peak hours, respectively. Under the No Build scenario, occupancy of the public parking facilities was increased by one percent per year except where the parking facility was already at least 95 percent occupied. During these peak times, vehicles would have to park elsewhere in the area. Occupancy during each of the peak hours is expected to rise by one to four percent overall. Additional parking facilities would be developed in the Coney North subdistrict to accommodate the parking demand for the as-of-right developments expected to be built in Coney North and Coney West. As shown in **Tables 16-10** and **16-11**, parking demand generated from the as-of-right developments would be fully accommodated by the off-street parking facilities.

On-street parking would also be expected to increase under the No Build scenario due to the substantial projected increase of traffic in the area. Projected on-street parking occupancy under the No Build scenario will range from 70 percent to 80 percent in the weekday AM peak period, 87 percent to 93 percent during the weekday midday peak period, and 85 percent to 90 percent during the weekday PM peak hour. A shortfall is expected in all Saturday peak periods.

Table 16-8
2019 No Build Public Parking Facilities Occupancy (Weekday)

Lot #	Location	Capacity	Occupancy at 9–10 AM	Occupancy at 1–2 PM	Occupancy at 6–7 PM
1	KeySpan Park Satellite Lot - South of Surf Avenue between West 22nd Street and West 21st Street	200	N/A ²	N/A ²	N/A ²
			N/A ²	N/A ²	N/A ²
2	KeySpan Park Main Lot - South of Surf Avenue between West 19th Street and West 16th Street	750	43	106	709
			6%	14%	95%
3	Commercial Lot - North of Surf Avenue between West 17th Street and West 16th Street	145	0	0	33
			0%	0%	23%
4	Commercial Lot - South of Surf Avenue between West 15th Street and Stillwell Avenue	30	0	30	30
			0%	100%	100%
5	Commercial Lot - North of Surf Avenue between Stillwell Avenue and West 12th Street	130	118	111	74
			91%	85%	57%
Total Spaces		1,055	162	247	846
Percent Occupancy			13%	20%	67%

Note:

1. Parking garages/lots at 95% capacity or greater in the existing conditions are considered at capacity and no additional vehicles are assigned to them for future conditions analyses.
2. Parking in the KeySpan Park Satellite is only available when there is insufficient parking supply at the main lot during Brooklyn Cyclone ball games.

Table 16-9
2019 No Build Public Parking Facilities Occupancy (Saturday)

Lot #	Location	Capacity	Occupancy at 1–2 PM	Occupancy at 6–7 PM
1	KeySpan Park Satellite Lot - South of Surf Avenue between West 22nd Street and West 21st Street	200	N/A ²	198
			N/A ²	99%
2	KeySpan Park Main Lot - South of Surf Avenue between West 19th Street and West 16th Street	750	230	743
			31%	99%
3	Commercial Lot - North of Surf Avenue between West 17th Street and West 16th Street	145	0	132
			0%	91%
4	Commercial Lot - South of Surf Avenue between West 15th Street and Stillwell Avenue	30	30	30
			100%	100%
5	Commercial Lot - North of Surf Avenue between Stillwell Avenue and West 12th Street	130	118	129
			91%	99%
Total Spaces		1,255	379	1,231
Percent Occupancy			30%	98%

Note:

1. Parking garages/lots at 95% capacity or greater in the existing conditions are considered at capacity and no additional vehicles are assigned to them for future conditions analyses.
2. Parking in the KeySpan Park Satellite is only available when there is insufficient parking supply at the main lot during Brooklyn Cyclone ball games.

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Table 16-10

Weekday Parking Accumulation - No Build As-Of-Right Developments

Time	Coney West				Coney North				Overall			
	Autos In	Autos Out	Accumulated Parking Demand		Autos In	Autos Out	Accumulated Parking Demand		Autos In	Autos Out	Accumulated Parking Demand	
			No.	%			No.	%			No.	%
Midnight – 1 AM	0	0	0	0	5	5	294	33	5	5	294	33
1–2 AM	0	0	0	0	5	5	295	33	5	5	295	33
2–3 AM	0	0	0	0	0	0	296	33	0	0	296	33
3–4 AM	0	0	0	0	0	0	296	33	0	0	296	33
4–5 AM	0	0	0	0	0	0	296	33	0	0	296	33
5–6 AM	0	0	0	0	10	10	296	33	10	10	296	33
6–7 AM	0	0	0	0	5	15	296	33	5	15	296	33
7–8 AM	5	0	5	1	16	47	257	29	21	47	262	30
8–9 AM	11	11	5	1	22	59	172	19	33	70	177	20
9–10 AM	4	3	6	1	28	75	119	13	32	78	125	14
10–11 AM	4	3	7	1	46	97	86	10	50	100	93	10
11 AM–Noon	10	11	6	1	52	122	75	8	62	133	81	9
12–1 PM	66	66	6	1	83	91	75	8	149	157	81	9
1–2 PM	52	52	6	1	89	85	73	8	141	137	79	9
2–3 PM	28	28	6	1	104	74	74	8	132	102	80	9
3–4 PM	28	28	6	1	104	72	75	8	132	100	81	9
4–5 PM	28	27	7	1	87	91	94	11	115	118	101	11
5–6 PM	33	33	7	1	98	70	151	17	131	103	158	18
6–7 PM	214	214	7	1	104	64	189	21	318	278	196	22
7–8 PM	27	27	7	1	110	56	234	26	137	83	241	27
8–9 PM	16	19	4	0	93	54	253	29	109	73	257	29
9–10 PM	5	9	0	0	78	45	266	30	83	54	266	30
10–11 PM	0	0	0	0	30	31	284	32	30	31	284	32
11 PM–Midnight	0	0	0	0	10	11	295	33	10	11	295	33
Total Parking Spaces												884

Table 16-11

Saturday Parking Accumulation - No Build As-Of-Right Developments

Time	Coney West				Coney North				Overall			
	Autos In	Autos Out	Accumulated Parking Demand		Autos In	Autos Out	Accumulated Parking Demand		Autos In	Autos Out	Accumulated Parking Demand	
			No.	%			No.	%			No.	%
Midnight - 1 AM	0	0	0	0	8	7	294	33	8	7	294	33
1–2 AM	0	0	0	0	8	7	294	33	8	7	294	33
2–3 AM	0	0	0	0	0	0	294	33	0	0	294	33
3–4 AM	0	0	0	0	0	0	294	33	0	0	294	33
4–5 AM	0	0	0	0	0	0	294	33	0	0	294	33
5–6 AM	0	0	0	0	14	15	294	33	14	15	294	33
6–7 AM	0	0	0	0	7	22	284	32	7	22	284	32
7–8 AM	0	0	0	0	27	72	253	29	27	72	253	29
8–9 AM	3	0	3	0	45	94	216	24	48	94	219	25
9–10 AM	6	1	8	1	58	120	169	19	64	121	177	20
10–11 AM	28	7	29	3	114	162	118	13	142	169	147	17
11 AM–Noon	33	33	29	3	155	236	48	5	188	269	77	9
12–1 PM	36	30	35	4	194	193	40	4	230	223	75	8
1–2 PM	36	30	41	5	224	201	44	5	260	231	85	10
2–3 PM	36	30	47	5	223	176	74	8	259	206	121	14
3–4 PM	36	30	53	6	224	175	106	12	260	205	159	18
4–5 PM	30	36	47	5	185	199	102	12	215	235	149	17
5–6 PM	28	28	47	5	207	168	130	15	235	196	177	20
6–7 PM	25	31	41	5	213	168	170	19	238	199	211	24
7–8 PM	23	29	35	4	212	153	224	25	235	182	259	29
8–9 PM	18	31	22	2	178	145	263	30	196	176	285	32
9–10 PM	8	30	0	0	138	124	296	33	146	154	296	33
10–11 PM	0	0	0	0	47	45	295	33	47	45	295	33
11 PM–Midnight	0	0	0	0	16	13	294	33	16	13	294	33
Total Parking Spaces												884

D. PROBABLE IMPACTS OF THE PROPOSED ACTIONS

This section presents an analysis of future traffic and parking conditions under the Build scenario in 2019. As described in Chapter 1, “Project Description,” the reasonable worst-case development scenario (RWCDs) that would result from the proposed actions consists of: approximately 251,500 sf of amusement space, 333,300 sf of themed retail space (also referred to as amusement-enhancing uses in this DEIS), 43,300 sf of small-scale accessory retail space, 468 hotel rooms, 261,360 sf of amusement park space and three acres of parkland in the Coney East subdistrict; 1,520 dwelling units, 26,400 sf of destination retail space and 105,600 sf of local retail space in the Coney West subdistrict; and 888 dwelling units, 29,400 sf of destination retail space, 117,600 sf of local retail space and 138 hotel rooms in the Coney North and Mermaid Avenue subdistricts. In total, approximately 2,408 dwelling units, 251,500 sf of amusement space, 333,300 sf of themed retail (amusement-enhancing) space, 55,800 sf of destination retail space, 266,500 sf of local and small-scale accessory retail space, 606 hotel rooms, 261,360 sf of amusement park space and three acres of parkland would be expected to be developed as part of the proposed actions. This section includes a determination of the volume of vehicle trips generated under the Build scenario, their distribution within the study area roadway network, the analysis of future traffic levels of service, the identification of significant impacts as per *CEQR Technical Manual* guidelines, and hour-by-hour parking accumulation estimates for the proposed actions. Mitigation measures are discussed in Chapter 22, “Mitigation.”

TRIP GENERATION AND MODAL SPLIT

To estimate the volume of traffic generated by the proposed actions during the peak traffic hours, a detailed trip generation analysis was performed. Travel demand factors used to calculate the projected number of trips were obtained primarily from previously approved EIS studies (such as *Atlantic Yards Redevelopment Project FEIS [2006]*, *No. 7 Subway Extension – Hudson Yards Rezoning and Development Program FGEIS [2004]*, *Gateway Center at Bronx Terminal Market FEIS [2005]*, *Jamaica Plan FEIS [2007]*, *The Baseball Stadium at Steeplechase Park FEIS [2000]*, *Greenpoint-Williamsburg Rezoning FEIS [2005]*), the *CEQR Technical Manual*, *ITE Trip Generation Manual*, U.S. Census 2000 data, and reasonable planning assumptions. Travel demand factors used to calculate trips generated by each of these land uses are summarized in **Tables 16-12** through **16-15** and described in detail below.

RESIDENTIAL

For residential space, a trip generation rate of 8.075 person trips per dwelling unit and temporal distribution of 9.1 percent, 4.7 percent, and 10.7 percent during the weekday AM, midday, and PM peak hours, respectively, were obtained from the *CEQR Technical Manual*. A Saturday trip generation rate of 9.575 trips per dwelling unit was obtained by adjusting the weekday rate from the *ITE Trip Generation Manual*, and temporal distributions of 7.0 percent and 7.2 percent during the Saturday midday and PM peak hours, respectively, were from the *Atlantic Yards Redevelopment Project FEIS*. A weekday modal split of 32 percent by auto, 1 percent by taxi, 45 percent by subway, 10 percent by bus, and 12 percent by walk, and Saturday modal splits of 40 percent by auto, 1 percent by taxi, 25 percent by subway, 4 percent by bus, and 30 percent by walk were derived from U.S. Census 2000 journey-to-work data for Brooklyn Census Tracts 326, 348.01, 348.02, 350, 352, and 354. Modal splits were adjusted for Saturday to reflect an anticipated higher auto and walk share.

Table 16-12

Weekday Travel Demand Characteristics: Build Scenario

Rates	Residential	Hotel	Destination Retail	Local and Accessory Retail
Size	2408 DU	606 Rooms	55,800 SF	266,500 SF
Person Trip Generation Rate	8.075 per DU ¹	9.40 per Room ¹	78.2 per 1,000 SF ^{2,12}	205.0 per 1,000 SF ⁴
Temporal Distribution				
AM Peak	9.1% ¹	7.5% ¹	2.4% ²	3.1% ⁴
Midday Peak	4.7% ¹	14.4% ¹	8.7% ²	19.1% ⁴
PM Peak	10.7% ¹	12.8% ¹	8.9% ²	9.6% ⁴
Linked Trip Credit			25.0% ⁹	25.0% ⁸
Modal Split				
	(AM / MD / PM) ⁵	(AM / MD / PM) ^{6,12}	(AM / MD / PM) ¹²	(AM / MD / PM) ^{6,9}
Auto	32.0%	45.0%	59.0%	15.0%
Taxi	1.0%	15.0%	3.0%	0.0%
Subway	45.0%	10.0%	15.0%	5.0%
Bus	10.0%	5.0%	18.0%	10.0%
Walk Only	12.0%	25.0%	5.0%	70.0%
Vehicle Occupancy				
Auto	1.18 ⁵	1.60 ¹¹	2.05 ¹²	2.00 ⁴
Taxi	1.18 ^{5,9}	1.40 ¹¹	2.05 ^{6,12}	2.00 ⁴
Directional Split (Ins)				
AM Peak	15.0% ⁷	41.0% ⁴	61.0% ²	50.0% ⁴
Midday Peak	50.0% ⁷	69.0% ¹²	55.0% ²	50.0% ⁴
PM Peak	70.0% ⁷	57.6% ¹²	47.0% ²	50.0% ⁴
Truck Trip Generation Rate	0.06 per DU ³	0.24 per Room ¹⁰	0.70 per 1,000 SF ¹²	0.70 per 1,000 SF ⁴
Truck Temporal Distribution				
AM Peak	12.0% ⁸	12.0% ⁴	7.7% ⁷	7.7% ¹⁴
Midday Peak	9.0% ⁸	9.0% ⁴	11.0% ⁷	11.0% ¹⁴
PM Peak	2.0% ⁸	1.0% ⁵	1.0% ⁷	1.0% ¹⁴
Truck Trip Directional Split (Ins)				
AM Peak	50.0%	50.0%	50.0%	50.0%
Midday Peak	50.0%	50.0%	50.0%	50.0%
PM Peak	50.0%	50.0%	50.0%	50.0%
Trip Generation References				
(1) New York City Mayor's Office of Environmental Coordination, City Environmental Quality Review Technical Manual (2001).				
(2) Institute for Transportation Engineers, Trip Generation Manual, 7th Edition (2003).				
(3) Wilbur Smith Associates, Motor Trucks in the Metropolis (1969).				
(4) Atlantic Yards Redevelopment Project Final Environmental Impact Statement (2006).				
(5) U.S. Department of Commerce, Bureau of the Census, Census 2000.				
(6) AKRF assumption.				
(7) No. 7 Subway Extension-Hudson Yards Rezoning and Development Program Final Generic Environmental Impact Statement (2004).				
(8) Curbside Pickup & Delivery Operations & Arterial Traffic Impacts, FHWA, February 1981.				
(9) Gateway Estates Final Environmental Impact Statement (1996).				
(10) 42 Street Development Project: General Project Plan Amendment Final Supplemental Environmental Impact Statement (1994).				
(11) AKRF surveys at the Renaissance Plaza Hotel, Brooklyn (1999).				
(12) Gateway Center at Bronx Terminal Market Final Environmental Impact Statement (2005).				
(13) Jamaica Plan Final Environmental Impact Statement (2007).				
(14) Coliseum Redevelopment Project Final Supplemental Environmental Impact Statement (1997).				
(15) Pushkarev & Zupan, Urban Space for Pedestrians (1975).				
(16) The Baseball Stadium at Steeplechase Park Final Environmental Impact Statement (2000).				
(17) Audience Research & Analysis, A Study of Visitors to Coney Island, Late Summer 2007 (2008).				
(18) Greenpoint-Williamsburg Rezoning Final Environmental Impact Statement (2005).				
(19) Saturday modal split adjusted to reflect anticipated higher auto and walk shares				

Table 16-13

Weekday Travel Demand Characteristics: Build Scenario (cont.)

Rates	Amusement/Entertainment	Themed Retail	Amusement Park	Parkland
Size	251,500 SF	333,300 SF	261,360 SF	3.0 acres
Person Trip Generation Rate	35.6	78.2	35.6	139
	per 1,000 SF ¹⁰	per 1,000 SF ^{2,12}	per 1,000 SF ¹⁰	per Acre ¹
Temporal Distribution				
AM Peak	2.4% ⁶	2.4% ²	2.4% ⁶	7.0% ¹
Midday Peak	7.4% ¹⁰	8.7% ²	7.4% ¹⁰	17.0% ¹
PM Peak	19.4% ¹⁰	8.9% ²	19.4% ¹⁰	14.0% ¹
Linked Trip Credit	25.0% ⁶	25.0% ⁶	25.0% ⁶	
Modal Split				
	(AM / MD / PM) ^{6,16,17}	(AM / MD / PM) ^{6,12,17}	(AM / MD / PM) ^{6,16,17}	(AM / MD / PM) ^{6,16,17}
Auto	40.0%	40.0%	40.0%	40.0%
Taxi	1.0%	3.0%	1.0%	1.0%
Subway	50.0%	41.0%	50.0%	50.0%
Bus	4.0%	11.0%	4.0%	4.0%
Walk Only	5.0%	5.0%	5.0%	5.0%
Vehicle Occupancy				
Auto	2.80 ¹⁶	2.80 ¹⁶	2.80 ¹⁶	2.80 ¹⁶
Taxi	2.80 ^{6,16}	2.80 ^{6,16}	2.80 ^{6,16}	2.80 ^{6,16}
Directional Split (Ins)				
AM Peak	50.0% ¹⁰	61.0% ²	50.0% ¹⁰	55% ¹⁸
Midday Peak	57.0% ¹⁰	55.0% ²	57.0% ¹⁰	50% ¹⁸
PM Peak	49.0% ¹⁰	47.0% ²	49.0% ¹⁰	45% ¹⁸
Truck Trip Generation Rate	0.08	0.70	0.08	0.02
	per 1,000 SF ¹⁰	per 1,000 SF ¹²	per 1,000 SF ¹⁰	per Acre ⁶
Truck Temporal Distribution				
AM Peak	12.0% ⁸	7.7% ⁷	12.0% ⁸	6.0% ⁶
Midday Peak	9.0% ⁸	11.0% ⁷	9.0% ⁸	6.0% ⁶
PM Peak	2.0% ⁸	1.0% ⁷	2.0% ⁸	1.0% ⁶
Truck Trip Directional Split (Ins)				
AM Peak	50.0%	50.0%	50.0%	50.0%
Midday Peak	50.0%	50.0%	50.0%	50.0%
PM Peak	50.0%	50.0%	50.0%	50.0%
Trip Generation References				
(1) New York City Mayor's Office of Environmental Coordination, City Environmental Quality Review Technical Manual (2001).				
(2) Institute for Transportation Engineers, Trip Generation Manual, 7th Edition (2003).				
(3) Wilbur Smith Associates, Motor Trucks in the Metropolis (1969).				
(4) Atlantic Yards Redevelopment Project Final Environmental Impact Statement (2006).				
(5) U.S. Department of Commerce, Bureau of the Census, Census 2000.				
(6) AKRF assumption.				
(7) No. 7 Subway Extension-Hudson Yards Rezoning and Development Program Final Generic Environmental Impact Statement (2004).				
(8) Curbside Pickup & Delivery Operations & Arterial Traffic Impacts, FHWA, February 1981.				
(9) Gateway Estates Final Environmental Impact Statement (1996).				
(10) 42 Street Development Project: General Project Plan Amendment Final Supplemental Environmental Impact Statement (1994).				
(11) AKRF surveys at the Renaissance Plaza Hotel, Brooklyn (1999).				
(12) Gateway Center at Bronx Terminal Market Final Environmental Impact Statement (2005).				
(13) Jamaica Plan Final Environmental Impact Statement (2007).				
(14) Coliseum Redevelopment Project Final Supplemental Environmental Impact Statement (1997).				
(15) Pushkarev & Zupan, Urban Space for Pedestrians (1975).				
(16) The Baseball Stadium at Steeplechase Park Final Environmental Impact Statement (2000).				
(17) Audience Research & Analysis, A Study of Visitors to Coney Island, Late Summer 2007 (2008).				
(18) Greenpoint-Williamsburg Rezoning Final Environmental Impact Statement (2005).				
(19) Saturday modal split adjusted to reflect anticipated higher auto and walk shares				

Table 16-14

Saturday Travel Demand Characteristics: Build Scenario

Rates	Residential	Hotel	Destination Retail	Local and Accessory Retail
Size	2408 DU	606 Rooms	55,800 SF	266,500 SF
Person Trip Generation Rate	9.575 per DU ^{1,2}	9.40 per Room ¹	92.5 per 1,000 SF ^{2,12}	205.0 per 1,000 SF ⁴
Temporal Distribution				
Midday Peak	7.0% ⁴	14.4% ^{4,6}	11.5% ¹³	9.5% ⁴
PM Peak	7.2% ⁴	7.5% ⁶	6.0% ¹²	9.5% ⁴
Linked Trip Credit			25.0% ⁶	25.0% ⁶
Modal Split				
	(MD / PM) ^{5,16,19}	(MD / PM) ^{5,12}	(MD / PM) ¹²	(MD / PM) ^{6,9}
Auto	40.0%	45.0%	59.0%	15.0%
Taxi	1.0%	15.0%	5.0%	0.0%
Subway	25.0%	10.0%	13.0%	5.0%
Bus	4.0%	5.0%	18.0%	10.0%
Walk Only	30.0%	25.0%	5.0%	70.0%
Vehicle Occupancy				
Auto	1.18 ⁵	2.20 ^{4,6}	2.49 ¹²	2.00 ⁴
Taxi	1.18 ^{5,6}	1.40 ¹¹	2.49 ^{6,12}	2.00 ⁴
Directional Split (Ins)				
Midday Peak	50.0% ⁴	56.0% ⁴	55.0% ¹³	55.0% ⁴
PM Peak	50.0% ⁴	50.0% ⁶	47.5% ¹²	45.0% ⁴
Truck Trip Generation Rate	0.02 per DU ⁴	0.08 per Room ^{5,10}	0.04 per 1,000 SF ⁴	0.04 per 1,000 SF ⁴
Truck Temporal Distribution				
Midday Peak	9.0% ⁵	9.0% ⁴	11.0% ⁴	11.0% ¹⁴
PM Peak	2.0% ⁶	1.0% ⁶	2.0% ⁴	2.0% ⁴
Truck Trip Directional Split (Ins)				
Midday Peak	50.0%	50.0%	50.0%	50.0%
PM Peak	50.0%	50.0%	50.0%	50.0%
Trip Generation References				
(1) New York City Mayor's Office of Environmental Coordination, City Environmental Quality Review Technical Manual (2001).				
(2) Institute for Transportation Engineers, Trip Generation Manual, 7th Edition (2003).				
(3) Wilbur Smith Associates, Motor Trucks in the Metropolis (1969).				
(4) Atlantic Yards Redevelopment Project Final Environmental Impact Statement (2006).				
(5) U.S. Department of Commerce, Bureau of the Census, Census 2000.				
(6) AKRF assumption.				
(7) No. 7 Subway Extension-Hudson Yards Rezoning and Development Program Final Generic Environmental Impact Statement (2004).				
(8) Curbside Pickup & Delivery Operations & Arterial Traffic Impacts, FHWA, February 1981.				
(9) Gateway Estates Final Environmental Impact Statement (1996).				
(10) 42 Street Development Project: General Project Plan Amendment Final Supplemental Environmental Impact Statement (1994).				
(11) AKRF surveys at the Renaissance Plaza Hotel, Brooklyn (1999).				
(12) Gateway Center at Bronx Terminal Market Final Environmental Impact Statement (2005).				
(13) Jamaica Plan Final Environmental Impact Statement (2007).				
(14) Coliseum Redevelopment Project Final Supplemental Environmental Impact Statement (1997).				
(15) Pushkarev & Zupan, Urban Space for Pedestrians (1975).				
(16) The Baseball Stadium at Steeplechase Park Final Environmental Impact Statement (2000).				
(17) Audience Research & Analysis, A Study of Visitors to Coney Island, Late Summer 2007 (2008).				
(18) Greenpoint-Williamsburg Rezoning Final Environmental Impact Statement (2005).				

**Table 16-15
Saturday Travel Demand Characteristics: Build Scenario (cont.)**

Rates	Amusement/Entertainment	Themed Retail	Amusement Park	Parkland
Size	251,500 SF	333,300 SF	261,360 SF	3.0 acres
Person Trip Generation Rate	84.7	92.5	84.7	158
	per 1,000 SF ^{2,10}	per 1,000 SF ^{2,12}	per 1,000 SF ^{2,10}	per Acre ⁷
Temporal Distribution				
Midday Peak	10.5% ²	11.5% ¹³	10.5% ²	15.0% ⁶
PM Peak	10.5% ^{2,6}	6.0% ¹²	10.5% ^{2,6}	15.0% ⁶
Linked Trip Credit	25.0% ⁶	25.0% ⁶	25.0% ⁶	
Modal Split				
	(MD / PM) ^{6,16,17}	(MD / PM) ^{6,12,17}	(MD / PM) ^{6,16,17}	(MD / PM) ^{6,16,17}
Auto	40.0%	40.0%	40.0%	40.0%
Taxi	1.0%	3.0%	1.0%	1.0%
Subway	50.0%	41.0%	50.0%	50.0%
Bus	4.0%	11.0%	4.0%	4.0%
Walk Only	5.0%	5.0%	5.0%	5.0%
Vehicle Occupancy				
Auto	2.80 ⁶	2.80 ¹⁶	2.80 ⁶	2.80 ^{6,16}
Taxi	2.80 ^{6,16}	2.80 ^{6,16}	2.80 ^{6,16}	2.80 ^{6,16}
Directional Split (Ins)				
Midday Peak	58.0% ²	55.0% ¹³	58.0% ²	55.0% ⁶
PM Peak	42.0% ^{2,6}	47.5% ¹²	42.0% ^{2,6}	45.0% ⁶
Truck Trip Generation Rate	0.04	0.04	0.04	0.00
	per 1,000 SF ^{6,10}	per 1,000 SF ⁴	per 1,000 SF ^{6,10}	per Acre ⁶
Truck Temporal Distribution				
Midday Peak	9.0% ⁸	11.0% ⁴	9.0% ⁸	0.0% ⁶
PM Peak	2.0% ⁶	2.0% ⁴	2.0% ⁶	1.0% ⁶
Truck Trip Directional Split (Ins)				
Midday Peak	50.0%	50.0%	50.0%	50.0%
PM Peak	50.0%	50.0%	50.0%	50.0%
Trip Generation References				
(1) New York City Mayor's Office of Environmental Coordination, City Environmental Quality Review Technical Manual (2001).				
(2) Institute for Transportation Engineers, Trip Generation Manual, 7th Edition (2003).				
(3) Wilbur Smith Associates, Motor Trucks in the Metropolis (1969).				
(4) Atlantic Yards Redevelopment Project Final Environmental Impact Statement (2006).				
(5) U.S. Department of Commerce, Bureau of the Census, Census 2000.				
(6) AKRF assumption.				
(7) No. 7 Subway Extension-Hudson Yards Rezoning and Development Program Final Generic Environmental Impact Statement (2004).				
(8) Curbside Pickup & Delivery Operations & Arterial Traffic Impacts, FHWA, February 1981.				
(9) Gateway Estates Final Environmental Impact Statement (1996).				
(10) 42 Street Development Project: General Project Plan Amendment Final Supplemental Environmental Impact Statement (1994).				
(11) AKRF surveys at the Renaissance Plaza Hotel, Brooklyn (1999).				
(12) Gateway Center at Bronx Terminal Market Final Environmental Impact Statement (2005).				
(13) Jamaica Plan Final Environmental Impact Statement (2007).				
(14) Coliseum Redevelopment Project Final Supplemental Environmental Impact Statement (1997).				
(15) Pushkarev & Zupan, Urban Space for Pedestrians (1975).				
(16) The Baseball Stadium at Steeplechase Park Final Environmental Impact Statement (2000).				
(17) Audience Research & Analysis: A Study of Visitors to Coney Island, Late Summer 2007 (2008).				
(18) Greenpoint-Williamsburg Rezoning Final Environmental Impact Statement (2005).				

Vehicle occupancy (1.18 persons per vehicle) was also obtained from U.S. Census data. Directional distributions of 15 percent “in” during the weekday AM peak hour, 50 percent “in” during the midday peak hour, and 70 percent “in” during the PM peak hour were obtained from the *No. 7 Subway Extension – Hudson Yards Rezoning and Development Program FGEIS* rates for residential use. Directional distributions of 50 percent “in” during the Saturday midday and PM peak hours were obtained from the *Atlantic Yards Redevelopment Project FEIS*.

For weekday delivery trips, a trip generation rate of 0.06 trips per dwelling unit was obtained from *Motortrucks in the Metropolis* (1969) and 0.02 trips per dwelling unit for Saturday delivery trips was obtained from the *Atlantic Yards Redevelopment Project FEIS*. A temporal distribution of 12 percent, 9 percent, and 2 percent for weekday AM, midday, and PM peak hours, respectively, and 9 percent for the Saturday midday peak hour were obtained from *Curbside Pickup and Delivery Operations and Arterial Traffic Impacts* (1981). A 2 percent temporal distribution was assumed for the Saturday PM peak hour.

HOTEL

For the hotel component, a trip generation rate of 9.4 person trips per room was obtained from the *CEQR Technical Manual* and applied for both the weekday and Saturday. A weekday

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temporal distribution of 7.5 percent during the AM peak hour, 14.4 percent during the midday peak hour, and 12.8 percent during the PM peak hour were obtained from the *CEQR Technical Manual*. For Saturday, a temporal distribution of 14.4 percent during the Saturday midday was developed from the *Atlantic Yards Redevelopment Project FEIS* with guidance from NYCDOT and a temporal distribution of 7.5 percent was assumed based on a comparison with the other peak hours analyzed. Weekday and Saturday modal splits of 45 percent by auto, 15 percent by taxi, 10 percent by subway, 5 percent by bus, and 25 percent by walk were based on the *Gateway Center at the Bronx Terminal Market FEIS* adjusted slightly to reflect local conditions. Vehicle occupancy rates (1.6 and 2.2 persons per auto for weekdays and Saturdays, respectively; 1.4 persons per taxi) came from the *AKRF Surveys at the Renaissance Hotel, Brooklyn (1999)*.

A weekday AM peak hour directional distribution of 41 percent “in” was obtained from the *Atlantic Yards Redevelopment Project FEIS* while midday and PM peak hour distributions (69 percent and 57.6 percent “in”, respectively) were obtained from the *Gateway Center at the Bronx Terminal Market FEIS*. For Saturday, a directional distribution of 56 percent “in” was also obtained from the *Gateway Center at the Bronx Terminal Market FEIS* while a distribution of 50 percent “in” was assumed for the PM peak hour.

For hotel delivery trips, a weekday trip generation rate of 0.24 daily trips per 1,000 sf was obtained from the *42nd Street Development Project: General Project Plan Amendment FSEIS (1994)*. The Saturday delivery trip rate of 0.08 daily trips per 1,000 sf was based on the weekday rate adjusted to account for fewer deliveries occurring during the weekend. Delivery temporal distributions for weekday AM (12 percent) and midday (9 percent), and Saturday midday (9 percent) peak hours were obtained from the *Atlantic Yards Redevelopment Project FEIS*. Weekday and Saturday PM peak hour temporal distributions (1 percent) were based on the assumption that few delivery trips would occur during these peak hours.

DESTINATION RETAIL

For destination retail space, weekday and Saturday trip generation rates of 78.2 and 92.5 daily person trips per 1,000 sf, respectively, were obtained from the *Gateway Center at the Bronx Terminal Market FEIS* using the *ITE Trip Generation Manual* to convert the rate from hourly to daily person trips. A 25 percent linked trip credit was assumed for all peak hours. Weekday temporal distributions (2.4 percent, 8.7 percent, and 8.9 percent during the AM, midday, and PM peak hours, respectively) were obtained from the *ITE Trip Generation Manual*, while a Saturday midday peak hour temporal distribution (11.5 percent) was obtained from the *Jamaica Plan FEIS* and a Saturday PM peak hour temporal distribution (6 percent) was obtained from the *Gateway Center at the Bronx Terminal Market FEIS*. A weekday modal split of 59 percent by auto, 3 percent by taxi, 15 percent by bus, 18 percent by subway and 5 percent walk, and Saturday modal split of 59 percent by auto, 5 percent by taxi, 13 percent by bus, 18 percent by subway and 5 percent by walk were obtained from the *Gateway Center at the Bronx Terminal Market FEIS*. Vehicle occupancies (for autos and taxis) of 2.05 and 2.49 persons per vehicle for weekday and Saturday, respectively were also obtained from the *Gateway Center at the Bronx Terminal Market FEIS*. Directional distributions for weekday AM (61 percent “in”), midday (55 percent “in”), PM peak hours (47 percent “in”) were also obtained from the *Gateway Center at the Bronx Terminal Market FEIS*. For Saturday, the midday peak hour directional distribution of 11.5 percent “in” was obtained from the *Jamaica Plan FEIS* while the PM peak hour distribution of 47.5 percent “in” was obtained from the *Gateway Center at the Bronx Terminal Market FEIS*.

Weekday truck trip generation rates of 0.70 trips per 1,000 sf and temporal distributions (7.7 percent, 11 percent and 1 percent during the AM, midday and PM peak hours, respectively) for destination retail deliveries were obtained from the *Gateway Center at the Bronx Terminal Market FEIS* and *No. 7 Subway Extension – Hudson Yards Rezoning and Development Program FGEIS*, respectively. Trip generation rates of 0.04 trips per 1,000 sf and temporal distribution (11 percent during the midday and 2 percent during the PM peak hour) were obtained for Saturday from the *Atlantic Yards Redevelopment Project FEIS*.

LOCAL AND SMALL-SCALE ACCESSORY RETAIL

For the local and small-scale accessory retail component, a person trip generation rate of 205 trips per 1,000 sf and temporal distributions of 3.1 percent, 19.1 percent, 9.6 percent, 9.5 percent and 9.5 percent during the weekday AM, midday, PM, Saturday midday, and Saturday PM peak hours were used from the *Atlantic Yards Redevelopment Project FEIS*. A 25 percent linked trip credit was assumed for all peak hours. Modal splits of 15 percent auto, 5 percent subway, 10 percent bus and 70 percent walk were used for all peak hours and obtained from the *Gateway Estates FEIS* (1996). Vehicle occupancy for auto and taxi (2 persons per vehicle during all peak hours) and directional distributions (50 percent “in” for the weekday AM, midday and PM peak hours, and 55 percent and 45 percent “in” for the Saturday midday and PM peak hours, respectively) were obtained from the *Atlantic Yards Redevelopment Project FEIS*.

Delivery trip generation rates of 0.70 trips per 1,000 sf during the weekday and 0.40 trips per 1,000 sf during the Saturday were obtained from the *Atlantic Yards Redevelopment Project FEIS*. The delivery temporal distribution (7.7 percent, 11 percent, 1 percent during weekday AM, midday and PM peak hours, respectively, and 11 percent and 2 percent for the Saturday midday and PM peak hours, respectively) were obtained from the *Atlantic Yards Redevelopment Project FEIS*.

AMUSEMENT AND ENTERTAINMENT

Amusement and entertainment trip generation rates of 35.6 person trips per 1,000 sf during the weekday and 8.47 person trips per 1,000 sf during the Saturday were based upon the *42nd Street Development Project: General Project Plan Amendment FSEIS*; the weekday rate was adjusted using data from the *ITE Trip Generation Manual* to develop the Saturday rate. A 25 percent linked trip credit was used since not all amusement and entertainment trips will be new trips; there are existing amusement and entertainment facilities that would be replaced under the proposed actions. The weekday temporal distribution (2.4 percent during the AM, 7.4 percent during the midday and 19.4 percent during the PM peak hours) and directional distribution (50 percent “in” during the AM, 57 percent “in” during the midday and 19.4 percent “in” during the PM peak hours) were developed from the *42nd Street Development Project: General Project Plan Amendment FSEIS*. The *ITE Trip Generation Manual* was used to obtain the Saturday midday temporal distribution of 10.5 percent and directional distribution of 58 percent “in”; the Saturday PM peak hour used the same temporal distribution and a reverse “in” percentage of the Saturday midday peak hour (42 percent “in”). A modal split of 40 percent auto, 1 percent taxi, 50 percent subway, 4 percent bus and 5 percent walk was derived from *The Baseball Stadium at Steeplechase Park FEIS* and the existing modal splits pattern found in the Audience Research & Analysis survey, *A Study of Visitors to Coney Island, Late Summer 2007. The Baseball Stadium at Steeplechase Park FEIS* was also used as the basis of the vehicle occupancy rate of 2.8 persons per vehicle for both autos and taxis (during all peak hours).

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Delivery trip generation rates for the amusement and entertainment component of 0.08 trips per 1,000 sf during the weekday and 0.04 trips per 1,000 sf during the Saturday were obtained from the *42nd Street Development Project: General Project Plan Amendment FSEIS*. The temporal distributions of 12 percent during the weekday AM, 9 percent during the weekday midday, 2 percent during the weekday PM, and 9 percent during the Saturday midday peak hours, and directional distribution of 2 percent “in” during those peak hours were based upon *Curbside Pickup and Delivery Operations and Arterial Traffic Impact*; Saturday PM peak hour distributions were assumed to the same as those of the weekday PM peak hour.

THEMED RETAIL

Themed retail developments in the Coney East subdistrict are similar to the destination retail developments in the Coney North and Coney West subdistricts but are expected to have different travel behavior because of amusement and entertainment characteristics to be developed in Coney East. Weekday and Saturday trip generation rates of 78.2 and 92.5 daily person trips per 1,000 sf, respectively, were obtained from the *Gateway Center at the Bronx Terminal Market FEIS* using the *ITE Trip Generation Manual* to convert the rate from hourly to daily person trips. A 25 percent linked trip credit was assumed for all peak hours. Weekday temporal distributions (2.4 percent, 8.7 percent, and 8.9 percent during the AM, midday, and PM peak hours, respectively) were obtained from the *ITE Trip Generation Manual* while the Saturday midday peak hour temporal distribution (11.5 percent) was obtained from the *Jamaica Plan FEIS*. The Saturday PM peak hour temporal distribution (6 percent) was obtained from the *Gateway Center at the Bronx Terminal Market FEIS*. A modal split of 40 percent auto, 3 percent taxi, 41 percent subway, 11 percent bus and 5 percent walk was derived from *The Baseball Stadium at Steeplechase Park FEIS* and the existing modal split patterns found in the Audience Research & Analysis survey, *A Study of Visitors to Coney Island, Late Summer 2007*. *The Baseball Stadium at Steeplechase Park FEIS* was also used as the basis of the vehicle occupancy rate of 2.8 persons per vehicle for both autos and taxis (during all peak hours). Directional distributions for the weekday AM (61 percent “in”), midday (55 percent “in”), PM peak hours (47 percent “in”) were also obtained from the *Gateway Center at the Bronx Terminal Market FEIS*. For Saturday, the midday peak hour directional distribution of 11.5 percent “in” was obtained from the *Jamaica Plan FEIS* while the PM peak hour distribution of 47.5 percent “in” was obtained from the *Gateway Center at the Bronx Terminal Market FEIS*.

Weekday trip generation rates of 0.7 trips per 1,000 sf and temporal distribution (7.7 percent, 11 percent and 1 percent during the AM, midday and PM peak hours, respectively) for themed retail deliveries were obtained from the *Gateway Center at the Bronx Terminal Market FEIS* and *No. 7 Subway Extension – Hudson Yards Rezoning and Development Program FGEIS*, respectively. Trip generation rates of 0.04 trips per 1,000 sf and temporal distributions (11 percent during the midday and 2 percent during the PM peak hour) were obtained for the Saturday from the *Atlantic Yards Redevelopment Project FEIS*.

AMUSEMENT PARK

Amusement park trip generation rates of 35.6 person trips per 1,000 sf during the weekday and 8.47 trips per 1,000 sf during the Saturday were based upon the *42nd Street Development Project: General Project Plan Amendment FSEIS*; the weekday rate was adjusted using data from the *ITE Trip Generation Manual* to develop the Saturday rate. A 25 percent linked trip credit was assumed for all peak hours. The weekday temporal distributions (2.4 percent during the AM, 7.4 percent during the midday and 19.4 percent during the PM peak hours) and directional distribution (50

percent “in” during the AM, 57 percent “in” during the midday and 19.4 percent “in” during the PM peak hours) were developed from the *42nd Street Development Project: General Project Plan Amendment FSEIS*. The *ITE Trip Generation Manual* was used to obtain the Saturday midday temporal distribution of 10.5 percent and directional distribution of 58 percent “in”; the Saturday PM peak hour used the same temporal distribution and a reverse “in” percentage of the Saturday midday peak hour (42 percent “in”). A modal split of 40 percent auto, 1 percent taxi, 50 percent subway, 4 percent bus and 5 percent walk was derived from assumptions made from existing modal split patterns found in *The Baseball Stadium at Steeplechase Park FEIS* and the Audience Research & Analysis survey, *A Study of Visitors to Coney Island, Late Summer 2007*. *The Baseball Stadium at Steeplechase Park FEIS* was also used as the basis of the vehicle occupancy rate of 2.8 persons per vehicle for both autos and taxis (during all peak hours).

Delivery trip generation rates for the amusement park component of 0.08 trips per 1,000 sf during the weekday and 0.04 trips per 1,000 sf during the Saturday were obtained from the *42nd Street Development Project: General Project Plan Amendment FSEIS*. The temporal distributions of 12 percent during the weekday AM, 9 percent during the weekday midday, 2 percent during the weekday PM, and 9 percent during the Saturday midday peak hours, and directional distribution of 2 percent “in” during those peak hours were based upon *Curbside Pickup and Delivery Operations and Arterial Traffic Impact*; Saturday PM peak hour distributions were assumed to be the same as those of the weekday PM peak hour.

PARKLAND

For the parkland component, a weekday trip generation rate of 139 person trips per acre was obtained from the *CEQR Technical Manual* and a Saturday trip generation of 158 person trips per acre was obtained from the *Gateway Estates FEIS*. The weekday temporal distribution of 7 percent during the AM, 17 percent during the midday and 14 percent during the PM peak hours were obtained from the *CEQR Technical Manual*; the Saturday temporal distribution of 15 percent during both the Saturday midday and PM peak hours was developed based on the weekday values. The weekday directional distribution of 55 percent “in” during the AM, 50 percent “in” during the midday and 45 percent “in” during the PM peak hours were obtained from *Greenpoint-Williamsburg Rezoning FEIS*; and a Saturday distribution of 55 percent “in” during the midday and 45 percent “in” during the Saturday peak hours was assumed based on the weekday trends. A modal split of 40 percent auto, 1 percent taxi, 50 percent subway, 4 percent bus and 5 percent walk was derived from *The Baseball Stadium at Steeplechase Park FEIS* and the existing modal split patterns found in the Audience Research & Analysis survey, *A Study of Visitors to Coney Island, Late Summer 2007*, and applied to all peak hours. *The Baseball Stadium at Steeplechase Park FEIS* was also used as the basis of the vehicle occupancy rate of 2.8 persons per vehicle for both autos and taxis (during all peak hours).

For parkland related deliveries, a trip generation rate of 0.02 trips per acre for the weekday and no trips for the Saturday was assumed. The delivery temporal of 6 percent during the weekday AM and midday peak hours, and 1 percent during the PM peak hour, and directional distribution of 50 percent “in” during all peak hours were developed with guidance from NYCDOT.

GENERATED TRAFFIC VOLUMES

As shown in **Tables 16-16 through 16-19**, the proposed actions would generate 326 vph, 836 vph, 981 vph, 1,224 vph, and 912 vph for the Coney East subdistrict; 389 vph, 457 vph, 534 vph, 531 vph, and 512 vph for the Coney West subdistrict; and 301 vph, 498 vph, 467 vph, 471 vph,

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**Table 16-16
2019 Build Vehicle Trip Generation - Coney East**

Coney East Land Use	Weekday AM			Weekday Midday			Weekday PM			Saturday Midday			Saturday PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto/Trucks															
Amusement/Entertainment	12	12	24	41	32	73	91	95	186	139	101	240	101	139	240
Themed Retail	50	35	85	147	122	269	118	133	251	210	172	382	94	104	198
Accessory Retail	9	9	18	50	50	100	24	24	48	26	22	48	22	26	48
Hotel	45	62	107	128	60	188	92	69	161	75	59	134	34	34	68
Amusement Park	13	13	26	43	33	76	95	99	194	144	105	249	105	144	249
Parkland	2	2	4	5	5	10	4	5	9	6	5	11	5	6	11
Taxi (all uses)	31	31	62	60	60	120	66	66	132	80	80	160	49	49	98
Total	162	164	326	474	362	836	490	491	981	680	544	1,224	410	502	912

**Table 16-17
2019 Build Vehicle Trip Generation - Coney West**

Coney West Land Use	Weekday AM			Weekday Midday			Weekday PM			Saturday Midday			Saturday PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto/Trucks															
Residential	51	263	314	82	82	164	250	108	358	174	174	348	178	178	356
Destination Retail	8	5	13	22	19	41	19	21	40	27	22	49	12	14	26
Local Retail	22	22	44	120	120	240	59	59	118	64	52	116	52	64	116
Taxi (all uses)	9	9	18	6	6	12	9	9	18	9	9	18	7	7	14
Total	90	299	389	230	227	457	337	197	534	274	257	531	249	263	512

**Table 16-18
2019 Build Vehicle Trip Generation - Coney North**

Coney East Land Use	Weekday AM			Weekday Midday			Weekday PM			Saturday Midday			Saturday PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto/Trucks															
Residential	29	154	183	48	48	96	147	64	211	102	102	204	103	103	206
Destination Retail	8	5	13	25	21	46	20	23	43	31	25	56	14	15	29
Local Retail	24	24	48	134	134	268	65	65	130	71	58	129	58	71	129
Hotel	13	18	31	37	17	54	27	20	47	21	17	38	10	10	20
Taxi (all uses)	13	13	26	17	17	34	18	18	36	22	22	44	13	13	26
Total	87	214	301	261	237	498	277	190	467	247	224	471	198	212	410

**Table 16-19
2019 Build Vehicle Trip Generation - Total**

Total Land Use	Weekday AM			Weekday Midday			Weekday PM			Saturday Midday			Saturday PM		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Auto/Trucks															
Residential	80	417	497	130	130	260	397	172	569	276	276	552	281	281	562
Amusement/Entertainment	12	12	24	41	32	73	91	95	186	139	101	240	101	139	240
Themed Retail	50	35	85	147	122	269	118	133	251	210	172	382	94	104	198
Destination Retail	16	10	26	47	40	87	39	44	83	58	47	105	26	29	55
Local and Accessory Retail	55	55	110	304	304	608	148	148	296	161	132	293	132	161	293
Hotel	58	80	138	165	77	242	119	89	208	96	76	172	44	44	88
Amusement Park	13	13	26	43	33	76	95	99	194	144	105	249	105	144	249
Parkland	2	2	4	5	5	10	4	5	9	6	5	11	5	6	11
Taxi (all uses)	53	53	106	83	83	166	93	93	186	111	111	222	69	69	138
Total	339	677	1,016	965	826	1,791	1,104	878	1,982	1,201	1,025	2,226	857	977	1,834

and 410 vph for the Coney North subdistrict during the weekday AM, midday, PM, Saturday midday, and Saturday PM peak hours, respectively. In total, the proposed actions would generate a total of 1,016 vph, 1,791 vph, 1,982 vph, 2,226 vph, and 1,834 vph during the weekday AM, midday, PM, Saturday midday, and Saturday PM peak hours, respectively.

TRIP DISTRIBUTION AND ASSIGNMENT

The volume of vehicular traffic generated by the RWCDS was assigned to the roadway network. A description of vehicular traffic assignments (for autos, taxis, and trucks) is provided below.

AUTOS

Auto trips to and from the Coney North and Coney West subdistricts of the proposed actions were assigned to parking facilities within their respective subdistricts. Auto trips to Coney East were distributed to one on-site parking facility (located south of Surf Avenue bounded by West 15th Street to the east and West 16th Street to the west) and several off-site parking facilities—the New York Aquarium (which would expand its parking facilities to accommodate Coney East trips), new parking facilities in the Coney North subdistrict, and the parking facility on Stillwell Avenue (No Build development project #10) which would be available only during the weekends. An additional off-site parking facility would be built at Surf Avenue and West 25th Street to accommodate any additional parking demand associated with the amusement and entertainment uses. **Figure 16-14** shows the locations of the parking facilities.

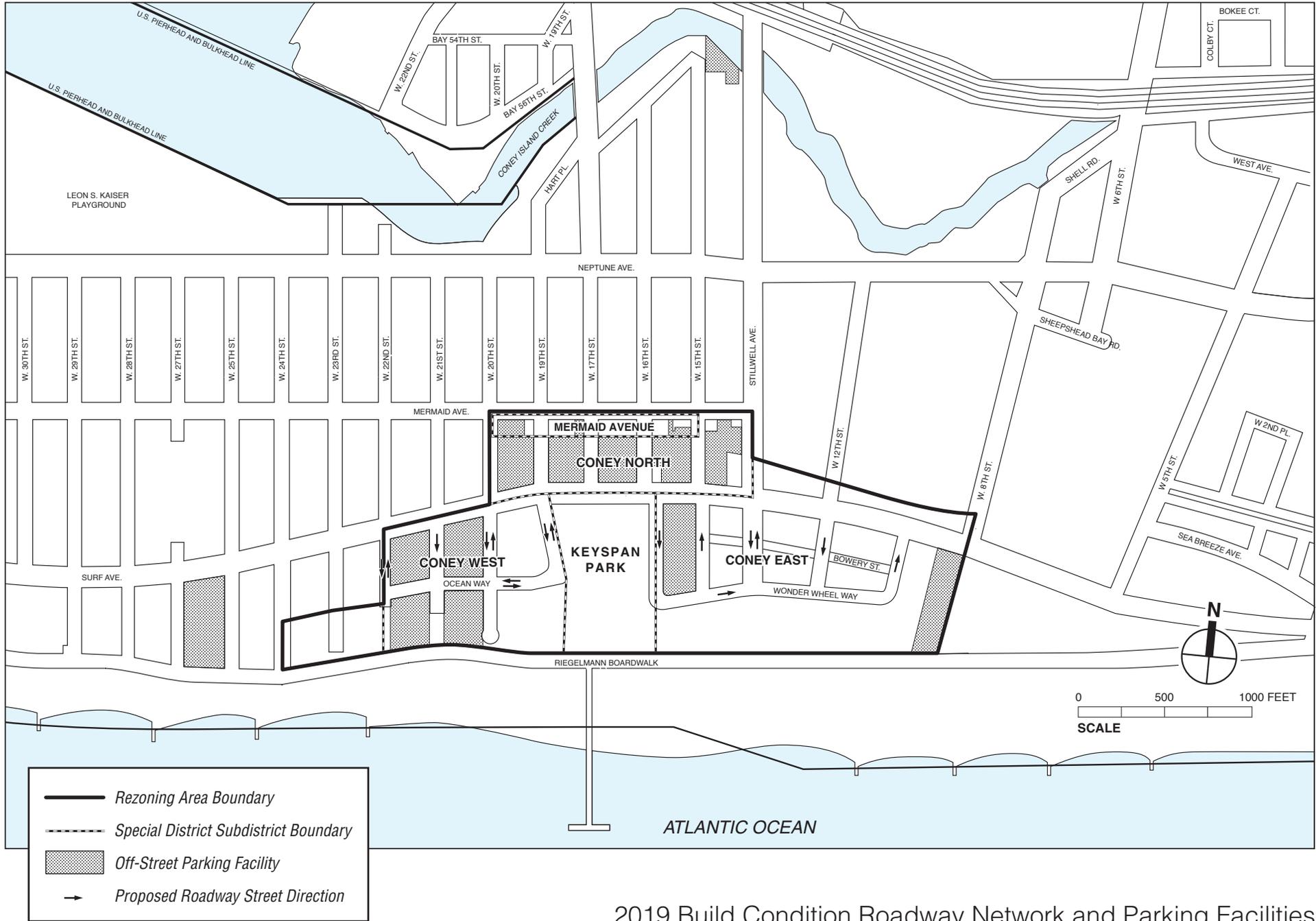
Residential

Residential auto assignments were based on U.S. Census 2000 journey-to-work data. Most residential trips by auto would occur within Brooklyn (68 percent). Trips would also be made to Manhattan (9 percent), Queens (7 percent), the Bronx (2 percent), Staten Island (1 percent), and outside of the city boundaries (13 percent).

For trips within Brooklyn, approximately 28 percent (of the 68 percent) were assigned to the Belt Parkway and 24 percent were assigned to Ocean Parkway (20 percent) and Cropsey Avenue (4 percent). The remaining 16 percent were assigned to other roadways entering Coney Island such as Stillwell Avenue, Shell Road, Neptune Avenue and Brighton Beach Avenue (approximately 14 percent total along these streets), or would be internal trips (2 percent) from within Coney Island. Trips from outside of Brooklyn were all assigned to arrive and depart from the project site via the Belt Parkway. Reverse trips were expected to return along the same general routes on which they arrived.

Amusement and Entertainment

The majority of amusement and entertainment-related trips by auto would be expected to arrive from Brooklyn (55 percent) with the other 45 percent from Queens (18 percent), Staten Island (10 percent), Manhattan (5 percent), New Jersey (5 percent), Long Island (5 percent), and the Bronx and Westchester (2 percent). Trips from outside of Brooklyn would be expected to use the Belt Parkway to arrive at the project site. For amusement and entertainment trips originating from within Brooklyn, approximately 26 percent of the trips were assigned to the Belt Parkway and 18 percent were assigned to Ocean Parkway (15 percent) and Cropsey Avenue (3 percent). Approximately 6 percent would travel on roadways entering Coney Island (Stillwell Avenue, Shell Road, Neptune Avenue and Brighton Beach Avenue), and the remaining 5 percent of trips would be generated from within Coney Island itself.



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Themed Retail

Given the linked characteristics between land uses, themed retail trips were assigned similar to that of the amusement and entertainment trips (55 percent from Brooklyn, 18 percent from Queens, 10 percent from Staten Island, 5 percent from Manhattan, 5 percent from New Jersey, 5 percent from Long Island, and 2 percent from the Bronx and Westchester. Trips from outside Brooklyn would arrive to the project site via the Belt Parkway. For Brooklyn trips, approximately 26 percent of the trips were assigned to the Belt Parkway and 18 percent were assigned to Ocean Parkway (15 percent) and Cropsey Avenue (3 percent). Approximately 6 percent would travel on roadways entering Coney Island (Stillwell Avenue, Shell Road, Neptune Avenue and Brighton Beach Avenue), and the remaining 5 percent of trips would be generated from within Coney Island itself.

Destination Retail

Destination retail trips would be expected to draw consumers from within a 3 to 5 mile radius from the project site; therefore the majority of the trips are expected to come from Brooklyn (90 percent). Of the Brooklyn trips, 35 percent would arrive via the Belt Parkway, 34 percent would use Ocean Parkway and Cropsey Avenue and 16 would travel on other roadways outside Coney Island. About 5 percent of trips would be generated from within Coney Island itself. Trips from outside Brooklyn (10 percent) would use the Belt Parkway to arrive at the site.

Local and Small-Scale Accessory Retail

Local and small-scale accessory retail land uses are expected to primarily serve the immediate surrounding area. Therefore, auto trips were generally assigned from local origins within the neighborhood and adjacent residential areas. Auto trips from outside Coney Island (45 percent) were assigned along Ocean Parkway, Cropsey Avenue, Shell Road, Neptune Avenue and Brighton Beach Avenue. Internal trips which account for 55 percent of the total trips, were assigned along Neptune, Mermaid and Surf Avenues leading into local roadways. Local and small-scale accessory retail trips would be generated from within the immediate surrounding area and are expected to park in lots located within walking distance of these retail uses. Departing trips were generally assigned along the same routes as arrivals.

Hotel

Hotel trips by auto would be expected to arrive from one of the regional airports—JFK Airport (20 percent), La Guardia Airport (10 percent) and Newark Airport (10 percent), from tourist attraction areas such as Manhattan and Downtown Brooklyn (55 percent), or locally within Brooklyn (5 percent). The majority of the trips were assumed to arrive via the Belt Parkway (80 percent) with the remainder (20 percent) via other roadways such as Cropsey Avenue, Stillwell Avenue, Ocean Parkway, Surf Avenue and Neptune Avenue.

Amusement Park

Given the linked characteristics between land uses, amusement park trips were assigned similar to that of the amusement and entertainment trips and themed retail trips described earlier.

Parkland

Parkland trips are expected to serve the immediate surrounding area. Therefore, auto trips were generally assigned from local origins within the neighborhood and adjacent residential areas. Auto trips from outside Coney Island (45 percent) were assigned along Ocean Parkway, Cropsey Avenue,

Shell Road, Neptune Avenue and Brighton Beach Avenue. Internal trips which account for 55 percent of the total trips, were assigned along Neptune, Mermaid and Surf Avenues leading into local roadways. Departing trips were generally assigned along the same routes as arrivals.

TAXIS

Taxi pick-ups and drop-offs for all land uses were distributed mostly to local streets for the Coney North and Coney West subdistricts. Taxi trips to Coney East would circulate through the redesigned roadway network in Coney East, entering at West 16th Street and exiting along West 15th Street, Stillwell Avenue or West 10th Street.

TRUCKS / DELIVERY VEHICLES

Delivery trips for all land uses were assigned to NYCDOT-designated truck routes. Trucks were assigned to the study area from regional origins via the Belt Parkway, Cropsey Avenue, Shell Road and Neptune Avenue. Delivery vehicles were assigned along regional and local truck routes to the extent possible until reaching their destination. Departing trucks were assigned along the same route.

NEW ROADWAY DESIGN

As part of the proposed actions, the roadway network would be redesigned to accommodate the proposed developments in Coney West and Coney East. As part of the proposed roadway network, two new east-west roadways would be constructed south of Surf Avenue—Ocean Way (two-way) in Coney West, and Wonder Wheel Way (one-way eastbound) in Coney East. Several existing roadways would have operational and geometric changes south of Surf Avenue including curb-to-curb roadway width reductions or widenings, some street demappings, roadway length reduction or extensions and changes in street directions. **Figure 16-14** provides the proposed roadway network along with the new street directions as well as the sites of the proposed parking facilities.

VEHICULAR ACCESS AND CIRCULATION

Two east-west streets would be constructed south of Surf Avenue as part of the proposed actions—Ocean Way, which would extend from West 22nd Street to West 19th Street, and Wonder Wheel Way, which would extend from West 16th Street to West 10th Street. Ocean Way would be two-way with one 11 foot wide travel lane in each direction and curb parking on both sides. Wonder Wheel Way would be one-way eastbound consisting of two 11 foot wide travel lanes with curb parking on both sides. As part of the proposed actions, Highland View Avenue, a one-way eastbound roadway between West 23rd Street and West 22nd Street, would be demapped.

In Coney West, four roadways that travel north-south—West 22nd Street, West 21st Street, West 20th Street and West 19th Street—would be modified south of Surf Avenue as part of the proposed roadway network. West 22nd Street is currently a one-way northbound roadway and extends south to Highland View Avenue. Under the proposed actions, it would be converted to a two-way street with one lane in each direction ending at Ocean Way. West 21st Street is currently a two-way street with one lane in each direction and would be converted to a one-way street with one lane in the southbound direction. West 20th Street and West 19th Street would be extended to the Boardwalk; both roadways currently operate as access points to the KeySpan Park main parking lot. They would operate as two-way streets with one lane in each direction. All roadways would have curb parking on both sides.

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In Coney East, five roadways that travel north-south—West 16th Street, West 15th Street, Stillwell Avenue, West 12th Street and West 10th Street—would be modified south of Surf Avenue as part of the proposed roadway network. All five roadways, except West 16th Street, would no longer extend to the Boardwalk and would instead end at Wonder Wheel Way. West 16th Street, which is currently a service entrance for KeySpan Park, would be extended to Wonder Wheel Way and would operate as a one-way southbound street with two travel lanes. West 15th Street is currently a two-way street with 90 degree parking along its west curb, and would be converted to a one-way northbound street with two travel lanes and curb parking on both sides. West 12th Street is currently a two-way street with one travel lane in each direction separated by a median, and would be converted to a one-way southbound street with one travel lane. West 10th Street, which is currently a two-way roadway with 90 degree parking along the west curb, would be converted to a one-way northbound street with two travel lanes. All roadways except Stillwell Avenue would have curb parking on both sides.

TRAFFIC DIVERSIONS

As a result of the redesigned street network, the flow of existing traffic and vehicle trips generated by No Build background developments south of Surf Avenue would be altered. Vehicles that currently access West 15th Street from Surf Avenue would do so in the future from West 16th Street. Vehicles that currently access Surf Avenue via West 21st Street, West 16th Street, West 12th Street and West 10th Street would do so in the future from nearby roadways. Also, as part of the proposed actions, none of the parking facilities in the Coney North subdistrict would allow direct access/egress from/to Surf Avenue, Mermaid Avenue, West 17th Street or Stillwell Avenue. Vehicles would enter/exit these parking facilities using other side streets.

PROJECT-GENERATED TRAFFIC VOLUMES

The aforementioned trip generation and assignment process produced specific roadway-by-roadway and intersection-by-intersection traffic volume projections within the study area, an overview of which is provided below. Specific turning movement volume projections are provided in detail in Appendix F.

The proposed actions would add approximately 125 vph to 170 vph in the eastbound direction and 105 vph to 145 vph in the westbound direction along Surf Avenue between West 17th Street and West 8th Street during the weekday AM peak hour. During the weekday midday and PM peak hours, 170 vph to 265 vph and 160 to 230 vph, respectively, are expected to be added to the eastbound direction, and approximately 270 vph, and 280 vph to 330 vph, respectively, would be added in the westbound direction. During the Saturday midday and PM peak hours, 190 vph to 300 vph and 175 to 230 vph, respectively, are expected to be added to the eastbound direction, and 300 vph to 320 vph and 210 vph to 270 vph, respectively, would be added in the westbound direction.

Volumes along Surf Avenue between West 20th Street and West 17th Street are expected to increase by 160 vph to 260 vph, 70 vph to 195 vph, and 95 vph to 185 during the weekday AM, midday and PM peak hours, respectively, and 135 vph to 240 vph, and 125 to 225 vph would be added during the Saturday midday and PM peak hours, respectively, in the eastbound direction. Approximately 105 vph, 260 vph, 360 vph, 310 vph, and 220 to 300 vph are expected to be added in the westbound direction during the weekday AM, midday, PM, Saturday midday, and Saturday PM peak hours, respectively.

Within the study area, Mermaid Avenue volumes are expected to increase by 5 vph to 20 vph in each direction during the weekday AM peak hour. An increase of approximately 10 vph to 40 vph is expected in each direction during the other peak hours.

Volumes along Neptune Avenue between Cropsey Avenue/West 17th Street and Shell Road/West 8th Street are expected to increase by 120 vph to 145 vph in the eastbound direction, and by 75 vph in the westbound direction during the weekday AM peak hour. An increase of approximately 175 vph to 225 vph is expected in the eastbound direction during the other peak hours. During the weekday midday and Saturday PM peak hours, westbound volumes would be expected to increase by 160 vph to 240 vph. Heavier volume increases are expected during the weekday PM peak hour (200 vph to 275 vph) and the Saturday midday peak hour (180 vph to 300 vph).

Along Cropsey Avenue, south of the Belt Parkway, traffic volumes are expected to increase by 345 vph, 300 vph, and 395 vph in the northbound direction, and 160 vph, 300 vph, and 515 vph in the southbound direction during the weekday AM, midday and PM peak hours, respectively. Traffic volume increases of 435 vph to 475 vph, and 390 vph to 430 vph in the northbound direction, and approximately 555 vph and 385 vph in the southbound direction would be expected during the Saturday midday and PM peak hours, respectively. Increases in traffic volumes would be lower along West 17th Street. In the northbound direction, an increase of 260 vph to 300 vph would be expected during the weekday peak hours, and 270 vph to 335 vph during the Saturday midday peak hour. During the Saturday PM peak hour, an increase of 155 to 175 vph would be expected in the northbound direction. The volume increases along southbound West 17th Street are expected to be approximately 130 vph to 150 vph during the weekday AM peak hour, 235 vph to 350 vph during the weekday midday peak hour, 380 vph to 460 vph during the weekday PM peak hour, 355 vph to 430 vph during the Saturday midday peak hour, and 265 vph to 315 vph during the Saturday PM peak hour.

Volumes along Ocean Parkway would be expected to increase by 85 vph to 150 vph in the northbound direction, and 45 vph to 65 vph in the southbound direction, during the weekday AM peak hour. An increase of 115 vph to 160 vph, and 140 vph to 195 vph in the northbound direction, and 130 vph to 185 vph, and 155 vph to 240 vph in the southbound direction would be expected during the weekday midday and PM peak hours, respectively. During the Saturday peak hours, an increase of 150 vph to 235 vph, and 135 vph to 225 vph in the northbound direction, and 175 vph to 250 vph, and 120 vph to 180 vph in the southbound direction would be expected during the midday and PM peak hours, respectively.

Traffic volumes along Stillwell Avenue within the study area would be expected to increase by 20 vph to 30 vph in each direction during the weekday AM peak hour, and by 40 vph to 70 vph in each direction during the other peak hours.

Shell Road and West 8th Street volumes would be expected to increase by approximately 75 vph in the northbound direction and 40 vph in the southbound direction during the weekday AM peak hour as a result of the proposed actions. An increase of 70 vph to 135 vph in the northbound direction would be expected during all other peak hours. Traffic volumes would increase by 90 vph to 160 vph in the southbound direction during the weekday midday, PM and Saturday PM peak hours, and by 145 vph to 160 vph during the Saturday midday peak hour.

TRAFFIC LEVELS OF SERVICE AND IMPACTS

The assessment of potential significant traffic impacts of the proposed actions is based on significant impact criteria defined in the *CEQR Technical Manual*. Lane groups in the No Build LOS A, B, or C conditions that deteriorate to unacceptable LOS D, E, or F in the future Build conditions are considered a significant traffic impact. For future No Build LOS A, B, or C conditions that deteriorate to LOS D, mitigation to mid-LOS D (45.0 seconds of delay for signalized intersections and 30.0 seconds of delay for unsignalized intersections) needs to be considered to fully mitigate the impact.

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For a No Build LOS D, an increase of delay by 5 or more seconds in the Build condition is considered a significant impact if the Build delay meets or exceeds 45.0 seconds. For a No Build LOS E, the threshold is a 4-second increase in Build delay; for a No Build LOS F, a 3-second increase in delay in the Build condition is significant. However, if a No Build LOS F condition already has delays in excess of 120 seconds, an increase in delay of more than 1 second is considered significant, unless the proposed actions would generate fewer than 5 vehicles through that intersection in the peak hour (signalized intersections) or fewer than 5 passenger car equivalents (PCEs) in the peak hour along the critical approach (unsignalized intersections). In addition, for unsignalized intersections, for the minor street to generate a significant impact, 90 PCEs must be identified in the Build condition in any peak hour.

The remainder of this section provides an overview of significant traffic impacts that would be generated under the 2019 Build scenario, primarily through the use of figures indicating overall levels of service intersection-by-intersection and significantly impacted locations. Detailed volume-to-capacity (v/c) ratios, average vehicle delay, and levels of service movement-by-movement at each intersection under the Build condition are provided at the end of this chapter. Generated traffic volume increment maps and total Build volume maps are provided in Appendix F.

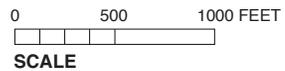
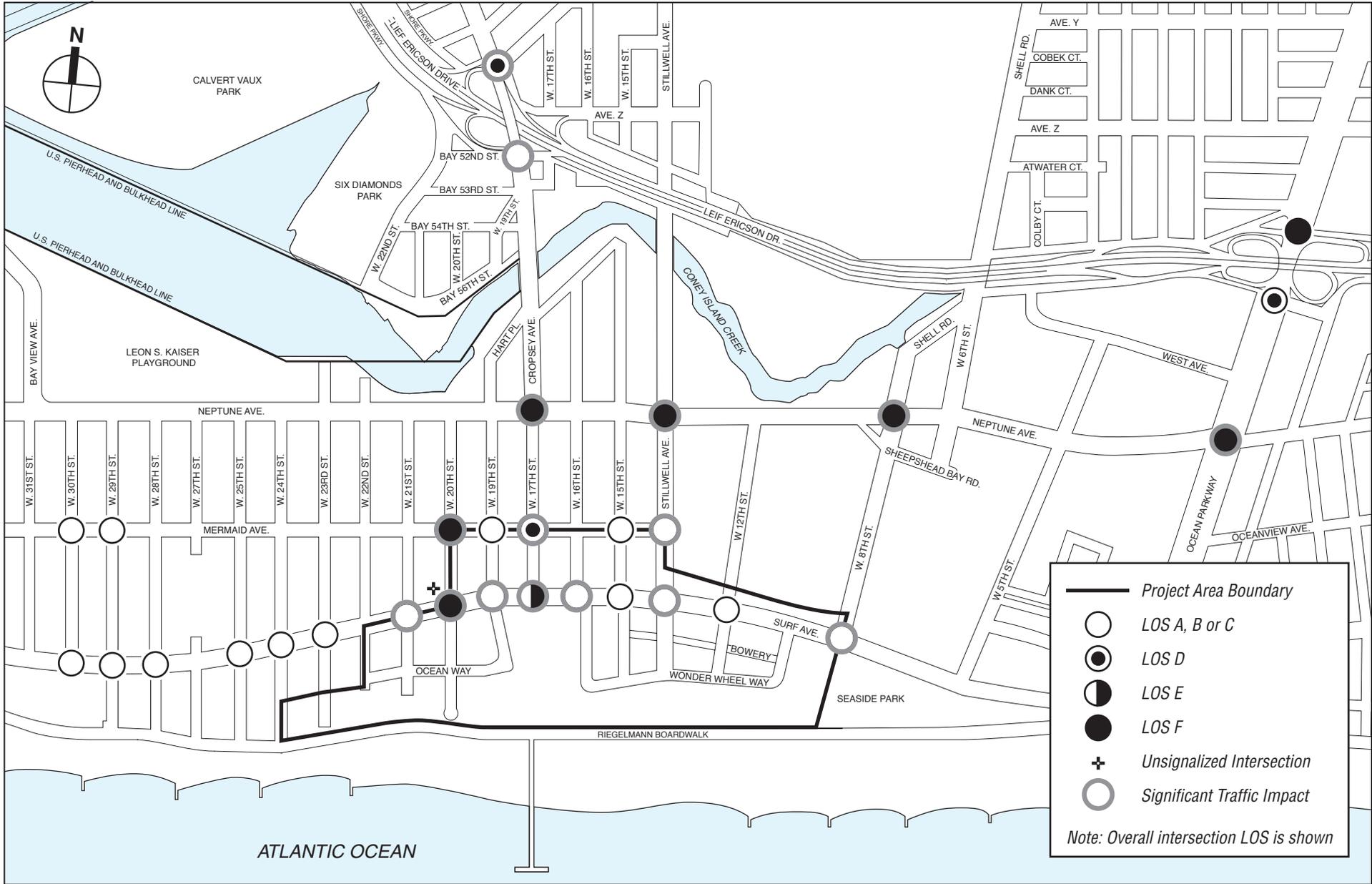
A summary of the 30 intersections is presented below. Future traffic levels of service for intersections analyzed under the 2019 Build scenario are shown in **Figures 16-15** through **16-19** and in **Tables 16-20** and **16-21**.

Table 16-20
Intersection Level of Service Summary Comparison
2019 No Build vs. 2019 Build Scenarios (Weekday)

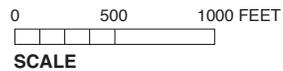
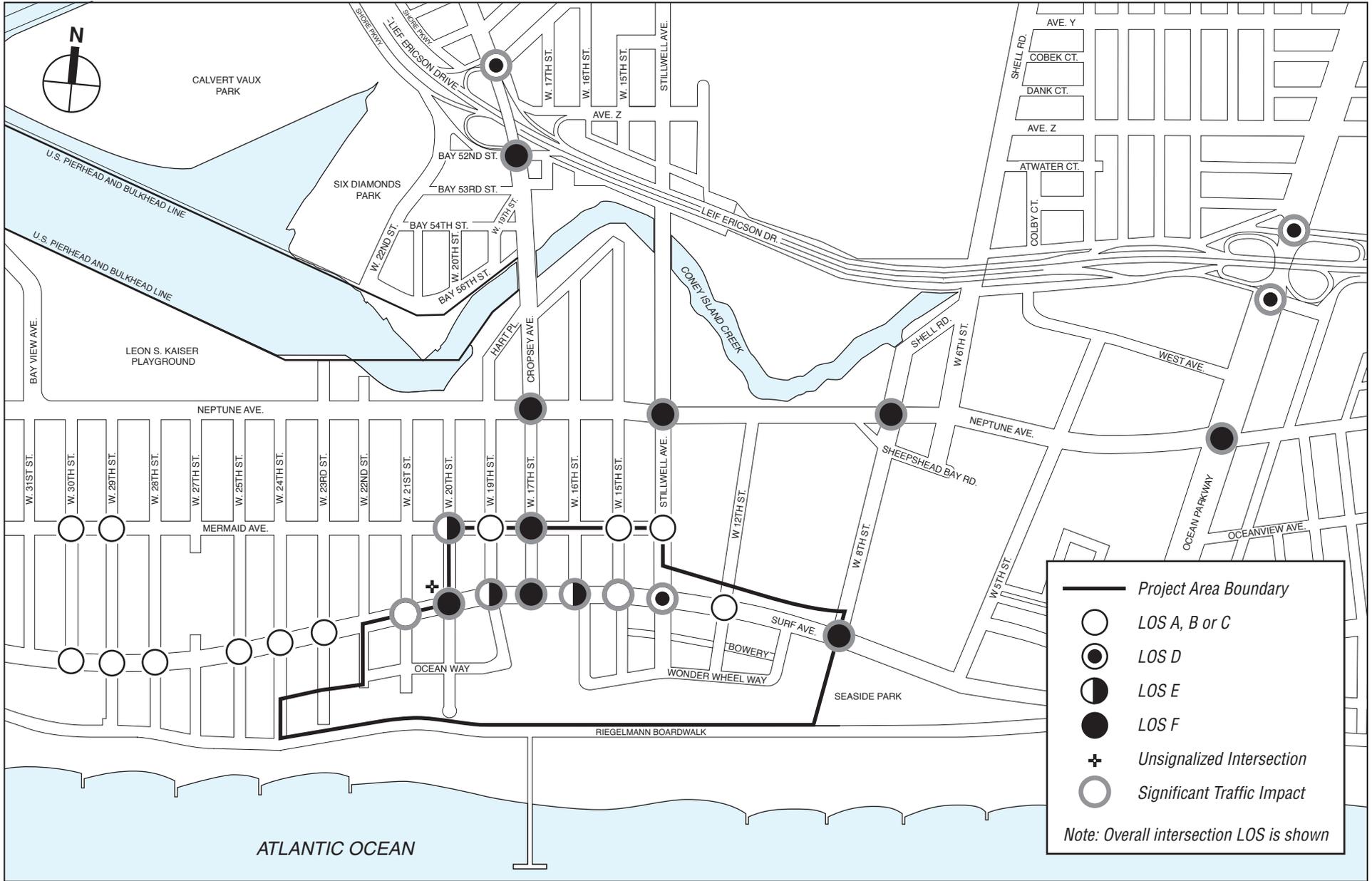
	2019 No Build			2019 Build		
	AM	Midday	PM	AM	Midday	PM
Overall LOS A/B/C	24	25	21	19	19	14
Overall LOS D	3	1	4	4	3	4
Overall LOS E	0	2	2	2	1	3
Overall LOS F	3	2	3	5	7	9
Number of intersections with significant impacts	-	-	-	15	16	18
Number of movements at LOS E or F (of approximately 132 movements analyzed)	19	16	23	29	32	43
Note: Includes the unsignalized intersection of Surf Avenue and West 20th Street which operates at LOS F during all traffic analysis hours in both scenarios.						

Table 16-21
Intersection Level of Service Summary Comparison
2019 No Build vs. 2019 Build Scenarios (Saturday)

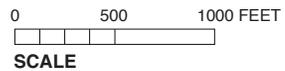
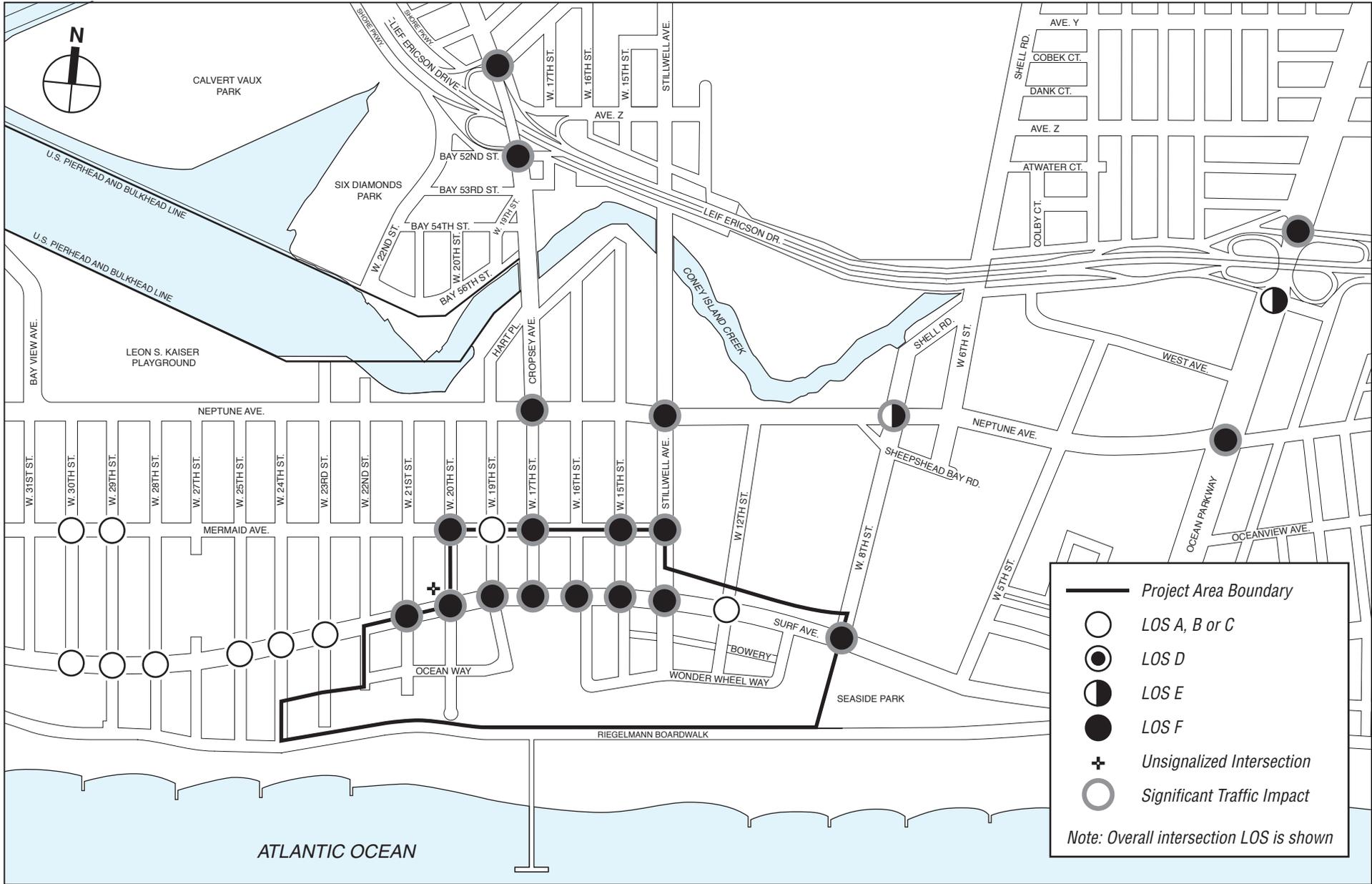
	2019 No Build		2019 Build	
	Midday	PM	Midday	PM
Overall LOS A/B/C	24	13	15	10
Overall LOS D	4	5	3	0
Overall LOS E	0	6	3	2
Overall LOS F	2	6	9	18
Number of intersections with significant impacts	-	-	17	19
Number of movements at LOS E or F (of approximately 132 movements analyzed)	22	38	43	55
Note: Includes the unsignalized intersection of Surf Avenue and West 20th Street which operates at LOS F during all traffic analysis hours in both scenarios.				



2019 Build Traffic Levels of Service
Weekday Midday Peak Hour
Figure 16-16



2019 Build Traffic Levels of Service
Weekday PM Peak Hour
Figure 16-17



2019 Build Traffic Levels of Service
Saturday PM Peak Hour
Figure 16-19

All 30 intersections analyzed under the No Build scenario would continue to operate with similar geometric/stop control characteristics under the 2019 Build scenario, except for six intersections that would be reconfigured as part of the proposed actions. The northbound approach of the intersections of Surf Avenue with West 21 Street and West 12th Street would be converted from two-way with one travel lane and one receiving lane to one-way “away” with one receiving lane. The intersection of Surf Avenue and West 20th Street, which currently operates as a three-legged intersection, would operate as a four-legged intersection with the addition of a two-way northbound approach (one travel lane and one receiving lane) and a crosswalk along the south side. The northbound approach of the intersection of Surf Avenue and West 19th Street would continue to operate as a two-way street but would experience geometric changes as part of the proposed actions. The northbound approaches of the intersections of Surf Avenue with West 16th Street and West 15th Street, both of which currently operate as two-way streets, would be changed to one-way approaches with two travel lanes (in the southbound direction at West 16th Street, and in the northbound direction at West 15th Street).

As shown in Tables 16-15 and 16-19, the proposed actions would create significant traffic impacts at 15 intersections in the weekday AM peak hour, 16 intersections in the weekday midday peak hour, 18 intersections in the weekday PM peak hour, 17 intersections in Saturday midday peak hour, and 19 intersections in the Saturday PM peak hour. The unsignalized intersection of Surf Avenue and West 20th Street would be significantly impacted during all peak hours and is included in these tables.

This summary overview of the Build condition indicates that:

- During the weekday AM peak hour, the number of intersections analyzed that are projected to operate at overall LOS E or F would increase from three under the No Build condition to seven under the Build condition. Overall, 15 of the 30 intersections would have significant impacts. The number of traffic movements projected to operate at LOS E or F would increase from 19 under the No Build condition to 29 under the Build condition. **Figure 16-15** shows overall levels of service and intersections where significant impacts would occur.
- During the weekday midday peak hour, the number of intersections that would operate at overall LOS E or F would increase from four under the No Build condition to eight under the Build condition. Overall, 16 intersections would be significantly impacted, as shown in **Figure 16-16**. The number of traffic movements at LOS E or F would increase from 16 to 32.
- During the weekday PM peak hour, the number of intersections that are projected to operate at overall LOS E or F would increase from five under the No Build condition to 12 under the Build condition. As shown in **Figure 16-17**, 18 intersections would experience significant impacts. The number of traffic movements projected to operate at LOS E or F would increase from 23 to 43.
- During the Saturday midday peak hour, the number of intersections analyzed that are projected to operate at overall LOS E or F would increase from two under the No Build condition to 12 under the Build condition. Overall, 17 intersections would be significantly impacted as shown in **Figure 16-18**. The number of traffic movements at LOS E or F would increase from 22 to 43.
- During the Saturday PM peak hour, the number of intersections that would operate at overall LOS E or F would increase from 12 under the No Build condition to 20 under the Build condition. Overall, 19 intersections would be significantly impacted, as shown in **Figure 16-19**. The number of traffic movements at LOS E or F would increase from 38 to 55.
- Thirteen of the intersections where significant impacts would occur would have those impacts during all five peak analysis hours. These intersections include the intersections of:

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Surf Avenue with West 20th Street, West 19th Street, West 17th Street, West 16th Street and Stillwell Avenue; Mermaid Avenue with West 20th Street and West 17th Street; Neptune Avenue with Cropsey Avenue/West 17th Street, Stillwell Avenue, West 8th Street/Shell Road, Ocean Parkway; and Cropsey Avenue with Bay 50th Street and Bay 52nd Street.

PARKING

This section addresses the ability of on-site parking spaces to accommodate projected parking demands under the 2019 Build scenario. The RWCDs analyzed in the EIS assumes that the proposed actions would provide 1,173 parking spaces in Coney West, 1,531 parking spaces in Coney North (of which 300 spaces would accommodate the parking demand for Coney East), 200 parking spaces in Coney East and 600 parking spaces outside the project site for a total of 3,504 parking spaces.

The Coney North and Coney West subdistricts of the proposed actions would provide sufficient off-street parking within their respective subdistricts to accommodate parking demand for developments proposed for each subdistricts. The parking associated with development on the Coney East subdistrict would be distributed to one on-site parking facility (Block 7074, Lots 4, 6, 23, 89, 105, located south of Surf Avenue bounded by West 15th and West 16th Streets, which would provide 200 spaces), and several off-site parking facilities—the New York Aquarium (which would expand its parking facilities by 400 spaces to accommodate Coney East trips), new parking facilities in the Coney North subdistrict (300 spaces), and the parking facility (200 spaces) on Stillwell Avenue (No Build development project #10). An additional off-site parking facility would be built at Surf Avenue and West 25th Street to accommodate any additional parking demand associated with the Coney East amusement uses. **Figure 16-14** provided earlier shows the locations of the parking facilities.

Also, approximately 350 parking spaces would be created to replace the 200 parking spaces in the KeySpan Park satellite parking lot on West 21st Street.

As shown in **Tables 16-22** and **16-23**, parking demand generated from the proposed actions would be fully accommodated by the off-street parking facilities. Weekday parking accumulation is projected to be at its highest during the early morning hours (2 AM to 7 AM); during that period, 40 percent of the overall 3,304 available parking spaces are expected to be occupied. During Saturday, the maximum accumulation would occur between 3 to 4 PM, during which 48 percent of the overall 3,504 available parking spaces are expected to be occupied; 99 percent of the 1,100 parking spaces in Coney East would be expected to be occupied during this time.

In addition to the off-street parking spaces provided as part of the proposed actions, approximately 180 new spaces would be created on-street as part of the proposed roadway network to be constructed south of Surf Avenue (between West 22nd Street and West 10th Street).

TRAFFIC AND SAFETY

Accident data for the study area intersections were obtained from the New York State Department of Transportation (NYSDOT) for the three-year period between January 1, 2005 and December 31, 2007. The data obtained quantify the total number of reportable accidents (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 accidents at each location. According to the *CEQR Technical Manual*, a high pedestrian accident location is one where there were five or more pedestrian-related accidents in any year of the most recent three-year period for which data are available.

Table 16-22
Weekday Parking Accumulation - 2019 Build Scenario

Time	Coney East				Coney West				Coney North				Overall			
	Autos In	Autos Out	Accumulated Parking Demand No.	%	Autos In	Autos Out	Accumulated Parking Demand No.	%	Autos In	Autos Out	Accumulated Parking Demand No.	%	Autos In	Autos Out	Accumulated Parking Demand No.	%
Midnight – 1 AM	5	2	132	15	28	29	730	62	18	17	465	38	51	48	1,327	40
1–2 AM	6	0	138	15	12	11	731	62	8	8	465	38	26	19	1,334	40
2–3 AM	0	0	138	15	7	6	732	62	4	4	465	38	11	10	1,335	40
3–4 AM	0	0	138	15	5	5	732	62	3	3	465	38	8	8	1,335	40
4–5 AM	0	0	138	15	5	5	732	62	3	3	465	38	8	8	1,335	40
5–6 AM	0	0	138	15	5	5	732	62	3	3	465	38	8	8	1,335	40
6–7 AM	0	0	138	15	10	10	732	62	6	6	465	38	16	16	1,335	40
7–8 AM	15	14	139	15	22	119	635	54	19	71	413	34	56	204	1,187	36
8–9 AM	112	114	137	15	72	281	426	36	65	192	286	23	249	587	849	26
9–10 AM	78	63	152	17	58	183	301	26	47	122	211	17	183	368	664	20
10–11 AM	100	68	184	20	58	134	225	19	46	92	165	13	204	294	574	17
11 AM–Noon	137	117	204	23	89	117	197	17	75	94	146	12	301	328	547	17
12–1 PM	392	280	316	35	215	212	200	17	235	211	170	14	842	703	686	21
1–2 PM	333	338	311	35	203	202	201	17	193	197	166	14	729	737	678	21
2–3 PM	211	252	270	30	141	143	199	17	126	136	156	13	478	531	625	19
3–4 PM	211	226	255	28	161	155	205	17	137	140	153	12	509	521	613	19
4–5 PM	229	272	212	24	212	166	251	21	166	146	173	14	607	584	636	19
5–6 PM	422	423	211	23	327	187	391	33	258	171	260	21	1007	781	862	26
6–7 PM	377	421	167	19	438	346	483	41	212	166	306	25	1027	933	956	29
7–8 PM	465	410	222	25	257	147	593	51	209	136	379	31	931	693	1,194	36
8–9 PM	138	156	204	23	122	81	634	54	101	75	405	33	361	312	1,243	38
9–10 PM	59	131	132	15	81	59	656	56	60	50	415	34	200	240	1,203	36
10–11 PM	17	25	124	14	77	33	700	60	50	21	444	36	144	79	1,268	38
11 PM–Midnight	9	4	129	14	56	25	731	62	36	16	464	38	101	45	1,324	40
Total Parking Spaces	900 ¹				1,173				1,231 ²				3,304 ¹			

Notes: ¹ The parking facility (200 spaces) on Stillwell Avenue (No Build development project #10) would be available only during weekends.
² The parking facilities located in Coney North would provide 1,531 parking spaces (of which 300 spaces would accommodate the parking demand for Coney East)

Table 16-23
Saturday Parking Accumulation - 2019 Build Scenario

Time	Coney East				Coney West				Coney North				Overall			
	Autos In	Autos Out	Accumulated Parking Demand No.	%	Autos In	Autos Out	Accumulated Parking Demand No.	%	Autos In	Autos Out	Accumulated Parking Demand No.	%	Autos In	Autos Out	Accumulated Parking Demand No.	%
Midnight - 1 AM	4	1	132	12	12	13	730	62	8	7	465	38	24	21	1,327	38
1–2 AM	4	1	135	12	12	13	729	62	8	7	466	38	24	21	1,330	38
2–3 AM	0	0	135	12	0	0	729	62	0	0	466	38	0	0	1,330	38
3–4 AM	0	0	135	12	0	0	729	62	0	0	466	38	0	0	1,330	38
4–5 AM	0	0	135	12	0	0	729	62	0	0	466	38	0	0	1,330	38
5–6 AM	0	0	135	12	25	24	730	62	14	15	465	38	39	39	1,330	38
6–7 AM	0	0	135	12	12	37	705	60	7	22	450	37	19	59	1,290	37
7–8 AM	24	11	148	14	42	118	629	54	27	72	405	33	93	201	1,182	34
8–9 AM	51	28	171	16	58	150	537	46	45	94	356	29	154	272	1,064	30
9–10 AM	178	33	316	29	77	186	428	37	58	120	294	24	313	339	1,038	30
10–11 AM	224	63	477	43	134	247	315	27	114	162	246	20	472	472	1,038	30
11 AM–Noon	459	177	759	69	172	328	159	14	155	236	165	13	786	741	1,083	31
12–1 PM	412	290	881	80	241	255	145	12	194	193	166	14	847	738	1,192	34
1–2 PM	597	461	1,017	93	264	247	162	14	224	201	189	15	1085	909	1,368	39
2–3 PM	484	434	1,067	97	296	219	239	20	223	176	236	19	1003	829	1,542	44
3–4 PM	473	456	1,084	99	297	213	323	28	224	175	285	23	994	844	1,692	48
4–5 PM	360	454	990	90	242	256	309	26	185	199	271	22	787	909	1,570	45
5–6 PM	403	500	893	81	276	206	379	32	207	168	310	25	886	874	1,582	45
6–7 PM	367	484	776	71	286	196	469	40	213	168	355	29	866	848	1,600	46
7–8 PM	276	464	588	54	296	180	585	50	212	153	414	34	784	797	1,587	45
8–9 PM	223	413	398	36	252	164	673	57	178	145	447	36	653	722	1,518	43
9–10 PM	153	339	212	19	206	145	734	63	138	124	461	38	497	608	1,407	40
10–11 PM	33	80	165	15	74	74	734	63	47	45	463	38	154	199	1,362	39
11 PM–Midnight	12	48	129	12	25	28	731	62	16	13	466	38	53	89	1,326	38
Total Parking Spaces	1,100 ¹				1,173				1,231 ²				3,504 ¹			

Notes: ¹ The parking facility (200 spaces) on Stillwell Avenue (No Build development project #10) would be available only during weekends.
² The parking facilities located in Coney North would provide 1,531 parking spaces (of which 300 spaces would accommodate the parking demand for Coney East)

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During this period, a total of 232 reportable accidents, one fatality, 289 injuries, and 34 pedestrian-related accidents occurred at the study area intersections. The accident data identifies two study area intersections as high pedestrian accident locations in the 2005 to 2007 period: Stillwell Avenue at Neptune Avenue; and Ocean Parkway at Neptune Avenue. **Table 16-24** presents total accident characteristics by intersection during the study period, as well as a breakdown of pedestrian and bicycle accidents by year and location.

**Table 16-24
Accident Data**

Intersection		Study Period			Accidents by Year					
North-South Roadway	East-West Roadway	Reportable Accidents	Total Fatalities	Total Injuries	Pedestrian			Bicycle		
					2005	2006	2007	2005	2006	2007
W. 30th Street	Surf Avenue	3	0	8	0	1	0	0	1	0
W. 29th Street	Surf Avenue	2	0	1	0	0	0	0	0	0
W. 28th Street	Surf Avenue	6	0	7	0	0	0	0	0	0
W. 25th Street	Surf Avenue	1	0	7	0	0	0	0	0	0
W. 24th Street	Surf Avenue	5	0	6	0	0	0	0	0	0
W. 23rd Street	Surf Avenue	3	0	3	0	0	0	0	0	0
W. 21st Street	Surf Avenue	4	0	6	1	0	0	0	0	0
W. 20th Street	Surf Avenue	0	0	0	0	0	0	0	0	0
W. 19th Street	Surf Avenue	4	0	7	0	0	0	0	0	0
W. 17th Street	Surf Avenue	3	0	3	0	1	0	0	1	0
W. 16th Street	Surf Avenue	2	0	3	0	0	1	0	0	0
W. 15th Street	Surf Avenue	5	0	7	0	0	0	0	0	0
Stillwell Avenue	Surf Avenue	7	0	9	2	0	0	0	1	0
W. 12th Street	Surf Avenue	5	0	4	0	1	1	0	0	0
W. 8th Street	Surf Avenue	8	0	8	1	0	1	0	0	0
W. 30th Street	Mermaid Avenue	4	0	4	0	1	1	0	1	0
W. 29th Street	Mermaid Avenue	1	0	1	0	0	0	1	0	0
W. 20th Street	Mermaid Avenue	4	0	13	0	0	0	0	0	0
W. 19th Street	Mermaid Avenue	2	0	2	1	0	0	0	0	0
W. 17th Street	Mermaid Avenue	3	0	2	0	0	1	1	0	0
W. 15th Street	Mermaid Avenue	5	0	4	0	1	0	0	0	0
Stillwell Avenue	Mermaid Avenue	5	0	4	2	0	0	0	0	0
W. 17th Street	Neptune Avenue	30	0	32	0	0	0	0	0	0
* Stillwell Avenue	Neptune Avenue	18	0	24	1	3	2	0	0	0
W. 8th St./Shell Rd.	Neptune Avenue	20	0	26	0	0	1	2	1	0
* Ocean Parkway	Neptune Avenue	48	1	62	7	0	1	1	1	0
Cropsey Avenue	Bay 52nd Street	4	0	2	0	0	0	0	0	0
Cropsey Avenue	Bay 50th Street	10	0	14	0	1	0	0	0	1
Ocean Parkway	Leif Ericson Dr/Shore Pky EB	12	0	16	0	0	1	0	0	0
Ocean Parkway	Leif Ericson Dr/Shore Pky WB	7	0	6	0	0	0	0	1	0

Note: * High vehicular-pedestrian accident location.
Source: NYSDOT January 1, 2005 to December 31, 2007 accident data.

A review of the accident history at Stillwell Avenue and Neptune Avenue indicates that the majority of the pedestrian-related accidents were caused by drivers failing to yield the right of way during turning movements. Neptune Avenue and Stillwell Avenue is striped with school crosswalks on all approaches except for the westbound approach, which is striped as a regular crosswalk. There are also reflective, yellow signs depicting pedestrians in a crosswalk for all four approaches and a designated bike lane running east and west. Overall, there were very few distinct trends in the accident patterns beyond typical vehicular and pedestrian traffic conflicts. Field observations of conditions at this intersection were conducted to identify specific geometric and operational issues and to determine whether measures could be recommended to improve pedestrian safety. It is expected that the installation of a high-visibility crosswalk on the westbound approach and signs warning turning vehicles to yield to pedestrians and warning

pedestrians to wait for pedestrian signals at all crossing locations could further enhance pedestrian safety at this location.

The accident history at Ocean Parkway and Neptune Avenue indicates that the majority of the pedestrian-related accidents were caused by driver inattentiveness and failure to yield the right of way during turning movements. The frequency of these accidents dropped off dramatically since 2005, with no pedestrian accidents in 2006 and only one during 2007. A reconnaissance of field conditions at this intersection revealed a multitude of pedestrian safety signs. There are no less than four types of signs either warning pedestrians to wait for the walk signal or cautioning drivers to yield to pedestrians in the crosswalks. The lack of pedestrian accident reports in the last two years, coupled with the existing signage and high-visibility crosswalks, suggests that this intersection has already been improved since 2005. Hence, no additional safety measures are recommended at this location.

E. CONCLUSIONS

The RWCDS that would be built as a result of the proposed actions is expected to generate a significant volume of vehicular traffic. In the weekday AM peak hour, it would generate 339 vehicle trips arriving at the project sites and 677 vehicle trips leaving the sites, for a total of 1,016 vehicle trips. In the weekday midday peak hour, it would generate 965 inbound vehicle trips plus 826 outbound vehicle trips for a total of 1,791 vehicle trips. In the weekday PM peak hour, 1,104 inbound vehicle trips plus 878 outbound vehicle trips would be generated for a total of 1,982 vehicle trips. In the Saturday midday peak hour, the proposed actions would generate 1,201 inbound vehicle trips plus 1,025 outbound vehicle trips for a total of 2,226 vehicle trips. In the Saturday PM peak hour, 857 inbound vehicle trips plus 977 outbound vehicle trips would be generated for a total of 1,834 vehicle trips. The proposed actions would also include the mapping and demapping of roadways south of Surf Avenue between West 23rd Street and West 10th Street to provide access to the project site.

Of the 30 existing study area intersections analyzed, the proposed actions would create significant traffic impacts at 15 intersections in the weekday AM peak hour, 16 in the weekday midday peak hour, 18 in the weekday PM peak hour, 17 in the Saturday midday peak hour and 19 in the Saturday PM peak hour. (Traffic capacity improvements that would be needed to mitigate these significant impacts are addressed in Chapter 22, "Mitigation").

Parking demand generated from the proposed actions would be fully accommodated by the off-street parking facilities. The proposed actions would provide a total of 3,304 off-street parking spaces during weekday and 3,504 off-street spaces during Saturdays within or in close proximity to the rezoning district. *