9.0 Traffic and Parking

A. INTRODUCTION

The Project Site is bounded by the East River to the west, Vernon Boulevard to the east, Queens Plaza South to the north and 43rd Avenue to the south. The project vicinity experiences heavy travel demands by daily commuters working and residing in Long Island City and commuters traveling to Manhattan. However, many sections of the local street network that serve the site have substantial amounts of unused capacity. These streets include Vernon Boulevard, Queens Plaza South and 43rd Avenue, all of which lead directly to the Project Site.

This chapter addresses the potential traffic and parking impacts of the proposed project. Regional traffic would travel to the site on key roadways such as the Long Island Expressway, the Pulaski Bridge, Northern Boulevard, Queens Boulevard, and Jackson Avenue. Therefore, the traffic and parking analyses cover a large study area encompassing 30 existing intersections and two new intersections created for access to and from the project's parking garage.

This chapter starts with an assessment of existing traffic and parking conditions in the study area, and future conditions without the proposed project – i.e., the 2009 No Build condition. Significant traffic volume will be added to existing volumes as a result of the projected buildout of over 6 million square feet of development and annual background traffic growth. The No Build traffic analysis also incorporates mitigation measures primarily along the Queens Plaza/Queens Boulevard and Jackson Avenue corridors that were proposed and approved as part of the *Queens Plaza Bike and Pedestrian Improvement Project* (January 2003) and the *Long Island City (LIC) Rezoning FEIS* (May 2001), respectively. This chapter then provides a detailed description of the volume of trips expected to be generated by the proposed project in the 2009 Build year, and an assessment of future traffic and parking conditions with the proposed project in place. These Build year analyses identify the location and extent of significant adverse impacts potentially generated by the proposed project. The identification and evaluation of traffic improvements needed to mitigate those impacts is presented subsequently in the mitigation section of this chapter. The parking analysis addresses the ability of the proposed project to accommodate its parking demands in the Build year.

Of the 32 locations analyzed during the weekday peak hours, significant adverse impacts would occur at 13 intersections during the AM peak hour, 10 intersections during the Midday peak hour, and 18 intersections during the PM peak hour. Of the 21 intersections analyzed during the Saturday Midday peak hour, 6 would be significantly impacted. The evaluation of mitigation measures indicates that all significant adverse impacts would be fully mitigated by standard traffic engineering improvements such as the installation of traffic signals, signal timing and phasing modifications, parking prohibitions, and lane restriping. The analysis of parking conditions indicates that sufficient parking would be provided to accommodate the proposed project's expected parking demands.

In addition to the analyses presented in this chapter, detailed levels of service tables and traffic volume maps are presented in the Traffic Technical Appendix.

B. EXISTING TRAFFIC CONDITIONS (YEAR 2003)

1. Roadway Network and Traffic Study Area

The primary traffic study area is generally bounded by 40th Avenue on the north, 45th Avenue on the south, Vernon Boulevard on the west, and 24th Street on the east, with several key intersections included within a secondary study area (Figure 9-1). The primary traffic study area includes locations in the immediate vicinity of the Project Site and locations through which generated traffic can be expected. It includes important intersections along Vernon Boulevard, 11th and 21st Streets, and Queens Plaza North and South. Analysis locations within a secondary study area that would also be affected by project-generated traffic include intersections along Jackson and Borden Avenues, Northern Boulevard and Van Dam Street. The overall traffic study area consists of 30 traffic analysis locations throughout Long Island City (24 signalized and 6 unsignalized intersections). The specific analysis locations were selected based on observations of traffic patterns in the study area and projected trip patterns to the Project Site. They represent the key locations along the major approach and departure routes -- along heavily trafficked routes, high volume intersections, intersections near the project site, and other locations that could be expected to be significantly impacted.

The street network within the study area conforms to a general grid, with "Streets" generally extending in a north-south direction and "Avenues" or "Roads" generally extending in the east-west direction. Some of the key north-south streets include Vernon Boulevard, 11th Street, and 21st Street west of Sunnyside Yard, and Van Dam Street east of the yard. Some of the key east-west routes include Borden, Thomson and 49th/Hunters Point Avenues, and Queens Boulevard. All the routes mentioned above are two-directional. A major traffic route along an important commercial street is the Northern Boulevard/Jackson Avenue corridor which extends into and through the study area in a southwest-to-northeast direction. A number of other streets such as Vernon Boulevard, Queens Plaza South, 40th, 41st, 43rd and 44th Avenues, and 44th Drive lead directly to the Project Site. Following is a discussion of some of the key roadways in the study area vicinity:

- **Queens Boulevard and Queens Plaza North and South** link the Queensboro Bridge's main (lower) roadway with central Queens. Queens Boulevard is the primary arterial through central Queens, leading into Long Island City via the Queens Boulevard viaduct over Sunnyside Yard. The viaduct touches down at the heavily trafficked intersection of Queens Plaza (Queens Plaza North and South), Jackson Avenue, and Queens Plaza East (Northern Boulevard extended). Queens Boulevard functions as a major east-west arterial consisting of three travel lanes in each direction separated by a wide median that carries New York City Transit's elevated #7 Flushing train.

- **Northern Boulevard/Queens Plaza East** extends across Queens Boulevard/Queens Plaza North and South and connects the study area with northern sectors of Long Island City, Astoria, and northern Queens. The Northern Boulevard/Jackson Avenue corridor extends into and through Long Island City in a southwest-to-northeast direction, and functions as a major traffic route along an important commercial strip. The number of lanes along this corridor varies from two to three travel lanes in each direction. This corridor extends into Jackson Avenue, which is a major connector between the Queens Plaza area and Hunters Point, and is an important commercial street in the area.

- **Thomson Avenue** is a major east-west feeder route to the upper roadway of the Queensboro Bridge and to parts of Long Island City west of the Sunnyside Rail Yard. Thomson Avenue is one of the few roadways that cross over the Sunnyside Rail Yard, carrying three lanes of traffic in each direction.

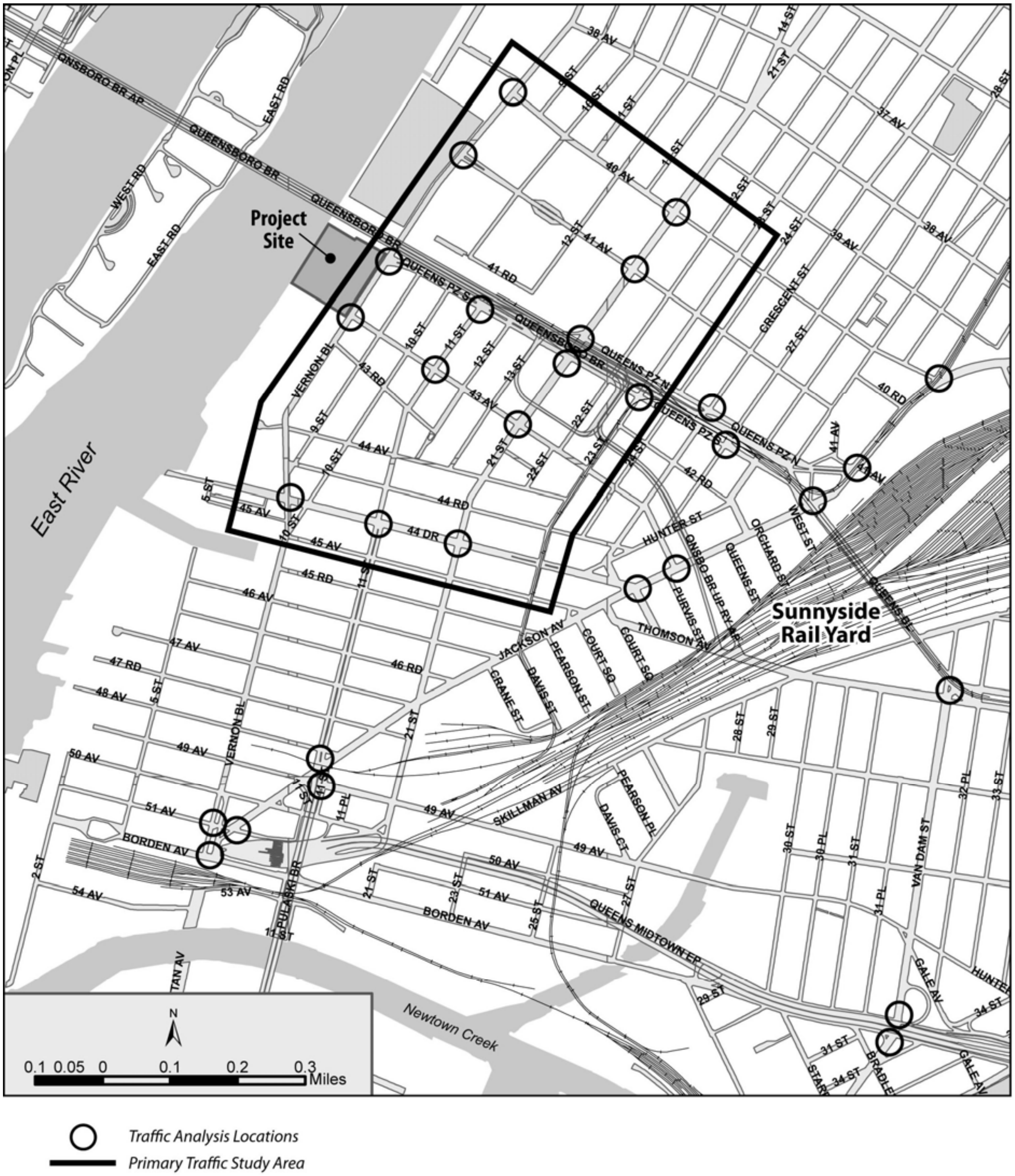


Figure 9-1:
Traffic Analysis Study Area

- **Long Island Expressway (LIE)** connects all of central and eastern Queens with Long Island City as well as the Queens-Midtown Tunnel en route to Manhattan. It is a major carrier of traffic from eastern Queens and Long Island to the study area through its local exits to Greenpoint Avenue and Van Dam Street (the last exit before the Queens-Midtown Tunnel).
- **Borden Avenue** is the extension of the LIE's service roads west of Van Dam Street and serves as an important traffic carrier to and from the waterfront sites in Long Island City.
- **Vernon Boulevard** extends past the proposed Project Site in a north-south direction, and is an important corridor for traffic traveling along the waterfront between Borden Avenue to the south and Astoria Boulevard to the north. It typically carries one lane of traffic in each direction with on-street parking. It is a moderately trafficked roadway and is characterized by unsignalized intersections near the Project Site.

Other streets that are expected to serve the Project Site include 40th, 41st, 43rd and 44th Avenues and 44th Drive, which are more local traffic oriented, two-way, east-west streets.

2. Existing Traffic Volumes

Traffic counts for typical weekday conditions were conducted in May 2003, including manual intersection counts and 24-hour Automatic Traffic Recorder (ATR) machine counts. At the request of the New York City Department of City Planning (NYCDCP), counts were also conducted on a typical Saturday Midday in November 2004 to determine weekend conditions. Additionally, two intersections were also counted on a typical weekday in February 2005 when they were added to the traffic study area during the DEIS scoping process. These volumes were used along with observations of actual traffic conditions to determine levels of service (LOS) using the *2000 Highway Capacity Manual (HCM 2000)* procedures. According to the *2001 City Environmental Quality Review (CEQR) Technical Manual,* traffic impact analyses are required at an intersection if the proposed project is expected to generate at least 50 peak hour vehicle trips through it. All 30 locations were analyzed for weekday AM, Midday and PM peak hours; 19 of the 30 locations were analyzed for Saturday Midday conditions since the proposed project is expected to generate at least 50 vehicle trips through those locations during the Saturday Midday period.

The determination of peak hours yielded an AM peak hour of 8–9 AM, a Midday peak hour of 1–2 PM, and a late afternoon/early evening peak hour of 5–6 PM for typical weekday conditions. The Saturday Midday peak was determined to be 1–2 PM. An overview of the traffic volumes along some of the local and commuter routes within the study area is provided in Table 9-1. Overall, a considerable amount of congestion is prevalent along some of the major commuter routes during the AM and PM peak hours, but the more local streets carry much lower volumes. Detailed traffic volume maps and LOS details for each of the intersections are provided in the Traffic Technical Appendix.

It can be seen from the sample locations listed in Table 9-1 that the weekday PM peak hour experiences the highest traffic volumes. In general, the weekday AM and Midday peak hour volumes are approximately 15 to 20 percent lower than the PM peak hour volumes, and the Saturday peak hour volumes are approximately 30 percent lower than the PM peak hour volumes.

TABLE 9-1: EXISTING TRAFFIC VOLUMES

Roadway Section	Weekday			Saturday
	8–9 AM	1–2 PM	5–6 PM	1–2 PM
Local Routes				
Vernon Boulevard between 49th and 50th Streets	615	592	553	383
Vernon Blvd. between Queens Plaza South and 43rd Avenue	996	870	889	538
Queens Plaza South between 21st and 22nd Streets	165	201	203	158
11th Street between 44th Drive and 44th Road	557	462	658	415
44th Drive between 11th Street and Vernon Boulevard	439	348	316	179
Commuter Routes				
Thomson Avenue between 30th Place and 31Street	2,023	1,926	2,704	1,909
Queens Boulevard west of Skillman Avenue	2,003	2,299	2,648	2,053
Queens Plaza South between 28th and 29th Streets	1,158	1,011	1,358	1,196
Jackson Avenue between Queens Boulevard and 43rd Avenue	1,298	1,058	1,300	761
Northern Boulevard between 40th Road and 41st Avenue	2,118	2,367	2,889	2,310
21st Street between Queens Plaza South and 43rd Avenue	1,592	1,496	1,858	1,060
TOTAL (sample locations)	**12,964**	**12,631**	**15,376**	**10,877**

3. Existing Traffic LOS

Analyses of traffic conditions in urban areas are based on critical conditions at intersections and are defined in terms of levels of service. According to the HCM 2000 that was used for these analyses, LOS at signalized intersections are defined in terms of a vehicle's control delay at the intersection, 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 significant 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. Delays of 45.0 seconds or greater are considered marginally unacceptable; delays under 45.0 seconds are considered marginally acceptable.
- 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 be contribute to such delays. Often, vehicles do not pass through the intersection in one signal cycle.

Levels of service 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 is considered unacceptable above mid-LOS D. LOS E and F are considered unacceptable.

Although the majority of analyzed intersections are signalized, some are not. For these 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 unacceptable to most drivers. This condition exists when there are insufficient gaps of suitable size to allow side street traffic to cross safely through a major vehicular traffic stream.

Table 9-2 provides an overview of the levels of service that characterize the traffic study area during the peak hours. A summary description is also provided below:

- In the weekday AM peak hour, four of the 24 signalized intersections analyzed are operating at overall unacceptable LOS E or F and five other intersections are operating at LOS D. "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 of the individual traffic movements). Sixteen specific traffic movements (e.g., left turns from one street to another, through traffic on one street passing through the intersection) out of approximately 98 total traffic movements analyzed are at LOS E or F conditions.
- In the weekday Midday peak hour, one signalized intersection operates at overall LOS E or F, while two are at overall LOS D. Four traffic movements are operating at LOS E or F.
- In the weekday PM peak hour, two signalized intersections are operating at overall LOS E or F, while four are at overall LOS D. Five traffic movements are operating at LOS E or F.
- In the Saturday Midday peak hour, none of the signalized intersections are operating at overall LOS E or F, while two are at overall LOS D. Only one traffic movement is operating at LOS E or F.
- Each of the six unsignalized intersections analyzed operates at acceptable levels of service during each of the traffic analysis hours.

TABLE 9-2: EXISTING TRAFFIC LOS SUMMARY

Signalized Intersections	Weekday			Saturday
	AM	MD	PM	MD
Overall LOS A/B	7	10	9	7
Overall LOS C	8	11	9	5
Overall LOS D	5	2	4	2
Overall LOS E/F	4	1	2	0
Number of Movements at LOS E or F	16	4	5	1
Unsignalized Intersections	**AM**	**MD**	**PM**	**MD**
Overall LOS A/B	5	5	5	5
Overall LOS C	1	1	0	0
Overall LOS D	0	0	1	0
Overall LOS E/F	0	0	0	0
Number of Movements at LOS E or F	0	0	0	0

Another representation of overall existing levels of service by intersection can be seen in Figures 9-2 through 9-5.

A more detailed presentation of traffic volumes and levels of service by corridor is provided below. (Details of the LOS analyses and traffic volume maps for each traffic movement at the intersections analyzed are presented in the Traffic Technical Appendix).

a) Vernon Boulevard

Levels of service along Vernon Boulevard are clearly acceptable with all signalized intersections analyzed operating at overall LOS C or better for all the peak periods. No movement at any of the intersections analyzed along Vernon Boulevard operates at an unacceptable LOS.

b) 11TH Street

Along the 11th Street corridor, all the signalized intersections analyzed operate at overall LOS C except the intersection of 11th Street and Jackson Avenue, which operates at acceptable/unacceptable overall LOS D during the weekday AM and PM peak hours. The northbound left-through movement of 11th Street at this intersection operates at LOS E during the weekday AM peak hour.

c) 21ST Street

All the signalized intersections analyzed along the 21st Street corridor operate at acceptable overall LOS D or better. During the weekday PM peak hour, the eastbound approach of Queens Plaza South at its intersection with 21st Street operates at LOS E.

d) Jackson Avenue/Northern Boulevard

Along the Jackson Avenue/Northern Boulevard corridor, three of the five signalized intersections analyzed operate at unacceptable overall LOS D/E during at least one peak hour, including the following:

- At the intersection of Jackson Avenue and Queens Boulevard/Queens Plaza South/Queens Plaza East, the Jackson Avenue northbound through movement operates at LOS E during the weekday AM peak hour and at LOS F during the weekday PM peak hour. Also, the westbound Queens Boulevard left-through movement at this intersection operates at LOS F during all three weekday peak hours.
- At the intersection of Northern Boulevard and 41st Avenue, southbound Northern Boulevard operates at LOS F during the weekday AM peak hour. Also, the eastbound approach of Queens Plaza North, during the weekday AM peak hour, and the northbound approach of Northern Boulevard, during the weekday Midday peak hour, operate at LOS E.
- At the intersection of Northern Boulevard and 31st Street, the southbound approach of 31st Street and the southbound approach of Northern Boulevard operate at LOS F during the weekday AM peak hour.

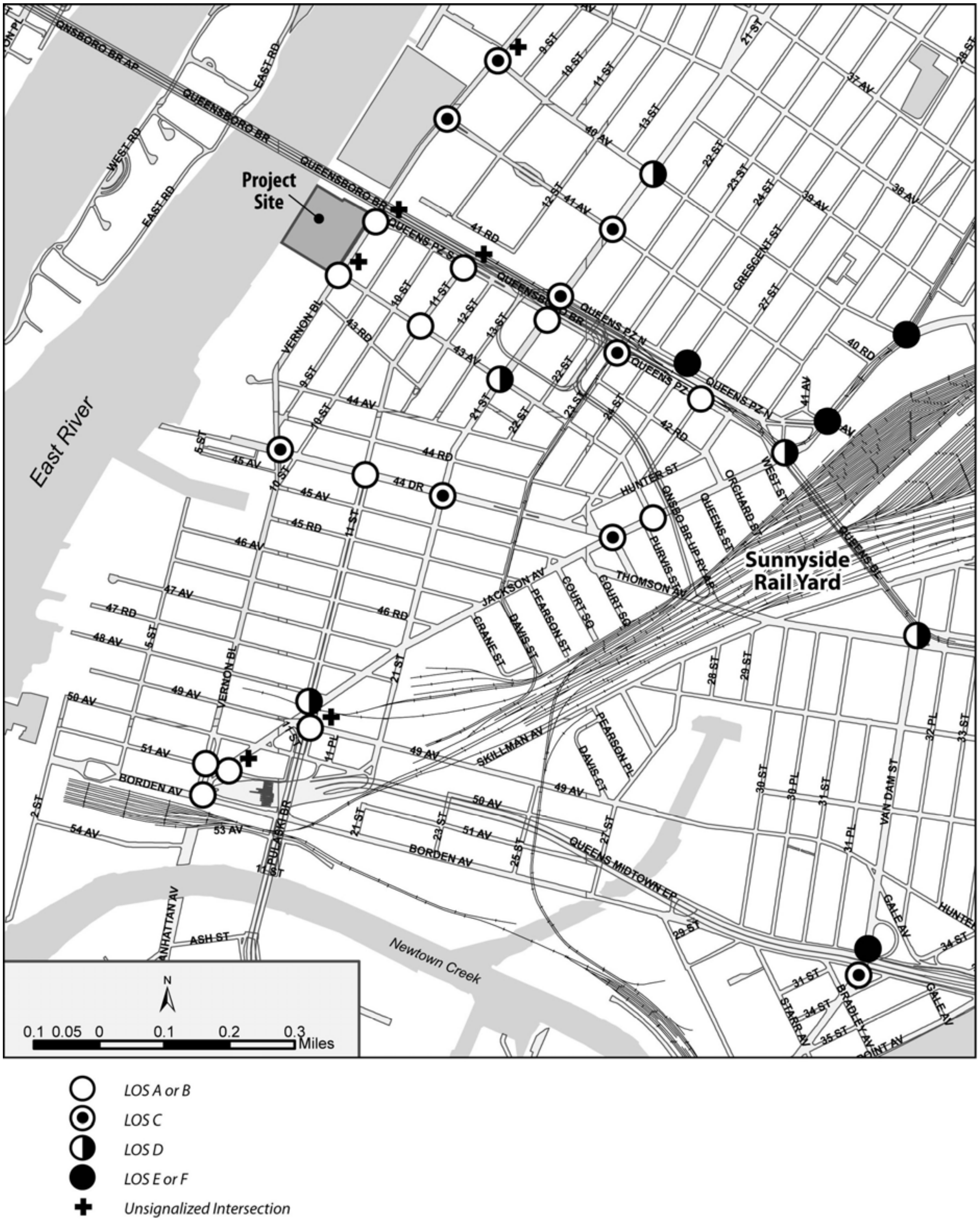
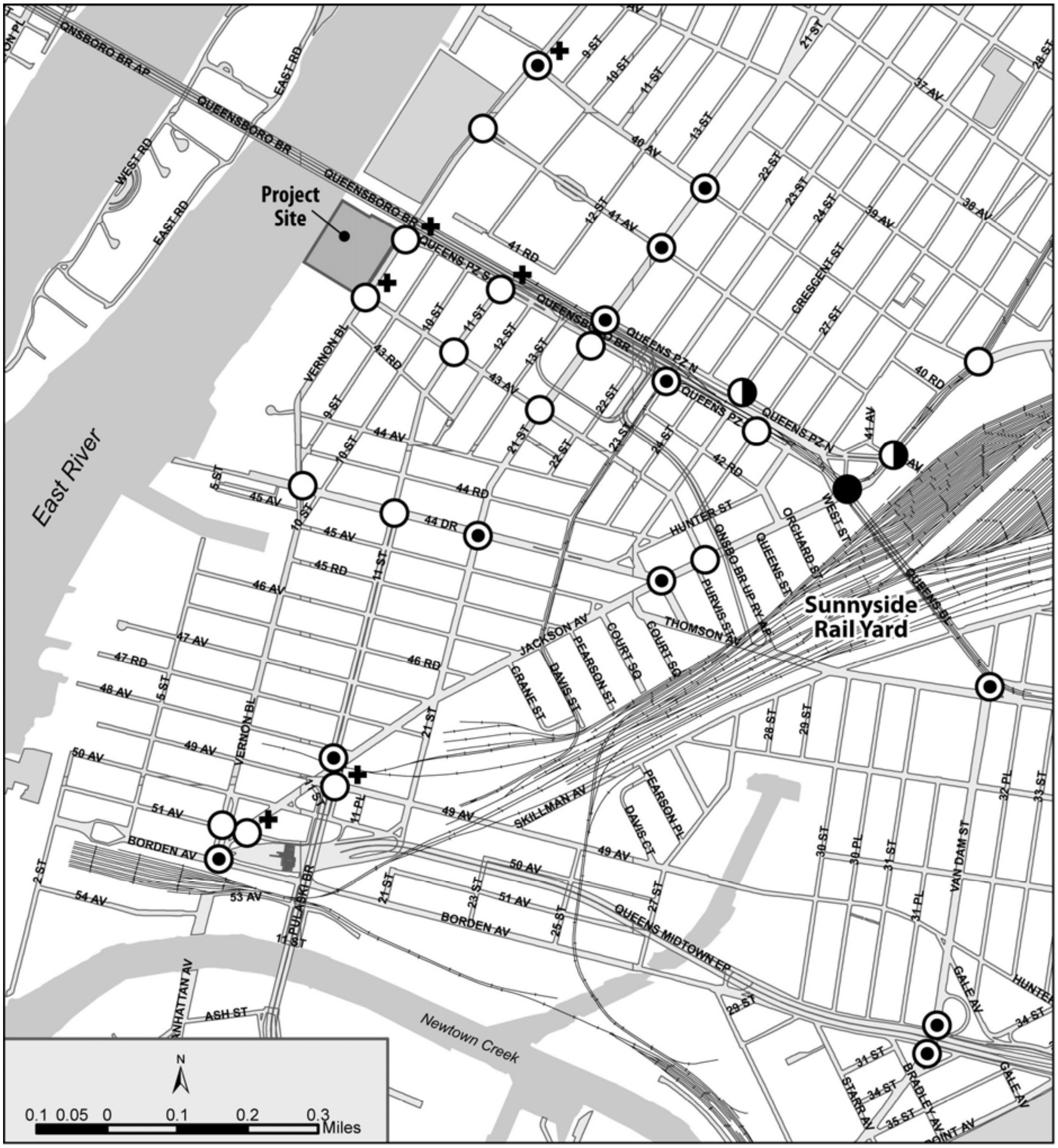


Figure 9-2:
Existing AM Peak Traffic LOS



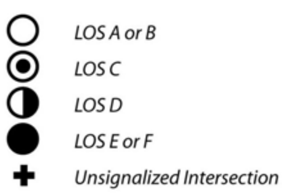


Figure 9-3:
Existing Midday Peak Traffic LOS

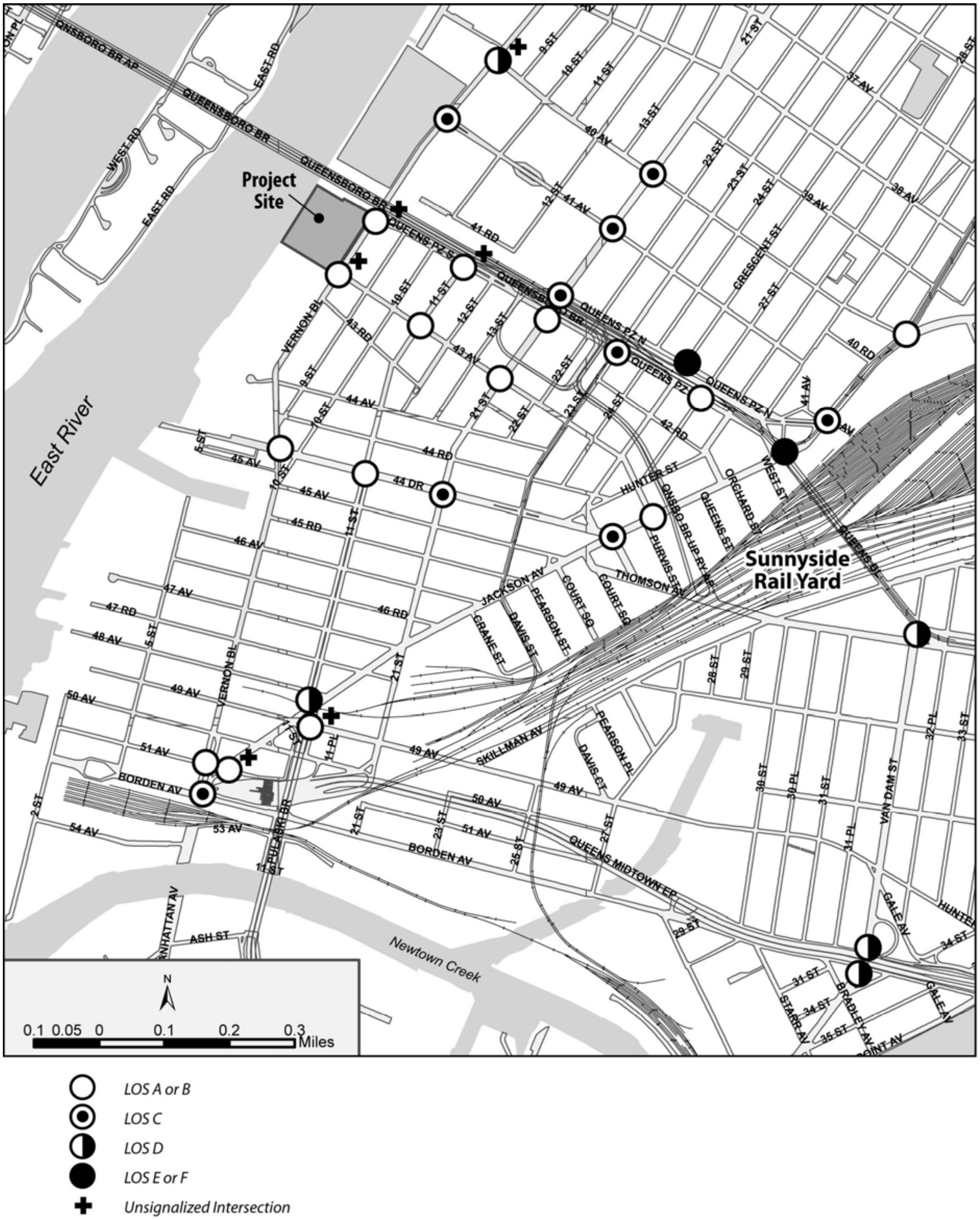
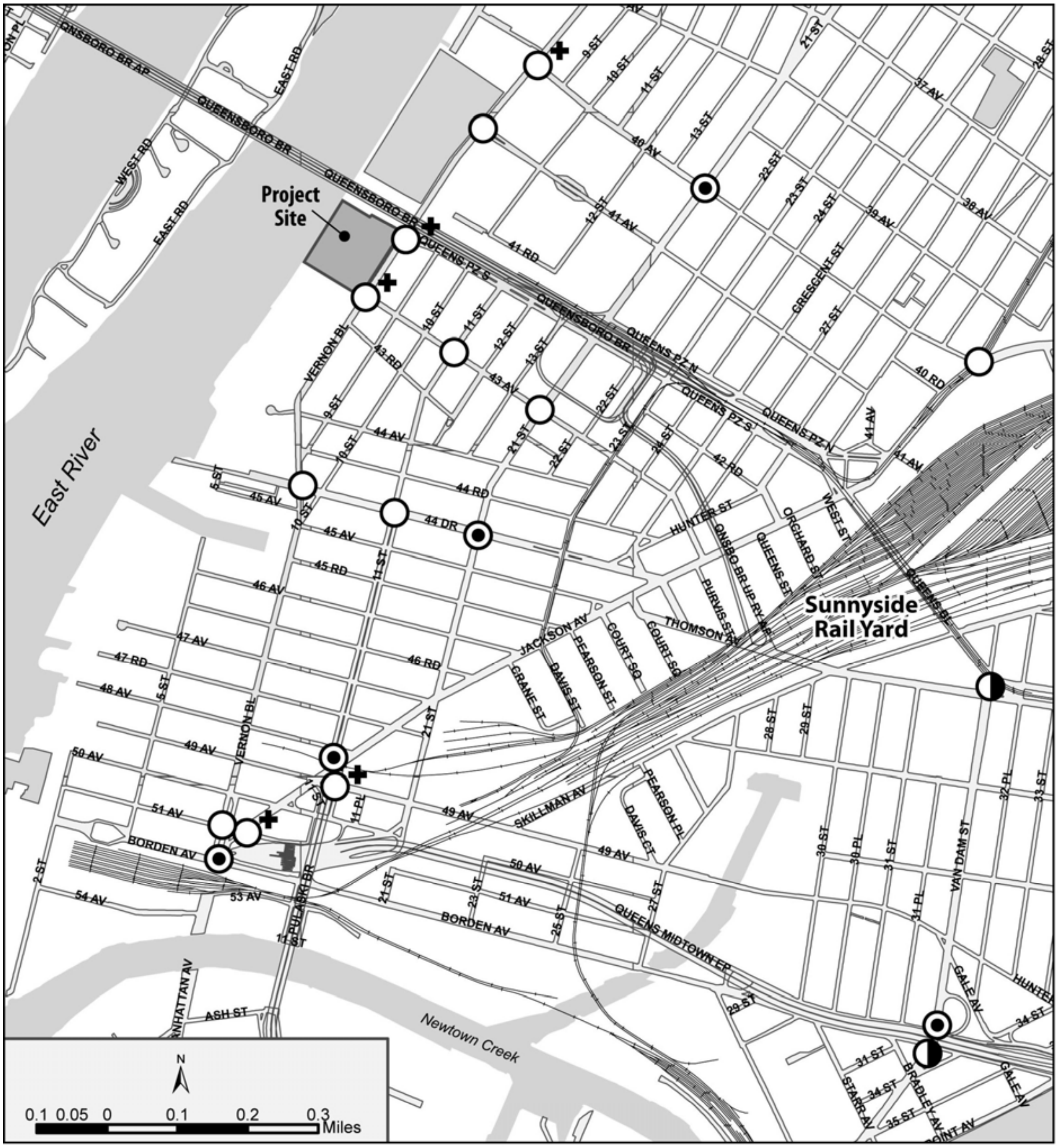


Figure 9-4:
Existing PM Peak Traffic LOS



LOS A or B

LOS C

LOS D

LOS E or F

Unsignalized Intersection

Figure 9-5:
Existing Saturday Midday Peak Traffic LOS

e) Queens Boulevard/Queens Plaza North and South

Along the Queens Boulevard/Queens Plaza North and South corridor two of the four signalized intersections analyzed operate at unacceptable overall LOS D/E/F during the weekday AM and/or PM peak hours, including the following:

- At the intersection of Queens Boulevard/Thomson Avenue at Van Dam Street, southbound Van Dam Street, eastbound Queens Boulevard, and the westbound left-through movement of Queens Boulevard (to Thomson Avenue) operate at LOS E during the weekday AM peak hour. The northbound left-turn movement of Van Dam Street operates at LOS E during the weekday Midday peak hour and at LOS F during the weekday AM, PM, and Saturday Midday peak hours. Also, the northbound through-right movement of this approach operates at LOS E during the weekday AM peak hour.
- At the Queens Plaza North and Crescent Street intersection, the southbound through movement of Crescent Street operates at LOS F during the weekday AM and PM peak hours and LOS E during the weekday Midday peak hour. Also, the Bridge Plaza roadway (mainline) operates at LOS F during the weekday AM peak hour and at unacceptable LOS D during the weekday PM peak hour.

f) Van Dam Street

The two signalized intersections analyzed operate at unacceptable overall LOS D/E during at least one peak hour, including the following:

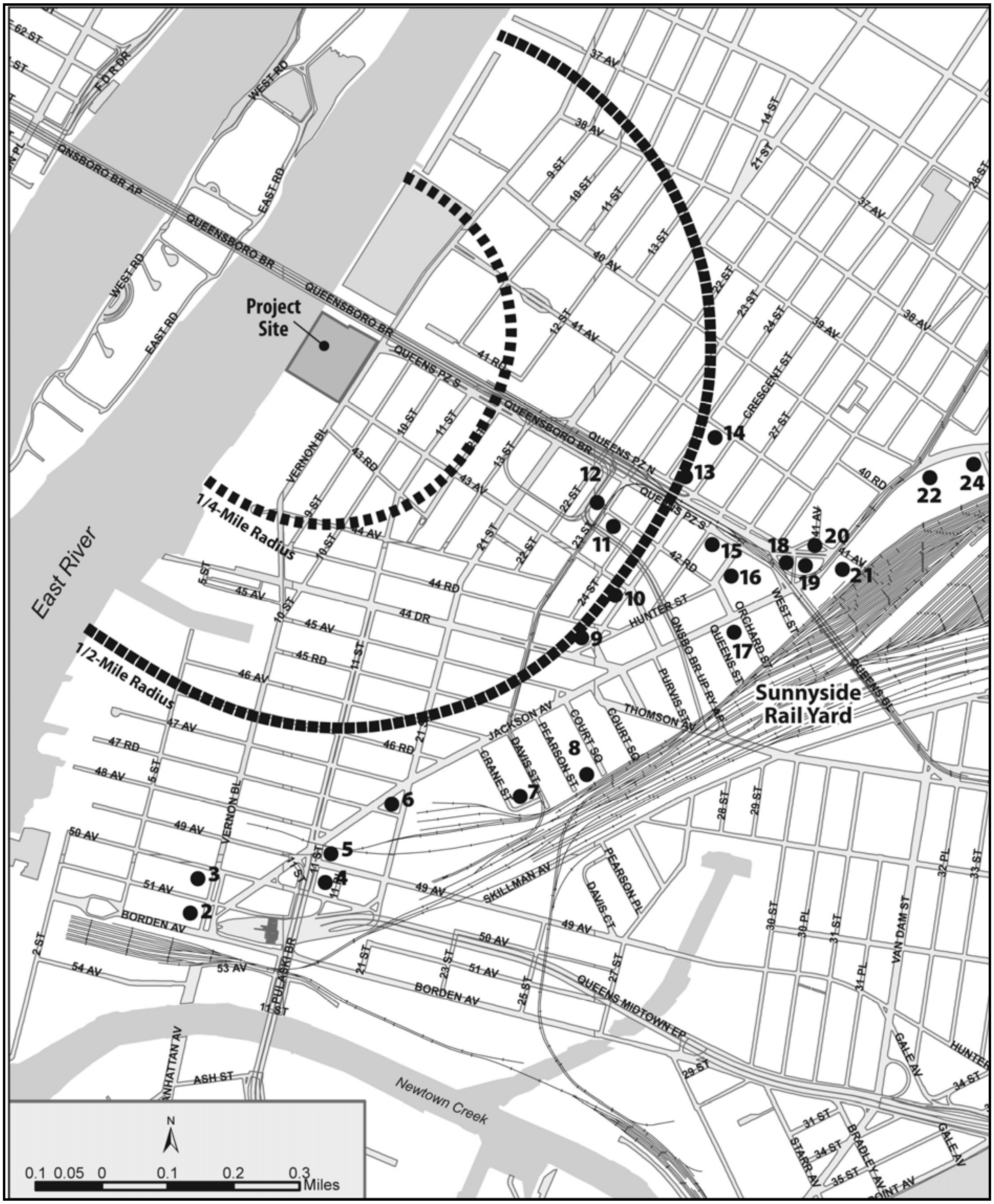
- At the intersection of the Queens-Midtown Expressway (the exit from the westbound LIE) and Van Dam Street, the westbound Queens-Midtown Expressway approach operates at LOS F during the weekday AM peak hour.

All six unsignalized intersections analyzed operate at LOS D or better during the weekday AM, Midday, PM and Saturday Midday peak hours.

4. Parking

A detailed parking inventory of the areas surrounding the proposed Project Site was conducted in May 2003. Information related to on- and off-street parking lots and spaces within a radius of one-half mile around the Project Site was obtained as part of the inventory. Collected information included capacities and occupancies of parking lots at 8 AM, 9 AM and 1 PM.

There are 24 public parking lots or garages in the study area, including a few major facilities – the Queens Plaza Municipal garage (1,143 spaces) located at the southwest corner of Jackson Avenue and Queens Plaza South, and the Municipal Garage at Court Square (680 spaces) located across Jackson Avenue from the Citibank building. Capacities of the remaining parking garages range from 20 to 250 spaces. In general, most parking lots are situated on or near Jackson Avenue/Northern Boulevard and Queens Plaza. An inventory of these parking lots and garages is provided in Table 9-3 and shown on Figure 9-6. It can be seen from the figure that all of these parking lots are located more than a quarter-mile away from the Project Site, and most are more than a half-mile away.



Note: Numbers correspond to Facility ID # as listed in Table 9-3.

Figure 9-6:
Existing Off-Street Parking Facilities

TABLE 9-3: INVENTORY OF PUBLIC PARKING LOTS AND GARAGES

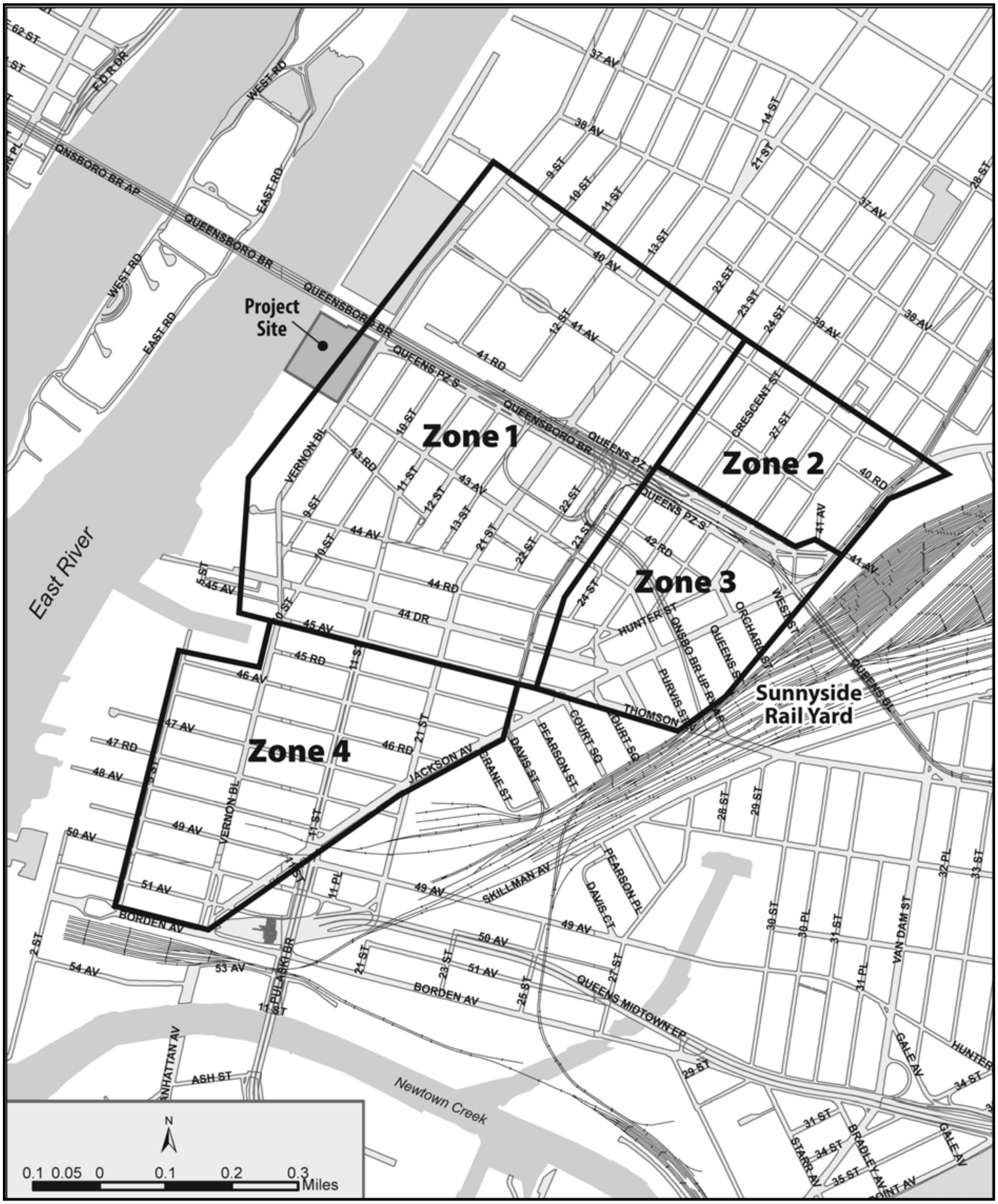
Facility ID#	Name and Address	Capacity	Percent Occupied		
			8 AM	9 AM	1 PM
1	S&R Parking 10-40 Borden Avenue	140	95	100+	100+
2	MPB Inc. Borden Avenue	150	88	100+	100+
3	Nick's Lot 5-52 50th Avenue	45	91	100+	100
4	Mutual Auto Park, 11-15 50th Avenue	110	62	79	100+
5	11-55 49th Avenue Parking	100	49	92	100+
6	Hunters Point Plaza, Jackson Ave. at 47th Avenue	148	45	48	80
7	Evia Parking Systems, 44-66 Davis Street	80	96	98	100+
8	Municipal Garage at Court Square	680	9	37	94
9	Parking Lot North of Citibank	150	41	100+	100+
10	4300 Crescent Street LLC	250	49	100+	100+
11	LIC Parking Corp., 23rd Street	70	88	95	100+
12	23rd Street Parking Inc., 23rd Street	100	90	89	100+
13	Last Stop Parking Inc., Queens Plaza North	54	51	64	82
14	T.P.E.C. Corp., 41-10 Crescent Street	125	100+	100+	100+
15	Braz Parking, 27th Street	71	15	22	74
16	Municipal Garage at Queens Plaza	1,143	49	67	77
17	Alex Operating Corp. 27-50 Jackson Avenue	150	35	61	82
18	NYCDOT Parking Lot, JFK Commuter Plaza	23	66	80	98
19	Municipal Meters, Queens Plaza/JFK Commuter Plaza	62	32	70	97
20	Municipal Meters, Queens Plaza East/41st Avenue	20	56	51	97
21	Dae Young Int. Inc., 29-28 Northern Boulevard	115	32	53	100+
22	Northern Blvd between 40th Road and 40th Avenue	160	40	73	78
23	Alert Garage Corp. 30-17 40th Avenue	200	92	100+	100+
24	Metro Commuter Parking 32-04 Northern Boulevard	50	47	61	88
	TOTAL	**4,196**	**52**	**74**	**93**

Note: Facility ID numbers indicated in this table correspond to those shown in Figure 9-6.

The Municipal Garage at Queens Plaza, which represents about 25 percent of all the off-street parking in the study area, is 49 percent full by 8 AM and 77 percent full by 1 PM. The Municipal Garage at Court Square whose 680 parking spaces represents approximately 16 percent of off-street parking in the area, is only 37 percent occupied at 9 AM, but by 1 PM almost reaches capacity with an occupancy of 94 percent. At 8 AM there are three locations with occupancies of 95 percent or more. By 9 AM, there are nine facilities that have occupancies of 95 percent or higher. By 1 PM, 16 of the 24 parking locations have occupancies of 95 percent or higher, 13 of which are at full occupancy.

Overall, the 24 off-street parking facilities are 52 percent full by 8 AM, 74 percent full by 9 AM, and 93 percent full by 1 PM.

A parking inventory was conducted to determine the number of legal on-street parking spaces available for each block in the study area and the occupancy percentage of each. The study area has been broken down into four on-street parking zones for data collection and presentation purposes, as shown in Table 9-4 presents an overview of capacity and occupancy of on-street parking in the study area. As shown in the table, 95 percent of on-street spaces are occupied by 8–9 AM and stay occupied through the Midday. This is consistent for all four zones. A map depicting parking regulations within the study area is presented in the Traffic Technical Appendix.



Note: Numbers correspond to Zone # as listed in Table 9-4

Figure 9-7: Existing On-Street Parking Zones

TABLE 9-4: ON-STREET PARKING SUMMARY

	Weekday 8 – 9 AM			Weekday 12 – 1 PM		
	No. of Spaces Legally Available	**No. of Spaces Vacant**	**Percent Occupancy**	**No. of Spaces Legally Available**	**No. of Spaces Vacant**	**Percent Occupancy**
Zone 1	2,225	133	94	2,248	93	96
Zone 2	375	16	96	389	9	98
Zone 3	856	20	98	843	28	97
Zone 4	1,213	74	94	1,238	38	97
TOTAL	**4,669**	**243**	**95**	**4,718**	**168**	**96**

C. FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION (NO BUILD CONDITION – YEAR 2009)

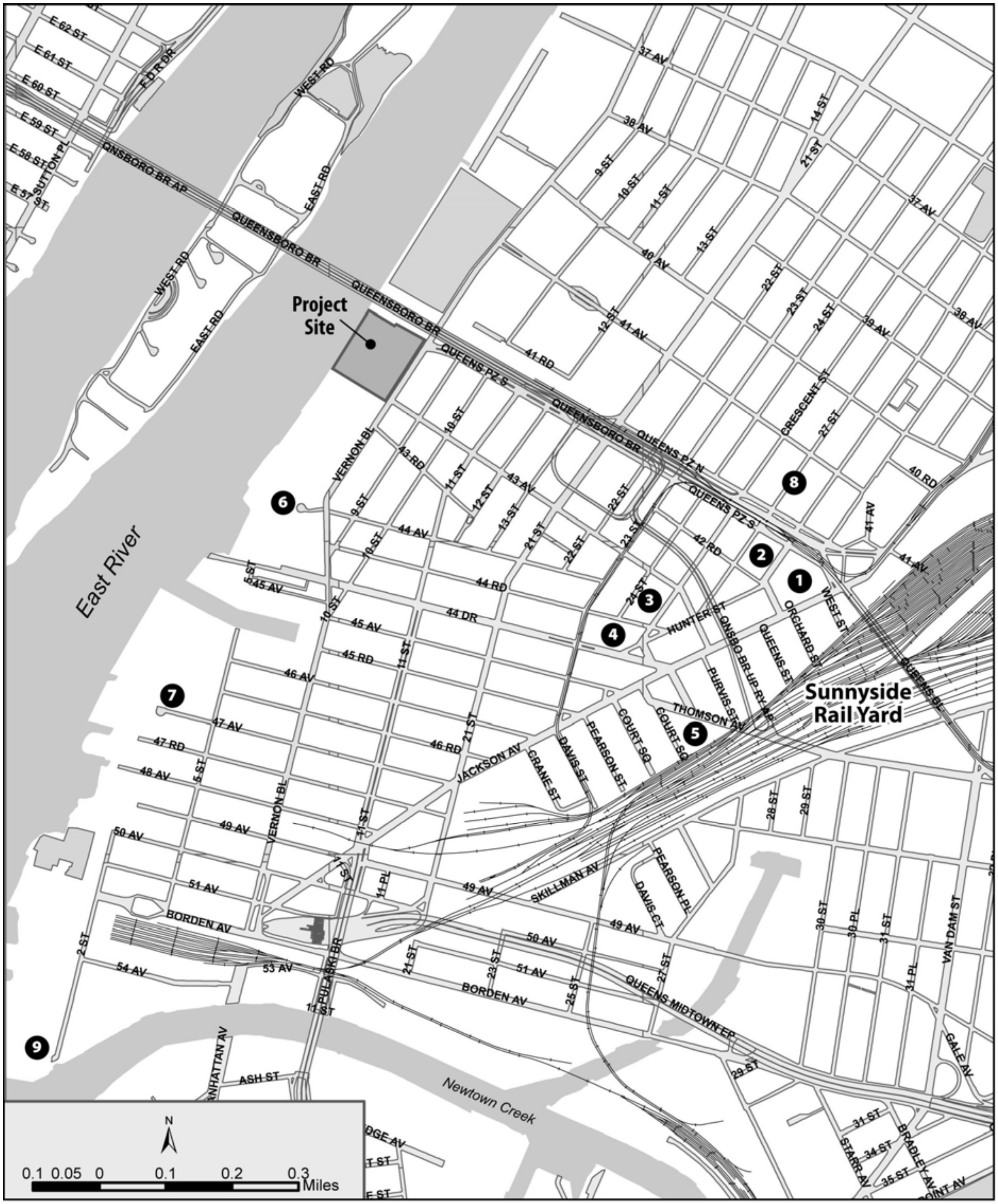
This section establishes the baseline (the No Build) condition against which the impacts of the proposed project can be compared. Future year traffic conditions were analyzed for the year 2009. Future No Build traffic volumes were established by applying a background traffic growth rate of one percent per year obtained from the *LIC Rezoning FEIS*. Trips expected to be generated by buildout of expected developments were added to the one percent background growth rate to develop future No Build traffic volumes.

1. Trip Generation and Assignments

The extent of commercial and residential buildout for No Build 2009 conditions was determined based on information obtained from private developers, NYCDCP staff, the Office of the Queens Borough President, the New York City Economic Development Corporation, and the Queens West Development Corporation. Nine developments were identified as noted in Table 9-5 and shown in Figure 9-8.

A detailed description of the trip generation analysis procedure for each development is provided in this section. Trip generation analyses were based on the floor areas listed in Table 9-5 and information referenced in the *LIC Rezoning FEIS.*

For the Municipal Garage site office (Site 1), Citibank Office – Block 435 (Site 4), and UN Federal Credit Union – Block 428 (Site 3), the vehicular trips generated by development expected on these three sites were obtained from the *LIC Rezoning FEIS* for the amount of development that was expected by 2009 for these particular sites. A lesser amount of development is currently expected on these sites, so the volume of vehicular trips currently expected to be generated was pro-rated based on a comparison of the previous and current development projections.



Note: Numbers correspond to Development# as listed in Table 9-5.

Figure 9-8: Background Developments for 2009 No Build Conditions

TABLE 9-5: APPROVED DEVELOPMENTS FOR 2009 NO BUILD CONDITIONS

Map No.	Development Project	Floor Area (sf)
	Commercial Development	**2,163,000**
1	Municipal Garage site office	700,000
2	Block 422 office	713,000 (includes 20,000 retail)
3	UN Federal Credit Union (Block 428)	250,000
4	Citibank office (Block 435)	500,000
	Residential Development	**4,138,000**
5	Eagle residential conversion (45-31 Court Square)	385,000
6	River East Development	900,000 (includes 12,500 retail)
7	Queens West Parcels 3-9	2,538,000
8	Miscellaneous residential development north of Queens Plaza	15,000
9	Queens West Parcels 17-20	300,000
	TOTAL	**6,301,000**

Note: Numbers for sites listed above correspond to Figure 9-8.

Block 422 (Site 2) is in very close proximity to the Municipal Garage office site (Site 1) and both developments would have similar characteristics in terms of person and vehicular trips. For Block 422, the *LIC Rezoning FEIS* provides information only for person trips, but it provides information for Site 1 that was used to develop vehicular trip information for the AM and PM periods.

For the miscellaneous residential development north of Queens Plaza (Site 8), and Eagle Residential Conversion (45-31 Court Square - Site 5), the vehicular trips generated by development expected on these sites were obtained from the *LIC Rezoning FEIS*, in proportion to the amount of development expected by 2009. Traffic assignment patterns used in the LIC Rezoning FEIS were again used, with the volume of trips pro-rated according to the comparison of development densities expected at this time versus that expected when the LIC Rezoning FEIS was prepared.

For the Queens West Parcels 3-9 (Site 7) and 17-20 (Site 9), the vehicular trips generated by development expected on the 11 parcels were obtained from the *Hunters Point Waterfront Development EIS* in proportion to the amount of development expected by 2009 for those sites; the same analysis process described above was used for developing trip projections and traffic assignments.

The River East Development (Site 6) is primarily a residential development with a very small retail component. Vehicular trips generated by development expected on this site were obtained from the *LIC Rezoning FEIS*, in proportion to the amount of development expected by 2009.

Tables 9-6, 9-7, 9-8 and 9-9 summarize the volume of vehicular trips generated by each of the nine developments. As shown in the tables, the volumes of trips generated are very comparable (approximately 1,200 to 1,300 vph) during the weekday peak hours. Only 386 vph are expected to be generated during the Saturday Midday peak hour. Table 9-10 provides a summary comparison of the total vehicle trips for these developments for year 2009.

TABLE 9-6: 2009 NO BUILD VEHICULAR TRIP GENERATION FOR WEEKDAY AM PEAK HOUR

	LIC Development Sites	Land Use	Source*	Trips In	Trips Out	Total Trips
1	Municipal Garage site office	Office	LIC	152	29	181
2	Block 422 office and retail	Office	LIC	140	28	168
3	UN Federal Credit Union (43-25 24 St)	Office	LIC	56	11	67
4	Citibank office	Office	LIC	112	22	134
5	Eagle residential conversion (45-31 Court Sq)	Residential	LIC	41	158	199
6	River East Development (includes retail)	Residential	LIC	36	81	117
7	Queens West (Parcels 3-9)	Residential	LIC	104	231	335
8	Misc. residential north of Queens Plaza	Residential	LIC	1	6	7
9	Queens West (Parcels 17-20)	Residential	LIC	24	35	59
			TOTAL	**666**	**601**	**1,267**

* *LIC = Long Island City Rezoning FEIS (May 2001).*

TABLE 9-7: 2009 NO BUILD VEHICULAR TRIP GENERATION FOR WEEKDAY MIDDAY PEAK HOUR

	LIC Development Sites	Land Use	Source*	Trips In	Trips Out	Total Trips
1	Municipal Garage site office	Office	LIC	50	66	116
2	Block 422 office and retail	Office	LIC	97	111	208
3	UN Federal Credit Union (43-25 24 St)	Office	LIC	35	40	75
4	Citibank office	Office	LIC	70	80	150
5	Eagle residential conversion (45-31 Court Sq)	Residential	LIC	40	28	68
6	River East Development (includes retail)	Residential	LIC	76	77	153
7	Queens West (Parcels 3-9)	Residential	LIC	203	205	408
8	Misc. residential north of Queens Plaza	Residential	LIC	1	1	2
9	Queens West (Parcels 17-20)	Residential	LIC	17	17	34
			TOTAL	**589**	**625**	**1,214**

* *LIC = Long Island City Rezoning FEIS (May 2001).*

TABLE 9-8: 2009 NO BUILD VEHICULAR TRIP GENERATION FOR WEEKDAY PM PEAK HOUR

	LIC Development Sites	Land Use	Source*	Trips In	Trips Out	Total Trips
1	Municipal Garage site office	Office	LIC	28	119	147
2	Block 422 office and retail	Office	LIC	33	118	151
3	UN Federal Credit Union (43-25 24 St)	Office	LIC	11	50	61
4	Citibank office	Office	LIC	21	88	109
5	Eagle residential conversion (45-31 Court Sq)	Residential	LIC	126	49	175
6	River East Development (includes retail)	Residential	LIC	97	57	154
7	Queens West (Parcels 3-9)	Residential	LIC	264	150	414
8	Misc. residential north of Queens Plaza	Residential	LIC	5	2	7
9	Queens West (Parcels 17-20)	Residential	LIC	38	28	66
			TOTAL	**623**	**661**	**1,284**

* *LIC = Long Island City Rezoning FEIS (May 2001).*

TABLE 9-9: 2009 NO BUILD VEHICULAR TRIP GENERATION FOR SATURDAY MIDDAY PEAK HOUR

	LIC Development Sites	Land Use	Source*	Trips In	Trips Out	Total Trips
1	Municipal Garage site office	Office	LIC	7	7	14
2	Block 422 office and retail	Office	LIC	19	19	38
3	UN Federal Credit Union (43-25 24 St)	Office	LIC	3	3	6
4	Citibank office	Office	LIC	5	5	10
5	Eagle residential conversion (45-31 Court Sq)	Residential	LIC	14	14	28
6	River East Development (includes retail)	Residential	LIC	41	41	82
7	Queens West (Parcels 3-9)	Residential	LIC	93	93	186
8	Misc. residential north of Queens Plaza	Residential	LIC	0	0	0
9	Queens West (Parcels 17-20)	Residential	LIC	11	11	22
			TOTAL	**193**	**193**	**386**

* *LIC = Long Island City Rezoning FEIS (May 2001).*

TABLE 9-10: 2009 NO BUILD TOTAL VEHICULAR TRIP GENERATION

	Autos		Taxis		Trucks		Total		Total Trips
	In	Out	In	Out	In	Out	In	Out	
AM	530	465	58	58	78	78	666	601	1,267
Midday	427	463	105	105	57	57	589	625	1,214
PM	508	546	79	79	36	36	623	661	1,284
Saturday Midday	146	146	37	37	10	10	193	193	386

Trip assignments were derived from the *LIC Rezoning FEIS.* The No Build project-generated trips were assigned to the roadway network and, together with the background traffic growth, became the future No Build traffic volume baseline. Detailed 2009 No Build traffic volume maps are provided in the Traffic Technical Appendix. An overview of the traffic volumes within the study area is provided below:

The Queens Midtown Expressway/Borden Avenue corridor acts as a connector between the Long Island Expressway and Vernon Boulevard for vehicles that need to access development along Vernon Boulevard. Traffic volumes would increase by approximately 100–200 vph during the weekday peak hours and approximately 50-100 vph during the Saturday Midday peak hour mainly due to vehicular trips to the Hunters Point/Queens West waterfront development sites from the Long Island Expressway and return trips.

Along Van Dam Street, traffic volumes would increase by approximately 60–100 vph during the weekday and weekend peak hours. These vehicles would primarily turn left onto Thomson Avenue to access the Long Island City development sites.

Queens Boulevard would experience an increase of approximately 120 vph in the westbound direction during the AM peak hour. These vehicles would then travel along Thomson Avenue to reach their destination. Traffic volumes traveling east along Queens Plaza and then along Queens Boulevard would increase by approximately 100 vph during the peak hours.

11th Street, 21st Street, Northern Boulevard and Jackson Avenue would experience an increase in traffic of approximately 50–100 vph in each direction due to the Queens West sites, the Queens Plaza developments, and projected background traffic volumes.

Along Vernon Boulevard, traffic volumes are expected to increase by approximately 130 vph during peak hours in each direction due to the residential developments that are part of Queens West and the River East Site, and projected background traffic volumes.

2. LOS (2009 No Build Condition)

The 2009 No Build traffic analysis incorporated mitigation measures primarily along the Queens Plaza/Queens Boulevard and Jackson Avenue corridors that were proposed and approved as part of the *Queens Plaza Bike and Pedestrian Improvement Project* (January 2003) and the *LIC Rezoning FEIS*. These measures included physical/geometric modifications and signal timing changes at 11 locations which were used as the baseline conditions for the 2009 No Build analysis, as detailed below:

The goals of the *Queens Plaza Bike and Pedestrian Improvement Project* were to improve pedestrian and biking safety and the capacity of pedestrian facilities and bicycle movements while maintaining the ability of the street network to accommodate the daily traffic using the Queensboro Bridge. Traffic, pedestrian, bicycle, and environmental studies conducted for this project focused on the Queens Plaza area bordered by Queens Plaza North, Northern Boulevard/Queens Plaza East/Jackson Avenue, Queens Plaza South, and Crescent Street. The *Queens Plaza Bike and Pedestrian Improvement Project* (January 2003) was completed after the *LIC Rezoning FEIS* (May 2001) was approved. For the three intersections that were analyzed as part of both projects – Queens Boulevard and Jackson Avenue/Queens Plaza East, Northern Boulevard/Queens Plaza East/41st Avenue, and Queens Plaza North/Crescent Street – the Silvercup West 2009 No Build traffic analysis incorporated mitigation measures from the *Queens Plaza Bike and Pedestrian Improvement Project* since they supercede the *LIC Rezoning FEIS* mitigation measures. Physical/geometric modifications such as restriping, prohibiting left-turns, addition of travel lanes and pedestrian crosswalks, changes to signal timing and phasing plans were all incorporated as part of the 2009 No Build conditions for the following four locations:

- **Queens Boulevard and Jackson Avenue/Queens Plaza East:** Modifications at this intersection would include prohibition of left turns along all approaches, roadway restriping, changes to the signal timing and phasing plan, and the addition of northbound and westbound receiving lanes. Also, pedestrian crosswalks would be provided to allow crossing movements in the eastbound and southbound directions.
- **Northern Boulevard/Queens Plaza East/41st Avenue:** This intersection would be redesigned so that vehicles traveling eastbound through Queens Plaza would be routed to approach the intersection from northbound Queens Plaza East. This intersection would be restriped to accommodate new lane configurations and the signal timing and phasing plan would be modified to allow for pedestrian phases and smooth vehicular progression with adjacent signalized intersections. Also, pedestrian crosswalks would be provided to accommodate the eastbound and southbound crossing movements. Parking would be prohibited along the northbound approach to the intersection.
- **Queens Plaza North and Crescent Street:** Modifications at this intersection would include restriping and changes to the signal timing and phasing plan to allow for pedestrian/bike-only phases and to achieve better traffic flow onto the Queensboro Bridge. Also, pedestrian crosswalks would be provided to accommodate northbound and eastbound crossing movements.
- **Queens Plaza South and 27th Street:** Eastbound Queens Plaza South would be restriped to provide better channelization along the mainline.

These mitigation measures were based on detailed analyses of projected future conditions that include substantial background traffic from other developments that have been proposed and are expected to be built in the Long Island City area. The *Long Island City Rezoning FEIS* notes that "as more than one development site is built out (especially more than one office site), the need for implementation of the full mitigation package would become more imminent, especially, for example, regarding offsetting the centerline of the Jackson Avenue corridor with its left turn lanes and significant parking restrictions". Since the No Build condition assumed for this (i.e., Silvercup West) FEIS includes approximately 6.3 million square feet of development in its background condition, it has been assumed that physical measures that are part of the *Long Island City Rezoning FEIS*' mitigation plan would be in-place. These measures are described below. The New York City Department of City Planning is initiating the design work for streetscape improvements along the Jackson Avenue corridor with design expected to be completed in early 2007, construction to begin in 2007, and construction to be completed by the end of 2009.

- **Jackson Avenue and 11th Street/Pulaski Bridge:** Northbound Pulaski Bridge would be restriped to accommodate one left-turn only lane. The northbound rightmost lane on the bridge would be restriped to allow for access to the service road. One right-turn lane would be added on the service road for vehicles turning right onto eastbound Jackson Avenue. Also, the eastbound and westbound approaches would be restriped and parking would be prohibited along the eastbound approach.

- **Jackson Avenue and 43rd Street/Purves Street:** At this intersection, parking would be prohibited along northbound Jackson Avenue. The signal timing and phasing plan would be modified and the northbound and southbound approaches would be restriped.

- **Jackson Avenue and 44th Drive:** At this intersection, parking would be prohibited along northbound Jackson Avenue. The signal timing and phasing plan would be modified and all approaches would be restriped.

- **Northern Boulevard and 31st Street:** The westbound lanes would be restriped so that during the AM and Midday peak periods the westbound left-most lane would be dedicated to vehicles bound for Jackson Avenue. The remaining two lanes would carry traffic bound for Queens Plaza/Queensboro Bridge.

- **Van Dam Street and Thomson Avenue/Queens Boulevard:** At this intersection, parking would be prohibited along southbound Van Dam Street. Also, the centerline of Van Dam Street would be realigned to add a northbound left-turn lane. Traffic enforcement agents would convert one of the westbound receiving lanes on Thomson Avenue to a third eastbound through lane to provide a right turn lane during each weekday PM peak period. The signal timing and phasing plan would also be modified.

- **Van Dam Street and Queens Midtown Expressway:** At this intersection, the westbound approach would be restriped to provide two through lanes and one exclusive right turn lane. Modifications to the signal timing and phasing plan would also be implemented.

- **21st Street and 44th Drive:** At this intersection, southbound 21st Street would be restriped, and the signal timing and phasing plan would be modified.

Comparison tables detailing mitigation measures from the *LIC Rezoning FEIS* and the *Queens Plaza Bike and Pedestrian Improvement Project* are provided in the Traffic Technical Appendix.

Based on the projected increases in traffic volumes and the physical changes noted above, future No Build levels of service were determined. Detailed intersection capacity analyses by movements for each location are presented in the Technical Traffic Appendix. Figures 9-9 through 9-12 depict levels of service for the weekday AM, Midday, PM and Saturday Midday peak hours respectively. An overview of the findings is summarized in Table 9-11:

- In the weekday AM peak hour, seven of the 24 signalized intersections analyzed would operate at overall unacceptable LOS E or F and six other intersections would operate at LOS D. "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 of the individual traffic movements). Seventeen specific traffic movements (e.g., left turns from one street to another, through traffic on one street passing through the intersection) would operate at LOS E or F conditions.
- In the weekday Midday peak hour, six signalized intersections would operate at overall LOS E or F, while two would operate at overall LOS D. Nine traffic movements would operate at LOS E or F.
- In the weekday PM peak hour, four signalized intersections would operate at overall LOS E or F, while eight would operate at overall LOS D. Sixteen traffic movements would operate at LOS E or F.
- In the Saturday Midday peak hour, three signalized intersections would operate at overall LOS E or F, while two would operate at overall LOS D. Four traffic movements would operate at LOS E or F.
- Five of the six unsignalized intersections analyzed would operate at acceptable levels of service during each of the traffic analysis hours.

TABLE 9-11: 2003 EXISTING VS. 2009 NO BUILD TRAFFIC LOS SUMMARY

	Existing				No Build			
	AM	Midday	PM	Saturday Midday	AM	Midday	PM	Saturday Midday
Signalized Intersections								
Overall LOS A/B	7	10	9	7	6	9	8	8
Overall LOS C	8	11	9	5	5	7	4	1
Overall LOS D	5	2	4	2	6	2	8	2
Overall LOS E/F	4	1	2	0	7	6	4	3
Number of Movements at LOS E or F	16	4	5	1	17	9	16	4
Unsignalized Intersections								
Overall LOS A/B	5	5	5	5	4	5	2	5
Overall LOS C	1	1	0	0	1	0	3	0
Overall LOS D	0	0	1	0	0	0	0	0
Overall LOS E/F	0	0	0	0	1	1	1	0
Number of Movements at LOS E or F	0	0	0	0	2	2	2	0

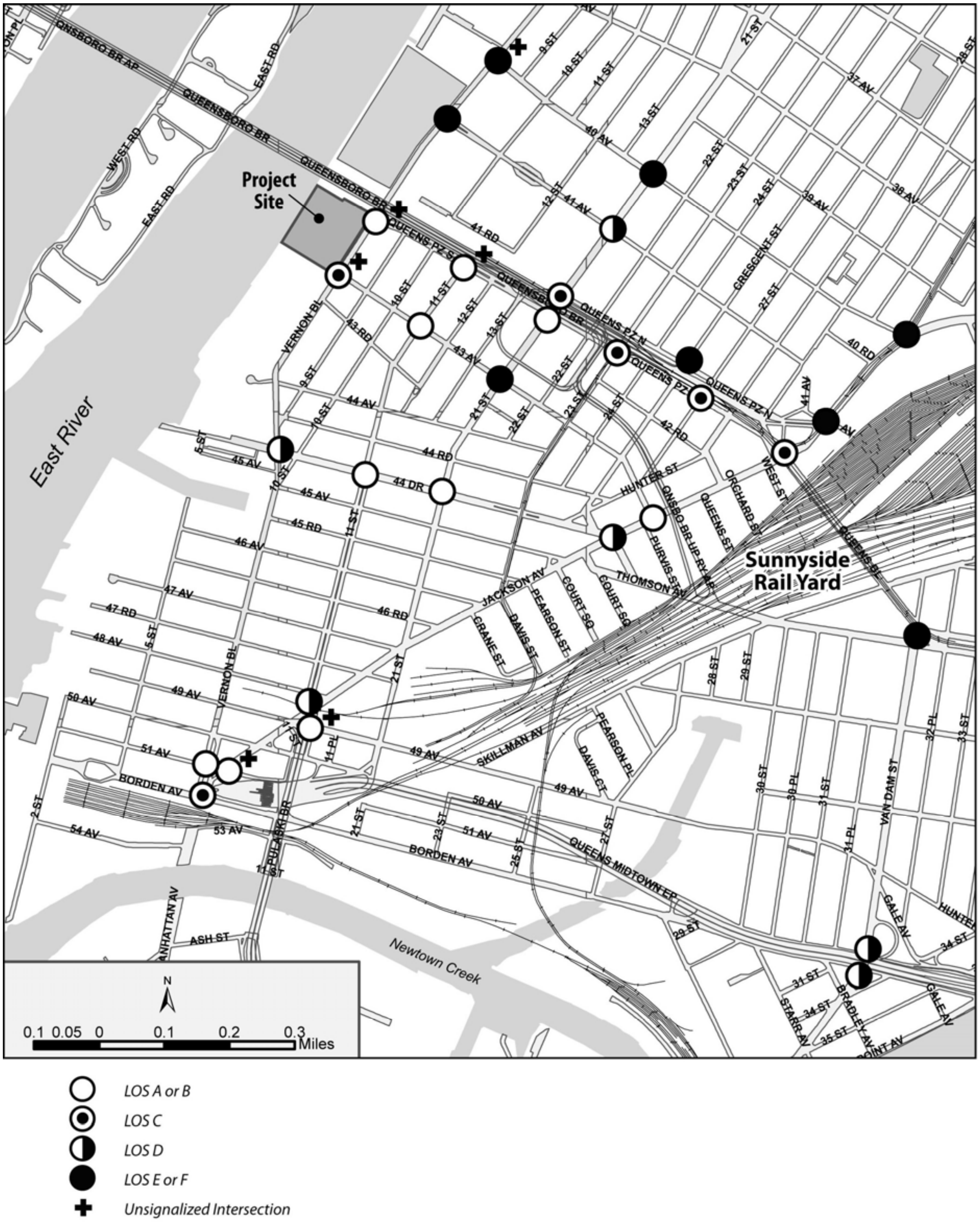


Figure 9-9: 2009 No Build AM Peak Traffic LOS

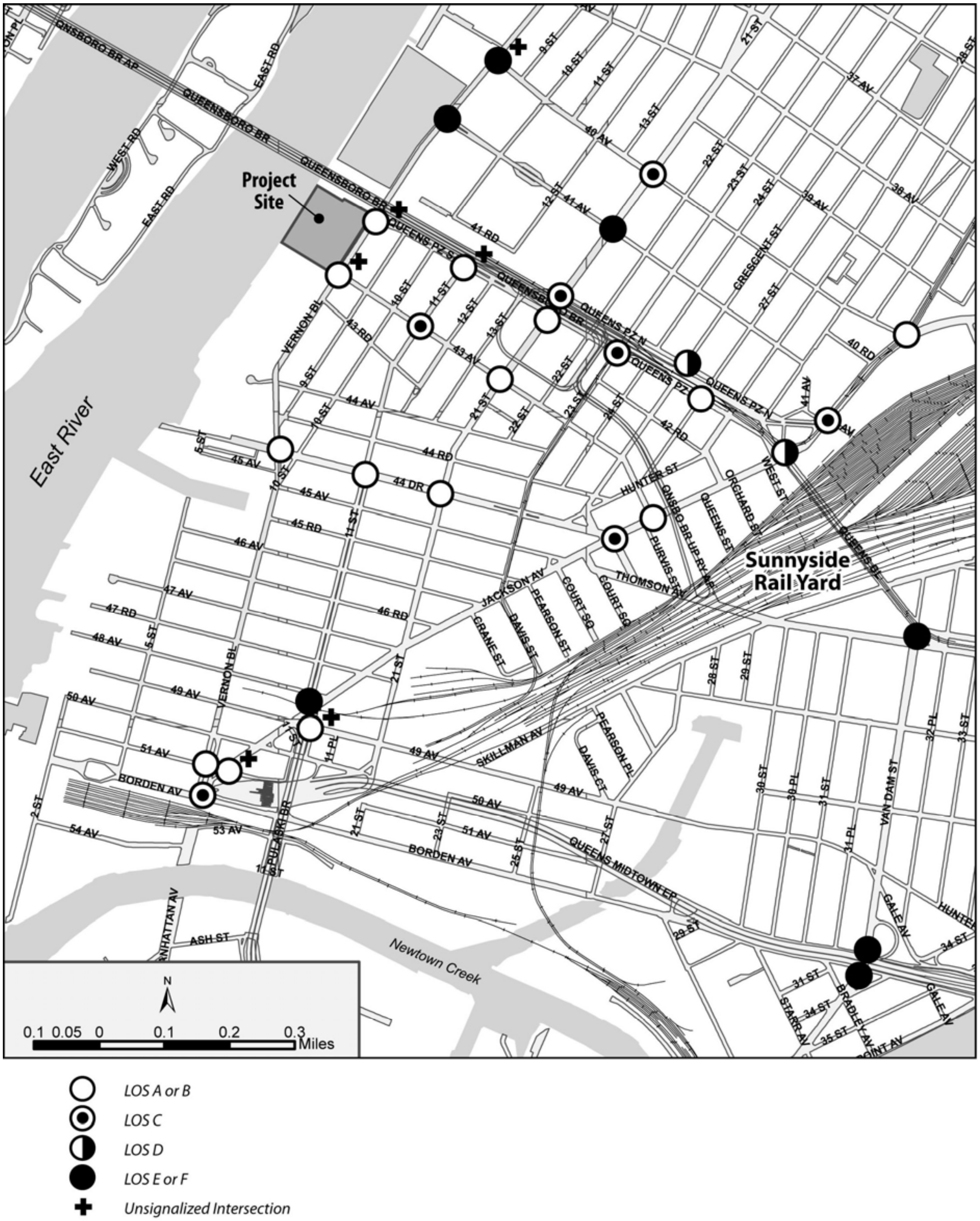


Figure 9-10: 2009 No Build Midday Peak Traffic LOS

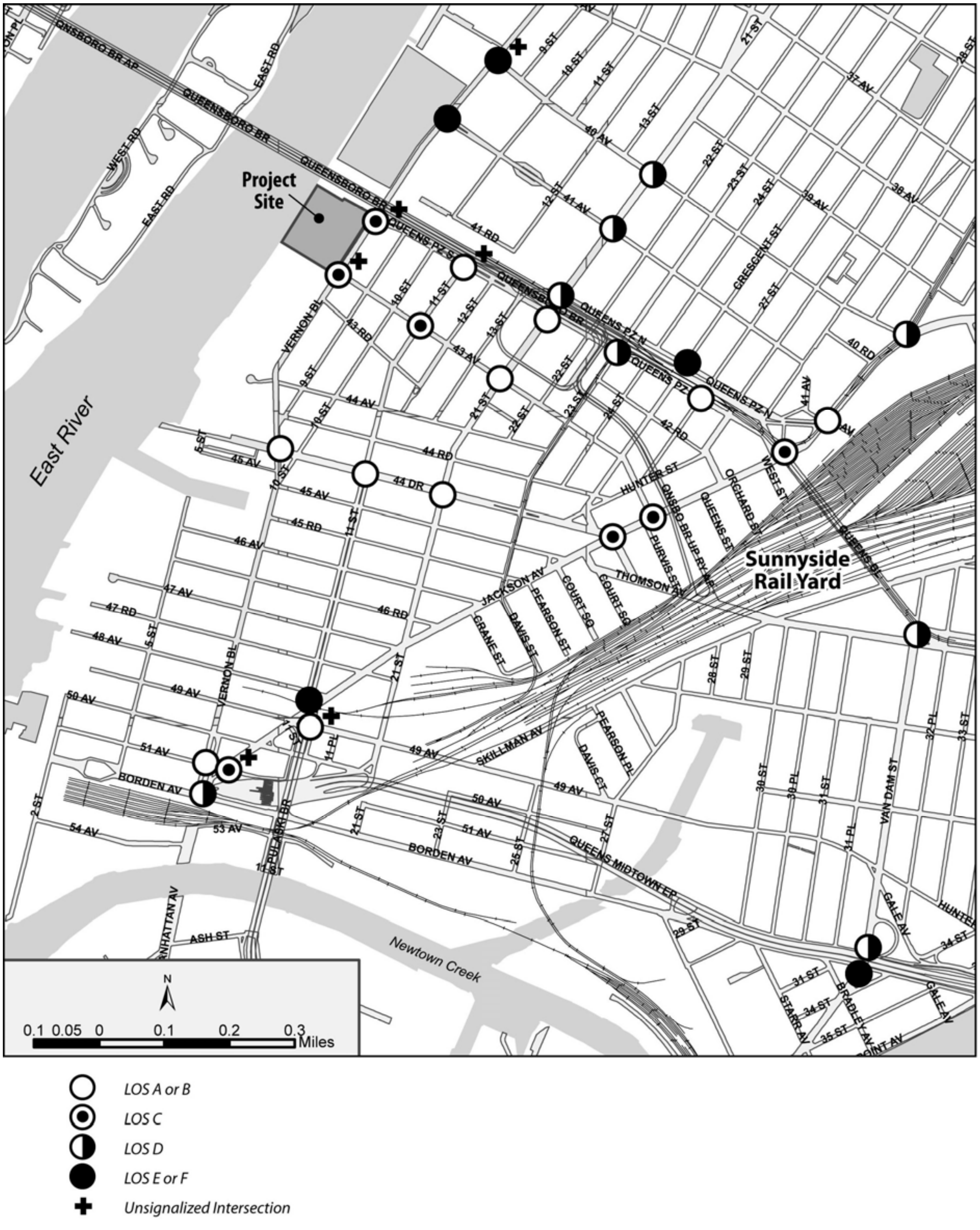


Figure 9-11:
2009 No Build PM Peak Traffic LOS

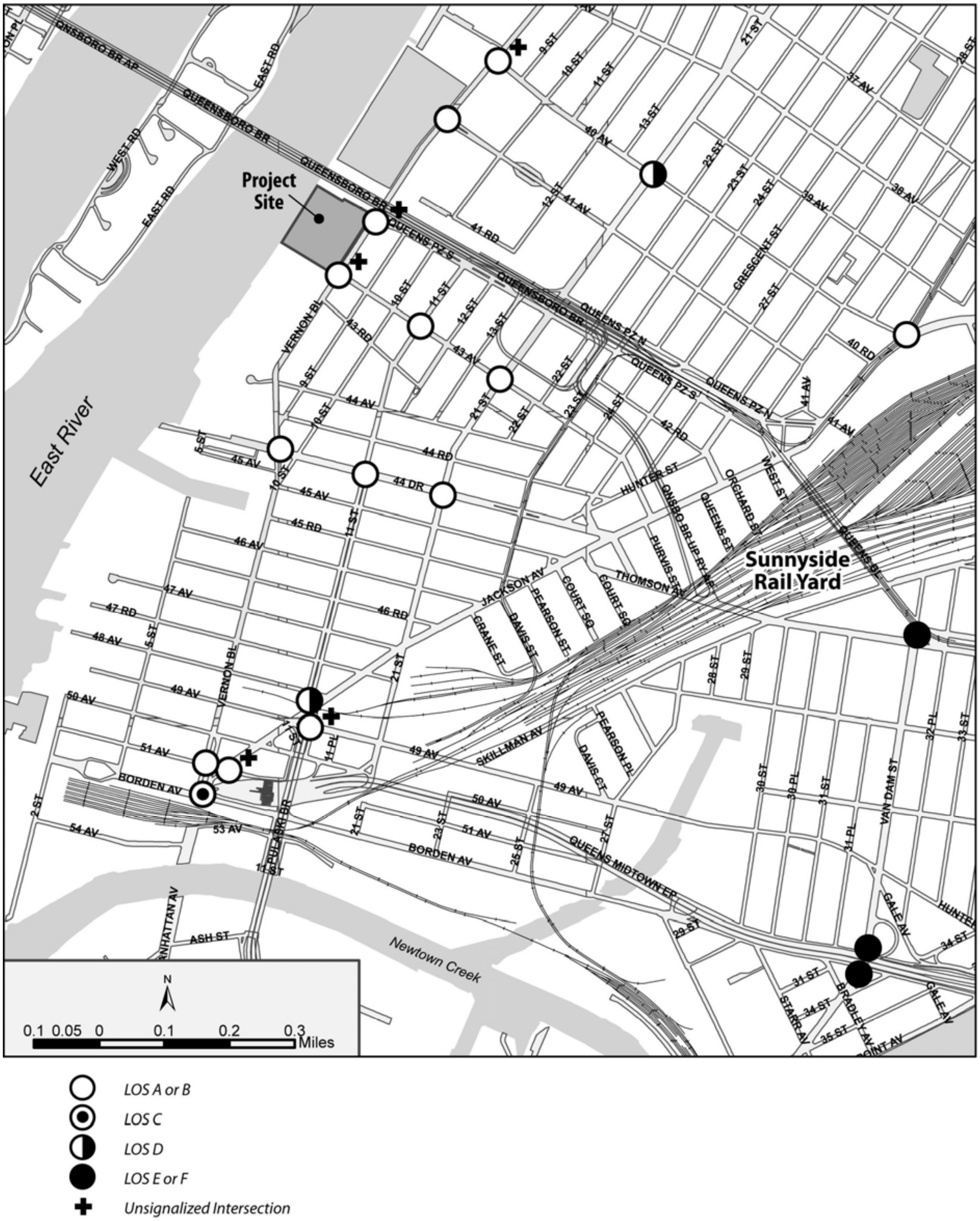


Figure 9-12:
2009 No Build Saturday Midday Peak Traffic LOS

A more detailed presentation of traffic volumes and levels of service by corridor is provided below.

a) Vernon Boulevard

Along Vernon Boulevard, all the signalized intersections analyzed would operate at overall LOS D or better during the analysis hours, except the intersection of Vernon Boulevard and 41st Avenue, which would operate at overall LOS F during the weekday AM peak hour and at overall LOS E during the weekday Midday and PM peak hours. At this intersection, southbound Vernon Boulevard would operate at LOS F during the weekday AM and Midday peak hours and at LOS E during the weekday PM peak hour, and northbound Vernon Boulevard would operate at LOS E during the weekday PM peak hour.

b) 11TH Street

Along the 11th Street corridor, all the signalized intersections analyzed would operate at overall LOS B or C except the intersection of 11th Street and Jackson Avenue, which would operate at overall unacceptable LOS D during the Saturday Midday peak hour, and at LOS F and E during the weekday Midday and PM peak hours, respectively. The northbound left-turn movement of 11th Street at this intersection would operate at LOS E during the weekday PM peak hour and the westbound left-turn movement of Jackson Avenue would operate at LOS F during the weekday Midday and PM and Saturday Midday peak hours.

c) 21ST Street

Along the 21st Street corridor three of the six signalized intersections analyzed would operate at unacceptable overall LOS E during at least one peak hour including the following:

- At the intersection of 21st Street and 43rd Avenue, northbound and southbound 21st Street would operate at LOS E during the weekday AM peak hour. Also, westbound 43rd Avenue would operate at LOS E during the weekday Midday and PM peak hours.
- At the intersection of 21st Street and 41st Avenue, southbound 21st Street would operate at LOS F and E during the weekday Midday and PM peak hours, respectively.
- At the intersection of 21st Street and 40th Avenue, southbound 21st Street would operate at LOS F during the weekday AM peak hour, and northbound 21st Street would operate at LOS E during the weekday PM peak hour.
- Eastbound Queens Plaza South at its intersection with 21st Street and the northbound approach of 21st Street at its intersection with Queens Plaza North would both operate at LOS E during the weekday PM peak hour.

d) Jackson Avenue/Northern Boulevard

Along the Jackson Avenue/Northern Boulevard corridor, all the signalized intersections analyzed would operate at acceptable overall LOS D or better during all the peak hours except the intersections of Northern Boulevard/Queens Plaza East at Queens Plaza North/41st Avenue and Northern Boulevard at 31st Street, which would both operate at overall LOS E during the weekday AM peak hour:

- At the intersection of Northern Boulevard/Queens Plaza East at Queens Plaza North/41st Avenue, the southbound right turn movement along Northern Boulevard would operate at LOS F during the AM peak hour.
- At the intersection of Northern Boulevard and 31st Street, southbound 31st Street and Northern Boulevard would both operate at LOS F during the weekday AM peak hour. Also, the northbound through movement of Northern Boulevard would operate at LOS E during the weekday PM peak hour.

e) Queens Boulevard/Queens Plaza North and South

Along the Queens Boulevard/Queens Plaza North and South corridor, two of the four signalized intersections analyzed would operate at unacceptable overall LOS D/E/F during two or more peak hours including the following:

- At the intersection of Queens Boulevard/Thomson Avenue at Van Dam Street, westbound Thomson Avenue would operate at LOS F during the weekday AM peak hour. The eastbound approach of Thomson Avenue would operate at LOS F during the weekday AM, Midday and Saturday Midday peak hours.
- At the Queens Plaza North and Crescent Street intersection, the southbound through movement of Crescent Street and the westbound left turn movement of Queens Plaza North would operate at LOS F during all peak hours analyzed. The westbound approach along the Bridge Plaza main line would operate at LOS F during the weekday AM peak hour.

f) Van Dam Street

The two signalized intersections analyzed would operate at unacceptable overall LOS E/F during at least two peak hours including the following:

- At the intersection of Queens-Midtown Expressway (the exit from the westbound LIE) and Van Dam Street, the westbound right-turn movement of the Queens-Midtown Expressway would operate at LOS F during the weekday Midday, PM, and Saturday Midday peak hours.
- At the intersection of Borden Avenue and Van Dam Street, the southbound left-turn movement of Van Dam Street would operate at LOS F during the weekday Midday, PM and Saturday Midday peak hours. Also, eastbound Borden Avenue would operate at LOS F during the weekday PM peak hour.

Five of the six unsignalized intersections analyzed would operate at overall LOS C or better during the peak hours. The intersection of Vernon Boulevard at 40th Avenue would operate at unacceptable LOS E/F during the weekday peak hours. At this intersection, westbound 40th Avenue would operate at LOS E during the weekday AM peak hour and at LOS F during the weekday Midday and PM peak hours.

3. Parking

Future parking occupancies for year 2009 No Build conditions were projected by assuming that existing parking occupancies would increase by an annual growth rate of one percent. Also, the following public parking lots and garages would be displaced by the approved No Build development sites presented in Table 9-5:

- Parking Lot north of Citibank (Site 2 – Block 435)
- Last Stop Parking, Inc., Queens Plaza North (Site 5 – Miscellaneous residential development north of Queens Plaza)
- TPEC Corp., 41-10 Crescent Street (Site 5 – Miscellaneous residential development north of Queens Plaza)
- Braz Parking, 27th Street (Site 3 – Block 422)

The following parking lots and garages would be lost due to the proposed improvements resulting from the Queens Plaza Bicycle and Pedestrian Project:

- NYCDOT Parking Lot, JFK Commuter Plaza
- Municipal Meters, Queens Plaza/JFK Commuter Plaza
- Municipal Meters, Queens Plaza East and 41st Avenue

A total of 505 off-street parking spaces would be lost as a result of the No Build development sites and the Queens Plaza Pedestrian Improvement Project. Also, 132 on-street parking spaces along the Jackson Avenue corridor would be lost due to the mitigation measures proposed in the *LIC* Rezoning FEIS.

Tables 9-12 and 9-13 present the expected off- and on-street parking occupancies, respectively, for year 2009. Overall, it is expected that about 440 parking spaces would be lost.

TABLE 9-12: 2009 NO BUILD PROJECTED PARKING OCCUPANCIES FOR PUBLIC PARKING LOTS AND GARAGES WITHOUT RE-ALLOCATION OF DEMAND

Facility ID#	Name and Address	Capacity	Percent Occupied		
			8 AM	9 AM	1 PM
1	S&R Parking, 10-40 Borden Avenue	140	99	100+	100+
2	MPB Inc., Borden Avenue	150	91	100+	100+
3	Nick's Lot, 5-52 50th Avenue	45	94	100+	100+
4	Mutual Auto Park, 11-15 50th Avenue	110	65	82	100+
5	11-55 49th Avenue Parking	100	51	96	100+
6	Hunters Point Plaza, Jackson Ave. at 47th Avenue	148	47	50	83
7	Evia Parking Systems, 44-66 Davis Street	80	100	100+	100+
8	Municipal Garage at Court Square	680	10	38	98
10	4300 Crescent Street LLC	250	51	100+	100+
11	LIC Parking Corp., 23rd Street	70	91	99	100+
12	23rd Street Parking Inc., 23rd Street	100	93	92	100+
16	Municipal Garage at Queens Plaza	1,143	51	70	80
17	Alex Operating Corp. 27-50 Jackson Avenue	150	36	64	85
21	Dae Young Int. Inc., 29-28 Northern Boulevard	115	33	55	100+
22	Northern Blvd between 40th Road and 40th Avenue	160	42	76	80
23	Alert Garage Corp. 30-17 40th Avenue	200	96	100+	100+
24	Metro Commuter Parking 32-04 Northern Boulevard	50	49	64	91
	TOTAL	3,691	54	77	97

TABLE 9-13: 2009 NO BUILD PROJECTED ON-STREET PARKING SUMMARY

	Weekday 8 – 9 AM			Weekday 12 – 1 PM		
	No. of Spaces Legally Available	No. of Spaces Vacant	Percent Occupancy	No. of Spaces Legally Available	No. of Spaces Vacant	Percent Occupancy
Zone 1	2,225	4	100	2,248	0	100+
Zone 2	375	0	100+	389	0	100+
Zone 3	856	0	100+	843	0	100+
Zone 4	1,213	4	100	1,238	0	100+
TOTAL	**4,669**	**8**	**100**	**4,718**	**0**	**100+**

Table 9-12 presents the projected occupancy of the area's off-street parking facilities given an annual growth rate of one percent per year, but without a re-allocation of parking demand from lots or garages that would be closed by projected development projects. With a projected overall occupancy of 97 percent of the remaining 3,691 spaces, only about 111 spaces would be available and would only partially be able to make up the projected loss of close to 450 spaces described above.

Table 9-13 provides on-street parking projections, and indicates that by Midday all on-street parking would be occupied and there would not be any vacant on-street parking spaces available.

D. FUTURE CONDITIONS WITH THE PROPOSED ACTION (BUILD CONDITION – YEAR 2009)

This section presents an analysis of future traffic and parking conditions with the proposed development in place in 2009. It includes a determination of the volume of vehicular trips generated, their distribution within the study area street network, the analysis of future traffic levels of service, and identification of potential significant traffic impacts.

1. Trip Generation and Traffic Assignments

Trip generation, modal split, and vehicle occupancy rates for the proposed development were derived from the approved rates in the *LIC Rezoning FEIS*, standard professional references, information from other development studies, and reasonable planning assumptions. For each of the land use categories envisioned under the Build condition, sources with similar geographic and/or user characteristics were used. The overall development scenario analyzed for potential traffic and parking impacts consisted of: approximately 655,048 square feet of office space (headquarters); 40,013 square feet of health club space; 1,000 residential units; 346,881 square feet of television studio space; a 1,000 seat catering hall; 76,581 square feet of local street-level retail space; and 126,401 square feet of cultural space (i.e., museum). A summary of trip generation factors used for weekday and weekend analysis conditions is provided in Tables 9-14 and 9-15.

The trip generation analysis was performed for the weekday AM, Midday, and PM peak hours, and the Saturday Midday peak hour. The analysis for the Saturday Midday peak hour was performed primarily due to the catering hall use, which typically would generate a significant volume of vehicle trips on weekends.

TABLE 9-14: WEEKDAY TRAVEL DEMAND CHARACTERISTICS

	Office	Health Club	Residential	Studio	Retail	Museum
	655,048 sf	40,013 sf	1,000 DU	346,881 sf	76,581 sf Street Level	126,401 sf
Person Trip Gen Rate	18.0[6] *per 1,000 SF*	82.0[12] *per 1,000 SF*	4.2[4] *per DU*	10.0[6] *per 1,000 SF*	205.0[5] *per 1,000 SF*	27.4[3] *per 1,000 SF*
Temporal Distribution						
AM Peak	14.4%[5]	4.0%[12]	10.5%[5]	11.8%[6]	0.0%[5]	0.0%[3]
Midday Peak	8.7%[5]	5.0%[12]	2.2%[5]	15.0%[6]	8.7%[5]	9.4%[3]
PM Peak	11.1%[5]	8.0%[12]	8.7%[5]	10.3%[6]	8.0%[5]	14.4%[3]
Linked Trip Credit	0.0%	0.0%	0.0%	0.0%	10.0%	0.0%
Modal Split (Weekday AM)						
Auto	17.0%[5]	17.6%[12]	24.0%[5]	17.0%[9]	2.0%[5]	70.0%[10]
Taxi	1.0%[5]	1.0%[12]	1.0%[5]	1.0%[9]	3.0%[5]	5.0%[10]
Bus	4.0%[5]	4.7%[12]	3.0%[5]	4.0%[9]	10.0%[5]	5.0%[10]
Subway	58.0%[5]	8.6%[12]	54.0%[5]	58.0%[9]	10.0%[5]	10.0%[10]
Walk	10.0%[5]	68.1%[12]	18.0%[5]	10.0%[9]	75.0%[5]	10.0%[10]
LIRR	10.0%[5]	0.0%[12]	0.0%[5]	10.0%[9]	0.0%[5]	0.0%[10]
Modal Split (Weekday Midday)						
Auto	6.5%[5]	15.8%[12]	24.0%[5]	6.5%[9]	2.0%[5]	70.0%[10]
Taxi	2.0%[5]	1.0%[12]	1.0%[5]	2.0%[9]	3.0%[5]	5.0%[10]
Bus	0.0%[5]	4.9%[12]	3.0%[5]	0.0%[9]	10.0%[5]	5.0%[10]
Subway	36.0%[5]	9.9%[12]	54.0%[5]	36.0%[9]	10.0%[5]	10.0%[10]
Walk	55.5%[5]	68.4%[12]	18.0%[5]	55.5%[9]	75.0%[5]	10.0%[10]
LIRR	0.0%[5]	0.0%[12]	0.0%[5]	0.0%[9]	0.0%[5]	0.0%[10]
Modal Split (Weekday PM)						
Auto	17.0%[5]	12.7%[12]	24.0%[5]	17.0%[9]	2.0%[5]	70.0%[10]
Taxi	1.0%[5]	1.0%[12]	1.0%[5]	1.0%[9]	3.0%[5]	5.0%[10]
Bus	4.0%[5]	3.8%[12]	3.0%[5]	4.0%[9]	10.0%[5]	5.0%[10]
Subway	58.0%[5]	12.8%[12]	54.0%[5]	58.0%[9]	10.0%[5]	10.0%[10]
Walk	10.0%[5]	69.7%[12]	18.0% [5]	10.0%[9]	75.0%[5]	10.0%[10]
LIRR	10.0%[5]	0.0%[12]	0.0%[5]	10.0%[9]	0.0%[5]	0.0%[10]
Vehicle Occupancy (Weekday)						
Auto	1.65[5]	1.15[7]	1.65[5]	1.65[9]	1.65[5]	2.34[3]
Taxi	1.40[5]	1.40[12]	1.40[5]	1.40[9]	1.40[5]	1.90[3]
Truck Trip Gen	0.20[2] *per 1,000 SF*	0.04[5] *per 1,000 SF*	0.06[5] *per DU*	0.04[8] *per 1,000 SF*	0.35[8] *per 1,000 SF*	0.05[3] *per 1,000 SF*
Truck Temporal Distribution						
AM Peak	9.7%[1]	0.0%	9.7%[5]	25.0%[8]	9.7%[1]	9.7%[11]
Midday Peak	7.8%[1]	0.0%	7.8%[5]	8.0%[8]	7.8%[1]	7.8%[11]
PM Peak	5.1%[1]	0.0%	5.1%[5]	3.0%[8]	5.1%[1]	5.1%[11]

Note: For Catering Hall trip generation, please refer to the description on page 9-36.

1. *Motor Trucks in the Metropolis*, 1969, Wilbur Smith and Associates
2. Urban Truck Road Systems and Travel Restrictions, 1975, Wilbur Smith and Associates
3. *MoMA FEIS*, October 6, 2000
4. ITE Trip Generation (High-rise Residential Condo/Townhouse - Land Use 232).
5. *Long Island City Rezoning FEIS*, 2001
6. *CEQR Technical Manual*
7. 1990 Census Journey to Work
8. *ABC West End Avenue Properties FEIS*, March 1993
9. Assumed similar to Office use
10. *Comparable to East River Plaza FEIS*, August 19, 1999
11. Assume same as retail
12. Survey of Vertical Club in Manhattan, 1992, EWT (modal splits slightly modified – “other” was combined with “auto” and “taxi” was reduced to 1% with the remaining “taxi” converted to “auto”).

TABLE 9-15: WEEKEND TRAVEL DEMAND CHARACTERISTICS

	Office	Health Club	Residential	Studio	Retail	Museum
	655,048 sf	40,013 sf	1,000 DU	346,881 sf	76,581 sf Street Level	126,401 sf
Person Trip Gen Rate	3.9[4] *per 1,000 SF*	51.97[4] *per 1,000 SF*	4.3[4] *per DU*	5.0[7] *per 1,000 SF*	237.8[3] *per 1,000 SF*	20.5[2] *per 1,000 SF*
Temporal Distribution						
Saturday Midday	8.0%[3]	5.0%[6]	10.0%[6]	15.0%[6]	8.7%[6]	16.8%[2]
Linked Trip Credit	0.0%	0.0%	0.0%	0.0%	10.0%	0.0%
Modal Split (Saturday Midday)						
Auto	6.5%[3]	15.8%[6]	24.0%[3]	6.5%[6]	2.0%[6]	70.0%[6]
Taxi	2.0%[3]	1.0%[6]	1.0%[3]	2.0%[6]	3.0%[6]	5.0%[6]
Bus	0.0%[3]	4.9%[6]	3.0%[3]	0.0%[6]	10.0%[6]	5.0%[6]
Subway	36.0%[3]	9.9%[6]	54.0%[3]	36.0%[6]	10.0%[6]	10.0%[6]
Walk	55.5%[3]	68.4%[6]	18.0%[3]	55.5%[6]	75.0%[6]	10.0%[6]
LIRR	0.0%[3]	0.0%[6]	0.0%[3]	0.0%[6]	0.0%[6]	0.0%[6]
Vehicle Occupancy (Weekend)						
Auto	1.65[7]	1.15[6]	1.65[6]	1.65[6]	1.65[6]	2.34[2]
Taxi	1.40[7]	1.40[6]	1.40[6]	1.40[6]	1.40[6]	1.90[2]
Truck Trip Gen	0.00 *per 1,000 SF*	0.04[6] *per 1,000 SF*	0.06[6] *per DU*	0.04[6] *per 1,000 SF*	0.35[5] *per 1,000 SF*	0.00 *per 1,000 SF*
Truck Temporal Distribution						
Saturday Midday	0.0%	0.0%	7.8%[3]	8.0%[5]	7.8%[1]	0.0%

Note: For Catering Hall trip generation, please refer to the description on page 9-36.

1. *Motor Trucks in the Metropolis*, 1969, Wilbur Smith and Associates
2. *MoMA FEIS*, October 6, 2000
3. *Long Island City Rezoning FEIS*, 2001
4. Adjusted based on ITE Trip Generation of weekday vs. weekend
5. *ABC West End Avenue Properties FEIS*, March 1993
6. Assumed similar to weekday Midday
7. Adjusted based on *CEQR Technical Manual*

a) Office (Headquarters)

A weekday daily trip generation rate of 18.0 person-trips per 1,000 square feet was used based on the *CEQR Technical Manual*. The vehicle occupancy rates (1.65 persons per auto and 1.40 persons per taxi) and directional splits (i.e., inbound or outbound trip) were all based on the *LIC Rezoning FEIS*. The directional splits used, expressed as the inbound (in) percentage, were 93 percent "in" for AM, 46 percent "in" for Midday, and 3 percent "in" for PM. The hourly trip variation by hour of the day used, or temporal distribution, was 14.4 percent for AM, 8.7 percent for Midday, and 11.1 percent for PM. Temporal distribution was also based on the *LIC Rezoning FEIS*.

The modal split for office trips was based on the *LIC Rezoning FEIS*. The modal split used for the weekday AM and PM peak hours was 17 percent by auto, 1 percent by taxi, 4 percent by bus, 58 percent by subway, 10 percent by walking, and 10 percent by LIRR. The weekday Midday peak hour used a modal split of 6.5 percent by auto, 2 percent by taxi, 36 percent by subway, and 55.5 percent by walking reflecting that the majority of Midday trips are lunchtime walk trips.

A weekday delivery trip rate of 0.20 truck-trips per 1,000 square feet and temporal distributions (9.7 percent for AM, 7.8 percent for Midday, and 5.1 percent for PM) were used based on Wilbur Smith and Associates' *Urban Truck Road Systems and Travel Restrictions* and *Motor Trucks in the Metropolis,* respectively.

A trip generation rate of 3.9 person-trips per 1,000 square feet was used for the weekend trip generation analysis. This rate was determined by taking the ratio of weekend versus weekday rates from *ITE Trip Generation Manual* and applying it to the weekday rate. The weekend modal splits, vehicle occupancy rates, and directional splits were assumed to be similar to weekday.

b) Health Club

The weekday trip generation rate of 82.0 person-trips per 1,000 square feet for health club space was based on a survey of the Vertical Club in Manhattan in 1992. Weekday temporal distribution (4, 5, and 8 percents for AM, Midday, and PM, respectively), modal splits and directional splits (34, 47, and 63 percent "ins" for AM, Midday, and PM, respectively) were based on the Vertical Club survey in Manhattan. A weekday auto occupancy of 1.15 was based on *1990 Census Journey to Work Census* data. The modal split used for the weekday AM peak hour was 17.6 percent by auto, 1 percent by taxi, 4.7 percent by bus, 8.6 percent by subway, and 68.1 percent by walking. The weekday Midday peak hour used a modal split of 15.8 percent by auto, 1 percent by taxi, 4.9 percent by bus, 9.9 percent by subway, and 68.4 percent by walking, whereas the weekday PM peak hour used a modal split of 12.7 percent by auto, 1 percent by taxi, 3.8 percent by bus, 12.8 percent by subway, and 69.7 percent by walking.

The Saturday Midday peak hour trip generation rate used was 51.97 vehicle-trips per 1,000 square feet based on the weekend and weekday ratio from the *ITE Trip Generation Manual*.

c) Residential

Proposed residential development at the Project Site would be high-rise towers. The weekday trip generation rate of 4.2 person-trips per dwelling unit, weekday temporal distribution (10.5, 2.2, and 8.7 percents for AM, Midday, and PM, respectively), weekday auto occupancy (1.65 for auto and 1.40 for taxi), and directional splits (16, 59, and 75 percent "ins" for AM, Midday, and PM, respectively) were based on the *LIC Rezoning FEIS*.

The weekday modal split was also based on the *LIC Rezoning FEIS* with one adjustment – 5 percent of walk trips were shifted to auto trips because the proposed development is located near the waterfront and away from main commercial corridors such as Jackson Avenue and Queens Plaza North and South. The modal split used for residential was 24 percent by auto, 1 percent by taxi, 3 percent by bus, 54 percent by subway, and 18 percent by walking, and was applied to all time periods.

A weekday delivery trip generation rate of 0.06 truck-trips per dwelling unit was based on the *LIC Rezoning FEIS*, with a weekday temporal distribution of 9.7 percent in the AM peak hour, 7.8 percent in the Midday peak hour, and 5.1 percent in the PM peak hour deliveries based on *Motor Trucks in the Metropolis* by Wilbur Smith and Associates.

A trip generation rate of 4.3 person-trips per 1,000 square feet was used for the Saturday Midday trip generation analysis. This rate was determined by taking the ratio of weekend versus weekday rates from *ITE Trip Generation Manual* and applying it to the weekday rate. The weekend modal splits, vehicle occupancy rates, and directional splits were assumed to be similar to weekday. The temporal distribution used for the Saturday Midday peak hour was 10 percent.

d) Television Studio

The *CEQR Technical Manual* daily trip generation rate for a typical weekday of 10 person-trips per 1,000 square feet and temporal distribution percentages of 11.8 percent for AM, 15 percent for Midday, and 10.3 percent for PM, were applied for the television studio use. The modal split and vehicle occupancy rates were assumed to be similar to office because the studio would be a place of work with primarily employee trips. The directional split percentages of 95 percent “in” for the AM peak hour, 50 percent “in” for the Midday peak hour, and 5 percent “in” for the PM peak hour, were based on the same employee pattern used in the *ABC West End Avenue Properties FEIS*.

A weekday delivery trip generation rate of 0.04 truck-trips per 1,000 square feet and delivery temporal distribution percentages of 25 percent, 8 percent, and 3 percent, for the AM, Midday, and PM peak hours were based on the *ABC West End Avenue Properties FEIS*.

A trip generation rate of 5.0 person-trips per 1,000 square feet was used for the weekend trip generation analysis. This rate was estimated based on the weekday/weekend ratio used for office space, but was adjusted (a 50 percent reduction from the weekday rate). The weekend modal split, vehicle occupancy rate, and directional split were assumed to be similar to weekend office use. The temporal distribution used for the Saturday Midday peak analysis hour was 15 percent.

e) Catering Hall

Trip generation estimates for the proposed 1,000 seat catering hall were based on a survey of a similar catering hall, the Terrace on the Park facility located in Corona, Queens in November 2004. A peak occupancy factor was determined based on the occupancy level of the parking lot at the time of a typical event. The peak hour ins and outs for the catering hall were a function of the traffic volumes during the peak hour, the number of seats for the catering hall (1,000 seats) and the peak occupancy factor. The vehicle occupancy rate of 1.5 persons per auto, and the modal splits of 92 percent by auto, 6 percent by taxi, 1 percent by limousine, and 1 percent by walking, were used for all time periods based on the Terrace on the Park survey. It is expected that the vast majority of these trips will originate from Queens, Brooklyn, and Long Island locations.

Telephone surveys conducted with similar catering hall facilities indicated that the average catering hall is approximately at 25 percent of capacity on a typical weekday Midday, 50 percent of capacity on a weekday PM, and at 50–75 percent of capacity during the weekend Midday analysis hour. Applying these percentages to the Terrace on the Park volumes obtained as mentioned above, yielded vehicular trips for weekday Midday, weekday PM, and weekend Midday peak hours.

f) Local Retail

The proposed development would include street-level retail uses intended to serve local needs. The trip generation rate used for street-level retail was 205 person-trips per 1,000 square feet as cited in the *CEQR Technical Manual* and as used in the *LIC Rezoning FEIS*. This trip rate is conservative since the development is not in Manhattan nor situated along a main commercial corridor such as Queens Plaza North and South. The temporal distributions of 8.7 percent of all trips occurring in the Midday peak hour and 8 percent of all trips occurring during the PM peak hour follow the rates used in the *LIC Rezoning FEIS*. The vehicle occupancy rates of 1.65 persons per auto and 1.40 persons per taxi, as well as the directional splits (50 percent “in” for each analysis period), were also derived from the *LIC Rezoning FEIS*. The modal split for street-level retail of 2 percent by auto, 3 percent by taxi, 10 percent by bus, 10 percent by subway, and 75 percent by walking, adhered to the servicing of the local community, and was based on rates from the *LIC Rezoning FEIS*.

A weekday delivery trip generation rate of 0.35 truck-trips per 1,000 square feet was based on the *ABC West End Avenue Properties FEIS.* The delivery temporal distribution percentages were assumed to be similar to office use, which are 9.7 percent in the AM peak hour, 7.8 percent in the Midday peak hour, and 5.1 percent in the PM peak hour deliveries based on *Motor Trucks in the Metropolis* by Wilbur Smith and Associates.

The trip generation rate of 237.8 person-trips per 1,000 square feet used for the weekend trip generation analysis is based on the *LIC Rezoning FEIS* and is 15 percent higher than the weekday rate. The weekend modal splits, vehicle occupancy rates, directional splits, and temporal distribution were assumed to be similar to weekday.

g) Cultural (Museum)

The daily trip generation rate used was 27.4 person-trips per 1,000 square feet and the temporal distribution percentages used were 9.4 percent for the Midday peak hour and 14.4 percent for the PM peak hour, based on rates used in the *Museum of Modern Art (MoMA) Expansion FEIS*. The use of these rates is conservatively high, since MoMA has far more activity because it is located in Manhattan. In general, museum use is not open during the morning, so there is no AM peak hour projection. In addition, vehicle occupancy rates of 2.34 person per auto and 1.90 persons per taxi and directional distribution of trips (53.1 percent “ins” for Midday and 54.4 percent “ins” for PM) were also based on the *MoMA Expansion FEIS*. It was assumed that the modal split of trips would be similar to a destination retail use. However, since the Proposed Action does not include a destination retail use, the modal splits from the *East River Plaza FEIS* were used, which was 70 percent by auto, 5 percent by taxi, 5 percent by bus, 10 percent by subway, and 10 percent by walking.

A delivery trip generation rate of 0.05 truck-trips per 1,000 square feet was based on the *MoMA Expansion FEIS*. The temporal distribution of the delivery trips was based on Wilbur Smith and Associates’ *Motor Trucks in the Metropolis*.

The trip generation rate of 20.5 person-trips per 1,000 square feet used for the weekend trip generation analysis is similar to the rate used in the *MoMA Expansion FEIS*. The weekend modal split was assumed to be similar to weekday. Weekend vehicle occupancy rates of 2.34 persons per auto and 1.9 persons per taxi, were based on the *MoMA Expansion FEIS*. The directional split for the weekend Midday hour was 39.2 percent “in”, and the weekend temporal distribution used was 16.8 percent “in”, which is the rate used in the *MoMA Expansion FEIS*.

h) Total Trip Generation and Traffic Assignments

The total volume of vehicle trips that would be generated by the proposed development is shown in Tables 9-16 through 9-19. These tables indicate that about 363, 395, and 636 vehicle trips would be generated in the weekday AM, Midday, and PM peak hours, respectively. About 512 vehicle trips would be generated in the Saturday Midday peak hour.

TABLE 9-16: VEHICLE TRIPS GENERATED BY THE PROPOSED ACTION: WEEKDAY AM PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Office	163	12	12	12	6	6	181	30
Health Club	7	13	1	1	0	0	8	14
Residential	10	54	3	3	3	3	16	60
Television Studio	40	2	3	3	2	2	45	7
Catering Hall	0	0	0	0	0	0	0	0
Retail Street	0	0	0	0	1	1	1	1
Museum	0	0	0	0	0	0	0	0
TOTAL	**220**	**81**	**19**	**19**	**12**	**12**	**251**	**112**

TABLE 9-17: VEHICLE TRIPS GENERATED BY THE PROPOSED ACTION: WEEKDAY MIDDAY PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Office	19	22	15	15	5	5	39	42
Health Club	11	12	1	1	0	0	12	13
Residential	8	5	1	1	2	2	11	8
Television Studio	10	10	7	7	1	1	18	18
Catering Hall	42	3	3	2	0	0	45	5
Retail Street	7	7	26	26	1	1	34	34
Museum	52	46	9	9	0	0	61	55
TOTAL	**149**	**105**	**62**	**61**	**9**	**9**	**220**	**175**

TABLE 9-18: VEHICLE TRIPS GENERATED BY THE PROPOSED ACTION: WEEKDAY PM PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	**Out**	**In**	**Out**	**In**	**Out**	**In**	**Out**
Office	4	131	9	9	3	3	16	143
Health Club	18	11	2	2	0	0	20	13
Residential	40	13	3	3	2	2	45	18
Television Studio	2	35	3	3	0	0	5	38
Catering Hall	84	6	5	4	0	0	89	10
Retail Street	7	7	24	24	1	1	32	32
Museum	81	68	13	13	0	0	94	81
TOTAL	**236**	**271**	**59**	**58**	**6**	**6**	**301**	**335**

TABLE 9-19: VEHICLE TRIPS GENERATED BY THE PROPOSED ACTION: SATURDAY MIDDAY PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Office	4	4	3	3	0	0	7	7
Health Club	7	8	1	1	0	0	8	9
Residential	31	31	3	3	2	2	36	36
Television Studio	5	5	4	4	1	1	10	10
Catering Hall	126	8	7	6	0	0	133	14
Retail Street	10	10	34	34	1	1	45	45
Museum	51	79	11	11	0	0	62	90
TOTAL	**234**	**145**	**63**	**62**	**4**	**4**	**301**	**211**

Project-generated trips were assigned to the roadway network leading to and from the study area to determine the traffic increases through study area intersections. These traffic assignments followed a similar set of assumptions to those used in the analysis of No Build conditions. A summary of traffic volume increases along selected streets within the study area is described below.

The Queens-Midtown Expressway/Borden Avenue corridor acts as a connector between the Long Island Expressway and Vernon Boulevard for a portion of the vehicles that would access the Project Site. During the analyzed hours, traffic volumes along the Queens-Midtown Expressway would increase by approximately 30–80 vph in each direction, depending on the traffic hour analyzed.

Queens Boulevard would experience an increase of approximately 10–30 vph in each direction during the peak hours. Westbound vehicles would travel along Thomson Avenue and then on 44th Drive to reach the Project Site. Traffic volumes traveling east from the Project Site would travel along Queens Plaza South and then on Queens Boulevard.

Along Northern Boulevard, vehicular volumes would increase by approximately 20–50 vph in each direction during the peak hours. Westbound traffic headed to the Project Site would tend to travel west on cross-streets such as 40th Avenue en route to southbound Vernon Boulevard, or travel south on Jackson Avenue and then west on 43rd Avenue.

44th Drive, 40th, 41st and 43rd Avenues would provide east-west access to the site resulting in an increase of approximately 30–50 vph along each roadway during the peak hours.

21st Street would experience an increase in traffic of approximately 10–30 vph while 11th Street would experience an increase of approximately 30–70 vph in each direction during the peak hours.

Along Vernon Boulevard to the north of the site, traffic volumes are expected to increase by approximately 20–80 vph in each direction during the peak hours. To the south of the site, traffic volumes are expected to increase by approximately 50–150 vph in each direction during the peak hours.

2. LOS (2009 Build Condition)

The assessment of potential significant traffic impacts generated by the proposed project is based on significant impact criteria defined in the *CEQR Technical Manual*. A significant traffic impact is defined for No Build LOS A, B, or C conditions that deteriorate to unacceptable LOS D, E, or F in the future Build condition. 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) is required.

For No Build LOS D, an increase of Build delay by 5 or more seconds is considered a significant impact if the Build delay meets or exceeds 45 seconds. For No Build LOS E, the threshold is a 4-second increase in Build delay; for No Build LOS F, a 3-second increase in Build delay is deemed significant. However, if a No Build LOS F condition already has delays in excess of 120 seconds, an increase in Build delay of more than 1 second is considered significant, unless the Proposed Action would generate fewer than 5 vehicles through that intersection in the peak hour (signalized intersections) and fewer than 5 passenger-car-equivalents (PCEs) in the peak 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.

Based on the projected increases in traffic volumes described previously, future Build levels of service were determined. Final 2009 Build volume maps and detailed intersection capacity analyses are presented in the Traffic Technical Appendix. It should be noted that two additional locations (entrances/exits to the Project Site) were analyzed as part of the 2009 Build conditions. These entrances/exits would be located along Vernon Boulevard between Queens Plaza South and 43rd Avenue and are depicted in Figure 9-13. All vehicular traffic would utilize these two entrances/exits to access and egress the accessory parking; trucks would enter the site from the truck entrance on 43rd Avenue and exit the site from the truck exit on Queens Plaza South. Figures 9-14 through 9-17 depict levels of service at analyzed intersections for the weekday AM, Midday, PM and Saturday Midday peak hours respectively. A summary of the projected levels of service (LOS) and significant adverse impacts appears in Table 9-20 and Table 9-21 (the overall intersection LOS is a weighted average of all of the individual traffic movements).

TABLE 9-20: 2009 NO BUILD VERSUS BUILD WEEKDAY TRAFFIC LOS SUMMARY

	No Build			Build		
Signalized Intersections	**AM**	**MD**	**PM**	**AM**	**MD**	**PM**
Overall LOS A/B	6	9	8	4	8	5
Overall LOS C	5	7	4	6	7	7
Overall LOS D	6	2	8	6	3	8
Overall LOS E/F	7	6	4	8	6	4
Number of Movements at LOS E or F	17	9	16	19	10	18
Number of Significantly Impacted Intersections	-	-	-	8	6	12
Unsignalized Intersections	**AM**	**MD**	**PM**	**AM**	**MD**	**PM**
Overall LOS A/B	4	5	2	3	2	1
Overall LOS C	1	0	3	1	2	1
Overall LOS D	0	0	0	0	0	1
Overall LOS E/F	1	1	1	4	4	5
Number of Movements at LOS E or F	2	2	2	6	5	9
Number of Significantly Impacted Intersections	-	-	-	5	4	6

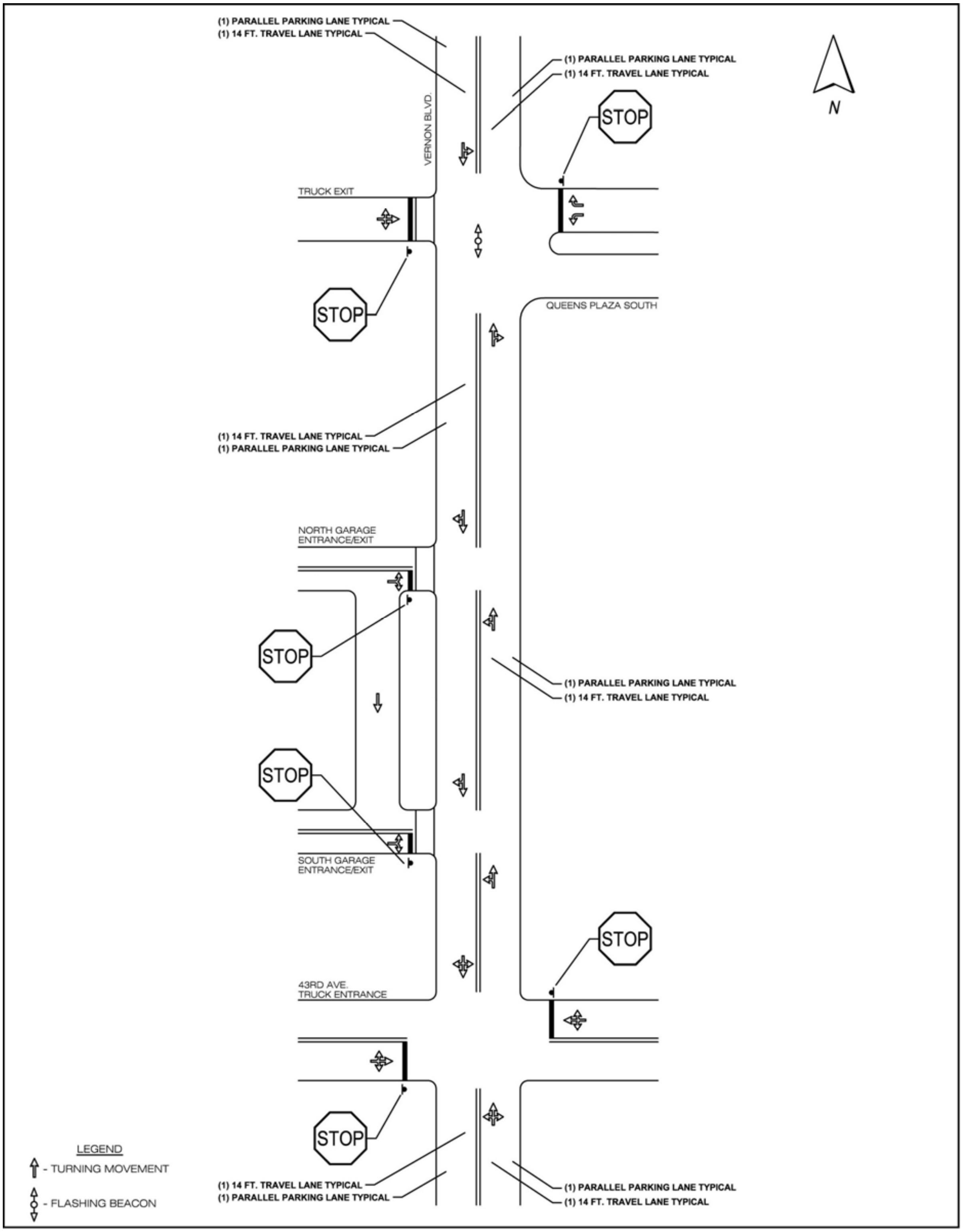


Figure 9-13: Project Site Entrances/Exits

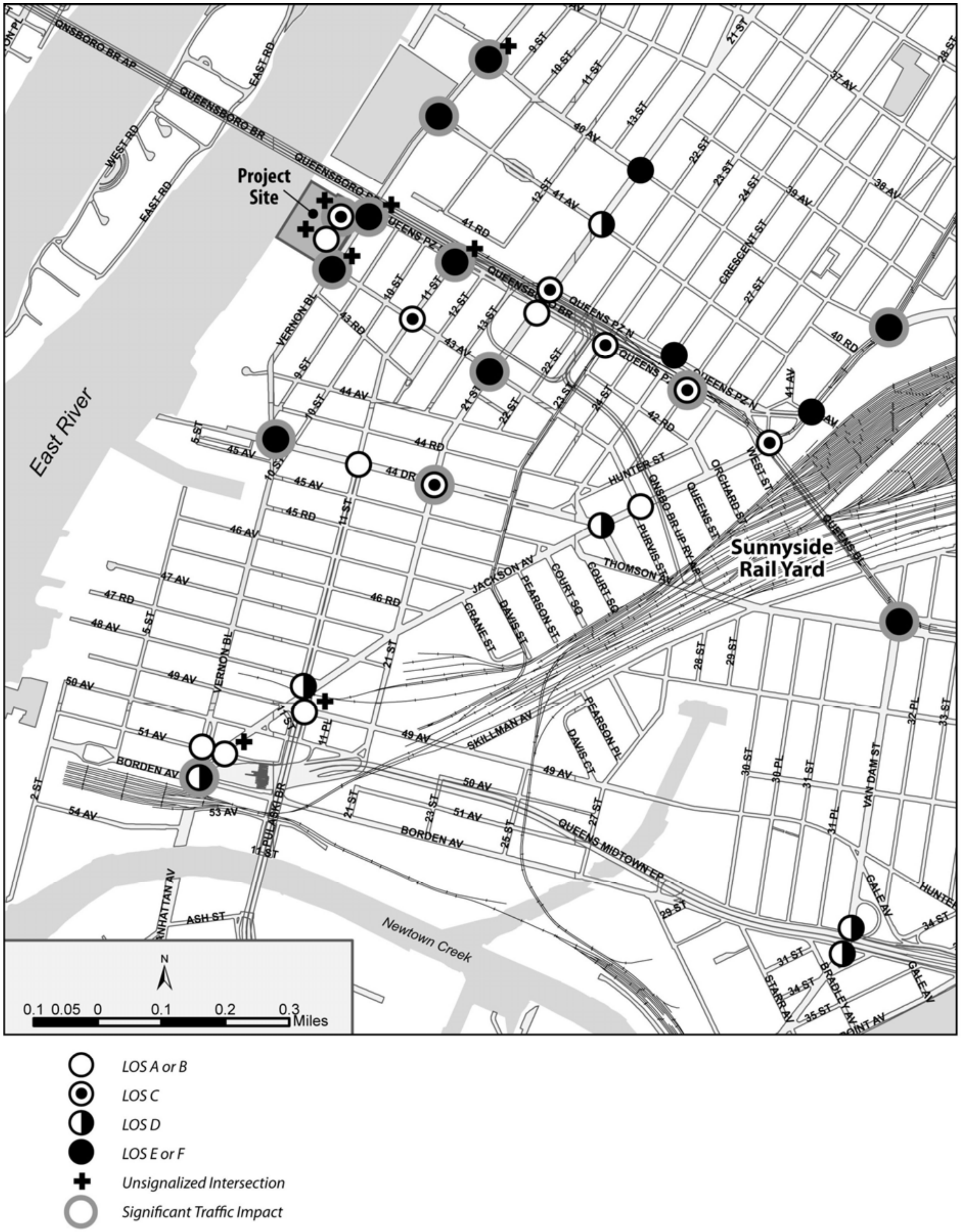


Figure 9-14: 2009 Build AM Peak Traffic LOS

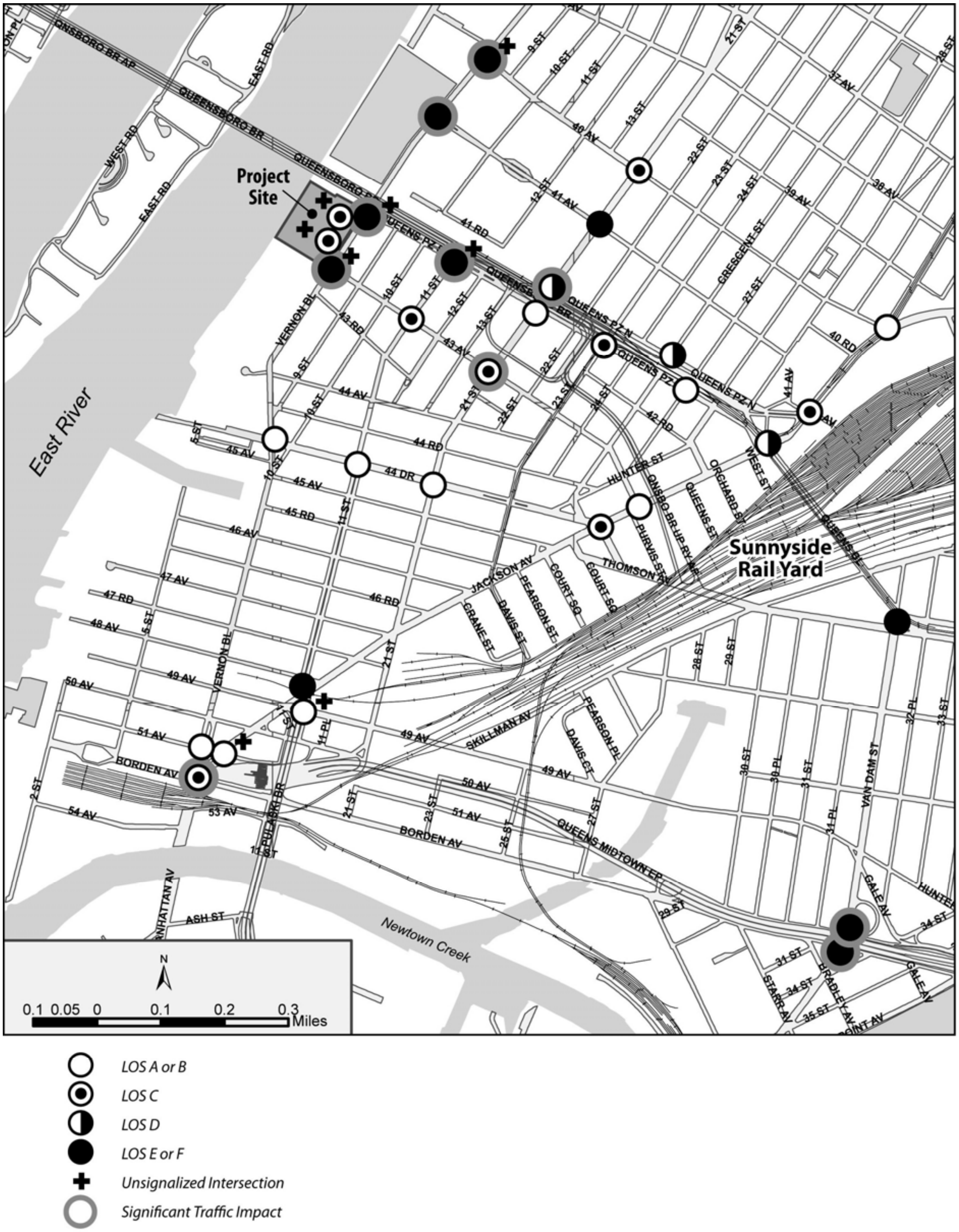


Figure 9-15:
2009 Build Midday Peak Traffic LOS

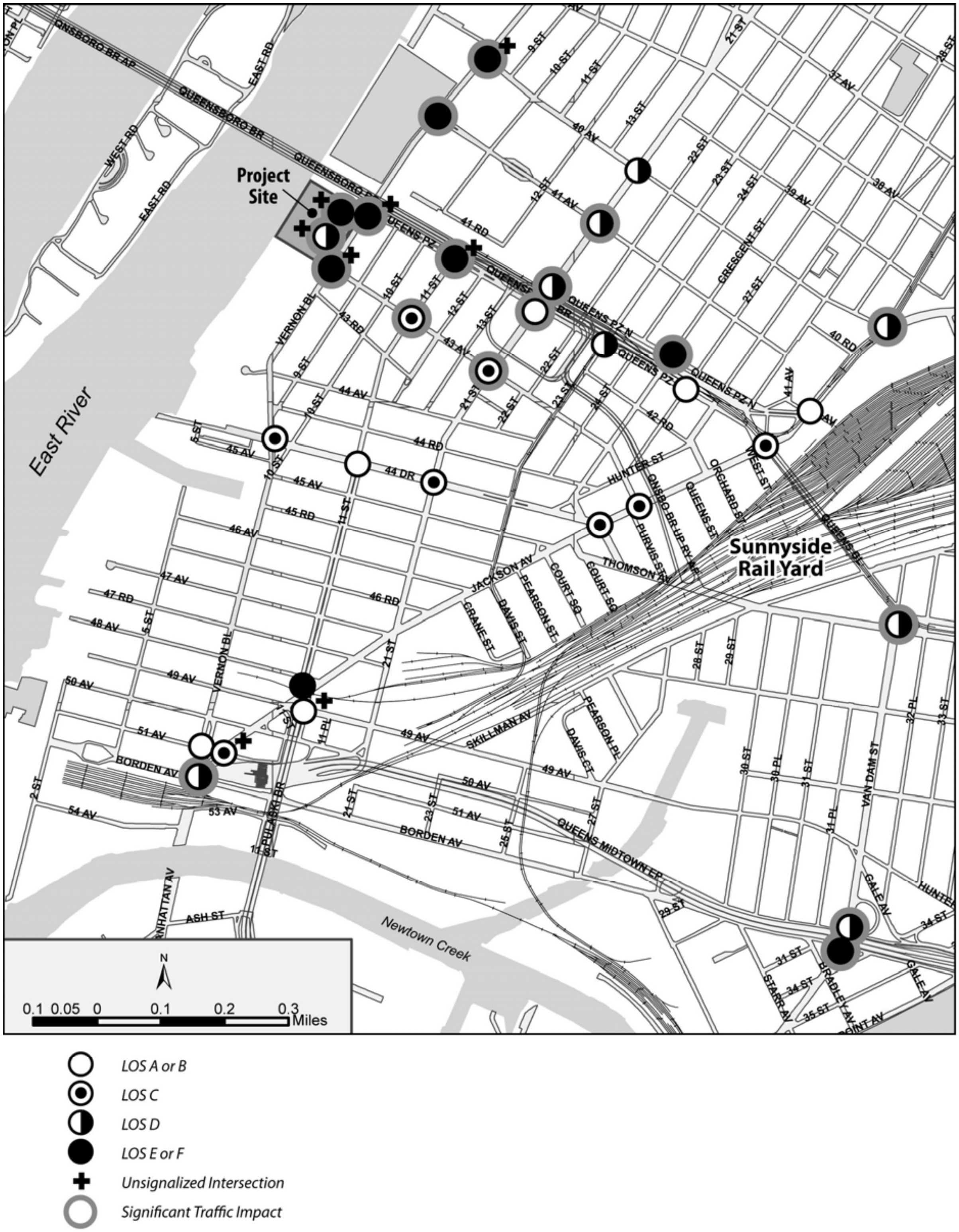


Figure 9-16:
2009 Build PM Peak Traffic LOS

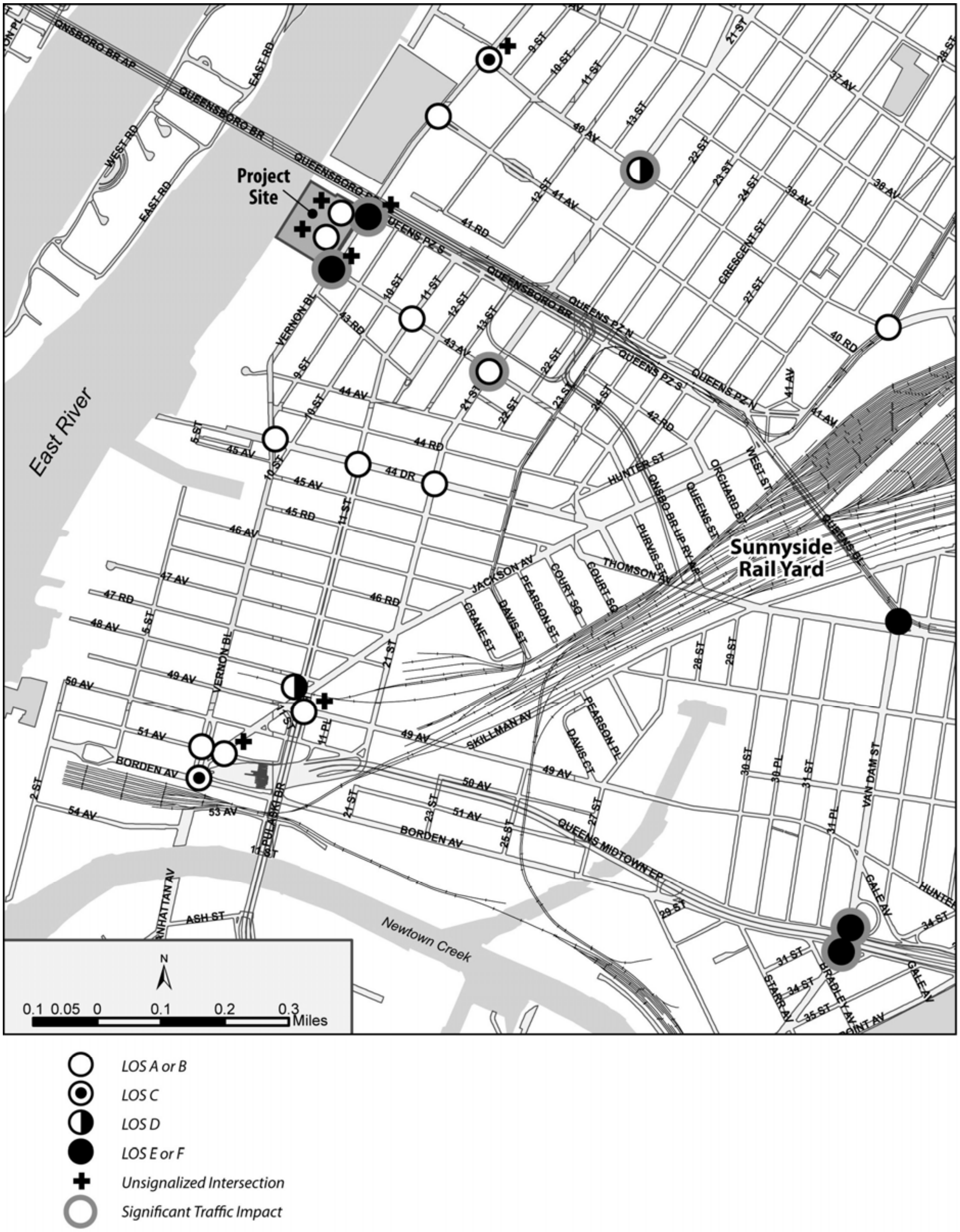


Figure 9-17: 2009 Build Saturday Midday Peak Traffic LOS

TABLE 9-21: 2009 NO BUILD VERSUS BUILD SATURDAY MIDDAY TRAFFIC LOS SUMMARY

Signalized Intersections	No Build Saturday MD	Build Saturday MD
Overall LOS A/B	8	8
Overall LOS C	1	1
Overall LOS D	2	2
Overall LOS E/F	3	3
Number of Movements at LOS E or F	4	4
Number of Significantly Impacted Intersections	-	4
Unsignalized Intersections	**Saturday MD**	**Saturday MD**
Overall LOS A/B	5	4
Overall LOS C	0	1
Overall LOS D	0	0
Overall LOS E/F	0	2
Number of Movements at LOS E or F	0	4
Number of Significantly Impacted Intersections	-	2

- In the weekday AM peak hour, eight signalized intersections would operate at overall unacceptable LOS E or F in the Build condition as opposed to seven in the No Build condition. "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. Nineteen specific traffic movements (e.g., left turns from one street to another, through traffic on one street passing through the intersection, etc.) out of approximately 101 total traffic movements analyzed would operate at LOS E or F conditions, and eight intersections would be significantly impacted.
- In the weekday Midday peak hour, six signalized intersections would operate at overall LOS E or F, while three would operate at overall LOS D in the Build condition as compared to six LOS E/F conditions and two LOS D conditions in the No Build scenario. Ten traffic movements would operate at LOS E or F, and six intersections would be significantly impacted.
- In the weekday PM peak hour, four signalized intersections would operate at overall LOS E or F in the Build condition as opposed to four in the No Build condition. Eight signalized intersections would operate at overall LOS D and 18 traffic movements would operate at LOS E or F. Twelve intersections would be significantly impacted.
- In the Saturday Midday peak hour, three signalized intersections would operate at overall LOS E or F, and two would operate at overall LOS D in the Build condition. Four traffic movements would operate at LOS E or F and four intersections would be significantly impacted.
- Five of the eight unsignalized intersections analyzed (including the two "new" intersections at the Project Site's access driveways along Vernon Boulevard) would operate at overall LOS E or F during at least one of the peak hours analyzed. Significant impacts would occur at five, four, six and two intersections during the weekday AM, Midday, PM, and Saturday Midday peak hours, respectively.

A more detailed presentation of levels of service and significant impacts by corridor is provided below.

a) Vernon Boulevard

Along the Vernon Boulevard corridor, three of the four signalized intersections analyzed would operate at overall unacceptable LOS D, E or F and would be significantly impacted during at least one weekday peak hour including the following:

- At the intersection of Vernon Boulevard and 44th Drive, southbound Vernon Boulevard would operate at LOS F during the weekday AM peak hour and would be significantly impacted.
- At the intersection of Vernon Boulevard and 41st Avenue, southbound Vernon Boulevard would operate at LOS F and would be significantly impacted during the weekday peak hours. Northbound Vernon Boulevard would operate at LOS F during the weekday PM peak hour and would be significantly impacted.
- At the intersection of Vernon Boulevard and Borden Avenue, the southbound left-turn movement of Vernon Boulevard would operate at LOS E during the weekday AM and Midday peak hours and at LOS F during the weekday PM peak hour, and would be significantly impacted. Also, the left-right movement of this approach would operate at LOS E and would be significantly impacted during the weekday PM peak hour.

b) 11th Street

Along the 11th Street corridor, all the signalized intersections analyzed would operate at overall LOS B or C except the intersection of 11th Street and Jackson Avenue, which would operate at overall LOS F and E during the weekday PM and Saturday Midday peak hours, respectively. The northbound left-turn movement of 11th Street at this intersection would operate at LOS E during the weekday PM peak hour and the westbound left-turn movement of Jackson Avenue would operate at LOS F during the weekday Midday, PM and Saturday Midday peak hours. The intersection of 11th Street and 43rd Avenue would be significantly impacted during the weekday PM peak hour.

c) 21st Street

Along the 21st Street corridor, three of the six intersections analyzed would operate at overall LOS E during at least one weekday peak hour. All six intersections would be significantly impacted during at least one peak period along this corridor including the following:

- At the intersection of 21st Street and 43rd Avenue, northbound and southbound 21st Street would operate at LOS E and would be significantly impacted during the weekday AM peak hour. Also, westbound 43rd Avenue would operate at LOS F during the weekday Midday and PM peak hours and would be significantly impacted. This approach would operate at LOS D during the Saturday Midday peak hour and would be significantly impacted.
- At the intersection of 21st Street and 41st Avenue, southbound 21st Street would operate at LOS E during the weekday AM and PM peak hours, and LOS F during the weekday Midday peak hour. This approach would be significantly impacted during the weekday PM peak hour.
- At the intersection of 21st Street and 40th Avenue, southbound 21st Street would continue to operate at LOS F during the weekday AM peak hour, but would not be significantly impacted since the approach delay is within the minimum criteria range defined for a significant impact. Tables 9-4 to 9-7 in the Traffic Technical Appendix provide a comparison of delays between the No Build and Build conditions. Also, northbound 21st Street would continue to operate at LOS E during the weekday PM peak hour, but would not be significantly impacted. Westbound 40th Avenue would operate at LOS D during the Saturday Midday peak hour and would be significantly impacted.

- Eastbound Queens Plaza South at its intersection with 21st Street would operate at LOS F during the weekday PM peak hour and would be significantly impacted.
- At the intersection of 21st Street and Queens Plaza North, the northbound approach of 21st Street would operate at LOS D and LOS E during the weekday Midday and PM peak hours, respectively, and would be significantly impacted.
- At the intersection of 21st Street and 44th Drive, the "de facto" left-turn movement of eastbound 44th Drive would operate at unacceptable LOS D during the weekday AM peak hour and would be significantly impacted.

d) <u>Jackson Avenue/Northern Boulevard</u>

Along the Jackson Avenue/Northern Boulevard corridor, two of the five signalized intersections analyzed would operate at overall LOS E during the weekday AM peak hour. The intersection of Northern Boulevard and 31st Street would be significantly impacted during the weekday AM and PM peak hours. Southbound 31st Street and Northern Boulevard would both operate at LOS F during the weekday AM peak hour, but only southbound Northern Boulevard would be significantly impacted. Also, the northbound through movement of Northern Boulevard would operate at LOS E during the weekday PM peak hour and would be significantly impacted.

e) <u>Queens Boulevard/Queens Plaza North and South</u>

Along the Queens Boulevard/Queens Plaza North and South corridor, two of the four signalized intersections analyzed would continue to operate at overall LOS F during at least one peak hour. Three intersections along this corridor would be significantly impacted during one or more peak hours, including the following:

- At the intersection of Queens Boulevard/Thomson Avenue at Van Dam Street, westbound left-through movement of Queens Boulevard would operate at LOS F during the weekday AM peak hour and would be significantly impacted. The eastbound through movement of Queens Boulevard would operate at LOS E during the weekday PM peak hour and would be significantly impacted.
- At the intersection of Queens Plaza South and 27th Street, the eastbound right turn movement of Queens Plaza South would continue to operate at LOS E during the weekday AM peak hour and would be significantly impacted.
- At the intersection of Queens Plaza North and Crescent Street, the southbound through movement of Crescent Street would continue to operate at LOS F during all the weekday peak hours analyzed and would be significantly impacted during the weekday PM peak hour. Although this movement would experience significant delays during the weekday AM peak hour, it would not be significantly impacted since the expected volume increments through this intersection would be below the minimum criteria (less than five vehicles) defined for such.

f) <u>Van Dam Street</u>

The two signalized intersections analyzed would operate at overall LOS E or F during at least one peak hour including the following:

- At the intersection of Queens-Midtown Expressway (the exit from the westbound LIE) and Van Dam Street, the westbound right-turn movement of Queens-Midtown Expressway would continue to operate at LOS F during the weekday Midday, PM, and Saturday Midday peak hours and would be significantly impacted.
- At the intersection of Borden Avenue and Van Dam Street, the southbound left-turn movement of Van Dam Street would operate at LOS F during the weekday Midday, PM and Saturday Midday peak hours and would be significantly impacted. Also, eastbound Borden Avenue would operate at LOS F during the weekday PM peak hour and would have significant impacts.

Three of the eight unsignalized intersections analyzed would operate at overall LOS D or better during the peak hours. Significant impacts would occur at five, four and six intersections during the weekday AM, Midday and PM peak hours, respectively and at two intersections during the Saturday Midday peak hour including the following:

- At the intersection of Vernon Boulevard and 43rd Avenue, eastbound 43rd Avenue would operate at LOS F during the weekday AM, PM and Saturday Midday peak hours. Westbound 43rd Avenue would operate at LOS F during the weekday and weekend peak hours. Both of these approaches would be significantly impacted during all the peak hours analyzed.
- At the intersection of Vernon Boulevard and Queens Plaza South, the westbound left-turn movement of Queens Plaza South would operate at LOS F during the weekday and weekend peak hours and would be significantly impacted. Also, eastbound Queens Plaza South would operate at LOS E during the weekday Midday peak hour, and at LOS F during the weekday AM, PM and Saturday Midday peak hours and would be significantly impacted.
- At the intersection of Vernon Boulevard and 40th Street, westbound 40th Avenue would operate at LOS F during the weekday peak hours and would be significantly impacted.
- Both eastbound approaches of the North and South Garage Entrances along Vernon Boulevard would operate at LOS F during the weekday PM peak hour. Eastbound North Garage Entrance would be significantly impacted during the weekday AM and PM peak hours while eastbound South Garage Entrance would have significant impacts during the weekday PM peak hour.
- At the intersection of 11th Street and Queens Plaza South, northbound 11th Street would operate at LOS F during the weekday peak hours and would be significantly impacted.

Detailed mitigation measures for significantly impacted locations are discussed later in this chapter; all significant impacts can be mitigated by standard traffic engineering improvements such as the installation of traffic signals, lane re-striping, signal phasing and timing changes, parking regulation modifications, and other measures.

3. Parking

All site-generated traffic would be accommodated by the proposed parking facility. An underground parking garage with a capacity of 1,400 spaces would be provided within the Project Site as part of the proposed development. Weekday and Saturday parking accumulation analyses were performed for the parking garage. Results of the analyses are presented in Tables 9-22A and 9-22B, and are graphically represented in Figures 9-18A and 9-18B. The tables show peak accumulations of approximately 85 percent for weekdays and approximately 88 percent for Saturday, based on a buildup of parking for the various project components. The parking occupancy accounts for the typical or average condition that can be expected on a weekday or Saturday. The peak parking usage of 1,192 is for the busiest hour on a normal weekday, whereas, this estimate increases to 1,239 for a typical Saturday. Conditions for the on- and off-street parking elsewhere within the overall Long Island City study area would be similar to 2009 No Build conditions.

TABLE 9-22A: WEEKDAY GARAGE PARKING ACCUMULATION FOR 2009 BUILD CONDITION

Time	Autos In	Autos Out	Spaces Occupied	Percent Occupied
12 - 1 AM	2	0	804	57%
1 - 2 AM	2	1	805	57%
2 - 3 AM	3	3	805	57%
3 - 4 AM	3	6	802	57%
4 - 5 AM	4	11	795	57%
5 – 6 AM	4	20	779	56%
6 - 7 AM	18	38	759	54%
7 - 8 AM	119	66	812	58%
8 - 9 AM	220	81	951	68%
9 - 10 AM	140	78	1,013	72%
10 - 11 AM	126	70	1,069	76%
11 AM - 12 PM	120	69	1,120	80%
12 - 1 PM	140	111	1,149	82%
1 - 2 PM	149	105	1,193	85%
2 - 3 PM	142	182	1,153	82%
3 - 4 PM	120	149	1,124	80%
4 - 5 AM	174	201	1,097	78%
5 - 6 PM	236	271	1,062	76%
6 - 7 PM	171	224	1,009	72%
7 - 8 PM	131	114	1,026	73%
8 - 9 PM	61	148	939	67%
9 - 10 PM	15	91	863	62%
10 - 11 PM	8	62	809	58%
11 PM - 12 AM	4	10	803	57%
Total Spaces Available = 1,400		**Overnight Cars Parked = 804**		

TABLE 9-22B: SATURDAY GARAGE PARKING ACCUMULATION FOR 2009 BUILD CONDITION

Time	Autos In	Autos Out	Spaces Occupied	Percent Occupied
12 - 1 AM	2	0	804	57%
1 - 2 AM	2	2	804	57%
2 - 3 AM	3	3	804	57%
3 - 4 AM	2	4	802	57%
4 - 5 AM	2	5	799	57%
5 – 6 AM	1	5	795	57%
6 - 7 AM	4	7	792	57%
7 - 8 AM	26	15	803	57%
8 - 9 AM	45	26	822	59%
9 - 10 AM	89	42	869	62%
10 - 11 AM	113	52	930	66%
11 AM - 12 PM	160	69	1,021	73%
12 - 1 PM	222	93	1,150	82%
1 - 2 PM	234	145	1,239	88%
2 - 3 PM	146	164	1,221	87%
3 - 4 PM	99	185	1,135	81%
4 - 5 AM	91	241	985	70%
5 - 6 PM	79	179	885	63%
6 - 7 PM	66	128	823	59%
7 - 8 PM	39	62	800	57%
8 - 9 PM	25	36	789	56%
9 - 10 PM	11	8	792	57%
10 - 11 PM	8	2	798	57%
11 PM - 12 AM	4	0	802	57%
Total Spaces Available = 1,400		**Overnight Cars Parked = 804**		

Of the 1,400 parking spaces that would be provided, about 800 spaces would be used by residents, with peak resident parking occurring during the overnight hours. During weekdays, resident parking would begin to decrease during the morning peak period, concurrently with the arrival of office commuters and some parking demand generated by other uses on the site. Parking accumulation would peak from around 12 noon to 3 or 4 PM, after which the office trips would begin to leave the site. On Saturdays, the retail and catering hall activities would result in peak parking accumulations during the midday hours of 12 noon to 4 PM.

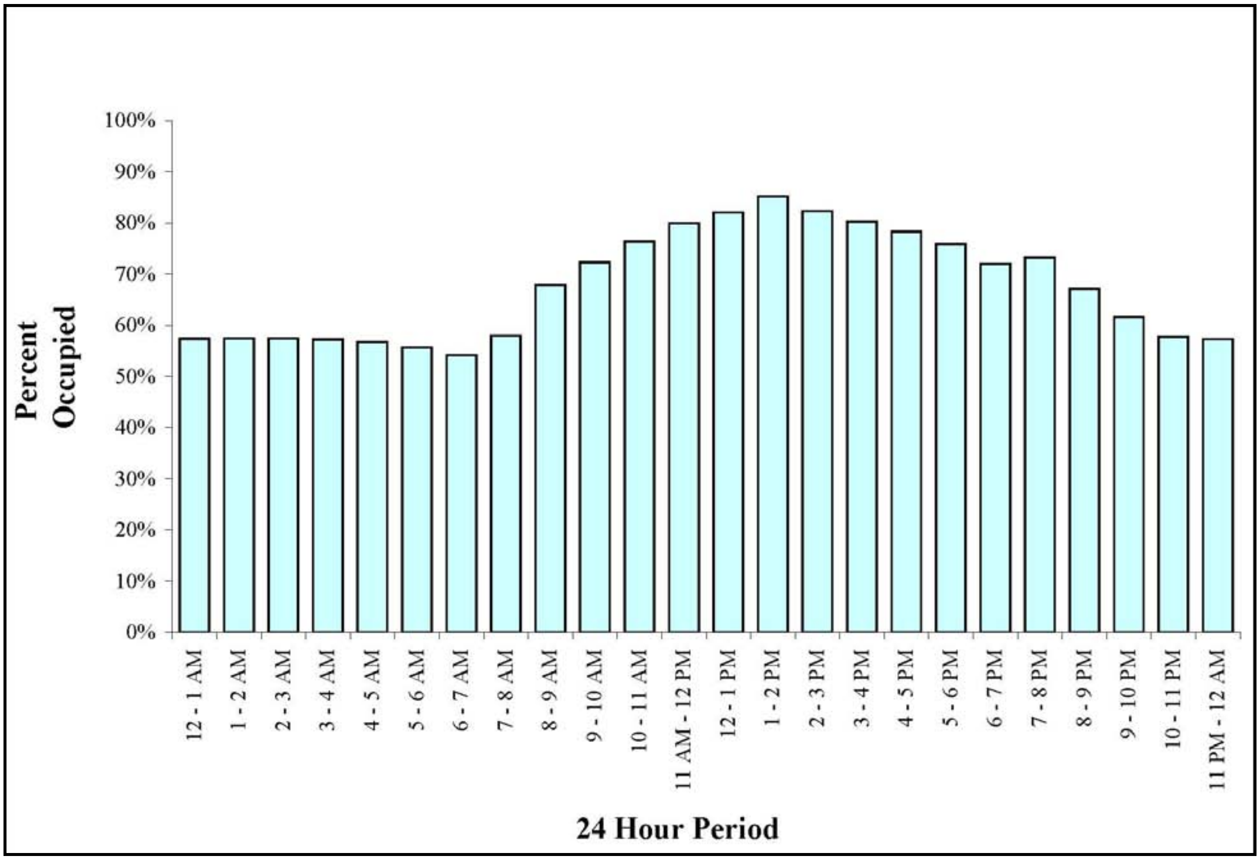


Figure 9-18A:
Weeday Garage Accumulation for 2009 Build Conditions

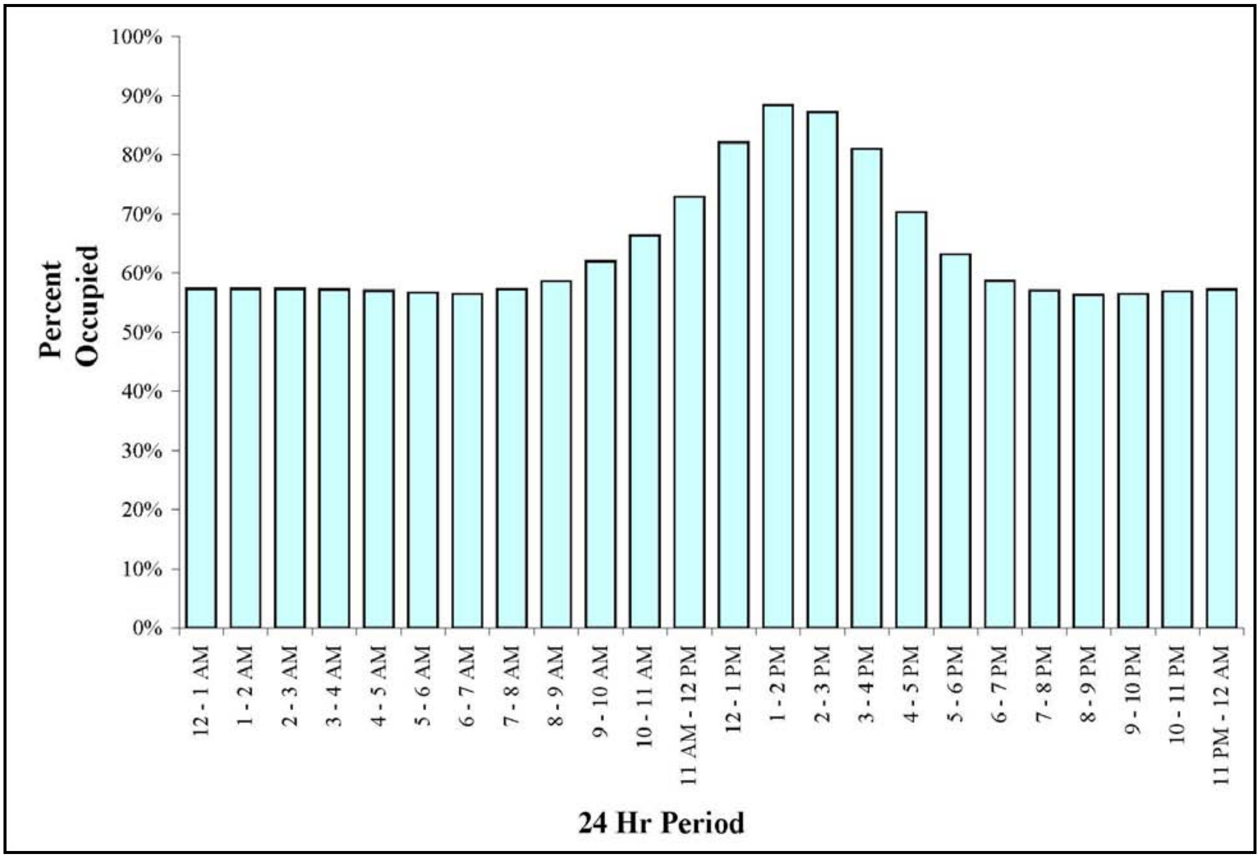


Figure 9-18B:
Saturday Garage Accumulation for 2009 Build Conditions

E. TRAFFIC MITIGATION (YEAR 2009)

This section identifies traffic capacity and operational improvements that would be needed as mitigation measures at significantly impacted locations. Detailed evaluation of mitigation measures indicates that all significant impacts would be fully mitigated by standard traffic engineering improvements such as installation of traffic signals, signal timing and phasing modifications, parking prohibitions, and lane restriping. These measures represent the standard range of traffic capacity improvements that have been proposed and implemented to mitigate anticipated traffic impacts for numerous projects in the City. Of the 32 locations analyzed during the weekday peak hours (signalized and unsignalized), significant adverse impacts would occur at 13 intersections during the AM peak hour, 10 intersections during the Midday peak hour, and 18 intersections would be significantly impacted during the PM peak hour (Table 9-23). Of the 21 intersections analyzed during the Saturday Midday peak hour, significant adverse impacts would occur at 6 intersections.

TABLE 9-23: SIGNIFICANT TRAFFIC IMPACT MITIGATION SUMMARY

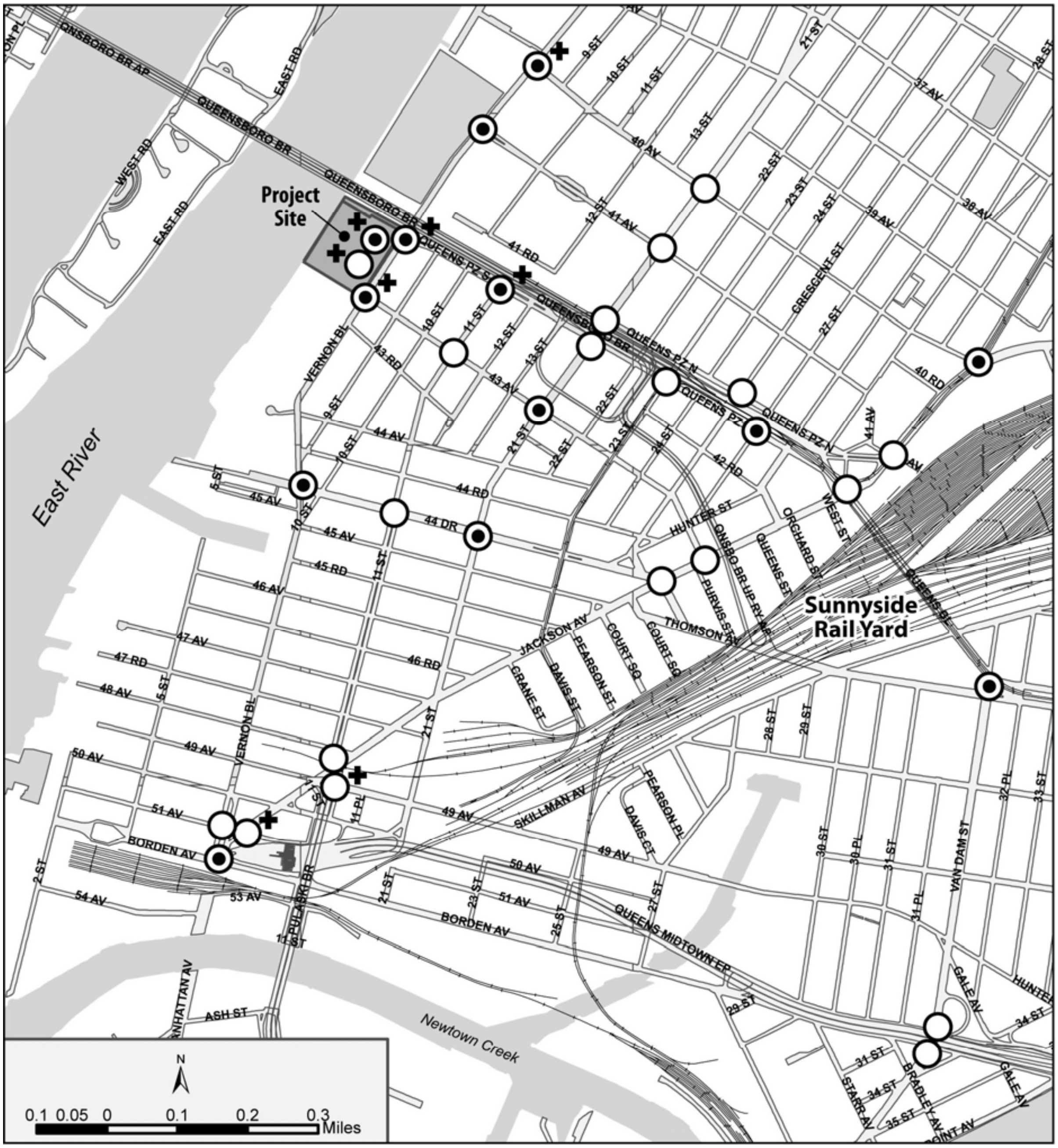
Intersections	AM	Midday	PM	Saturday Midday
Number of Intersections Not Significantly Impacted	19	22	14	15
Number of Significantly Impacted Intersections	13	10	18	6

Figures 9-19 through 9-22 provide an overview of traffic mitigation needs at analyzed intersections for the weekday AM, Midday, PM, and Saturday Midday peak hours, respectively. Detailed mitigation measures for each location are described below, with additional details provided in the Technical Traffic Appendix.

1. Vernon Boulevard

Along the Vernon Boulevard corridor, three of the four signalized intersections analyzed, and all five unsignalized intersections analyzed, would be significantly impacted during at least one peak hour. All significantly impacted locations could be mitigated using standard traffic engineering measures, including signalization of the intersections of 43rd Avenue and Queens Plaza South with Vernon Boulevard. Along northbound Vernon Boulevard, between 41st Avenue and 43rd Avenue, mitigation measures would include prohibiting curb parking on weekdays between 4–7 PM to accommodate two travel lanes. The two northbound lanes would be transitioned back to the existing one lane between Queens Plaza South and 41st Avenue. Curb parking would also need to be prohibited along northbound Vernon Boulevard at the intersections of Vernon Boulevard with the North and South Garage Entrances on weekdays between 7-10 AM.

In the southbound direction, between 41st Avenue and 43rd Avenue, parking would need to be prohibited on weekdays between 7 AM and 7 PM to accommodate two travel lanes.



No Significant Impact

Mitigated Impact

Unsignalized Intersection

Figure 9-19:
2009 Traffic Mitigation Overview for Weekday AM Peak

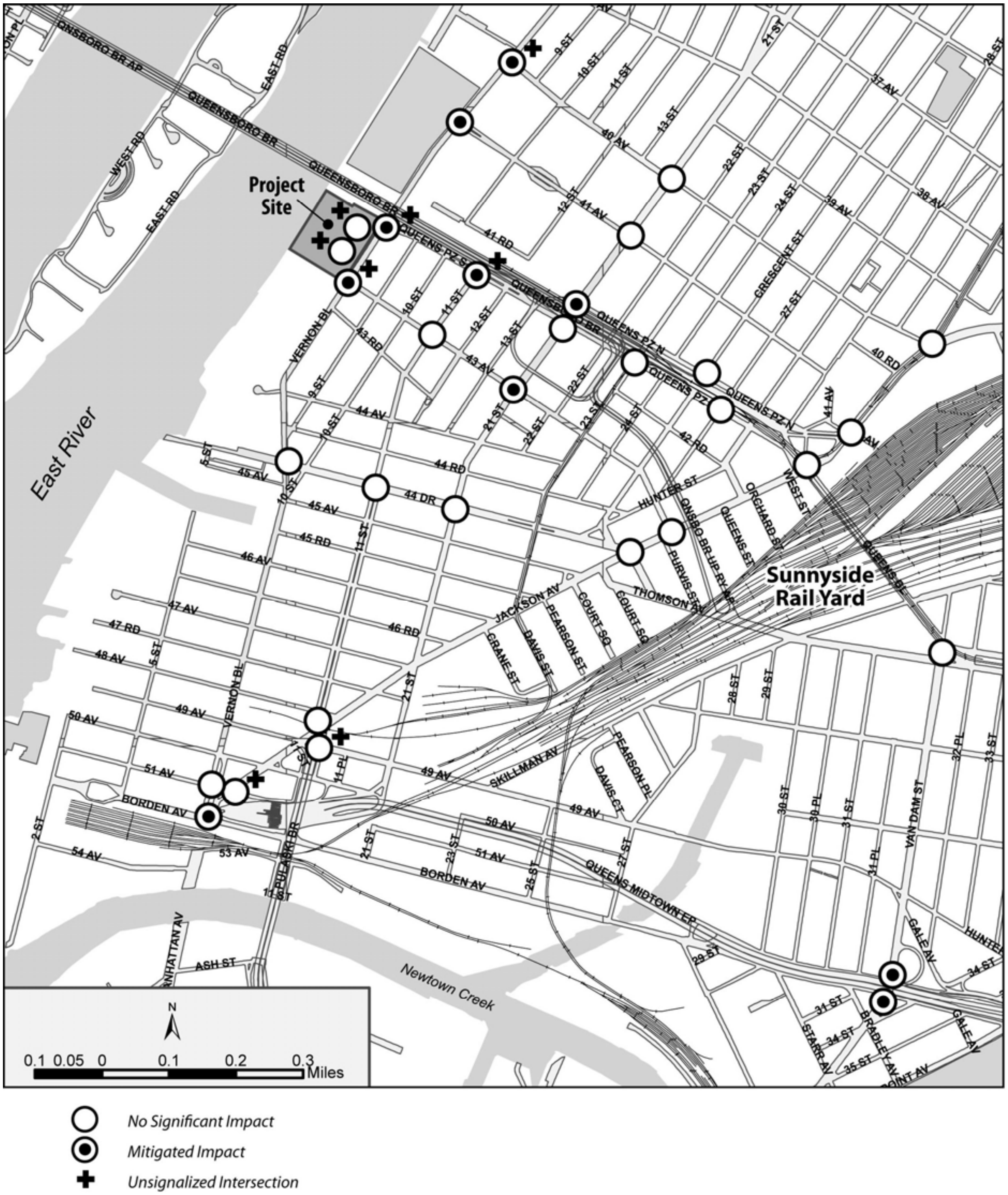


Figure 9-20:
2009 Traffic Mitigation Overview for Weekday Midday Peak

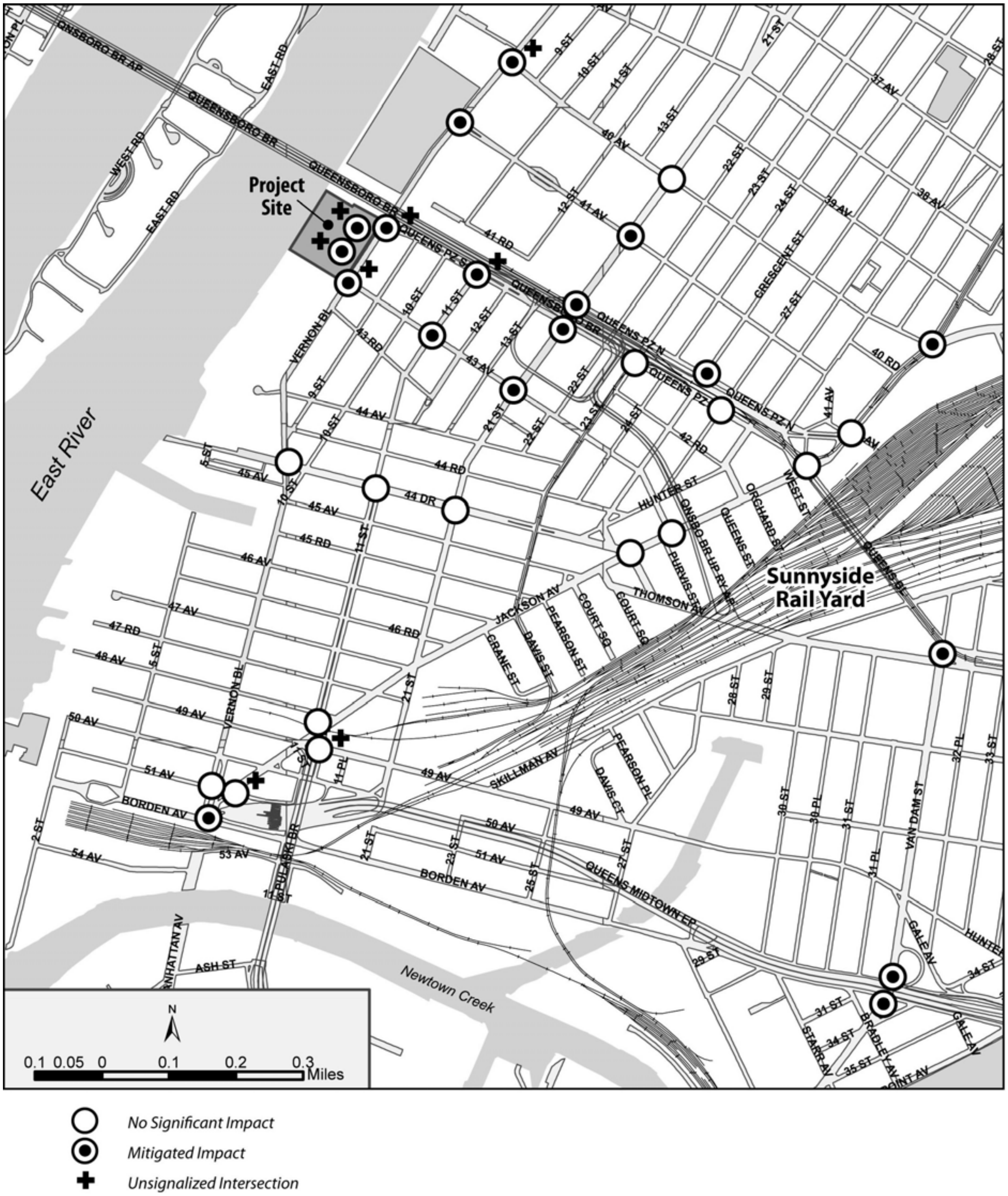


**Figure 9-21:
2009 Traffic Mitigation Overview for
Weekday PM Peak**

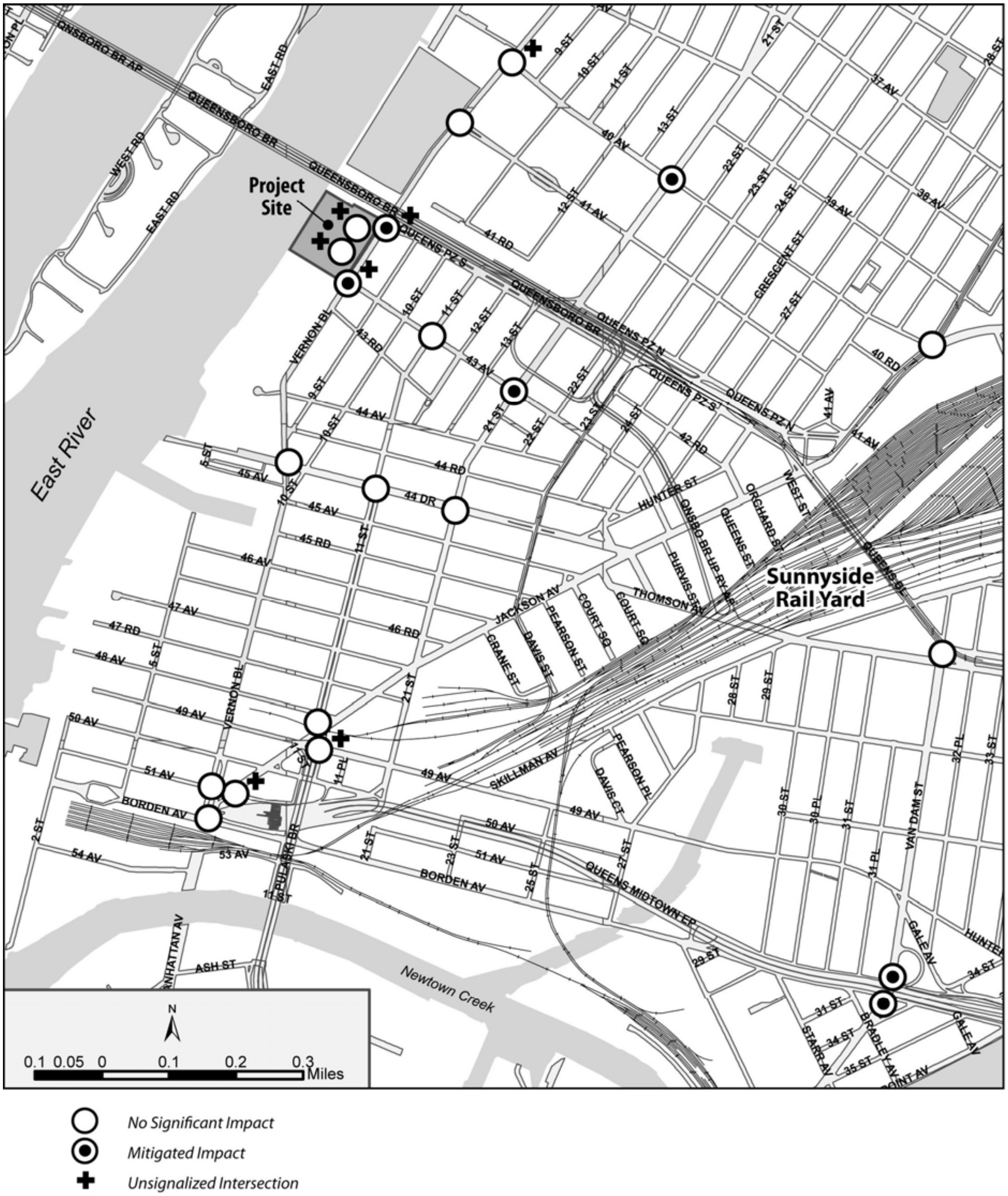


Figure 9-22: 2009 Traffic Mitigation Overview for Saturday Midday Peak

These two lanes would be transitioned back to one lane between 43rd Avenue and 43rd Road. Also, in the southbound direction, between 41st Avenue and Queens Plaza South, parking would need to be prohibited during the Saturday Midday peak period. Approximately 90 spaces would be lost on Vernon Boulevard during the weekday AM peak hour, approximately 50 spaces would be lost during the weekday Midday peak hour, approximately 100 spaces would be lost during the weekday PM peak hour, and approximately 25 spaces would be lost during the Saturday Midday peak hour in the southbound direction. These changes along Vernon Boulevard are illustrated in Figure 9-23. Significant traffic impacts and corresponding mitigation measures along Vernon Boulevard are as follows:

- Vernon Boulevard and 44th Drive: prohibit parking in the southbound direction (along the west curb of Vernon Boulevard) during the weekday AM peak period.
- Vernon Boulevard and 41st Avenue: significant traffic impacts during the weekday peak hours would be mitigated by signal timing modifications that would allow additional time for north/south traffic movements.
- Vernon Boulevard and Borden Avenue: significant traffic impacts during the weekday peak hours would be mitigated by signal timing modifications.
- Vernon Boulevard and 43rd Avenue: install a traffic signal and prohibit parking along northbound Vernon Boulevard during the weekday PM peak period to provide an additional travel lane. Lower volumes would permit parking during the weekday AM, Midday and Saturday Midday peak periods in the northbound direction (along the east curb of Vernon Boulevard); however, parking restrictions would still apply in the southbound direction during the weekday peak periods to provide two travel lanes.
- Vernon Boulevard and Queens Plaza South: install a traffic signal and prohibit parking along northbound Vernon Boulevard during the PM peak period to provide an additional travel lane. Parking prohibitions would be needed in the southbound direction during all peak periods analyzed to provide two travel lanes.
- Vernon Boulevard and 40th Street: prohibit parking in the southbound direction during the AM and Midday peak periods. During the weekday PM peak period, mitigation measures would involve parking prohibitions on both sides of Vernon Boulevard.
- North Garage Entrance and Vernon Boulevard intersection: prohibit parking in the northbound direction during the weekday AM and PM peak periods. Parking would also be prohibited from 7 AM – 7 PM on weekdays in the southbound direction. Southbound Vernon Boulevard would need to be restriped to provide one through lane and one right-turn only lane.
- South Garage Entrance and Vernon Boulevard intersection: prohibit parking in the northbound direction during the weekday AM and PM peak periods. Parking would also be prohibited from 7 AM – 7 PM on weekdays in the southbound direction.

2. 11TH Street

Along the 11th Street corridor, two of the five intersections analyzed would be significantly impacted and require mitigation during at least one peak hour, including the following:

- 11th Street and 43rd Avenue: significant traffic impacts during the weekday PM peak hour would be mitigated by signal timing modifications that would allow additional time for east/west traffic movements.
- 11th Street and Queens Plaza South: significant traffic impacts during the weekday peak hours would be mitigated by installing a traffic signal.

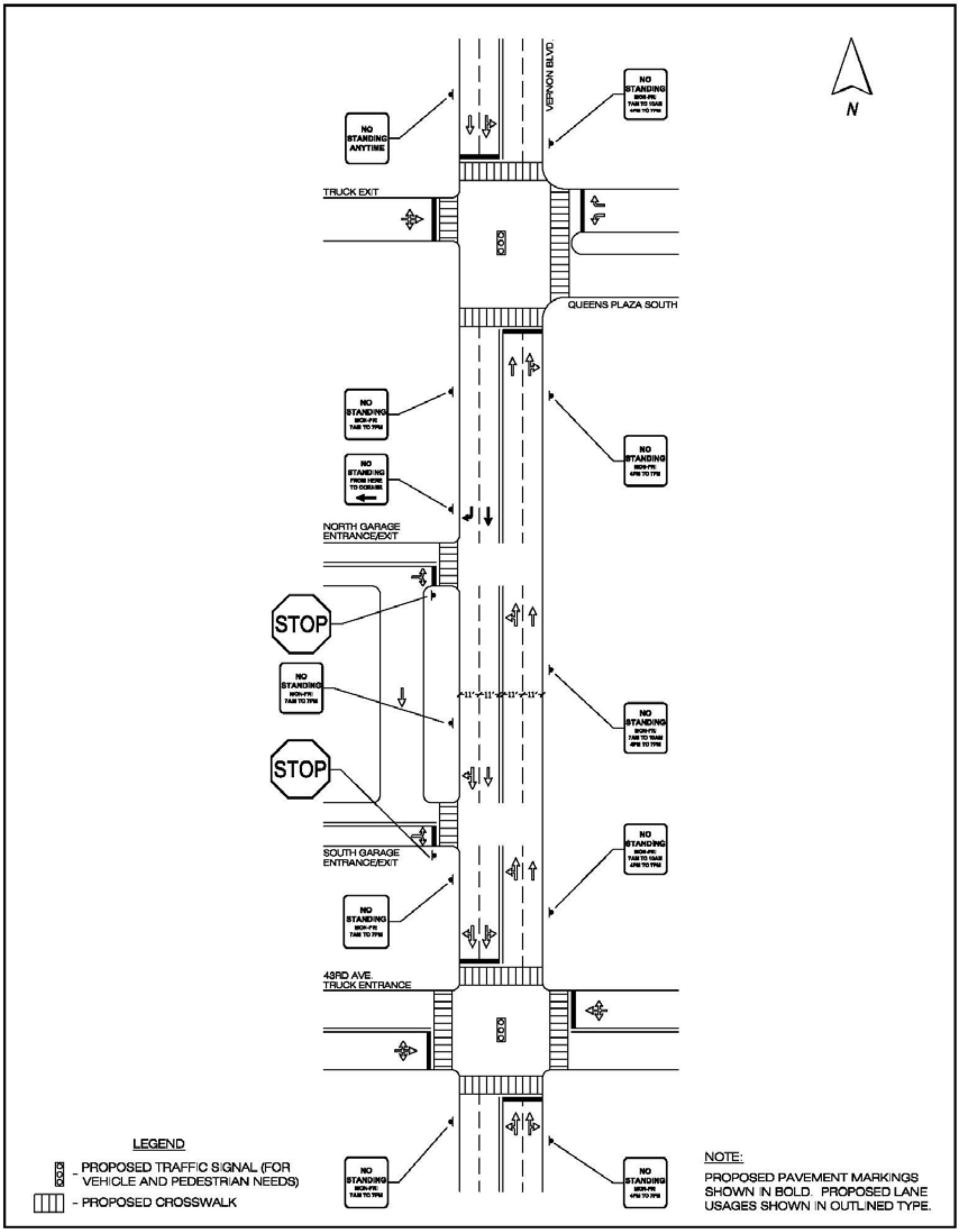


Figure 9-23:
Proposed Modifications Along Vernon Boulevard Near Project Site Entrances/Exits

3. 21ST Street

Along the 21st Street corridor, the following six intersections would be significantly impacted during at least one peak period and require mitigation as described below:

- 21st Street and 44th Drive: significant traffic impacts during the weekday AM peak hour would be mitigated by signal timing modifications that would allow additional time for east/west traffic movements.
- 21st Street and 43rd Avenue: significant traffic impacts during the weekday and weekend peak hours would be mitigated by signal timing modifications to allow additional time for the north/south traffic movements during the weekday AM peak hour and the east/west traffic movements during all other peak hours.
- 21st Street and 41st Avenue: significant traffic impacts during the weekday PM peak hour would be mitigated by signal timing modifications that would allow additional time for north/south traffic movements.
- 21st Street and 40th Avenue: significant traffic impacts during the Saturday Midday peak hour would be mitigated by prohibiting parking in the westbound direction (along the north curb) of 40th Avenue to accommodate one 15-foot-wide shared left-through lane and another 15-foot-wide shared through-right lane.
- 21st Street and Queens Plaza South: significant traffic impacts during the weekday PM peak hour would be mitigated by signal timing modifications that would allow additional time for north/south traffic movements.
- 21st Street and Queens Plaza North: significant traffic impacts during the weekday Midday and PM peak hours would be mitigated by signal timing modifications that would allow additional time for north/south traffic movements.

4. Jackson Avenue / Northern Boulevard

Along the Jackson Avenue/Northern Boulevard corridor, the intersection of Northern Boulevard and 31st Street would be significantly impacted during weekday AM and PM peak hours and require mitigation. The impacts would be mitigated by restriping the Northern Boulevard southbound median to provide additional width for the approach. During the weekday PM peak hour, mitigation measures would also include signal timing modifications that would allow additional time for the Northern Boulevard phase.

5. Queens Boulevard / Queens Plaza North And South

Along the Queens Boulevard/Queens Plaza North and South corridor, three of the four signalized intersections analyzed would be significantly impacted and require mitigation during at least one peak hour including the following:

- At the intersection of Queens Boulevard/Thomson Avenue at Van Dam Street: significant traffic impacts during the weekday AM and PM peak hours would be mitigated by signal timing modifications.
- At the intersection of Queens Plaza South and 27th Street: significant traffic impacts during the weekday AM peak hour would be mitigated by increasing the right turn lane width of eastbound Queens Plaza South from 10 feet to 10.5 feet by using 0.5 feet from the 18.5-foo-wide center median.
- At the intersection of Queens Plaza North and Crescent Street: significant traffic impacts during the weekday PM peak hour would be mitigated by signal timing modifications that would allow for additional time for southbound movements.

6. Van Dam Street

The two signalized intersections analyzed would be significantly impacted and require mitigation during at least one peak hour including the following:

- At the intersection of Queens-Midtown Expressway (the exit from the westbound LIE) and Van Dam Street: significant traffic impacts during the weekday Midday, PM, and Saturday Midday peak hours would be mitigated by signal timing modifications.
- Borden Avenue and Van Dam Street: significant traffic impacts during the weekday Midday, PM and Saturday Midday peak hours would be mitigated by modifications to the signal timing plan. Mitigation measures would also involve restriping to increase the width of the southbound through lane from 11 feet to 14 feet.

Each of the traffic engineering improvements described above would require approval of the New York City Department of Transportation (NYCDOT). These improvement measures fall within the range of typical measures employed by NYCDOT in improving traffic conditions in all parts of the City.

F. ASSESSMENT OF VARIATIONS

An assessment of the three variations to the Preferred Development Program was performed. This section provides a discussion of each variation along with the total volume of vehicle trips that would be generated by each variation. Each of the variations would generate approximately the same volume of vehicle trips or less in comparison to the Preferred Development Program.

1. Variation 1 (More Residential Space)

Variation 1 would replace approximately 655,048 sf of office space with an equivalent amount of residential space containing 655 dwelling units. Vehicle trips that would be generated by Variation 1 are shown in Tables 9-24 through 9-27. These tables indicate that a total of approximately 202, 327, and 518 vehicle trips would be generated during the weekday AM, Midday, and PM peak hours, respectively. Approximately 548 vehicle trips would be generated during the Saturday Midday peak hour. Comparisons to trip generation for the Preferred Development Program are provided later in this Section.

TABLE 9-24: VEHICLE TRIPS GENERATED BY VARIATION 1: WEEKDAY AM PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Residential (new)	7	35	2	2	2	2	11	39
Health Club	7	13	1	1	0	0	8	14
Residential	10	54	3	3	3	3	16	60
Television Studio	40	2	3	3	2	2	45	7
Catering Hall	0	0	0	0	0	0	0	0
Retail Street	0	0	0	0	1	1	1	1
Museum	0	0	0	0	0	0	0	0
TOTAL	**64**	**104**	**9**	**9**	**8**	**8**	**81**	**121**

TABLE 9-25: VEHICLE TRIPS GENERATED BY VARIATION 1: WEEKDAY MIDDAY PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Residential (new)	5	4	0	0	2	2	7	6
Health Club	11	12	1	1	0	0	12	13
Residential	8	5	1	1	2	2	11	8
Television Studio	10	10	7	7	1	1	18	18
Catering Hall	42	3	3	2	0	0	45	5
Retail Street	7	7	26	26	1	1	34	34
Museum	52	46	9	9	0	0	61	55
TOTAL	**135**	**87**	**47**	**46**	**6**	**6**	**188**	**139**

TABLE 9-26: VEHICLE TRIPS GENERATED BY VARIATION 1: WEEKDAY PM PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Residential (new)	26	9	2	2	1	1	29	12
Health Club	18	11	2	2	0	0	20	13
Residential	40	13	3	3	2	2	45	18
Television Studio	2	35	3	3	0	0	5	38
Catering Hall	84	6	5	4	0	0	89	10
Retail Street	7	7	24	24	1	1	32	32
Museum	81	68	13	13	0	0	94	81
TOTAL	**258**	**149**	**52**	**51**	**4**	**4**	**314**	**204**

TABLE 9-27: VEHICLE TRIPS GENERATED BY VARIATION 1: SATURDAY MIDDAY PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Residential (new)	21	21	2	2	2	2	25	25
Health Club	7	8	1	1	0	0	8	9
Residential	31	31	3	3	2	2	36	36
Television Studio	5	5	4	4	1	1	10	10
Catering Hall	126	8	7	6	0	0	133	14
Retail Street	10	10	34	34	1	1	45	45
Museum	51	79	11	11	0	0	62	90
TOTAL	**251**	**162**	**62**	**61**	**6**	**6**	**319**	**229**

2. Variation 2 (More Studio Space)

Variation 2 would replace approximately 126,401 sf of cultural space (museum) with an equivalent amount of studio and studio support space, including two additional studios. Vehicle trips that would be generated by Variation 2 are shown in Tables 9-28 through 9-31. These tables indicate that a total of approximately 383, 293, and 477 vehicle trips would be generated during the weekday AM, Midday, and PM peak hours, respectively. Approximately 366 vehicle trips would be generated during the Saturday Midday peak hour.

TABLE 9-28: VEHICLE TRIPS GENERATED BY VARIATION 2: WEEKDAY AM PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Office	163	12	12	12	6	6	181	30
Health Club	7	13	1	1	0	0	8	14
Residential	10	54	3	3	3	3	16	60
Television Studio	40	2	3	3	2	2	45	7
Catering Hall	0	0	0	0	0	0	0	0
Retail Street	0	0	0	0	1	1	1	1
Television Studio (new)	15	1	1	1	1	1	17	3
TOTAL	**235**	**82**	**20**	**20**	**13**	**13**	**268**	**115**

TABLE 9-29: VEHICLE TRIPS GENERATED BY VARIATION 2: WEEKDAY MIDDAY PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Office	19	22	15	15	5	5	39	42
Health Club	11	12	1	1	0	0	12	13
Residential	8	5	1	1	2	2	11	8
Television Studio	10	10	7	7	1	1	18	18
Catering Hall	42	3	3	2	0	0	45	5
Retail Street	7	7	26	26	1	1	34	34
Television Studio (new)	4	4	3	3	0	0	7	7
TOTAL	**101**	**63**	**56**	**55**	**9**	**9**	**166**	**127**

TABLE 9-30: VEHICLE TRIPS GENERATED BY VARIATION 2: WEEKDAY PM PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Office	4	131	9	9	3	3	16	143
Health Club	18	11	2	2	0	0	20	13
Residential	40	13	3	3	2	2	45	18
Television Studio	2	35	3	3	0	0	5	38
Catering Hall	84	6	5	4	0	0	89	10
Retail Street	7	7	24	24	1	1	32	32
Television Studio (new)	1	13	1	1	0	0	2	14
TOTAL	**156**	**216**	**47**	**46**	**6**	**6**	**209**	**268**

TABLE 9-31: VEHICLE TRIPS GENERATED BY VARIATION 2: SATURDAY MIDDAY PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Office	4	4	3	3	0	0	7	7
Health Club	7	8	1	1	0	0	8	9
Residential	31	31	3	3	2	2	36	36
Television Studio	5	5	4	4	1	1	10	10
Catering Hall	126	8	7	6	0	0	133	14
Retail Street	10	10	34	34	1	1	45	45
Television Studio (new)	2	2	1	1	0	0	3	3
TOTAL	**185**	**68**	**53**	**52**	**4**	**4**	**242**	**124**

3. Variation 3 (More Residential Space and More Studio Space)

Variation 3 would replace approximately 655,048 sf of office space with an equivalent amount of residential space containing 655 dwelling units, and would replace approximately 126,401 sf of cultural space (museum) with an equivalent amount of studio and studio support space, including two additional studios. Vehicle trips that would be generated by Variation 3 are shown in Tables 9-32 through 9-35. These tables indicate that a total of approximately 222, 225, and 359 vehicle trips would be generated during the weekday AM, Midday, and PM peak hours, respectively. Approximately 402 vehicle trips would be generated during the Saturday Midday peak hour.

TABLE 9-32: VEHICLE TRIPS GENERATED BY VARIATION 3: WEEKDAY AM PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Residential (new)	7	35	2	2	2	2	11	39
Health Club	7	13	1	1	0	0	8	14
Residential	10	54	3	3	3	3	16	60
Television Studio	40	2	3	3	2	2	45	7
Catering Hall	0	0	0	0	0	0	0	0
Retail Street	0	0	0	0	1	1	1	1
Television Studio (new)	15	1	1	1	1	1	17	3
TOTAL	**79**	**105**	**10**	**10**	**9**	**9**	**98**	**124**

TABLE 9-33: VEHICLE TRIPS GENERATED BY VARIATION 3: WEEKDAY MIDDAY PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Residential (new)	5	4	0	0	2	2	7	6
Health Club	11	12	1	1	0	0	12	13
Residential	8	5	1	1	2	2	11	8
Television Studio	10	10	7	7	1	1	18	18
Catering Hall	42	3	3	2	0	0	45	5
Retail Street	7	7	26	26	1	1	34	34
Television Studio (new)	4	4	3	3	0	0	7	7
TOTAL	**87**	**45**	**41**	**40**	**6**	**6**	**134**	**91**

TABLE 9-34: VEHICLE TRIPS GENERATED BY VARIATION 3: WEEKDAY PM PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Residential (new)	26	9	2	2	1	1	29	12
Health Club	18	11	2	2	0	0	20	13
Residential	40	13	3	3	2	2	45	18
Television Studio	2	35	3	3	0	0	5	38
Catering Hall	84	6	5	4	0	0	89	10
Retail Street	7	7	24	24	1	1	32	32
Television Studio (new)	1	13	1	1	0	0	2	14
TOTAL	**178**	**94**	**40**	**39**	**4**	**4**	**222**	**137**

TABLE 9-35: VEHICLE TRIPS GENERATED BY VARIATION 3: SATURDAY MIDDAY PEAK HOUR

Land Use	Autos		Taxis		Trucks		Total	
	In	Out	In	Out	In	Out	In	Out
Residential (new)	21	21	2	2	2	2	25	25
Health Club	7	8	1	1	0	0	8	9
Residential	31	31	3	3	2	2	36	36
Television Studio	5	5	4	4	1	1	10	10
Catering Hall	126	8	7	6	0	0	133	14
Retail Street	10	10	34	34	1	1	45	45
Television Studio (new)	2	2	1	1	0	0	3	3
TOTAL	**202**	**85**	**52**	**51**	**6**	**6**	**260**	**142**

4. Comparison of Variations with the Preferred Development Program

Overall, each of the variations would generate approximately the same volume of vehicle trips or less as compared to the Preferred Development Program. Variations 1 and 2 would generate a slightly higher volume of vehicle trips during one of the four analysis periods, and fewer vehicle trips during the other three analysis periods; Variation 3 would generate slightly fewer vehicle trips during all four traffic analysis periods. Table 9-36 provides a comparison of vehicle trips that would be generated by the Preferred Development Program and each of the three variations.

TABLE 9-36: COMPARISON OF VARIATIONS WITH THE PREFERRED DEVELOPMENT PROGRAM

	Weekday AM Peak		Weekday Midday Peak		Weekday PM Peak		Saturday Midday Peak	
	In	Out	In	Out	In	Out	In	Out
Preferred Development Program	251	112	220	175	301	335	301	211
	363		395		636		512	
Variation 1: More Residential	81	121	188	139	314	204	319	229
	202		327		518		548	
Variation 2: More Studio	268	115	166	127	209	268	242	124
	383		293		477		366	
Variation 3: More Residential and More Studio	98	124	134	91	222	137	260	142
	222		225		359		402	

For Variation 1, vehicle trips generated by residential space would be higher than trips generated by an equivalent amount of office space during one analysis period – the Saturday Midday peak hour. Therefore, Variation 1 would generate about 36 more vehicle trips in the Saturday Midday peak hour (7 percent more than the Preferred Development Program). These additional trips would be distributed throughout the network, with only a portion of them passing through key study area locations. No new significant impacts are expected. Variation 1 would generate significantly fewer trips than the Preferred Development Program in the weekday AM, Midday, and PM peak hours. The extent of significant impacts and mitigation requirements should be similar to the Preferred Development Program. The Saturday Midday peak hour has the highest garage parking accumulation, however according to the Saturday parking garage accumulation analysis, there would be capacity for an additional 161 vehicles during the Saturday Midday peak hour. The additional 36 vehicles during the Saturday Midday peak hour for Variation 1 (half in and half out) would not significantly affect the ability of the garage to accommodate its demand.

For Variation 2, vehicle trips generated by studio and studio support space would be higher than trips generated by an equivalent amount of cultural facility space (museum) during the weekday AM peak hour. Therefore, Variation 2 would generate about 20 more vehicle trips in the weekday AM peak hour (6 percent more than the Preferred Development Program). These additional trips would be distributed throughout the network, with only a portion of them passing through key study area locations. There would be one additional significant traffic impact—at the location of 21st Street and 40th Avenue—during the weekday AM peak hour for Variation 2. The intersection would be impacted during the Saturday Midday peak hour for the Preferred Development Program, but not during the weekday AM peak hour. The impact would be fully mitigated by shifting one second of green time from the east-west phase to the north-south phase for the AM peak hour. Variation 2 would generate significantly fewer trips than the Preferred Development Program in the weekday

Midday, PM, and Saturday Midday peak hour, and the extent of significant impacts and mitigation requirements during these time periods should be similar to the Preferred Development Program. As with the Preferred Development Program, there should be no parking shortfalls.

Variation 3 would generate significantly less traffic than the Preferred Development Program in all four traffic analysis peak hours, as shown in Table 9-36. It is possible that this lower volume of trip generation could result in fewer significant impacts but since the reduction in generated vehicle trips would be distributed throughout the study area's 32-intersection network, the overall set of traffic impacts and mitigation requirements should still be very similar to the Preferred Development Program. As with the Preferred Development Program, there should be no parking shortfalls.

For Variations 1 through 3, traffic improvements and mitigation measures along Vernon Boulevard—including the need for two new traffic signals—would be the same as for the Preferred Development Program.