Chapter 5: Transportation

5.1 Introduction

According to the *2014 CEQR Technical Manual*, the objective of a transportation analysis is to determine if a proposed project may result in significant adverse impacts to travelers (private car, taxi cab, subway and rail, bus, ferry, bicycle and by foot) within their respective study areas near the project site, and to identify measures to mitigate significant impacts.

5.2 Methodology and Analytical Framework

According to the *2014 CEQR Technical Manual* procedures for transportation analysis, a two-tiered screening process is to be undertaken to determine whether a detailed quantitative analysis is necessary. The first step, the Level 1 (Trip Generation) screening assessment, determines whether the number of peak hour person and vehicle trips generated by the proposed project would remain below the minimum thresholds for further study. These thresholds are:

- 50 peak hour vehicle trip ends;
- 200 peak hour subway/rail or bus transit riders; and
- 200 peak hour pedestrian trips.

If project-generated trips would exceed any of these thresholds, a Level 2 (Trip Assignment) screening assessment is usually performed. Under this assessment, project-generated trips are assigned to and from the site through their respective networks (streets, bus and subway lines, sidewalks, etc.) based on expected origin-destination patterns and travel routes. This determines the volume of peak hour vehicle traffic that would be added per intersection, the volume of riders that would be added per subway line or bus route, and the walk trips that would be added per individual pedestrian network element (crosswalk, corner reservoir area, etc.). If the Level 2 screening assessment determines that any specific traffic location, transit line or station element, or pedestrian network element would experience an increase of trips beyond the above thresholds for any peak hour, then a detailed analysis is typically warranted.

The proposed actions would allow for the construction of the proposed project. The With-Action condition would contain three components: 400 parking spaces accessory to the hotel (replacing the existing 410 spaces), 1,800 parking spaces available to the public for air travelers from LaGuardia Airport in need of long-term parking, and approximately 600 square feet (sf) of ground-level retail space along Ditmars Boulevard.[1] The existing hotel entrance/exit along Ditmars Boulevard would continue to provide access for the hotel pickup/drop off and shuttle bus activities. Access to the public parking garage would be provided via two driveways along Ditmars Boulevard—the main point of access/egress, the "west driveway," would be slightly east of the existing hotel entrance/exit, and a second driveway located further east, "the east driveway," would just allow entry into the garage.

[1] The With-Action condition established in the DEIS for analysis purposes has a slightly greater number of parking spaces (2,200 total) than the Uniform Land Use Review Procedure (ULURP) application (2,195 total, comprised of 1,775 public spaces and 420 accessory spaces).

5.3 Level 1 (Trip Generation) Screening Assessment

Trip generation projections for the proposed public parking component of the garage have been determined based on existing volume data ("ins" and "outs") provided by an affiliate of the applicant (The Parking Spot) for a 701 space parking lot located less than one-half mile away from the project site which serves LaGuardia Airport travelers and is also operated by The Parking Spot. The data provided is for typical weeks in May and October 2013, and consists of a 24-hour count of entering vehicles ("ins") and exiting vehicles ("outs") over seven days for both months. May and October are considered typically busy months for the existing parking lot as well as for the proposed facility. Since the volume data showed that the total volumes ("ins" plus "outs") during the three weekday peak periods were higher in October than in May, October "in" and "out" volumes were used and were pro-rated from the existing 701 spaces to reflect volumes for the approximately 1,800 space proposed public parking component of the garage. In addition, in order to ensure a conservative analysis, the projected trips were grown by 16 percent to analyze the parking facility operating at 100 percent capacity since the average occupancy during the weekday peak parking hour was 84 percent. Weekend peak hour volumes were generally lower than weekday peak hour volumes for the month of October. Existing parking demand would be accommodated in the garage component accessory to the hotel and would enter via the hotel driveway.

In addition to auto trips parking at the proposed garage, shuttle bus service would be provided to and from the airport. Approximately six shuttle buses per hour would be expected to travel between the proposed garage and the airport during the peak periods.

The travel demand factors used to calculate the projected number of trips expected to be generated for the retail component were obtained from the *2014 CEQR Technical Manual* and the *Willets Point Development Final Supplemental Environmental Impact Statement (FSEIS) (2013)*. A trip generation rate of 205 daily weekday person trips per 1,000 sf and temporal distributions of 3 percent in the weekday AM peak hour, 19 percent in the weekday midday peak hour, and 10 percent in the weekday PM peak hour were assumed and obtained from the *2014 CEQR Technical Manual*. Directional distributions of 50 percent "in" for the weekday peak hours and vehicle occupancies of 2 persons per auto or taxi were obtained from the *Willets Point Development FSEIS*. The modal splits were obtained from the *Willets Point Development FSEIS* and modified to reflect local travel characteristics, and conservatively assumes 20 percent of the trips would be by auto, 10 percent by bus, and 70 percent by walk or bike

For retail delivery trips, a trip generation rate of 0.35 daily weekday trucks per 1,000 sf and temporal distributions of 8 percent in the weekday AM peak hour, 11 percent in the weekday midday peak hour, and 2 percent in the weekday PM peak hour were assumed and were obtained from the *2014 CEQR Technical Manual*.

Travel demand assumptions used for the public parking and retail components of the proposed project are provided in the Appendix.

Level 1 Screening Results

Transit and Pedestrians

Since the auto trips from the proposed project would be generated by patrons flying from LaGuardia Airport and shuttled back and forth to the parking garage, project-generated transit and pedestrian trips would be well below their respective Level 1 screening thresholds; accordingly, no further

public transit or pedestrian analyses are needed.

Traffic and Parking

Table 5.1 below summarizes total peak hour volumes ("ins" plus "outs") for the highest weekday during typical weeks in May and October.

Table 5.1: Highest Individual Weekday Peak Hour Volumes (vph)

	May			October		
Peak Hour	In	Out	Total	In	Out	Total
Weekday AM	90	15	105	107	15	122
Weekday Midday	64	34	98	28	75	103
Weekday PM	55	45	100	34	87	121

Notes:
(1) Includes a net increase of six shuttle buses per hour during each peak period.
(2) Includes a net increase of two retail auto trips per hour during the weekday midday and PM peak periods.

As shown in Table 5.1, the net increase in vehicle trips ("ins" plus "outs") would exceed the 50 peak hour trip threshold during weekday peak hours. The proposed project is expected to generate 122 vehicle trips per hour (vph) during the weekday AM peak hour, 103 vph in the weekday midday peak hour, and 121 vph in the weekday PM peak hour (as described previously, volumes pro-rated for October are being used since they are higher). Since the volume of vehicle trips expected to be generated by the proposed project would exceed the 50 vehicle trip threshold during at least one weekday peak hour, a Level 2 screening assessment is warranted.

5.4 Level 2 (Trip Assignment) Screening Assessment

The following description details the assumptions used for the Level 2 screening assessment for vehicular traffic. An assessment for pedestrians and transit trips was not necessary because projected trips generated would not exceed the Level 1 Screening Assessment thresholds.

Level 2 Screening Results

Traffic

Based on the Level 1 transportation screening analysis, the incremental vehicle trips generated by the proposed project would exceed the *2014 CEQR Technical Manual* thresholds and require further analysis. The vehicular assignments were based on the LaGuardia Airport origin-destination survey data provided in the *Federal Aviation Administration* (FAA) *Regional Air Service Demand Study (2007)* and information provided by The Parking Spot on their clientele base. Origin-destination assumptions in the FAA report were adjusted to reflect patterns for auto users (the study's data shows a high Manhattan share; however, the majority of trips from Manhattan use taxi/black car service as opposed to personal autos).

Access to the project site would be provided along Ditmars Boulevard via two driveways. The driveway to the west (adjacent to the hotel driveway) would serve as the primary site entrance. Vehicles would be prohibited from turning left while exiting out of this west driveway. Exiting vehicles would turn right and travel west on Ditmars Boulevard; eastbound vehicles would use the roundabout at 23rd Avenue/102nd Street to make U-turns. The driveway to the east would serve as

a secondary site entrance; vehicles cannot exit from this driveway. The existing hotel entrance would be redesigned and would be utilized by hotel patrons and shuttle buses.

It is assumed that trips to and from the site would largely utilize the surrounding highway network to access Ditmars Boulevard. Sixty percent of auto trips to the project site were assigned from within New York City. Approximately 25 percent of these trips are assumed to originate from Manhattan and would make their way to the project site from the Grand Central Parkway (GCP) via the Robert F. Kennedy (RFK) Bridge (five percent) or from the Brooklyn-Queens Expressway (BQE) (20 percent). Approximately 30 percent of these trips are assumed to originate from Brooklyn and Queens. Half of these trips would arrive from the east and enter the study area via the GCP or the Van Wyck Expressway via Northern Boulevard. The remaining trips are assumed to arrive from the west along the GCP or the BQE. Trips from the Bronx (five percent) are expected to travel to the project site from the west via a combination of the RFK Bridge to the GCP, or either the Throgs Neck Bridge or the Whitestone Bridge to the Van Wyck Expressway (entering the area via Northern Boulevard).

The proposed project is also expected to service LaGuardia Airport passengers from Upstate New York/Connecticut (20 percent), Long Island (15 percent), and New Jersey (five percent). Most of the trips from Upstate New York/Connecticut would enter Queens via the Throgs Neck Bridge or the Whitestone Bridge and travel to the site via the Van Wyck Expressway (entering the study area via Northern Boulevard). The remaining trips would arrive from the west utilizing the RFK Bridge to the GCP. Long Island trips would arrive from the east, utilizing the GCP or the Van Wyck Expressway via Northern Boulevard to enter the study area. A vast majority of New Jersey trips are assumed to arrive from the RFK Bridge and travel to the site via the GCP, while some trips would enter New York City further south, and travel to the study area using a combination of the BQE and the GCP.

Overall, approximately 57 percent of the auto trips are assumed to reach the project site via eastbound Ditmars Boulevard, and the remaining 43 percent of the auto trips via westbound Ditmars Boulevard. The vast majority of the auto trips would use the main "west driveway" of the garage (92 percent) with the remaining auto trips (eight percent) entering via the "east driveway." All exiting vehicles would use the west driveway. Exiting vehicles would use the same highway routes detailed above in the reverse direction, with (as discussed earlier) all trips expected to leave via westbound Ditmars Boulevard since left turns would be prohibited for exiting vehicles. The vast majority (95 percent) of exiting trips would access the GCP via the eastbound on-ramp at 97th Street, and the westbound on-ramp west of 94th Street. The remaining trips (5 percent) would travel west on Ditmars Boulevard and turn around to travel east on Ditmars Boulevard via the roundabout at Ditmars Boulevard and 23rd Avenue/102nd Street. A graphical representation of the routing for vehicle trips arriving at and departing from the project site are shown in Figures 5.1a and 5.1b.

Shuttle buses from the project site were assigned to enter and leave the airport via 94th Street and 102nd Street. The majority of retail trips are expected to be from the hotel and garage patrons. Retail auto trips are expected to come from the immediate surrounding area and were assigned to and from the site from adjacent residential areas. Traffic volume increments are provided in Figures 5.2 through 5.4.

5.5 Transportation Analysis

The Level 1 and Level 2 screening assessments show that detailed traffic analyses are needed. Further analysis was conducted using methodologies presented in the *2000 Highway Capacity Manual* (*HCM 2000*) as detailed in the *2014 CEQR Technical Manual*.

102-05 Ditmars Blvd. Garage
Queens, New York 11369

Routing for Vehicle Trips Arriving (Percentage)

Figure 5.1a

102-05 Ditmars Blvd. Garage
Queens, New York 11369

Routing for Vehicle Trips Departing (Percentage)

Figure 5.1b

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102-05 Ditmars Blvd. Garage
Queens, New York 11369

Weekday AM Trip Increments

Figure 5.2

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

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Weekday Midday Trip Increments

Figure 5.3

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

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Weekday PM Trip Increments

Figure 5.4

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

Methodology

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*, levels of service (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 excess of 10.0 seconds up 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 excess of 20.0 seconds up to 35.0 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. The number of vehicles stopping is noticeable at this level, although many still pass through the intersection without stopping.
- LOS D describes operations with delays in excess of 35.0 seconds up to 55.0 seconds per vehicle. At LOS D, the influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high volume-to-capacity (v/c) ratios. Many vehicles stop, and the proportion of vehicles not stopping declines.
- LOS E describes operations with delays in excess of 55.0 seconds up to 80.0 seconds per vehicle. These high delay values generally indicate poor progression, long cycle lengths, and high v/c ratios.
- LOS F describes operations with delays in excess of 80.0 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation, i.e., when arrival flow rates exceed the capacity of the intersection. It may also occur at high v/c ratios with cycle failures. Poor progression and long cycle lengths may also contribute to such delays. Often, vehicles do not pass through the intersection in one signal cycle.

Based on the *2014 CEQR Technical Manual* guidelines, LOS A, B, and C are considered acceptable, LOS D is generally considered marginally acceptable up to mid-LOS D (45 seconds of delay for signalized intersections) and unacceptable above mid-LOS D, and LOS E and F indicate congestion. These guidelines are applicable to individual traffic movements and overall intersection levels of service.

For unsignalized intersections, delay is defined as the total elapsed time from when a vehicle stops at the end of the queue until the vehicle departs from the stop line: LOS A describes operations with very low delay, i.e., 10.0 seconds or less per vehicle; LOS B describes operations with delays in excess of 10.0 seconds up to 15.0 seconds; LOS C has delays in excess of 15.0 seconds up to 25.0 seconds; LOS D, excess of 25.0 seconds up to 35.0 seconds per vehicle; and LOS E, excess of 35.0 seconds up 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 in a major vehicular traffic stream to allow side street traffic to cross safely.

Roadway Network and Study Area

The traffic study area encompasses seven intersections (six signalized intersections and one unsignalized intersection) as shown in Figure 5.5 and listed below:

1. Westbound GCP service road and 94th Street
2. Ditmars Boulevard and 94th Street
3. Ditmars Boulevard and Eastbound GCP on-ramp/97th Street
4. Ditmars Boulevard and Marriott hotel entrance/23rd Avenue (unsignalized intersection)
5. Ditmars Boulevard and 27th Avenue
6. Ditmars Boulevard/111th Street and Astoria Boulevard
7. Northern Boulevard and 114th Street

Access to the project site will be along Ditmars Boulevard adjacent to the Marriott hotel entrance. Trips to the project site are assumed to utilize the vast network of highways in the area to reach Ditmars Boulevard primarily from the GCP and Northern Boulevard. Descriptions of the major roadways within the study area are provided below.

Ditmars Boulevard

Within the study area, Ditmars Boulevard is generally a two-way east-west street with two travel lanes in each direction. On-street parking is available in both directions and two bus routes operate along this segment.

Grand Central Parkway

The GCP provides regional highway access to and from the study area, and to LaGuardia Airport. It is generally four lanes in each direction, and extends from the eastern border of Queens (where it transitions to the Northern State Parkway in Long Island) to the East River to the west, where it provides access to the Bronx and Manhattan via the RFK Bridge.

94th Street

94th Street travels north-south and generally has one travel lane with parking in both directions. It provides access to LaGuardia Airport and the GCP, and extends from the airport to the north to Queens Boulevard to the south (this street is called Junction Boulevard south of Northern Boulevard). Approaching the airport, 94th Street consists of two through travel lanes per direction and left turn lanes, with no parking in either direction. Several bus lines utilize 94th Street to travel to the airport.

Northern Boulevard

Northern Boulevard is a major east-west arterial that extends from the western end of Queens to Long Island. Within the study area, Northern Boulevard consists of two travel lanes with parking in both directions, and carries several bus lines. Within the vicinity of the project site, Northern Boulevard serves as a connecting roadway between the GCP and the Van Wyck Expressway.

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Study Area

Figure 5.5

● Traffic Analysis Locations

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

Traffic

Traffic Volumes

Existing traffic volume counts were conducted in June 2014 for the weekday AM, midday, and PM peak periods using manual turning movement counts and 24-hour Automatic Traffic Recorder (ATR) machine counts. These volumes were used along with observations of traffic conditions to determine the levels of service for the weekday peak hours of 7:30 to 8:30 AM, 12:45 to 1:45 PM, and 4:00 to 5:00 PM. While the traffic volumes counted during the 4:45 to 5:45 PM hour were higher by about one percent, the analysis was based on the 4:00 PM to 5:00 PM conditions when traffic conditions were observed to operate at worse levels of service. The 4:45 to 5:45 PM traffic volumes were used in the analysis to be conservative.

Traffic volumes along eastbound Ditmars Boulevard between the eastbound GCP on-ramp at 97th Street and Astoria Boulevard range between 225 vehicles per hour (vph) to 525 vph during the weekday AM and midday peak hours. Westbound Ditmars Boulevard in this section carries approximately 400 vph to 500 vph during the weekday AM peak hour, and approximately 200 vph to 445 vph during the weekday midday and PM peak hours. West of 97th Street, approximately 775 vph to 825 vph travel along eastbound Ditmars Boulevard during the weekday AM, midday, and PM peak hours, and approximately 175 vph to 275 vph travel along westbound Ditmars Boulevard during the weekday AM and midday peak hours. Eastbound Ditmars Boulevard is heavily traveled during the PM peak hour. Approximately 925 vph to 1,050 vph travel east along this roadway within the study area, with the exception of a section between the eastbound GCP on-ramp at 97th Street and the roundabout at 23rd Avenue, carrying approximately 425 vph.

The 94th Street bridge that provides access to the airport carries approximately 500 vph to 825 vph northbound into the airport, and approximately 1,025 vph to 1,375 vph southbound out of the airport during the peak hours analyzed.

Northern Boulevard provides access to and from the GCP and the Van Wyck Expressway at its intersection with 114th Street. Eastbound Northern Boulevard carries about 825 vph to 950 vph during the weekday AM and midday peak hours, and approximately 1,625 vph during the weekday PM peak hour. Westbound Northern Boulevard carries approximately 2,150 vph during the weekday AM peak hour, approximately 1,225 vph during the weekday midday peak hour, and approximately 1,650 vph during the weekday PM peak hour.

Astoria Boulevard, at its intersection with Ditmars Boulevard and 111th Street, also serves as a major arterial in the area. Eastbound Astoria Boulevard carries approximately 800 vph to 900 vph during the weekday AM and midday peak hours, and approximately 1,900 vph during the weekday PM peak hour. In the westbound direction about 2,000 vph travel along Astoria Boulevard during the weekday AM peak hour, approximately 750 vph during the weekday midday peak hour, and approximately 1,000 vph during the weekday PM peak hour.

Cross-streets intersecting Ditmars Boulevard, such as 27th Avenue, are generally lightly traveled. 27th Avenue, for example, carries approximately 75 vph to 100 vph during the peak hours. Travel volumes entering and exiting the Marriott hotel are also low, ranging from 100 vph to 200 vph during the peak hours.

Existing traffic volumes are provided in Figures 5.6 through 5.8.

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Existing Weekday AM Traffic Volumes

Figure 5.6

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

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Existing Weekday Midday Traffic Volumes

Figure 5.7

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

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Existing Weekday PM Traffic Volumes

Figure 5.8

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

Levels of Service

Tables 5.2 and 5.3 provide an overview of levels of service that characterize existing "overall" intersection conditions and individual traffic movements, respectively, during the weekday AM, midday, and PM peak hours. Detailed descriptions of the existing condition traffic levels of services are provided in Table 5.4.

Table 5.2: 2014 Existing Traffic Levels of Service – Overall Intersections

	AM Peak Hour	Midday Peak Hour	PM Peak Hour
Intersections at Overall LOS A/B/C	5	7	6
Intersections at Overall LOS D	2	0	1
Intersections at Overall LOS E	0	0	0
Intersections at Overall LOS F	0	0	0
Note: Includes seven intersections (six signalized and one unsignalized)			

Table 5.3: 2014 Existing Traffic Levels of Service – Traffic Movements

	AM Peak Hour	Midday Peak Hour	PM Peak Hour
Traffic Movements at Overall LOS A/B/C or acceptable LOS D	28	30	28
Traffic Movements at Unacceptable LOS D	1	1	1
Traffic Movements at Overall LOS	1	1	2
Traffic Movements at Overall LOS	1	0	1
Number of individual traffic movements	31	32	32
Note: The number of movements may vary between peak hours due to turn prohibitions, parking regulations, and the presence of de facto left turn movements.			

TABLE 5.4
102-05 DITMARS BOULEVARD PARKING GARAGE EIS
EXISTING CONDITION

INTERSECTION & APPROACH		AM Peak Hour Mvt.	AM Peak Hour V/C	AM Peak Hour Control Delay	AM Peak Hour LOS	Midday Peak Hour Mvt.	Midday Peak Hour V/C	Midday Peak Hour Control Delay	Midday Peak Hour LOS	PM Peak Hour Mvt.	PM Peak Hour V/C	PM Peak Hour Control Delay	PM Peak Hour LOS
SIGNALIZED INTERSECTIONS													
1 WESTBOUND GRAND CENTRAL PARKWAY SERVICE ROAD AND 94TH STREET													
94th Street	NB	L	0.35	9.6	A	L	0.38	10.5	B	L	0.39	10.1	B
		T	0.22	8.1	A	T	0.27	8.5	A	T	0.36	9.1	A
	SB	T	0.31	22.4	C	T	0.52	25.0	C	T	0.42	23.7	C
Grand Central Pkwy WB Service Road	WB	LT	1.05	75.5	E	LT	0.96	54.0	D	LT	1.00	61.5	E
		R	-	27.5	D	R	-	25.7	D	R	-	15.1	C
Overall Intersection		-	**0.65**	**40.5**	**D**	-	**0.69**	**31.0**	**C**	-	**0.67**	**30.0**	**C**
2 DITMARS BOULEVARD AND 94TH STREET													
94th Street	NB	TR	0.65	35.3	D	TR	0.99	44.7	D	TR	0.99	45.7	D
	SB	L	0.32	32.9	C	L	0.43	34.4	C	L	0.46	34.5	C
		T	0.54	16.6	B	T	0.59	17.7	B	T	0.55	16.9	B
Ditmars Boulevard	EB	L	0.33	20.7	C	L	0.47	23.3	C	L	0.56	24.8	C
		TR	0.66	25.3	C	TR	0.63	24.8	C	TR	0.67	25.6	C
	WB	L	0.64	44.3	D	L	0.43	29.8	C	L	0.50	35.0	C
		R	0.16	7.4	A	R	0.14	7.2	A	R	0.16	7.4	A
Overall Intersection		-	**0.59**	**23.5**	**C**	-	**0.70**	**25.8**	**C**	-	**0.73**	**26.3**	**C**
3 DITMARS BOULEVARD AND EASTBOUND GRAND CENTRAL PARKWAY ON-RAMP/97TH STREET													
Ditmars Boulevard	EB	L	0.58	2.9	A	L	0.59	2.1	A	L	0.60	2.5	A
		T	0.07	0.0	A	T	0.07	0.0	A	T	0.14	0.1	A
	WB	TR	0.29	9.1	A	TR	0.23	8.6	A	TR	0.26	8.8	A
Overall Intersection		-	**0.75**	**4.8**	**A**	-	**0.73**	**3.8**	**A**	-	**0.75**	**3.7**	**A**
4 DITMARS BOULEVARD AND 27TH AVENUE													
Ditmars Boulevard	NB	LT	0.44	11.2	B	LT	0.25	9.6	A	LT	0.30	10.0	B
	SB	TR	0.29	9.8	A	TR	0.29	9.8	A	TR	0.67	14.3	B
27th Avenue	EB	LR	0.17	14.3	B	LR	0.12	13.7	B	LR	0.13	13.9	B
Overall Intersection		-	**0.33**	**10.9**	**B**	-	**0.22**	**10.0**	**A**	-	**0.44**	**13.2**	**B**
5 DITMARS BOULEVARD/111TH ST AND ASTORIA BOULEVARD													
Ditmars Boulevard/111th Street	NB	LTR	1.02	115.8	F	LTR	0.75	61.0	E	LTR	0.78	71.5	E
	SB	L	0.86	54.6	D	L	0.56	33.3	C	L	1.05	89.5	F
		R	-	8.6	A	R	-	8.5	A	R	-	8.7	A
Astoria Boulevard	EB	LT	0.42	22.4	C	LT	0.36	16.4	B	LT	0.80	29.0	C
	WB	TR	0.96	44.1	D	TR	0.37	16.6	B	TR	0.46	23.1	C
Overall Intersection		-	**0.94**	**44.8**	**D**	-	**0.48**	**22.5**	**C**	-	**0.87**	**41.7**	**D**
6 NORTHERN BOULEVARD AND 114TH STREET													
114th Street	SB	LTR	0.31	43.6	D	LTR	0.33	42.6	D	LTR	0.41	43.9	D
Northern Boulevard	EB	T	0.59	31.1	C	T	0.42	18.1	B	T	0.71	22.1	C
		R	0.69	37.2	D	R	0.34	17.7	B	R	0.60	20.9	C
	WB	LT	0.84	15.2	B	DefL	0.39	9.0	A	DefL	0.62	24.9	C
		-	-	-	-	T	0.51	8.8	A	T	0.68	10.6	B
Overall Intersection		-	**0.71**	**21.4**	**C**	-	**0.74**	**13.9**	**B**	-	**1.10**	**17.9**	**B**
UNSIGNALIZED INTERSECTIONS													
7 DITMARS BOULEVARD AND MARRIOTT HOTEL ENTRANCE/23RD ROAD													
Ditmars Boulevard	NB	LTR	-	0.0	A	LTR	-	0.0	A	LTR	-	0.0	A
	SB	L	-	9.4	A	L	-	8.6	A	L	-	8.6	A
		TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A
Marriott Entrance/Exit	WB	LR	-	17.9	C	LR	-	13.1	B	LR	-	14.3	B
Overall Intersection		-	-	**1.6**	**A**	-	-	**1.9**	**A**	-	-	**0.9**	**A**

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.

The summary overview of existing conditions indicates that:

- During the weekday AM peak hour, none of the seven intersections are operating at overall LOS E or F. "Overall" LOS E or F mean that serious congestion exists—either one specific traffic movement has severe delays, or two or more of the specific traffic movements at the intersections are at LOS E or F with very significant delays (the overall intersection level of service is a weighted average of all the individual traffic movements). Two individual traffic movements out of approximately 31 such movements analyzed are at LOS E or F (e.g., left turns from one street to another, through traffic passing through the intersections, etc.).
- In the weekday midday peak hour, all the intersections are operating at overall acceptable levels of service. One individual movement operates at LOS E.
- In the weekday PM peak hour, all the intersections are operating at overall acceptable levels of service. Three individual movements operate at LOS E or F.

The unsignalized intersection of Ditmars Boulevard and the Marriott hotel entrance/23rd Avenue operates at overall LOS A during all peak hours analyzed.

Three intersections have at least one movement operating at unacceptable levels of service (unacceptable LOS D, LOS E, or LOS F) during at least one peak hour and are listed below:

Westbound Grand Central Parkway Service Road and 94th Street

- Westbound shared left-through movement (weekday AM, midday, and PM peak hours).

Ditmars Boulevard and 94th Street

- Northbound shared through-right movement (weekday PM peak hour).

Ditmars Boulevard/111th Street and Astoria Boulevard

- Northbound approach (weekday AM, midday, and PM peak hours).
- Southbound left turn movement (weekday AM and PM peak hours).

Transit

Two bus routes travel along Ditmars Boulevard and past the project site: the Q23 (provides service from Forest Hills to the entrance of the project site) and Q48 (provides service from Flushing to LaGuardia Airport). Six additional bus routes operate within a half-mile of the project site: the Q19, Q33, Q49, Q70, Q72, and M60 Select Bus Service (SBS).

The Q33 and Q49 provide service between Jackson Heights and the study area. The Q33 terminates at 94th Street and Ditmars Boulevard, at the entrance of the airport, and the Q49 terminates along Astoria Boulevard south of the project site. The Q19 provides service between Flushing and Astoria, and travels through the study area along Astoria Boulevard.

In addition to the Q48, the Q70, Q72, and M60 SBS also provide service to the airport. The Q70 provides service to the airport from Jackson Heights/Woodside, the Q72 provides service from Rego Park, and the M60 SBS provides service from Harlem.

The closest subway line, the Number 7 train, is almost one and a half miles south of the project site.

Pedestrians

Pedestrian volumes near the project site are low; hotels are the primary land use along Ditmars Boulevard and most of the trips to these uses are made via auto or shuttle bus service.

Parking

The study area is generally characterized by on-street parking along most streets within a quarter-mile radius of the project site, with some exceptions such as Ditmars Boulevard north of 23rd Avenue where "No Standing Anytime" parking regulations are prevalent. There is just one off-street parking facility, Air Park LGA Inc. with a capacity of 139 spaces, located within a quarter-mile radius of the project site. This facility operates at 100 percent occupancy during all periods analyzed.

No-Action Condition – Year 2018

This section establishes the baseline (No-Action) condition against which potential impacts of the project can be identified. Future year conditions were analyzed for the year 2018. No-Action traffic and pedestrian volumes were established by applying a background growth of 0.5 percent per year in accordance with the *2014 CEQR Technical Manual* guidelines for Queens projects. Other than ongoing expansion at LaGuardia Airport, which is not expected to be completed by 2018, there are no other known developments in the area.

Traffic

Traffic Volumes

Existing traffic volumes were increased by 0.5 percent annually for four years to establish No-Action traffic volumes. The No-Action traffic volumes are shown in Figures 5.9 through 5.11.

Levels of Service

Based on the traffic increases mentioned above, the 2018 No-Action traffic levels of service were determined for the seven analysis locations. Tables 5.5 and 5.6 provide an overview of the levels of service that characterize 2018 No-Action "overall" intersection conditions and individual traffic movements, respectively, during the weekday AM, midday, and PM peak hours. Detailed traffic levels of service are provided in Table 5.7.

Date: 5.29.15

102-05 Ditmars Blvd. Garage
Queens, New York 11369

No Action Weekday AM Traffic Volumes

Figure 5.9

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

Date: 5.29.15

102-05 Ditmars Blvd. Garage
Queens, New York 11369

No Action Weekday Midday Traffic Volumes

Figure 5.10

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

Date: 5.29.15

102-05 Ditmars Blvd. Garage
Queens, New York 11369

No Action Weekday PM Traffic Volumes

Figure 5.11

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

Table 5.5: 2014 Existing vs. 2018 No-Action Traffic Levels of Service – Overall Intersections

	Existing			2018 No-Action		
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	AM Peak Hour	Midday Peak Hour	PM Peak Hour
Intersections at Overall LOS A/B/C	5	7	6	5	7	6
Intersections at Overall LOS D	2	0	1	2	0	1
Intersections at Overall LOS E	0	0	0	0	0	0
Intersections at Overall LOS F	0	0	0	0	0	0
Note: Includes seven intersections (six signalized and one unsignalized).						

Table 5.6: 2014 Existing vs. 2018 No-Action Traffic Levels of Service – Traffic Movements

	Existing			2018 No-Action		
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	AM Peak Hour	Midday Peak Hour	PM Peak Hour
Traffic Movements at Overall LOS A/B/C or acceptable LOS D	28	30	28	26	29	28
Traffic Movements at Unacceptable LOS D	1	1	1	2	1	1
Traffic Movements at Overall LOS E	1	1	2	1	2	2
Traffic Movements at Overall LOS F	1	0	1	2	0	1
Number of individual traffic movements	31	32	32	31	32	32
Note: The number of movements may vary between peak hours due to turn prohibitions, parking regulations, and the presence of de facto left turn movements.						

The summary overview of the 2018 No-Action condition indicates that:

- During the weekday AM peak hour, none of the seven intersections analyzed would operate at overall LOS E or F (similar to the existing conditions). Three individual traffic movements out of the approximately 31 movements analyzed would operate at LOS E or F, compared to two movements under existing conditions.
- In the weekday midday peak hour, all analysis intersections would operate at overall acceptable levels of service (similar to existing conditions), and two individual movements would operate at LOS E as compared to one movement under existing conditions.
- In the weekday PM peak hour, similar to the existing conditions, all the intersections would operate at overall acceptable levels of service, and three individual movements would operate at LOS E or F.

The unsignalized intersection of Ditmars Boulevard and the Marriott hotel entrance/23rd Avenue would operate at overall LOS A during all peak hours analyzed.

TABLE 5.7
102-05 DITMARS BOULEVARD PARKING GARAGE EIS
NO ACTION CONDITION

INTERSECTION & APPROACH		AM Peak Hour Mvt.	AM Control V/C	AM Control Delay	AM LOS	Midday Peak Hour Mvt.	Midday Control V/C	Midday Control Delay	Midday LOS	PM Peak Hour Mvt.	PM Control V/C	PM Control Delay	PM LOS
SIGNALIZED INTERSECTIONS													
1 WESTBOUND GRAND CENTRAL PARKWAY SERVICE ROAD AND 94TH STREET													
94th Street	NB	L	0.36	9.7	A	L	0.39	10.7	B	L	0.40	10.2	B
		T	0.22	8.2	A	T	0.28	8.5	A	T	0.36	9.2	A
	SB	T	0.32	22.5	C	T	0.53	25.1	C	T	0.43	23.8	C
Grand Central Pkwy WB Service Road	WB	LT	1.07	82.7	F	LT	0.98	57.8	E	LT	1.02	66.4	E
		R	-	29.9	D	R	-	27.5	D	R	-	15.5	C
Overall Intersection		**-**	**0.66**	**43.9**	**D**	**-**	**0.70**	**31.5**	**C**	**-**	**0.69**	**31.7**	**C**
2 DITMARS BOULEVARD AND 94TH STREET													
94th Street	NB	TR	0.66	35.8	D	TR	1.01	48.6	D	TR	1.01	50.2	D
	SB	L	0.33	33.0	C	L	0.44	34.4	C	L	0.47	34.6	C
		T	0.55	16.7	B	T	0.60	17.9	B	T	0.57	17.1	B
Ditmars Boulevard	EB	L	0.34	20.8	C	L	0.48	23.5	C	L	0.57	25.1	C
		TR	0.67	25.6	C	TR	0.64	25.1	C	TR	0.69	25.9	C
	WB	L	0.67	47.8	D	L	0.45	30.9	C	L	0.53	37.6	D
		R	0.17	7.4	A	R	0.14	7.2	A	R	0.17	7.4	A
Overall Intersection		**-**	**0.60**	**23.8**	**C**	**-**	**0.71**	**26.6**	**C**	**-**	**0.74**	**27.2**	**C**
3 DITMARS BOULEVARD AND EASTBOUND GRAND CENTRAL PARKWAY ON-RAMP/97TH STREET													
Ditmars Boulevard	EB	L	0.60	3.3	A	L	0.60	2.3	A	L	0.61	2.7	A
		T	0.07	0.0	A	T	0.07	0.0	A	T	0.15	0.1	A
	WB	TR	0.30	9.2	A	TR	0.23	8.6	A	TR	0.26	8.9	A
Overall Intersection		**-**	**0.76**	**5.0**	**A**	**-**	**0.74**	**3.9**	**A**	**-**	**0.76**	**3.8**	**A**
4 DITMARS BOULEVARD AND 27TH AVENUE													
Ditmars Boulevard	NB	LT	0.45	11.4	B	LT	0.26	9.6	A	LT	0.31	10.1	B
	SB	TR	0.29	9.9	A	TR	0.29	9.8	A	TR	0.68	14.5	B
27th Avenue	EB	LR	0.17	14.3	B	LR	0.12	13.7	B	LR	0.13	13.9	B
Overall Intersection		**-**	**0.34**	**11.0**	**B**	**-**	**0.22**	**10.0**	**B**	**-**	**0.45**	**13.4**	**B**
5 DITMARS BOULEVARD/111TH ST AND ASTORIA BOULEVARD													
Ditmars Boulevard/111th Street	NB	LTR	1.04	121.8	F	LTR	0.78	64.2	E	LTR	0.80	73.9	E
	SB	L	0.88	56.3	E	L	0.57	33.6	C	L	1.07	96.7	F
		R	-	8.6	A	R	-	8.5	A	R	-	8.7	A
Astoria Boulevard	EB	LT	0.44	22.5	C	LT	0.37	16.5	B	LT	0.81	29.4	C
	WB	TR	0.98	48.2	D	TR	0.38	16.7	B	TR	0.47	23.2	C
Overall Intersection		**-**	**0.96**	**47.0**	**D**	**-**	**0.49**	**22.9**	**C**	**-**	**0.88**	**43.6**	**D**
6 NORTHERN BOULEVARD AND 114TH STREET													
114th Street	SB	LTR	0.32	43.7	D	LTR	0.33	42.7	D	LTR	0.41	44.0	D
Northern Boulevard	EB	T	0.60	31.3	C	T	0.43	18.2	B	T	0.73	22.5	C
		R	0.70	37.9	D	R	0.35	17.8	B	R	0.62	21.2	C
	WB	LT	0.86	16.1	B	DefL	0.40	9.3	A	DefL	0.64	28.3	C
		-	-	-	-	T	0.52	8.9	A	T	0.70	10.9	B
Overall Intersection		**-**	**0.73**	**22.2**	**C**	**-**	**0.75**	**14.0**	**B**	**-**	**1.12**	**18.4**	**B**
UNSIGNALIZED INTERSECTIONS													
7 DITMARS BOULEVARD AND MARRIOTT HOTEL ENTRANCE/23RD ROAD													
Ditmars Boulevard	NB	LTR	-	0.0	A	LTR	-	0.0	A	LTR	-	0.0	A
	SB	L	-	9.4	A	L	-	8.6	A	L	-	8.6	A
		TR	-	0.0	A	TR	-	0.0	A	TR	-	0.0	A
Marriott Entrance/Exit	WB	LR	-	18.3	C	LR	-	13.3	B	LR	-	14.5	B
Overall Intersection		**-**	**-**	**1.7**	**A**	**-**	**-**	**1.9**	**A**	**-**	**-**	**0.9**	**A**

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.

Based on the analysis results, the majority of traffic movements would continue to operate at acceptable levels of services; three intersections would have at least one movement operating at unacceptable levels of service during at least one peak hour. Traffic movements expected to operate at unacceptable levels of service (unacceptable LOS D, LOS E, or LOS F) are listed below:

Westbound Grand Central Parkway Service Road and 94th Street

- Westbound shared left-through movement (weekday AM, midday, and PM peak hours).

Ditmars Boulevard and 94th Street

- Northbound shared through-right movement (weekday midday and PM peak hours).
- Westbound left turn movement (weekday AM peak hour).

Ditmars Boulevard/111th Street and Astoria Boulevard

- Northbound approach (weekday AM, midday, and PM peak hours).
- Southbound left turn movement (weekday AM and PM peak hours).
- Westbound shared through-right movement (weekday AM peak hour).

Transit

Transit services are expected to remain similar to existing conditions.

Pedestrians

Pedestrian volumes near the project site are low; hotels are the primary land use along Ditmars Boulevard and most of the trips to these uses are made via auto or shuttle bus service.

Parking

On-street and off-street parking within a quarter-mile of the project site are expected to remain similar to the existing conditions.

With-Action Condition – Year 2018

Traffic

The proposed project would develop a new garage structure that would contain two components: 400 spaces accessory to the hotel (replacing the existing 410 spaces), and 1,800 spaces available to the public for long-term parking. It is expected that the public parking component would generate 122 total vehicle trips (107 "ins" and 15 "outs") during the weekday AM peak hour, 101 total vehicle trips (27 "ins" and 74 "outs") during the weekday midday peak hour, and 119 total vehicle trips (33 "ins" and 86 "outs") during the weekday PM peak hour. These project generated trips were added to peak hour volumes on the street network to ensure a conservative traffic analysis.

The existing hotel entrance/exit along Ditmars Boulevard would continue to provide access for the hotel pickup/dropoff and shuttle bus activities. Access to the public parking garage would be provided via two driveways along Ditmars Boulevard—the main point of access/egress would be slightly east of the existing hotel entrance/exit, and a second driveway located further east would just

allow entry into the garage. The left turn lane along eastbound Ditmars Boulevard would be extended to provide a storage area for left turning vehicles associated with both (hotel and parking garage) entrances. Left turns out of the main driveway associated with the parking garage would be prohibited. The site layout is shown in Figure 5.12.

Traffic Volume Increments

Project-generated trips were assigned to the project site along Ditmars Boulevard via the area's highway network. West of the project site, volumes along Ditmars Boulevard are expected to increase by approximately 15 vph in the westbound direction and by approximately 60 vph in the eastbound direction during the weekday AM peak hour. During the weekday midday and PM peak hours, volumes along eastbound Ditmars Boulevard are expected to increase by approximately 10 vph to 25 vph and by approximately 35 vph to 85 vph in the westbound direction. East of the project site, volumes along Ditmars Boulevard are expected to increase by approximately 45 vph in the westbound direction and are not expected to increase in the eastbound direction during the weekday AM peak hour. The projected increase in traffic along Ditmars Boulevard east of the project site is expected to be less than 15 vph during the weekday midday and PM peak hours.

Traffic volume increases along 94th Street during the weekday AM peak hour are expected to be less than 10 vph in each direction. Southbound traffic volume increases during the weekday midday and PM peak hours are expected to be less than five vph. Increases in traffic volume in the northbound direction would be approximately 35 vph to 45 vph during the weekday midday and PM peak hours.

Westbound Northern Boulevard traffic volumes would increase by approximately 15 vph during the weekday AM peak hour. Traffic volumes would increase by approximately 30 vph in the westbound direction along Astoria Boulevard during the weekday AM peak hour. Traffic volumes would increase by less than 10 vph during the weekday midday and PM peak hours along both these roadways in each direction.

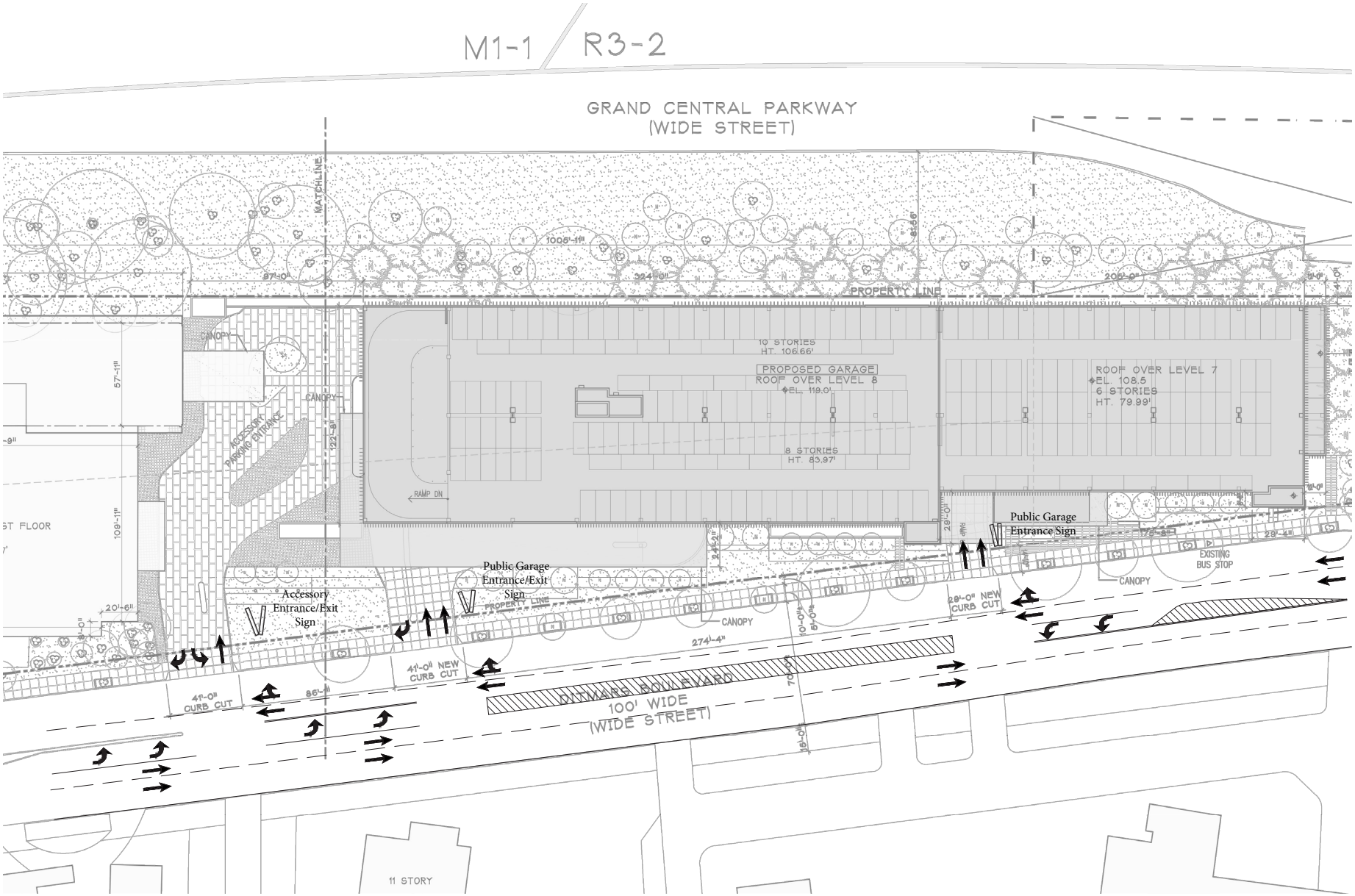
The With-Action traffic volumes are shown in Figures 5.13 through 5.15.

Roadway Modifications

As a result of the new driveway access to the project site, Ditmars Boulevard would need to be restriped as part of the project. The existing eastbound Ditmars Boulevard left turn lane would be extended to provide an exclusive lane to access the existing Marriott hotel entrance and the proposed main entrance/exit of the public parking garage.

Levels of Service

Based on the traffic increments described above, the 2018 With-Action traffic levels of service were determined for the seven analysis locations. Tables 5.8 and 5.9 provide an overview of the levels of service that characterize 2018 With-Action "overall" intersection conditions and individual traffic movements during the weekday AM, midday, and PM peak hours, respectively. Detailed traffic levels of service are provided in Table 5.10.



For Illustrative Purposes Only

Note: Signage will be provided notifying motorists that left turns exiting the public garage are prohibited.

102-05 Ditmars Blvd. Garage
Queens, New York

Site Plan

Figure
5.12

Date: 5.22.15

102-05 Ditmars Blvd. Garage
Queens, New York 11369

With Action Weekday AM Traffic Volumes

Figure 5.13

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

102-05 Ditmars Blvd. Garage
Queens, New York 11369

With Action Weekday Midday Traffic Volumes

Figure 5.14

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

102-05 Ditmars Blvd. Garage
Queens, New York 11369

With Action Weekday PM Traffic Volumes

Figure 5.15

Sources: 1. New York (City). Dept. of City Planning 2014. LION (Edition 14A). New York City: NYC Department of City Planning.

The summary overview of 2018 With-Action conditions indicates that the number of intersections operating at LOS E or F, and the number of traffic movements projected to operate at unacceptable levels, would remain the same for the With-Action condition and the No-Action condition during all peak hours analyzed. There would be no significant adverse impacts.

The unsignalized intersection of Ditmars Boulevard and the Marriott hotel entrance/23rd Avenue would operate at overall LOS A and would not be significantly impacted during any peak hour analyzed.

Table 5.8: 2018 No-Action vs. 2018 With-Action Traffic Levels of Service – Overall Intersections

	2018 No-Action			2018 With-Action		
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	AM Peak Hour	Midday Peak Hour	PM Peak Hour
Intersections at Overall LOS A/B/C	5	7	6	5	7	6
Intersections at Overall LOS D	2	0	1	2	0	1
Intersections at Overall LOS E	0	0	0	0	0	0
Intersections at Overall LOS F	0	0	0	0	0	0
Numbers of intersections with significant impacts	-	-	-	2	0	0
Note: Includes seven intersections (six signalized and one unsignalized)						

Table 5.9: 2018 No-Action vs. 2018 With-Action Traffic Levels of Service – Traffic Movements

	2018 No-Action			2018 With-Action		
	AM Peak Hour	Midday Peak Hour	PM Peak Hour	AM Peak Hour	Midday Peak Hour	PM Peak Hour
Traffic Movements at Overall LOS A/B/C or unacceptable LOS D	26	29	28	29	32	31
Traffic Movements at Unacceptable LOS D	2	1	1	1	1	1
Traffic Movements at Overall LOS E	1	2	2	2	2	2
Traffic Movements at Overall LOS F	2	0	1	2	0	1
Number of significantly impacted movements	-	-	-	2	0	0
Number of individual traffic movements	31	32	32	34	35	35
Note: The number of movements may vary between peak hours due to turn prohibitions, parking regulations, and the presence of de facto left turn movements.						

TABLE 5.10
102-05 DITMARS BOULEVARD PARKING GARAGE EIS
WEEKDAY AM PEAK HOUR -- NO ACTION VS. WITH ACTION

			NO ACTION				WITH ACTION		
INTERSECTION & APPROACH	**Mvt.**	**V/C**	**Control Delay**	**LOS**	**Mvt.**	**V/C**	**Control Delay**	**LOS**
SIGNALIZED INTERSECTIONS								
1 WESTBOUND GRAND CENTRAL PARKWAY SERVICE ROAD AND 94TH STREET								
94th Street NB	L	0.36	9.7	A	L	0.37	9.8	A
	T	0.22	8.2	A	T	0.22	8.2	A
SB	T	0.32	22.5	C	T	0.32	22.5	C
Grand Central Pkwy WB Service Road WB	LT	1.07	82.7	F	LT	1.08	84.6	F
	R	-	29.9	D	R	-	30.0	D
Overall Intersection	**-**	**0.66**	**43.9**	**D**	**-**	**0.67**	**44.6**	**D**
2 DITMARS BOULEVARD AND 94TH STREET								
94th Street NB	TR	0.66	35.8	D	TR	0.66	35.8	D
SB	L	0.33	33.0	C	L	0.34	33.2	C
	T	0.55	16.7	B	T	0.55	16.7	B
Ditmars Boulevard EB	L	0.34	20.8	C	L	0.34	20.8	C
	TR	0.67	25.6	C	TR	0.72	26.8	C
WB	L	0.67	47.8	D	L	0.78	66.0	E
	R	0.17	7.4	A	R	0.17	7.4	A
Overall Intersection	**-**	**0.60**	**23.8**	**C**	**-**	**0.65**	**24.9**	**C**
3 DITMARS BOULEVARD AND EASTBOUND GRAND CENTRAL PARKWAY ON-RAMP/97TH STREET								
Ditmars Boulevard EB	L	0.60	3.3	A	L	0.60	3.5	A
	T	0.07	0.0	A	T	0.09	0.0	A
WB	TR	0.30	9.2	A	TR	0.31	9.2	A
Overall Intersection	**-**	**0.76**	**5.0**	**A**	**-**	**0.76**	**4.9**	**A**
4 DITMARS BOULEVARD AND 27TH AVENUE								
Ditmars Boulevard NB	LT	0.45	11.4	B	LT	0.49	11.8	B
SB	TR	0.29	9.9	A	TR	0.29	9.9	A
27th Avenue EB	LR	0.17	14.3	B	LR	0.17	14.3	B
Overall Intersection	**-**	**0.34**	**11.0**	**B**	**-**	**0.36**	**11.3**	**B**
5 DITMARS BOULEVARD/111TH ST AND ASTORIA BOULEVARD								
Ditmars Boulevard/111th Street NB	LTR	1.04	121.8	F	LTR	1.12	144.6	F
SB	L	0.88	56.3	E	L	0.88	56.3	E
	R	-	8.6	A	R	-	8.6	A
Astoria Boulevard EB	LT	0.44	22.5	C	LT	0.44	22.6	C
WB	TR	0.98	48.2	D	TR	1.00	52.6	D
Overall Intersection	**-**	**0.96**	**47.0**	**D**	**-**	**0.99**	**51.0**	**D**
6 NORTHERN BOULEVARD AND 114TH STREET								
114th Street SB	LTR	0.32	43.7	D	LTR	0.32	43.7	D
Northern Boulevard EB	T	0.60	31.3	C	T	0.60	31.3	C
	R	0.70	37.9	D	R	0.70	37.9	D
WB	LT	0.86	16.1	B	LT	0.87	16.4	B
Overall Intersection	**-**	**0.73**	**22.2**	**C**	**-**	**0.73**	**22.4**	**C**
UNSIGNALIZED INTERSECTIONS								
7 DITMARS BOULEVARD AND MARRIOTT HOTEL ENTRANCE/23RD ROAD								
Ditmars Boulevard NB	LTR	-	0.0	A	LTR	-	0.0	A
SB	TR	-	0.0	A	TR	-	0.0	A
- to Marriott Hotel Entrance/23rd Road	L	-	9.4	A	L	-	9.5	A
- to The Parking Spot	-	-	-	-	L	-	9.2	A
Marriott Entrance/Exit WB	LR	-	18.3	C	L	-	26.5	D
	-	-	-	-	R	-	10.7	B
The Parking Spot WB	-	-	-	-	R	-	10.2	B
Overall Intersection	**-**	**-**	**1.7**	**A**	**-**	**-**	**2.3**	**A**

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.
Denotes significantly impacted movement

TABLE 5.10
102-05 DITMARS BOULEVARD PARKING GARAGE EIS
WEEKDAY MIDDAY PEAK HOUR -- NO ACTION VS. WITH ACTION

		NO ACTION				WITH ACTION		
			Control				Control	
INTERSECTION & APPROACH	Mvt.	V/C	Delay	LOS	Mvt.	V/C	Delay	LOS
SIGNALIZED INTERSECTIONS								
1 WESTBOUND GRAND CENTRAL PARKWAY SERVICE ROAD AND 94TH STREET								
94th Street NB	L	0.39	10.7	B	L	0.47	11.7	B
	T	0.28	8.5	A	T	0.28	8.5	A
SB	T	0.53	25.1	C	T	0.53	25.2	C
Grand Central Pkwy WB Service Road WB	LT	0.98	57.8	E	LT	0.98	58.0	E
	R	-	27.5	D	R	-	27.7	D
Overall Intersection	-	**0.70**	**31.5**	**C**	-	**0.73**	**31.4**	**C**
2 DITMARS BOULEVARD AND 94TH STREET								
94th Street NB	TR	1.01	48.6	D	TR	1.01	48.6	D
SB	L	0.44	34.4	C	L	0.45	34.5	C
	T	0.60	17.9	B	T	0.60	17.9	B
Ditmars Boulevard EB	L	0.48	23.5	C	L	0.48	23.5	C
	TR	0.64	25.1	C	TR	0.65	25.3	C
WB	L	0.45	30.9	C	L	0.46	32.0	C
	R	0.14	7.2	A	R	0.17	7.4	A
Overall Intersection	-	**0.71**	**26.6**	**C**	-	**0.72**	**26.4**	**C**
3 DITMARS BOULEVARD AND EASTBOUND GRAND CENTRAL PARKWAY ON-RAMP/97TH STREET								
Ditmars Boulevard EB	L	0.60	2.3	A	L	0.63	3.2	A
	T	0.07	0.0	A	T	0.08	0.0	A
WB	TR	0.23	8.6	A	TR	0.27	9.0	A
Overall Intersection	-	**0.74**	**3.9**	**A**	-	**0.77**	**4.7**	**A**
4 DITMARS BOULEVARD AND 27TH AVENUE								
Ditmars Boulevard NB	LT	0.26	9.6	A	LT	0.26	9.7	A
SB	TR	0.29	9.8	A	TR	0.29	9.8	A
27th Avenue EB	LR	0.12	13.7	B	LR	0.12	13.7	B
Overall Intersection	-	**0.22**	**10.0**	**B**	-	**0.22**	**10.0**	**B**
5 DITMARS BOULEVARD/111TH ST AND ASTORIA BOULEVARD								
Ditmars Boulevard/111th Street NB	LTR	0.78	64.2	E	LTR	0.80	66.0	E
SB	L	0.57	33.6	C	L	0.57	33.7	C
	R	-	8.5	A	R	-	8.5	A
Astoria Boulevard EB	LT	0.37	16.5	B	LT	0.37	16.5	B
WB	TR	0.38	16.7	B	TR	0.38	16.7	B
Overall Intersection	-	**0.49**	**22.9**	**C**	-	**0.50**	**23.0**	**C**
6 NORTHERN BOULEVARD AND 114TH STREET								
114th Street SB	LTR	0.33	42.7	D	LTR	0.33	42.7	D
Northern Boulevard EB	T	0.43	18.2	B	T	0.43	18.2	B
	R	0.35	17.8	B	R	0.35	17.8	B
WB	DefL	0.40	9.3	A	DefL	0.40	9.3	A
	T	0.52	8.9	A	T	0.52	8.9	A
Overall Intersection	-	**0.75**	**14.0**	**B**	-	**0.76**	**14.0**	**B**
UNSIGNALIZED INTERSECTIONS								
7 DITMARS BOULEVARD AND MARRIOTT HOTEL ENTRANCE/23RD ROAD								
Ditmars Boulevard NB	LTR	-	0.0	A	LTR	-	0.0	A
SB	TR	-	0.0	A	TR	-	0.0	A
- to Marriott Hotel Entrance/23rd Road	L	-	8.6	A	L	-	8.9	A
- to The Parking Spot	-	-	-	-	L	-	8.1	A
Marriott Entrance/Exit WB	LR	-	13.3	B	L	-	19.7	C
	-	-	-	-	R	-	10.2	B
The Parking Spot WB	-	-	-	-	R	-	10.1	B
Overall Intersection	-	-	**1.9**	**A**	-	-	**3.0**	**A**

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.

TABLE 5.10
102-05 DITMARS BOULEVARD PARKING GARAGE EIS
WEEKDAY PM PEAK HOUR -- NO ACTION VS. WITH ACTION

		NO ACTION				WITH ACTION		
			Control				Control	
INTERSECTION & APPROACH	**Mvt.**	**V/C**	**Delay**	**LOS**	**Mvt.**	**V/C**	**Delay**	**LOS**
SIGNALIZED INTERSECTIONS								
1 WESTBOUND GRAND CENTRAL PARKWAY SERVICE ROAD AND 94TH STREET								
94th Street NB	L	0.40	10.2	B	L	0.48	11.2	B
	T	0.36	9.2	A	T	0.37	9.2	A
SB	T	0.43	23.8	C	T	0.43	23.8	C
Grand Central Pkwy WB Service Road WB	LT	1.02	66.4	E	LT	1.02	66.7	E
	R	-	15.5	C	R	-	15.6	C
Overall Intersection	-	**0.69**	**31.7**	**C**	-	**0.72**	**31.5**	**C**
2 DITMARS BOULEVARD AND 94TH STREET								
94th Street NB	TR	1.01	50.2	D	TR	1.01	50.2	D
SB	L	0.47	34.6	C	L	0.47	34.7	C
	T	0.57	17.1	B	T	0.57	17.1	B
Ditmars Boulevard EB	L	0.57	25.1	C	L	0.57	25.1	C
	TR	0.69	25.9	C	TR	0.70	26.2	C
WB	L	0.53	37.6	D	L	0.55	39.6	D
	R	0.17	7.4	A	R	0.20	7.6	A
Overall Intersection	-	**0.74**	**27.2**	**C**	-	**0.75**	**27.0**	**C**
3 DITMARS BOULEVARD AND EASTBOUND GRAND CENTRAL PARKWAY ON-RAMP/97TH STREET								
Ditmars Boulevard EB	L	0.61	2.7	A	L	0.64	4.4	A
	T	0.15	0.1	A	T	0.15	0.1	A
WB	TR	0.26	8.9	A	TR	0.31	9.3	A
Overall Intersection	-	**0.76**	**3.8**	**A**	-	**0.79**	**4.8**	**A**
4 DITMARS BOULEVARD AND 27TH AVENUE								
Ditmars Boulevard NB	LT	0.31	10.1	B	LT	0.32	10.2	B
SB	TR	0.68	14.5	B	TR	0.69	14.6	B
27th Avenue EB	LR	0.13	13.9	B	LR	0.13	13.9	B
Overall Intersection	-	**0.45**	**13.4**	**B**	-	**0.46**	**13.5**	**B**
5 DITMARS BOULEVARD/111TH ST AND ASTORIA BOULEVARD								
Ditmars Boulevard/111th Street NB	LTR	0.80	73.9	E	LTR	0.82	76.4	E
SB	L	1.07	96.7	F	L	1.08	98.2	F
	R	-	8.7	A	R	-	8.7	A
Astoria Boulevard EB	LT	0.81	29.4	C	LT	0.81	29.4	C
WB	TR	0.47	23.2	C	TR	0.48	23.3	C
Overall Intersection	-	**0.88**	**43.6**	**D**	-	**0.89**	**44.0**	**D**
6 NORTHERN BOULEVARD AND 114TH STREET								
114th Street SB	LTR	0.41	44.0	D	LTR	0.41	44.0	D
Northern Boulevard EB	T	0.73	22.5	C	T	0.73	22.5	C
	R	0.62	21.2	C	R	0.62	21.2	C
WB	DefL	0.64	28.3	C	DefL	0.64	28.3	C
	T	0.70	10.9	B	T	0.70	10.9	B
Overall Intersection	-	**1.12**	**18.4**	**B**	-	**1.12**	**18.4**	**B**
UNSIGNALIZED INTERSECTIONS								
7 DITMARS BOULEVARD AND MARRIOTT HOTEL ENTRANCE/23RD ROAD								
Ditmars Boulevard NB	LTR	-	0.0	A	LTR	-	0.0	A
SB	TR	-	0.0	A	TR	-	0.0	A
- to Marriott Hotel Entrance/23rd Road	L	-	8.6	A	L	-	8.9	A
- to The Parking Spot	-	-	-	-	L	-	8.2	A
Marriott Entrance/Exit WB	LR	-	14.5	B	L	-	28.7	D
	-	-	-	-	R	-	10.3	B
The Parking Spot WB	-	-	-	-	R	-	10.0	B
Overall Intersection	-	**-**	**0.9**	**A**	-	**-**	**1.9**	**A**

(1) Control delay is measured in seconds per vehicle.
(2) Overall intersection V/C ratio is the critical lane groups' V/C ratio.

The summary overview of the 2018 With-Action conditions indicates that:

- During the weekday AM peak hour, none of the seven intersections analyzed would operate at overall LOS E or F (similar to the No-Action conditions). Four individual traffic movements out of the approximately 31 movements analyzed would operate at LOS E or F, compared to three movements under the No-Action conditions. Two of the seven intersections would have significant impacts.
- In the weekday midday peak hour, similar to the No-Action conditions, all seven intersections would operate at overall acceptable levels of service, and two individual movements would operate at LOS E or F. None of the intersections would have significant impacts.
- In the weekday PM peak hour, similar to the No-Action conditions, all seven intersections would operate at overall acceptable levels of service, and three individual movements would operate at LOS E or F. None of the intersections would have significant impacts.

The unsignalized intersection of Ditmars Boulevard and the Marriott hotel entrance/23rd Avenue would operate at overall LOS A during all peak hours analyzed and would not be impacted.

Based on the analysis results, the majority of traffic movements would continue to operate at acceptable levels of services; three intersections would have at least one movement operating at unacceptable levels of service during at least one peak hour. Traffic movements that operate at unacceptable levels of service under the No-Action conditions would continue to do so under the With-Action conditions; no additional movements would be expected to operate at unacceptable levels of service as a result of the proposed project.

Of the seven intersections analyzed, the proposed project would result in significant adverse traffic impacts at two intersections during the weekday AM peak hour. Significant adverse impacts are not expected during the weekday midday and PM peak hours. The impacted traffic movements are identified below:

Ditmars Boulevard and 94th Street

- Westbound left turn movement (weekday AM peak hour).

Ditmars Boulevard/111th Street and Astoria Boulevard

- Northbound approach (weekday AM peak hour).

Standard traffic improvement measures were identified to fully mitigate the two potential significant adverse traffic impacts resulting from the proposed project and are presented in Chapter 10, "Mitigation."

Transit

Transit services are expected to remain similar to No-Action conditions.

Pedestrians

Since all trips associated with the proposed project would arrive to the project site via auto or shuttle bus service, pedestrian conditions are expected to remain similar to the No-Action conditions.

Parking

A detailed hour by hour parking accumulation of the public parking component of the garage was performed based on existing volume data for a typical week in October 2013, provided by an affiliate of The Parking Spot for a 701 space parking lot located less than one-half mile away from the project site. These volumes were pro-rated to reflect a 1,800 space parking facility, and additionally increased by 16 percent to analyze a parking facility operating at 100 percent capacity. The peak parking demand occurs on a typical weekday from 11 AM – 12 PM. The weekday parking accumulation is presented in Table 5.11.

Table 5.11: Weekday Parking Accumulation

Hour	In	Out	Demand
Midnight - 1 AM	1	19	1418
1 AM - 2 AM	0	0	1418
2 AM - 3 AM	0	6	1412
3 AM - 4 AM	6	1	1417
4 AM - 5 AM	43	0	1460
5 AM - 6 AM	61	1	1520
6 AM - 7 AM	85	0	1605
7 AM - 8 AM	101	9	1697
8 AM - 9 AM	45	10	1732
9 AM - 10 AM	51	22	1761
10 AM - 11 AM	40	19	1782
11 AM - Noon	49	31	1800
Noon - 1 PM	27	39	1788
1 PM - 2 PM	21	68	1741
2 PM - 3 PM	15	52	1704
3 PM - 4 PM	48	48	1704
4 PM - 5 PM	34	46	1692
5 PM - 6 PM	27	80	1639
6 PM - 7 PM	9	65	1583
7 PM - 8 PM	7	55	1535
8 PM - 9 PM	0	66	1469
9 PM - 10 PM	0	61	1408
10 PM - 11 PM	0	57	1351
11 PM - 12 AM	4	27	1328

5.6 Safety

Accident data was obtained for the study area intersections from the New York City Department of Transportation (NYCDOT) for the most recent three-year period (2011 through 2013). This information is based on data provided by the New York State Department of Transportation (NYSDOT), New York State Department of Motor Vehicles (NYSDMV), and New York City Police Department (NYPD).

The data obtained details reported crashes (crashes resulting in death, injury, or property damage in excess of $1,000), fatalities, injuries, and pedestrian and bicycle injuries annually. According to the *2014 CEQR Technical Manual*, a location is considered a high-accident location when there are 48 or more total reportable and non-reportable crashes, or five or more pedestrian/bicyclist injury crashes in any consecutive 12 months during the most recent three-year period of which data is available.

Table 5.12 presents a summary of total accidents in the study area intersections during the three-year period of 2011 through 2013, and also shows total fatalities, injuries, and pedestrian and bicycle accidents. None of the seven intersections analyzed are considered high-accident locations.

Table 5.12: Accident Summary

	Total Accidents by Year					Pedestrian and Bicycle Accidents by Year		
Intersection	2011	2012	2013	Total Fatalities	Total Injuries	2011	2012	2013
Westbound GCP service road and 94th Street	1	0	1	0	1	0	0	0
Ditmars Boulevard and 94th Street	12	9	8	0	29	2	1	1
Ditmars Boulevard and Eastbound GCP On-ramp/97th Street	0	0	0	0	0	0	0	0
Ditmars Boulevard and Marriott hotel entrance/23rd Avenue	0	0	0	0	0	0	0	0
Ditmars Boulevard and 27th Avenue	2	2	1	0	7	0	0	0
Ditmars Boulevard/111th Street and Astoria Boulevard	6	5	5	0	23	0	0	1
Northern Boulevard and 114th Street	8	11	14	0	33	0	1	0

5.7 Conclusion

The proposed project would generate traffic volumes exceeding transportation screening thresholds and, as a result, a detailed traffic analysis was performed at seven nearby intersections. Potential significant adverse traffic impacts as a result of project-generated vehicle trips were identified at two intersections during the weekday AM peak hour. Standard traffic improvement measures were identified to fully mitigate the two potential significant adverse impacts resulting from the proposed project and are presented in Chapter 10, "Mitigation." In accordance with the guidelines of the *2014 CEQR Technical Manual*, the screening thresholds related to transit and pedestrian analyses would not be exceeded by the proposed project, and analyses were not required for these technical areas.