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March 3, 2014

Hon. Meenakshi Srinivasan
Chair
New York City Board of Standards and Appeals
250 Broadway, 29th Floor
New York, NY 10007

Re: New York Methodist Hospital/Additional Traffic Study
BSA Calendar Number 289-13-BZ

Dear Chair Srinivasan:

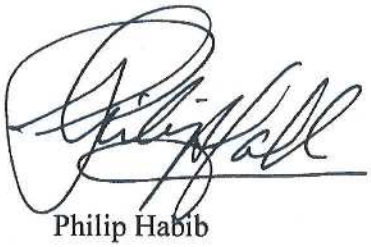
Enclosed please find a copy of a Traffic Assessment for the proposed Center for Community Health (the "Center"), dated October 28, 2013 (the "Traffic Study"). This Traffic Study was prepared to provide additional information regarding traffic conditions in the area beyond what is required under CEQR. Although not required under CEQR, this additional traffic assessment conservatively compares traffic expected to be generated by the proposed Center with existing traffic conditions in the study area using the methodology set forth in the CEQR Technical Manual. The Traffic Study was prepared in addition to the Transportation Analysis (Attachment G) contained in the Environmental Assessment Statement filed with the Board in connection with the referenced application for a variance and, thus, it is not meant to replace that CEQR analysis.

The Traffic Study includes an analysis of the intersection of 7th Avenue and 5th Street, which is adjacent to the block on which the John Jay Educational Campus (the "School") is located. The Study shows that travel demand and traffic generated by the school typically peak from 8-9 AM (inbound) and from 3-4 PM (outbound). Travel demand and traffic generated from the proposed Center would be expected to have three peaks: from 8-9 AM, 12-1 PM and 5-6 PM. No conflicts would be expected in the midday and evening peaks, since peak travel times for the School and the proposed Center do not coincide during those periods. While the peak travel times for the proposed Center and the School do overlap with each other during the morning hour, the increase in traffic volumes during that period is relatively small, as it only includes employee trips for the proposed Center, whereas the Center's other peak hours include both employee and patient trips.

Existing traffic volumes at the intersection of 7th Avenue and 5th Street are 891, 793 and 781 vehicles during the AM, midday and PM peak hours, respectively. The proposed Center is forecast to increase traffic volumes through this intersection by 31, 55 and 42 vehicles during the AM, midday and PM peak hours, respectively. The overall increase in traffic volume would only be 3%, 6% and 5% during the AM, midday and PM peak hours , respectively, when compared to the volumes that already exist.

All movements through the intersection of 7th Avenue and 5th Street currently operate at an acceptable LOS B during the three analyzed peak hours. In the future with the proposed Center, all movements through this intersection would continue to operate at LOS B during two of the three analyzed peak hours. During the AM peak hour, the northbound movement would operate at LOS C, which is still considered to be an acceptable level of service. Thus, the Traffic Study demonstrates that no significant adverse traffic impacts are expected to result from the proposed Center (including impacts at the intersection adjacent to the block on which the School is located) even when traffic generated by the proposed Center is compared to existing traffic conditions.

Very truly yours,



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TECHNICAL MEMORANDUM

To: New York Methodist Hospital

From: Philip Habib & Associates

Date: October 28, 2013

Re: **Traffic Assessment for New York Methodist Hospital New Center for Community Health, Brooklyn, New York (PHA No. 1284)**

This technical memorandum examines existing transportation conditions and future conditions that are expected to result from the development of a proposed ambulatory care center at New York Methodist (NYM) Hospital. A summary of the transportation planning factors used for the analyses of traffic, parking, transit, and pedestrian conditions are also included. The proposed development site is located in Park Slope, Brooklyn and is bounded on the north by 5th Street, on the south by 6th Street, on the east by 8th Avenue and on the west by a medical building and garage. **Figure 1** shows the project site location. As shown in **Figure 1** the proposed U-shaped project site is located in an area comprised of low-density residential buildings with a substantial number of institutional uses. (Although the analyses utilize methodologies similar to those set forth in the *City Environmental Quality Review (CEQR) Technical Manual,* it should be noted that this memorandum has not been prepared to satisfy any CEQR requirements.)

The New York Methodist Hospital is planning to construct a 498,500 gross square foot (gsf) (corresponding to 311,040 sf zoning floor area [zfa]) ambulatory care facility (the Center for Community Health) at 505-525 East 6th Street in Brooklyn, New York. The proposed development site is part of the larger NYM campus, which occupies two adjacent blocks bounded by 5th Street and 7th Street, and 7th Avenue and 8th Avenue. The site is part of a zoning lot that consists of the parcels designated as Block 1084, Lots 25, 26, 28, 39 through 44, 46, 48, 50 through 59, 164, 1001, and 1002 (the Zoning Lot). There is a series of contiguous out-parcels fronting on 5th Street which are not part of the Zoning Lot and give the development site a U-shape. The proposed project would be completed in 2017.

Currently, most ambulatory procedures (outpatient) take place across 6th Street, directly south of the proposed development site, in several contiguous buildings that comprise a portion of NYM's campus. Medical services provided in many of these existing facilities would be moved to the new building on the proposed project site, which would also include some expansion in both staffing and patient capacity. The space in the existing building that previously housed the

outpatient facilities would be used to update and modernize the hospital's inpatient facilities, and no additional travel demand is therefore expected from these existing inpatient spaces.

2013 EXISTING CONDITIONS

Data Collection

The traffic analysis focuses on the weekday 8-9 AM, 12-1 PM (Midday) and 5-6 PM peak periods. These are typical peak periods for the overall traffic network and for ambulatory care uses. To establish the existing conditions traffic network, an extensive traffic data collection program – including automatic traffic recorder (ATR) counts, manual turning movement counts and vehicle classification counts – was undertaken on Thursday, May 16th and Tuesday, May 21st 2013. Physical inventory data needed for operational analysis—e.g., the number of traffic lanes, lane widths, pavement markings, turn prohibitions, bus stops, and typical parking regulations—were collected in the study area concurrently with the traffic count program. Signal timing plans for signalized intersections within the study area were obtained from the New York City Department of Transportation (NYCDOT). Traffic volumes at the access points to NYM's three accessory off-street parking facilities within the study area were obtained from electronic records provided by the operator of the facilities. Pedestrian volumes were recorded midblock along the north side of 6th Street between 7th and 8th Avenues in proximity to the anticipated location of the main entrance to the proposed project where it is anticipated that most of the new transit and walk-only trips would be concentrated.

Study Area Street Network

The street network within the study area comprises a grid of avenues which run north-south and streets which run east-west. As shown in **Figure 1**, a total of five intersections in proximity to NYM where project-generated vehicle trips are expected to be most concentrated were selected for analysis. Project-generated vehicle trips are expected to be less concentrated at more distant intersections, as these trips would typically become more widely dispersed over the street network with increasing distance from the site.

Seventh Avenue just west of the proposed project typically operates with one moving lane in both the northbound and southbound directions with curbside public parking permitted along both sides of the street. NYC Transit B67 and B69 buses stop along 7th Avenue near the proposed project. Two-way traffic volumes along 7th Avenue adjacent to the proposed project total approximately 683, 662 and 670 vehicles during the weekday AM, midday and PM peak hours, respectively. Eighth Avenue just east of the project site typically operates with two northbound moving lanes with curbside public parking permitted along both sides of the street. One-way northbound traffic volumes along 8th Avenue adjacent to the proposed project total approximately 709, 491 and 693 vehicles during the weekday AM, midday, PM peak hours, respectively. Prospect Park West (9th Avenue) one block east of the proposed project has two southbound moving lanes with curbside parking permitted along both sides of the street. A class I two-way bike lane runs along the east side of the street between the curb and parked vehicles. One-way southbound traffic volumes along Prospect Park West total approximately 967, 761,

999 vehicles during the weekday AM, midday, and PM peak hours, respectively. Fifth Street north of the proposed project has one eastbound moving lane and curbside parking permitted along both sides of the street with the exception of the north side of the street along the frontage with John Jay Educational Complex. Parking along this frontage is governed by a no parking, 7 AM to 4 PM school days regulation. One-way eastbound traffic volumes along 5th Street total approximately 172, 151, 160 vehicles during the AM, midday, and PM peak hours, respectively. An entrance to a parking deck at NYM is located midblock on the south side of 5th Street adjacent to the proposed project. It should also be noted that the garage entrance on 5th Street between 7th Avenue and 8th Avenue is currently closed to traffic, but is expected to reopen during peak hours in the near term. The existing conditions traffic networks have been adjusted to reflect this reopening.

Sixth Street on the south side of the proposed project site has one westbound moving lane with entrances to a surface lot and below grade parking garage located on the north side of the street. Parking along the majority of 6th Street is governed by a no-standing, 7AM to 7PM regulation on both sides of the street, with a small portion of the street governed by alternate-side-of-the-street parking regulations for street cleaning. One-way westbound traffic volumes on 6th Street adjacent to the proposed project total approximately 372, 281, 169 vehicles during the AM, midday and PM peak hours, respectively. **Figure 2** shows the 2013 existing weekday AM, midday and PM peak hour traffic volumes at study area intersections in proximity to the proposed project.

Intersection Capacity Analysis

The capacity analyses at study area intersections are based on the methodology presented in the *Highway Capacity Manual (HCM) Software HCS+ Release 5.4*. Traffic data required for these analyses include the hourly volumes on each approach and various other physical and operational characteristics. As mentioned previously, signal timing plans for each signalized intersection were obtained from NYCDOT. Field inventories were conducted to document the physical layout, lane markings, curbside parking regulations, and other relevant characteristics needed for the analysis.

The HCM methodology provides a volume-to-capacity (v/c) ratio for each signalized intersection approach. The v/c ratio represents the ratio of traffic volumes on an approach to the approach's carrying capacity. A ratio of less than 0.90 is generally considered indicative of non-congested conditions in dense urban areas; when higher than this value, the ratio reflects increasing congestion. At a v/c ratio of between 0.95 and 1.0, near-capacity conditions are reached and delays can become substantial. Ratios of greater than 1.0 indicate saturated conditions with queuing. The HCM methodology also expresses quality of flow in terms of level of service (LOS), which is based on the amount of delay that a driver typically experiences at an intersection. Levels of service range from A, with minimal delay (10 seconds or less per vehicle), to F, which represents long delays (greater than 80 seconds per vehicle).

Table 1 shows the LOS/delay relationship for signalized intersections based on the HCM methodology. Levels of service A, B, and C generally represent highly favorable to fair levels of traffic flow. At LOS D, the influence of congestion becomes noticeable. LOS E is

considered to be the limit of acceptable delay, and LOS F is considered to be unacceptable to most drivers. In this study, a signalized lane grouping operating at LOS E or F or a v/c ratio of 0.90 or above is identified as congested.

Table 1
Intersection Level of Service Criteria

Level of Service (LOS)	Average Delay per Vehicle (seconds)
A	Less than 10.1
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	greater than 80.0

Table 2 shows the results of the existing capacity analysis for the five signalized intersections within the traffic study area. As shown in **Table 2**, there are currently no congested movements (v/c ratios of 0.90 or greater) at any study area intersection during any of the analysis peak hours. All intersections in the study area currently operate at LOS C or better during all of the analysis peak hours.

Pedestrians

Pedestrian volumes were observed to be relatively light around the proposed project. The proposed project's main pedestrian entrance would be located on 6th Street between 7th and 8th Avenues, and therefore most new transit and walk trips would be concentrated along this sidewalk, which is analyzed as part of this study. Data on peak period pedestrian flow volumes were collected along the above mentioned sidewalk on Thursday, May 16, 2013 and Tuesday, May 21, 2013, concurrent with the traffic data collection program. Peak hours for pedestrian demand were determined by comparing rolling hourly averages, and the highest 15-minute volumes within the selected peak hours were used for analysis. Based on existing peak pedestrian volumes, the peak hours selected for the analyses are 8-9 AM, 12:30-1:30 PM. and 4:30-5:30 PM. Peak 15-minute pedestrian flow conditions during the weekday AM, Midday, and PM peak hours are analyzed using the *2000 Highway Capacity Manual* methodology.

Table 2

2013 Existing Traffic Conditions Level of Service

SIGNALIZED INTERSECTIONS	LANE GROUP	AM PEAK HOUR			MD PEAK HOUR			PM PEAK HOUR		
		V/C RATIO	Delay (sec.)	LOS	V/C RATIO	Delay (sec.)	LOS	V/C RATIO	Delay (sec.)	LOS
7th Avenue										
7th Avenue (N-S) @ 5th Street (EB)	EB-LTR	0.36	15.6	B	0.31	15.1	B	0.23	14.1	B
	NB-TR	0.70	18.8	B	0.58	15.3	B	0.59	15.2	B
	SB-TL	0.50	14.0	B	0.49	13.4	B	0.46	12.9	B
7th Avenue (N-S) @ 6th Street (WB)	WB-LTR	0.67	23.2	C	0.70	24.4	C	0.70	24.6	C
	NB-LT	0.59	15.1	B	0.46	13.0	B	0.48	13.1	B
	SB-TR	0.42	12.4	B	0.53	14.3	B	0.44	12.6	B
8th Avenue										
8th Avenue (NB) @ 5th Street (EB)	EB-LT	0.31	12.9	B	0.26	12.4	B	0.26	12.4	B
	NB-TR	0.59	15.5	B	0.41	13.3	B	0.53	14.5	B
8th Avenue (NB) @ 6th Street (WB)	WB-TR	0.41	14.3	B	0.37	13.7	B	0.24	12.3	B
	NB-LT	0.72	17.9	B	0.48	14.0	B	0.56	15.0	B
Prospect Park West										
Prospect Park West (SB) @ 5th Street (EB)	EB-R	0.35	17.1	B	0.31	16.5	B	0.28	16.3	B
	SB-T	0.59	12.2	B	0.44	10.5	B	0.58	12.1	B

*- Denotes Congested Movement

Using this methodology, the congestion level of pedestrian facilities is determined by considering pedestrian volume, measuring the sidewalk width, determining the available pedestrian capacity and developing a ratio of volume flows to capacity conditions. The resulting ratio is then compared with LOS standards for pedestrian flow, which define a qualitative relationship at a certain pedestrian traffic concentration level.

LOS standards are based on the average area available per pedestrian during the analysis period, typically expressed as a 15-minute peak period. LOS grades from A to F are assigned, with LOS A representative of free flow conditions without pedestrian conflicts and LOS F depicting significant capacity limitations and inconvenience. **Table 3** defines the LOS criteria for pedestrian crosswalk/corner area and sidewalk conditions, as based on the *Highway Capacity Manual* methodology.

The analysis of sidewalk conditions includes a "platoon" factor in the calculation of pedestrian flow to more accurately estimate the dynamics of walking. "Platooning" is the tendency of pedestrians to move in bunched groups or "platoons" once they cross a street where cross traffic required them to wait. Platooning generally results in a level of service one level poorer than that determined for average flow rates.

TABLE 3
PEDESTRIAN SIDEWALK LEVELS OF SERVICE DESCRIPTIONS

LOS	Crosswalk/Corner	Non-Platoon Sidewalk Criteria (pmf)	Platoon Sidewalk Criteria (pmf)
A	(Unrestricted)	≤ 5	≤ 0.5
B	(Slightly Restricted)	> 5 to 7	> 0.5 to 3
C	(Restricted but fluid)	> 7 to 10	> 3 to 6
D	(Restricted, necessary to continuously alter walking stride and direction)	> 10 to 15	> 6 to 11
E	(Severely restricted)	> 15 to 23	> 11 to 18
F	(Forward progress only by shuffling; no reverse movement possible)	> 23	> 18

Source: *2010 Highway Capacity Manual*

Table 4 shows the results of the capacity analysis for existing conditions along the sidewalk on the north side of 6th Street in front of the proposed project. As show in **Table 4** this sidewalk currently operates at LOS A during all analyzed peak periods under non-platoon conditions. This same sidewalk operates at LOS B during all analyzed peak periods under platoon conditions. It should be noted that this sidewalk is typically 15 feet wide (property line to curb). However, due to several sidewalk obstructions (e.g., stoops, tree pits and fences) the effective width at its narrowest point is only two feet between the surface lot on 6th Street and a curbside tree pit. This results in very limited pedestrian capacity as this location. However, given the relatively low existing pedestrian volumes, this sidewalk still experiences good levels of service during all periods, as demonstrated in **Table 4**.

Table 4
2013 Existing Sidewalk Conditions

Location	Effective Width (feet)	Peak Hour	Peak 15-Min Volumes	Average Conditions PFM	Average Conditions LOS	Platoon Conditions PFM	Platoon Conditions LOS
North Side of 6th Street Between 7th & 8th Avenue	2.0	AM	25	0.83	A	0.83	B
	2.0	MD	25	0.83	A	0.83	B
	2.0	PM	26	0.87	A	0.87	B

Notes:
AM - weekday 7-8 AM
MD-weekday 12:30 - 1:30
PM - weekday 4:30-5:30 PM
PFM - persons per foot of effective width per minute.
LOS - level of service.

Parking

The NYM campus currently operates two surface parking lots and one below-grade garage totaling approximately 597 parking spaces. Access to the surface parking lot at the corner of 8th Avenue and 6th Street is provided from 6th Street. This lot is attended and primarily used by physicians employed by NYM. The second surface parking lot is located on 5th Street midblock between 7th and 8th Avenues. (This parking lot is actually a roof deck on the NYM parking garage structure; however, it has a separate entrance and functions independently.) This lot is self-park with access restricted to monthly permit-holders only. The below-grade garage has access from 6th Street, and also has access from a currently closed entrance from 5th Street, which is expected to be reopened to traffic during peak hours in the near future. (The existing conditions traffic network has been adjusted to reflect this reopening.) This garage operates as a mixture of self-park and attended parking for patients and visitors.

Data on existing parking demand was obtained from computerized records compiled by NYM. **Table 5** shows the existing traffic volumes (in and out) and corresponding existing parking demand for the NYM campus facilities. As shown in **Table 5**, on an average weekday, parking demand peaks at approximately 558 spaces, or approximately 93.4 percent of the available capacity. Based on these data, the surface parking lots and below-grade garage are currently operating close to capacity during the weekday midday period. Consequently, it should be noted that substantial numbers of NYM staff, patients and visitors currently park on-street due to a lack of available capacity in the off-street facilities.

Table 5
Existing Weekday Parking Demand

Hour (Beginning)	6th Street Garage		5th Street Parking Deck		Doctors Lot		Total Accumulation
	In	Out	In	Out	In	Out	
1200	2	9	0	0	0	2	60
100	0	11	0	0	0	3	47
200	0	2	0	0	1	0	46
300	1	1	0	0	0	0	45
400	1	1	1	0	0	0	47
500	5	1	3	0	3	0	56
600	21	1	4	0	11	0	90
700	97	2	14	1	23	0	219
800	123	10	35	0	21	2	385
900	103	40	16	1	15	12	465
1000	74	25	3	0	8	3	522
1100	50	29	1	0	5	2	547
1200	38	30	1	3	7	2	558
1300	35	44	1	3	6	4	548
1400	34	42	0	3	4	4	536
1500	32	51	0	13	3	6	502
1600	29	74	1	18	5	12	433
1700	13	92	1	21	4	20	319
1800	15	83	0	17	5	18	221
1900	28	57	1	0	5	13	184
2000	31	46	0	1	3	10	161
2100	7	50	0	1	2	10	109
2200	3	27	0	0	3	4	84
2300	3	17	0	0	2	3	68
	743	743	81	81	134	134	

2017 Future Conditions

The proposed project would consist of a medical building of approximately 498,500 gsf and a below-grade accessory garage with approximately 542 accessory parking spaces. The proposed project would also include a new on-site off-street drop-off/pick-up area along the western edge of the new building with access provided exclusively off 6th Street. This drop-off area would have a ramp leading to the new below-grade parking garage. Pedestrian access would be provided primarily from 6th Street, and to a lesser extent from 8th Avenue and from 5th Street.

The proposed project would also include a new loading dock with access from 5th Street within the boundaries of the existing parking deck.

It should be noted that over the past decade, demand for out-patient procedures has increased steadily. **Table 6** shows the yearly out-patient visits to both the NYM main campus and all off-site locations as well (approximately a ½ mile away or greater.) As shown in the **Table 6**, over the past five years out-patient visits have increased by 47.0 percent. This growth has happened with no discernable increase in the size of any of the hospital facilities. There is therefore a need for a new, modern ambulatory care center at NYM to accommodate anticipated future growth.

Table 6
Yearly Outpatient Visits to All Sites at NYM

Year	Number of Yearly Out-Patient Visits	Percentage Growth over the previous 5 years
2007	243,109	
2008	260,562	
2009	253,566	
2010	277,575	
2011	298,660	
2012	357,561	47.0%

Transportation Planning Factors

As discussed above, the proposed project would consist of a new ambulatory care center for NYM. With development of the proposed project, many of the facilities in the existing NYM building would be moved across the street to the proposed new building. There would also be some consolidation of off-site facilities, which would also be relocated on the proposed project. This would allow NYM to meet the growing demand for outpatient procedures in the neighborhood, as well as Brooklyn as a whole. A comparison between the existing (2013) and future outpatient facilities is provided. Most of the existing outpatient facilities on the NYM main campus as well as several located off-site would be moved or expanded to occupy the proposed building on the project site. Lastly, **Table 7** also shows the net increase in medical staff and patient visits.

Table 7 shows the existing and future medical staffing and annual outpatient visits generated by NYM departments that would be affected by the proposed project. As shown in **Table 7**, these departments currently account for a total of approximately 237 medical staff and 154,634 annual outpatient visits. (These totals do not reflect staff and patient visits associated with departments in the existing building that would remain unaffected by the proposed project.)

With implementation of the proposed project, departments/services accounting for a total of approximately 175 staff and 119,072 annual patient visits are expected to relocate to the proposed building.

Table 7

INCREMENTAL CHANGE IN STAFFING AND ANNUAL OUTPATIENT VISITS AT NYM CAMPUS DUE TO THE PROPOSED PROJECT

EXISTING BUILDING (1)	Staff	Annual Patient Visits	Weekday Patient Visits
Departments Affected by Proposed Project	237	154,634	
Departments/Services Relocated to Proposed Building	175	119,072	
Departments/Services to Remain in Existing Building	62	35,562	124
PROPOSED BUILDING	Staff	Annual Patient Visits	Weekday Patient Visits
Departments/Services Relocated from Existing Building	175	119,072	
Incremental Expansion of Existing Services	73	61,961	
Departments/Services Relocated from Off-Site	34	40,284	
Proposed Building Total	282	221,317	774
NET CHANGE IN STAFF/ANNUAL PATIENT VISITS AT NYM CAMPUS	Staff	Annual Patient Visits	Weekday Patient Visits
2013 Services in Existing Building (1)	237	154,634	
2017 Services to Remain in Existing Building (1)	62	35,562	
2017 Services in Proposed Building	282	221,317	
Total:	344	256,879	898
Net Change at NYM Campus:	107	102,245	358

(1) Numbers do not include staff or patient visits associated with departments/services in the existing building that are not affected by the proposed project.

It is estimated that new and expanded services in the proposed building would account for an additional 73 staff and 61,961 annual patient visits. In addition, services relocated to the proposed building from off-site locations not in proximity to the main NYM campus are expected to add an additional 34 staff and 40,284 annual patient visits. Overall, the proposed building is therefore expected to house a total of 282 medical staff and service a total of 221,317 outpatient visits annually. Consequently, as shown in **Table 7** development of the proposed project is expected to result in a total net increase of 107 medical staff and 102,245 annual outpatient visits at the NYM main campus.

It is important to note that in 2012, NYM had a total of approximately 702,864 patient visits to their main campus, including in-patient and out-patient services and the emergency room. The estimated net increase of 102,245 annual outpatient visits resulting from the proposed project would therefore represent an increase of approximately 14.5 percent in overall patient visits to the NYM main campus compared to 2012 demand.

In addition to the 282 medical staff expected at the proposed project (of which 107 would be new to the NYM main campus), there are also expected to be a total of approximately 45 new building support staff. Therefore, a total of approximately 327 workers would be employed at proposed project, of which approximately 152 would be new to the NYM Campus. By comparison, the NYM main campus currently employs approximately 3,000 people among all departments (e.g., medical staff, security, administrative, maintenance, etc.). The estimated net increase of 152 new workers resulting from the proposed project would therefore represent an increase of approximately five percent in overall staffing at the NYM main campus compared to current levels.

As shown in **Table 7,** it is estimated that the proposed new building would serve a total of approximately 774 patients on a typical weekday, of which approximately 358 would represent new patients at the NYM main campus. As each outpatient is typically accompanied by an average of one other person, it is therefore anticipated that a combined total of 716 new patients and visitors would arrive at the proposed building over the course of a typical weekday.

Table 8 shows the preliminary transportation planning factors used for the forecast of travel demand generated by the new building in the weekday AM, Midday, and PM peak hours. These factors include trip generation rates, temporal and directional distributions, mode choice factors, vehicle occupancies and truck trip factors for medical uses. The temporal distributions, mode choice and auto occupancy for the staff were derived from data collected at NYM. Transportation planning factors for outpatients/visitors were based on the *NY Presbyterian Hospital Ambulatory Care Center FEIS (2012).* The truck trip generation rates and temporal distributions were based on the *MSK Ambulatory Care Center EAS (2012).*

Trip Generation

Table 9 shows the estimated net number of weekday person and vehicle trips that would be generated by the proposed project in the weekday AM, Midday and PM peak hours for each mode of transportation. As shown in **Table 9**, the proposed project is expected to generate a net total of approximately 90, 91, and 79 new vehicle trips (in and out combined) in the weekday AM, Midday and PM peak hours, respectively.

Table 8
TRANSPORTATION PLANNING ASSUMPTIONS

User:	New Staff	New Patient/Visitors
	(1)	(1)
Daily Weekday Population:	152	716
Trip Generation:	(1)	(1)
Weekday	2 per person	2 per person
Temporal Distribution:	(2)	(3)
AM	21.5%	7.0%
MD	2.0%	10.0%
PM	15.0%	7.0%
	(4)	(5)
Modal Splits:	AM/MD/PM	AM/MD/PM
Auto	50.0%	40.0%
Auto Drop-off	0.0%	5.7%
Taxi/Ambulette	2.0%	31.0%
Subway	26.0%	14.3%
Bus	10.0%	5.0%
Walk/Other	12.0%	4.0%
	100.0%	100.0%

	(2)		(3)	
In/Out Splits:	In	Out	In	Out
AM	100%	0%	100%	0%
MD	25%	75%	50%	50%
PM	5%	95%	20%	80%

Vehicle Occupancy:	(4)	(5)
Auto	1.30	2.30
Taxi	1.50	1.80

Truck Trip Generation:	(6)	
	0.20	
	per 1,000 sf	
	(6)	
AM	10.0%	
MD	9.0%	
PM	5.0%	
	In	Out
AM/MD/PM	50.0%	50.0%

Notes :

(1) Daily Population Provided by NY Methodist Hospital -2013
(2) Data Collected from NY Methodist 5th Street Parking Lot (Staff Only) -2013
(3) PHA Survey at NY Presbyterian Hospital Ambulatory Care Center - 2012
(4) SSE Employee Mode choice survey for NY Methodist
(5) SSE Travel Demand Factors Memorandum at NY Presbyterian Hospital Ambulatory Care Center 2012 (Mode choice adjusted for Brooklyn Site)
(6) MSK Ambulatory Care Center, (2012)
* Includes 107 new Medical Staff and 45 new support staff
** Includes 358 new patients and 358 family/friends accompanying patients

Table 9
TRAVEL DEMAND FORECAST

Land Use:		New Staff		New Patient/Visitors			
Population		152		716			
Peak Hour Trips:							
	AM	65		100			
	MD	6		143			
	PM	46		100			
Person Trips:						Total Person	
		In	Out	In	Out	In	Out
AM	**Auto**	33	0	40	0	73	0
(8-9)	**Auto Drop-off**	0	0	6	0	6	0
	Taxi	1	0	31	0	32	0
	Subway	17	0	14	0	31	0
	Bus	7	0	5	0	12	0
	Walk/Other	8	0	4	0	12	0
	Total	66	0	100	0	166	0
		In	Out	In	Out	In	Out
MD	**Auto**	1	2	29	29	30	31
(12-1)	**Auto Drop-off**	0	0	4	4	4	4
	Taxi	0	0	22	22	22	22
	Subway	0	1	10	10	10	11
	Bus	0	0	4	4	4	4
	Walk/Other	0	1	3	3	3	4
	Total	1	4	72	72	73	76
		In	Out	In	Out	In	Out
PM	**Auto**	1	22	8	32	9	54
(5-6)	**Auto Drop-off**	0	0	1	5	1	5
	Taxi	0	1	6	25	6	26
	Subway	1	11	3	11	4	22
	Bus	0	4	1	4	1	8
	Walk/Other	0	5	1	3	1	8
	Total	2	43	20	80	22	123
Vehicle Trips :						Total	
		In	Out	In	Out	In	Out
AM	**Auto (Total)**	25	0	17	0	42	0
	Taxi/Auto Drop-off	1	0	20	0	21	0
	Balanced Taxi					21	21
	Truck*					3	3
	Total	26	0	37	0	66	24
		In	Out	In	Out	In	Out
MD	**Auto (Total)**	1	2	13	13	14	15
	Taxi/Auto Drop-off	0	0	14	14	14	14
	Balanced Taxi					28	28
	Truck*					3	3
	Total	1	2	27	27	45	46
		In	Out	In	Out	In	Out
PM	**Auto (Total)**	1	17	3	14	4	31
	Taxi/Auto Drop-off	0	1	3	16	3	17
	Balanced Taxi					20	20
	Truck*					2	2
	Total	1	18	6	30	26	53

*Truck Volumes Based on Building Size not Population

(Vehicle trips include auto and truck trips, and trips by taxi, which have been balanced to reflect that each taxi either arrives or departs empty.) The proposed project would also generate a net total of 31, 21, and 26 new subway trips and 12, 8, and 9 new bus trips in the weekday AM, Midday, and PM peak hours, respectively. New walk-only trips would increase by 12, 8, and 9 trips, respectively, during these same periods

Intersection Capacity Analysis

As shown in **Table 9**, the proposed project would generate an estimated 90, 91, 79 new vehicle trips (in and out combined) in weekday AM, Midday and PM peak hours, respectively. These vehicle trips were assigned to the study area street network based on access routes to major transportation corridors. With the exception of auto trips associated with patients being dropped off, patient and employee autos were assigned to the proposed on-site parking garage. Employee vehicles were assumed to use the existing garage entrances on either 5th Street or 6th Street. Patient vehicle trips are assigned to the new on-site drop-off area which would include a ramp to the new below-grade garage. All taxi trips are assumed to utilize the new on-site drop-off/pick-up area. Truck trips were assigned to the new loading dock with access off of 5th Street. **Figure 3** shows the project-generated vehicle trips at study area intersections during the weekday AM, midday and PM peak hours. As shown in **Figure 3**, given the on-site midblock drop-off area, most of the new vehicle trips would be concentrated on 6th Street between 7th and 8th Avenues. **Figure 4** shows the total 2017 future traffic volumes at study area intersections. **Table 10** compares the existing 2013 levels of service to the future 2017 conditions. As shown in **Table 10,** all intersections would operate at an acceptable LOS C or better during all three analyzed peak periods with the proposed project.

Pedestrians

As shown in **Table 9**, the proposed project would generate 43, 29 and 35 new transit trips (bus and subway combined) during the weekday AM, Midday and PM peak hours, respectively. The proposed project would also generate 12, 7 and 9 new walk-only trips, respectively, during these same periods. Overall, the proposed project would generate a total of 55, 36 and 44 new pedestrian trips (including walk trips to and from area transit services) during the weekday AM, Midday and PM peak hours, respectively. As discussed previously much of the demand for the proposed new building is already present at the NYM campus as uses would be relocated from the existing building across 6th Street. Therefore, existing pedestrian volumes that previously utilized the sidewalk along the south side of 6th Street would instead occur on the north side of the street, resulting in a greater net increase in pedestrian volumes on this sidewalk than reflected by the numbers in **Table 9. Table 11** shows the 2017 future sidewalk conditions during the weekday AM, Midday and PM peak periods. As shown in **Table 11,** it is anticipated that the future pedestrian levels of service would actually improve on the north sidewalk on 6th Street compared to existing conditions even though pedestrian volumes would increase. This would be mainly due to the removal of a surface parking lot which was encroaching into the public sidewalk. The effective width of the north sidewalk on 6th Street would increase from the current two feet to 7.5 feet with the proposed project.

Table 10

2017 Build Conditions Level of Service (as Compared to Existing Conditions)

SIGNALIZED INTERSECTIONS	LANE GROUP	AM Level of Service						MIDDAY Level of Service						PM Level of Service					
		EXISTING 2013 AM PEAK HOUR			FUTURE 2018 AM PEAK HOUR			EXISTING 2013 MD PEAK HOUR			FUTURE 2018 MD PEAK HOUR			EXISTING 2013 PM PEAK HOUR			FUTURE 2018 PM PEAK HOUR		
		V/C RATIO	Delay (sec.)	LOS	V/C RATIO	Delay (sec.)	LOS	V/C RATIO	Delay (sec.)	LOS	V/C RATIO	Delay (sec.)	LOS	V/C RATIO	Delay (sec.)	LOS	V/C RATIO	Delay (sec.)	LOS
7th Avenue																			
7th Avenue (N-S) @ 5th Street (EB)	EB-LTR	0.36	15.6	B	0.41	16.3	B	0.31	15.1	B	0.34	15.4	B	0.23	14.1	B	0.25	14.3	B
	NB-TR	0.70	18.8	B	0.74	20.2	C	0.58	15.3	B	0.62	16.3	B	0.59	15.2	B	0.59	15.2	B
	SB-TL	0.50	14.0	B	0.64	18.2	B	0.49	13.4	B	0.52	14.1	B	0.46	12.9	B	0.48	13.2	B
7th Avenue (N-S) @ 6th Street (WB)	WB-LTR	0.67	23.2	C	0.73	26.2	C	0.70	24.4	C	0.79	30.3	C	0.70	24.6	C	0.80	30.7	C
	NB-LT	0.59	15.1	B	0.60	15.5	B	0.46	13.0	B	0.47	13.2	B	0.48	13.1	B	0.49	13.3	B
	SB-TR	0.42	12.4	B	0.42	12.3	B	0.53	14.3	B	0.54	14.5	B	0.44	12.6	B	0.45	12.7	B
8th Avenue																			
8th Avenue (NB) @ 5th Street (EB)	EB-LT	0.31	12.9	B	0.34	13.2	B	0.26	12.4	B	0.31	12.9	B	0.26	12.4	B	0.32	13.0	B
	NB-TR	0.59	15.5	B	0.60	15.7	B	0.41	13.3	B	0.42	13.4	B	0.53	14.5	B	0.54	14.7	B
8th Avenue (NB) @ 6th Street (WB)	WB-TR	0.41	14.3	B	0.45	14.8	B	0.37	13.7	B	0.41	14.2	B	0.24	12.3	B	0.27	12.5	B
	NB-LT	0.72	17.9	B	0.75	18.6	B	0.48	14.0	B	0.51	14.3	B	0.56	15.0	B	0.59	15.3	B
Prospect Park West																			
Prospect Park West (SB) @ 5th Street (EB)	EB-R	0.35	17.1	B	0.37	17.4	B	0.31	16.5	B	0.34	17.0	B	0.28	16.3	B	0.29	16.5	B
	SB-T	0.59	12.2	B	0.61	12.6	B	0.44	10.5	B	0.45	10.6	B	0.58	12.1	B	0.60	12.3	B

* - Denotes Congested Movement

Table 11
2017 Future Sidewalk Conditions

Location	Effective Width (feet)	Peak Hour	Peak 15-Min Volumes	Average Conditions PFM	Average Conditions LOS	Platoon Conditions PFM	Platoon Conditions LOS
North Side of 6th Street	7.5	AM	63	0.56	A	0.56	B
Between 7th & 8th	7.5	MD	48	0.43	A	0.43	A
Avenue	7.5	PM	54	0.48	A	0.48	A

Notes:

AM - weekday 7-8 AM

MD-weekday 12:30 - 1:30

PM - weekday 4:30-5:30 PM

PFM - persons per foot of effective width per minute.

LOS - level of service.

Parking

The proposed project would provide a new below-grade accessory parking garage with approximately 542 spaces. This reflects the total parking that needs to be provided as per zoning (426 spaces) plus the number of existing parking spaces that would be displaced as a result of the proposed project (116 spaces). **Table 12** shows the anticipated parking demand that would be generated by the proposed project. As shown in **Table 12,** parking demand is expected to peak at approximately 104 spaces between 11 AM and 12 Noon.

With construction of a loading dock on the parking deck and connections to the proposed new garage as part of the proposed project, the existing parking garage would have a total capacity of 481 spaces, 37 fewer than its current capacity of 518 spaces. Overall, the existing and new garages would have a total combined parking capacity of 1,023 spaces (542 + 481) including the remaining parking on the garage deck. This number of parking spaces would satisfy the required parking for the new building plus the previous BSA variance for the existing garage, as well as accommodate all parking displaced by construction. **Table 13** shows the overall future parking demand at the NYM main campus based on existing usage of the on-site parking lots and garage and anticipated future demand. In combination, existing parking demand at the current on-site parking facilities and the net incremental increase resulting from the proposed project would result in a future peak usage of approximately 661 spaces, or approximately 64 percent of future capacity during the weekday Midday period. As noted previously, however, the existing surface parking lots and below-grade garage are currently operating close to capacity during the weekday midday period, and substantial numbers of NYM staff, patients and visitors therefore park on-street due to a lack of available spaces. The additional capacity that would be provided under the proposed project (roughly 350 spaces) would therefore provide the opportunity for NYM to accommodate much of the demand from staff, patients and visitors who are currently parking on-street. This is expected to improve overall on-street parking conditions (i.e., increase the number of available spaces) in the immediate vicinity of the NYM main campus.

Table 12
Future Incremental Parking Demand

Hour (Beginning)	Future Staff In	Future Staff Out	Future Patients/Visitors In	Future Patients/Visitors Out	Garage Accumulation
1200	0	0	0	0	0
100	0	0	0	0	0
200	0	0	0	0	0
300	0	0	0	0	0
400	1	0	0	0	1
500	2	0	0	0	2
600	3	0	0	0	5
700	10	0	6	0	20
800	25	0	16	0	62
900	11	1	15	1	85
1000	2	0	15	2	100
1100	1	1	14	10	104
1200	1	2	12	12	102
1300	1	2	12	12	101
1400	0	2	11	12	98
1500	0	9	10	12	87
1600	1	12	8	16	67
1700	1	17	4	14	41
1800	0	10	0	14	18
1900	0	0	0	10	8
2000	0	0	0	5	3
2100	0	0	0	2	0
2200	0	0	0	0	0
2300	0	0	0	0	0
Total	58	58	125	125	

Table 13
Total Garage Parking Demand Based on Existing On-Site Parking Usage

Hour (Beginning)	Existing Parking Demand		Future Staff		Future Patient/ Visitors Parking		Total Future Parking Demand	Percent of Future Total Capacity
	In	Out	In	Out	In	Out		
1200	2	11	0	0	0	0	61	5.96%
100	1	14	0	0	0	0	48	4.66%
200	1	2	0	0	0	0	47	4.57%
300	1	1	0	0	0	0	46	4.52%
400	2	1	1	0	0	0	48	4.70%
500	11	1	2	0	0	0	59	5.79%
600	35	1	3	0	0	0	95	9.33%
700	133	3	10	0	6	0	240	23.51%
800	178	13	25	0	16	0	447	43.74%
900	133	52	11	1	15	1	552	53.94%
1000	85	28	2	0	15	2	623	60.93%
1100	56	31	1	1	14	10	651	63.66%
1200	46	35	1	2	12	12	661	64.62%
1300	42	51	1	2	12	12	650	63.51%
1400	38	49	0	2	11	12	635	62.07%
1500	36	70	0	9	10	12	590	57.65%
1600	34	104	1	12	8	16	501	48.94%
1700	19	132	1	17	4	14	361	35.30%
1800	21	119	0	10	0	14	239	23.38%
1900	34	70	0	0	0	10	193	18.91%
2000	34	57	0	0	0	5	165	16.11%
2100	8	61	0	0	0	2	110	10.71%
2200	6	31	0	0	0	0	85	8.27%
2300	4	20	0	0	0	0	69	6.71%
	958	958	58	58	125	125		

Conclusion

The proposed project would provide outpatient services to an additional 102,245 patients annually. This would represent a net overall increase of 14.5 percent in total annual patient visits to NYM's main campus. During a typical weekday the proposed project is expected to generate 90, 91 and 79 new vehicle trips during the AM, Midday and PM peak hours, respectively.

However, the resulting capacity analysis shows that all analyzed intersections would continue to operate at acceptable levels of service during these periods.

The proposed project would also generate 55, 36 and 44 new pedestrian trips, including walk-only trips and pedestrians en route to and from area transit services. These trips would be concentrated on the sidewalk fronting the main entrance to the proposed prospect on the north side of 6th Street. The resulting sidewalk analysis shows that the proposed project would actually result in improved levels of service along the north side of the 6th Street sidewalk as compared to existing conditions, due to the removal of an existing surface lot that is encroaching onto the public right-of-way, thus providing a wider sidewalk at an existing constraint point.

The proposed project would provide 542 parking spaces in a below-grade accessory garage. A parking garage with this capacity would satisfy the zoning requirement and replace all of the parking spaces that would be displaced due to construction the proposed project. The proposed project is anticipated to have a net peak parking demand of 104 spaces. When combined with the existing parking demand in the future, the overall NYM campus would have a peak parking demand of 661 space or approximately 64 percent of the future capacity. Therefore, no shortfall of parking capacity is expected to result from the proposed project. Further, the additional capacity to be constructed under the proposed project would provide the opportunity for NYM to accommodate much of the demand from staff, patients and visitors that currently park on-street, thereby improving overall on-street parking conditions.

FIGURE 1- PROJECT SITE

N.T.S

LEGEND:

- EXISTING NYM BUILDINGS
- EXISTING PARKING DECK
- PROPOSED PROJECT SITE
- DIRECT OF TRAFFIC FLOW
- TRAFFIC STUDY AREA
- ANALYZED INTERSECTIONS WITHIN THE TRAFFIC STUDY AREA

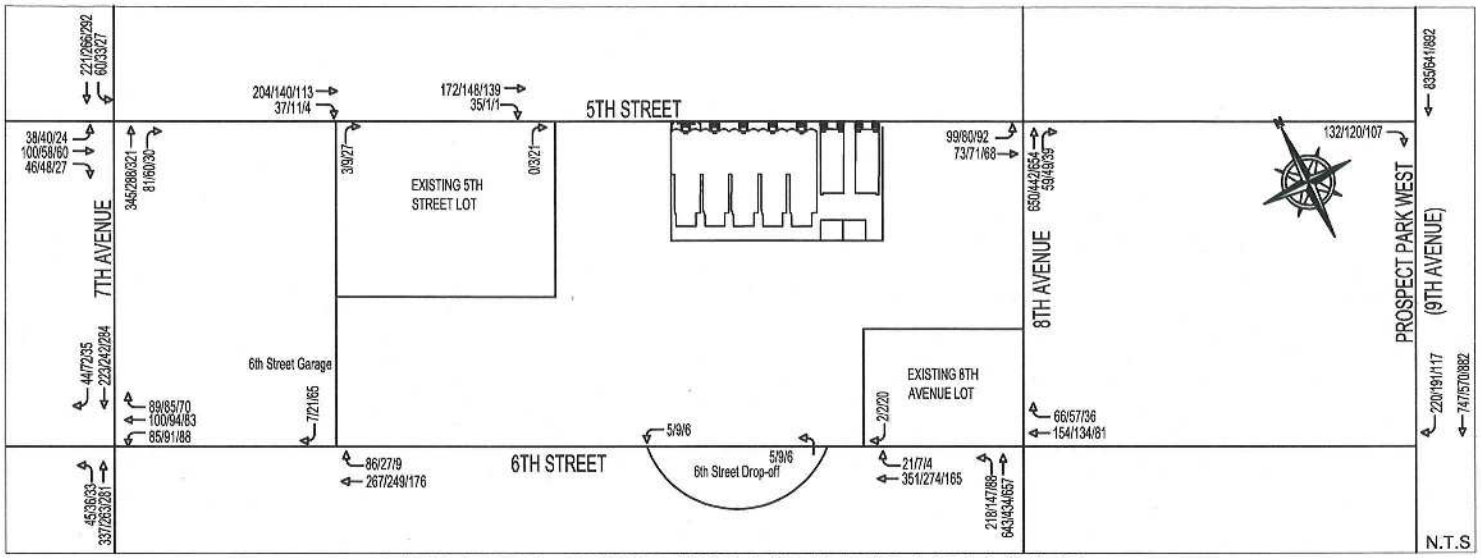

FIGURE 2 - EXISTING TRAFFIC VOLUMES

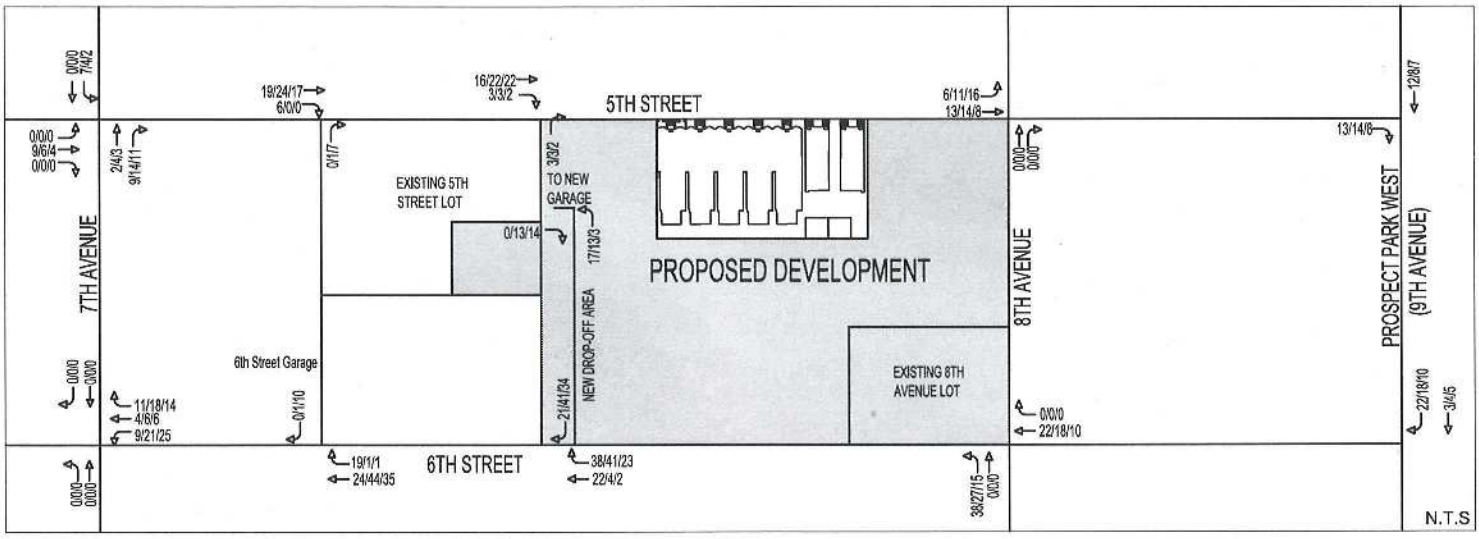

FIGURE 3 - NEW PROJECT GENERATED VEHICLE TRIPS

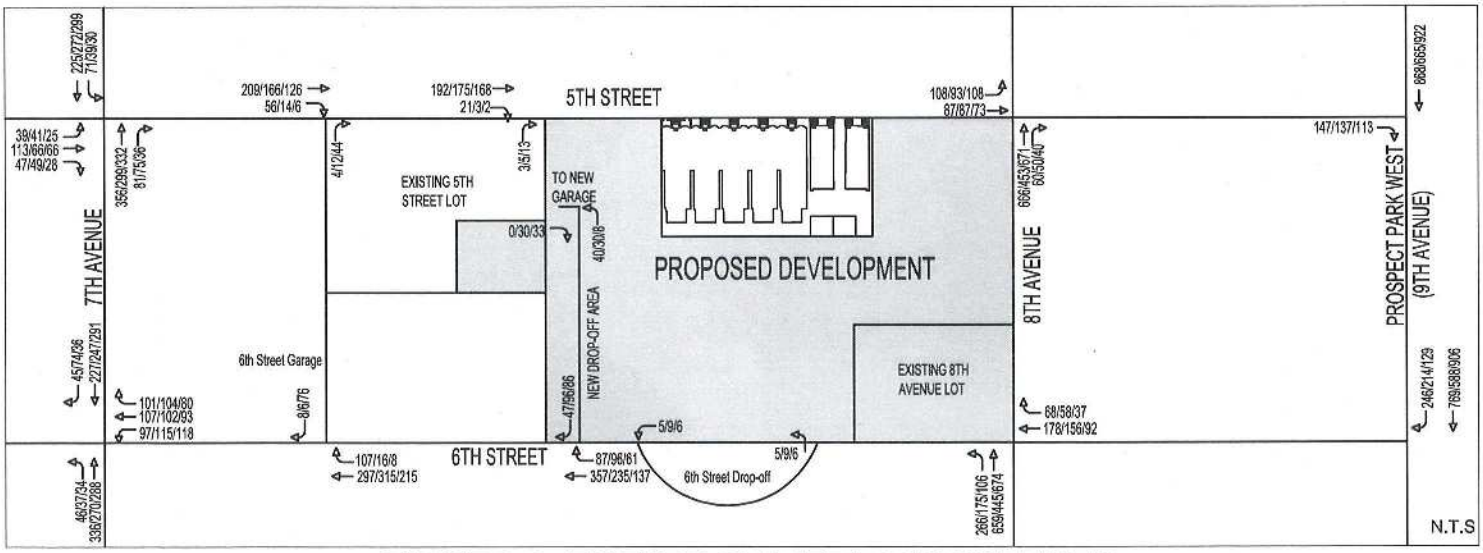

FIGURE 4 - FUTURE 2017 TRAFFIC VOLUMES

LEGEND:

5/4/3 - PEAK HOUR TRAFFIC VOLUME (AM/MIDDAY/PM)

→ - DIRECTION OF TRAFFIC