



# Memorandum

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To: Jane Marshall, Forest City Ratner Companies  
From: Daniel Schack, AICP, PTP  
Date: April 30, 2012  
Re: Barclays Center: On-Site Parking Reduction Analysis  
Project No: AY-10-146

## Introduction

On behalf of Forest City Ratner Companies (FCRC), Sam Schwartz Engineering (SSE) analyzed the potential effects of the proposed reduction of on-site parking supply at the Barclays Center from 1,100 to 541 spaces.<sup>1</sup> The on-site parking would be provided on Block 1129, which is bounded by Pacific Street to the north, Vanderbilt Avenue to the east, Dean Street to the south, and Carlton Avenue to the west.<sup>2</sup>

This analysis looks at the 2012 Arena Opening Condition, which adds arena traffic and parking demand associated with a sold-out basketball game to the 2012 street network and parking facilities that would be available at arena opening (expected in September 2012).

The analysis methodology included the following steps:

- Update the off-street parking capacities and utilization to determine parking supply within ½ mile of the arena
- Update the projected arena parking demand
- Assess how the on-site parking changes might affect pre-game, peak hour traffic conditions
- Assess the effect on pre-game, peak hour pedestrian conditions of shifting parking locations.

This memorandum concludes that there would be sufficient parking available to accommodate all arena-generated demand at arena opening; that shifting a portion of arena autos from on-site to off-site facilities is not likely to result in significant changes in vehicle volumes at most study intersections; and that changes in pedestrian routing caused by the shift in parking locations is not likely to result in any significant effect on pedestrian operations. There are, however, certain intersections where operations could be adversely affected by an increase in vehicle volume; these

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<sup>1</sup> Based on the operation of the Block 1129 site as a primarily self-park facility with a total of 565 spaces, with 24 spaces reserved for police department parking and the remaining 541 spaces available to arena patrons.

<sup>2</sup> While this memorandum examines a potential reduction in on-site parking in the 2012 Arena Opening Condition, additional parking could be located on Block 1129 in the future as additional components of the project are constructed.

locations would be monitored during arena events and improvement measures recommended, as needed.

### **Update Off-Street Parking Inventory**

The 2006 *Atlantic Yards Arena and Redevelopment Project Final Environmental Impact Statement* (Atlantic Yards FEIS) contained a detailed survey of all public, off-street parking facilities located within ½ mile of the arena block (bounded by Atlantic Avenue to the north, Sixth Avenue to the east, Dean Street to the south, and Flatbush Avenue to the west-southwest). The survey, conducted in 2006, collected the licensed capacity of each facility and typical occupancy/utilization for various time periods throughout the day. In October 2011, SSE updated the parking facility inventory for the same study area and obtained typical occupancies on weekday evenings and Saturday afternoons based on operator estimates. Twenty existing off-street parking facilities were found within the study area, shown in Figure 1. Capacity and utilization data for all off-street parking facilities within the study area are shown in Table 1.

These 20 public parking facilities have a total licensed capacity of 3,461 spaces and a combined typical utilization of approximately 49% on weekday evenings and 41% on Saturday afternoons. According to the *City Environmental Quality Review (CEQR) Technical Manual* (January 2012), parking facilities are to be considered full when they reach 98% of their licensed capacity; therefore, the estimated total availability of parking spaces is 1,685 on weekday evenings and 1,986 on Saturday afternoons.

Figure 1: Off-Street Parking Facilities within 1/2 Mile of Barclays Center (as of October 2011)



**Table 1: Off-Street Parking Facilities within ½ Mile of Arena**

#	Address	License #	Licensed Capacity	Weekday Evening			Saturday Afternoon		
				Estimated Utilization <sup>A</sup>		Availability <sup>B</sup> (based on 98% capacity)	Estimated Utilization		Availability <sup>B</sup> (based on 98% capacity)
				%	Vehicles		%	Vehicles	
1	700 Pacific St	1244293	170	60%	102	65	50%	85	82
2 <sup>D</sup>	212 S. Oxford St	1383522	45	25%	11	33	30%	14	31
3	625 Atlantic Ave	1242325	650	50%	325	312	80%	520	117
4	556 State St	1328826	25	50%	13	12	50%	13	12
5	10 Lafayette Ave	1343564	124	35%	43	78	70%	87	35
6	622 Fulton St	1026759	95	30%	29	65	0%	0	93
7	258 Ashland Pl	1021918	227	50%	114	109	30%	68	154
8 <sup>D,E</sup>	365 Schermerhorn St	1205793	100	0%	0	98	0%	0	98
9	180 Ashland Pl	1009614	316	40%	126	183	10%	32	278
10	97-103 Dekalb Ave	1019609	155	40%	62	90	5%	8	144
11	74 Dekalb Avenue	1346796	126	90%	113	10	90%	113	10
12	395 Flatbush Ave	1187231	140	50%	70	67	15%	21	116
13	300 Livingston St	1164348	623	40%	249	361	20%	125	486
14 <sup>D</sup>	252 Schermerhorn St	1119974	100	0%	0	98	0%	0	98
15 <sup>D</sup>	390 State St	365142	40	0%	0	39	0%	0	39
16	841 Union St	363740	165	90%	149	13	60%	99	63
17	211-215 Lincoln Pl	368580	14	100%	14	0	30%	4	10
18	405 Flatbush Ave	1030813	69	95%	66	2	20%	14	54
19	288 St Marks Ave	1004164	112	65%	73	37	50%	56	54
20	800 Union St	963093	165	90%	149	13	90%	149	13
<b>Total<sup>C</sup></b>			<b>3,461</b>	<b>49%</b>	<b>1,707</b>	<b>1,685</b>	<b>41%</b>	<b>1,406</b>	<b>1,986</b>

A. Based on surveys conducted by Sam Schwartz Engineering in October 2011.

B. Parking facilities are considered full when they reach 98% of their capacity, CEQR Technical Manual (January 2012), Page 16-14.

C. Results may not balance due to rounding.

D. Facility is currently closed during analysis periods; however, it is assumed that all facilities within 1/2 mile of the arena would remain open during arena events.

E. A 720-unit residential development is currently planned on this site, with construction expected to commence in early 2013.

## Updated Arena Parking Demand

To project the number of on-site parking spaces needed in the 2012 Arena Opening Condition, an analysis was performed considering the updated off-street parking information collected by SSE and the effects that certain mitigation measures contained in the Atlantic Yards FEIS would have on overall arena parking demand.

In the FEIS 2010 Build Condition, a maximum arena-generated parking demand of 2,517 and 2,461 vehicles were projected for a weekday evening and Saturday afternoon Nets game, respectively. The FEIS also assumed that the 1,100 on-site spaces would be fully utilized and that the remaining arena-generated autos would park in off-site facilities. The FEIS parking analysis showed that there would be sufficient parking availability within ½ mile of the arena to accommodate all demand generated by a basketball game.

In the FEIS 2010 Build with Mitigation Condition, a package of transportation demand management (TDM) strategies was proposed that is projected to achieve an overall 20% reduction in peak hour auto trips generated by basketball games and capture 250 arena-generated autos in remote parking facilities.<sup>3</sup> This reduction in auto trips was included in the peak hour vehicular analysis from the 2006 FEIS but was not accounted for in the FEIS parking analysis because no significant adverse parking impact was found in the FEIS 2010 Build Condition.

Table 2 updates the arena parking demand from the FEIS to account for the reduction in parking demand that would result from the proposed TDM measures, including remote parking facilities, and then compares it to the updated off-street parking availability. Certain TDM measures proposed in the FEIS were aimed at shifting a portion of the arena-generated auto trips outside the peak hours, which would not reduce maximum parking demand. To account for this, even though peak hour auto trips would be reduced by 20%, it is assumed that the maximum parking demand would only be reduced by 15%.

As shown in Table 2, all arena-generated parking demand could still be accommodated in off-street parking facilities, even with the proposed reduction in on-site capacity. The results show that there would be a surplus of 337 and 685 available spaces during a weekday evening and Saturday afternoon game, respectively.

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<sup>3</sup> Atlantic Yards FEIS (2006), page 19-35.

**Table 2: 2012 Arena Opening Condition: Maximum Arena-Generated Parking Demand Analysis**

	Weekday Evening	Saturday Afternoon
<b>Arena Parking Demand</b>		
FEIS 2010 Build Condition Maximum Arena Parking Demand <sup>A</sup>	2,517	2,461
Assumed Overall TDM Reduction in Arena Parking Demand <sup>B</sup>	15%	15%
Arena Autos Utilizing Remote Parking Spaces <sup>B</sup>	250	250
<b>Post-TDM Reduction Parking Demand within 1/2 Mile of Arena</b>	<b>1,889</b>	<b>1,842</b>
<b>Off-Street Parking Availability</b>		
Available Off-Site Spaces (from Table 1) <sup>C</sup>	1,685	1,986
Available On-Site Spaces (Block 1129) <sup>D</sup>	541	541
<b>Total Off-Street Parking Availability</b>	<b>2,226</b>	<b>2,527</b>
<b>Total Parking Surplus<sup>E</sup></b>	<b>337</b>	<b>685</b>

A. Atlantic Yards FEIS (2006), Tables 12-17 and 12-18.

B. Based on expected reduction in arena auto trips in the FEIS 2010 Build with Mitigation Condition, Atlantic Yards FEIS (2006), Page 19-35.

C. Based on surveys conducted by Sam Schwartz Engineering in October 2011.

D. The only on-site parking facility available at arena opening would be located on Block 1129.

E. Total surplus is greater than the 100 spaces that could be displaced by development on Facility #8.

### Potential Effect on Pre-Game Peak Hour Traffic Volumes

In the 2012 Arena Opening Condition, the proposed reduction in on-site parking supply, the consolidation of all arena parking into one location (Block 1129), and current availability at off-site parking facilities would shift the travel routes of certain arena-generated vehicles. This section examines the expected changes to project-generated auto routes.

#### *Trip Distribution and Assignment*

To establish the volume of arena-generated autos entering the network at each entry/exit portal, volumes in the FEIS 2010 Build Condition were adjusted for the pre-game peak hour on both a weekday (7 pm – 8 pm) and Saturday (1 pm – 2 pm). Specifically, the following assumptions were applied to generate the 2012 Arena Opening Condition traffic volumes:

- Auto volumes at each portal were reduced by 20% to account for the TDM reduction in overall arena auto trips.
- To account for the pre-game peak hour vehicles assumed in the FEIS to utilize remote parking facilities, an additional 188 vehicles were reduced from the portals closest to the locations of the expected remote parking facilities.<sup>4</sup>

The distribution of arena-generated vehicles by network entry/exit portal is shown in Table 3 and Table 4.

<sup>4</sup> 250 total vehicles are expected to utilize the remote parking facilities with 75% (188) arriving in the pre-game peak hour, per the Atlantic Yards FEIS (2006), page 12-32. At this time, all remote parking spaces are expected to be located at off-street facilities along Atlantic Avenue, west of Boerum Place.

**Table 3: 2012 Arena Opening Condition: Weekday Pre-Game Peak Hour (7 pm – 8 pm) Arena Auto Trip Distribution**

	<b>Entry Portals</b>	<b>FEIS 2010 Build Condition: Inbound Arena Auto Trips<sup>A</sup></b>	<b>Overall TDM Reduction (20%) in Arena Auto Trips<sup>B</sup></b>	<b>Arena Autos Utilizing Remote Parking Spaces (188)<sup>B</sup></b>	<b>2012 Arena Opening Condition: Inbound Auto Trips</b>
<b>Portal 1</b>	Smith Street @ Dean Street	41	-8	-13	20
<b>Portal 2</b>	Pacific Street @ Hoyt Street	0	0		0
<b>Portal 3</b>	Atlantic Avenue @ Hicks Street	254	-51	-78	125
<b>Portal 4</b>	Adams Street @ Tillary Street	314	-63	-97	154
<b>Portal 5</b>	Flatbush Avenue @ Tillary Street	320	-64		256
<b>Portal 6</b>	Fourth Avenue @ Union Street	224	-44		180
<b>Portal 7</b>	Third Avenue @ Dean Street	14	-3		11
<b>Portal 8</b>	Vanderbilt Avenue @ Park Avenue	163	-33		130
<b>Portal 9</b>	Gates Avenue @ Vanderbilt Avenue	0	0		0
<b>Portal 10</b>	Washington Avenue @ DeKalb Avenue	97	-19		78
<b>Portal 11</b>	Atlantic Avenue @ Grand Avenue	254	-51		203
<b>Portal 12</b>	Washington Avenue @ Bergen Street	61	-12		49
<b>Portal 13</b>	Flatbush Avenue @ Eighth Avenue	109	-22		87
<b>Portal 14</b>	Sixth Avenue @ Union Street	40	-8		32
<b>Portal 15</b>	Fifth Avenue @ Union Street	88	-18		70
	<b>Total</b>	<b>1,979</b>	<b>-396</b>	<b>-188</b>	<b>1,395</b>

A. Based on arena auto trip assignments used for the Atlantic Yards FEIS (2006).

B. Based on reduction in arena generated auto trips assumed in the Atlantic Yards FEIS (2006).

**Table 4: 2012 Arena Opening Condition: Saturday Pre-Game Peak Hour (1 pm – 2 pm) Arena Auto Trip Distribution**

	<b>Entry Portals</b>	<b>FEIS 2010 Build Condition: Inbound Arena Auto Trips<sup>A</sup></b>	<b>Overall TDM Reduction (20%) in Arena Auto Trips<sup>B</sup></b>	<b>Arena Autos Utilizing Remote Parking Spaces (188)<sup>B</sup></b>	<b>2012 Arena Opening Condition: Inbound Auto Trips</b>
<b>Portal 1</b>	Smith Street @ Dean Street	35	-7	-11	17
<b>Portal 2</b>	Pacific Street @ Hoyt Street	0	0		0
<b>Portal 3</b>	Atlantic Avenue @ Hicks Street	263	-53	-84	126
<b>Portal 4</b>	Adams Street @ Tillary Street	293	-59	-93	141
<b>Portal 5</b>	Flatbush Avenue @ Tillary Street	331	-66		265
<b>Portal 6</b>	Fourth Avenue @ Union Street	211	-42		169
<b>Portal 7</b>	Third Avenue @ Dean Street	12	-2		10
<b>Portal 8</b>	Vanderbilt Avenue @ Park Avenue	175	-35		140
<b>Portal 9</b>	Gates Avenue @ Vanderbilt Avenue	0	0		0
<b>Portal 10</b>	Washington Avenue @ DeKalb Avenue	103	-21		82
<b>Portal 11</b>	Atlantic Avenue @ Grand Avenue	253	-51		202
<b>Portal 12</b>	Washington Avenue @ Bergen Street	52	-10		42
<b>Portal 13</b>	Flatbush Avenue @ Eighth Avenue	93	-19		74
<b>Portal 14</b>	Sixth Avenue @ Union Street	39	-8		31
<b>Portal 15</b>	Fifth Avenue @ Union Street	84	-17		67
	<b>Total</b>	<b>1,944</b>	<b>-390</b>	<b>-188</b>	<b>1,366</b>

A. Based on arena auto trip assignments used for the Atlantic Yards FEIS (2006).

B. Based on reduction in arena generated auto trips assumed in the Atlantic Yards FEIS (2006).

A detailed trip assignment was developed using these auto trip volumes following the arrival patterns from the FEIS and the assumption that vehicles would utilize available (off-street) parking along their most direct route, which is consistent with the trip assignment guidance provided in the *CEQR Technical Manual* (January 2012). This trip assignment included routing vehicles through intersections that were analyzed in the FEIS, as well as other intersections in the vicinity of the project site.

Individual, arena-generated turning movement volumes in the 2012 Arena Opening Condition were compared to project-generated volumes in the FEIS 2010 Build with Mitigation Condition to determine the change in volume at each movement and overall intersection between the two conditions. The volume increments at the FEIS intersections and non-FEIS intersections are shown in Appendix A and Appendix B, respectively.

#### *FEIS Intersections*

The shift of some arena vehicles to various off-site parking facilities would result in fewer vehicles reaching the immediate vicinity of the arena block and reduce their travel distances. This would result in a decrease or no change in total vehicle volumes at the majority of intersections studied in the FEIS.

Of the 93 FEIS study intersections (shown in Appendix A), the total intersection volume would:

- decrease or remain unchanged at 75 intersections in the weekday pre-game peak hour and 76 intersections in the Saturday pre-game peak hour, and
- increase at 18 intersections in the weekday pre-game peak hour and 17 intersections in the Saturday pre-game peak hour.

Overall, decreases in total intersection volumes would be spread throughout the roadway network, with the greatest decreases occurring along key arterial roadways, such as Flatbush Avenue, Atlantic Avenue, and Adams Street/Boerum Place.

To further assess the effect of shifting vehicle assignments in the 2012 Arena Opening Condition, changes in individual turning movement volumes were also examined. It was found that in the weekday pre-game peak hour, there would be 54 intersections with an increase in volume for at least one turning movement, and the individual increases would range from 1 to 36 vehicles. In the Saturday pre-game peak hour, there would be 44 intersections with an increase in volume for at least one turning movement, and the individual increases range from 1 to 45 vehicles. Intersections that would have an increase in any individual movement are further examined in the following section.

#### *Non-FEIS Intersections*

Project-generated volumes that would travel through intersections that were not analyzed in the FEIS were also compared between the 2012 Arena Opening Condition and FEIS 2010 Build with Mitigation Condition.<sup>5</sup>

As shown in Appendix B, of the 88 and 90 intersections that arena trips would pass through in the 2012 Arena Opening Condition, the total intersection volume would:

- decrease or remain unchanged at 50 intersections in the weekday pre-game peak hour and 63 intersections in the Saturday pre-game peak hour, and
- increase at 38 intersections in the weekday pre-game peak hour and 27 intersections in the Saturday pre-game peak hour.

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<sup>5</sup> For the FEIS 2010 Build with Mitigation Condition, volumes at intersections not analyzed in the FEIS were based on arena auto trip assignments used for the Atlantic Yards FEIS (2006).

Overall, decreases in total intersection volume would generally be concentrated along corridors like Fifth Avenue, Sixth Avenue, Washington Avenue, and Dekalb Avenue. Increases in total intersection volumes are scattered through the roadway network, with concentrations along the Fourth Avenue and Myrtle Avenue corridors.

Detailed operations analysis data for these intersections was not presented in the FEIS; however the changes to total intersection volume at the non-FEIS intersections are qualitatively examined in the following section.

### **Potential Effect on Pre-Game Peak Hour Traffic Operations**

As described in the previous section, the geographic distribution of some project-generated auto trips would shift in the 2012 Arena Opening Condition, with a reduction or no change in total volume at most of the intersections and increases at other intersections. This section examines the potential effects on pre-game peak hour traffic operations of these changes for both FEIS intersections and non-FEIS intersections.

#### *FEIS Intersections*

For each intersection where the volume in a lane group would increase, the level of service (LOS) and average control delay in the FEIS 2010 Build with Mitigation Condition and FEIS 2010 Build Condition, as well as the FEIS-analyzed lane group volume, were examined to qualitatively assess the potential effect of the increase on intersection operations (see Appendix C). The FEIS 2010 Build Condition was included in the comparison because the FEIS did not present delay and LOS information in the Build with Mitigation Condition for intersections that did not have significant impacts.

An increase was determined unlikely to result in any significant change in delay or LOS if it met one of the following screening criteria:

- Criterion 1: LOS acceptable (LOS A through LOS C) or marginally acceptable (mid-LOS D or better), according to *CEQR Technical Manual* criteria, in the FEIS 2010 Build with Mitigation/Build Condition, and delay and/or v/c ratio low enough to support the 2012 Arena Opening Condition volume increase.<sup>6</sup>
- Criterion 2: LOS unacceptable (mid-LOS D through LOS F), according to *CEQR Technical Manual* criteria, in the FEIS 2010 Build with Mitigation/Build Condition but 2012 Arena Opening Condition lane group increment volume extremely low (less than 10 vehicles).
- Criterion 3: Conflicting traffic/adjacent movements reduction high enough to offset the increase in 2012 Arena Opening Condition volume.
- Criterion 4: Uncontrolled approach. Vehicles do not experience measurable delay.

As shown in Appendix C, most locations where a vehicle volume would increase are not expected to experience a significant change in delay or LOS; however, there are certain movements that were operating with an unacceptable LOS (mid-LOS D through LOS F) in the FEIS 2010 Build with Mitigation Condition or FEIS 2010 Build Condition where the increase in volume could exacerbate conditions.<sup>7</sup>

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<sup>6</sup> Assessment of delay and v/c ratios are based on professional judgment.

<sup>7</sup> Mid-LOS D through LOS F correlate to a control delay greater than 45.0 seconds per vehicle, according to the *Highway Capacity Manual 2010* by the Transportation Research Board.

In the weekday pre-game peak hour, three intersections would experience an increase in volume that could have an effect on intersection operations. The FEIS delay and LOS conditions and projected volumes are shown in Table 5, below.

**Table 5: Weekday Pre-Game Peak Hour (7 pm – 8 pm), LOS and Vehicle Volumes at Intersections that Do Not Meet Screening Criteria**

	Lane Group	FEIS 2010 Build Condition <sup>A</sup>			FEIS 2010 Build with Mitigation <sup>B</sup>				2012 Arena Opening Condition Increment
		v/c ratio	Delay (sec.)	Level of Service	v/c ratio	Delay (sec.)	Level of Service	Vehicle Volume <sup>C</sup>	
Flatbush Ave (N-S) @ Fulton St (E-W)	SB-L	1.02	79.5	E *	0.87	44.7	D	345	14
Flatbush Ave (N-S) @ St. Marks Pl (E-W)	EB-LTR	0.69	42.1	D				276	26
Boerum Pl (N-S) @ Livingston St (E-W)	SB-L	1.18	152.5	F *	0.91	44.3	D	308	13

A. Atlantic Yards FEIS (2006), Table C-4.

B. Atlantic Yards FEIS (2006), Table C-9.

C. Calculated from Table C-11, Atlantic Yards FEIS (2006).

\* Indicates a significant impact in the FEIS 2010 Build Condition.

In the Saturday pre-game peak hour, seven intersections would experience an increase in volume that could have an effect on intersection operations. The FEIS delay and LOS conditions and projected volumes are shown in Table 6, below.

**Table 6: Saturday Pre-Game Peak Hour (1 pm – 2 pm), LOS and Vehicle Volumes at Intersections that Do Not Meet Screening Criteria**

	Lane Group	FEIS 2010 Build Condition <sup>A</sup>			FEIS 2010 Build with Mitigation <sup>B</sup>				2012 Arena Opening Condition Increment
		v/c ratio	Delay (sec.)	Level of Service	v/c ratio	Delay (sec.)	Level of Service	Vehicle Volume <sup>C</sup>	
Flatbush Ave (N-S) @ Fulton St (E-W)	SB-L	0.95	73.4	E *	0.81	44.9	D	288	14
Flatbush Ave (N-S) @ St. Marks Pl (E-W)	EB-LTR	0.84	52.7	D *	0.71	41.2	D	308	35
Atlantic Ave (E-W) @ Bond Street (N-S)	NB-LTR	0.74	46.5	D	0.74	46.5	D	246	17
Atlantic Ave (E-W) @ S. Portland Ave (N-S)	SB-TR				0.45	35.6	D	181	45
Atlantic Ave (E-W) @ Carlton Ave (N-S)	WB-L	0.58	30.0	C	0.53	26.7	C	67	30
Atlantic Ave (E-W) @ Vanderbilt Ave (N-S)	WB-L	1.81	422.6	F *	0.96	80.1	F	210	41
5th Ave (N-S) @ St. Marks St (E-W)	EB-LTR	0.70	33.3	C				276	34

A. Atlantic Yards FEIS (2006), Table C-4.

B. Atlantic Yards FEIS (2006), Table C-9.

C. Calculated from Table C-11, Atlantic Yards FEIS (2006).

\* Indicates a significant impact in the FEIS 2010 Build Condition.

The additional volume at the intersections listed above is not likely to substantially increase congestion. However, these locations are recommended for monitoring during the initial arena events to observe congestion levels, and measures will be recommended to address any issues, if necessary. This monitoring program is described in the following section.

*Non-FEIS Intersections*

Because existing traffic volumes and operations (delay and LOS) are not known for the non-FEIS intersections, the total project-generated volume in the 2012 Arena Opening Condition for each was examined qualitatively using screening criteria.

An intersection was determined unlikely to experience any significant change in operations if it met one of the following evaluation criteria:

- Criterion 1: Volume of project-generated trips assigned to intersection (less than 50) in 2012 Arena Opening Condition unlikely to cause a significant adverse impact, according to *CEQR Technical Manual* criteria.
- Criterion 2: Overall intersection experiences no change or a decrease in project-generated trips in 2012 Arena Opening Condition.
- Criterion 3: Overall intersection increment volume very low (less than 15 vehicles).

As shown in Appendix B, most non-FEIS intersections are not expected to experience a significant increase in delay in the 2012 Arena Opening Condition.

However, there are certain intersections where the increase in total intersection volume could adversely affect operations. In the weekday pre-game peak hour, the following four intersections were not screened out using the criteria described above:

- Sixth Avenue and St. Marks Place
- Livingston Street and Hanover Place
- Nevins Street and Livingston Street
- Hanson Place and Ft. Greene Place

In the Saturday pre-game peak hour, the following intersection was not screened out using the criteria described above:

- Sixth Avenue and St. Marks Place

Therefore, it is recommended that these locations be monitored during the initial arena events to observe congestion levels, and measures will be recommended to address any issues, if necessary. This monitoring program is described in the following section.

### **Post-Arena Opening Traffic Monitoring**

In spring 2013, after the arena has been open for several months, a comprehensive traffic study will be conducted to assess the effect of arena operations on the area roadway network. The scope of this study, currently being developed with the New York City Department of Transportation (NYCDOT), would include data collection and traffic analysis of over 50 intersections, spread throughout the study area, during the pre- and post-event periods. For any locations where delay is found to have deteriorated significantly in the post-opening condition, measures would be recommended to NYCDOT to improve operations. These measures could include items such as adjustments to signal timing and phasing, lane re-striping, or changes to parking regulations.

In addition, the critical intersections identified in the previous section would be monitored for the first several events at the arena. Operations at these intersections will be observed and any congestion or operational issues would be noted and shared with NYCDOT. If requested by NYCDOT, data collection and/or analysis at any of the critical intersections would be conducted and appropriate mitigation measures recommended, if warranted.

## **Online Parking Reservation System**

To further encourage drivers to park at facilities along their routes of travel, the Barclays Center will establish an online parking space reservation system (controlled by an outside vendor), where parking passes for arena events could be pre-purchased by attendees. The on-site parking facility (Block 1129) would be a part of this reservation system and the vendor would make efforts to incorporate all of the 20 other off-site facilities in the area, as well as any designated remote parking facilities, into the system.

Visitors to the Barclays Center website would be able to click on a link to the parking reservation system site where they could select the event that they are attending and be presented with a map/list of participating parking facilities with available spaces and their prices during event times.

It is expected that drivers would select facilities primarily based on convenience and/or cost. This would result in a strong preference for drivers to select facilities that are along their route of travel, enabling them to limit the distance they need to drive and avoid congestion near the arena. In addition, as is typical for parking at large events, facilities farther from the arena are likely to be less expensive than those closer, which would provide another incentive for drivers to park in facilities further from the arena and along their general arrival routes.

In addition, the online parking reservation system could be structured to allow for drivers to enter their origin point when purchasing a pass and be directed to or notified of the facilities that would be most convenient to them before they make their selection. For instance, a driver coming to the arena from Park Slope could be notified that facilities in the south are most convenient to them.

Once a driver does purchase a space at a particular facility, they would be given directions from their stated point of origin to the selected facility. These directions could be customized in order to direct vehicles along particular roadways following the most direct route to their space and to avoid areas near the arena. Arena management and event organizers would work with the reservation vendor to develop these directions so they are coordinated with the overall arena traffic and parking management plans, resulting in a more efficient flow of event traffic.

Furthermore, through the parking vendor, arena management would be able to notify customers of any particular game day traffic conditions or incidents and recommend alternate routes to reach their destinations more efficiently.

Overall, the parking reservation system would allow drivers who utilize it to begin their trip to the arena with a specific destination and planned route, reducing driver confusion and overall distance traveled. It would further aid arena management by informing them of expected fan travel patterns and allowing them to plan accordingly.

## Potential Effect on Pre-Game Peak Hour Pedestrian Operations

The shift in distribution of arena-generated autos to off-street parking facilities would result in changes to pedestrian routes to the arena in the 2012 Arena Opening Condition. To estimate these changes, a detailed trip assignment was developed for pedestrian trips generated by arena autos in the weekday and Saturday pre-game peak hours.

To derive the number of pedestrians traveling to the arena from each off-street parking facility, the number of autos assigned to each facility was multiplied by the expected average vehicle occupancy for a weekday (2.35 persons/vehicle) and Saturday (2.75 persons/vehicle) Nets game.<sup>8</sup> These pedestrians were then routed along logical walking routes, in the most direct path towards the arena, which is consistent with the trip assignment guidance provided in the *CEQR Technical Manual*.

At each pedestrian element (sidewalks, corners, and crosswalks) studied in the FEIS, the 2012 Arena Opening Condition was compared to the total FEIS 2010 Build Condition project-generated volume to determine locations where pedestrian volume would increase (see Appendix D). In general, the increase in pedestrian volume at elements not studied in the FEIS would be concentrated northwest of the arena block along Flatbush Avenue between Livingston Street and the arena. Along this segment, Flatbush Avenue is an arterial with relatively wide sidewalks and should be able to accommodate the increased volume. For each studied pedestrian element where volume is projected to increase, the LOS in the FEIS Build Condition<sup>9</sup> was examined to qualitatively assess the potential effect on pedestrian operations.

### *Sidewalks*

There were a total of 24 sidewalks studied in the FEIS. In the weekday pre-game peak hour (7 pm – 8 pm), five sidewalks would have an increase in volume. In the Saturday pre-game peak hour (1 pm – 2 pm), seven sidewalks would have an increase in volume. Each of these sidewalks was projected to operate at LOS A under average and platoon conditions in the FEIS 2010 Build Condition. The magnitude of each volume increase shows that an acceptable LOS would likely be maintained in the 2012 Arena Opening Condition.

### *Corners*

There were a total of 15 corners studied in the FEIS. In the weekday pre-game peak hour (7 pm – 8 pm), eight corners would have an increase in volume. In the Saturday pre-game peak hour (1 pm – 2 pm), nine corners would have an increase in volume. Each of these corners was projected to operate at LOS A or B in the FEIS 2010 Build Condition. The magnitude of each volume increase shows that an acceptable LOS would likely be maintained in the 2012 Arena Opening Condition.

### *Crosswalks*

There were a total of 29 crosswalks studied in the FEIS. In both the weekday (7 pm – 8 pm) and Saturday (1 pm – 2 pm) pre-game peak hours, three crosswalks would have an increase in volume. Each of these crosswalks was projected to operate at LOS A in the FEIS 2010 Build Condition. The magnitude of each volume increase shows that an acceptable LOS would likely be maintained in the 2012 Arena Opening Condition.

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<sup>8</sup> Atlantic Yards FEIS (2006), Table 12-10.

<sup>9</sup> The FEIS 2010 Build Condition was used for this assessment because the FEIS did not present LOS information in the Build with Mitigation Condition because there were no pedestrian elements with significant impacts.

## **Conclusion**

By assigning arena-generated autos within the current roadway and parking network in the area, SSE assessed the potential effect of reducing the number of on-site parking spaces at the Barclays Center from 1,100 to 541 spaces.<sup>10</sup> Based on the analyses contained in this study, there would still be more than sufficient parking availability in the on-site and off-site facilities to accommodate all of the projected demand generated by the arena. Further, these spaces would be dispersed sufficiently enough through the area that most vehicles should not have to travel any additional distance to reach parking, and most study intersections would experience an overall decrease or no change in volume. At the few locations where particular movement or overall intersection volumes would increase and which did not meet the screening criteria, conditions would be monitored during arena events and improvement measures recommended, as needed. Changes in pedestrian routing caused by the shift in parking locations are not likely to result in any significant effect on pedestrian operations.

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<sup>10</sup> Based on the operation of the Block 1129 site as a primarily self-park facility with a total of 565 spaces, with 24 spaces reserved for police department parking and the remaining 541 spaces available to arena patrons.

















Appendix C: Level of Service and Auto Trip Increment at Intersections where Movements would Increase in the 2012 Arena Opening Condition

	Lane Group	Weekday PM Pre-Game Peak Hour (7 pm - 8 pm)									Saturday PM Pre-Game Peak Hour (1 pm - 2 pm)														
		FEIS 2010 Build Condition <sup>A</sup>			FEIS 2010 Build with Mitigation Condition <sup>B</sup>			FEIS 2010 Build with Mitigation Lane Group Volume <sup>C</sup>	2012 Arena Opening Condition Lane Group Increment	Evaluation Criteria	FEIS 2010 Build Condition <sup>A</sup>			FEIS 2010 Build with Mitigation Condition <sup>B</sup>			FEIS 2010 Build with Mitigation Lane Group Volume <sup>C</sup>	2012 Arena Opening Condition Lane Group Increment	Evaluation Criteria						
		v/c ratio	Delay (sec.)	Level of Service	v/c ratio	Delay (sec.)	Level of Service				v/c ratio	Delay (sec.)	Level of Service	v/c ratio	Delay (sec.)	Level of Service									
Flatbush Avenue (N-S) @ Tillary Street (E-W)	EB	L	0.20	26.7	C	0.20	26.7	C	79	0				0.12	23.3	C	0.12	23.1	C	49	0				
		TR	0.90	52.6	D	0.93	56.2	E	1,023	-1				0.82	47.2	D	0.77	43.6	D	857	-2				
		R	1.14	137.1	F *	1.06	110.7	F	313	-3				0.96	83.4	F *	0.90	70.3	E	280	-5				
	WB	L	0.56	36.8	D	0.55	36.9	D	469	0				0.62	38.1	D	0.65	39.9	D	477	-2				
		TR	0.63	41.6	D	0.63	41.6	D	487	0				0.54	39.5	D	0.51	37.4	D	417	0				
		R	0.61	46.7	D	0.61	46.7	D	174	0				0.75	55.3	E	0.70	49.6	D	209	0				
	NB	L	0.64	45.3	D	0.64	45.3	D	492	-2				1.01	81.4	F	1.01	81.4	F	624	-7				
		T	0.35	22.6	C	0.35	22.6	C	614	-15				0.44	20.4	C	0.44	20.4	C	754	-22				
		R							560	-4										233	-6				
	SB	T	1.08	91.1	F *	1.07	88.7	F ^	1321	7				0.78	42.6	D	0.78	42.4	D	940	1		Criterion 1		
		R	0.21	32.7	C	0.21	32.7	C	69	0				0.19	32	C	0.19	32.0	C	62	0				
	Intersection Total									5,601	-19			Intersection Total									4,902	-43	
Flatbush Avenue (N-S) @ Willoughby Street (E-W)	EB	L	1.04	112.2	F				246	0															
		R	0.38	30.4	C				118	0															
	WB	LTR	0.40	39.8	D				191	0															
		L	0.38	21.5	C				65	0															
	NB	T	0.52	4.6	A				1,299	-20															
		TR	0.96	34.8	C				1,905	3															
Intersection Total									3,824	-17			Intersection Total												
Flatbush Avenue (N-S) @ Myrtle Avenue (E-W)	EB	LTR	0.16	33.5	C	0.16	33.5	C	95	0															
		LTR	0.80	60.3	E	0.80	60.3	E	203	0															
	NB	L	0.11	25.9	C	0.11	25.9	C	16	0															
		TR	1.05	58.4	E *	1.05	58.2	E ^	1,503	-20															
	SB	L	1.09	102.2	F	1.09	102.2	F	289	0															
TR		1.50	253.4	F *	1.43	220.0	F ^	1,852	3													Criterion 2			
Intersection Total									3,958	-17			Intersection Total												
Flatbush Avenue (N-S) @ Dekalb Avenue (E-W)	WB	L	0.81	59.5	E	0.81	59.5	E	223	0															
		TR	0.31	34.8	C	0.31	34.8	C	120	0															
	NB	R	0.82	60.5	E	0.82	60.5	E	225	0															
		T	0.57	13.8	B	0.57	13.8	B	1,157	-20															
SB	TR	1.03	45.9	D *	0.99	34.6	C	2,070	3													Criterion 1			
	Intersection Total									3,795	-17			Intersection Total											
Flatbush Avenue (N-S) @ Fulton Street (E-W)	EB	LTR	0.81	64.5	E	0.81	64.5	E	205	0				0.48	43.4	D	0.50	44.9	D	116	0				
		LT	0.55	50.7	D	0.55	50.7	D	90	0				0.66	54.1	D	0.69	57.6	E	121	0				
	WB	R	0.27	19.6	B	0.25	17.7	B	122	0				0.36	20.3	C	0.36	19.7	B	151	0				
		T	0.66	30.7	C	0.70	34.4	C	1,010	-20				0.84	38.5	D	0.86	40.6	D	1,207	-34				
	SB	L	1.02	79.5	E *	0.87	44.7	D	345	14				0.95	73.4	E *	0.81	44.9	D	288	14				
		T	1.25	136.4	F *	0.78	11.4	B	1,907	-11				1.06	53.4	D *	0.99	33.0	C	1,514	-22				
Intersection Total									3,679	-17			Intersection Total									3,397	-42		
Flatbush Avenue (N-S) @ Dean Street (E-W)	EB	LT	1.06	94.6	F *																				
		R	0.32	32.2	C																				
		LTR				0.79	40.8	D	675	3													Criterion 1		
	NB	TR	0.61	11.7	B	0.62	13.9	B	884	-3															
		LT	1.48	243.9	F *																				
SB	T				0.91	25.6	C	1,303	-53																
	Intersection Total									2,862	-43			Intersection Total											
Flatbush Avenue (N-S) @ 6th Avenue (E-W)	EB	L	0.29	32.7	C	0.29	32.7	C	60	-1				0.41	37.3	D	0.43	38.2	D	64	-1				
		TR	0.14	28.5	C	0.11	28.1	C	47	11				0.16	28.9	C	0.10	28.0	C	54	1		Criteria 1 and 3		
	WB	LTR	0.46	33.4	C	0.43	32.7	C	305	-4				0.58	36.3	D	0.58	36.2	D	374	-2				
		LTR	0.74	14.9	B	0.74	15.1	B	906	-5				0.92	24.1	C	0.92	24.1	C	1,242	-6				
	SB	TR	0.92	23.3	C	0.59	10.8	B	1,393	-8				0.79	16.0	B	0.79	16.0	B	1,199	-6				
Intersection Total									2,711	-7			Intersection Total									2,933	-14		
Flatbush Avenue (N-S) @ St. Marks Place (E-W)	EB	LTR	0.69	42.1	D				276	26				0.84	52.7	D *	0.71	41.2	D	308	35				
		TR	0.55	12.3	B				953	-5				0.89	21.1	C	0.93	27.6	C	1,286	-6				
	SB	T	0.60	11.0	B				1,395	-10				0.55	10.3	B	0.58	12.5	B	1,248	-7				
Intersection Total									2,624	11			Intersection Total									2,842	22		
Flatbush Avenue (N-S) @ Sterling Place (E-W)	WB	LTR	0.36	32.3	C				154	0				0.59	38.3	D	0.66	44.1	D	235	0				
		LT	0.86	20.2	C				1,072	1				1.19	108.3	F *	1.09	65.6	E	1,345	1		Criterion 2		
	SB	TR	0.89	21.0	C				1,313	-10				0.82	17.3	B	0.78	12.7	B	1,209	-7				
Intersection Total									2,539	-9			Intersection Total									2,789	-6		
Atlantic Avenue (E-W) @ Bond Street (N-S)	EB	LT	1.51	260.9	F *	0.89	20.8	C	1,452	-103				1.82	400.0	F *	1.66	325.1	F ^	1,281	-122				
		TR	0.63	12.1	B	0.63	12.1	B	922	-14				0.89	21.0	C	0.88	20.9	C	1,168	-26				
	NB	LTR	0.47	35.4	D	0.47	35.4	D	167	20				0.74	46.5	D	0.74	46.5	D	246	17				
Intersection Total									2,541	-97			Intersection Total									2,695	-131		
Atlantic Avenue (E-W) @ 3rd Avenue (N-S)	EB	TR	0.75	21.6	C	0.71	20.7	C	1,325	-102				0.67	12.7	B	0.67	12.7	B	1,261	-115				
		TR	0.76	23.5	C									0.91	23.8	C									
		T				0.66	20.3	C	895	-14							0.79	16.4	B	1,141	-26				
	WB	R				0.18	17.7	B	91	0							0.29	14.2	B	146	0				
		TR	0.26	27.2	C	0.26	27.2	C	223	11				0.50	38.2	D	0.50	38.2	D	292	10		Criterion 1		
SB	TR	0.79	46.0	D	0.39	29.2	C	354	0				0.90	67.9	E	0.90	67.9	E	266	0					
	Intersection Total									2,888	-105			Intersection Total									3,106	-131	
Atlantic Avenue (E-W) @ 5th Avenue (N-S)	EB	LT	0.94	39.2	D									0.81	18.8	B									
		L				0.44	18.4	B	113	14							0.82	51.9	D	147	14		Criterion 3		
		T				0.46	9.4	A	996	-80							0.44	7.5	A	959	-77				
	WB	TR	0.71	24.1	C	0.69	23.4	C	1,111	10				0.84	19.0	B	0.97	39.4	D	1,461	-90				
		L	0.39	23.1																					

	Lane Group		Weekday PM Pre-Game Peak Hour (7 pm - 8 pm)							2012 Arena Opening Condition Lane Group Increment	Evaluation Criteria
			FEIS 2010 Build Condition <sup>A</sup>			FEIS 2010 Build with Mitigation Condition <sup>B</sup>			FEIS 2010 Build with Mitigation Lane Group Volume <sup>C</sup>		
			v/c ratio	Delay (sec.)	Level of Service	v/c ratio	Delay (sec.)	Level of Service			
Atlantic Avenue (E-W) @ S. Portland Avenue (N-S)	EB	L	0.20	0.8	A	0.26	20.1	C	37	0	
		TR	0.55	8.6	A	0.72	23.3	C	1,196	-80	
	WB	L	1.31	194.6	F *	0.83	43.0	D	209	-13	
		TR	0.50	8.1	A	0.50	8.1	A	1,075	46	Criteria 1 and 3
	NB	LT				0.26	33.8	C	354	-6	
		R				0.48	38.1	D	67	-13	
		LTR	0.38	34.1	C						
	SB	LTR	1.73	382.8	F *						
		De/L				0.89	67.3	E	49	0	
			TR			0.37	34.5	C	167	0	
		Intersection Total							3,154	-66	
Atlantic Avenue (E-W) @ Cumberland Street (N-S)	EB	T	0.65	9.8	A				1,452	-64	
	WB	T	0.58	8.9	A				1,275	33	Criterion 1
	SB	L	0.28	33.0	C				101	0	
		R	0.16	31.2	C				46	0	
		Intersection Total							2,874	-31	
Atlantic Avenue (E-W) @ Carlton Avenue (N-S)	EB	L	0.23	9.7	A	0.21	8.5	A	29	-2	
		TR	0.69	10.4	B	0.67	9.5	A	1,524	-62	
	WB	L	0.70	47.1	D *	0.62	36.9	D	67	-10	
		TR	0.61	9.3	A	0.59	8.4	A	1,334	33	Criteria 1 and 3
	NB	LTR	0.39	34.1	C	0.39	34.9	C	253	-2	
		Intersection Total							3,207	-43	
Atlantic Avenue (E-W) @ Clermont Avenue (N-S)	EB	L	0.31	12.4	B	0.64	29.6	C	79	0	
	WB	T	0.70	10.5	B	0.70	10.5	B	1,575	-18	
	SB	TR	0.64	9.7	A	0.62	9.4	A	1,401	23	Criterion 1
		LR	0.54	39.6	D	0.54	39.6	D	186	0	
		Intersection Total							3,241	5	
Atlantic Avenue (E-W) @ Vanderbilt Avenue (N-S)	EB	L	0.36	25.9	C						
		TR	0.96	39.7	D						
		T				0.94	44.1	D	1,485	-16	
		R				0.41	29.6	C	197	0	
	WB	L	1.61	335.2	F *	0.87	66.2	E	216	-18	
		TR	0.60	12.9	B	0.58	12.6	B	1,273	28	Criteria 1 and 3
	NB	De/L	0.54	36.3	D						
		L				0.40	32.1	C	114	0	
		T	0.42	31.2	C						
	SB	LT				0.36	29.6	C	220	-2	
R		0.14	26.6	C	0.14	26.6	C	60	-2		
		TR	0.51	40.8	D	0.49	40.5	D	383	1	Criterion 1
		Intersection Total							3,948	-9	
Atlantic Avenue (E-W) @ Clinton Avenue (N-S)	EB	LT	0.71	10.8	B				1,545	-18	
	WB	TR	0.66	9.9	A				1,479	10	Criterion 1
	SB	LR	0.62	42.3	D				221	0	
		Intersection Total							3,245	-8	
Atlantic Avenue (E-W) @ Washington/Underhill Avenue (N-S)	EB	L	0.10	9.8	A	0.10	9.5	A	13	0	
		TR	0.83	18.5	B	0.83	18.5	B	1,696	-18	
	WB	L	0.68	36.0	D	0.73	40.6	D	134	0	
		TR	0.53	3.3	A	0.51	3.7	A	1,342	10	Criterion 1
	NB	L	1.07	132.0	F *	1.03	118.9	F	176	0	
		T	0.75	54.6	D	0.72	52.0	D	284	0	
	SB	R							24	0	
		LTR	1.04	106.2	F	1.00	95.0	F	297	0	
		Intersection Total							3,966	-8	
Atlantic Avenue (E-W) @ Grand Avenue (N-S)	EB	TR	0.67	10.1	B				1,576	-18	
	WB	L	0.38	16.8	B				37	0	
	SB	T	0.63	9.5	A				1,416	10	Criterion 1
		LTR	0.38	35.0	C				154	0	
		Intersection Total							3,183	-8	
4th Avenue (N-S) @ Dean Street (E-W)	EB	LTR	1.34	217.8	F *						
		LT				0.88	64.5	E	311	-55	
		R				0.26	35.3	D	74	0	
	NB	TR	0.37	9.6	A	0.38	11.0	B	981	-48	
	SB	L	0.06	3.5	A	0.05	4.5	A	11	0	
		T	0.20	3.5	A	0.20	4.7	A	548	0	
		Intersection Total							1,925	-103	
4th Avenue (N-S) @ St. Marks Street (E-W)	EB	LTR	0.64	46.1	D				197	0	
	NB	TR	0.43	10.3	B				990	11	Criterion 1
	SB	L	0.08	3.8	A				16	0	
		T	0.30	3.9	A				737	-2	
		Intersection Total							1,940	9	
4th Avenue (N-S) @ Union Street (E-W)	EB	LTR	1.05	109.7	F				295	0	
	WB	LTR	1.07	132.7	F				157	0	
	NB	L	0.24	10.0	A				76	0	
		TR	0.32	9.2	A				728	11	Criterion 1
	SB	L	0.04	3.2	A				10	0	
		TR	0.28	3.8	A				709	-2	
		Intersection Total							1,975	9	
5th Avenue (N-S) @ Dean Street (E-W)	EB	LTR	1.53	297.7	F	1.25	177.2	F ^	377	1	Criterion 2
	NB	TR	1.08	120.9	F	1.02	105.1	F ^	236	2	Criterion 2
	SB	LT	0.13	7.0	A						
		L				0.28	11.0	B	141	0	
			T			0.14	8.0	A	126	-42	
		Intersection Total							880	-39	

Saturday PM Pre-Game Peak Hour (1 pm - 2 pm)									
v/c ratio	Delay (sec.)	Level of Service	FEIS 2010 Build with Mitigation Condition <sup>B</sup>			FEIS 2010 Build with Mitigation Lane Group Volume <sup>C</sup>	2012 Arena Opening Condition Lane Group Increment	Evaluation Criteria	
			v/c ratio	Delay (sec.)	Level of Service				
0.66	37.9	D	0.65	43.2	D	56	0		
0.57	8.8	A	0.63	16.8	B	1,092	-77		
1.67	353.0	F *	1.14	118.5	F ^	228	-15		
0.71	10.7	B	0.70	11.3	B	1,429	-53		
						98	-7		
						83	-9		
0.78	56.2	E *	0.80	59.1	E				
1.43	251.0	F *							
			0.88	69.5	E	199	0		
			0.45	35.6	D	181	45		
			Intersection Total			3,366	-116		
0.89	96.7	F *	0.82	77.5	E ^	46	0		
0.60	9.2	A	0.59	9.1	A	1,216	-55		
0.58	30.0	C	0.53	26.7	C	67	30		
0.86	15.1	B	0.84	14.3	B	1,736	-68		
0.46	35.3	D	0.46	35.3	D	301	-1		
			Intersection Total			3,366	-94		
0.60	61.9	E *							
1.02	59.4	E *							
			0.97	54.6	D	1,189	-9		
			0.56	37.5	D	201	0		
1.81	422.6	F *	0.96	80.1	F	210	41		
0.92	27.9	C	0.89	25.7	C	1,566	-33		
0.68	46.9	D *							
			0.50	31.1	C	149	0		
0.59	32.4	C							
			0.47	28.4	C	304	-1		
0.09	22.7	C	0.08	22.6	C	34	-2		
0.56	38.6	D	0.53	38.1	D	353	-16		
			Intersection Total			4,006	-20		
0.63	9.6	A	0.63	9.7	A	1,223	-11		
0.85	14.4	B	0.82	13.2	B	1,742	8	Criterion 1	
0.82	55.1	E	0.82	55.1	E	269	0		
			Intersection Total			3,234	-3		
0.39	21.7	C	0.51	30.3	C	42	0		
0.64	13.4	B	0.67	16.0	B	1,350	-11		
0.38	12.2	B	0.40	14.2	B	89	0		
0.62	3.8	A	0.62	5.3	A	1,618	8	Criterion 1	
1.06	140.2	F *	0.95	106.2	F	118	0		
1.05	101.3	F	0.95	71.8	E	413	0		
						46	0		
1.19	154.6	F	1.07	108.5	F	368	0		
			Intersection Total			4,044	-3		
0.64	9.6	A				1,383	-11		
0.48	20.8	C				48	0		
0.80	12.7	B				1,663	8	Criterion 1	
0.59	40.7	D				219	0		
			Intersection Total			3,313	-3		
1.31	202.6	F *							
			0.89	64.8	E	308	-53		
			0.37	37.9	D	90	0		
0.62	13.0	B	0.67	15.4	B	1,411	-68		
0.34	16.9	B	0.40	22.9	C	32	0		
0.16	8.0	A	0.14	9.0	A	310	-1		
			Intersection Total			2,151	-122		
0.81	60.8	E				226	0		
0.65	13.6	B				1,379	7	Criterion 1	
0.55	31.5	C				46	0		
0.23	8.4	A				508	-2		
			Intersection Total			2,159	5		
1.26	184.2	F				306	0		
1.28	204.5	F				189	0		
0.20	9.6	A				47	0		
0.47	10.7	B				993	7	Criterion 1	
0.28	12.4	B							

	Lane Group		Weekday PM Pre-Game Peak Hour (7 pm - 8 pm)							2012 Arena Opening Condition Lane Group Increment	Evaluation Criteria
			FEIS 2010 Build Condition <sup>A</sup>			FEIS 2010 Build with Mitigation Condition <sup>B</sup>			FEIS 2010 Build with Mitigation Lane Group Volume <sup>C</sup>		
			v/c ratio	Delay (sec.)	Level of Service	v/c ratio	Delay (sec.)	Level of Service			
5th Avenue (N-S) @ Bergen Street (E-W)	WB	LTR	1.02	96.2	F *				89	-2	
		L				0.26	34.2	C			
	NB	TR				0.69	45.7	D	286	-16	
		LT	0.31	10.0	A	0.31	11.3	B	254	0	Criterion 1
	SB	TR	0.11	8.2	A	0.17	9.8	A	136	-14	
Intersection Total								765	-32		
5th Avenue (N-S) @ St. Marks Street (E-W)	EB	LTR	0.44	25.6	C				187	34	Criterion 1
	NB	TR	0.53	15.8	B				325	2	Criterion 1
	SB	LT	0.23	11.4	B				167	-16	
Intersection Total								679	20		
5th Avenue (N-S) @ Union Street (E-W)	EB	LTR	0.53	21.7	C				259	0	
	WB	LTR	0.41	19.4	B				179	0	
	NB	LTR	0.42	19.3	B				191	4	Criterion 1
	SB	LTR	0.53	21.8	C				269	-16	
Intersection Total								898	-12		
S. Portland Avenue (N-S) @ Fulton Street (E-W)	EB	TR									
	WB	LT									
	NB	LR									
	SB	LTR									
S. Portland Avenue (N-S) @ Hanson Place (E-W)	EB	LTR									
	NB	TR									
	SB	LT									
6th Avenue (N-S) @ Pacific Street (E-W)	EB	TR	0.18	11.2	B				0	0	
	WB	L	0.48	14.4	B				93	0	
	NB	TR							239	-12	
	SB	LT	0.40	12.8	B				429	-7	
Intersection Total								761	-19		
6th Avenue (N-S) @ Dean Street (E-W)	EB	L	1.22	159.9	F *	0.95	66.0	E	173	-13	
	TR	0.93	39.5	D	0.74	20.0	B	412	-15		
	NB	TR	0.23	11.9	B	0.20	13.3	B	96	11	Criterion 1
	SB	LT	0.49	13.8	B	0.56	16.8	B	507	-7	
Intersection Total								1,188	-24		
6th Avenue (N-S) @ Bergen Street (E-W)	WB	LTR									
		LT	0.30	12.5	B	0.30	12.5	B	156	-2	
	NB	L				0.29	14.0	B	62	0	
		T				0.16	9.5	A	96	11	Criterion 1
	SB	TR	0.52	14.3	B	0.52	14.3	B	507	-17	
Intersection Total								821	-8		
6th Avenue (N-S) @ Union Street (E-W)	EB	LTR	0.53	16.3	B				255	2	Criterion 1
	WB	LTR	0.29	12.5	B				145	0	
	NB	LTR	0.34	13.2	B				152	2	Criterion 1
	SB	LTR	0.41	14.2	B				185	-2	
Intersection Total								737	2		
Carlton Avenue (N-S) @ Myrtle Avenue (E-W)	EB	LT	0.34	7.0	A				284	0	
	WB	TR	0.32	6.7	A				316	30	Criterion 1
	NB	LTR	0.54	39.0	D				132	-8	
Intersection Total								732	22		
Carlton Avenue (N-S) @ Pacific Street (E-W)	EB	L									
	NB	LT									
	SB	LR									
Carlton Avenue (N-S) @ Dean Street (E-W)	EB	L				0.45	19.0	B	181	12	Criterion 1
		T				0.65	24.2	C	261	-7	
	LT	1.22	136.8	F *							
	NB	TR	0.71	16.4	B	0.65	14.4	B	418	36	Criterion 1
Intersection Total								860	41		
Carlton Avenue (N-S) @ Bergen Street (E-W)	WB	TR	0.42	18.1	B				191	-2	
	NB	LT	0.65	14.3	B				383	36	Criterion 1
Intersection Total								574	34		
Vanderbilt Avenue (N-S) @ Park Avenue (E-W)	EB	LTR	0.34	12.7	B				514	-8	
	WB	DeL	0.77	32.1	C				216	8	Criterion 1
		TR	0.55	16.7	B				460	0	
	NB	LTR	0.34	34.9	C				121	-7	
SB	LTR	0.23	32.9	C				87	0		
Intersection Total								1,398	-7		
Vanderbilt Avenue (N-S) @ Myrtle Avenue (E-W)	EB	LTR	0.60	10.6	B	0.64	13.7	B	494	0	
	WB	LTR	0.39	7.6	A	0.42	9.7	A	328	0	
	NB	LTR	1.17	158.7	F *	0.70	44.9	D	166	-7	
	SB	LTR	1.36	218.4	F *	0.99	78.5	E ^	328	8	Criterion 2
Intersection Total								1,316	1		
Vanderbilt Avenue (N-S) @ Dekalb Avenue (E-W)	WB	LTR	0.57	11.1	B	0.62	13.6	B	756	3	Criterion 1
	NB	LT	0.43	19.4	B	0.29	14.2	B	141	-7	
	SB	TR	1.00	58.9	E *	0.77	25.5	C	405	-21	
Intersection Total								1,302	-25		
Vanderbilt Avenue (N-S) @ Gates Street (E-W)	EB	LTR	0.11	28.1	C	0.23	30.0	C	106	0	
	WB	LR	0.39	34.5	C	0.38	34.3	C	94	2	Criterion 1
	NB	TR	0.35	14.2	B	0.29	13.4	B	214	-3	
	SB	LT	0.39	14.8	B	0.38	14.6	B	287	-1	
Intersection Total								701	-2		

Saturday PM Pre-Game Peak Hour (1 pm - 2 pm)											
	Lane Group		Saturday PM Pre-Game Peak Hour (1 pm - 2 pm)							2012 Arena Opening Condition Lane Group Increment	Evaluation Criteria
			FEIS 2010 Build Condition <sup>A</sup>			FEIS 2010 Build with Mitigation Condition <sup>B</sup>			FEIS 2010 Build with Mitigation Lane Group Volume <sup>C</sup>		
			v/c ratio	Delay (sec.)	Level of Service	v/c ratio	Delay (sec.)	Level of Service			
5th Avenue (N-S) @ Bergen Street (E-W)	WB	LTR	1.35	217.8	F *				89	-2	
		L				0.20	33.4	C			
	NB	TR				1.33	206.1	F	286	-16	
		LT	0.35	10.7	B	0.35	12.1	B	254	0	Criterion 1
	SB	TR	0.17	8.7	A	0.27	10.9	B	136	-14	
Intersection Total								940	-30		
5th Avenue (N-S) @ St. Marks Street (E-W)	EB	LTR	0.70	33.3	C				276	34	
	NB	TR	0.55	16.2	B				305	2	Criterion 1
	SB	LT	0.30	12.3	B				175	-11	
Intersection Total								756	25		
5th Avenue (N-S) @ Union Street (E-W)	EB	LTR	0.63	24.4	C	0.63	24.4	C	292	0	
	WB	LTR	0.42	19.4	B	0.42	19.4	B	184	0	
	NB	LTR	0.94	49.5	D *	0.90	42.4	D	432	4	Criterion 1
	SB	LTR	0.64	24.8	C	0.64	24.8	C	311	-11	
Intersection Total								1,219	-7		
S. Portland Avenue (N-S) @ Fulton Street (E-W)	EB	TR	0.43	14.0	B				310	0	
	WB	LT	0.41	13.6	B				296	0	
	NB	LR	0.86	53.7	D				220	0	
	SB	LTR	0.28	23.2	C				102	45	Criterion 1
Intersection Total								928	45		
S. Portland Avenue (N-S) @ Hanson Place (E-W)	EB	LTR	0.54	10.9	B				587	-2	
	NB	TR	0.53	21.0	C				184	0	
	SB	LT	0.38	18.1	B				128	45	Criterion 1
Intersection Total								899	43		
6th Avenue (N-S) @ Pacific Street (E-W)	EB	TR	0.21	11.6	B				0	0	
	WB	L	0.40	13.7	B				103	0	
	NB	TR							197	-17	
	SB	LT	0.44	13.2	B				432	38	Criterion 1
Intersection Total								732	21		
6th Avenue (N-S) @ Dean Street (E-W)	EB	L	1.13	138.2	F *	0.69	28.9	C	112	-4	
	TR	1.18	113.7	F *	0.94	38.4	D	503	-17		
	NB	TR	0.35	13.3	B	0.40	16.9	B	146	1	Criterion 1
	SB	LT	0.51	14.1	B	0.61	18.3	B	516	-7	
	Intersection Total								1,277	-27	
6th Avenue (N-S) @ Bergen Street (E-W)	EB	LTR	0.42	14.2	B	0.48	17.3	B			
	WB	LT							204	-5	
		L				0.35	11.6	B			
	NB	T				0.93	58.0	E	181	0	
		TR				0.24	8.1	A	146	1	Criterion 1
SB	TR	0.62	15.8	B	0.55	12.8	B	571	-11		
Intersection Total								1,102	-15		
6th Avenue (N-S) @ Union Street (E-W)	EB	LTR	0.70	21.0	C				333	2	Criterion 1
	WB	LTR	0.49	15.5	B				218	0	
	NB	LTR	0.62	18.6	B				266	2	Criterion 1
	SB	LTR	0.49	15.6	B				205	-1	
Intersection Total								1,022	3		
Carlton Avenue (N-S) @ Myrtle Avenue (E-W)	EB	LT	0.67	24.5	C				413	0	
	WB	TR	0.49	19.1	B				366	30	Criterion 1
	NB	LTR	0.34	28.7	C				142	-3	
Intersection Total								921	27		
Carlton Avenue (N-S) @ Pacific Street (E-W)	EB	L	0.05	13.5	B				19	0	
	NB	LT	0.50	10.9	B				326	0	
	SB	LR	0.12	7.2	A				58	39	Criterion 1
Intersection Total								403	39		
Carlton Avenue (N-S) @ Dean Street (E-W)	EB	L				2.08	527.2	F	225	6	Criterion 2
		T				0.65	20.7	C	284	-5	
	LT	2.62	758.7	F *							
	NB	TR	0.77	19.1	B	0.80	24.4	C	411	-1	
Intersection Total								920	0		
Vanderbilt Avenue (N-S) @ Park Avenue (E-W)	EB	LTR	0.24	11.6	B				290	-3	
	WB	DeL	0.59	19.9	B				195	8	Criterion 1
		TR	0.55	16.7	B				429	0	
	NB	LTR	0.35	35.1	D				128	-3	
	SB	LTR	0.09	30.6	C				33	0	
Intersection Total								1,075	2		
Vanderbilt Avenue (N-S) @ Myrtle Avenue (E-W)	EB	LTR	0.71	25.1	C				428	0	
	WB	LTR	0.67	24.7	C				412	0	
	NB	LTR									



Appendix D1: Sidewalk Conditions

Weekday Pre-Game Peak Hour (7 PM - 8 PM)

Facility No.	Location	FEIS 2010 No Build Condition <sup>A</sup> Peak 15-Min Volume	FEIS 2010 Build Condition <sup>B</sup>						2012 Arena Opening Condition <sup>D</sup>		
			Effective Width (feet)	Peak 15-Min Volume	Average Conditions		Platoon Conditions		Project-Generated Peak 15-Min Volume <sup>C</sup>	Walk Trips from Off-Street Parking Facilities Peak 15-Min Volume	Increase from FEIS 2010 Build Condition
					PFM	LOS	PFM	LOS			
S1	Pacific St btwn 4th & 5th Avs -north	21	8.5	54	0.42	A	4.42	A	33	0	
S2	4th Av btwn Pacific St & Atlantic Av - east	107	5.0	117	1.56	A	5.56	B	10	0	
S3	Atlantic Av btwn 4th & Flatbush Avs - south	52	13.5	472	2.33	A	6.33	B	420	0	
S4	Flatbush Av btwn Atlantic Av & Pacific St - west	43	13.5	89	0.44	A	4.44	A	46	0	
S5	Flatbush Av btwn Atlantic Av & Pacific St - east	42	13.5	900	4.44	A	8.44	C	858	5	
S6	Atlantic Av btwn Ft Greene Pl & S Portland Av - south	8	13.5	170	0.84	A	4.84	A	162	161	
S7	6th Av btwn Atlantic Av & Pacific St - west	23	8.5	171	1.34	A	5.34	B	148	56	
S8	6th Av btwn Atlantic Av & Pacific St - east	25	8.5	58	0.45	A	4.45	A	33	21	
S9	Atlantic Av btwn S Portland & Carlton Avs - south	9	3.5	79	1.50	A	5.50	B	70	66	
S10	Carlton Av btwn Atlantic Av & Pacific St - west	12	7.0	12	0.11	A	4.11	A	0	0	
S11	Carlton Av btwn Atlantic Av & Pacific St - east	10	7.0	10	0.10	A	4.10	A	0	66	66
S12	Atlantic Av btwn Carlton & Vanderbilt Avs - south	6	3.0	26	0.58	A	4.58	A	20	0	
S13	Vanderbilt Av btwn Atlantic Av & Pacific St - west	5	15.0	5	0.02	A	4.02	A	0	0	
S14	Dean St btwn Carlton & Vanderbilt Avs - north	24	11.5	62	0.36	A	4.36	A	38	66	28
S15	Pacific St btwn S Portland & Carlton Avs -north	10	6.5	10	0.10	A	4.10	A	0	0	
S16	Pacific St btwn S Portland & Carlton Avs -south	6	11.5	39	0.23	A	4.23	A	33	117	84
S17	Dean St btwn 6th & Carlton Avs - north	13	10.5	248	1.57	A	5.57	B	235	66	
S18	Dean St btwn Flatbush & 6th Av - north	33	11.5	153	0.89	A	4.89	A	120	152	32
S19	6th Av btwn Pacific St & Dean St - west	22	8.5	332	2.60	A	6.60	B	310	35	
S20	6th Av btwn Pacific St & Dean St - east	23	8.5	23	0.18	A	4.18	A	0	37	37
S21	6th Av btwn Dean St & Bergen St - west	22	4.5	228	3.38	A	7.38	C	206	5	
S22	6th Av btwn Dean St & Bergen St - east	14	6.5	177	1.82	A	5.82	B	163	9	
S23	6th Av btwn Bergen St & Flatbush Av - west	16	12.0	57	0.32	A	4.32	A	41	4	
S24	6th Av btwn Bergen St & Flatbush Av - east	18	6.5	344	3.53	A	7.53	C	326	8	

Saturday Pre-Game Peak Hour (1 PM - 2 PM)

Facility No.	Location	FEIS 2010 No Build Condition <sup>A</sup> Peak 15-Min Volume	FEIS 2010 Build Condition <sup>B</sup>						2012 Arena Opening Condition <sup>D</sup>		
			Effective Width (feet)	Peak 15-Min Volume	Average Conditions		Platoon Conditions		Project-Generated Peak 15-Min Volume <sup>C</sup>	Walk Trips from Off-Street Parking Facilities Peak 15-Min Volume	Increase from FEIS 2010 Build Condition
					PFM	LOS	PFM	LOS			
S1	Pacific St btwn 4th & 5th Avs -north	28	8.5	101	0.79	A	4.81	A	73	0	
S2	4th Av btwn Pacific St & Atlantic Av - east	130	5.0	221	2.95	A	8.71	C	91	0	
S3	Atlantic Av btwn 4th & Flatbush Avs - south	60	13.5	560	2.77	A	6.79	B	500	0	
S4	Flatbush Av btwn Atlantic Av & Pacific St - west	114	13.5	156	0.77	A	4.77	A	42	0	
S5	Flatbush Av btwn Atlantic Av & Pacific St - east	52	13.5	1,049	5.18	B	9.21	C	997	12	
S6	Atlantic Av btwn Ft Greene Pl & S Portland Av - south	8	13.5	150	0.80	A	4.80	A	142	215	73
S7	6th Av btwn Atlantic Av & Pacific St - west	15	8.5	172	1.35	A	5.44	B	157	79	
S8	6th Av btwn Atlantic Av & Pacific St - east	15	8.5	15	0.12	A	4.12	A	0	31	31
S9	Atlantic Av btwn S Portland & Carlton Avs - south	7	3.5	101	1.92	A	5.96	B	94	85	
S10	Carlton Av btwn Atlantic Av & Pacific St - west	4	7.0	4	0.04	A	4.04	A	0	0	
S11	Carlton Av btwn Atlantic Av & Pacific St - east	6	7.0	6	0.06	A	4.06	A	0	85	85
S12	Atlantic Av btwn Carlton & Vanderbilt Avs - south	7	3.0	45	1.00	A	5.04	B	38	0	
S13	Vanderbilt Av btwn Atlantic Av & Pacific St - west	6	15.0	6	0.03	A	4.03	A	0	0	
S14	Dean St btwn Carlton & Vanderbilt Avs - north	4	11.5	53	0.31	A	4.31	A	49	84	35
S15	Pacific St btwn S Portland & Carlton Avs -north	12	6.5	12	0.12	A	4.12	A	0	0	
S16	Pacific St btwn S Portland & Carlton Avs -south	9	11.5	46	0.27	A	4.27	A	37	168	131
S17	Dean St btwn 6th & Carlton Avs - north	27	10.5	304	1.93	A	5.94	B	277	84	
S18	Dean St btwn Flatbush & 6th Av - north	12	11.5	104	0.60	A	4.64	A	92	219	127
S19	6th Av btwn Pacific St & Dean St - west	15	8.5	352	2.76	A	6.84	B	337	47	
S20	6th Av btwn Pacific St & Dean St - east	13	8.5	13	0.10	A	4.10	A	0	53	53
S21	6th Av btwn Dean St & Bergen St - west	24	4.5	266	3.94	A	8.01	C	242	12	
S22	6th Av btwn Dean St & Bergen St - east	29	6.5	216	2.22	A	6.22	B	187	23	
S23	6th Av btwn Bergen St & Flatbush Av - west	11	12.0	64	0.36	A	4.38	A	53	11	
S24	6th Av btwn Bergen St & Flatbush Av - east	20	6.5	394	4.04	A	8.04	C	374	22	

PFM = Persons per foot of effective width per minute

LOS = Level of Service

A. Atlantic Yards FEIS (2006), Table 13-19.

B. Atlantic Yards FEIS (2006), Table 13-30.

C. Calculated by subtracting peak 15-minute volume in FEIS 2010 No Build Condition from FEIS 2010 Build Condition.

D. Based on assignment of arena-generated vehicle trips to off-street parking facilities in the 2012 Arena Opening Condition.

Appendix D2: Corner Conditions

Weekday Pre-Game Peak Hour (7 PM - 8 PM)

Facility No.	Location	Corner	FEIS 2010 No Build Condition <sup>A</sup> Peak 15-Min Volume	FEIS 2010 Build Condition <sup>B</sup>			2012 Arena Opening Condition <sup>D</sup>		
				Peak 15-Min Volume	Average Condition		Project-Generated Peak 15-Min Volume <sup>C</sup>	Walk Trips from Off-Street Parking Facilities Peak 15-Min Volume	Increase from FEIS 2010 Build Condition
					SF/Ped	LOS			
C1	4th Av @ Pacific St	northeast	9	9	500.1	A	0	0	
C2	Atlantic Av @ 4th Av	southeast	32	237	118.9	A	205	0	
C3	Flatbush Av @ Atlantic Av	southwest	44	55	155.3	A	11	66	55
C4	Flatbush Av @ Atlantic Av	southeast	1	89	56.9	B	88	352	264
C5	Atlantic Av @ 6th Av	southwest	0	23	137.7	A	23	161	138
C6	Atlantic Av @ 6th Av	southeast	0	0	136.0	A	0	96	96
C7	Atlantic Av @ Carlton Av	southwest	0	81	131.1	A	81	66	
C8	Atlantic Av @ Carlton Av	southeast	3	3	484.1	A	0	66	66
C9	Atlantic Av @ Vanderbilt Av	southwest	2	2	642.3	A	0	0	
C10	Dean St @ Vanderbilt Av	northwest	3	3	1,233.0	A	0	0	
C11	Dean St @ Carlton Av	northeast	3	3	119.4	A	0	66	66
C12	Dean St @ Carlton Av	northwest	3	3	96.8	A	0	66	66
C13	Dean St @ 6th Av	northeast	20	20	78.1	A	0	108	108
C14	Dean St @ 6th Av	northwest	27	189	56.3	B	162	152	
C15	Flatbush Av @ Dean St	northeast	4	139	342.8	A	135	4	

Saturday Pre-Game Peak Hour (1 PM - 2 PM)

Facility No.	Location	Corner	FEIS 2010 No Build Condition <sup>A</sup> Peak 15-Min Volume	FEIS 2010 Build Condition <sup>B</sup>			2012 Arena Opening Condition <sup>D</sup>		
				Peak 15-Min Volume	Average Condition		Project-Generated Peak 15-Min Volume <sup>C</sup>	Walk Trips from Off-Street Parking Facilities Peak 15-Min Volume	Increase from FEIS 2010 Build Condition
					SF/Ped	LOS			
C1	4th Av @ Pacific St	northeast	18	162	147.4	A	144	0	
C2	Atlantic Av @ 4th Av	southeast	32	231	96.7	A	199	0	
C3	Flatbush Av @ Atlantic Av	southwest	3	7	130.6	A	4	75	71
C4	Flatbush Av @ Atlantic Av	southeast	55	230	44.3	B	175	419	244
C5	Atlantic Av @ 6th Av	southwest	3	107	77.6	A	104	215	111
C6	Atlantic Av @ 6th Av	southeast	2	2	234.2	A	0	126	126
C7	Atlantic Av @ Carlton Av	southwest	1	94	98.9	A	93	85	
C8	Atlantic Av @ Carlton Av	southeast	1	1	341.5	A	0	85	85
C9	Atlantic Av @ Vanderbilt Av	southwest	3	3	418.9	A	0	0	
C10	Dean St @ Vanderbilt Av	northwest	1	1	965.6	A	0	0	
C11	Dean St @ Carlton Av	northeast	3	3	121.0	A	0	84	84
C12	Dean St @ Carlton Av	northwest	0	0	81.7	A	0	84	84
C13	Dean St @ 6th Av	northeast	7	7	74.8	A	0	149	149
C14	Dean St @ 6th Av	northwest	1	150	55.9	B	149	219	70
C15	Flatbush Av @ Dean St	northeast	3	93	270.0	A	90	11	

SF/Ped = Average square feet per pedestrian

LOS = Level of Service

A. Atlantic Yards FEIS (2006), Table 13-20.

B. Atlantic Yards FEIS (2006), Table 13-31.

C. Calculated by subtracting peak 15-minute volume in FEIS 2010 No Build Condition from FEIS 2010 Build Condition.

D. Based on assignment of arena-generated vehicle trips to off-street parking facilities in the 2012 Arena Opening Condition.

Appendix D3: Crosswalk Conditions

Weekday Pre-Game Peak Hour (7 PM - 8 PM)

Facility No.	Location	FEIS 2010 No Build Condition <sup>A</sup> Peak 15-Min Volume	FEIS 2010 Build Condition <sup>B</sup>					2012 Arena Opening Condition <sup>D</sup>		
			Street Width (feet)	Crosswalk Width (feet)	Peak 15-Min Volume	Average Condition		Project-Generated Peak 15-Min Volume <sup>C</sup>	Walk Trips from Off-Street Parking Facilities Peak 15-Min Volume	Increase from FEIS 2010 Build Condition
						SF/Ped	LOS			
X1	4th Av @ Pacific St - east	67	30.0	8.0	75	219.6	A	8	0	
X2	4th Av @ Pacific St - north	13	85.0	14.0	15	461.4	A	2	0	
X3	Atlantic Av @ 4th Av - south	47	83.0	16.0	274	53.9	A	227	0	
X4	Atlantic Av @ 4th Av - east	85	73.0	14.0	103	68.9	A	18	0	
X5	Flatbush @ Atlantic Av - west	14	127.0	18.0	16	1,822.4	A	2	66	64
X6	Flatbush @ Atlantic Av - south	55	138.0	20.0	516	21.0	D	461	66	
X7	Flatbush @ Atlantic Av - east	42	123.0	21.0	803	32.8	C	761	286	
X8	Atlantic Av @ Ft Greene Pl - west	32	90.0	12.5	132	69.0	A	100	15	
X9	Atlantic Av @ Ft Greene Pl - east	15	90.0	17.5	242	47.9	B	227	135	
X10	Atlantic Av @ 6th Av - west	39	111.0	13.5	227	32.6	C	188	9	
X11	Atlantic Av @ 6th Av - south	6	40.0	18.0	174	132.5	A	168	96	
X12	Atlantic Av @ 6th Av - east	26	112.0	16.0	30	298.9	A	4	9	5
X13	Atlantic Av @ Carlton Av - west	2	115.0	14.0	2	4,270.6	A	0	0	
X14	Atlantic Av @ Carlton Av - south	8	38.0	18.0	28	938.0	A	20	66	46
X15	Atlantic Av @ Carlton Av - east	8	115.0	15.0	8	1,063.9	A	0	0	
X16	Atlantic Av @ Vanderbilt Av - west	5	115.0	12.0	5	966.1	A	0	0	
X17	Atlantic Av @ Vanderbilt Av - south	9	60.0	12.0	29	455.8	A	20	0	
X18	Dean St @ Vanderbilt Av - north	5	68.0	16.0	11	670.9	A	6	0	
X19	Dean St @ Vanderbilt Av - west	5	38.0	13.0	37	532.1	A	32	0	
X20	Dean St @ Carlton Av - east	7	34.0	9.0	7	1,464.1	A	0	0	
X21	Dean St @ Carlton Av - north	4	38.0	16.0	430	20.0	D	426	66	
X22	Dean St @ Carlton Av - west	7	34.0	13.0	7	2,221.6	A	0	0	
X23	Dean St @ 6th Av - east	44	34.0	12.0	72	144.7	A	28	5	
X24	Dean St @ 6th Av - north	38	40.0	16.0	492	24.8	C	454	108	
X25	Dean St @ 6th Av - west	54	34.0	12.0	180	55.3	B	126	9	
X26	Flatbush Av @ Dean St - east	20	65.0	12.0	43	415.9	A	23	0	
X27	Flatbush Av @ Dean St - north	7	95.0	14.0	30	340.5	A	23	0	
X28	Flatbush Av @ 5th Av - south	33	60.0	12.0	66	135.9	A	33	1	
X29	Flatbush Av @ 5th Av - north	24	60.0	14.0	55	194.5	A	31	0	

Saturday Pre-Game Peak Hour (1 PM - 2 PM)

Facility No.	Location	FEIS 2010 No Build Condition <sup>A</sup> Peak 15-Min Volume	FEIS 2010 Build Condition <sup>B</sup>					2012 Arena Opening Condition <sup>D</sup>		
			Street Width (feet)	Crosswalk Width (feet)	Peak 15-Min Volume	Average Condition		Project-Generated Peak 15-Min Volume <sup>C</sup>	Walk Trips from Off-Street Parking Facilities Peak 15-Min Volume	Increase from FEIS 2010 Build Condition
						SF/Ped	LOS			
X1	4th Av @ Pacific St - east	109	30.0	8.0	137	114.0	A	28	0	
X2	4th Av @ Pacific St - north	28	85.0	14.0	35	197.0	A	7	0	
X3	Atlantic Av @ 4th Av - south	73	83.0	16.0	362	20.2	D	289	0	
X4	Atlantic Av @ 4th Av - east	124	73.0	14.0	158	82.6	A	34	0	
X5	Flatbush @ Atlantic Av - west	52	127.0	18.0	63	367.6	A	11	75	64
X6	Flatbush @ Atlantic Av - south	74	138.0	20.0	638	24.6	C	564	75	
X7	Flatbush @ Atlantic Av - east	93	123.0	21.0	928	21.5	D	835	344	
X8	Atlantic Av @ Ft Greene Pl - west	74	90.0	12.5	161	104.0	A	87	7	
X9	Atlantic Av @ Ft Greene Pl - east	101	90.0	17.5	353	62.1	A	252	68	
X10	Atlantic Av @ 6th Av - west	37	111.0	13.5	261	26.6	C	224	10	
X11	Atlantic Av @ 6th Av - south	11	40.0	18.0	223	101.6	A	212	126	
X12	Atlantic Av @ 6th Av - east	18	112.0	16.0	23	407.6	A	5	10	5
X13	Atlantic Av @ Carlton Av - west	7	115.0	14.0	7	1,216.8	A	0	0	
X14	Atlantic Av @ Carlton Av - south	7	38.0	18.0	45	577.7	A	38	85	47
X15	Atlantic Av @ Carlton Av - east	9	115.0	15.0	9	940.5	A	0	0	
X16	Atlantic Av @ Vanderbilt Av - west	8	115.0	12.0	8	786.4	A	0	0	
X17	Atlantic Av @ Vanderbilt Av - south	6	60.0	12.0	44	260.2	A	38	0	
X18	Dean St @ Vanderbilt Av - north	4	68.0	16.0	17	432.3	A	13	0	
X19	Dean St @ Vanderbilt Av - west	11	38.0	13.0	47	416.3	A	36	0	
X20	Dean St @ Carlton Av - east	6	34.0	9.0	6	1,723.4	A	0	0	
X21	Dean St @ Carlton Av - north	7	38.0	16.0	503	16.5	D	496	84	
X22	Dean St @ Carlton Av - west	18	34.0	13.0	18	858.7	A	0	0	
X23	Dean St @ 6th Av - east	22	34.0	12.0	54	189.7	A	32	12	
X24	Dean St @ 6th Av - north	16	40.0	16.0	544	22.0	D	528	149	
X25	Dean St @ 6th Av - west	15	34.0	12.0	175	57.1	B	160	23	
X26	Flatbush Av @ Dean St - east	70	65.0	12.0	113	150.1	A	43	0	
X27	Flatbush Av @ Dean St - north	23	95.0	14.0	61	164.3	A	38	0	
X28	Flatbush Av @ 5th Av - south	62	60.0	12.0	102	84.7	A	40	1	
X29	Flatbush Av @ 5th Av - north	73	60.0	14.0	100	102.8	A	27	0	

SF/Ped = Average square feet per pedestrian

LOS = Level of Service

A. Atlantic Yards FEIS (2006), Table 13-21.

B. Atlantic Yards FEIS (2006), Table 13-32.

C. Calculated by subtracting peak 15-minute volume in FEIS 2010 No Build Condition from FEIS 2010 Build Condition.

D. Based on assignment of arena-generated vehicle trips to off-street parking facilities in the 2012 Arena Opening Condition.