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From: Dan Brzac – HDR	Project: Atlantic Yards
CC: Dave Leibnitz, Jeff Martirano, Luigi Casinelli – HDR	
Date: November 18, 2011	Job No: 147-164429

RE: Atlantic Yards Environmental Monitoring – Response to Comments on HDR Memorandum Dated September 27, 2011 on Effective Sidewalk Widths at Arena Block

At the request of the New York City Department of Transportation (NYCDOT), HDR on behalf of ESD is providing this technical response to address public comments regarding HDR’s Arena Block Sidewalk Analysis memorandum dated September 27, 2011. The public comments were summarized in a document dated October 5, 2011, by the Prospect Heights Neighborhood Development Council (PHNDC), entitled “Testimony for Barclays Center Bollard Plans”.

HDR offers the following responses to each of PHNDC’s summarized written comments regarding HDR’s memorandum dated September 27, 2011:

1. COMMENT:

HDR’s calculation of total obstruction width plus shy distances at sidewalk location S6a (measured at the location of a proposed light pole in the sidewalk) is inconsistent with HDR’s stated methodology.

RESPONSE:

HDR correctly adhered to the stated methodology of utilizing 1.5 feet for shy distance from a wall or fence, and 1.5 feet from a light pole. Based upon the submitted plans for the revocable consent submission, HDR was unable to determine the exact dimension for the distance between the proposed light pole and curb. As such, for analysis purposes, HDR assumed a distance of 1.5 feet. Thus, the total obstruction width plus shy distance at sidewalk location S6a was calculated as 4.5 feet, resulting in a calculated effective sidewalk width of 5.2 feet, as was indicated in Table 1 of the HDR memorandum dated September 27, 2011.

On October 12, 2011, HDR received a detailed sketch from the designer of the dimensions in plan view of the proposed light pole at sidewalk S6a (a copy of the sketch is attached to this memorandum). The sketch reveals a clear dimension from the curb to the light pole base of 20 inches, and a clear dimension from the proposed light pole location to the proposed security wall at the back of the sidewalk of 6 feet 8 inches. These dimensions can be considered conservative, since a clear dimension from the curb to the light pole (not to be confused with the light pole base) of 18 inches is acceptable to NYCDOT. Based on this information, utilizing the conservative clear dimension from the proposed light pole to the proposed security wall of 6 feet 8 inches, and applying 1.5 feet of shy distance from the security wall and from the light pole yields an effective sidewalk width of 3 feet 8 inches. Utilizing this updated value of effective sidewalk width in conjunction with the peak 15-minute pedestrian flows as provided in the Final Environmental Impact Statement (FEIS) results in a Level of Service (LOS) A for all Peak Hours analyzed (Weekday AM, Weekday PM, Weekday Pre-Game and Saturday Pre-Game). Refer to the following tables for the calculation of effective sidewalk width and pedestrian LOS at this location. As such, the revised analysis indicates no change in LOS from HDR’s memorandum dated September 27, 2011.

Table 1 – HDR Effective Sidewalk Width Calculation

No.	Location	Clear Distance (ft)	Total Shy Distance (ft)	Effective Sidewalk Width (W_E) (ft)
S6a	Atlantic Avenue between Ft Greene Place and 6th Avenue	6.7	=1.5+1.5=3.0	=6.7-3.0=3.7

Table 2 – HDR-calculated Sidewalk 2010 Build Condition LOS Using FEIS Phase 1 Pedestrian Volumes

Facility No.	Location	Effective Width (feet)	Peak 15-Min Volumes				Average Conditions							
			AM	PM	EVE	SAT	AM		PM		EVE		SAT	
							PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS
S6a	Atlantic Avenue between Ft. Greene Place and 6th Avenue (at light pole)	3.7	158	228	170	150	2.85	A	4.11	A	3.06	A	2.70	A

2. COMMENT:

HDR neglected to analyze the sidewalk width adjacent to the combination traffic signal and street light pole located at the southwest corner of Atlantic Avenue and 6th Avenue, which should have been considered in the determination of effective sidewalk width for sidewalk segment S6a.

RESPONSE:

The combination traffic signal and street light pole described above is located at the sidewalk corner of Atlantic Avenue and 6th Avenue. Per Highway Capacity Manual 2000 methodology, an analysis of sidewalk corners is different from an analysis of mid-block sidewalk segments. Sidewalk corner analysis involves consideration of adjacent crosswalks including pedestrian crosswalk flows and pedestrian crossing time, pedestrian flow through the sidewalk corner, and sidewalk corner geometry. The original email correspondence from the PHNDC to NYCDOT dated August 18, 2011 and August 20, 2011 expresses concern for narrow sidewalks at the Arena Block that reflect a mid-block sidewalk analysis; however, no mention of any concern regarding sidewalk corners at the Arena Block is made. As such, analysis of the southwest corner of Atlantic Avenue and 6th Avenue was not included as part of HDR's original effective sidewalk width analysis.

To address community concerns, HDR has performed a corner sidewalk analysis at the southwest corner of Atlantic Avenue and 6th Avenue. Refer to the following tables for the calculation of pedestrian LOS at this location, referring to the plans submitted for the revocable consent submission as well as the results from the FEIS of the sidewalk corner analysis for this location.

Table 3 – FEIS Sidewalk Corner Phase 1 Build Condition LOS

Facility No.	Location	Corner	Peak 15-Min Volumes				Average Conditions							
			AM	PM	EVE	SAT	AM		PM		EVE		SAT	
							SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS
C5	Atlantic Avenue at 6th Avenue	southwest	127	57	23	107	187.2	A	236.1	A	137.7	A	77.6	A

Table 4 – HDR-calculated Sidewalk Corner 2010 Build Condition LOS Using FEIS Phase 1 Pedestrian Volumes, per the Revocable Consent Plans

Facility No.	Location	Corner*	Peak 15-Min Volumes				Average Conditions							
			AM	PM	EVE	SAT	AM		PM		EVE		SAT	
							SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS
C5	Atlantic Avenue at 6th Avenue	southwest	127	57	23	107	32.7	C	25.7	C	18.2	D	12.6	E

**Note: The proposed curb alignment along 6th Avenue was utilized in this calculation.*

Table 5 – HDR-calculated Sidewalk Corner 2010 Build Condition LOS Using FEIS Phase 1 Pedestrian Volumes, Utilizing the Existing Curb Alignment

Facility No.	Location	Corner**	Peak 15-Min Volumes				Average Conditions							
			AM	PM	EVE	SAT	AM		PM		EVE		SAT	
							SF/P	LOS	SF/P	LOS	SF/P	LOS	SF/P	LOS
C5	Atlantic Avenue at 6th Avenue	southwest	127	57	23	107	63.6	A	57.1	B	36.2	C	25.5	C

***Note: The existing curb alignment along 6th Avenue was utilized in this calculation.*

According to the City Environmental Quality Review 2010 Manual, for the condition where the sidewalk corner is located within a central business district, a significant impact is not considered to be met if the average pedestrian space in the Build Condition deteriorates to within acceptable LOS D, which correlates to a corner occupancy greater than 19.5 square feet per pedestrian. The sidewalk corner was considered to be located within a central business district as this was the same assumption utilized for the pedestrian analysis performed for the FEIS. This condition is not met for two of the analyzed peak hours (Weekday Pre-Game and Saturday Pre-Game) for the analysis based on the sidewalk geometry indicated in the plans submitted for the revocable consent submission (see Table 4). The revocable consent plans show a uniform width for the west sidewalk of 6th Avenue between Atlantic Avenue and Pacific Street, which is achieved by implementing a straight curb for the full length along the west side of 6th Avenue between Atlantic Avenue and Pacific Street. This has the effect of narrowing the west sidewalk of 6th Avenue immediately south of Atlantic Avenue. However, an acceptable LOS at this corner is met for all four analyzed peak hours (AM, PM, Weekday Pre-Game, Saturday Pre-Game) if the existing curb alignment along 6th Avenue is utilized (i.e. the west sidewalk of 6th Avenue immediately south of Atlantic Avenue is not narrowed, see Table 5). Therefore, the results indicate that an acceptable LOS is provided for all four analyzed peak hours if the existing curb alignment along 6th Avenue is maintained for the Arena-opening condition.

3. COMMENT:

HDR neglected to analyze the sidewalk width at the location of the proposed return bollard at sidewalk location S6a.

RESPONSE:

The proposed return bollard is located near the west end of sidewalk segment S6a, approximately 20 feet from the Arena structure and centered approximately 7.0 feet from the face of curb. The return bollard was not considered in the determination of effective sidewalk width in the HDR memorandum dated September 27, 2011 since the sidewalk at the location of the proposed return bollard does not represent the typical sidewalk condition for sidewalk location S6a.

It should be noted that the location of the proposed return bollard is essential to providing a continuous security perimeter around the Arena Block. Building 4 will be constructed after the Arena opens. As such, in order to maintain the security perimeter for the Arena, a security wall is proposed at the location of the future Building 4 (to be located 9.8 feet from the curb at the back of sidewalk).

Directly in front of the Arena, the security perimeter is located along a row of proposed bollards centered 2.0 feet from the face of curb. At the closest point, the clear distance between the row of proposed bollards near the curb and the proposed security wall is approximately 7.2 feet. The proposed 7.2 feet is too large of a gap to maintain a continuous security perimeter around the Arena Block. Through negotiations between FCRC, FCRC's consultants, NYCDOT, and NYPD, it was concluded that the best solution to providing a continuous security perimeter between the proposed line of bollards near the curb and the proposed security wall at the back of sidewalk was to add a return bollard within the sidewalk. This was suggested in order to yield an acceptable clearance from the nearest security bollard to the proposed security wall. Therefore, the return bollard is crucial to the design of the Arena Block, and based on site constraints, the bollard must be located within the middle portion of the sidewalk in order to provide for a continuous security perimeter around the Arena Block. As well, security bollards have been installed in sidewalks around other notable buildings within New York City at a similar spacing and are deemed critical in providing the necessary security perimeter to these structures. Based upon the above items, the return bollard was not included in the effective sidewalk width analysis.

To address community concerns, HDR has determined the new effective sidewalk width and pedestrian LOS to include the return bollard. Although a shy distance of 1.5 feet from a bollard was assumed in the HDR memorandum dated September 27, 2011, this value was revised to 1.0 foot, based on the 1.0 foot shy distance from a security bollard that NYCDOT has previously approved in past studies. This smaller dimension was accepted based on the premise that pedestrians on average shy away from security bollards less than they do from other, typically larger obstructions. Based on the plans submitted for the revocable consent submission for the proposed sidewalk bollards, the clear distance between the return bollard and the line of bollards near the curb is 4.0 feet. Refer to the following tables for the calculation of effective sidewalk width and pedestrian LOS at this location:

Table 6 – HDR Effective Sidewalk Width Calculation

No.	Location	Clear Distance (ft)	Total Shy Distance (ft)	Effective Sidewalk Width (W_E) (ft)
S6a	Atlantic Avenue between Ft Greene Place and 6th Avenue	4.0	=1.0+1.0=2.0	=4.0-2.0=2.0

Table 7 – HDR-calculated Sidewalk 2010 Build Condition LOS Using FEIS Phase 1 Pedestrian Volumes

Facility No.	Location	Effective Width (feet)	Peak 15-Min Volumes				Average Conditions							
			AM	PM	EVE	SAT	AM		PM		EVE		SAT	
							PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS
S6a	Atlantic Avenue between Ft. Greene Place and 6th Avenue (at return bollard)	2.0	158	228	170	150	5.27	B	7.60	C	5.67	B	5.00	A

As illustrated above, considering the constraint posed by the presence of the proposed return bollard, the pedestrian sidewalk analysis indicates that for the four critical pedestrian peak hours (AM, PM, Weekday Pre-Game, Saturday Pre-Game), an acceptable LOS is provided. It should be noted that at peak pedestrian activity times the presence of the return bollard may cause an inconvenience to certain segments of the population such as persons in wheelchairs or pedestrians pushing strollers.

4. COMMENT:
HDR utilized pedestrian numbers from the FEIS to analyze effective sidewalk widths although the proposed sidewalk conditions reflect the 2009 Modified General Project Plan (MGPP).

RESPONSE:

Updated pedestrian volumes at the Arena Block were not provided in the 2009 MGPP since the proposed project modifications in the 2009 MGPP indicated a minimal change in pedestrian volumes and flows, thus resulting in no significant impacts on pedestrians at the Arena Block. As well, pedestrian volumes used in the FEIS Phase 1 Build Condition include those pedestrian trips generated by project elements originally part of the full build-out of Phase 1 that will not be in place during the Arena opening condition, including Site 5 and Buildings 1 through 4. Thus, use of the FEIS pedestrian volumes for the analysis of the effective sidewalk widths is conservative.

5. COMMENT:
HDR did not consider the increased pedestrian volumes due to the relocation of the VIP entrance to the Arena from Dean Street to Atlantic Avenue as put forth in the 2009 MGPP.

RESPONSE:

The findings in the Technical Memorandum prepared for the 2009 MGPP regarding the relocation of the VIP entrance from Dean Street to Atlantic Avenue indicated that there would be no significant impact on pedestrian flows as a result of this change. The presence of a VIP entrance does not imply that the VIP entrance is the only entrance by which VIPs would enter the Arena. The VIP entrance allows only VIPs to use that entrance, which is the smallest of all the Arena entrances (the total length of the door opening is approximately 5.7 feet, compared to 11.2 feet for the Atlantic Avenue entrance, 41.1 feet for the Main Entrance and 50.3 feet for the Dean Street entrance). The VIP entrance provides the quickest access from outside the Arena to the event level Bunker Club (a limited-capacity facility located below grade, which can also be accessed from the Main Entrance). For VIPs attempting to access the suite levels or to club seating, the quickest access from outside the Arena is either through the Dean Street or Atlantic Avenue entrances. Also, it is assumed that the majority of VIPs would travel to the Arena by subway, and thus would most likely enter at the Main Entrance.

The analysis in the 2009 MGPP assumed that Arena patrons would walk the shortest distance from their walking origin to the Arena, and thus would enter the Arena at the entrance that is closest to their walking origin. The assumed small increase in pedestrians at sidewalk location S6a due to the relocated VIP Arena entrance was deemed insignificant, and was therefore not considered in the sidewalk analysis performed. And as stated in response to Comment #4, above, HDR determined it to be more conservative to use the pedestrian volumes from the FEIS for the sidewalk analysis.

6. COMMENT:
HDR did not consider the relocation of 100 parking spaces from the Arena Block to Block 1129 as put forth in the 2009 MGPP.

RESPONSE:

The findings in the 2009 MGPP regarding the relocation of 100 parking spaces from the Arena Block to Block 1129 indicated that there would be no significant impact on pedestrian flows as a result of this change. The analysis in the 2009 MGPP assumed that Arena patrons would walk the shortest distance from their walking origin (in this case, the parking facility) to the Arena, and thus would enter the Arena at the entrance that is closest to their walking origin. According to the FEIS pedestrian analysis, it was assumed that Arena patrons parking at Block 1129 would access the Arena by walking along the north sidewalk of Dean Street between Block 1129 and the Arena Block, and would enter the Arena by utilizing the entrance located at Dean Street. Therefore, it is assumed that those Arena patrons utilizing the relocated 100 parking spaces from the Arena Block to Block 1129 would not access the Arena at Atlantic Avenue, and, as a result, no additional pedestrian volumes along sidewalk segment S6a can be attributed to the 100 relocated parking spaces at Block 1129.

7. COMMENT:

HDR did not consider the impacts of the Demand Management program on sidewalk conditions at the Arena Block, in particular the effects of shuttle buses connecting to remote parking facilities.

RESPONSE:

The Travel Demand Management (TDM) program, as described in the FEIS, did not provide any details regarding the potential impacts of various aspects of the TDM, such as the pick-up and drop-off locations at the Arena Block for the shuttle bus service that is proposed to connect the Arena to remote parking facilities and the Park and Ride facilities on Staten Island. Currently, FCRC does not yet have any specific information on where these potential shuttle bus locations may be, and does not expect to determine this until 2012, prior to the opening of the Arena.

The current plan for the Arena Block features lay-by lanes on the east side of Flatbush Avenue, the south side of Atlantic Avenue, the west side of 6th Avenue and the north side of Dean Street. Lay-by lanes are provided to accommodate pick-up and drop-off and loading and unloading activity adjacent to the Arena Block. It is feasible that the pick-up and drop-off locations of the shuttle buses could be accommodated on any of the proposed lay-by lanes around the Arena Block, and may be more suited to those locations closer to the primary entrances to the Arena, such as the Main Entrance and the entrance on Dean Street.

Due to the above factors, at this time, impacts associated with the Demand Management program on sidewalk conditions at the Arena Block were not considered as part of this analysis.