

TECHNICAL MEMORANDUM

Atlantic Yards Arena and Redevelopment Project

A. INTRODUCTION

In November 2006, the Empire State Development Corporation (ESDC), in cooperation with the Metropolitan Transportation Authority (MTA) and the City of New York (the City), prepared the Final Environmental Impact Statement (FEIS) for the Atlantic Yards Arena and Redevelopment Project (the “approved project”). The approved project was subject to environmental review under the State Environmental Quality Review Act (SEQRA) and the City Environmental Quality Review (CEQR). With ESDC as the lead agency, the approved project is being implemented pursuant to a General Project Plan (GPP) affirmed by the New York State Urban Development Corporation (UDC), a public benefit corporation of New York State, doing business as ESDC. In December 2006, ESDC adopted its SEQRA findings, pursuant to New York Environmental Conservation Law Article 8, and its implementing regulations adopted by the New York State Department of Environmental Conservation (NYSDEC) and codified at Title 6 of the New York Code of Rules and Regulations (N.Y.C.R.R.) Part 617 (the SEQRA Regulations).

This Technical Memorandum describes a proposed modification to the GPP, changes related to design development, changes to the project’s schedule, and changes in background conditions and analysis methodologies under the *CEQR Technical Manual* and assesses whether the project as currently envisioned would result in any new or different significant adverse environmental impacts not previously identified in the FEIS.

B. PROJECT DESCRIPTION

2006 FEIS

The project analyzed in the 2006 FEIS involves the redevelopment of 22 acres in the Atlantic Terminal area of Brooklyn, New York. The project site is roughly bounded by Flatbush and 4th Avenues to the west, Vanderbilt Avenue to the east, Atlantic Avenue to the north, and Dean and Pacific Streets to the south. The project is a land use improvement and civic project of ESDC, and would eliminate blighted conditions in the area by implementing development that would include a new arena for the New Jersey Nets National Basketball Association team, along with commercial office and retail, possible hotel, open space, and residential uses, including affordable housing. The project would also partially relocate, expand, platform over, and improve the MTA/LIRR Vanderbilt Yard (rail yard), which, together with a New York City Transit (NYCT) yard for retired buses, occupies approximately nine acres of the project site. (The buses have been removed since completion of the FEIS.)

The FEIS analyzed two build years: 2010 (Phase I), which included development of the entire program slated for the project site west of 6th Avenue and the new LIRR rail yard; and 2016

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(Phase II), when the buildings at the eastern end of the project site—together with the Phase I development—were anticipated to be developed and occupied. At full build-out, the approved project would comprise the 150-foot-tall arena and 16 other buildings with maximum heights ranging from approximately 184 feet to approximately 620 feet.

The FEIS examined two variations of the project program, reflecting what was anticipated as the range of reasonable worst case development scenarios for the programming of three of the proposed project’s 17 buildings: (1) a residential mixed-use variation containing approximately 336,000 gross square feet (gsf) of commercial office space, 165,000 gsf of hotel use (approximately 180 rooms), 247,000 gsf of retail space, and up to 6.4 million gsf of residential use (approximately 6,430 units); and (2) a commercial mixed-use variation, which would permit more commercial office use in three buildings closest to Downtown Brooklyn and would contain approximately 1.6 million gsf of commercial office space, 247,000 gsf of retail space, and up to approximately 5.3 million gsf of residential use (approximately 5,325 units). Both variations would provide eight acres of publicly accessible open space, with up to one additional acre of private open space on the roof of the arena and an enclosed, publicly accessible Urban Room. Both variations also assumed that community facility uses would occupy portions of the retail and residential space. In addition, both program variations included approximately 3,670 parking spaces (see Table 1 and Figures 1 and 2). Finally, both variations included as part of the project a new subway entrance at the southeast corner of Atlantic and Flatbush Avenues, which would provide direct pedestrian access at the western end of the project site to the Atlantic Avenue/Pacific Street subway complex.

Table 1
FEIS Residential and Commercial
Mixed-Use Variation Programs for 2010 and 2016

Proposed Uses [†]	Residential Mixed-Use Variation	Commercial Mixed-Use Variation
Analysis Year: 2010 (Phase I: Development of arena block and Site 5)		
Residential	2,085,000 gsf (2,110 units)	994,000 gsf (1,005 units)
Hotel (180 rooms)	165,000 gsf	0 gsf
Retail	91,000 gsf	91,000 gsf
Commercial	336,000 gsf	1,606,000 gsf
Arena	850,000 gsf	850,000 gsf
Parking (spaces)	2,346 spaces	2,346 spaces
Private Open Space	±1 acres	±1 acres
Publicly Accessible Open Space	0 acres	0 acres
Analysis Year: 2016 (Phase I and Phase II: Full Build-Out)		
Residential ¹	6,363,000 gsf (6,430 units)	5,272,000 gsf (5,325 units)
Hotel (180 rooms)	165,000 gsf	0 gsf
Retail ¹	247,000 gsf	247,000 gsf
Commercial	336,000 gsf	1,606,000 gsf
Arena	850,000 gsf	850,000 gsf
Parking (spaces)	3,670 spaces	3,670 spaces
Private Open Space	±1 acres	±1 acres
Publicly Accessible Open Space	8 acres	8 acres
Notes:		
¹ A portion of the retail and residential space is expected to house community facilities.		
[†] An additional 100,000 gsf, not included in this table, may be built for a public school at the project site.		

The project as described in the FEIS also would include several roadway and pedestrian circulation changes near the project site: (1) Pacific Street between Flatbush and 6th Avenues, and 5th Avenue between Flatbush and Atlantic Avenues, would be closed to vehicular traffic to accommodate the arena, the Urban Room (the glass-enclosed, publicly-accessible space within Building 1 at the southeast corner of Flatbush and Atlantic Avenues), and a direct below-grade connection from the Urban Room to the Atlantic Avenue/Pacific Street subway complex; (2) Pacific Street between Vanderbilt and Carlton Avenues would be closed to vehicular traffic; (3) sidewalks along Flatbush Avenue between Atlantic Avenue and Dean Street would be set back to provide a lay-by lane for vehicles discharging and picking up passengers; (4) sidewalks along Atlantic Avenue between Flatbush and 6th Avenues would be set back to provide a lay-by lane along the south curb of Atlantic Avenue adjacent to the arena block and the street would be reconfigured to provide three eastbound through-lanes and four westbound lanes west of Fort Greene Place, and three travel lanes and a single 10-foot wide parking lane in each direction; (5) 6th Avenue between Atlantic and Flatbush Avenues would be converted to two-way operation, the roadway between Pacific Street and Flatbush Avenue would be widened by reducing the width of the sidewalks, and a lay-by lane between Atlantic Avenue and Dean Street would be provided; (6) Pacific Street between 6th and Carlton Avenues would be widened; and (7) wide sidewalks would be provided along the south side of Atlantic Avenue between Flatbush and Vanderbilt Avenues and the east side of Flatbush Avenue between Atlantic Avenue and Dean Street by setting the proposed buildings back from the street line.

PROJECT STATUS

Since final approval of the project in December 2006, a number of project-related construction tasks have been undertaken, including abatement and demolition work on certain project parcels under the control of the project sponsor or the MTA/LIRR. Remediation on several of the project sites, including the MTA/LIRR rail yard, has begun. Construction of the temporary MTA/LIRR rail yard has commenced, including excavation and installation work on the eastern portion of the yard (Blocks 1120 and 1121). Closure and dismantling of the Carlton Avenue Bridge started in January 2008 to accommodate the reconfigured rail yard. Several public infrastructure improvements have also begun, including the upgrade of water and sewer installations along Flatbush Avenue, Dean Street, and 6th Avenue bordering the arena block. Private utility work, including below-grade improvements for Con Edison, Verizon, Time Warner Cable, and National Grid services, commenced in June 2008. Two bus stops—the northbound B67 bus stop on the east side of Flatbush Avenue between Atlantic Avenue and Pacific Street, and the B65 bus stop on Dean Street at the east side of Flatbush Avenue—have been relocated until the completion of the utility and private infrastructure upgrades. The project sponsor also has begun implementing mitigation measures including installation of double-glazed or storm windows and air conditioning units to the affected residences (as identified in the FEIS), to mitigate the project's noise impacts during construction.

C. DESCRIPTION OF CHANGES AND MODIFICATIONS

GENERAL PROJECT PLAN MODIFICATION

A modification to the GPP is proposed to allow for the acquisition of property in two phases, rather than one phase as detailed in the FEIS. The first round of acquisition would occur towards the end of 2009 and would encompass the arena block including the streetbeds to be closed, Block 1129, Pacific Street between Vanderbilt and Carlton Avenues, Lots 42 and 47 on Block

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1121, and, if necessary for the construction and operation of the LIRR rail yard, easements or other property interests in Lot 35 on Block 1120 and possibly a small number of additional lots included in the project site. The second round would occur towards the end of 2011 and would encompass the remainder of the project site.

The GPP also would be modified to reflect the commitment by the project sponsor to assess project-generated day care enrollment and capacity as the project progresses, as explained in greater detail below.

Certain other changes to the GPP would affect the business terms, but would not have the potential to affect environmental conditions (see proposed 2009 Modified GPP). There are no modifications proposed to the Design Guidelines.

DESIGN DEVELOPMENT

As project planning has progressed, the project sponsor has further developed the design of certain buildings and eliminated certain project elements. This design development would affect the arena block and, to a lesser extent, Block 1129. None of the proposed uses of the project buildings would change; in addition, they would all still need to conform with the Design Guidelines detailed in the GPP and the principal exterior materials of the building would remain the same. The program, design, configuration, and uses of the proposed buildings on other blocks would not change. The changes are as follows:

- The height of **Building 1** would be reduced so that this structure would match the height of the nearby Williamsburgh Savings Bank building. The height of Building 1 would decrease from 620 feet to 511 feet.
- The design of the **arena façade** would be altered from the description in the FEIS to a more traditional design that incorporates a mixture of glass, masonry, and metal panels. In addition, the footprint of the arena would be slightly smaller compared to the description in the FEIS, and have a more efficient below-grade configuration. The area of the glass would be decreased from the images shown in the FEIS and the footprint would be slightly different; however, the design of the arena would conform to the GPP Design Guidelines and it would still be possible to see into the arena from certain vantage points in the surrounding area, including along Flatbush Avenue (see Figures 3a and 3b).
- As described in the FEIS, the project was anticipated to require the demolition and rebuilding of the **6th Avenue Bridge** between Atlantic Avenue and Pacific Street, to allow the arena's loading dock to extend below the bridge as well as to accommodate the LIRR's drill track. The arena's loading dock would now be redesigned to stay within the arena block footprint, and the LIRR drill track would be relocated partially off the arena block. Accordingly, the 6th Avenue Bridge would not need to be demolished.
- Due to the reconfiguration of below-grade space on the arena block, up to 100 spaces of **parking** that would have been provided under Building 2 of the arena block would be relocated to Block 1129. Initially, these parking spaces would be part of an interim parking facility on Block 1129. When Block 1129 is fully built out, this parking would be located in a below-grade facility.
- The **arena roof** would not incorporate stormwater detention tanks, a green roof, or rooftop private open space. Instead, the detention tanks would be located in the base of the arena and enlarged to accommodate the additional stormwater load associated with the elimination of the green roof.

- **Heating systems** for the arena block would be decentralized, with the arena and each of the surrounding buildings on the arena block having individual HVAC and microturbine/distributed power systems. The arena boiler exhaust would be vented through a single stack located on the roof of Building 2.
- As stated in the project description in the FEIS and the GPP, the project will include a reconfigured and partially relocated yard to address the current and future needs of the **LIRR**. The proposed design for the yard would have seven tracks, compared to the nine described in the FEIS, and the drill track would be moved partially off of the arena block. The permanent yard would include the principal improvements described in the FEIS and GPP and would fully meet the operational needs and specifications of the LIRR. These improvements would include new switches and signals; the West Portal; a drill track; permanent storage tracks capable of storing MU series trains; a new electrical substation; the Central Instrument Location (CIL); toileting manifolds; employee facilities; and employee, truck and equipment parking.
- The **VIP entry** to the arena would be relocated to Atlantic Avenue, although an entrance from Dean Street would remain.
- The north **crosswalk** along Carlton Avenue at Dean Street and the north crosswalk along 6th Avenue at Dean Street would each be widened by one foot, compared to the design analyzed in the FEIS.
- As described in the FEIS (and as shown in Figure 4), it was proposed that the east sidewalk along northbound Flatbush Avenue on the arena block would be set back between Dean Street and Atlantic Avenue to provide for a 10-foot-wide lay-by lane along the east curb to accommodate pick-up/drop-off and loading/unloading activity adjacent to the arena. The **Flatbush Avenue lay-by lane** described in the FEIS had two lay-by sections: a northern section just south of Atlantic Avenue that included a bus stop and approximately eight parking spaces, and a southern section just north of Dean Street with approximately six parking spaces. Construction of these two lay-by sections would require the relocation and reconstruction of a series of existing subway vents along Flatbush Avenue between Dean Street and Atlantic Avenue. Due to the complexity in relocating these vents, a modified design for the lay-by lane entails the relocation of a smaller portion of the existing subway vents. As shown in Figure 5, the lay-by lane just south of Atlantic Avenue would remain unchanged, however, there would be no lay-by lane created along northbound Flatbush Avenue between 5th Avenue and Dean Street. The lay-by lanes on the other three sides of the arena block would not change.

Additionally, the Urban Room subway entrance may be reconfigured from what was analyzed in the FEIS. The illustrative transit connection design shown in the FEIS consisted of two 48-inch escalators each paired with a 9-foot-wide stair. Based on a more recent design developed in consultation with MTA/New York City Transit (NYCT), this configuration may be revised to group the two escalators together with a single, approximately 25-foot-wide stair. (Under both designs, a new elevator for ADA access would also be provided.) Overall, the total vertical circulation capacity of this revised configuration would be greater than the design analyzed in the FEIS.

SCHEDULE CHANGE TO 2019

The anticipated year of completion for Phase I of the project has been extended from 2010 to 2014 due to delays in the commencement of construction on the arena block. The anticipated

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date of the full build-out of the project—Phase II—has been extended from 2016 to 2019 for the same reason. The projected completion date of the various project components is noted below in Table 2. As detailed in the table, the duration of construction of most project elements would not change as a result of their modified start date within the overall construction schedule. Rather, with the exception of project elements whose construction has already commenced, the schedule’s overall timeline reflects a shift by approximately three years from what was presented in the FEIS. The duration of the LIRR rail yard’s construction—as well as the duration of construction for the site preparation and platforms on Blocks 1120, 1121, and 1128—would be longer than anticipated in the FEIS.

**Table 2
FEIS and Revised Construction Phasing**

Project Component	FEIS		Revised	
	Duration	Time Period	Duration	Time Period
Phase I				
LIRR Rail Yard*	42 months	2006-2010	79 months	2007-2013
Arena**	32 months	2007-2009	29 months	2009-2012
Building 1	41 months	2007-2010	35 months	2010-2013
Building 2	22 months	2008-2009	22 months	2010-2012
Building 3	32 months	2008-2010	32 months	2010-2013
Building 4	36 months	2008-2010	36 months	2011-2014
Site 5	41 months	2007-2010	37 months	2011-2014
Phase II				
Platform Block 1120	23 months	2009-2011	29 months	2011-2014
Building 5	24 months	2011-2012	24 months	2013-2015
Building 6	21 months	2011-2012	21 months	2014-2016
Building 7	30 months	2011-2013	32 months	2014-2017
Site Preparation Blocks 1121 & 1129	71 months	2006-2012	107 months	2007-2014
Platform Block 1121	20 months	2011-2012	20 months	2014-2015
Building 8	18 months	2012-2014	18 months	2015-2017
Building 9	21 months	2014-2015	21 months	2017-2018
Building 10	20 months	2015-2016	20 months	2018-2019
Building 11	18 months	2015-2016	18 months	2018-2019
Building 12	21 months	2015-2016	20 months	2018-2019
Building 13	18 months	2014-2015	18 months	2017-2018
Building 14	15 months	2012-2013	15 months	2015-2016
Building 15	31 months	2010-2012	32 months	2012-2015
Notes: *Extended schedule reflects periodic suspensions of construction activity since commencement of the temporary yard in 2007. **Includes excavation				

D. CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

UPDATES TO BACKGROUND CONDITIONS

In connection with the preparation of this technical memorandum, background conditions and the status of development projects anticipated for completion through 2019 have been updated for the FEIS study area. Updates to the No Build list were made through review of New York City Department of Buildings permits, identification of construction sites, and review of project lists kept by various organizations. The updated No Build list includes projects that were planned prior to the current economic slowdown. Although some of these projects are now on

hold, they are assumed to still be moving forward in the future when market conditions improve. Therefore, since projects were not removed, this list is conservatively inclusive. Since the FEIS was completed in 2006, some development projects have been completed in the surrounding area; some are now on hold, due to changes in market conditions and financing availability; and some new projects are under development or are proposed (see Figure 6). Background conditions projected at this time include a higher number of residential units and less commercial development compared to the FEIS. As shown in Table 3, most of the development projects added since the FEIS will introduce new residential units, and several of the projects included as part of the FEIS, particularly those located in Downtown Brooklyn, have shifted from commercial to residential development. Table 3 provides updated information on developments in the study area. Information that has changed since the FEIS is noted in bold, italicized, and/or bracketed text (see table notes).

**Table 3
Development in the Study Area Recently Completed or Anticipated to be Complete by 2019**

Map No. ¹	Project Name/Address	Development Proposal/Program	Study Area	Build Year ⁸
1	LIU Recreation and Wellness Center (site of present Goldner Building and LIU tennis courts)	10,000 sf for Brooklyn Hospital Center/athletic staff; 117,000 sf wellness/recreation center with natatorium, tennis courts, track, 3,500 seating for athletic events	Primary	Completed
2	The Greene House, 383 Carlton Avenue between Lafayette and Greene Avenues	27 dwelling units	Primary	Completed
3	Atlantic Terminal	425,000 sf office, 470,000 sf retail, rehabilitated LIRR station ³	Primary	Completed
4	One Hanson Place (Williamsburgh Savings Bank Building)	178 [189] dwelling units; 30,000 sf dental offices; 23,000 sf retail	Primary	Completed [2007]
5	South Portland Avenue at Atlantic Avenue (Block 2004)	32 3-family houses	Primary	Completed
6	Atlantic Terrace (aka 669 Atlantic Avenue), Atlantic Ave. between South Portland Ave. and South Oxford St.	80 dwelling units; 12,100 [11,960] sf ground-floor retail, 87 subgrade parking spaces Rezoning: C6-1 to C6-2 ⁴	Primary	2010 [2008]
7	567 Warren Street between 3rd and 4th Avenues	20 dwelling units	Primary	Completed [2006]
8	The Washington, 35 Underhill Avenue between Pacific and Dean Streets	39 dwelling units	Primary	Completed [2006]
9	On Prospect Park/1 Grand Army Plaza [17 Eastern Parkway]	102 [200] dwelling units	Primary	Completed [2007]
10	Bond Street Garage	14,000 sf retail; 4,000 sf community facility	Primary	Completed
11	State Renaissance Court [Schermerhorn between Hoyt and Bond Streets (Block 171)]	158 [135] units, 14,700 sf ground-floor retail and 50 parking spaces, 14 townhouses ⁵	Primary	Completed [2009]
12	80 DeKalb Avenue between Hudson Avenue and Rockwell Place	335,000 [430,000] sf residential (365 residential units)	Primary	2010 [2009]
13	BAM LDC South (Block 2108 bounded by Ashland Place and Lafayette and Flatbush Avenues) ²	180 housing units, 187,000 sf rehearsal studio, cinema, visual arts space⁹ [140,000 sf visual and performing arts library, 40,000 sf theater, 15,000 sf commercial, 466 car public parking facility]	Primary	2013
14	BAM LDC North (Block 2107 bounded by Ashland and Rockwell Places, Lafayette Avenue, and Fulton Streets)	299 seat/30,000 sf [50,000 sf] theater, office/rehearsal space, public outdoor space, 187 [570,000 sf] residential units, 4,000 [10,000] sf retail space [7,000 sf open space, 43,000 sf dance center, 160,000 sf museum/gallery, 465-space parking facility]	Primary	2013
15	395 Flatbush Avenue Ext. ²	12,000 sf retail/office expansion	Primary	2013
16	Atlantic Center	850,000 sf residential, 500,000 [550,000] sf commercial, 395,000 sf retail on lower levels (same as in existing conditions)	Primary	TBD [2013]
17	254 Livingston Street ²	186,000 sf residential, 21,000 sf commercial	Primary	2013
18	230 Livingston Street at the southwest corner of Bond Street (Block 165, Lots 17-19 and 58) ²	271 unit/260,000 sf [163,000 sf] residential [18,000 sf commercial]	Primary	2013
19	Fulton Street/Rockwell Place (aka 29 Flatbush Avenue)	333 [140] dwelling units	Primary	2013 [2007]
20	The Forte: Fulton Street/Ashland Place	108 [100] dwelling units	Primary	Completed [2007]
21	BAM LDC East: 620-622 Fulton Street	150 [80] residential units (100,000 sf), 60,000 sf community facility [7,200 sf retail]	Primary	2013 [2009]
22	Ingersoll Community Center	18,250 sf community center (replaces former 9,000 sf center)	Secondary	2009 [2006]
23	City Point: Flatbush Avenue at Albee Square West (Block 149, Lots 1 and 49) ²	360,000 [1,233,000] sf office, 520,000 [415,000] sf retail, 650 unit/900,000 sf residential, 404 parking spaces (113,962 sf)⁶	Secondary	2013

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Table 3 (cont'd)

Development in the Study Area Recently Completed or Anticipated to be Complete by 2019

Map No. ¹	Project Name/Address	Development Proposal/Program	Study Area	Build Year ⁸
24	Sheraton Aloft Hotel: 222-228 Duffield Street: Willoughby Street between Gold and Duffield Streets (Block 146, Lots 2, 7, 11-18, 23, 29, 34-37, 41-43, and 46-52) and Hotel Indigo (237 Duffield Street) ²	500 plus 180 hotel rooms (2 hotels), 1.25-acre [1.15-acre] public space (Willoughby Square), 700 -space [694-space] public parking facility [999,000 sf office, 48,000 sf retail]	Secondary	2009 [2013]
25	505 Fulton Street: Willoughby Street between Duffield and Bridge Streets (Block 145, Lots 8, 10, 13-16, 18-22, 26, and 32) ²	544,000 sf residential [office], 50,000 sf retail	Secondary	2013
26	Red Hook Lane: Adams Street/Boerum Place at Fulton Street (Block 153, Lots 3, 14, and 15; Block 154, Lots 1, 5, 11, 12, and 36-40) ²	788,000 sf office, 70,000 sf retail	Secondary	2013
27	53 Boerum Place	99 dwelling units, 85 parking spaces	Secondary	Completed
28	Schermerhorn House and Hoyt-Schermerhorn I and II: ESDC/HS (Block 170, south of Schermerhorn Street between Smith and Hoyt Streets)	440 dwelling units (including 217 [200] affordable)	Secondary	2009 [2008]
29	The Smith Condominiums and Hotel (75 Smith Street at Atlantic Avenue)	50 dwelling units, 93-unit hotel, 15,000 sf ground floor retail, 8,500 sf community facility, 130 space parking facility [31,500 sf commercial/office use]	Secondary	Completed [2007]
30	Toren, Myrtle Avenue at Flatbush Avenue (Block 2060, Lots 22-27, 32 [part], and 122; Block 2061, Lot 1 [part]; Block 2062, Lot 6 [part]) ²	280 residential units [300,000 sf], 60,000 sf retail; 457-space public parking facility	Secondary	2009 [2013]
31	Catsimatidis Red Apple/218 Myrtle Avenue between Fleet Place and Ashland Place (Block 2061, Lot 1 [part]) ²	660 residential units [259,000 sf], 22,000 sf [86,000 sf] retail	Secondary	2011 [2013]
32	The Collection 525 (525 Clinton Avenue)	30 dwelling units, 15,500 of medical office, 41 parking spaces	Primary	Completed [2007]
33	557 Atlantic Avenue	72 dwelling units	Primary	Completed [2006]
34	477 Atlantic Avenue	21 dwelling units	Primary	Completed [2006]
35	Waverly Avenue Charter School	Conversion of existing 80,000 sf building to a charter school	Primary	2009 [2008]
36	Park Slope Court (110 Fourth Ave near Warren)	49 residential units	Primary	2009
37	126 Fourth Avenue	50 residential units	Primary	Completed
38	255 Fourth Avenue	41 residential units	Secondary	2009
39	Elan Park Slope (255 First Street)	21 residential units	Secondary	Completed
40	Crest (302 2nd Street at 4th Avenue)	68 residential units	Secondary	Completed
41	159 Myrtle Avenue by Avalon Bay	650 residential units, 5,000 sf retail, parking	Secondary	2009
42	470 Vanderbilt Avenue	376 residential units, 115,424 sf retail, 579,645 sf office, 397 accessory parking spaces ⁷	Primary	2011
43	Rockwell Place	37 residential units	Primary	Completed
44	111 Lawrence Street (Block 148, Lot 1)	500 residential units	Secondary	2010
45	150 Fourth Avenue	95 residential units	Primary	2019
46	181 Third Avenue	130 room/65,785 sf hotel	Primary	2019
47	252 Atlantic Avenue/97 Boerum Place	65 residential units, ground floor retail, on-site parking	Secondary	2019
48	Brooklyn House of Detention (275 Atlantic Avenue)	Expansion of current jail from 815 to 1,478 beds (renovation and 40,000 sf of new construction)	Secondary	2012
49	Holiday Inn, 300 Schermerhorn Street (Block 174, Lot 24)	247 room/108,163 sf hotel	Primary	2010
50	307 Atlantic Avenue	26 residential units (27,462 sf)	Secondary	2019
51	316 Bergen Street	39 residential units (63,434 sf)	Primary	2019
52	388 Bridge Street	360 residential units	Secondary	2019
53	462 Baltic Street	35,551 sf office, 61 parking spaces	Primary	2019
54	611 DeGraw Street	25 room/12,625 sf hotel	Primary	2019
55	675 Sackett Street	38 residential units	Primary	2019
56	340-346 Bond Street	22 residential units	Secondary	2019
57	265 Third Avenue	57-room hotel	Secondary	2019
58	Consolidated Edison (block bounded by First and Third Streets)	52,000 sf office	Secondary	2019
59	225 Fourth Avenue	40 residential units	Secondary	2019
60	238 St. Marks Avenue	20 residential units	Primary	2019
61	324 Grand Avenue	29 residential units	Primary	2019

Table 3 (cont'd)

Development in the Study Area Recently Completed or Anticipated to be Complete by 2019

Map No. ¹	Project Name/Address	Development Proposal/Program	Study Area	Build Year ⁸
62	76 Lexington Avenue	21 residential units	Secondary	2019
63	1124 Bedford Avenue	67 residential units	Secondary	2019
<p>Notes: Projects noted as complete (not bold text) were complete as of the FEIS. Projects noted as complete (bold text) have been finished since the FEIS. Changes in projects since the FEIS are noted with bold text; the portions of these projects that are no longer accurate are noted [in brackets] and <i>in italics</i>.</p> <p>¹ See Figure 6.</p> <p>² Projects anticipated as a result of the Downtown Brooklyn rezoning.</p> <p>³ The LIRR station rehabilitation is currently under construction.</p> <p>⁴ Rezoning to C6-2 completed.</p> <p>⁵ The townhouses are currently under construction.</p> <p>⁶ Includes 373,000 sf of existing retail; project will add 147,000 additional sf of retail</p> <p>⁷ Includes 578,554 sf of existing office and 200 existing parking spaces; project will add 1,091 sf office and 197 accessory parking spaces</p> <p>⁸ Projects for which completion dates were not available were assumed to have a build year of 2019.</p> <p>⁹ Development plan still being finalized.</p> <p>Sources: Downtown Brooklyn Council, New York City Economic Development Corporation, New York City Department of City Planning, New York City Department of Housing Preservation and Development, AKRF, Forest City Ratner Companies.</p>				

CHANGES IN ANALYSIS METHODOLOGIES

The FEIS was prepared generally in accordance with the guidelines set forth in the *CEQR Technical Manual*. As described in detail below, the *CEQR Technical Manual* methodologies for analyzing some technical areas have been updated since the FEIS. These updated analysis methodologies are noted where relevant.

E. POTENTIAL IMPACTS OF CHANGES

The purpose of the analysis that follows is to determine, with respect to each relevant technical area, whether the proposed GPP modification, design development, changes in schedule, or changes in background conditions or *CEQR Technical Manual* methodologies could result in any significant adverse environmental impacts not addressed in the FEIS. In the discussions below, for each of the environmental areas, the analysis is presented under individual headings for clarity of presentation. However, the evaluation and conclusions considered both the individual and collective effects of each component of the analysis.

LAND USE, ZONING AND PUBLIC POLICY

GENERAL PROJECT PLAN MODIFICATION

The proposed modification to the GPP would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to land use, zoning and public policy. The timing of property acquisition would not affect the project's land uses, building layout, density, the amount of affordable housing and publicly accessible open space, or the project's consistency with relevant public policies.

DESIGN DEVELOPMENT

The development on the project site is governed by the GPP's Design Guidelines, which serve in lieu of the underlying zoning. Development on the project site would conform to the height and bulk limits established by the Design Guidelines. The project as currently envisioned would result in the same uses on the project site as analyzed in the FEIS, and the land uses of the proposed project will continue to be compatible with the surrounding area. Therefore, the design

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development described above would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to land use, zoning and public policy.

After the completion of Phase I of the project, but while Phase II is under construction, the 100 parking spaces to be relocated from below the arena block to Block 1129 would be in a surface parking facility; however, when Phase II is fully built out, this parking would be located in a below-grade facility. The addition of a limited number of parking spaces to the surface parking lot for a period of time would not materially change its operation or appearance or effects and would not alter the conclusions of the FEIS with respect to land use, zoning and public policy.

SCHEDULE CHANGE TO 2019

The FEIS contemplated the location of a temporary surface parking facility on Block 1129, and the addition of 100 more spaces to that facility would not have notable effects on land use or cause any significant adverse impacts. The surface parking lot would be in place for no longer than described in the FEIS. The schedule change to 2019 would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to land use, zoning and public policy.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions since the FEIS are discussed below.

Land Use

As anticipated in the FEIS and described above, a substantial amount of new development in and around Downtown Brooklyn has been completed recently or is currently under construction—although a number of anticipated commercial office projects have been changed to residential projects—due in part to the rezoning of this area in 2004 (see discussion below). In the FEIS, 35 projects were included in the No Build list, six of which were listed as recently completed. Ten additional projects noted in the FEIS have since been completed. Several of the projects that have been completed, as well as others on the FEIS list, have been modified since the FEIS. Specifically, the projects that have been modified would create over 600 additional residential units compared to the No Build projections utilized in the FEIS. In general, the demand for office space has not been as high as anticipated in the FEIS and the overall amount of projected commercial development in the study area is less than assumed in the FEIS, whereas the demand for residential and hotel uses has been less adversely affected by current market conditions. As noted in Table 3, there are also 28 new projects in the study area that were not identified in the FEIS list, and which have either been recently completed or are anticipated to be complete by 2019. Most of these projects are residential in nature.

It is also expected that additional smaller projects and renovations—typically those allowable under the current zoning and not requiring environmental review—have occurred and will continue to occur throughout the study area. Overall, the development programs for some of the projects listed in the FEIS have changed and several new projects have been added to the No Build list. These changes are modest in relation to the overall land use development anticipated within the study area and notwithstanding these changes, the overall land use profile of the primary and secondary study areas will remain the same in the future without the proposed project as described in the FEIS.

In summary, changes in background conditions since 2006 and future conditions anticipated through 2019 would not substantially alter the conclusions presented in the FEIS for land use. Although there is more of a trend toward residential and hotel development than office uses and additional No Build projects have been added, the essential land use patterns within the study area have remained similar to what was expected in the FEIS.

Zoning and Public Policy

With respect to conditions in the study area, most public policy and zoning initiatives anticipated in the FEIS have been implemented. These initiatives, which include the Special Downtown Brooklyn District (established in 2001, amended in 2004) and the Park Slope Rezoning (2003), focus on building the density of Downtown Brooklyn while preserving the existing low-density character of established adjacent neighborhoods. Development in the BAM Cultural District has been reconfigured in a response to market and other trends but will continue to include cultural uses that will be a resource for the arts, the local community, the borough of Brooklyn, and the City as a whole.

Several additional zoning and public policy initiatives have been implemented or proposed for consideration since completion of the FEIS. The Fort Greene/Clinton Hill Rezoning (2007) is expected to preserve the predominantly brownstone character of that neighborhood's residential core and provide opportunities for apartment house construction and incentives for affordable housing on Myrtle Avenue, Fulton Street, and Atlantic Avenue within the rezoning area.

In addition, since completion of the FEIS the New York City Landmarks Preservation Commission (LPC) has held a public hearing on the proposed designation of the Prospect Heights Historic District—a portion of which is currently listed on the State and National Historic Registers—as a New York City Historic District in order to protect and preserve the low-density and historic context of Prospect Heights. The project site is not in the footprint of the proposed historic district.

These changes in zoning and public policy and their added limits on development further strengthen the conclusions in the FEIS, which state that the proposed project is not expected to spur substantial changes in the firmly established neighborhoods that surround the project site.

PlaNYC

In April 2007, the Mayor's Office of Long Term Planning and Sustainability released *PlaNYC: A Greener, Greater New York*. It includes policies to address three key challenges that the City faces over the next twenty years: (1) population growth; (2) aging infrastructure; and (3) global climate change. Elements of the plan are organized into six categories—land, water, transportation, energy, air quality, and climate change—with corresponding goals and objectives for each. These goals include, but are not limited to, the following:

- Create homes for almost a million more New Yorkers, while making housing more affordable and sustainable;
- Ensure that all New Yorkers live within a 10-minute walk of a park;
- Clean up all contaminated land in New York City;
- Reduce pollution by implementing infrastructure upgrades, and using best management practices to prevent stormwater from entering the sewer system;
- Improve access to transit;

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- Create or enhance a public plaza in every community;
- Target large consumers to accelerate efficiency upgrades;
- Reduce automobile travel, congestion, and emissions;
- Improve the efficiency of power plants and buildings,
- Implement natural strategies such as planting 1 million trees; and
- Reduce greenhouse gas emissions by 30 percent.

The Atlantic Yards project would assist in meeting many of the goals and objectives established in PlaNYC, by providing new housing to meet the needs of current and future residents, providing new open spaces, and better utilizing land already owned by the public. The project would include the creation of approximately 6,430 dwelling units, including 2,250 affordable dwelling units, and would create new development in an area that is very well served by existing transit infrastructure. It would also deck over a rail yard and would develop an underused area to knit neighborhoods together, and would meet the housing goal of PlaNYC. The project also would meet certain of the open space goals of PlaNYC: to create or enhance a publicly accessible open space in every community. The project's eight acres of planned publicly accessible open space would help achieve the PlaNYC goal that all New Yorkers live within a 10-minute walk of a park. The proposed open space would include landscaping and plantings and thus would help to green underutilized street and sidewalk space, another open space initiative of PlaNYC.

The project is largely consistent with the goals and objectives of water, transportation, energy, air quality, and climate change PlaNYC elements in that it is a new development that is anticipated to incorporate responsible design in terms of water utilization, stormwater management, transportation efficiency, energy demand, air quality emissions, and effects on and from climate change. In addition, the project is registered with the United States Green Building Council (USGBC) as a Leadership in Energy and Environmental Design (LEED) project, and has been accepted into the LEED-Neighborhood Development pilot program. It is anticipated that the HVAC systems for Buildings 2, 3, and 4 will incorporate microturbines to generate electricity and heat (co-generation) as a LEED design element. The feasibility of incorporating combined heat and power into the design of other project buildings will be evaluated as the engineering design work for the project continues.

The development of the project site, which is located at one of the largest transportation hubs in the City, would also provide for a new subway access on the project site. This transit-oriented development would encourage use of mass transit and thus would reduce automobile travel, congestion, and emissions. The project also would promote cycling through the provision of an indoor parking station for up to 400 bicycles and the construction of new off-street bike route segments through the site. Therefore, the project is consistent with PlaNYC.

SOCIOECONOMIC CONDITIONS

GENERAL PROJECT PLAN MODIFICATION

While the proposed GPP modification would result in the postponement of property acquisition on portions of the site until 2011, thereby delaying direct displacement on certain sites, the project's potential for direct and indirect displacement and effects on specific industries at full build-out would remain the same as described in the FEIS. Therefore, the GPP modification

would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to socioeconomic conditions.

DESIGN DEVELOPMENT

The design development described above would not alter the FEIS build program notably. The overall number of dwelling units, as well as the total number of units in an affordable housing program, would remain the same. Similarly, the amount of anticipated commercial use is within the range of that considered in the FEIS. Therefore, the design development would not change the FEIS conclusion that the project would not result in significant adverse socioeconomic impacts.

SCHEDULE CHANGE TO 2019

As described above, the project's potential for direct and indirect displacement and effects on specific industries at full build-out would remain the same as described in the FEIS. Therefore, the schedule change to 2019 would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to socioeconomic conditions. The delay in the project's build year to 2019 would postpone the full realization of the social and economic benefits of the completed project.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions described above would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to socioeconomic conditions.

COMMUNITY FACILITIES

GENERAL PROJECT PLAN MODIFICATION

The proposed modification to the GPP would not result in significant adverse environmental impacts with respect to any of the community facilities or services that were not addressed in the FEIS. The proposed GPP modification would affect the timing of property acquisition but it would not affect the proposed uses and program, which would remain the same as described in the FEIS. Thus, there would be no new demand for police protection, fire protection, emergency services, public schools, libraries, hospitals and health care facilities, or daycare centers as a result of the proposed GPP modification. Additional information on schools and day care facilities is discussed below.

DESIGN DEVELOPMENT

The design development described above would not change the FEIS build program notably. The overall number of dwelling units, as well as the total number of units in an affordable housing program, would remain the same. Similarly, the amount of anticipated commercial use is within the range of that considered in the FEIS. Space would still be made available for the anticipated on-site school, daycare, and intergenerational facility. The deadline for the New York City School Construction Authority (SCA) to decide whether or not it wants to develop a school at the project site would be extended from January 1, 2010 to January 1, 2013. Therefore, the design development would not result in significant adverse environmental impacts with respect to community facilities that were not addressed in the FEIS.

SCHEDULE CHANGE TO 2019

The proposed schedule change to 2019 would not result in significant adverse environmental impacts with respect to community facilities that were not addressed in the FEIS.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The updated information on background conditions would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts on police protection, fire protection, emergency services, libraries, or hospitals and health care facilities. Changes in background conditions would not affect the project's population, which would remain the same as described in the FEIS, and no changes have been made since the FEIS to the *CEQR Technical Manual* methodologies for analyzing the potential for significant adverse impacts on police protection, fire protection, emergency services, libraries, or hospitals and health care facilities.

Public Schools

The updated information on background conditions was reviewed to determine whether the project's potential effects on public schools would remain consistent with the conclusions in the FEIS. The schools analysis was also updated to account for new information on current school enrollment and new enrollment projections, and to use updated CEQR pupil generation rates.

Current school enrollment data and enrollment projections for up to 10 years into the future are released annually by the SCA. This analysis uses the most recent data available, which includes school enrollment for the 2007-2008 school year and enrollment projections for the 2017-2018 school year. The FEIS analysis used data on school enrollment for the 2004-2005 school year, and enrollment projections for the 2014-2015 school year (which the analysis held constant for the 2016 build year).

The updated CEQR pupil generation rates were released in November 2008 in conjunction with the release of SCA's new five-year (2010-2014) capital plan based on this information. The new student generation rates (i.e., the number of school-age children per household) differ from those used by SCA in the past, and those used in the FEIS based on 2001 *CEQR Technical Manual* guidelines. The New York City Office of Environmental Coordination (OEC) has issued an online addendum to the *CEQR Technical Manual* that incorporates these rates into a revised Table 3C-2 for CEQR schools analyses.

Future conditions at local schools were predicted based on the new school enrollment projections and estimated enrollment from the updated list of development projects in the study area. The updated CEQR pupil generation rates were applied to the build program as defined in the FEIS to determine how many school children would be introduced by the project. The effect of these school children on local schools was evaluated and compared to the effects of the project as presented in the FEIS.

As reflected in the technical analysis that follows, these changes would not result in any additional significant adverse impacts on public schools that were not identified in the FEIS.

Student Population. As described above, the FEIS analysis of the project's potential effect on public schools relied on student generation rates previously provided in Table 3C-2 of the *CEQR Technical Manual*. These rates were used to estimate the number of school age children generated per household given the location (by borough) and affordability level of new residential development. The updated CEQR pupil generation rates account for differences by borough, but do not differentiate by income mix.

As shown in Table 4, the FEIS concluded that the project would generate 1,757 elementary school students, 667 intermediate school students, and 412 high school students upon completion. Based on the updated CEQR pupil generation rates, the project would generate 1,734 elementary school students, 718 intermediate school students, and 837 high school students. This is 23 fewer elementary school students and 51 and 425 more intermediate and high school students, respectively, than disclosed in the FEIS.

Table 4
Estimated Number of Students Generated by the RWCDs Presented in the FEIS versus with Updated CEQR Generation Rates

School	FEIS Student Generation ¹	Updated CEQR Student Generation ²	Difference
PS	1,757	1,734	-23
IS	667	718	51
HS	412	837	425
Totals	2,836	3,289	453

Notes: 1. Based on student generation rates provided in the 2001 CEQR Technical Manual (0.27 elementary students, 0.10 intermediate students, and 0.06 high school students per high-income household; 0.31 elementary students, 0.13 intermediate students, and 0.08 high school students per moderate-high income household; 0.34 elementary students, 0.13 intermediate students, and 0.09 high school students per low-moderate income household; and 0.37 elementary students, 0.14 intermediate students, and 0.09 high school students per low-income household).
 2. Based on updated SCA pupil generation rates (0.29 elementary students, 0.12 intermediate students, and 0.14 high school students per household).
 Both the FEIS and this analysis assume that the 450 rental units set aside as senior housing would not introduce additional students.

As noted above, this analysis also uses the most recent school enrollment projections available. The updated projections estimate school enrollment in the 2017-2018 school year, whereas the projections used in the FEIS estimated enrollment in the 2014-2015 school year.¹ The updated projections predict lower elementary school enrollment in CSD 13, but higher elementary school enrollment in CSD 15 and CSD 13/15 combined. For intermediate schools and high schools, although the updated CEQR pupil generation rates predict greater numbers of students, the updated enrollment projections predict an overall decline in intermediate and high school enrollment compared to the projections utilized in the FEIS.

Conclusions. The FEIS concluded that the project would not result in significant adverse impacts on elementary or intermediate schools within CSD 13, CSD 15, or CSDs 13/15 combined, or on high schools within Brooklyn as a whole. The FEIS concluded that the project would result in significant adverse impacts on elementary and intermediate schools within a ½ mile of the project site.

Using the updated information on background conditions, the new school enrollment and projections data, and the updated CEQR pupil generation rates, the project’s effects on local schools would be substantially similar to those reported in the FEIS.

Table 5 below shows school enrollment, capacity and utilization based on the new methodology and updated background conditions in the 2019 future without the project and the 2019 future with the project. This analysis finds, as did the FEIS, that the project would result in a significant adverse impact on elementary schools within a ½-mile of the project site. As in the FEIS, this

¹ In both the FEIS and this analysis, the enrollment projections are held constant to project to the analysis year because the SCA does not issue school enrollment projections for more than 10 years in the future.

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analysis finds that the project would not result in a significant adverse impact on elementary schools within CSD 13, CSD 15, or CSD 13/15 combined. Although this analysis finds that CSD 15 would operate with a shortfall of 1,681 elementary seats (109.7 percent utilization) in the future with the project, this shortfall would not constitute a significant adverse impact because the project would increase the elementary school utilization rate in CSD 15 by slightly more than 1 percent compared to the future without the project. According to the *CEQR Technical Manual*, if a project causes an increase of 5 percent or more in a deficiency of available seats, a significant adverse impact may result. Because the project would increase the elementary school utilization rate in CSD 15 by less than 5 percent, the project would not result in a significant adverse impact.

Table 5

**Analysis with Updated Background Conditions and Methodology:
Estimated Public Elementary, Intermediate, and High School Enrollment, Capacity, and
Utilization 2019 Future Without and With the Project**

Study Area	2019 Future Without the Project				2019 Future With the Project			
	Total Enrollment	Capacity	Available Seats	Utilization	Total Enrollment	Capacity ¹	Available Seats	Utilization
Elementary Schools								
½-Mile Study Area	5,590	4,542	-1,048	123.1%	7,324	4,542	-2,782	161.3%
CSD 13	7,500	10,909	3,409	68.8%	9,008	10,909	1,901	82.6%
CSD 15	18,860	17,405	-1,455	108.4%	19,086	17,405	-1,681	109.7%
CSD 13 & 15	26,360	28,314	1,954	93.1%	28,094	28,314	220	99.2%
Intermediate Schools								
½-Mile Study Area	2,316	3,222	906	71.9%	3,034	3,222	188	94.2%
CSD 13	2,997	7,317	4,320	41.0%	3,621	7,317	3,696	49.5%
CSD 15	4,600	10,037	5,437	45.8%	4,694	10,037	5,343	46.8%
CSD 13 & 15	7,597	17,354	9,757	43.8%	8,315	17,354	9,039	47.9%
High Schools								
Brooklyn Total	61,230	89,951	28,721	68.1%	62,067	89,951	27,884	69.0%
Notes:	¹ The capacity column includes additional elementary, intermediate, and high school capacity identified as currently under construction in the DOE five-year capital plan. Any capacity not currently under construction was not included. The capacity does not include the school seats provided on the project site as mitigation for the FEIS impact on elementary an intermediate schools.							
Sources:	SCA <i>Enrollment Projections</i> ; DOE, <i>Utilization Profiles: Enrollment/Capacity/Utilization, 2007-2008</i> . DOE <i>FY 2010-2014 Five-Year Capital Plan</i> , Proposed February 2009							

Using the updated CEQR pupil generation rates and the new information about other projects planned in the study area, elementary schools within ½-mile of the project site and CSD 15 would have seat shortfalls that would be greater than predicted in the FEIS. This would occur for two primary reasons: 1) background conditions projected at this time include a greater number of residential units compared to the FEIS; and 2) the new CEQR pupil generation rates project greater numbers of students from market-rate residential units, which is what most of the surrounding development is expected to provide. Based on the revised SCA projections, predicted enrollment in these areas is higher compared to the FEIS.

This analysis finds that the project would not result in significant adverse impacts on intermediate schools in the ½-mile study area, CSD 13, CSD 15, or CSD 13/15 combined. As noted above, the new SCA enrollment projections predict lower intermediate school enrollment in all of the study areas. Therefore, based on the revised enrollment projections, unlike the FEIS, the project would not result in a significant adverse impact on intermediate schools within a ½-mile of the project site, as these schools would have excess capacity in the 2019 future with the project (see Table 5).

Using the updated information on background conditions, the new school enrollment and projections data, and the updated CEQR pupil generation rates, this analysis finds that the project would not result in any significant adverse impacts on high schools in Brooklyn. As noted above, the new SCA enrollment projections predict an overall decline in high school enrollment compared to the projections used in the FEIS. In this analysis, as in the FEIS, high schools would have surplus capacity in the future with the project.

Overall, as was the case in the FEIS, the revised analysis concludes that the project would result in a significant adverse impact on elementary schools within the ½-mile study area. However, based on the revised SCA enrollment projections, it would not result in a significant adverse impact on intermediate schools in the ½-mile study area.

The approved project included the provision of an approximately 100,000 square foot elementary and intermediate public school to partially mitigate the significant adverse impacts on elementary and intermediate schools within a ½-mile of the project site. The FEIS stated that additional mitigation measures such as shifting the boundaries of school catchment areas within the CSDs, creating new satellite facilities in less crowded schools, or building new school facilities off-site would be required to fully mitigate the significant adverse impacts on public schools identified in the FEIS.

As in the FEIS, the provision of an elementary and intermediate public school on the project site would alleviate but not fully mitigate the significant adverse impact on elementary schools within a ½-mile of the project site. Additional mitigation measures would still be required to fully mitigate the significant adverse impact on elementary schools within a ½-mile of the project site. As in the FEIS, upon completion of the on-site school there would still be additional capacity within CSD 13 and 15 combined (220 seats) to alleviate the shortfall within the ½-mile study area, but there would be much less extra combined CSD 13/15 capacity in 2019 than the FEIS had predicted for 2016, and there would be a shortfall of elementary school capacity in CSD 15 considered by itself.

No additional elementary school mitigation measures—beyond that proposed in the FEIS—are warranted based on these changes in background conditions and methodologies. Although larger shortfalls of seats are predicted than in the FEIS, the project would actually introduce 23 fewer elementary school students than in the FEIS. Therefore, the project's contribution to the elementary school shortfall in the ½-mile study area and CSD 15 would actually be smaller than in the FEIS. Most of the seat shortfall is the result of the greater number of residential units in background developments. Furthermore, as noted above, the shortfall of seats in CSD 15 in the future with the project would not constitute a significant adverse impact because the project would increase the elementary school utilization rate in CSD 15 by slightly more than 1 percent compared to the future without the project.

The shortfall of elementary school seats could be alleviated by the construction of new elementary schools as budgeted in the Department of Education (DOE) five-year capital plan. Any new schools that are currently under construction and expected to be complete by 2019 are included in the capacity figures reported in Table 5 above, but there are several additional schools in CSD 13 and CSD 15 that are planned but not yet under construction. According to the DOE capital plan, there are 416 seats in CSD 13 and 1,459 seats in CSD 15 that are planned but

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not yet under construction.² Should these schools be constructed as planned, they could alleviate a substantial portion of the seat shortfall within the ½-mile study area and CSD 15.

Overall, accounting for the changes in background conditions and the updated methodology, the project would not result in any significant adverse impacts on public schools not previously identified in the FEIS. In fact, the significant adverse impact on intermediate schools in the ½-mile study area would not occur. As described above, no additional elementary school mitigation measures—beyond that proposed in the FEIS—are warranted.

Day Care

The updated information on background conditions was reviewed to determine whether the project's potential effects on publicly-funded day care facilities would remain consistent with the conclusions in the FEIS. The day care analysis was also updated to account for current day care enrollment and capacity information and to use updated CEQR generation rates for the projection of day care-eligible children. Updated enrollment and capacity information was obtained from the Administration for Children's Services (ACS) for child care facilities and Head Start programs and is current as of October and December 2008, respectively. The updated CEQR generation rates for day care eligible children were released by the New York City Department of City Planning (DCP) in November 2008 and have since been incorporated into the *CEQR Technical Manual* via an online addendum on OEC's website. As with the FEIS, publicly funded day care facilities within one mile of the project site were identified and examined; private day care facilities were not considered in the analysis. Impacts were considered significant if the project would result in demand for slots in publicly funded day care centers greater than available capacity and the increased demand generated by the project would be 5 percent or more of the collective capacity of the day care centers serving the study area in the future without the project.

The new generation rates create two categories, children up to 6 years of age and children 6 to 12 years of age, to project the number of children that would be eligible for public child care services per new residential unit. The first category, children up to 6 years of age, is the primary age group receiving public child care services, and will be the focus of quantitative analysis. The second group, children ages 6 to 12, is more likely to receive after-school services and will only be discussed qualitatively. At this time there are limited enrollment and capacity data available for after-school programs and there are no criteria for a significant adverse impact on after-school programs for children age 6 to 12.

Day Care Enrollment and Capacity Projections. Based on the generation rates for day care eligible children previously presented in Table 3C-4 of the 2001 *CEQR Technical Manual*, the FEIS analysis found that the project would introduce 486 day care-eligible children.

Based on the updated CEQR generation rates, the project could generate 537 children under the age of 6 who would be eligible for publicly-funded day care programs. Although the project would introduce 1,350 units affordable to low- and low- to moderate-income households, these estimates are based on approximately 1,013 low- and low- to moderate-income units with the potential to introduce day care eligible children. Approximately 225 of the 1,350 low- to moderate-income units would be affordable to households earning between 80 and 100 percent of area median income (AMI), which would not qualify for publicly-funded day care. Therefore,

² DOE FY 2010-2014 Five-Year Capital Plan, Proposed February 2009. http://source.nycsca.org/pdf/capitalplan/2009/Feb_2009_2010-2014CapitalPlan.pdf

these households were not included in the analysis. Furthermore, approximately 112 of the 1,350 affordable units would be for seniors earning 80 percent or less of AMI. Senior housing units are not expected to introduce day-care eligible children, and therefore were also excluded from the day care analysis. Thus, a total of 337 of the 1,350 low- and low- to moderate-income units were found to not have the potential to introduce day care eligible children; therefore, this analysis is based on 1,013 units. The FEIS analysis did not exclude senior housing units or units for households earning 80 to 100 percent of AMI from the day care analysis.

As shown in Table 6, the 537 children under the age of 6 who would be eligible for publicly-funded day care programs according to the updated DCP generation rates would represent an increase of 51 children over the number of public day care-eligible children presented in the FEIS.

Table 6

Estimated Number of Publicly-Funded Day Care Eligible Children Generated by Project FEIS versus with Updated DCP Generation Rates

	FEIS Predicted Generation¹	New CEQR Child Generation²	Difference
Children Eligible for Publicly-Funded Day Care Services	486	537 ³	51
Notes:	1. Based on public day care-eligible child generation rates presented in Table 3C-4 of the 2001 <i>CEQR Technical Manual</i> (0.37 children per low-income unit and 0.34 children per low- to moderate-income unit). This number includes all children age 0 to 12. 2. Based on new CEQR public day care-eligible child generation rates (0.53 children under age 6 per low-income and low- to moderate-income unit). This value excludes the senior housing units affordable to low- and low- to moderate-income households. 3. This is the number of children under age 6 only because these are the children that would be eligible for publicly-funded day care programs. With the new generation rates, the project would also introduce 192 children between the ages of 6 and 12 who would be eligible for publicly-funded after school programs.		

The project could also generate 192 children between the ages of 6 and 12 who would be eligible for publicly-funded day care services. Because these children are expected to be attending school during most of the day, their need would be for after-school care. Eligible children who qualify for ACS vouchers or other programming for after school care could be served by Family Child Care Networks or school-age slots in ACS contracted day care facilities, New York City Department of Youth and Community Development’s (DYCD) Out of School Time programs, and/or DOE-approved after school programs.

Conclusions. As described in the FEIS, a 100-seat day care facility is planned as part of the project. This facility would be publicly-funded or would accept ACS vouchers. The FEIS analysis concluded that the project would not result in a significant adverse impact on publicly-funded day care facilities because there would be remaining capacity at publicly-funded day care centers in the study area. Further, the analysis indicated that the potential increase in demand as a result of the project could be offset by several limiting factors, including: the presence of private day care facilities in the area, the use of day care facilities outside the study area (such as closer to a parent’s place of work), and the opening of new day care facilities within the study area as population increases.

Since publication of the FEIS, the changes in background conditions and the new analysis methodology would result in a shortfall in the number of available day care slots that was not predicted in the FEIS analysis. Based on the new CEQR generation rates, the project is predicted to introduce 537 day care-eligible children under the age of 6. As shown in Table 7, if no

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additional day care facilities open in the vicinity of the project site, day care facilities in the area will already be operating above capacity in the 2019 future without the project. If no new day care facilities are added in the study area to respond to this new demand, the 537 new children from the project would exacerbate the predicted shortage in day care slots and would constitute 14 percent of the collective capacity of day care and Head Start facilities (3,854 slots) in the study area.

Table 7
Analysis with Updated Background Conditions and Methodology:
Estimated Publicly-Funded Day Care Enrollment, Capacity, and Utilization
2019 Future Without and With the Project

Analysis	Enrollment	Capacity¹	Available Slots	Utilization
2019 Future Without the Project	3,958	3,754	-204	105%
2019 Future With the Project	4,495	3,854	-641	117%
Notes: ¹ Capacity in the future with the project includes the 100-seat day care facility included as part of the project.				
Sources: ACS.				

The projected shortfall would occur for several reasons. The updated CEQR generation rates for publicly-funded day care eligible children are substantially higher than the generation rates used in the FEIS. In addition, some day care centers have closed, some no longer accept ACS vouchers, and other programs have reduced capacity since the FEIS. As a result, there are four fewer day care and Head Start centers in the study area. The total number of day care slots available in the study area has decreased since the FEIS, from 5,241 slots to 3,854 slots. Finally, background conditions projected at this time include a greater number of low- and low- to moderate-income residential units compared to the FEIS.

Despite the predicted shortfall of slots, several factors may limit the number of children in need of publicly-funded day care slots. The number of children in need of publicly-funded day care may be smaller than presented in this analysis depending on the amount of new residential development that is completed in the area as well as the proportion of new residents who are children of low-income families. Families in the one-mile study area could make use of alternatives to publicly-funded day care facilities. There are slots at homes licensed to provide family day care that families of eligible children could elect to use instead of public day care centers. Parents of eligible children also may use ACS vouchers to finance care at private day care centers in the study area. Additionally, parents of eligible children are not restricted to enrolling their children in publicly-funded day care facilities in a specific geographical area, and could use the ACS voucher system to make use of public and private day care providers beyond the one-mile study area (some parent/guardians choose a day care center close to their employment rather than their residence).

To meet the additional demand projected based on the updated background conditions and updated CEQR generation rates, additional day care demand would need to be provided within the study area. The private market may respond to the additional demand by opening day care centers and increasing capacity in the study area as population increases. New capacity could also potentially be developed as part of ACS’s public-private partnership initiatives.

At this point, however, it is not possible to know exactly how much additional day care capacity would be needed or when its implementation would be necessary, because it is uncertain at this time whether new day care facilities will open in response to the projected increase in demand, how many new facilities will open, and how many day care slots they will add. Therefore, the

project sponsor will assess day care enrollment and capacity in the study area as the project progresses. If necessary, the project sponsor will work with ACS to develop appropriate measures to provide additional capacity on-site, such as interior-facing ground-floor space, or off-site as the project progresses.

In order to reduce the number of day care-eligible children introduced by the project to less than 5 percent of the collective capacity of day care centers in the study area, the project would need to provide day care slots for approximately 350 of the 537 day care-eligible children introduced by the project. This would reduce the number of project-generated day care-eligible children that would need to be accommodated in other day care facilities in the study area to 187 children ($537-350=187$ children), which would be less than 5 percent of the existing collective capacity of day care centers in the study area (3,754 slots without the project). As noted above, the project sponsor has already committed to the development of a 100-slot day care facility, and has now increased that commitment by up to approximately 250 more day care slots. This analysis is based on current day care capacity and represents a snapshot in time. If the capacity of day care centers changes in the future, the project's need for day care slots could change. As noted above, the project sponsor will monitor day care enrollment and capacity in the study area as the project progresses. In light of the project sponsor's commitment to monitor and, if necessary, provide approximately 250 additional day care slots, there would be no new significant adverse impacts on publicly funded day care facilities in the study area.

As noted above, based on the new generation rates, the project would also introduce 192 children age 6 to 12 who would also be eligible for publicly-funded child care services in the 2019 analysis year. These children are expected to be attending school during most of the day; therefore, their need would be for after-school care. These children would represent a small portion of the children at this age in the study area. Specifically, the 192 project-generated day care-eligible children between ages 6 and 12 would represent 2.6 percent of the projected elementary school enrollment in the half mile study area in 2019 with the project. Eligible children who qualify for ACS vouchers or other programming for after-school care could be served by Family Child Care Networks or school-age slots in ACS contracted child care facilities, DYCD Out of School Time programs, and/or DOE-approved after school programs. The change in the *CEQR Technical Manual* methodology for children age 6 to 12 would not result in a project-generated significant adverse impact.

In conclusion, although a shortfall of day care slots is identified with the project in 2019, this shortfall would occur due to changes in background conditions and analysis methodologies that would not be caused by the GPP modification, the project's design development, or the full build-out schedule change to 2019.

OPEN SPACE

GENERAL PROJECT PLAN MODIFICATION

The proposed modification to the GPP would not result in significant adverse environmental impacts with respect to open space that were not addressed in the FEIS. The proposed GPP modification would affect the timing of property acquisition but not the amount or layout of the 8 acres of publicly-accessible open space or the project's population, which would remain the same as described in the FEIS.

DESIGN DEVELOPMENT

The design development described above would not increase the number of workers, visitors, or residents expected to be generated by the project. The private open space on the arena roof was not included in the quantitative FEIS open space analysis, and the decision to not proceed with this space would not affect the conclusions of that analysis. Qualitatively, the private open space on the arena's roof—as well as at the Urban Room and plazas around the outside of the arena—was to have helped address the deficiency in passive open space until the completion of Phase II. With or without these spaces, however, the FEIS identified a temporary significant adverse open space impact between the completion of Phase I and the completion of Phase II. This temporary impact would continue to be addressed by the completion of the Phase II open space.

SCHEDULE CHANGE TO 2019

The schedule change to 2019 would not result in significant adverse environmental impacts with respect to open space that were not addressed in the FEIS. As described above, the FEIS identified a temporary significant adverse open space impact between the completion of Phase I and the completion of Phase II. With the schedule change to 2019, this temporary impact would extend through 2019, but would continue to be addressed by the completion of the Phase II open space.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions described above would not result in significant adverse environmental impacts with respect to open space that were not addressed in the FEIS. With the additional residents and workers generated by the new No Build projects and other changes in background conditions, there would be new demands on the area's public open spaces in the future baseline condition, and thus an exacerbation of existing and future shortfalls. The project would not affect these baseline conditions, as the project's publicly-accessible open space has not changed since the FEIS and the demand generated by the project-generated population would remain the same. The 8 acres of publicly-accessible open space to be provided by the project would continue to help meet the open space demands of residents and workers on the project site as well as in the surrounding area.

SHADOWS

GENERAL PROJECT PLAN MODIFICATION

The proposed modification to the GPP would not result in significant adverse environmental impacts with respect to shadows that were not addressed in the FEIS because the proposed GPP modification would affect the timing of property acquisition but not the proposed massing envelopes analyzed for shadow impacts, which would remain the same as described in the FEIS.

DESIGN DEVELOPMENT

With the project as currently envisioned, the height and bulk of the arena block buildings would remain substantially the same or would be reduced from the configurations analyzed in the FEIS. Therefore, the project's design development would not have the potential to result in significant adverse shadows impacts that were not addressed in the FEIS.

SCHEDULE CHANGE TO 2019

The schedule change to 2019 would not result in significant adverse environmental impacts with respect to shadows that were not addressed in the FEIS.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions described above would not result in significant adverse environmental impacts with respect to shadows that were not addressed in the FEIS.

HISTORIC RESOURCES

GENERAL PROJECT PLAN MODIFICATION

The proposed modification to the GPP would not result in significant adverse environmental impacts with respect to historic resources that were not addressed in the FEIS. The proposed GPP modification would affect the timing of property acquisition but would not result in any changes that would affect the analysis of historic resources as described in the FEIS.

DESIGN DEVELOPMENT

The development in the project's design would not result in any effects to archaeological or architectural resources that were not previously identified in the FEIS; in addition, it would not change the stipulations of the Letter of Resolution among ESDC, the project sponsor, and the New York State Office of Parks, Recreation and Historic Preservation (OPRHP). Therefore, the project as currently envisioned would not have any significant adverse impacts to historic resources that were not previously identified in the FEIS, nor would the development of the project's design increase the effects of the project on any historic resource.

SCHEDULE CHANGE TO 2019

The schedule change to 2019 would not result in significant adverse environmental impacts with respect to historic resources that were not addressed in the FEIS.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions described above would not result in significant adverse environmental impacts with respect to historic resources that were not addressed in the FEIS.

URBAN DESIGN AND VISUAL RESOURCES

GENERAL PROJECT PLAN MODIFICATION

The proposed modification to the GPP would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to urban design and visual resources. The proposed GPP modification would affect the timing of property acquisition but would not result in changes to the buildings' bulk, uses, the type or arrangement of the buildings, the layout of the open space, and other matters addressed in the Design Guidelines. The proposed GPP modification would not affect the urban design and visual resources analysis as described in the FEIS.

DESIGN DEVELOPMENT

The reduction in the height of Building 1 to match the height of the Williamsburgh Savings Bank building would lessen Building 1's impact on views to this visual resource. The design of the arena would change notably from the Frank Gehry design with the glass façade that was depicted in the FEIS in Figures 1-19, 1-20 and 8-36 (see illustrative renderings presented in Figures 3a and 3b). However, the arena would still conform to the GPP's Design Guidelines noted in the FEIS, and it would still be possible to view the interior of the arena and the scoreboard from certain vantage points in the surrounding area, including along Flatbush Avenue. All of the project buildings, lighting, and signage would need to conform with the GPP's Design Guidelines, and the principal exterior materials of the buildings would remain the same. As currently contemplated, the arena façade materials would continue to comprise masonry, glass, and metal panels. The proposed access and circulation reconfigurations would not create any notable changes to the site's urban design; while the VIP entry to the arena would be relocated to Atlantic Avenue, a secondary arena entrance on Dean Street would remain. The arena would continue to be surrounded by four buildings with active street frontages to enliven the pedestrian experience when the arena is not in use. The development in the project's design would not have any significant adverse impacts to urban design or visual resources that were not previously identified in the FEIS, nor would it increase the effects of the project on urban design and visual resources. Instead, the reduction in the height of Building 1 would somewhat lessen the project's effect on urban design and visual resources.

SCHEDULE CHANGE TO 2019

The schedule change to 2019 would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to urban design and visual resources.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions described above would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to urban design and visual resources.

HAZARDOUS MATERIALS

GENERAL PROJECT PLAN MODIFICATION

The proposed modification to the GPP would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to hazardous materials. The proposed GPP modification would affect the timing of property acquisition but would not result in any changes that would affect the analysis of hazardous materials as described in the FEIS.

DESIGN DEVELOPMENT

The footprint of the project site would not change with the design development described above, and therefore there are no additional areas to be considered for their potential to contain hazardous materials. Therefore, the design development would not lead to any significant adverse hazardous materials impacts and no further analysis is required.

SCHEDULE CHANGE TO 2019

The schedule change to 2019 would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to hazardous materials.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions described above would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to hazardous materials.

INFRASTRUCTURE

GENERAL PROJECT PLAN MODIFICATION

The proposed modification to the GPP would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to infrastructure, including water supply, sanitary wastewater treatment, stormwater runoff and combined sewer overflows (CSOs), solid waste management, and energy. The proposed GPP modification would affect the timing of property acquisition but it would not affect the proposed uses, which would remain the same as described in the FEIS. Thus, there would be no increase in project-generated demand for these services.

DESIGN DEVELOPMENT

As described above, unlike what was anticipated in the FEIS, the arena roof would not incorporate stormwater detention tanks or a green roof. Instead, detention tanks would be located in the base of the arena and enlarged to accommodate the additional stormwater load associated with the elimination of the green roof. In addition, the demolition and reconstruction of the 6th Avenue Bridge would no longer occur.

An analysis using the same methodology as the FEIS determined that the changes to the stormwater detention system would not have a significant adverse effect in the volume of stormwater runoff from the project site, nor would the frequency of combined sewer overflow (CSO) events change substantially. Design development would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to sanitary wastewater treatment, solid waste management, or energy. None of these design elements materially affect the project-generated demand for these services.

SCHEDULE CHANGE TO 2019

The schedule change to 2019 would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to infrastructure.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions described above would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to infrastructure.

TRAFFIC AND PARKING

GENERAL PROJECT PLAN MODIFICATION

The proposed GPP modification would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to traffic and parking. The proposed GPP modification would affect the timing of property acquisition but would not affect the proposed uses, which would remain the same as described in the FEIS. Thus, the GPP modification would not result in any changes that would affect the traffic and parking analysis as described in the FEIS.

DESIGN DEVELOPMENT

Two design development components would potentially affect traffic and/or parking conditions compared to the FEIS analysis and were therefore evaluated: (1) the relocation of up to 100 (out of 350) off-street parking spaces from the arena block below Building 2 to Block 1129; and (2) a decrease in the amount of lay-by lane capacity along the east side of Flatbush Avenue adjacent to the arena block. These changes would not change the FEIS conclusions with respect to on-street parking, bicycles, or accidents, because there would be no substantial change to traffic patterns in the study area.

Relocation of Arena Block Parking

The FEIS assumed that a total of 3,670 off-street below-grade public parking spaces would be provided on the project site with full build-out of the proposed project. (Prior to the completion of development on Block 1129, surface parking would be located on this block.) This would include approximately 400 spaces in a parking garage on Site 5; 350 spaces in a parking garage on the arena block; 800 spaces in two parking garages on Block 1120; 150 spaces in a garage on Block 1128; and 1,970 spaces in a garage on Block 1129 (see Figure 1-12 in the FEIS). Under both project variations, the proposed project would include sufficient off-street public parking capacity to fully accommodate all project-generated parking demand in the weekday AM, midday, and PM peak periods. During a weekday evening or Saturday afternoon Nets game, approximately 1,100 spaces would be available on-site to accommodate a portion of the demand from the proposed arena. Remaining arena demand would be accommodated at existing off-site public parking facilities.

As presently envisioned, up to 100 of the 350 parking spaces assumed to be located on the arena block in the FEIS would instead be accommodated on Block 1129 at the east end of the project site, increasing the total number of spaces on that block from 1,970 to 2,070. This would result in the diversion of some project-generated traffic previously assigned to the below-grade garage on the arena block. Intersections where traffic diversions are expected to occur were therefore analyzed to assess the potential for additional significant adverse traffic impacts.

It was assumed for the analysis that during the weekday AM, midday and PM peak periods (when the parking supply on the project site would exceed demand), vehicles diverted from the arena block parking garage would instead park in nearby facilities on Blocks 1120 and 1128 as many of these trips would be en route to office and residential uses located in Buildings 1, 2, 3, and 4. During these three peak periods, diverted inbound vehicles are therefore expected to continue east on Dean Street and turn north onto 6th Avenue to access the parking facilities on Blocks 1120 and 1128. (Outbound vehicles are expected to utilize 6th Avenue and from there follow routes similar to the assignment assumed in the FEIS.) The analysis of weekday AM, midday, and PM peak hour traffic conditions with the relocated arena block parking therefore

focuses on the 6th Avenue/Dean Street and 6th Avenue/Pacific Street intersections, where these diverted trips would be concentrated (see Table 8a).

During the weekday and Saturday pre- and post-game periods (when on-site parking capacity would be fully utilized) all diverted trips were assigned to the parking garage on Block 1129, where up to 100 parking spaces from the arena block would be relocated. During these four peak periods, diverted vehicles are therefore expected to continue east on Dean Street to access the parking facility on Block 1129. Outbound diverted vehicles would utilize Carlton, Atlantic, and 6th Avenues, from which they would rejoin the routes analyzed in the FEIS. (Outbound diverted vehicles assumed to utilize eastbound Dean Street in the FEIS would rejoin this corridor directly from the parking facility on Block 1129 resulting in no net change in vehicle trips at the Dean Street/Vanderbilt Avenue intersection.) The analysis of weekday and Saturday pre-game and post-game peak hour traffic conditions with the relocated arena block parking therefore focuses on a total of seven intersections along these corridors, where diverted traffic is expected to be concentrated (see Table 8b).

These seven intersections are:

- 6th Avenue at Dean Street;
- 6th Avenue at Pacific Street;
- Carlton Avenue at Dean Street;
- Carlton Avenue at Pacific Street;
- Atlantic Avenue at South Portland Street/6th Avenue;
- Atlantic Avenue at Cumberland Street; and
- Atlantic Avenue at Carlton Avenue.

The results of the analysis are shown in Tables 8a and 8b. It should be noted that while a three-year extension from 2016 to 2019 for full build-out of the proposed project is now contemplated, the analysis in Tables 8a and 8b assumes no increase in No Build and Build traffic volumes compared to the 2016 conditions assessed in the FEIS. As discussed in more detail below, neither the level of No Build development anticipated to occur through 2019, nor the additional background growth associated with the proposed change in the Build year, are expected to result in overall traffic volumes greater than what was analyzed in the FEIS for the 2016 Build year.

The data in Tables 8a and 8b establish that the proposed relocation of arena block parking would improve conditions for some movements and would worsen conditions for others compared to the FEIS analysis. Overall, however, the proposed relocation of 100 parking spaces from the arena block to Block 1129 would not result in any new significant adverse traffic impacts at any of the seven analyzed intersections in any peak hour, under the *CEQR Technical Manual* criteria. One location of note is the intersection of 6th Avenue and Dean Street where the FEIS revealed a significant adverse impact to the eastbound Dean Street approach in the Saturday pre-game peak hour; this impact would remain unmitigated under the proposed project's traffic mitigation plan outlined in the FEIS. As shown in Table 8b, in the 2016 Build with Mitigation condition, the eastbound approach would operate at LOS E with 77.6 seconds of delay compared to LOS B with 16.3 seconds of delay in the 2016 No Build. The relocation of on-site parking capacity from the arena block to Block 1129 would add an additional 9 vehicles to the eastbound through-right movement in the Saturday pre-game peak hour, worsening the unmitigated impact to this

Atlantic Yards Arena and Redevelopment Project

Table 8a
2019 Traffic Conditions with Relocation of 100 Parking Spaces to Block 1129
Weekday AM and PM Peak Hours

Signalized Intersections	Lane Group	AM Peak Hour									MD Peak Hour									PM Peak Hour								
		No Build 2016			Build w/ Mitigation 2016			Revised 2019			No Build 2016			Build w/ Mitigation 2016			Revised 2019			No Build 2016			Build w/ Mitigation 2016			Revised 2019		
		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	V/C Ratio	Delay (sec.)	LOS	V/C Ratio	Delay (sec.)	LOS	V/C Ratio	Delay (sec.)	LOS
6th Avenue(N-S) @ Pacific St. (E-W)	EB-TR	0.10	10.5	B		NA			NA		0.14	10.8	B		NA			NA		0.21	11.4	B		NA			NA	
	WB-L	0.26	12.7	B		NA			NA		0.14	11.2	B		NA			NA		0.12	11.0	B		NA			NA	
	WB-LR		NA		0.36	13.2	B	0.34	13.1	B		NA		0.23	11.7	B	0.23	11.7	B		NA		0.22	11.6	B	0.22	11.6	B
	NB-TR		NA		0.45	14.2	B	0.55	16.4	B		NA		0.32	12.4	B	0.41	13.9	B		NA		0.43	13.9	B	0.49	15.2	B
6th Avenue(N-S) @ Dean St. (E-W)	SB-LT	0.24	11.6	B	0.46	13.4	B	0.47	13.5	B	0.25	11.7	B	0.44	13.3	B	0.46	13.6	B	0.22	11.1	B	0.50	13.8	B	0.52	14.1	B
	EB-L		NA		0.75	31.1	C	0.82	38.4	D		NA		0.31	12.7	B	0.34	13.1	B		NA		0.78	32.9	C	0.67	22.1	C
	EB-TR	Same as Approach			0.65	19.0	B	0.64	18.9	B	Same as Approach			0.89	34.1	C	0.88	32.7	C	Same as Approach			0.94	40.5	D	0.95	40.3	D
	EB-Approach	0.39	13.3	B	---	23.3	C	---	26.3	B	0.50	15.0	B	---	28.6	C	---	27.2	C	0.48	14.6	B	---	38.4	D	---	35.2	D
	NB-TR		NA		0.16	11.0	B	0.19	11.4	B		NA		0.12	10.7	B	0.11	10.6	B		NA		0.20	11.4	B	0.28	14.5	B
	SB-LT	0.20	11.0	B	0.62	15.7	B	0.62	15.8	B	0.19	11.0	B	0.51	14.1	B	0.52	14.3	B	0.28	11.6	B	0.59	15.2	B	0.68	19.0	B

Note: NA - Not Applicable due to change in lane configurations

Table 8b
2019 Traffic Conditions with Relocation of 100 Parking Spaces to Block 1129
Weekday/Saturday Pre-Game and Post-Game Peak Hours

Signalized Intersections	Lane Group	PM PRE-GAME PEAK HOUR									PM POST-GAME PEAK HOUR									SAT MIDDAY PEAK HOUR									SAT POST-GAME PEAK HOUR								
		No Build 2016			Build w/ Mit 2016			Revised 2019			No Build 2016			Build w/ Mit 2016			Revised 2019			No Build 2016			Build w/ Mit 2016			Revised 2019			No Build 2016			Build w/ Mit 2016			Revised 2019		
		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	V/C Ratio	Delay (sec.)	LOS	V/C Ratio	Delay (sec.)	LOS	V/C Ratio	Delay (sec.)	LOS	V/C Ratio	Delay (sec.)	LOS						
Atlantic Ave. (E-W) @ S. Portland Ave. (N-S)	EB-L	0.23	9.0	A	0.33	25.2	C	0.33	25.4	C	0.08	7.4	A	0.10	7.9	A	0.09	7.8	A	0.81	65.4	E	0.97	125.2	F	0.99	125.2	F	0.87	70.5	E	1.18	172.7	F	1.18	172.7	F
	EB-TR	0.73	11.7	B	0.87	31.9	C	0.86	31.6	C	0.49	9.9	A	0.44	9.2	A	0.44	9.2	A	0.70	11.1	B	0.79	25.7	C	0.79	25.7	C	0.74	11.9	B	0.68	10.3	B	0.68	10.3	B
	WB-L	0.59	22.9	C	0.84	44.4	D	0.83	42.8	D	0.12	7.8	A	0.40	14.3	B	0.36	12.7	B	0.67	27.4	C	1.05	100.6	F	1.05	100.5	F	0.32	11.8	B	1.52	299.0	F	1.52	299.0	F
	WB-TR	0.50	8.0	A	0.58	10.2	B	0.58	10.2	B	0.40	8.8	A	0.51	9.8	A	0.50	9.7	A	0.72	10.9	B	0.80	12.9	B	0.81	12.9	B	0.67	10.0	A	0.75	11.5	B	0.75	11.5	B
	NB-DefL		NA			NA			NA			NA		0.53	31.5	C	0.40	27.0	C		NA		0.54	44.2	D	0.53	43.2	D		NA		0.91	81.7	F	0.87	73.4	E
	NB-TR		NA			NA			NA			NA		0.41	26.9	C	0.40	26.6	C		NA		0.44	37.4	D	0.44	37.4	D		NA		0.32	34.1	C	0.32	34.1	C
	NB-LTR		NA		0.44	34.1	C	0.42	33.1	C		NA			NA			NA			NA			NA			NA			NA			NA			NA	
	SB-LTR	1.03	90.7	F	---	63.2	E	---	63.7	E	0.46	25.8	C	0.79	43.4	D	---	28.0	C	1.00	83.4	F	---	66.9	E	---	66.9	E	1.38	224.6	F	1.28	181.3	F	1.28	181.3	F
	SB-L		NA		0.97	81.1	F	0.97	81.8	F		NA			NA		0.57	33.1	C		NA		0.99	92.8	F	0.99	92.8	F		NA			NA			NA	
SB-TR		NA		0.38	33.3	C	0.38	33.3	C		NA			NA		0.24	22.2	C		NA		0.50	37.7	D	0.50	37.7	D		NA			NA			NA		

Table 8b (cont'd)
 2019 Traffic Conditions with Relocation of 100 Parking Spaces to Block 1129
 Weekday/Saturday Pre-Game and Post-Game Peak Hours

Signalized Intersections	Lane Group	PM PRE-GAME PEAK HOUR									PM POST-GAME PEAK HOUR									SAT MIDDAY PEAK HOUR									SAT POST-GAME PEAK HOUR								
		No Build 2016			Build w/ Mit 2016			Revised 2019			No Build 2016			Build w/ Mit 2016			Revised 2019			No Build 2016			Build w/ Mit 2016			Revised 2019			No Build 2016			Build w/ Mit 2016			Revised 2019		
		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	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			
Atlantic Ave. (E-W) @ Cumberland St. (N-S)	EB-T	0.67	10.1	B	0.73	11.2	B	0.73	11.1	B	0.43	9.0	A	0.52	9.9	A	0.52	9.9	A	0.61	9.3	A	0.68	10.3	B	0.68	10.2	B	0.67	10.1	B	0.79	12.5	B	0.79	12.5	B
	WB-T	0.57	8.7	A	0.65	9.9	A	0.65	9.8	A	0.43	9.1	A	0.52	9.9	A	0.52	9.9	A	0.83	13.9	B	0.96	22.9	C	0.95	22.3	C	0.74	11.3	B	0.90	17.2	B	0.91	18.0	B
	SB-L	0.27	32.8	C	0.29	33.3	C	0.29	33.3	C	0.07	20.1	C	0.07	20.1	C	0.07	20.1	C	0.11	30.2	C	0.12	30.5	C	0.12	30.5	C	0.22	31.9	C	0.25	32.8	C	0.25	32.8	C
	SB-R	0.16	31.2	C	0.17	31.5	C	0.17	31.5	C	0.07	20.2	C	0.08	20.3	C	0.08	20.3	C	0.09	30.1	C	0.11	30.5	C	0.11	30.5	C	0.28	33.4	C	0.33	34.9	C	0.33	34.9	C
Atlantic Ave. (E-W) @ Carlton St. (N-S)	EB-L	0.15	7.7	A	0.28	16.7	B	0.27	16.0	B	0.11	7.8	A	0.17	9.1	A	0.18	9.2	A	0.67	51.3	D	0.92	103.4	F	0.92	103.4	F	0.43	21.2	C	0.62	39.0	D	0.62	39.0	D
	EB-T	0.69	10.3	B	NA	NA	NA	NA	NA	0.42	8.9	A	NA	NA	NA	NA	NA	NA	0.59	9.0	A	NA	NA	NA	NA	NA	0.67	10.0	A	NA	NA	NA	NA	NA	NA		
	EB-TR	NA	NA	NA	0.88	22.9	C	0.87	22.6	C	NA	NA	0.53	10.0	A	0.53	10.0	A	NA	NA	0.65	8.0	A	0.65	8.0	A	NA	NA	0.78	11.7	B	0.78	11.7	B			
	WB-L	NA	NA	NA	0.42	21.8	C	0.42	21.6	C	NA	NA	0.12	11.4	B	0.12	11.4	B	NA	NA	0.70	42.8	D	0.70	42.8	D	NA	NA	0.59	42.8	D	0.59	42.8	D			
6th Avenue(N-S) @ Pacific St. (E-W)	WB-TR	0.57	8.8	A	0.64	9.0	A	0.64	9.0	A	0.45	9.2	A	0.50	9.7	A	0.50	9.7	A	0.81	13.0	B	0.88	13.6	B	0.88	13.6	B	0.73	11.2	B	0.79	12.0	B	0.79	12.0	B
	NB-LTR	0.26	31.8	C	0.52	37.4	D	0.53	37.7	D	0.13	20.5	C	0.36	23.1	C	0.38	23.4	C	0.39	33.8	C	0.73	44.9	D	0.74	45.3	D	0.47	35.3	D	0.77	44.0	D	0.77	44.0	D
	EB-TR	0.15	10.9	B	0.20	11.5	B	0.20	11.5	B	0.08	10.3	B	0.29	12.4	B	0.30	12.4	B	0.19	11.2	B	0.26	12.0	B	0.26	12.0	B	0.32	12.6	B	0.80	25.9	C	0.80	26.1	C
	WB-L	0.12	10.9	B	0.49	15.0	B	0.49	15.0	B	0.03	10.0	A	0.26	11.9	B	0.32	12.7	B	0.17	11.7	B	0.43	13.9	B	0.43	13.9	B	0.47	17.8	B	0.45	14.2	B	0.53	16.0	B
6th Avenue(N-S) @ Dean St. (E-W)	SB-LT	0.27	11.8	B	0.44	13.2	B	0.44	13.2	B	0.10	10.4	B	0.20	11.1	B	0.20	11.1	B	0.32	12.4	B	0.47	13.6	B	0.47	13.6	B	0.31	12.2	B	0.50	13.9	B	0.50	13.9	B
	EB-L	NA	NA	NA	0.98	70.8	E	0.97	68.5	E	NA	NA	0.58	22.8	C	0.54	20.5	C	NA	NA	0.87	52.1	D	0.86	52.1	D	NA	NA	0.91	59.9	E	1.30	59.9	E			
	EB-TR	Same as Approach	0.84	25.5	C	0.86	26.9	C	Same as Approach	0.39	11.6	B	0.38	11.6	B	Same as Approach	1.10	86.4	F	1.12	88.9	F	Same as Approach	1.18	113.3	F	1.34	113.3	F								
	EB-Approach	0.36	13.0	B	---	38.2	D	---	38.4	D	0.18	11.1	B	---	15.3	B	---	14.4	B	0.57	16.3	B	---	77.6	E	---	82.2	F	0.68	19.2	B	---	103.4	F	---	103.4	F
Carlton Ave. (N-S) @ Pacific St. (E-W)	NB-TR	NA	NA	NA	0.22	14.2	B	0.22	14.2	B	NA	NA	0.16	12.9	B	0.16	12.9	B	NA	NA	0.40	16.2	B	0.40	16.2	B	NA	NA	0.25	13.9	B	0.22	13.9	B			
	SB-LT	0.19	10.9	B	0.63	18.8	B	0.63	18.8	B	0.07	10.2	B	0.33	14.1	B	0.34	14.1	B	0.23	11.2	B	0.64	18.1	B	0.64	18.1	B	0.29	11.7	B	0.85	25.4	C	0.81	25.4	C
	EB-L	NA	NA	NA	0.04	13.4	B	0.04	13.4	B	NA	NA	0.01	13.1	B	0.01	13.1	B	NA	NA	0.06	13.5	B	0.06	13.6	B	NA	NA	0.09	13.9	B	0.09	13.9	B			
	EB-LT	0.26	15.8	B	NA	NA	NA	NA	0.11	14.2	B	NA	NA	NA	NA	0.32	16.7	B	NA	NA	NA	NA	NA	NA	0.50	20.4	C	NA	NA	NA	NA	NA	NA				
Carlton Ave. (N-S) @ Dean St. (E-W)	WB-TR	0.17	14.8	B	NA	NA	NA	0.09	13.9	B	NA	NA	NA	NA	0.31	16.5	B	NA	NA	NA	NA	NA	NA	0.43	18.6	B	NA	NA	NA	NA	NA	NA	NA				
	NB-LTR	0.31	8.8	A	NA	NA	NA	0.14	7.2	A	NA	NA	NA	NA	0.43	7.5	A	NA	NA	NA	NA	NA	0.40	7.1	A	NA	NA	NA	NA	NA	NA	NA					
	NB-LT	NA	NA	NA	0.55	12.0	B	0.56	12.2	B	NA	NA	0.62	13.6	B	0.63	13.9	B	NA	NA	0.80	19.9	B	0.79	19.5	B	NA	NA	0.73	13.9	B	0.73	14.2	B			
	SB-R	NA	NA	NA	0.12	7.2	A	0.12	7.2	A	NA	NA	0.04	6.6	A	0.05	6.7	A	NA	NA	0.13	7.3	A	0.15	7.5	A	NA	NA	0.16	7.5	A	0.16	7.5	A			
Carlton Ave. (N-S) @ Dean St. (E-W)	EB-LT	0.53	20.5	C	---	30.7	C	---	28.5	C	0.23	15.7	B	0.53	21.0	C	0.53	21.0	C	0.79	31.4	C	---	289.2	F	---	286.8	F	1.06	79.5	E	1.95	458.0	F	1.95	458.0	F
	EB-L	NA	NA	NA	0.47	19.5	B	0.45	18.2	B	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.42	682.3	F	2.42	682.3	F	NA	NA	NA	NA	NA	NA	NA	NA				
	EB-T	NA	NA	NA	0.86	37.0	D	0.84	34.1	C	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.85	33.5	C	0.87	35.8	D	NA	NA	NA	NA	NA	NA	NA	NA				
	NB-TR	0.32	9.2	A	0.69	15.5	B	0.71	16.9	B	0.16	5.7	A	0.22	6.1	A	0.22	6.1	A	0.37	9.8	A	0.82	24.5	C	0.82	24.5	C	0.44	10.6	B	0.67	15.2	B	0.67	15.2	B

Notes:
 * Unmitigated Significant Adverse Impact
 NA - Not Applicable due to change in lane configurations

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approach. With these 9 additional vehicles, conditions on the eastbound approach would worsen to LOS F and 82.2 seconds of delay. The eastbound through-right movement would operate at LOS F with 88.9 seconds of delay and a v/c ratio of 1.12, compared to LOS F, 86.4 seconds of delay and a v/c ratio of 1.10 in the 2016 Build with Mitigation condition reported in the FEIS.

As the proposed relocation of up to 100 off-street parking spaces from the arena block to Block 1129 would not change the total amount of off-street parking capacity provided on the project site from what was analyzed in the FEIS, no new significant adverse impacts to off-street parking conditions are anticipated.

Change in Lay-by Lane Configuration on Flatbush Avenue

Under the plan for the arena block described in the FEIS (as shown in Figure 4), the east sidewalk along northbound Flatbush Avenue would be set back between Dean Street and Atlantic Avenue to provide for a 10-foot-wide lay-by lane along the east curb to accommodate pick-up/drop-off and loading/unloading activity adjacent to the arena. This segment of Flatbush Avenue would operate with three travel lanes and the lay-by lane in the northbound direction, and two travel lanes and a curb lane in the southbound direction.

The FEIS assumed approximately 61 vehicle spaces of lay-by lane capacity on the arena block under the plan assessed in the FEIS. This included approximately 14 spaces along the east side of Flatbush Avenue—8 to the north of 5th Avenue and 6 to the south; 7 spaces along Dean Street; 6 spaces along 6th Avenue; and 34 spaces along Atlantic Avenue. These estimates assumed 22 feet per space, and exclude the curbside space within the Flatbush Avenue/Pacific Street intersection that would be newly signalized and reconfigured with a new crosswalk under the traffic mitigation plan as outlined in the FEIS (see Figure 19-1 in the FEIS). Also excluded is 150 feet of curb length along Flatbush Avenue north of 5th Avenue assumed to be occupied by a bus stop for northbound B41 and B67 buses, as well as the northbound B63 that would be re-routed to operate along Flatbush Avenue between 5th and Atlantic Avenues.

In addition to taxis, black cars, and buses serving remote parking garages and ‘park & ride’ lots on Staten Island during Nets games, the FEIS assumed that pick-up and drop-off activity by commuter vans serving the new subway entrance on the project site would also be accommodated in the lay-by lanes proposed along both Atlantic and Flatbush Avenues.

As currently envisioned, a lay-by lane would be located along the east side of Flatbush Avenue between Atlantic and 5th Avenues, but the east sidewalk along Flatbush Avenue between Dean Street and 5th Avenue would not be set back and a lay-by lane would not be provided along this block. (As a result, the east sidewalk on this block would be wider than the design analyzed in the FEIS.) Instead, no stopping would be permitted along northbound Flatbush Avenue between Dean Street and 5th Avenue and this block would function with three northbound moving lanes with no parking lane. North of 5th Avenue, the lane configuration of Flatbush Avenue would remain unchanged from what was analyzed in the FEIS.

Overall, the current plan would reduce the number of lay-by spaces along Flatbush Avenue by a total of approximately 6 spaces. Along the arena block frontages, approximately 8 spaces would remain on Flatbush Avenue (compared to 14 under the plan assessed in the FEIS) and 47 spaces would remain along the lay-by lanes on Atlantic Avenue, 6th Avenue, and Dean Street. In addition, substantial curbside space would continue to be available in the proposed lay-by lanes along Atlantic Avenue adjacent to Blocks 1120 and 1121 and along the north curb of Pacific Street adjacent to Block 1120 (see Figure 12-5 in the FEIS).

A screening analysis was performed to identify the potential for the absence of a lay-by lane south of 5th Avenue to result in new significant adverse traffic impacts at the Flatbush Avenue/5th Avenue intersection. The analysis focuses on the weekday and Saturday pre-game and post-game peak hours when the highest amount of curbside pick-up and drop-off activity adjacent to the arena is expected to occur. As a worst-case condition for this screening analysis, the northbound Flatbush Avenue approach was assumed to operate with only two moving lanes approaching 5th Avenue, a condition that would occur if vehicles were to illegally stop in the curbside lane. The analysis was performed using the same methodology that was utilized in the FEIS—the methodology presented in the *Highway Capacity Manual Software [HCS] 2000 Release 4.1f*. The results of this analysis are shown below in Table 9, which illustrates the volume-to-capacity (v/c) ratios, approach delays, and levels of service (LOS) on the northbound approach for the 2016 FEIS No Build condition, the 2016 FEIS Build with Mitigation condition, and 2019 Build condition assuming only two northbound moving lanes on Flatbush Avenue approaching 5th Avenue due to vehicles illegally stopping in the curbside lane. (It should be noted that while a three-year extension to 2019 for full build-out of the proposed project is now contemplated, the analysis in Table 9 assumes no increase in No Build and Build traffic volumes compared to the 2016 conditions assessed in the FEIS. As discussed below, neither the level of No Build development anticipated to occur through 2019, nor the additional background growth associated with the proposed change in Build year are expected to result in overall traffic volumes greater than what was analyzed in the FEIS for the 2016 Build year.) With only two travel lanes, northbound Flatbush Avenue at the Flatbush Avenue/5th Avenue intersection would continue to operate at an acceptable LOS B or C in all pre-game and post-game peak hours when demand for curbside space adjacent to the arena is expected to be greatest. Based on the results of this screening analysis, no new significant adverse traffic impacts are anticipated on northbound Flatbush Avenue at 5th Avenue due to the absence of a lay-by lane south of 5th Avenue, even if vehicles were to illegally stop in the curbside lane. This should be considered a conservative, worst-case analysis because the presence of traffic control officers before and after a major arena event and posted no stopping regulations along this block are expected to deter drivers from illegally stopping or standing.

Table 9
Traffic Impact Screening Analysis for Northbound Flatbush Avenue at 5th Avenue with Lay-by Lane Modifications

	Analysis Period	2016 FEIS No Build			2016 FEIS Build with Mitigation			2019 Build Screening Analysis Condition ¹		
		V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS
Northbound Flatbush Avenue @ 5th Avenue	Weekday Pre-Game	0.74	14.7	B	0.47	9.5	A	0.68	13.1	B
	Weekday Post-Game	0.73	21.4	C	0.47	15.1	B	0.68	19.8	B
	Saturday Pre-Game	1.14	87.8	F	0.63	11.7	B	0.92	25.4	C
	Saturday Post-Game	0.98	34.0	C	0.62	8.2	A	0.81	14.2	B
Notes: V/C ratio – volume-to-capacity ratio LOS – level of service sec/veh – seconds per vehicle ¹ As a worst case scenario, the screening analysis assumes only two northbound moving lanes on Flatbush Avenue approaching 5 th Avenue, a condition that would occur if vehicles were to illegally stop in the curbside lane.										

Other Design Development Components

Other design development components now contemplated are not expected to result in traffic or parking conditions substantially different from what was analyzed in the FEIS. Changes in the design of the arena's façade, roof, stormwater detention tanks, heating systems, the height of Building 1, and the potential Urban Room subway entrance reconfiguration would not affect traffic or parking conditions. The relocation of the arena's VIP entry to Atlantic Avenue from Dean Street would also not result in significant changes to traffic flow or parking, nor would the one-foot widening of a crosswalk on Carlton Avenue at Dean Street or a similar widening of a second crosswalk on 6th Avenue at Dean Street. (The potential effects of these changes in crosswalk widths on pedestrian flow are discussed below in the "Transit and Pedestrians" section.) Neither Build condition traffic flow nor parking capacity/utilization would be affected by the modifications to the LIRR Vanderbilt Yard. Lastly, although the 6th Avenue Bridge between Atlantic Avenue and Pacific Street would not be demolished and rebuilt, the configuration of travel lanes and parking lanes along the bridge would be the same as what was analyzed in the FEIS.

SCHEDULE CHANGES TO 2019

The three-year extension to 2019 for the full build-out of the project was analyzed to determine whether there would be any effect on the conclusions of the FEIS. As discussed in Chapter 12 of the FEIS and in the technical memorandum entitled *Summary of No Build Sites Considered for the EIS Transportation Analyses* included in Appendix C of the FEIS, a 0.5 percent per year background growth rate was applied to the entire 2006 existing baseline traffic network for the 2006 through 2016 period. This background growth rate, recommended in the *CEQR Technical Manual* for projects in Downtown Brooklyn, was applied to account for travel demand from smaller developments, as-of-right developments not reflected in the land use analyses, and general increases in travel demand not attributable to specific development projects. The background growth rate was conservatively applied to every intersection in the traffic study area in each peak hour, and is equivalent to an approximately five percent increase in traffic by 2016 compared to 2006 levels. In the AM peak hour alone, the amount of background growth assumed for the 2006 through 2016 period would account for roughly 2,000 additional vehicle trips entering and exiting the study area, equivalent to the travel demand generated by 19,000 new dwelling units or nine million square feet of new office space in Downtown Brooklyn.

The proposed change in the Build year from 2016 to 2019 would potentially represent an additional 1.5 percent of background growth over 2006 levels. However, it is important to note that traffic volumes in New York City have declined in recent years. For example, March 2009 traffic volumes at two of Brooklyn's primary gateway facilities—the Brooklyn-Battery Tunnel and the Verrazano-Narrows Bridge—declined by approximately 11.6 percent and 4.4 percent, respectively, compared to March 2006 volumes.³

To assess the localized change in traffic volumes in the vicinity of the project site since the baseline traffic network for the FEIS was developed, automatic traffic recorder (ATR) counts were conducted on Flatbush Avenue south of Dean Street and on Atlantic Avenue east of South Oxford Street in September 2008. A comparison with ATR data collected at these same locations in 2005 is presented in Table 10. The 2008 ATR data indicate that average weekday two-way traffic volumes on Atlantic Avenue have declined by approximately 11.5 percent since

³ Source: MTA Bridges and Tunnels.

2005, while Saturday volumes have declined by approximately 7.3 percent. Two-way traffic volumes on Flatbush Avenue have declined by approximately 9 percent on weekdays and 10.7 percent on Saturdays over the same three-year period.

Table 10
Comparison of 2005 and 2008 Daily Two-Way Traffic Volumes

	2005		2008		Percent Change: 2005 to 2008	
	Weekday	Saturday	Weekday	Saturday	Weekday	Saturday
Atlantic Avenue	46,445	45,898	41,087	42,570	-11.5	-7.3
Flatbush Avenue	44,848	48,700	40,801	43,481	-9.0	-10.7

Source: June 2005 and September 2008 ATR counts conducted on Atlantic Avenue east of South Oxford Street and on Flatbush Avenue south of Dean Street.

Overall, the FEIS analysis assumed a one percent increase in existing traffic levels due to background growth from 2006 to 2008 and an approximately five percent total increase from 2006 through 2016, while recent ATR data indicate that weekday and Saturday traffic volumes on the primary arteries serving the project site have actually declined by approximately 7 to 12 percent since 2005. As such, it appears that the FEIS traffic analysis overestimates background growth by substantially more than the potential 1.5 percent increase associated with the proposed change in the project’s Build year from 2016 to 2019. Any potential increase in study area background traffic associated with the change in the schedule for the full build-out would therefore not be expected to result in total traffic volumes greater than what was analyzed in the FEIS for the 2016 Build year.

In addition to the background growth assessment discussed above, the amount of traffic generated by No Build development was also assessed to account for changes in the status of No Build projects identified in the FEIS (see Table 11). These include developments located within the ¾-mile secondary land use study area, developments outside of the secondary study area that were included in the FEIS at the request of DOT, and developments located in proximity to corridors analyzed for the traffic analysis. All of the projected development sites for the Downtown Brooklyn Development project were also included. Projects with programs less than the minimum development thresholds for Downtown Brooklyn identified in Table 30-1 in the *CEQR Technical Manual* as potentially requiring traffic, parking, transit, and/or pedestrian analyses were not included.⁴ (Exceptions were made if a development program included a mix of uses that in aggregate were expected to generate 50 or more vehicle trips or 200 or more transit or pedestrian trips in a peak hour.)

As shown in Table 11, the discrete No Build sites accounted for in the FEIS transportation analyses comprised a total of approximately 6,254 dwelling units; 5,185,400 sf of office space; 1,152,100 sf of retail space; and 504 hotel rooms. A total of 2,244,615 sf of “other” space (a mix of academic, performance, community facility, marina, and courthouse space) was also included.

⁴ These minimums are: 200 residential dwelling units; 100,000-gsf office space; 20,000-gsf retail space; and 25,000-gsf community facility space.

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Table 11
**Comparison of the FEIS Transportation Analyses 2016 No Build Development Scenario
with the 2019 No Build Development Scenario**

No.	Project Name/Location	FEIS 2016 NO BUILD SCENARIO						DEVELOPMENT COMPLETED OR ANTICIPATED BY 2019						Notes
		Build Year	Residential (D.U.)	Office (sf)	Retail (sf)	Hotel (rooms)	Other (sf)	Build Year	Residential (D.U.)	Office (sf)	Retail (sf)	Hotel (rooms)	Other (sf)	
1	LIU Recreation and Wellness Center	2005		10,000			117,000	2005		10,000			117,000	completed
2 [NA]	Federal Courthouse (Adams & Tillary Sts)	2005					700,000	2005					700,000	completed
3 [NA]	Pier 12	2006					23,200	2006					23,200	completed
4 [NA]	110 Livingston Street	2006	375				6,000	2006	300				6,000	completed
5 [NA]	Brooklyn Marriott Expansion	2006			8,500	280		2006			8,500	280		completed
6 [NA]	IKEA Red Hook	2006			346,000			2006			346,000			completed
7 [NA]	Fairway Supermarket	2006		91,500	119,300		19,200	2006	45	6,000	119,300			completed
8 [4]	Williamsburgh Savings Bank Building	2007	189		23,000			2007	178		23,000			completed; 30,000 sf of existing dental office space retained
9 [9]	17 Eastern Pkwy (Union Temple site)	2007	200					2007	102					completed
10 [29]	Atlantic Avenue & Smith Street	2007	50	31,500	15,000		8,500	2007	50		15,000	93	8,500	Completed; "other" includes community facility space
11 [NA]	306 & 313 Gold Street	2015	517					2008	527					Oro Condominiums (306 Gold St.) completed w/303 D.U.; 313 Gold Street w/214 D.U. under construction
12 [11]	Schermerhorn St btwn Hoyt and Bond Sts	2009	149		14,700			2009	172		14,700			158 D.U. completed; 14 townhouses under construction

Table 11 (cont'd)
**Comparison of the FEIS Transportation Analyses 2016 No Build Development Scenario
with the 2019 No Build Development Scenario**

No.	Project Name/Location	FEIS 2016 NO BUILD SCENARIO						DEVELOPMENT COMPLETED OR ANTICIPATED BY 2019						Notes
		Build Year	Residential (D.U.)	Office (sf)	Retail (sf)	Hotel (rooms)	Other (sf)	Build Year	Residential (D.U.)	Office (sf)	Retail (sf)	Hotel (rooms)	Other (sf)	
13 [24]	Willoughby St btwn Gold & Duffield Sts	2013		999,000	48,000			2009					680	
14 [28]	ESDC/HS Schermerhorn St Block 170	2008	440					2009	440					
15 [30]	Myrtle Ave & Flatbush Ave	2013	300		60,000			2009	280		60,000			
16 [35]	Waverly Avenue Charter School	2008					80,000	2009					80,000	
17 [41]	159 Myrtle Avenue by Avalon Bay		Not included in FEIS No Build Scenario					2009	650		5,000			
18 [12]	80 DeKalb Ave	2009	430					2010	365					
19 [44]	111 Lawrence Street		Not included in FEIS No Build Scenario					2010	500					
20 [49]	Holiday Inn: 300 Schermerhorn Street		Not included in FEIS No Build Scenario					2010					247	
21 [42]	470 Vanderbilt Avenue		Not included in FEIS No Build Scenario					2011	376	1,091	115,424			totals reflect the displacement of 578,554 sf of existing office uses on the site.
22 [31]	Myrtle Ave & Ashland Pl	2013	259		86,000			2011	660		22,000			
23 [NA]	Brooklyn Bridge Park	2012	1,210	164,400	237,600	224	(see note)	2012	1,210	164,400	237,600	224	(see note)	"other" includes a 185-slip marina and 1,000-seat theater.
24 [48]	Brooklyn House of Detention		Not included in FEIS No Build Scenario					2012					40,000	"other" includes expansion of current jail from 815 to 1,478 beds

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Table 11 (cont'd)
**Comparison of the FEIS Transportation Analyses 2016 No Build Development Scenario
with the 2019 No Build Development Scenario**

No.	Project Name/Location	FEIS 2016 NO BUILD SCENARIO						DEVELOPMENT COMPLETED OR ANTICIPATED BY 2019						Notes
		Build Year	Residential (D.U.)	Office (sf)	Retail (sf)	Hotel (rooms)	Other (sf)	Build Year	Residential (D.U.)	Office (sf)	Retail (sf)	Hotel (rooms)	Other (sf)	
25 [13]	BAM LDC (bounded by Ashland Pl and Lafayette & Flatbush Aves)	2013		15,000			180,000	2013	180				187,000	"other" includes rehearsal studio/cinema/visual arts space
26 [14]	BAM LDC North (bounded by Ashland Pl, Rockwell Pl, Lafayette Ave, & Fulton St)	2013	570		10,000		253,000	2013	187	0	4,000	0	74,000	"other" includes rehearsal/performance/arts space
27 [15]	395 Flatbush Avenue Ext.	2013			12,000			2013			12,000			
28 [17]	254 Livingston Street	2013	186	21,000				2013	186	21,000				
29 [18]	236 Livingston St (SW corner of Bond St)	2013	163	18,000				2013	271					
30 [23]	Flatbush Ave at Albee Square W.	2013		1,233,000	42,000			2013	650	360,000	147,000			excludes 373,000 sf of existing retail that would be retained
31 [25]	Willoughby St btwn Duffield & Bridge Sts	2013		544,000	50,000			2013	544		50,000			
32 [26]	Adams St/Boerum Pl at Fulton St	2013		788,000	70,000			2013		788,000	70,000			
33 [NA]	Site C, Jay & Johnson Sts	2013		720,000			8,000	2013		720,000			8,000	
34 [NA]	Site G, Johnson & Gold Sts	2013	71		10,000			2013	71		10,000			
35 [19]	29 Flatbush Avenue		Not included in FEIS No Build Scenario					2013	333					
36 [21]	BAM LDC East		Not included in FEIS No Build Scenario					2013	150				60,000	"other" includes community facility space

Table 11 (cont'd)
**Comparison of the FEIS Transportation Analyses 2016 No Build Development Scenario
with the 2019 No Build Development Scenario**

No.	Project Name/Location	FEIS 2016 NO BUILD SCENARIO						DEVELOPMENT COMPLETED OR ANTICIPATED BY 2019						Notes	
		Build Year	Residential (D.U.)	Office (sf)	Retail (sf)	Hotel (rooms)	Other (sf)	Build Year	Residential (D.U.)	Office (sf)	Retail (sf)	Hotel (rooms)	Other (sf)		
37 [52]	388 Bridge Street		Not included in FEIS No Build Scenario						2014	360					
38 [16]	Atlantic Center	2013	850	550,000				TBD	850	500,000					
39 [NA]	Bridge Plaza Rezoning	2004	295					TBD	648						
40 [NA]	City University (Site A)	TBD					590,777	TBD					244,000		
41 [NA]	City University (Site B)	TBD					258,938	TBD					157,000		
	Development 2006–2008		814	133,000	511,800	280	873,900		675	16,000	511,800	373	854,700		
	Development 2008–2016/2019		5,440	5,052,400	640,300	224	1,370,715		9,610	2,554,491	747,724	1,151	850,000		
	Total Development 2006–2016/2019		6,254	5,185,400	1,152,100	504	2,244,615		10,285	2,570,491	1,259,524	1,524	1,704,700		

Note: Numbering used in Table 3 is reflected in brackets.

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Since the issuance of the FEIS, some development projects have been completed in the surrounding area; some are now on hold, due to changes in market conditions and financing availability; and some new projects are under development. Overall, as shown in Table 11, development totaling approximately 675 dwelling units, 16,000 sf of office space, 511,800 sf of retail space, 373 hotel rooms and 854,700 sf of courthouse and other space was completed by 2008. As noted above, even with the additional travel demand generated by this completed development, 2008 traffic volumes in the vicinity of the project site are actually lower than the 2006 baseline volumes for the FEIS analysis. In order to determine the transportation demand that would be generated by new development anticipated to occur from 2008 through 2019, an updated No Build scenario for the transportation analyses was developed based on the same criteria used for identifying discrete No Build sites for the transportation analyses in the FEIS. Based on current data, it is anticipated that a total of approximately 9,610 dwelling units; 2,554,491 sf of office space; 747,724 sf of retail space, 1,151 hotel rooms, and 850,000 sf of other space would be developed in Downtown Brooklyn and its vicinity by 2019.

Table 12 shows the estimated travel demand generated by the No Build residential, office, retail and hotel development assumed for the 2006 through 2016 period in the FEIS, and the estimated travel demand from such new development now anticipated to occur by 2019. As shown in Table 12, the residential, office, retail and hotel uses in the FEIS No Build development scenario would generate an estimated 336 to 2,504 vehicle trips (auto, taxi and truck) in each analyzed peak hour. For the FEIS traffic analyses, the vehicle trips generated by No Build sites were added to the 2006 baseline network (along with a total of approximately five percent background growth—0.5 percent per year) to forecast 2016 No Build conditions. By comparison, new residential, office, retail and hotel development now anticipated to occur by 2019 would generate an estimated 437 to 2,167 vehicle trips in each peak hour. There would be 173 fewer vehicle trips generated in the weekday AM peak hour compared to the FEIS No Build development scenario, 251 fewer in the midday and 337 fewer in the weekday PM peak hour. In the weekday pre-game and post-game and Saturday pre-game and post-game peak hours, development now planned by 2019 would generate approximately 123, 100, 292 and 275 more vehicle trips, respectively, compared to the FEIS scenario. These increases in vehicle trips in the pre- and post-game peak hours are primarily due to an increase in the number of residential dwelling units now planned for development in the study area. Given that No Build development sites are widely dispersed throughout Downtown Brooklyn and its vicinity, the number of these additional vehicle trips occurring at any one intersection is expected to be relatively small.

In addition to residential, office, retail and hotel uses, the FEIS No Build scenario accounted for travel demand from the development of approximately 2,244,615 square feet of miscellaneous uses that do not fall into these categories, including academic, marina, rehearsal studio, theater, and performing and visual arts space. By contrast, as shown in Table 11, it is now anticipated that a total of only 850,000 square feet of such space would be developed from 2008 through 2019. Given this decrease in projected development, it is not expected that these miscellaneous uses would generate greater travel demand than what was analyzed in the FEIS, and separate travel demand forecasts for these uses are not included in Table 12.

Table 12
Travel Demand Comparison
FEIS 2016 No Build Scenario vs Anticipated Development 2008 - 2019

		FEIS 2006 - 2016 NO BUILD SCENARIO					DEVELOPMENT ANTICIPATED 2008-2019					NET DIFFERENCE				
		Residential	Office	Retail	Hotel	Total	Residential	Office	Retail	Hotel	Total	Residential	Office	Retail	Hotel	Total
Total Development		6,254 (D.U.)	5,185,400 (sf)	1,152,100 (sf)	504 (rooms)	----	9,610 (D.U.)	2,554,491 (sf)	747,724 (sf)	1,151 (rooms)	----	3,365 (D.U.)	(2,630,909) (sf)	(404,376) (sf)	647 (rooms)	----
Peak Hour Vehicle Trips																
Auto+Taxi+Truck	Weekday AM	643	1,095	166	60	1,964	994	544	112	141	1,791	351	-551	-54	81	-173
	Weekday MD	348	392	926	80	1,746	531	192	594	178	1,495	183	-200	-332	99	-251
	Weekday PM	711	1,249	470	74	2,504	1,091	613	296	167	2,167	380	-636	-174	93	-337
	Weekday Pre-Game	543	371	138	63	1,115	830	181	88	139	1,238	287	-190	-50	76	123
	Weekday Post-Game	214	62	44	16	336	332	30	32	43	437	118	-32	-12	26	100
	Saturday Pre-game	610	24	431	103	1,168	936	9	279	236	1,460	326	-15	-152	133	292
	Saturday Post-Game	622	69	445	105	1,241	958	33	285	240	1,516	336	-36	-160	135	275
Peak Hour Transit Trips																
Subway Trips	Weekday AM	3,309	7,159	878	36	11,382	5,085	3,527	570	83	9,265	1,776	-3,632	-308	47	-2,117
	Weekday PM	3,891	8,312	2,720	42	14,965	5,978	4,095	1,766	97	11,936	2,087	-4,217	-954	55	-3,029
	Weekday Pre-Game	3,018	2,426	850	37	6,331	4,637	1,195	552	83	6,467	1,619	-1,231	-298	46	136
Bus Trips	Weekday AM	138	660	220	10	1,028	211	326	142	24	703	73	-334	-78	14	-325
	Weekday PM	162	767	680	12	1,621	249	378	442	29	1,098	87	-389	-238	17	-523
	Weekday Pre-Game	126	224	212	10	572	193	110	138	25	466	67	-114	-74	15	-106
Note: In addition to the residential, office, retail and hotel uses shown in the table, the FEIS No Build scenario accounted for travel demand from approximately 2.2 million sf of miscellaneous uses that do not fall into these categories, including academic, marina, rehearsal studio, theater and performing and visual arts space. As only 850,000 sf of such space is now planned for the 2008-2019 period, these uses are not expected to generate greater travel demand than was analyzed in the FEIS, and travel demand forecasts for these uses are not included in the table.																

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In summary, the analysis of future traffic conditions in the FEIS utilized a 2006 baseline condition that was increased by a total of approximately five percent to account for background growth through 2016 (0.5 percent per year) and to which was added travel demand from No Build developments. By contrast, recent ATR data indicate that 2008 weekday and Saturday traffic volumes on the primary arteries serving the project site are actually lower than the 2006 baseline used for the FEIS. In addition, there would be up to 337 fewer vehicle trips in the weekday AM, midday and PM peak hours generated by the No Build development now anticipated to occur by 2019. Although there would be up to 292 more vehicle trips from No Build development in the pre-game and post-game peak hours by 2019 than considered in the FEIS, these trips would be widely dispersed throughout Downtown Brooklyn and its vicinity, and the number of additional vehicle trips from changes in No Build developments occurring at any one intersection is expected to be relatively small. Furthermore, as noted previously, there has been a 7 to 12 percent decline in weekday and Saturday traffic volumes on the primary arteries serving the project site from 2005 to 2008. Therefore, the potential 1.5 percent increase in study area background traffic associated with the three-year shift in the Build year and the changes in anticipated No Build development now expected to occur by 2019 would not be expected to result in total traffic volumes greater than what was analyzed in the FEIS for the 2016 Build year.

The shift in the Build year from 2016 to 2019 is also not expected to result in greater demand for off-street public parking in the vicinity of the project site than was analyzed in the FEIS. Overall, the FEIS analysis assumed an approximately five percent increase in existing parking demand due to background growth from 2006 through 2016. However, as discussed above, recent ATR data indicate that weekday and Saturday traffic volumes on the primary arteries serving the project site have actually declined by approximately 7 to 12 percent since 2005. Given these ATR data and the recent increase in unemployment city-wide, it is expected that parking demand in the vicinity of Downtown Brooklyn has also declined during this period. In addition, based on current data there would be a net decrease in new office space developed by 2019 compared to the development program assumed for the 2016 No Build analysis in the FEIS. Future office -related parking demand would therefore also be substantially lower than what was assumed in the FEIS. By contrast, the increase in residential development anticipated by 2019 compared to the 2016 scenario is not expected to substantially increase the demand for public parking. It is anticipated that residential parking demand would be generally accommodated in accessory parking, as zoning in the area typically imposes minimum parking requirements for any new residential developments that are designed to accommodate the development's parking demand. As such, it is not expected that parking demand in the vicinity of the project site in 2019 would be greater than what was analyzed in the FEIS for the 2016 Build year. In addition, it should be noted that in the 2016 future with the proposed project, the parking study area would continue to operate with a surplus of between 624 and 2,919 off-street public parking spaces in the analyzed weekday AM, midday, evening and Saturday midday peak hours under both project variations (see Tables 12-27 and 12-38 in the FEIS). Therefore, even if there were to be a small increase in parking demand by 2019 compared to the levels forecast for 2016, sufficient off-street public parking capacity would be expected to be available to accommodate this demand, and it would not result in new significant adverse parking impacts.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The potential effects on traffic and parking of changes to anticipated No Build developments in the vicinity of the project site were discussed previously in conjunction with the change in the schedule to 2019. As noted above, the potential 1.5 percent increase in study area background traffic associated with the three-year shift in the Build year and the changes in anticipated No Build development now expected to occur by 2019 would not be expected to result in total traffic volumes or parking demand greater than what was analyzed in the FEIS for the 2016 Build year.

TRANSIT AND PEDESTRIANS

GENERAL PROJECT PLAN MODIFICATION

The proposed GPP modification would not result in significant adverse environmental impacts with respect to transit and pedestrians that were not addressed in the FEIS. The proposed GPP modification would affect the timing of property acquisition but would not affect the proposed uses for transit facilities, which would remain the same as described in the FEIS. Thus, the GPP modification would not result in any changes that would affect the transit and pedestrians analysis as described in the FEIS.

DESIGN DEVELOPMENT

One design development—the potential reconfiguration of the Urban Room subway entrance—may affect transit conditions compared to what was analyzed in the FEIS. In addition, two components of the design development—the relocation of up to 100 (out of 350) off-street parking spaces from the arena block below Building 2 to Block 1129 and the widening of two crosswalks, one on 6th Avenue at Dean Street and one on Carlton Avenue at Dean Street—would potentially affect pedestrian conditions compared to the FEIS analysis. These three design developments are, therefore, evaluated below.

Transit-Subway

As discussed previously, the Urban Room subway entrance may be reconfigured from what was analyzed in the FEIS. The illustrative transit connection design shown in the FEIS consisted of two 48-inch escalators each paired with a 9-foot-wide stair with an estimated effective width of approximately 6 feet. Based on a more recent design developed in consultation with MTA/NYCT, this configuration may be revised to group the two escalators together with a single, approximately 25-foot-wide stair. (Under both designs, a new elevator for ADA access would also be provided.) Using the same methodology as was used in the FEIS, it is estimated that this stairway would have an effective width of approximately 17.6 feet if divided by handrails into five lanes. This compares to a total of 12 feet of effective stair width for the two-stair configuration analyzed in the FEIS. Overall, the total vertical circulation capacity of this revised escalator/stair configuration would be greater than the design analyzed in the FEIS. Therefore, pedestrian access between the Urban Room and the subway would be improved compared to conditions reflected in the FEIS, and no further analysis of this design change is warranted.

Pedestrians

As discussed previously, up to 100 of the 350 parking spaces planned for a parking garage on the arena block would instead be relocated to a parking garage on Block 1129, increasing the total number of parking spaces on Block 1129 to 2,070 spaces. This would result in additional pedestrian demand on sidewalks and crosswalks along the north side of Dean Street linking Block 1129 and the Arena (i.e., between Vanderbilt and 6th Avenues), primarily in the weekday and Saturday pre-game and post-game peak periods. During these periods, from 32 to 36 additional pedestrians would be expected to utilize these sidewalks and crosswalks in the peak 15-minutes compared to the volumes forecast in the FEIS.

As shown in Table 13-50 in the FEIS, the sidewalks and corner areas along the north side of Dean Street between Vanderbilt and 6th Avenues are projected to operate at LOS A or B in all analyzed peak periods under platoon conditions in the 2016 Build conditions. With the addition of up to 36 peak 15-minute pedestrian trips, these sidewalks and corner areas would continue to operate at an

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acceptable LOS B or better, and would not experience new significant adverse impacts in any analyzed peak period.

As shown in Table 19-11 in the FEIS, under pre-mitigation 2016 Build conditions, the north crosswalk on Carlton Avenue at Dean Street would experience significant adverse impacts in the weekday and Saturday pre-game peak periods, and the north crosswalk on 6th Avenue at Dean Street would experience significant adverse impacts in the Saturday pre-game peak period. The FEIS proposed widening the north crosswalk on Carlton Avenue by four feet (from 16 to 20 feet in width) and the north crosswalk on 6th Avenue by one foot (from 16 to 17 feet in width) to return both of these crosswalks from LOS E to LOS D conditions, thereby fully mitigating these impacts.

As noted above, the relocation of up to 100 spaces of parking capacity from the arena block to Block 1129 under the proposed design development would result in the addition of 32 to 36 pedestrians to each of these two crosswalks in the peak 15 minutes of each peak hour in the weekday and Saturday pre-game peak periods. To accommodate this additional demand, the design development includes the widening of the north crosswalk on Carlton Avenue at Dean Street and the north crosswalk on 6th Avenue at Dean Street by an additional one-foot each. Widening the north crosswalk on Carlton Avenue from 20 feet in width (in the FEIS Build with Mitigation condition) to 21 feet and the north crosswalk on 6th Avenue from 17 feet in width to 18 feet would maintain each of these crosswalks at an acceptable LOS D, with more than 15 square feet/pedestrian in each peak hour. Therefore, with the proposed further one-foot increase in the width of the north crosswalk on Carlton Avenue at Dean Street and the similar one-foot increase in the width of the north crosswalk on 6th Avenue at Dean Street (compared to the FEIS Build with Mitigation condition), the additional pedestrian demand generated by the relocated parking would be accommodated.

Other design development components now contemplated are not expected to result in transit or pedestrian conditions substantially different from what was analyzed in the FEIS. Changes in the design of the arena's façade, roof, stormwater detention tanks, heating systems, and the height of Building 1 would not affect transit or pedestrian conditions. With the elimination of a lay-by lane along the east side of Flatbush Avenue between Dean Street and 5th Avenue, the sidewalk along this block would be wider than the design analyzed in the FEIS, and therefore, pedestrian conditions would be improved. Although the arena's VIP entry would be relocated to Atlantic Avenue from Dean Street, this would affect only a relatively small number of arena pedestrian trips, and a substantial change in pedestrian flow patterns is not anticipated. There would continue to be a secondary entrance for arena patrons located on Dean Street as assumed in the FEIS.

The modifications to the permanent LIRR Vanderbilt Yard are unrelated to and would not affect subway, bus or pedestrian conditions. Lastly, although the 6th Avenue Bridge between Atlantic Avenue and Pacific Street would not be demolished and rebuilt, the configuration of the travel lanes, lay-by lanes and sidewalks along the bridge would be the same as analyzed in the FEIS, and there would be no change in pedestrian conditions.

SCHEDULE CHANGE TO 2019

As discussed in Chapter 13, "Transit and Pedestrians," of the FEIS, a total of approximately five percent background growth (0.5 percent per year) was applied to 2006 existing baseline transit (subway and bus) and pedestrian volumes for the 2006 through 2016 period. This background growth rate, recommended in the *CEQR Technical Manual* for projects in Downtown Brooklyn, was applied to account for travel demand from smaller developments, as-of-right developments not reflected in the land use analyses, and general increases in travel demand not attributable to specific

development projects. The proposed change in the Build year from 2016 to 2019 would potentially represent an additional 1.5 percent of background growth over 2006 levels.

Transit—Subway

Analyzed stairways and fare arrays at the Atlantic Avenue/Pacific Street subway station complex, and the Bergen Street (2, 3), Fulton Street (G), and Lafayette Avenue (C) subway stations were assessed to determine their sensitivity to future increases in peak hour demand above what was assumed in the FEIS analyses. As demonstrated in Tables 13-45 through 13-47 and Tables 19-9 and 19-10 in the FEIS, existing stairways and fare arrays that would be utilized by project-generated demand are all projected to operate at no more than 61 percent of capacity under 2016 Build with Mitigation conditions. Therefore, future 2019 volumes at these existing facilities would have to increase by 39 percent or more from what was forecast in the FEIS before reaching capacity conditions. In addition, much of the future demand at the proposed new on-site entrance and associated circulation improvements at the Atlantic Avenue/Pacific Street subway station complex is expected to be generated by the development on the project site. These facilities would therefore not be as sensitive to increases in general background growth (background growth would not apply to project-generated demand).

It is also important to note that, in addition to background growth, the analyses of 2016 subway and bus conditions in the FEIS reflect the transit demand from No Build developments that were anticipated in Downtown Brooklyn and its vicinity by 2016 (see Table 11). Since issuance of the FEIS, some development projects have been completed in the surrounding area; some are now on hold, due to changes in market conditions and financing availability; and some new projects are under development. Overall, as shown in Table 11, development totaling approximately 675 dwelling units, 16,000 square feet of office space, 511,800 square feet of retail space, 373 hotel rooms and 854,700 square feet of courthouse and other space was completed by 2008. As discussed previously, an additional 9,610 dwelling units; 2,554,491 sf of office space; 747,724 sf of retail space, 1,151 hotel rooms, and 850,000 sf of other space is now anticipated to be developed in Downtown Brooklyn and its vicinity. Of the approximately 5,185,400 square feet of office space considered in the 2016 No Build scenario for the transportation analyses in the FEIS, only 2,570,491 square feet has been developed or is now planned for development, a decrease of approximately 50 percent. Much of this office space has been or is projected to be developed as residential space, a use that typically generates a lower level of transit demand during the weekday AM, PM, and weekday pre-game peak hours analyzed in the FEIS.

Table 12 shows the estimated travel demand generated by the No Build residential, office, retail and hotel development assumed for the 2006 through 2016 period in the FEIS, and the estimated travel demand from such new development now anticipated to occur by 2019. As shown in Table 12, it is estimated that the residential, office, retail and hotel uses in the FEIS 2016 No Build development scenario would generate 11,382 subway trips in the weekday AM peak hour, 14,965 in the weekday PM peak hour and 6,331 in the weekday pre-game peak hour. For the FEIS subway analyses, the subway trips generated by No Build sites were added to the 2006 baseline network (along with a total of approximately five percent background growth) to forecast 2016 No Build conditions. By comparison, new residential, office, retail and hotel development now anticipated to occur by 2019 would generate an estimated 9,265, 11,936 and 6,467 new subway trips in the AM, PM and weekday pre-game peak hours, respectively. There would be 2,117 fewer subway trips generated in the weekday AM peak hour compared to the FEIS No Build development scenario, 3,029 fewer in the PM and a relatively small increase of 136 trips in the weekday pre-game peak hour.

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As noted previously, in addition to residential, office, retail and hotel uses, the FEIS No Build scenario accounted for travel demand from the development of approximately 2,244,615 square feet of miscellaneous uses that do not fall into these categories, including academic, marina, rehearsal studio, theater, and performing and visual arts space. By contrast, as shown in Table 11, it is now anticipated that a total of only 850,000 square feet of such space would be developed from 2008 through 2019. Given this decrease in projected development, it is not expected that these miscellaneous uses would generate greater transit (subway and local bus) demand than what was analyzed in the FEIS, and separate travel demand forecasts for these uses are not included in Table 12.

The analysis of future subway conditions in the FEIS utilized a 2006 baseline condition that was increased by a total of approximately five percent to account for background growth through 2016 (0.5 percent per year) and to which was added travel demand from No Build developments. It should be noted that overall New York City Transit subway ridership actually increased by an average of roughly four percent per year from 2006 to 2008, more than the 0.5 percent per year rate assumed in the FEIS (likely due in part to the surge in gasoline prices that occurred during this period). However, recent MTA data indicate that subway ridership is now declining, with 4.3 percent fewer riders in February 2009 compared to February 2008.

In summary, the shift in the Build year from 2016 to 2019 would potentially represent a 1.5 percent increase in background growth (based on the 0.5 percent/year growth rate recommended in the *CEQR Technical Manual*) compared to the level of background growth assumed in the FEIS for the 2006 through 2016 period. However, future 2019 volumes at existing subway station stairways and fare arrays analyzed in the FEIS would have to increase by 39 percent or more compared to what was forecast for the 2016 Build with Mitigation condition in the FEIS before reaching capacity. It should also be noted that as much of the demand at the new on-site entrance and associated circulation improvements planned for the Atlantic Avenue/Pacific Street subway station complex is expected to be generated by the development on the project site, these facilities would not be as sensitive to increases in general background growth (background growth would not apply to project-generated demand). In addition, the number of subway trips generated by No Build development through 2019 is expected to be less than what was forecast for 2016 in the analyzed weekday AM and PM peak hours, and comparable or only marginally more in the weekday pre-game peak hour. Therefore, the potential changes in No Build subway demand resulting from a shift in the Build year from 2016 to 2019 are not expected to result in new significant adverse subway station impacts.

Under *CEQR Technical Manual* criteria, projected increases in subway load levels from a No Build condition to a Build condition that exceed practical capacity may be considered significant impacts if a proposed action generates five or more additional passengers per car. As shown in Table 13-48 in the FEIS, with full build-out, the proposed project would generate an average of no more than 4.2 additional passengers per car in the peak direction on all subway lines serving the project site. The proposed project would therefore not result in significant adverse impacts to subway line haul conditions under *CEQR Technical Manual* criteria, irrespective of any increase in background growth or demand from No Build site development.

Transit-Buses

As shown in Table 13-49 in the FEIS, the proposed project would generate from 2 to 38 new peak direction trips on analyzed bus routes in either the AM or PM peak hour in the 2016 Build condition. As disclosed in the FEIS, under NYCT guidelines, this demand would result in a capacity shortfall of 14 spaces on westbound B38 buses in the AM peak hour, resulting in a significant adverse bus impact based on the current service frequency of B38 buses. As standard practice, NYCT routinely

conducts ridership counts and adjusts bus service frequency to meet its service criteria, within fiscal and operating constraints. Therefore, no mitigation was proposed for this potential impact on westbound B38 bus service. With the project changes analyzed in this technical memorandum, there would be no change in the number of peak hour bus trips generated by the proposed project and, therefore, the incremental change in bus load levels resulting from the proposed project in 2019 would also remain unchanged from what was analyzed in the FEIS.

It is expected, however, that there would be changes in background growth and No Build site demand under the proposed 2019 No Build scenario. The shift in the Build year from 2016 to 2019 would potentially represent a 1.5 percent increase in background growth (based on the 0.5 percent/year growth rate recommended in the *CEQR Technical Manual*) compared to the level of background growth assumed in the FEIS for the 2006 through 2016 period. By contrast, overall New York City Transit bus ridership actually increased by only 0.7 percent from 2006 to 2008, less than the 1.0 percent (0.5 percent per year) assumed in the FEIS, and recent MTA data indicate that bus ridership is now declining, with 1.2 percent fewer riders in February 2009 compared to February 2008.

Table 12 shows the estimated travel demand generated by the No Build development assumed for the 2006 through 2016 period in the FEIS, and the estimated travel demand from new development now anticipated to occur by 2019. As shown in Table 12, it is estimated that the residential, office, retail and hotel uses in the FEIS No Build development scenario would generate 1,028 bus trips in the weekday AM peak hour, 1,621 in the weekday PM peak hour and 572 in the weekday pre-game peak hour. By comparison, new residential, office, retail and hotel development now anticipated to occur by 2019 would generate an estimated 703, 1,098 and 466 new bus trips in these peak hours, respectively. There would be 325 fewer bus trips generated in the weekday AM peak hour compared to the FEIS No Build development scenario, 523 fewer in the PM and 106 fewer in the weekday pre-game peak hour. Overall, the data in Table 12 indicate that the number of bus trips generated by No Build residential, office, retail and hotel development through 2019 is expected to be less than what was forecast for 2016 in the analyzed weekday AM, PM and pre-game peak hours. However, it should be noted that some bus routes may experience localized increases in No Build demand due to background growth and new No Build projects located in their proximity and/or changes in the directional distribution of peak hour trips due to changes in programmed uses (e.g., from an office travel pattern to a residential one).

It is therefore possible that one or more additional bus routes could experience over-capacity conditions in the proposed 2019 Build scenario. As it is anticipated that the proposed project would generate from 2 to 38 new peak direction bus trips on any analyzed route—less than the 65-passenger capacity of a single bus—any new over-capacity condition that may occur would be fully addressed by the addition of a single peak direction bus in the affected peak hour. As previously noted, NYCT routinely conducts—as standard practice—periodic ridership counts on its local bus routes and increases service where operationally warranted and fiscally feasible. Therefore, no additional measures would need to be proposed to address any new over-capacity conditions on local bus service under the proposed schedule change to 2019.

Pedestrian

Existing pedestrian volumes at the project site are relatively low; and all sidewalks, corner areas, and crosswalks analyzed in the FEIS are expected to operate at good levels of service (LOS A or B) in all peak hours under 2016 FEIS No Build conditions. The shift in the project's Build year from 2016 to 2019 would increase No Build volumes by approximately 1.5 percent (i.e., 0.5 percent/year). Given the low existing baseline volumes, this added background growth would result in no more than three additional pedestrians at any analyzed facility in the peak 15-minutes in any peak hour. This small

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increase in volume compared to the volumes analyzed in the FEIS is not expected to result in any new significant adverse impacts at any analyzed sidewalk, corner area or crosswalk.

As shown in Table 12 and discussed above, peak hour transit demand from discrete No Build sites in the vicinity of Downtown Brooklyn is generally expected to be lower than was forecast in the FEIS due to changes in anticipated No Build development since the FEIS analyses were conducted. Overall, this would be expected to result in somewhat fewer pedestrian trips at analyzed pedestrian elements than was originally forecast. It should be noted, however, that one new development not previously analyzed in the FEIS—470 Vanderbilt Avenue—would add approximately 376 dwelling units, 1,091 square feet of office space, and 115,424 square feet of retail space in proximity to the intersection of Vanderbilt and Atlantic Avenues at the northeast corner of the project site. As all analyzed sidewalks, corner areas, and crosswalks at this intersection were predicted to continue to operate at high levels of service (LOS A or B) in all peak hours in the 2016 FEIS Build condition, the additional pedestrian demand from this one development, coupled with the additional background growth resulting from the schedule change to 2019, is not expected to result in any new significant adverse pedestrian impacts.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The potential effects on transit and pedestrian conditions of changes to anticipated No Build developments in the vicinity of the project site were discussed previously in conjunction with the change in the project schedule to 2019. As discussed above, the changes in No Build site development along with the potential 1.5 percent increase in study area background demand associated with the three-year shift in the Build year are not expected to result in new significant adverse impacts to subway station, subway line haul or pedestrian conditions. However, it is possible that one or more additional bus routes could experience impacts due to increased No Build demand by 2019. Any new bus impact that may occur would be fully mitigated by the addition of a single peak direction bus in the affected peak hour. NYCT routinely conducts—as standard practice—periodic ridership counts on its local bus routes and increases service where operationally warranted and fiscally feasible. Therefore, no additional mitigation would need to be proposed to address any new potential impacts to local bus service that may occur as a result of changes in No Build site development and additional background growth.

AIR QUALITY

GENERAL PROJECT PLAN MODIFICATION

The proposed modification to the GPP would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to air quality. The proposed GPP modification would affect the timing of property acquisition but would not affect the proposed uses, their emissions, or traffic generated by those uses, which would remain the same as described in the FEIS. Thus, the GPP modification would not result in any changes that would affect the air quality analysis as described in the FEIS.

DESIGN DEVELOPMENT

The design development described above would result in a decentralized system for heating and hot water on the arena block. Separate steam plants would provide heating for the arena and Building 1.

The steam plant serving the arena would have a capacity of 1,200 bhp¹ (49 MMbtu/hr)² while the steam plant serving Building 1 would have a capacity of 1,000 bhp (40.83 MMbtu/hr). Each residential unit in Buildings 2, 3, and 4 would be provided with air-source heat pump air conditioning units for cooling and heating, supplemented with electrical resistance heating coils. Domestic hot water for the arena and Buildings 2, 3, and 4 would be provided by separate natural gas fired boilers, while domestic hot water for Building 1 would be provided by an electric water heater. The arena would have 150 bhp (6 MMbtu/hr) capacity hot-water boilers; Buildings 2 and 3 would each have 1.94 MMbtu/hr capacity gas-fired boilers; and Building 4 would have 2.91 MMbtu/hr capacity gas fired boilers. In addition, base electrical loads for each of the residential buildings would be served by (2)-65 kilowatt (kW) (1.68 MMbtu/hr) natural gas fired micro-turbines, which would also supply heat for domestic hot water. The arena boiler exhaust would be vented through a single stack located on the roof of Building 2. The exhaust from the boilers and microturbines in Buildings 2-4 would be directed to the roof of each building.

The use of electric heaters for residential units and the hot water heating for Building 1 would result in a combined steam plant capacity somewhat smaller compared to what was analyzed in the FEIS (3,200 bhp, 130.6 MMbtu/hr), and aggregate emissions of air pollutants from the arena block steam and hot water boilers and microturbines would be lower than the arena block emissions analyzed in the FEIS.

In addition, the steam plant equipment and exhaust stack for Building 1 is now anticipated to be located in Building 1 rather than Building 4 as assumed in the FEIS. The relocated steam plant exhaust would be farther away from most of the other project buildings where the maximum concentrations were predicted. However, in some cases the emission sources would be on buildings that would be lower in height than the Building 4 design analyzed in the FEIS. Therefore, an analysis was undertaken to assess the potential for air quality impacts from HVAC systems with the design development. This analysis considered both the potential for on-site (project-on-project) and off-site impacts. The analysis utilized the EPA-approved air dispersion model, AERMOD, and the same general procedures and assumptions outlined in the FEIS air quality chapter were followed. The results of the analysis determined that maximum concentrations of air pollutants would not increase as compared to the scenario that was analyzed in the FEIS. Therefore, the project with the design development described above would not have the potential to result in significant adverse air quality impacts that were not previously identified in the FEIS.

SCHEDULE CHANGE TO 2019

The schedule change to 2019 would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to air quality.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions described above would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to air quality.

¹ Bhp: Boiler horsepower; 1 bhp = 33,478 British thermal units per hour (btu/hr)

² MMbtu/hr: Million British thermal units per hour

NOISE

GENERAL PROJECT PLAN MODIFICATION

The proposed modification to the GPP would not result in significant adverse environmental impacts with respect to noise that were not addressed in the FEIS. The proposed GPP modification would affect the timing of property acquisition but would not affect the proposed uses, which would remain the same as described in the FEIS. Thus, the GPP modification would not result in any changes that would affect the noise analysis as described in the FEIS.

DESIGN DEVELOPMENT

The development in the project's design would not result in significant adverse environmental impacts with respect to noise that were not addressed in the FEIS. The modification of the arena's design and storm water system and the relocation of up to 100 parking spaces from the arena to Block 1129, the reconfiguration of the Flatbush Avenue lay-by lane, and the reconfiguration of the LIRR rail yard would not be expected to affect the results of the analysis presented in the FEIS. With this design development, noise levels due to the proposed project would be expected to be similar to those presented in the FEIS. Consequently, the project would not be expected to result in significant adverse noise impacts that were not previously identified in the FEIS.

SCHEDULE CHANGE TO 2019

The schedule change to 2019 would not result in significant adverse environmental impacts with respect to noise that were not addressed in the FEIS.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions described above would not result in significant adverse environmental impacts with respect to noise that were not addressed in the FEIS.

NEIGHBORHOOD CHARACTER

GENERAL PROJECT PLAN MODIFICATION

The proposed GPP modification would not change the FEIS conclusion that the completed project would not result in significant adverse environmental impacts with respect to neighborhood character. The proposed GPP modification would affect the timing of property acquisition but would not affect the proposed uses, which would remain the same as described in the FEIS. Thus, the GPP modification would not result in any changes that would affect the neighborhood character analysis for the completed project as described in the FEIS.

DESIGN DEVELOPMENT

As presented in the FEIS, the project would result in localized neighborhood character impacts to immediately adjacent lower density uses in the transitional areas to the south of the project site, but would not result in significant adverse impacts to the overall neighborhood character of the study areas. The design development described above would not change the FEIS build program notably—the project would still result in new development that would clearly and substantially alter neighborhood character on the project site—and would not result in impacts different from those previously identified in the FEIS. Similarly, there would not be any additional significant adverse or

unmitigated impacts to historic resources, urban design and visual resources, socioeconomics, traffic, or noise.

SCHEDULE CHANGE TO 2019

The schedule change to 2019 would not change the FEIS conclusion that the completed project would not result in significant adverse environmental impacts with respect to neighborhood character.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions described above would not change the FEIS conclusion that the completed project would not result in significant adverse environmental impacts with respect to neighborhood character.

CONSTRUCTION IMPACTS

The FEIS construction analysis examined the potential effects of project construction on a number of technical areas, including land use, socioeconomic conditions, community facilities, open space, historic resources, hazardous materials, traffic and parking, transit and pedestrians, air quality, noise and vibration, infrastructure, and neighborhood character. The analysis of construction impacts presented below focuses only on those areas that could be affected by the GPP modification, design development, schedule change to 2019, or changes in background conditions and methodologies and therefore does not specifically address land use socioeconomic conditions, community facilities, open space, historic resources, hazardous materials, pedestrians, or infrastructure.

GENERAL PROJECT PLAN MODIFICATION

With the proposed modification to the GPP, the taking of property would be divided into two phases. The first phase of property acquisition would occur towards the end of 2009 and would encompass the arena block, including the streetbeds to be closed, Block 1129, Pacific Street between Vanderbilt and Carlton Avenues, Lots 42 and 47 on Block 1121, and, if necessary for the construction and operation of the LIRR rail yard, easements or other property interests on Lot 35 on Block 1120 and possibly a small number of additional lots included in the project site. The second phase would occur towards the end of 2011 and would encompass the remainder of the project site. Therefore, certain land that had been planned to be used for staging of materials would not be available. Instead, part of the construction material staging for the arena would be on the arena block, and the remainder of the staging area would continue to be located on Block 1129. Parking for construction workers would continue to be located on Block 1129.

Several residential buildings adjacent to the arena block, on the north side of Dean Street between 6th and Carlton Avenues (Block 1128: Lots 85-87), which were assumed in the FEIS to be acquired before the construction of the arena block, would not be expected to be acquired prior to the arena's construction. With respect to air quality, these buildings are approximately the same distance away from the arena block construction as the previously analyzed residential receptors at the intersection of Dean Street and 6th Avenue. As presented in FEIS Figures 17b-5 and 17b-6, concentration increments at the buildings are expected to be similar to those predicted at the nearby receptors. The FEIS concluded that no significant adverse air quality impacts are predicted during the construction of the proposed project at any location, including the residential receptors at the intersection of Dean Street and 6th Avenue. Moreover, none of the windows of the buildings face west toward the arena block. The adjacent lot would be used as parking, storage, and/or construction trailers, and thus

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would not have active construction activities. Therefore, applying the same criteria as in the FEIS for the added sensitive receptors in Block 1128 during arena construction, no new air quality impacts would occur during the construction of the project.

Furthermore, since the FEIS was published, additional information regarding emissions controls has become available, indicating that the diesel particle filters (DPFs)—the central component of the emissions reduction program being applied for the construction of the project—reduce emissions significantly more than was assumed in the analysis. In the FEIS, DPFs were assumed to reduce diesel particulate matter (DPM) by 85 percent. The latest information indicates that almost all DPFs reduce DPM emissions by at least 92 percent, and most are in the range of 95 to 98 percent. Several large construction projects analyzed more recently under CEQR have applied an assumption of 90 percent reduction. Applying this assumption would result in overall emission increments that are at least 1/3 lower than presented in the FEIS, and in all likelihood closer to 2/3 lower. This information further substantiates the conclusion that the project would not result in any significant adverse air quality impacts during construction.

Noise impacts on Block 1128: Lots 85-87, would be similar in character to those disclosed in the FEIS. As noted above, these buildings are approximately the same distance away from the arena block construction as the previously analyzed residential receptors on the south side of Dean Street. It is reasonable to expect that the buildings on the north side of Dean Street would experience no greater level of construction noise as the buildings on the south side of Dean Street. According to the FEIS, the original construction schedule would result in significant increases in 2008 and 2009. The construction activity peaks of 2008 and 2009 in the original schedule correspond most closely with the construction that would occur during 2010 and 2011 under the new schedule. As a result, based on the new proposed schedule, significant noise level increases would be expected to occur during 2010 and 2011 along Dean Street. The project sponsor has already offered all residents on the project site the same noise mitigation measures provided to the other nearby buildings.

The FEIS also noted that properties along Dean Street were potential areas of concern for construction-related vibration. However, the project sponsor has and will continue to implement a monitoring program to ensure that vibration levels at buildings within this area are kept below the 0.50 inches/second PPV limit and that no architectural or structural damage would be expected to occur. As a result, there would be no new significant vibration impacts as a result of the revised construction schedule.

Thus, the proposed modification to the GPP would not result in new or greater significant adverse impacts presented in the FEIS analysis with respect to construction-related air quality, noise, or vibration impacts.

DESIGN DEVELOPMENT

The general means and methods used for construction, as presented in the FEIS, are not expected to change as a result of the design development. The modified design of the arena is simpler than described in the FEIS, but would still require substantially the same number of workers and truck deliveries. In addition, the modified arena would cover less ground area during construction. This additional space could be used for on-site staging of materials. The replacement of the 6th Avenue Bridge would no longer be necessary with this design development, and thus there would be fewer infrastructure improvements constructed. In summary, the design development would not result in significant adverse environmental impacts with respect to construction impacts that were not addressed in the FEIS.

SCHEDULE CHANGE TO 2019

Overall, construction activities with the schedule change would be similar to those of the approved project analyzed in the FEIS. However, there would be an approximate three-year shift in the overall construction schedule with completion of Phase II anticipated in 2019. The construction schedule presented in the FEIS showed construction activities taking place over a 10-year period, from the fourth quarter of 2006 to the fourth quarter of 2016. The revised construction schedule anticipates construction activities lasting until the fourth quarter of 2019. Under the schedule presented in the FEIS, in the fourth quarter of 2009 the construction of the arena would be completed and by the fourth quarter of 2010 the remaining arena block buildings—Buildings 1, 2, 3, and 4—would be completed. Under the revised schedule, completion of the arena construction would occur in the first quarter of 2012, and the reconstruction of the Carlton Avenue Bridge would be completed in time for the opening of the arena and would be compatible with LIRR rail yard operations and the new permanent yard, which is expected to be completed in 2013. Under this revised schedule, the improvements to the LIRR rail yard are anticipated to be completed in 2013. The last building on the arena block would be completed in the second quarter of 2014.

General construction practices, equipment, staging, maintenance and protection of traffic, and work hours would be the same as described in the FEIS. Lane and sidewalk closures would also be comparable to that described in the FEIS. Certain activities that were expected to take place during the intensive construction on the arena block have proceeded since the FEIS was completed. These activities have included demolition of some existing structures and construction of the temporary rail yard. Comparisons to the findings presented in the FEIS with respect to traffic and transportation, air quality, and noise are described below.

Traffic and Transportation

The FEIS analyzed potential construction traffic and transportation impacts by dividing the construction period into Phase I (2006-2010) and Phase II (2011-2016). The highest level of construction activities during Phase I was projected to take place between the third quarter of 2008 and the second quarter of 2009, with a 4-quarter daily average of just over 3,400 construction workers and approximately 420 truck deliveries. During Phase II, the peak construction activities would have taken place between the third quarter of 2011 and the second quarter of 2012, with a 4-quarter daily average of approximately 2,040 construction workers and 310 truck deliveries. The revised construction schedule with the proposed project modifications indicates that the highest level of construction activities would take place during the last three quarters of 2012, with a 4-quarter daily average of 1,922 construction workers and 349 truck deliveries. A summary of the FEIS and revised construction workforce and truck delivery projections is presented in Table 13 and shown in Figure 7.

In comparison to the construction schedule analyzed in the FEIS, the revised construction schedule would result in maximum construction activities shifting from 2008-2009 to 2012, with fewer deliveries and approximately 40 percent fewer estimated daily workers. However, peak construction under the revised schedule would take place after the completion of the arena and Building 2, whereas peak construction under the FEIS schedule was projected to occur prior to completion of any building. Hence, prior to any buildings having been completed, the revised schedule would generate less peak construction traffic than analyzed in the FEIS. For the new construction peak in 2012, projected construction traffic levels would be comparable to those projected for the FEIS Phase II peak construction analysis. In that analysis, the entire arena block (the arena and Buildings 1, 2, 3, and 4) was assumed to be completed, whereas for the new construction peak in 2012, only the arena and Building 2 would be completed. Therefore, operational traffic attributed to the

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completed components of the arena block would be less with the project modifications. Overall, the cumulative peak conditions resulting from the revised construction schedule would fall within the maximum envelopes analyzed in the FEIS.

Table 13
Summary of Construction Workers and Delivery Trucks

	Year	2006				2007				2008				2009				2010			
		Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd
FEIS	Workers				565	635	460	588	1,140	1,575	2,220	2,920	3,540	3,710	3,505	2,325	1,250	745	665	620	340
	Deliveries				155	270	240	410	305	265	375	355	430	470	405	360	280	140	150	160	165
Cur.	Workers					26	56	75	151	175	184	184	184	180	171	337	459	563	742	1,055	1,476
	Deliveries					75	90	110	106	106	106	126	126	96	96	166	231	191	374	266	231
	Year	2011				2012				2013				2014				2015			
		Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd
FEIS	Workers	490	1,035	1,760	2,105	2,215	2,090	1,450	810	595	570	820	845	440	420	705	870	870	855	855	805
	Deliveries	255	255	335	360	320	235	195	115	90	120	40	40	85	70	130	100	65	155	150	155
Cur.	Workers	1,681	1,728	1,620	1,597	1,615	1,904	1,949	1,954	1,880	1,706	1,352	873	721	833	1,089	1,369	1,465	1,440	1,246	1,234
	Deliveries	265	314	310	409	447	404	283	367	341	358	298	240	299	278	325	310	280	255	225	210
	Year	2016				2017				2018				2019							
		Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th			
FEIS	Workers	1,225	1,420	1,070	655																
	Deliveries	155	55	80	50																
Cur.	Workers	1,323	1,509	1,494	1,197	783	601	756	968	936	819	757	1,019	1,380	1,389	1,145	649				
	Deliveries	200	75	70	65	110	95	130	80	45	155	150	170	155	65	90	50				

Sources: Atlantic Yards Arena and Redevelopment Project FEIS (2006)
Revised schedule (April 2009)

As discussed in the FEIS, construction trips typically peak at the 6 to 7 AM arrival hour and the 3:30 to 4:30 PM departure hour, with minimal overlap with operational trips, which typically peak at 8 to 9 AM and 5 to 6 PM. Since peak construction activities under the revised construction schedule would take place after the completion of the arena, roadway improvements, traffic mitigation measures, traffic circulation plans, and updated curbside parking regulations described in the FEIS would already be in place to accommodate operational traffic from the arena and other to be completed buildings. Hence, the magnitude of temporary significant adverse traffic impacts generated by the construction activities under the revised construction schedule is expected to be similar to or lower than estimated in the FEIS. Similarly, after all buildings in the arena block are completed by the 4th quarter of 2014, the projected number of construction workers and truck deliveries would be lower under the revised construction schedule than the levels projected for FEIS Phase II peak construction. Therefore, the revised construction schedule is not expected to result in additional or new significant adverse construction traffic impacts or required mitigation measures that were not identified in the FEIS. With overall lower levels of construction worker trips, there would not be a potential for significant adverse transit and pedestrian impacts during construction.

Air Quality

The construction air quality analysis in the FEIS was revisited to determine if the revised construction schedule would have the potential to cause new significant adverse impacts not identified in the FEIS. The conclusion of the construction air quality analysis in the FEIS was that no significant adverse air quality impacts would occur during the project's construction period.

The general means and methods used for construction, as presented in the FEIS, are not expected to change as a result of the revised construction schedule. In order to assess the potential change in the impact on air pollutant concentrations associated with the revised schedule, the emissions assumptions prepared for the FEIS were applied to the revised schedule, resulting in new estimates ('emissions profiles') of 24-hour and annual average fine particulate matter (PM_{2.5}) emissions

throughout the duration of construction. These emissions profiles were then compared with the profiles presented in the FEIS. The new 24-hour and annual average ground-level emissions profiles with the revised construction schedule, together with the previous profiles presented in the FEIS, are presented in Figures 8 and 9, respectively. Ground-level emissions are emissions from activities that do not occur at elevated locations in the constructed buildings. Since most emissions would be near ground level, and the nearest receptors are at ground level, the highest impacts were predicted to be at ground level and are affected mostly by emissions at or near ground level.

As presented in the figures, the level of intensity during the peak construction period with the revised schedule would be lower than that analyzed in the FEIS. With the revised schedule, a peak 24-hour average ground-level emissions of 5.1 pounds per day (lb/day) was predicted, whereas a peak of 7.4 lb/day was predicted in the FEIS. Similarly, the peak annual average ground level emissions with the revised schedule were predicted to be 2.3 lb/day, whereas an annual peak of 2.8 lb/day was predicted in the FEIS. The revised schedule would therefore result in lower peak emission levels than those predicted in the FEIS, and would therefore generally result in lower concentration increments.

Therefore, the revised construction schedule is not expected to result in any significant adverse impacts on air quality.

Noise

The construction noise analysis presented in the FEIS was revisited to determine if the revised schedule would have the potential to result in significant adverse impacts not previously identified in the FEIS and/or change any of the conclusions presented in the FEIS. The construction noise analysis presented in the FEIS concluded that at a number of specific locations near the project site, for specific periods of time, significant adverse noise impacts would occur as a result of the construction of the approved project. In addition, the FEIS identified measures, which the project sponsor committed to implement, to mitigate these impacts.

In order to assess the change in the potential impact on noise associated with the revised construction schedule, the revised construction schedule, including equipment usage, was examined to determine whether there would be any significant increase in the number of pieces of equipment operating on-site. In addition, the numbers of workers and truck trips were examined.

The revised construction schedule, when compared to the construction schedule presented in the FEIS, contains comparable construction activities. There are two primary differences between the FEIS construction schedule and the revised construction schedule. The first difference is that with the revised construction schedule, certain construction activities would occur at a later date. The second difference concerns the number of pieces of construction equipment simultaneously operating at the project site at any time period. In peak periods the number of pieces of construction equipment simultaneously operating on the project site at any time period with the revised construction schedule would be either the same or less than was assumed at a comparable period of construction for the FEIS construction analysis. Therefore, with the revised construction schedule, noise levels produced by construction activities would be expected to be comparable to the noise levels predicted to occur with the FEIS construction schedule, and impacts of comparable intensity would be expected with the revised construction schedule.

The project sponsor has and will continue to implement a monitoring program to ensure that vibration levels at buildings within this area are kept below the 0.50 inches/second PPV limit and that no architectural or structural damage would be expected to occur. As a result, there would be no new significant vibration impacts as a result of the revised construction schedule.

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Consequently, no significant noise or vibration impacts would be expected to occur that were not already identified previously in the FEIS.

Neighborhood Character

As described in the FEIS, construction activity associated with the Atlantic Yards project would have significant adverse localized neighborhood character impacts in the immediate vicinity of the project site during construction. The project site and the immediately surrounding area would be subject to added traffic from construction trucks and worker vehicles, partial and complete street closures, and bridge reconstruction, resulting in changes in area travel patterns and the resultant significant adverse traffic impacts. Construction traffic and noise would change the quiet character of Dean Street and Pacific Street in the immediate vicinity of the project site. With the schedule change to 2019, there would be an additional three years during which the project would be an active construction area. Therefore, the localized, significant adverse neighborhood character impacts at Dean and Pacific Streets would continue through the 2019 construction period.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions described above would not result in significant adverse environmental impacts with respect to construction impacts that were not addressed in the FEIS. Increases in the study area's population in the future without the project would not affect construction practices or the potential for significant adverse construction impacts, and no changes have been made since the FEIS to the *CEQR Technical Manual* methodologies for analyzing the potential for construction impacts.

PUBLIC HEALTH

GENERAL PROJECT PLAN MODIFICATION

The proposed modification to the GPP would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to public health. The proposed GPP modification would affect the timing of property acquisition but would not affect the proposed uses, which would remain the same as described in the FEIS. Thus, the GPP modification would not result in any changes that would affect the public health analysis as described in the FEIS.

DESIGN DEVELOPMENT

As discussed above, the design development would not change the FEIS conclusions with respect to the project's impacts to air quality or noise. Therefore, the design development would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to public health.

SCHEDULE CHANGE TO 2019

The schedule change to 2019 would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to public health.

CHANGES IN BACKGROUND CONDITIONS AND METHODOLOGIES

The changes in background conditions described above would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to public health.

CONCLUSION

As a result of the analyses detailed in the various sections above, the proposed GPP modification, design development, schedule change to 2019, and changes in background conditions and analysis methodologies would not, considered either individually or together, result in any significant adverse environmental impacts not previously addressed in the FEIS.

F. POTENTIAL FOR DELAYED BUILD OUT

Since the FEIS, New York City has suffered a large loss in employment as a result of the global economic downturn. A recent analysis of the Mayor's Preliminary Budget for 2010 by the Independent Budget Office (IBO) indicated that the city's economy will continue to decline through 2010. Overall, the city is projected to lose about 254,300 jobs in 2009 and 2010, a decrease of about 6.8 percent from 2008. Although job growth is expected to resume at a slow pace in the latter half of 2010, IBO expects there to be 108,000 fewer jobs in the city by the end of 2013 (a decrease of 2.9 percent) compared to the first quarter of 2008. These estimates are similar to employment projections made by the New York City Office of Management and Budget.

Current economic conditions, including the employment losses described above, have led to decreases in demand for both residential and commercial real estate, while turmoil in the financial market has made it more difficult to obtain financing for development projects. Over the past year, these changes have resulted in delays and program changes for development projects citywide. It is anticipated that the Atlantic Yards Arena and Redevelopment Project will be completed in 2019. However, if current economic conditions persist beyond the timeframes of current projections, it is possible that future delays may occur.

These potential delays due to prolonged adverse economic conditions would not affect the timing of the development of the arena, the transit access improvements, the construction of the new LIRR rail yard, the reconstruction of the Carlton Avenue Bridge or the construction of Building 2. It could, however, delay the construction of some of the remaining buildings on the arena block as well as the Phase II sites. While the current construction plan calls for the continuous construction of the platform over the rail yard in Phase II, under this delayed build out condition, sections of the platform for Buildings 5 through 10 could be constructed as each of the buildings move forward in development. On the arena block, interim open space, urban plaza or other temporary public amenity use would be provided on the building footprints not under development.

This section of the memo considers a scenario in which full build out of the project would be delayed as a result of prolonged adverse economic conditions.

In the context of environmental review, the primary relevance of a build year is that it provides the baseline condition against which incremental changes from a project can be evaluated. Depending on general economic conditions and the particular geographic area being studied, pushing a build year further into the future can increase key baseline figures (e.g., population, employment, traffic) against which a project's effects are measured.

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To the extent that the current economic conditions continue to affect the city's employment base, the market-rate residential units and office components of the project and other No Build projects in the study area would be subject to the same market forces (e.g., reduced demand for housing and commercial space). Similarly, it is expected that the market-rate components of the project would be financed in the same general manner as other No Build projects, with each of the buildings in Atlantic Yards evaluated by lenders as an individual project. Therefore, delay in the project resulting from prolonged adverse economic conditions would be expected to be accompanied by a delay in other study area projects, and future conditions in a delayed post-2019 Build year would be fundamentally the same as those described in this technical memorandum for 2019. For most of the technical areas analyzed in the FEIS, future population, employment, and housing conditions are evaluated based on known development projects. Table 3 provides a detailed list of updated No Build projects anticipated for completion through 2019. As noted previously, the updated list includes projects that were planned prior to the economic slowdown and, although some of those projects are on hold, they are assumed to still be moving forward in the future when market conditions improve. Therefore, this list is conservatively inclusive since projects were not removed. Based on current information there are no substantial projects planned for completion after 2019 that would need to be added to the No Build list presented in Table 3 and used to evaluate future conditions. Therefore, it is expected that future conditions under a scenario of prolonged adverse economic conditions would be fundamentally the same as those described in this technical memorandum for 2019.

LAND USE, ZONING, AND PUBLIC POLICY

The potential delay in the construction of the proposed project beyond 2019 would not affect the project's compatibility with the surrounding area or alter the underlying zoning as the project development would need to conform with the GPP. Under this delayed build out scenario, the temporary surface parking lot used for arena parking would be in place for a longer period of time than described in the FEIS. Upon completion of the project, there would be no change in land use, underlying zoning, or public policy.

As described above, potential delays due to prolonged adverse economic conditions would not affect the development of the arena, the transit access improvements, the construction of the new LIRR rail yard, the reconstruction of the Carlton Avenue Bridge or the construction of Building 2; however, it could delay the construction of some of the remaining buildings on the arena block as well as the Phase II sites. While the current construction plan calls for the continuous development of the platform over the rail yard in Phase II, under this delayed build out scenario, sections of the platform for Buildings 5 through 10 would likely be constructed as each of the buildings move forward in development.

As described in the FEIS, although the arena use would result in localized adverse land use impacts to certain existing residential uses within 200 feet of the arena block. However, the arena use was not considered to be a significant adverse impact on land use because the arena activities would be flanked by and interspersed with new, compatible residential and local street-level retail uses. On the arena block, Building 2—located on the southwestern corner of the arena block facing the residential district to the south—would be constructed with a predominantly residential use with street-level retail frontages along Dean Street and Flatbush Avenue. Temporary open space and public amenity use such as retail kiosks, landscaped seating areas, and plantings would be provided on the building footprints not under development, particularly Buildings 3 and 4. These amenities would enliven the street-level environment and provide a buffer between the arena and residential district to the south.

As in the FEIS, the localized impacts associated with the arena would not result in a significant adverse land use impact, as this condition would be temporary and would be addressed by the construction of these buildings over time. Furthermore, the Dean Street corridor between Flatbush and Vanderbilt Avenues—which has a mix of commercial, industrial, institutional, parking, and residential uses—has historically functioned as a transition between the more commercial and industrial uses to the north and the residential uses to the south.

Under the delayed build out scenario, the temporary surface parking lot used for arena parking on Block 1129, which was predominantly characterized by large abandoned manufacturing buildings in the No Build condition studied in the FEIS, would be in place for a longer period of time than described in the FEIS. However, this would not result in a change to the conclusions of the FEIS because as the Phase II buildings come on line, the surface parking lot would be relocated below grade. Furthermore, the surface parking at this location would be compatible with the mix of light manufacturing, commercial, and residential uses that are adjacent to the project site south of Dean Street between Carlton and Vanderbilt Avenues, which are areas predominantly zoned for manufacturing uses.

Thus, the potential delay of the full build out of the project would not result in significant adverse environmental impacts with respect to land use, zoning and public policy that were not addressed in the FEIS.

SOCIOECONOMIC CONDITIONS

The delay of the full build out of the project would result in a delay in the realization of the full economic benefits of the project as disclosed in the FEIS. The project's potential for direct and indirect displacement and effects on specific industries at full build-out would remain the same as described in the FEIS. Therefore, the schedule delay to beyond 2019 would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to socioeconomic conditions.

COMMUNITY FACILITIES

In this scenario, the timing of construction of the project could be affected, but the proposed uses and program, which would remain the same as described in the FEIS, would not be affected. Thus, there would be no additional demand for police protection, fire protection, emergency services, public schools, libraries, hospitals and health care facilities, or daycare centers. Additional information on schools and day care facilities is discussed below.

As noted above, the overall number of dwelling units, as well as the total number of units in an affordable housing program, would remain the same as that considered in the FEIS. Space would still be made available for the anticipated on-site school, daycare, and intergenerational facility. In the event that the project's residential buildings are delayed, the deadline for the New York City School Construction Authority (SCA) to decide whether or not it wants to develop a school at the project site would be extended.

With respect to the availability of day care demand, the private market may respond to the additional demand by opening day care centers and increasing capacity in the study area as population increases. Under this delayed build scenario, the project sponsor will also continue to assess day care enrollment and capacity in the study area as the project is completed. If necessary, the project sponsor will work with ACS to develop appropriate measures to provide additional capacity on-site or off-site as the project is completed, as described elsewhere in this Technical Memorandum.

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In summary, the potential delay of the full build out of the project would not result in significant adverse environmental impacts with respect to community facilities that were not addressed in the FEIS.

OPEN SPACE

The conclusions of the FEIS analysis with respect to open space would not change if completion of the project were to be delayed beyond 2019. As described above, until the Buildings 1, 3 and 4 on the arena block are built, interim open space, urban plaza or other temporary public amenity use would be provided on those building footprints not under development.

The FEIS identified a temporary significant adverse open space impact between the completion of Phase I and the completion of Phase II. With the delayed build out scenario, this temporary impact would be extended, but would continue to be addressed by the Phase II completion of the 8 acres of publicly accessible open space. Moreover, as each of the buildings is completed, a certain amount of open space would be provided in conformance with the GPP's Design Guidelines, thereby offsetting some of this temporary open space impact.

SHADOWS

Further delay in the construction schedule due to prolonged adverse economic conditions would not result in significant adverse environmental impacts with respect to shadows that were not addressed in the FEIS.

HISTORIC RESOURCES

Further delay in the construction schedule due to prolonged adverse economic conditions would not result in significant adverse environmental impacts with respect to historic resources that were not addressed in the FEIS.

URBAN DESIGN

The potential delay in the construction of the proposed project would not affect the project's urban design as the project development would need to conform with the GPP's Design Guidelines. As described above, should prolonged adverse economic conditions result in delayed construction of Buildings 3 and 4 on the arena block, temporary open space and public amenities such as retail kiosks, landscaped seating areas, and plantings would be provided on these building footprints. These amenities would enliven the street-level environment and, along with Building 2, would provide a buffer between the arena and existing development to the north and south. Moreover, with the construction of Buildings 3 and 4, the condition of the arena block would be the same as that analyzed in the FEIS. Therefore, the potential delay in construction of Buildings 3 and 4 would not result in significant adverse environmental impacts with respect to urban design and visual resources that were not addressed in the FEIS.

Under the delayed build out scenario, the temporary surface parking lot used for arena parking would be in place for a longer duration than described in the FEIS and in this technical memorandum. However, this delayed schedule would not result in significant adverse environmental impacts with respect to urban design and visual resources that were not addressed in the FEIS, since upon full build out, the surface lot would be relocated below ground.

HAZARDOUS MATERIALS

Further delay in the construction schedule due to prolonged adverse economic conditions would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to hazardous materials.

INFRASTRUCTURE

Further delay in the construction schedule due to prolonged adverse economic conditions would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to infrastructure, including water supply, sanitary wastewater treatment, stormwater runoff and combined sewer overflows (CSOs), solid waste management, and energy because the delay would not materially affect these services or resources.

TRAFFIC AND PARKING

For traffic and transportation analyses in the vicinity of Downtown Brooklyn, background growth amounting to 0.5 percent per year is typically added onto existing conditions along with demand from specific No Build projects to develop a future No Build condition. However, under a scenario of prolonged adverse economic conditions that are assumed to delay development projects, the application of this level of background growth to the additional period of delay would not be appropriate. Such robust background growth is not consistent with this scenario, under which there would be a reduced demand for housing and commercial space and delays in development projects in the study area. As adverse economic conditions begin to abate and the economy begins to recover, transportation demand in the study area can once again be expected to experience some level of background growth. New demand from discrete No Build sites in the area will also be generated as these developments once again begin to advance. Although the characteristics of specific No Build projects may have changed in the interim, the inclusive list of No Build sites that has been compiled provides a conservative basis for projecting the magnitude of future development that can be expected as conditions improve. Overall, the total level of study area transportation demand expected at the time of project completion under a scenario of prolonged adverse economic conditions is unlikely to be greater than has been presented in this technical memorandum for 2019.

Moreover, even if a 0.5 percent per year background growth rate were to be applied, it is unlikely that conditions under a delayed scenario would be worse than analyzed in the FEIS. To conservatively illustrate the potential effects of an additional delay in the project, the sections below detail potential traffic and transportation conditions applying the 0.5 percent annual growth factor to a hypothetical delay of approximately five years, resulting for analytical purposes in a 2024 Build year.

As described above, the analysis of future traffic conditions in the FEIS utilized a 2006 baseline condition that was increased by a total of five percent to account for background growth through 2016 (0.5 percent per year) and to which was added travel demand from No Build developments. If the 0.5 percent annual growth factor were to be applied even in the scenario of prolonged adverse economic conditions, a Build year of 2024 would potentially represent an approximately four percent increase in background growth compared to the 2016 Build year analyzed in the FEIS. However, recent ATR data indicate that 2008 weekday and Saturday traffic volumes on the primary arteries serving the project site are actually lower by 7 to 12 percent than the 2006 baseline used for the FEIS. In addition, as noted previously, since issuance of the FEIS, some development projects have been completed in the surrounding area; some are now on hold, due to changes in market conditions and financing availability; and some new projects are under development. Based on the

conservatively inclusive No Build list of known developments, it is estimated that demand from No Build sites expected to occur under a scenario of prolonged adverse economic conditions would generate fewer vehicle trips in the weekday AM, midday, and PM peak hours than were assumed for 2016 in the FEIS. There would be a modest increase in the number of No Build site vehicle trips in the pre-game and post-game peak hours compared to the demand assumed in the FEIS; however, these trips would be widely dispersed throughout Downtown Brooklyn and its vicinity, and the number of additional vehicle trips occurring at any one intersection is expected to be relatively small. Overall, the anticipated demand from No Build development along with the potential four percent increase in study area background traffic associated with a 2024 Build year would not be expected to result in total traffic volumes greater than what was analyzed in the FEIS for the 2016 Build year, especially in the context of the 7 to 12 percent decline in weekday and Saturday traffic volumes that occurred from 2005 to 2008. Moreover, under a scenario of prolonged adverse economic conditions, it would be unrealistic to assume that housing and employment growth—the principal factors driving traffic volumes—would continue to result in a 0.5 percent annual increase in background growth. The recovery that follows a pronounced economic downturn typically ramps up over an extended period of time, and thus the rebound in employment and associated traffic activities does not occur immediately, since growth starts from the lower base established by the job losses and associated traffic conditions during the recession.

A Build year of 2024 would not be expected to result in greater demand for off-street public parking in the vicinity of the project site than was analyzed in the FEIS. Overall, the FEIS assumed a five percent increase in existing parking demand due to background growth from 2006 through 2016. However, as discussed above, recent ATR data indicate that weekday and Saturday traffic volumes on the primary arteries serving the project site have actually declined by approximately 7 to 12 percent since 2005. Given these ATR data and the current economic downturn, it is expected that parking demand in the vicinity of Downtown Brooklyn has also declined during this period. In addition, based on known No Build developments there would be substantially less new office space developed by 2024 compared to the development program assumed for the 2016 No Build analysis in the FEIS. Future office parking demand would therefore also be substantially lower than what was assumed in the FEIS. Although the anticipated residential development would be greater than what was assumed for the 2016 No Build scenario, this additional residential development is not expected to substantially increase the demand for public parking. It is anticipated that residential parking demand would be generally accommodated in accessory parking, as zoning in the area typically imposes minimum parking requirements for new residential developments that are designed to accommodate the development's parking demand. As such, it is not expected that parking demand in the vicinity of the project site in the scenario of prolonged adverse economic conditions would be greater than what was analyzed in the FEIS for the 2016 Build year. In addition, it should be noted that in the 2016 Build condition analyzed in the FEIS, the parking study area would continue to operate with a surplus of between 624 and 2,919 off-street public parking spaces in the analyzed weekday AM, midday, evening, and Saturday midday peak hours under both project variations (see Tables 12-27 and 12-38 in the FEIS). Therefore, even if there were to be a small increase in parking demand by 2024 compared to the levels forecast for 2016, sufficient off-street public parking capacity would be expected to be available to accommodate this demand, and it would not result in new significant adverse parking impacts. Moreover, under a scenario of prolonged adverse economic conditions it would be unrealistic to assume that stagnating housing and employment growth—the principal factors driving parking demand—would continue to result in a 0.5 percent annual increase in background growth in parking demand.

TRANSIT AND PEDESTRIANS

Under a scenario of prolonged adverse economic conditions, in which the Atlantic Yards project and other No Build projects in the study area are delayed beyond 2019, transit and pedestrian conditions in the study area are expected to be similar to the conditions presented in this technical memorandum for 2019. The application of an annual growth factor beyond 2019 is not consistent with a scenario of prolonged adverse economic conditions. Nevertheless, if the 0.5 percent annual growth factor were to be applied even in the scenario of prolonged adverse economic conditions, a delay in the completion of the project to 2024 would potentially represent an approximately four percent increase in background growth compared to the level of background growth assumed in the FEIS for the 2006 through 2016 period. By contrast, the number of subway trips generated by No Build development through 2024 is expected to be less than what was forecast for 2016 in the analyzed weekday AM and PM peak hours, and comparable or only marginally more in the weekday pre-game peak hour. (As overall demand on the subway system is typically lower in the weekday post-game and Saturday pre- and post-game peak hours, these periods were not assessed for subway impacts in the FEIS.) As much of the demand at the new on-site entrance and associated circulation improvements planned for the Atlantic Avenue/Pacific Street subway station complex is expected to be generated by the development on the project site, these facilities would not be as sensitive to increases in general background growth (background growth would not apply to project-generated demand). At existing subway station stairways and fare arrays analyzed in the FEIS, future volumes would have to increase by 39 percent or more compared to what was forecast for the 2016 Build with Mitigation condition in the FEIS before reaching capacity. As the potential changes in No Build subway demand resulting from a shift in the Build year are not expected to result in an increase of this magnitude, new significant adverse subway station impacts are not expected under this scenario.

Under *CEQR Technical Manual* criteria, projected increases in subway load levels from a No Build condition to a Build condition that exceed practical capacity may be considered significant impacts if a proposed action generates five or more additional passengers per car. As shown in Table 13-48 in the FEIS, with full build-out, the proposed project would generate an average of no more than 4.2 additional passengers per car in the peak direction on all subway lines serving the project site. The proposed project would therefore not result in significant adverse impacts to subway line haul conditions under *CEQR Technical Manual* criteria, irrespective of any increase in background growth or demand from No Build site development.

Given the additional background growth and potential changes in No Build site bus demand under the scenario of prolonged adverse economic conditions, some additional local bus routes may be operating near capacity in the peak direction in a 2024 No Build compared to the FEIS 2016 No Build scenario. It is therefore possible that one or more additional bus routes could experience over-capacity conditions. As it is anticipated that the proposed project would generate from 2 to 38 new peak direction bus trips on any analyzed route—less than the 65-passenger capacity of a single bus—any over-capacity condition that may occur would be addressed by the addition of a single peak direction bus in the affected peak hour. NYCT routinely conducts—as standard practice—periodic ridership counts on its local bus routes and increases service where operationally warranted and fiscally feasible. Therefore, no additional measures would need to be proposed to address any potential over-capacity conditions.

Existing pedestrian volumes at the project site are relatively low; and all sidewalks, corner areas, and crosswalks analyzed in the FEIS are expected to operate at good levels of service (LOS A or B) in all peak hours under 2016 FEIS No Build conditions. If a background growth factor were to be applied to pedestrian volumes, the shift in the Build year under the scenario of prolonged adverse economic

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conditions would increase No Build volumes by approximately four percent (i.e., 0.5 percent/year). Given the low existing baseline volumes, this added background growth would result in no more than eight additional pedestrians at any analyzed facility in the peak 15-minutes in any peak hour (or roughly one person every two minutes). This small increase in volume compared to the volumes analyzed in the FEIS is not expected to result in any new significant adverse impacts at any analyzed sidewalk, corner area or crosswalk.

AIR QUALITY

Further delay in the construction schedule due to prolonged adverse economic conditions would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to air quality because the delay would not affect project-related emissions.

NOISE

Further delay in the construction schedule due to prolonged adverse economic conditions would not result in significant adverse noise impacts not addressed in the FEIS. The delay would not materially affect project-generated noise.

NEIGHBORHOOD CHARACTER

The schedule change would not result in significant adverse environmental impacts with respect to neighborhood character that were not addressed in the FEIS. Under this delayed build out scenario, the temporary surface parking lot used for arena parking would be in place for a longer period of time than described in the FEIS. However, this would not result in a change to the conclusions of the FEIS, which disclosed that traffic, noise, and other effects of the active uses on the project site upon completion of Phase I would have localized adverse neighborhood character impacts on Dean Street. As with the FEIS, these impacts would be experienced in a small area adjacent to the project site and would not affect the character of the larger Prospect Heights neighborhood. Moreover, as the Phase II buildings come on line, the surface parking lot would be relocated below grade.

As described in the FEIS and above, construction activity associated with the Atlantic Yards project would result in significant adverse localized neighborhood character impacts in the immediate vicinity of the project site during construction. The construction activities would be substantially the same. The extension of the schedule would result in an additional period of time during which portions of the project site would be undergoing active construction. Therefore, the localized, significant adverse neighborhood character impacts at Dean and Pacific Streets would continue through the prolonged construction period.

In the delayed build out scenario, the nearby residential uses may not have the buffer from the arena use provided by Buildings 1, 3, and 4; however, this condition would be temporary and would be addressed by the construction of these buildings over time. On the arena block, Building 2—located on the southwestern corner of the arena block facing the residential district to the south—would be constructed with a predominantly residential use with street-level retail frontages along Dean Street and Flatbush Avenue. Temporary open space and public amenity uses such as retail kiosks, landscaped seating areas, plantings would be provided on the building footprints not under development, particularly Buildings 3 and 4. These amenities would enliven the street-level environment and provide a buffer between the arena and residential district to the south and north.

In summary, the potential delay of the full build out of the project would not result in significant adverse environmental impacts with respect to neighborhood character that were not addressed in the FEIS.

CONSTRUCTION

Construction activities may be prolonged with the schedule change but would be similar to those of the approved project analyzed in the FEIS and be similar to the currently proposed project showing a 2019 completion date. These potential delays due to prolonged adverse economic conditions would not affect the development of the arena, the transit access improvements, the reconstruction of the LIRR rail yard, the reconstruction of the Carlton Avenue Bridge or the construction of Building 2. While the current construction plan calls for the continuous construction of the platform over the rail yard in Phase II, the delayed build out condition would likely result in sections of the platforms being constructed as each of the corresponding buildings move forward in development. As noted above, as each of the buildings is completed, a certain amount of landscaped open space would be provided in conformance with the GPP's Design Guidelines.

General construction practices, equipment, staging, maintenance and protection of traffic, and work hours would be similar to that described for the 2019 completion year. Certain activities that were expected to take place during the construction peaks on the arena block and Phase II sites would now be prolonged but the intensity of these activities would not increase. The effects of this delayed construction scenario on air quality and noise would be spread over a longer period of time but the level of impact would not be greater than that presented in the FEIS or for the revised 2019 construction schedule.

Should there be periods in which there are temporary cessations of site construction, there would be no major equipment stored on the site; however, the project sites would be maintained and secured. Overall, should the project be delayed beyond the 2019 schedule, construction effects—and the localized adverse impact on neighborhood character on Dean and Pacific Streets—would be prolonged but impacts associated with this construction activity would not be greater than that presented in the FEIS.

PUBLIC HEALTH

The schedule change would not change the FEIS conclusion that the project would not result in significant adverse environmental impacts with respect to public health.

CONCLUSION—POTENTIAL FOR DELAYED BUILD OUT

A delay in the full build out year for the Atlantic Yards Arena and Redevelopment Project as a result of prolonged adverse economic conditions would not result in any significant adverse environmental impacts that were not addressed in the FEIS. *

A. INTRODUCTION

This appendix analyzes a scenario in which the arena and Buildings 2, 3, and 4 would be completed as contemplated under the revised schedule discussed in the technical memorandum, but Building 1 would not be completed by the end of Phase I. This scenario is being analyzed to identify whether a potential delay in construction for Building 1 due to changes in market demand for office space or other circumstances would have the potential to result in significant adverse impacts not previously identified in the FEIS and/or change any of the conclusions presented in the FEIS.

In the revised construction schedule for the project, work on Building 1 would begin in November 2010 and would conclude in August 2013, a period of 35 months. The other buildings on the arena block would be constructed at roughly the same time, with the arena and Building 2 completed in 2012, Building 3 completed in 2013, and Building 4 completed in 2014. If the development of Building 1 were delayed, however, it is assumed for the purposes of analysis that construction of this building would begin after the other buildings on this block are completed. In this scenario, Building 1 construction would start in June 2014 and extend through March 2017 (see Table 1). The period of construction would remain the same, at 35 months. Although under this scenario Building 1 could be constructed at anytime during the project's Phase II build out, it was conservatively assumed in this discussion that construction of Building 1 would occur during the Phase II peak construction activity. Thus, Building 1 would be under construction at the same time as buildings are slated to come on line during Phase II of the project, specifically Buildings 5, 6, 7, 8, 14, and (for a short period) 15.

Table 1
Arena Block Construction Phasing

Project Component	Revised Project Schedule		Building 1 Delay Scenario	
	Duration	Time Period	Duration	Time Period
Arena	29 months	2009-2012	32 months	2009-2012
Building 1	35 months	2010-2013	35 months	2014-2017
Building 2	22 months	2010-2012	21 months	2010-2012
Building 3	32 months	2010-2013	32 months	2010-2013
Building 4	36 months	2011-2014	36 months	2011-2014

Until Building 1 construction commences, the future Urban Room area at the southeast corner of Flatbush and Atlantic Avenues would be occupied by an outdoor urban plaza. The urban plaza would follow the basic use and design principles of the Urban Room in order to create a significant public amenity. It is anticipated that the plaza would include the following elements:

- Trees in planters, to provide shade;
- Retail kiosks that incorporate stoop-like bleacher seating into their structure. These kiosks could provide food and beverages or other retail uses;

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- Social seating (benches and fixed tables) as well as loose seating;
- The new transit entrance, which will be provided even if there is a delay in the construction of Building 1;
- A prominent sculptural element, such as a large piece of public art; and
- A generously sized, flexible program space to allow for formal and informal public uses such as outdoor performances, temporary markets, art installations, and seating.

The program and design of the arena block buildings under this scenario would remain the same as described in the technical memorandum.

The potential delay in the completion of Building 1 would have certain implications for arena operations as well as for the construction-period uses of this building site. The uses identified for the Urban Room would still be provided; the urban plaza would still serve as a new access point to mass transit for the neighborhoods to the south, east and west of Atlantic Avenue, providing new escalators, an elevator, stairways, and passageways leading to the subway station below. As described above, the plaza also would include small kiosks for retail and café uses (see Figures A-1 and A-2). This interim use of the Urban Room area would be designed by the project sponsor to provide a usable, welcoming amenity for the surrounding neighborhood.

As detailed below, the analysis concludes that the project with the potential delay of construction for Building 1 would not result in any significant adverse environmental impacts not already identified in the FEIS.

B. ANALYSIS OF DELAYED CONSTRUCTION SCENARIO

The potential delay in the completion of Building 1 would not change the future build program or zoning of the arena block or the rest of the project site; it would not increase the number of workers, visitors, or residents expected to be generated by the project; it would not alter the proposed height or dimensions of any project buildings, which would continue to conform to the General Project Plan's Design Guidelines; it would not change the amount or timing of the project's anticipated affordable housing, or its direct displacement effects; it would not change any infrastructure needs, configurations, or proposed improvements in comparison to the project as described in the technical memorandum; and lastly, it would not change the stipulations of the Letter of Resolution among ESDC, the project sponsor, and the New York State Office of Parks, Recreation and Historic Preservation (OPRHP).

The analysis provided below focuses on those technical areas—urban design, traffic and transportation and construction-related traffic, air quality, and noise—where the potential delay in construction of Building 1 could potentially have substantive effects that require further analysis.

URBAN DESIGN AND VISUAL RESOURCES

As described above, some elements of the arena block's proposed urban design would be temporarily postponed due to the delay of Building 1 construction. In this scenario, until the construction of Building 1 commences the site of the future Urban Room would be occupied by an open, urban plaza. The urban plaza would provide most of the uses identified for the Urban Room, including transit access and café kiosks. This interim use of the Urban Room area would be designed by the project sponsor to provide a usable, welcoming amenity for the surrounding neighborhood. In comparison to the Urban Room, the use of the urban plaza would occur outside of any project buildings. Some of the Urban Room's uses would be provided in different

locations—the main entrance to the arena, as well as a temporary box office and the team store, would be located on the arena’s western façade. However, these changes would not notably alter the urban design of the arena block, and would not be in place upon completion of the project. The project would still meet the GPP’s Design Guidelines. Therefore, the project in this scenario would not have any significant adverse impacts to urban design or visual resources that were not previously identified in the FEIS.

TRAFFIC AND TRANSPORTATION

As described above, if the construction of Building 1 is delayed, the proposed Urban Room area would be temporarily occupied by an urban plaza and surrounded by arena signage. Most uses identified for the Urban Room would be maintained. The arena’s main entrance, temporary box office, and team store would continue to be located on its western façade, facing the new subway entrance. The temporary urban plaza, like the Urban Room, would serve as a new access point to mass transit for the neighborhoods to the south, east and west of Atlantic Avenue, providing new escalators, an elevator, stairways, and passageways leading to the subway station below.

A delay in the construction of Building 1 would temporarily result in fewer traffic activities and less demand on parking and transit services due to the absence of the Building 1 operations. However, once Building 1 is completed and occupied, the resulting effects on traffic, parking, transit, and pedestrians would be the same as that assumed in the FEIS and is not likely to result in additional or new significant adverse impacts or require mitigation measures that were not identified in the FEIS.

CONSTRUCTION IMPACTS

As discussed above and shown in Table 1, under this scenario it is assumed that Building 1 construction would start in June 2014 and extend through March 2017, and its construction activities would overlap with other Phase II building construction elements. The period of construction for Building 1 would remain the same, at 35 months.

In this scenario, the operations of the arena would continue and adequate access to and from the arena would be maintained. However, during the construction of Building 1, the main entrance to the arena, as well as a temporary box office and the team store, would be located on the arena’s northern or eastern façades. During the construction of Building 1, subway riders would exit under construction bridges and travel along sidewalks to reach the alternate entrances to the arena, which would continue to operate until the completion of Building 1, at which time the Urban Room, main entrance, box office, and team store would be in place.

URBAN DESIGN AND VISUAL RESOURCES

While Building 1 is under development, the visual and pedestrian experience of the arena and Buildings 2, 3, and 4 would be lessened by the presence of construction fencing, sheds, materials, and equipment on this site; however, this effect would be temporary and would not last beyond the period of construction. Thus, the potential delay in construction is not expected to result in additional or new significant adverse impacts on urban design.

TRAFFIC AND TRANSPORTATION

During construction of Building 1, subway riders would exit under construction bridges and travel along sidewalks to reach the alternate entrances to the arena. The pedestrian sheds/corridors provided through the construction site would be sized to accommodate anticipated peak arena demand at acceptable levels of service. There would be directional

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signage at various points on the arena block, indicating routes to the arena's entrances and amenities.

In comparison to the potential construction traffic and transportation impacts described in the technical memorandum, the delay in construction of Building 1 would shift its related construction activities—specifically worker and truck delivery trips—to later years of the construction project. Figures A-3 and A-4 illustrate how these trips would differ in this scenario, compared to the FEIS and the project as described in the technical memorandum. While higher levels of construction worker and truck delivery trips during the latter years of construction are expected to result from the overlapping of construction activities for Building 1 with those of other Phase II buildings, the project's overall construction activities would be staggered and spread-out over time and would not be expected to exceed the peak conditions analyzed in the FEIS. Furthermore, with the proposed roadway improvements, traffic mitigation measures, traffic circulation plans, and updated curbside parking regulations already in place to accommodate the project's operational traffic during the construction of Building 1, the potential delay in construction is not expected to result in additional or new significant adverse construction traffic impacts and required mitigation measures that were not identified in the FEIS.

Furthermore, with the proposed roadway improvements, traffic mitigation measures, traffic circulation plans, and updated curbside parking regulations already in place to accommodate the project's operational traffic during the construction of Building 1, the potential delay in construction is not likely to result in additional or new significant adverse construction traffic impacts and required mitigation measures that were not identified in the FEIS.

AIR QUALITY

As shown in Figures A-5 and A-6, the short-term peak ground-level emissions and the annual average ground-level emissions for the Delay of Building 1 Scenario would be comparable to those described in the technical memorandum for the project. The main difference is that the delay of construction for Building 1 would shift some of the emissions predicted to occur during non-peak construction periods to a later date. The change in the construction schedule of Building 1 would not result in any significant adverse construction-period air quality impacts.

NOISE

In this scenario, construction of Building 1 and the arena would not happen simultaneously, with construction of Building 1 commencing approximately two years after construction of the arena is complete. This change in construction scheduling could result in the noise impacts identified in the FEIS at sites 12 and 16 occurring not only during construction of the arena, but again during construction of Building 1, thus resulting in more time during which these locations are impacted by construction noise. No additional noise mitigation is required, as the FEIS identified significant adverse noise impacts at these receptor locations and imposed comprehensive noise mitigation measures that would also partially mitigate noise from the delayed construction of Building 1. *

Summary Conclusions

As a result of the analyses detailed in the various sections of this technical memorandum and appendix, the proposed General Project Plan (GPP) modification and changes related to the design development, schedule change, background conditions and analysis methodologies, and the potential for a change in the anticipated timing of Building 1 would not, considered either individually or together, result in any significant adverse environmental impact not previously addressed in the FEIS. Further delay due to prolonged adverse economic conditions would not change this conclusion. Therefore, no Supplemental Environmental Impact Statement would be required if the GPP modification were to be approved substantially in the form as proposed. *