A. INTRODUCTION

This chapter describes the transit and pedestrian travel characteristics and potential impacts associated with the proposed Atlantic Yards Arena and Redevelopment project located on an approximately 22-acre site in the Atlantic Terminal area of Brooklyn, roughly bounded by Flatbush and 4th Avenues on the west, Vanderbilt Avenue on the east, Atlantic Avenue on the north, and Dean and Pacific Streets on the south (see Figure 12-5 in Chapter 12, "Traffic and Parking"). As described in detail in earlier chapters of this environmental impact statement (EIS), in addition to an approximately 850,000 gross-square-foot (gsf) arena for use by the Nets professional basketball team and for other sporting, entertainment, and cultural events, it is anticipated that the proposed project would include residential, office, hotel, and retail uses, eight acres of publicly accessible open space, approximately 3,670 parking spaces, and an improved Long Island Rail Road (LIRR) rail yard. (As discussed in Chapter 1, the development program for the proposed project has been reduced from the program that was analyzed in the DEIS.) Also included would be internal circulation improvements at the Atlantic Avenue/Pacific Street subway station complex, and a major new on-site entrance to the complex adjacent to the arena. In addition to the arena, a total of 16 other buildings would be constructed on the eight blocks comprising the project site. These buildings are referred to as Site 5 and Buildings 1 through 15. The proposed project is expected to benefit from its location in an area with one of the densest concentrations of transit services in the City. As demonstrated later in this chapter and discussed in more detail in Chapter 12, "Traffic and Parking," the proposed project's accessibility via a total of 12 subway routes, 11 bus routes, and the LIRR, is expected to result in a high level of transit usage.

As shown in Figures 1-3 and 1-4 in Chapter 1, "Project Description," the proposed development considers two program variations: residential mixed-use and commercial mixed-use. The variations reflect the fact that the programs for three of the project's 17 buildings are not fixed and could be used for a mixture of residential and commercial uses. Under the commercial mixed-use variation, additional commercial space would substitute for the hotel use and a majority of the residential space in Buildings 1 and 2 on the arena site (blocks 1118, 1119, and 1127, collectively referred to as the "arena block") and all of the residential space on Site 5 (Block 927). The other buildings and uses on the project site (the arena and Buildings 3 through 15) would remain the same under both the residential mixed-use and commercial mixed-use variations.

It is anticipated that the proposed project would be developed in two phases. Phase I, to be completed in 2010, would include the arena, Site 5, Buildings 1 through 4, two permanent parking garages and additional interim parking, and a new on-site entrance to the Atlantic Avenue/Pacific Street subway station complex on Block 1118 at the intersection of Flatbush and Atlantic Avenues. Also included in this phase would be the closure of the existing LIRR rail yard at the west end of the site and the development of an improved LIRR rail yard at the east end of the site along with a

new portal for direct train access between the new rail yard and the LIRR's Atlantic Terminal. The remainder of the proposed project, which includes construction of a permanent platform over the new LIRR Yard, Buildings 5 through 15, the remainder of the permanent parking, and publicly accessible open space, would be completed under Phase II by 2016.

This chapter describes in detail the existing transit (subway and local bus) and pedestrian conditions in the vicinity of the project site. Future conditions in the years 2010 and 2016 without the proposed project (No Build conditions) are then determined, including additional transportation-system demand and any changes in transit facilities and services and pedestrian facilities expected by the years 2010 and 2016. The increases in travel demand resulting from Phase I and full build-out of the proposed project are then forecast and added to the No Build to develop the 2010 and 2016 future conditions with the proposed project (Build conditions). Significant impacts from project generated trips and project-related changes to transit services and pedestrian facilities are then identified for each analysis year. Discussions of commuter van and commuter rail (LIRR) service are also provided.

B. PRINCIPAL CONCLUSIONS

SUBWAY SERVICE

The area of the project site in Downtown Brooklyn is served by one of the densest concentrations of subway lines in New York City. Trips en route to and from the proposed project are expected to use a total of seven subway stations served by a dozen subway routes—the Nos. 2, 3, 4, 5 and the B, C, D, G, M, N, Q and R. Ten of these routes (all but the C and G) serve the Atlantic Avenue/Pacific Street subway station complex that would be located immediately adjacent to the proposed arena. Development of the proposed project would include construction of a major new on-site subway entrance and other internal circulation improvements at the southern end of the Atlantic Avenue/Pacific Street subway station complex. These improvements would attract the majority of new project-generated subway demand, as well as some non-project demand that would otherwise use existing subway station stairways, corridors and fare arrays.

The proposed project would generate an estimated 2,996, 4,299, and 8,006 new subway trips during the weekday 8-9 AM, 5-6 PM, and 7-8 PM (pre-game) peak hours, respectively, in 2010, and 5,402, 7,358, and 10,209 trips during these periods, respectively, in 2016. Demand would be highest during the 7-8 PM pre-game period because of a combination of residual commuter trips and peak demand en route to a basketball game at the arena, a condition that would occur, assuming sold-out games, approximately 26 times per year (not including playoff games). The majority of new trips would occur at the three subway stations comprising the Atlantic Avenue/Pacific Street subway station complex, which would be immediately adjacent to the project site and accessible via a new on-site entrance. In addition, the Bergen Street IRT, Fulton Street IND, and Lafayette Avenue IND subway stations would all attract 200 or more project-generated trips in at least one peak hour.

Overall, the new on-site entrance and internal circulation improvements proposed at the Atlantic Avenue/Pacific Street subway station complex would be adequate to accommodate new project-generated demand at acceptable levels of service during the analyzed 8-9 AM, 5-6 PM, and 7-8 PM peak hours in both 2010 and 2016, as would existing analyzed stairways and fare arrays at this facility.

All analyzed stairways and fare arrays at the Bergen Street IRT, Fulton Street IND, and Lafayette Avenue IND subway stations would also continue to operate at acceptable levels of service during these periods in the future with the proposed project in both 2010 and 2016.

During the weekday 10-11 PM and Saturday 4-5 PM post-game periods, when surges of subway trips generated by an event at the arena would be arriving on the subway platforms, the potential may exist for crowding on the platforms at the Atlantic Avenue/Pacific Street subway station complex under certain post-game or major event situations in 2010. Such crowding, if it were to occur, would constitute a significant adverse impact, which would be addressed by providing additional subway service (i.e., more trains) during post-game periods or after major arena events.

Subway trips generated by the proposed project would be distributed among the numerous subway routes serving Downtown Brooklyn en route to and from Brooklyn and Queens, and to and from Manhattan. Given the project site's location outside of the Manhattan Central Business District (CBD) and the anticipated directions of travel for project-generated trips in each peak period, it is anticipated that the majority of this new demand would not occur at the maximum load points in the peak direction of travel. All subway routes through Downtown Brooklyn are expected to continue to operate below their practical capacity in the peak direction in the 8-9 AM and 5-6 PM commuter peak periods with development of Phase I of the proposed project in 2010, and at completion of the proposed project in 2016. The proposed project is therefore not expected to result in significant adverse impacts to subway line haul conditions in Downtown Brooklyn under CEQR criteria.

BUS SERVICE

In 2010, the proposed project would generate an estimated 249 trips on the 11 New York City Transit (NYCT) local bus routes serving the project site in the weekday 8-9 AM peak hour and 355 trips in the 5-6 PM peak hour. With full build-out of the proposed project in 2016, these numbers would increase to 374 trips and 560 trips during the 8-9 AM and 5-6 PM peak hours, respectively. With this added demand, all of these routes would continue to operate with available capacity at their maximum load points in the peak direction in each of these peak hours in 2010, and no significant adverse impacts to local bus service are therefore expected to occur with development of Phase I of the proposed project. In the 2016 future with the proposed project, westbound B38 buses would be significantly adversely impacted by project-generated demand in the AM peak hour.

LIRR COMMUTER RAIL SERVICE

In 2010, new peak hour project-generated trips on the LIRR would total 444 and 628 during the weekday AM and PM commuter peak hours, respectively. The highest levels of new demand would typically occur during the pre-game and post-game peak hours, with 1,188 and 1,487 new trips during these periods, respectively, on weekdays, and 1,086 and 1,256 new trips, respectively, on Saturdays. In 2016, the number of LIRR trips generated by the proposed project would total 475 and 666 during the weekday AM and PM commuter peak hours, respectively; 1,217 in the weekday pre-game, 1,499 in the weekday post-game, 1,110 in the Saturday pre-game, and 1,280 in the Saturday post-game peak hour. These trips would utilize the LIRR's nearby Atlantic Terminal at Flatbush and Atlantic Avenues via an entrance on Flatbush Avenue south of Hanson Place. (Most LIRR riders would not use the new Urban Room entrance to the

Atlantic Avenue/Pacific Street subway station complex as it would require payment of a subway fare to reach the LIRR platforms.)

In addition to generating new commuter rail demand, the proposed project would also result in a reconfiguration of the LIRR's train storage and servicing facilities in Downtown Brooklyn. The LIRR's Vanderbilt Yard south of the terminal (on the project site) is presently used as a daytime storage and cleaning facility for LIRR trains serving Atlantic Terminal. With implementation of Phase I of the proposed project in 2010, a reconfigured and upgraded yard, with expanded storage and servicing capacity and improved yard functionality, would be built below street grade on the eastern end of the existing rail yard footprint to allow for both the continuance of LIRR operations and the operation of the arena. The west end of the improved rail yard would include a new portal (West Portal) which would provide a direct route to and from the LIRR Atlantic Terminal to the storage yard. The West Portal would also provide an emergency detour route for passenger train egress from LIRR Atlantic Terminal. The new rail yard would be designed to accommodate support for substantial portions of the development that would be built on a platform covering the new rail yard by 2016.

PEDESTRIANS

Development of the proposed project would result in physical changes to pedestrian facilities in the vicinity of the project site, most of which would be implemented by 2010 in conjunction with Phase I of the proposed project. The arena and other proposed buildings would be set back to provide for 20-foot-wide sidewalks along Atlantic Avenue (15 feet adjacent to Site 5) compared with the existing 10- to 12-foot-wide sidewalks. Twenty-foot-wide sidewalks would also be provided along Flatbush Avenue adjacent to the arena block and Site 5. Sidewalks along 6th Avenue would be widened from 10 to 15 feet in width between Atlantic Avenue and Pacific Street as part of the reconstruction of the bridge carrying 6th Avenue over the LIRR rail yard. South of Pacific Street, 6th Avenue would be reconstructed with 15-foot-wide sidewalks compared with the existing 18-foot-wide sidewalks to accommodate two-way traffic flow between Atlantic and Flatbush Avenues. The bridge carrying Carlton Avenue over the LIRR rail yard between Atlantic Avenue and Pacific Street would also be reconstructed, and the sidewalks widened from 10 to 16 feet in width.

In addition to physical changes to pedestrian facilities, development of the proposed project would add new pedestrian demand to analyzed sidewalks, corner areas, and crosswalks. This new demand would include walk-only trips, pedestrians en route to and from subway stations, bus stops and the LIRR, arena patrons en route to and from off-site parking facilities, and pedestrians diverted as a result of the closures of 5th Avenue and Pacific Street to accommodate development on the arena block. In general, the highest numbers of new pedestrian trips at analyzed facilities in both 2010 and 2016 would typically occur during the weekday 7-8 PM and Saturday 1-2 PM pre-game periods. The analysis of pedestrian conditions therefore focuses on these peak hours as well as the weekday 8-9 AM and 5-6 PM commuter peak hours.

Although the proposed Urban Room subway entrance would allow subway riders en route to and from the project site to access the subway without crossing Atlantic Avenue, substantial numbers of new pedestrians would still use crosswalks on Atlantic Avenue to access bus stops, off-site parking facilities (primarily arena patrons), the LIRR and retail establishments at Atlantic Terminal and Atlantic Center.

With full development of the proposed project in 2016, the north crosswalk on Carlton Avenue at Dean Street would be significantly adversely impacted by the proposed project, with LOS E

conditions in the weekday and Saturday pre-game peak hours. The north crosswalk on 6th Avenue at Dean Street would also be significantly adversely impacted in 2016, operating at LOS E during the Saturday pre-game peak hour. (See Chapter 19, "Mitigation.") All other analyzed crosswalks, and all analyzed sidewalks and corner areas would continue to operate at acceptable levels of service in all analyzed peak hours in both 2010 and 2016.

C. METHODOLOGY

The transit and pedestrian analyses in this chapter consider the subway, commuter rail, local bus, and pedestrian trips generated by the proposed project; the effects of a major new subway entrance to be developed on the project site; and project-related changes to pedestrian facilities (sidewalks, corner areas, and crosswalks). As the proposed project would be developed in phases over a period of time, the transit and pedestrian analyses examine conditions in two analysis years—2010 for Phase I of the project and 2016 for Phase II. Phase I represents the anticipated opening of the arena and the completion of the improved LIRR rail yard and other development planned for the arena block and Site 5. Development of the proposed new subway entrance and all permanent street closures and changes in street direction are also assumed to occur in this phase. Phase II represents full build-out of the proposed project, with completion of all other project elements.

As discussed later in this chapter, the commercial mixed-use variation would typically generate a higher level of travel demand during weekday peak periods than would the residential mixed-use variation. During Saturday peak periods, the residential mixed-use variation would generate more trips due to its larger residential component. The transit and pedestrian analyses therefore assume the commercial mixed-use variation as the reasonable worst case scenario (RWCS) for weekday analyses, and the residential mixed-use variation as the RWCS for Saturday analyses.

Although the proposed project's arena component would generate substantial new transit and pedestrian demand during the weekday 10-11 PM and Saturday 4-5 PM post-game peak hours, overall demand on transit and pedestrian facilities serving the site would be substantially lower than during the analyzed weekday peak periods (the 7-8 PM pre-game peak period, for example). Typically, new significant adverse transit and pedestrian impacts not already identified for other analyzed peak hours would therefore not be anticipated during the post-game peak periods. The transit and pedestrian analyses include a discussion of the potential for significant adverse impacts in the post-game peak hours, where appropriate. It is also possible that some transit and pedestrian impacts identified for the weekday and Saturday pre-game peak periods as a result of demand entering the arena may also occur during the post-game peak periods, as much of this same demand exits the arena. This is also discussed below.

SUBWAY SERVICE

SELECTION OF SUBWAY STATIONS TO BE ANALYZED

As described in more detail later in this chapter, project-related improvements to the Atlantic Avenue/Pacific Street subway station complex would provide direct access between the project site and the subway routes serving this facility (the B, D, M, N, Q, R and Nos. 2, 3, 4, and 5 trains). The large majority of project-generated subway trips are therefore expected to utilize this subway station complex. However, some trips are also expected to occur at other subway stations that are either served by trains not accessible at Atlantic Avenue/Pacific Street or that would also provide reasonably convenient access to the project site. For example, some trips by Nos. 2 and 3 trains would likely use the Bergen Street subway station given its proximity to the proposed buildings

along 6th Avenue and on blocks to the east. The Fulton Street (G), the Lafayette Avenue (C) station, and the Washington-Clinton Avenues (C) subway stations would also be used by project-generated trips as neither C train nor G train service is available at the Atlantic Avenue/Pacific Street subway station complex.

The *CEQR Technical Manual* typically requires a detailed analysis of a subway station when the incremental increase in peak hour trips totals 200 persons per hour or more. As discussed later in this chapter, new subway trips generated by the proposed project would exceed this threshold in one or more analyzed peak hours at the Atlantic Avenue/Pacific Street subway station complex, and the Bergen Street, the Lafayette Avenue, and the Fulton Street subway stations. These subway stations were therefore selected for quantitative analysis in the EIS. The analysis examines key subway station processors under peak 15-minute flow conditions, focusing on stairways, escalators, corridors, and fare arrays that are expected to be used by concentrations of project-generated trips.

Development of Phase I of the proposed project would include construction of a major new on-site street-level entrance and other internal circulation improvements at the southern end of the Atlantic Avenue/Pacific Street subway station complex. These improvements, described in more detail later in this chapter, would attract the majority of new project-generated demand, as well as some non-project demand that would otherwise use existing subway station stairways, corridors, and fare arrays. For example, the proposed improvements are expected to reduce demand at the existing street entrance at the north end of the subway station at Flatbush Avenue and Hanson Place, as well as at adjacent fare arrays. The analysis of future conditions at the Atlantic Avenue/Pacific Street subway station complex therefore focuses only on those existing subway station elements where demand is expected to increase—specifically the street stair at the southeast corner of 4th Avenue and Pacific Street, and the adjoining fare array, both of which would be utilized by new trips from the proposed development on Site 5. The analysis also examines future conditions at key elements of the proposed new subway station entrance and internal circulation improvements.

PEAK HOURS FOR ANALYSIS

The analysis of subway station conditions focuses on the weekday 8-9 AM and 5-6 PM peak commuter hours, as it is during these periods that demand from the project's commercial and residential development components would be greatest, as would overall demand on the subway system. In addition, the analysis examines the weekday 7-8 PM pre-game peak hour, as it is during this period that the proposed project would generate its highest level of subway demand.

Although the proposed project would generate a higher level of new demand during the weekday 7-8 PM pre-game period on days when a basketball game is scheduled, overall demand on the subway system is typically lower during this period than during the commuter peak hours. Therefore, the analysis of line haul conditions on the subway routes serving Downtown Brooklyn focuses on the weekday 8-9 AM and 5-6 PM commuter peak hours when overall demand on the subway system is typically highest.

ANALYSIS METHODOLOGY

The analysis of subway station conditions uses the design capacities for stairs, escalators, corridors, turnstiles, and high revolving exits (HEETs) specified in *NYCTA Station Planning and Design Guidelines*, as well as procedures set forth in *Pedestrian Planning and Design* by John J. Fruin. All analyses reflect peak 15-minute conditions in each peak hour. The stairway and corridor

analyses were conducted using the Fruin pedestrian level of service (LOS) methodology, which equates pedestrian flow per foot of effective stairway or corridor width per minute (PFM) with qualitative measures of pedestrian comfort. Based on the calculated values of pedestrian volumes per foot width of stairway or corridor per minute, six levels of service are defined with letters A through F, as shown in Table 13-1. LOS A is representative of free flow conditions without pedestrian conflicts and LOS F depicts significant capacity limitations and inconvenience. Metropolitan Transportation Authority (MTA) NYCT's minimum standard for pedestrian conditions has traditionally been established as the threshold between LOS C and LOS D, at a volume-to-capacity (v/c) ratio of 1.00. Absolute capacity for a stair is typically considered to be about 15 PFM.

Table 13-1
Stairway and Corridor Level of Service Definitions

Level of Service	Stairway PFM	Corridor PFM	Description
A	Up to 5	Up to 7	Free-flow conditions.
B	5 - 7	7-10	Minor reverse flow will cause minor conflicts.
C	7 - 10	10-15	Slight restrictions in speed and difficulties in reverse flows.
D	10 - 13	15-20	Significant restriction in speed and difficulties in reverse flows.
E	13 - 17	20-25	Reductions of speeds, serious reverse flow conflicts, and intermittent stoppages.
F	More than 17	Variable up to 25	Complete breakdown in traffic flow.

Note: PFM—persons per foot of effective width per minute.

Practical capacities are calculated for each stairway analyzed by multiplying the effective stair width in feet by 10 PFM (the LOS C/D threshold), and by an adjustment factor to account for two-directional friction (where applicable). Peak 15-minute volumes are then compared with the capacities to obtain a v/c ratio for each peak hour. Using this methodology, LOS A, B, and C correspond to volume-to-capacity ratios of less than 1.0. LOS D, E, and F represent demand levels that exceed capacity, and hence, have v/c ratios greater than 1.0.

Levels of service for corridors are also defined quantitatively based on PFM ranges, as shown in Table 13-1. Practical capacity (a v/c ratio of 1.0) is reached at about 15 PFM (the LOS C/D threshold for corridors) with an absolute capacity of about 22 PFM.

The *CEQR Technical Manual* identifies a significant impact for stairways in terms of the width increment threshold (WIT) needed to restore conditions to their No Build state. Stairways that are substantially degraded in level of service or which experience the formation of extensive queues are classified as significantly impacted. Significant stairway impacts are typically considered to have occurred once the following thresholds are reached; for a Build LOS D condition, a WIT of six inches or more is considered significant; for a Build LOS E condition, three inches is considered significant; and for Build LOS F, a WIT of one inch is considered significant. For stairways operating at LOS A, B or C in the No Build condition, a refined methodology that was used for the *Hudson Yards Rezoning & Development Program GEIS* (June 2004) is employed. This methodology is based on bringing these stairways to an acceptable LOS (v/c ratio of less than 1.00), not to the LOS projected for the No Build condition.

Operating conditions for escalators, turnstiles, HEETs, and high revolving exit gates are also described in terms of LOS and volume-to-capacity ratios, with LOS A corresponding to a v/c ratio of less than 0.2, LOS B corresponding to 0.2 to 0.4, LOS C corresponding to 0.4 to 0.6, LOS D corresponding to 0.6 to 0.8, LOS E corresponding to 0.8 to 1.0, and LOS F corresponding to a v/c ratio of greater than 1.0. Any volume-to-capacity ratio greater than 1.0 signifies volumes beyond capacity and extended queues.

For turnstiles, escalators, and high-wheel exit gates, the *CEQR Technical Manual* defines a significant impact as an increase from a No Build volume-to-capacity ratio of below 1.00 to a v/c ratio of 1.00 or greater. Where a facility is already at a v/c ratio of 1.00 or greater, a 0.01 change in v/c ratio is also considered significant.

For subway line haul conditions, *CEQR Technical Manual* criteria specify that any increases in load levels that remain within practical capacity limits are generally not considered significant impacts. (Guideline capacities established by NYC Transit were used for the analyses. These are 110 passengers/car for a 51-foot subway car, 145 passengers/car for a 60-foot car, and 175 passengers/car for a 75-foot car.) Projected increases from a No Build condition to a Build condition that exceed practical capacity may be considered significant impacts if the proposed action generates five or more additional passengers per car.

BUS SERVICE

Downtown Brooklyn is well served by numerous bus routes operated by MTA NYCT, and many of these routes operate in close proximity to the project site along Atlantic, Flatbush, Third, Fifth and Vanderbilt Avenues, and Dean, Bergen, and Fulton Streets. Bus patrons en route to and from the project site would therefore likely find it unnecessary to walk substantial distances to access a needed bus service. Consequently, the analysis of project-generated bus trips focuses on the 11 routes located within ¼ mile of the site, as it is on these routes that project trips would be most heavily concentrated. These routes include the B25, B26, B37, B38, B41, B45, B52, B63, B65, B67, and B69.

The analysis of local bus conditions focuses on conditions in the peak direction at the maximum load point for each route during the weekday 8-9 AM and 5-6 PM peak commuter hours when overall demand on the bus system is typically greatest. Assignment of project increment bus trips to individual routes is based on existing demand patterns and the relative proximity of each route to the proposed development blocks. Identification of impacts is based on current NYCT guidelines, under which increases in bus load levels to above their maximum capacity at any load point is considered a significant adverse impact as it would necessitate the addition of more bus service along that route.

PEDESTRIANS

STUDY AREA

The analysis of pedestrian conditions focuses on three areas: sidewalks, corner areas, and crosswalks that would: serve as key links between the project site and the surrounding street system; be used by concentrations of project-generated pedestrian demand en route to other modes (subway stations, bus stops, or off-site parking garages, for example); or be affected by physical changes resulting from the proposed project. These include pedestrian facilities along the Atlantic Avenue, Flatbush Avenue, 4th Avenue, and Dean Street corridors adjacent to the project site. Sidewalks along 6th Avenue between Atlantic and Flatbush Avenues are also

analyzed as these sidewalks would be narrowed to accommodate conversion of the street from one-way southbound to two-way operation. Overall, a total of 24 sidewalk locations, 15 corner areas and 29 crosswalks are analyzed.

PEAK HOURS FOR ANALYSIS

In addition to the weekday AM and PM peak commuter hours, the pedestrian analysis focuses on the 7-8 PM pre-game and Saturday 1-2 PM pre-game peak hours, as it is during these periods that trips en route to the arena would coincide with elevated demand on study area pedestrian facilities (from commuters and shoppers, respectively).

ANALYSIS METHODOLOGY

Peak 15-minute pedestrian flow conditions during the weekday AM, PM, pre-game, and Saturday pre-game peak hours are analyzed using the *Highway Capacity Manual* methodology. Under this methodology, the congestion level of pedestrian facilities is determined by considering pedestrian volume, measuring the sidewalk or crosswalk width, determining the available pedestrian capacity and developing a ratio of existing volume flows to capacity conditions. The resulting ratio is then compared with level of service standards for pedestrian flow which define a qualitative relationship at a certain pedestrian traffic concentration level. The evaluation of street crosswalks and corners is more complicated as these spaces cannot be treated as corridors due to the time incurred waiting for traffic lights. To effectively evaluate these facilities a "time-space" analysis methodology is employed which takes into consideration the traffic light cycle at intersections.

LOS standards are based on the average area available per pedestrian during the analysis period, typically expressed as a 15-minute peak period. LOS grades from A to F are assigned, with LOS A representative of free flow conditions without pedestrian conflicts and LOS F depicting significant capacity limitations and inconvenience. Table 13-2 defines the LOS criteria for pedestrian crosswalk/corner area and sidewalk conditions, as based on the *Highway Capacity Manual*.

Table 13-2
Pedestrian Crosswalk/Corner Area and Sidewalk Levels of Service Descriptions*

Levels of Service		Crosswalk/Corner Area Criteria (sq. ft./ped.)	Sidewalk Criteria (ped./min./ft.)
A	(Unrestricted)	≥ 60	≤ 5
B	(Slightly Restricted)	≥ 40	≤ 7
C	(Restricted but fluid)	≥ 24	≤ 10
D	(Restricted, necessary to continuously alter walking stride and direction)	≥ 15	≤ 15
E	(Severely restricted)	≥ 8	≤ 23
F	(Forward progress only by shuffling; no reverse movement possible)	< 8	> 23

Note: *Based on average conditions for 15 minutes.
Source: *Highway Capacity Manual*.

The analysis of sidewalk conditions includes a “platoon” factor in the calculation of pedestrian flow to more accurately estimate the dynamics of walking. “Platooning” is the tendency of

pedestrians to move in bunched groups or "platoons" once they cross a street where cross traffic required them to wait. Platooning generally results in a level of service one level poorer than that determined for average flow rates.

For Downtown Brooklyn, *CEQR Technical Manual* criteria define a significant adverse sidewalk impact to have occurred when the platoon flow rate increases by two or more pedestrians per foot per minute (PFM) over No Build conditions characterized by flow rates over 15 PFM (the threshold of LOS D/E). For crosswalk and corner areas within Downtown Brooklyn, CEQR criteria define a significant adverse impact as a decrease in pedestrian space of one or more square feet per pedestrian (SF/ped) when the No Build condition has an average occupancy of 15 SF/ped (the LOS D/E threshold) or less. A deterioration from LOS C or better to LOS E or F is also considered a significant adverse impact.

It should be noted that the location of an area being assessed for pedestrian impacts is an important consideration under *CEQR Technical Manual* criteria. To reflect some sensitivity to local area's current pedestrian usage levels, the *CEQR Technical Manual* criteria specify one set of impact criteria for the Manhattan CBD and Downtown Brooklyn, and a second more stringent set of criteria for other areas of the City. Given the proposed project's location on the periphery of Downtown Brooklyn adjacent to a major transit terminal and retail center, the analyses of potential pedestrian impacts are based on the *CEQR Technical Manual* criteria specified for Downtown Brooklyn. However, the existing pedestrian densities in the vicinity of much of the project site are relatively low (the exception being the west end of the site near the intersections of Flatbush, Atlantic, and 4th Avenues). The site also borders residential neighborhoods on the south. The potential for impacts under the non-Downtown Brooklyn *CEQR Technical Manual* criteria was therefore also considered. Under these criteria, a significant impact to a sidewalk occurs when the platoon flow rate increases by two or more pedestrians per foot per minute for No Build conditions characterized by flow rates over 13 PFM (mid-LOS D). For crosswalk and corner areas, a significant adverse impact is defined as a decrease in pedestrian space of one or more square feet per pedestrian (SF/ped) when the No Build condition has an average occupancy under 20 SF/ped (the mid-LOS D). Increments of one square foot or more applied to No Build conditions within LOS D or any deterioration from LOS C or better to LOS D may be perceptible, but not necessarily significant impacts.

D. EXISTING CONDITIONS

DATA COLLECTION

Counts at key subway station stairways, fare arrays, and other subway station elements were conducted during the weekday AM, PM, and pre-game peak periods at the Atlantic Avenue/Pacific Street, Bergen Street, Fulton Street, and Lafayette Avenue subway stations in April 2004 and March 2006. Pedestrian counts along the principal sidewalks, corner areas, and crosswalks providing access to the project site were conducted during the weekday AM, PM, pre-game, and Saturday pre-game periods in April 2004, January 2006, and May 2006. Maximum load point data for the subway line haul and local bus analyses were obtained from NYCT.

SUBWAY SERVICE

The area of the project site is served by one of the densest concentrations of subway lines in New York City. Trips en route to and from the proposed project are expected to use a total of seven

subway stations served by a dozen subway routes—the Nos. 2, 3, 4, 5 and the B, C, D, G, M, N, Q, and R. As part of the proposed project, improvements to the Atlantic Avenue/Pacific Street subway station complex would include a major new entrance to the complex on the project site with access to the 10 subway routes serving the facility. The large majority of project-generated subway trips are therefore expected to utilize the three subway stations comprising this complex—the Atlantic Avenue IRT (2, 3, 4, and 5 trains), the Atlantic Avenue BMT (B and Q trains), and the Pacific Street BMT subway stations (D, M, N, and R trains). LIRR commuter rail service to Queens and Long Island is also available at this complex, but would not be directly accessible via the proposed on-site entrance without entering into the subway fare zone.

Some subway trips are also expected to occur at other subway stations that are either served by trains not accessible at Atlantic Avenue/Pacific Street subway station complex or that would also provide reasonably convenient access to the project site. For example, some trips by Nos. 2 and 3 trains would likely use the Bergen Street subway station, given its proximity to the proposed buildings along 6th Avenue and on blocks to the east. The Fulton Street IND (G), the Lafayette Avenue IND (C), and the Clinton-Washington Avenues IND (C) subway stations would also be used by project-generated trips as neither C train nor G train service is available at Atlantic Avenue/Pacific Street. Figure 13-1 shows the location of these subway stations in relation to the project site.

Table 13-3 shows the average weekday entering turnstile counts at the Atlantic Avenue/Pacific Street subway station complex and the four other subway stations serving the project site for the years 2003 through 2005, as well as the 2005 ranking of each facility based on average weekday ridership relative to all 423 subway stations system-wide.

Table 13-3
Average Weekday Entering Turnstile Counts

Subway Station	2005 Rank	2003	2004	2005	Percent Change 2003—2005
Atlantic Avenue/Pacific Street (2,3,4,5,B,D,M,N,Q,R)	33	21,813	24,573	27,559	26.3%
Bergen Street (2,3)	298	4,102	4,153	3,998	-2.5%
Clinton-Washington Avenues (C)	272	4,392	4,499	4,508	2.6%
Fulton Street (G)	364	2,330	2,437	2,593	11.3%
Lafayette Avenue (C)	308	3,981	4,022	3,822	-4.0%
	Totals	36,618	39,684	42,480	16.0%
LIRR		25,590	25,770	25,310	-1.1%

Notes:
Ranking out of 423 subway stations systemwide by 2005 average weekday ridership.
LIRR data reflect total arrivals and departures (source: MTA).
Source: NYCT 2005 Subway & Bus Ridership Report.

The number of weekday trips (arrivals and departures) by LIRR at Atlantic Terminal is also shown.

Overall, demand increased by approximately 16 percent from 2003 to 2005 at subway stations serving the project site. Much of the increase occurred at the Atlantic Avenue/Pacific Street subway station complex where demand increased by approximately 26.3 percent over the three year period. The numbers shown in Table 13-3 include both entries from the street as well as

transfers from the LIRR to the NYCT subway system. They do not, however, reflect the high number of transfers between subway routes that also occurs at the Atlantic Avenue/Pacific Street subway station complex.

As discussed later in this chapter, new subway trips generated by the proposed project would exceed the 200-trips per hour CEQR threshold for a detailed analysis in one or more analyzed peak hours at the Atlantic Avenue/Pacific Street subway station complex, the Bergen Street IRT, the Lafayette Avenue IND, and the Fulton Street IND subway stations. These subway stations are therefore analyzed quantitatively in this EIS. The locations of these subway stations are shown in Figure 13-1, and the physical characteristics and the services provided at each subway station are described below, along with the results of the analysis of 2006 existing conditions at each analyzed station element during the weekday 8-9 AM, 5-6 PM, and 7-8PM peak hours. Also provided is an analysis of line haul conditions on each of the subway routes serving the project site.

ATLANTIC AVENUE/PACIFIC STREET SUBWAY STATION COMPLEX

As shown in Figure 13-1, the Atlantic Avenue/Pacific Street subway station complex is located immediately adjacent to the project site at the intersection of Flatbush, Atlantic, and 4th Avenues. The subway station complex comprises three subway stations—the Atlantic Avenue IRT subway (served by Nos. 2, 3, 4, and 5 trains), the Atlantic Avenue BMT (B and Q trains), and the Pacific Street BMT subway stations (D, M, N, and R trains). It also includes the LIRR Atlantic Terminal. A central internal distribution corridor traverses the length of the complex connecting the mezzanine level of the Pacific Street BMT subway station to the mezzanine level of the Atlantic Avenue BMT subway station. This corridor passes under the Atlantic Avenue IRT subway station platforms and the platforms for the LIRR. Stairways connect all three subway stations and the LIRR platforms to the central corridor which provides the only means of inter-line transfer with the exception of the transfer between the LIRR concourse and the Manhattan-bound 2,3 platform which are adjacent to each other at the same level. The complex functions as a major interchange point for transfers between the LIRR and subway and bus services, as well as for transfers between subway routes.

Figure 13-2 shows the existing layout of the Atlantic Avenue/Pacific Street subway station complex, portions of which were substantially reconstructed in 2004 to upgrade stairways, widen the central internal distribution corridor and improve handicapped accessibility. As shown in Figure 13-2, the Atlantic Avenue IRT subway station, located beneath Flatbush Avenue, comprises two side platforms served by Nos. 2 and 3 trains, and a single island platform served by Nos. 4 and 5 trains. Stairs on each platform lead down to the central corridor which provides the only access between the IRT platforms, as well as access to other areas of the subway station complex. A 24-hour token booth (R-610) and a fare array consisting of eight turnstiles is located adjacent to the Manhattan-bound 2,3 platform. Street access to the Atlantic Avenue IRT subway station is via a stair (06) at the southeast corner of Hanson Place and Flatbush Avenue. This stairway leads to fare array R-610 as well as the LIRR concourse.

The Atlantic Avenue BMT subway station is located east of the Atlantic Avenue IRT subway station and consists of a single island platform served by B and Q trains. A mezzanine level extends the length of the station above the platform level. Access to the north end of the mezzanine is available from the LIRR concourse, a street entrance on Hanson Place, and an entrance within the Williamsburgh Savings Bank Building. (The street entrance on Hanson Place and access from the LIRR concourse is currently closed due to construction that is scheduled for completion in July 2007.) Access to the platform level from the north end of the mezzanine is

controlled by two HEETs and a single high revolving exit gate. The center portion of the mezzanine provides a connection to the platform level from the east end of the central corridor and from two street-level entrance stairs controlled by a total of three HEETs and a single high revolving exit gate. The remaining areas of the mezzanine are currently closed to the public.

At its western end, the central corridor provides access to a mezzanine for the Pacific Street BMT subway station. This mezzanine, located beneath 4th Avenue south of Atlantic Avenue, includes a 24-hour token booth (C-9) and a fare array with eight turnstiles. A set of three stairs provides access down to each of the subway station's two island platforms which are served by D, M, N, and R trains. Access from street level is provided by a stair located at the northwest corner of 4th Avenue and Pacific Street (S1), and a second stair (S2) and an elevator located near the northeast corner of 4th Avenue and Pacific Street. This street-level access is also used by subway riders en route to and from the IRT 2, 3, 4, and 5 and BMT B and Q routes via the central corridor. As it is located immediately adjacent to Site 5, stair S2 is expected to have increased usage due to project-generated demand, and is therefore analyzed in this EIS along with adjoining fare array C-9.

As shown in Figure 13-2, LIRR trains utilize a three-platform, six-track facility located immediately to the east of the Atlantic Avenue IRT subway station. A concourse at the north end of the LIRR platforms provides direct access to the platform for Manhattan-bound Nos. 2 and 3 subway trains (via fare array R-610), a street entrance at the southeast corner of Hanson Place and Flatbush Avenue, and the north mezzanine of the Atlantic Avenue BMT subway station. There are also stairs on the LIRR platforms that provide direct access (via turnstiles) down to the central corridor, and additional stairs that provide access up to a street-level concourse with an entrance on Flatbush Avenue midblock between Atlantic Avenue and Hanson Place. As part of the 2004 upgrades to the subway station complex, LIRR ticketing facilities were relocated to this new street-level concourse which also provides access to the Atlantic Terminal office and retail development located above the subway station complex.

With an average weekday ridership of approximately 27,559 entering passengers in 2005, the Atlantic Avenue/Pacific Street subway station complex is ranked 33rd in weekday ridership among the subway system's 423 stations. As shown in Table 13-3, ridership at this subway station complex increased by approximately 26.3 percent from 2003 through 2005. It should be noted, however, that as many users of this complex transfer between subway lines and do not pass through turnstiles, the ranking based on turnstile counts does not fully reflect the total usage within the complex.

The analysis of existing conditions at stair S2 and fare array C-9 during the weekday 8-9 AM, 5-6 PM, and 7-8 PM pre-game peak periods are shown in Table 13-4. As shown in Table 13-4, both stair S2 and fare array C-9 currently operate at unrestricted LOS A in all three analyzed peak hours.

BERGEN STREET IRT SUBWAY STATION (2,3)

The Bergen Street IRT subway station is located at the intersection of Flatbush Avenue and Bergen Street approximately 400 feet south of the project site. This subway station, served by Nos. 2 and 3 trains, consists of two side platforms each with an adjoining entrance/control area located on opposite sides of Flatbush Avenue. As shown in Figure 13-1, the Manhattan-bound platform is reached via street stairs S2 and S4 located at the southeast and northeast corners of Flatbush Avenue and Bergen Street, respectively. The fare array for this platform (R-617) consists of a 24-hour token booth and three turnstiles. Three stairs on the west side of Flatbush Avenue provide access to the Brooklyn-bound platform; S1 and S3 on the south side of Bergen

Table 13-4
Existing Conditions at the Atlantic Avenue/Pacific Street Subway Station Complex

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	Volume to Capacity Ratio	LOS
S2	Stairway @ NE Corner	8-9 AM	5.20	780	153	1.96	0.20	A
	Fourth Ave/Pacific Street	5-6 PM	5.20	780	144	1.85	0.18	A
		7-8 PM	5.20	780	83	1.06	0.11	A

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	Volume to Capacity Ratio	LOS
C-9	Pacific St Station Fare Array	8-9 AM	3,840	503	0.13	A
	@ 4th Ave/Pacific Street	5-6 PM	3,840	416	0.11	A
	8 entry/exit turnstiles	7-8 PM	3,840	232	0.06	A

Notes:

(1) Effective width measured as stairwell width less 1.5 feet to account for center and side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Source: PHA April 2004 field counts.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

Street and stair S5 on the north side of Bergen Street. The fare array serving the Brooklyn-bound platform (R-618) consists of a token booth, three turnstiles, two HEETs, and two high revolving exit gates. An agent is on duty at this token booth from 6 AM to 9 PM, Monday through Friday. Demand from the proposed project is expected to be concentrated at stair S4 (Manhattan-bound) and stair S5 (Brooklyn-bound), and the analyses of conditions at this subway station therefore focus on these stairs as well as the adjoining fare arrays.

As shown in Table 13-3, with an average weekday ridership of approximately 3,998 entering passengers in 2005, the Bergen Street IRT subway station is ranked 298th in weekday ridership among the subway system's 423 subway stations. Ridership at this subway station experienced a decline of approximately 2.5 percent from 2003 through 2005. As shown in Table 13-5, under existing conditions, analyzed stairs S4 and S5 and both fare arrays currently operate at an acceptable LOS A or B in the weekday AM, PM and pre-game peak periods.

FULTON STREET IND SUBWAY STATION (G)

The Fulton Street IND subway station is located north of the project site at the intersection of Fulton Street and Lafayette Avenue. This subway station, served by the G train, consists of two side platforms and a single fare control area with three turnstiles and a 24-hour token booth (N-422) located adjacent to the west end of the southbound (Brooklyn-bound) platform. (The G-train operates between Red Hook, Brooklyn, and Long Island City or Forest Hills, Queens and, with the exception of shuttle services, is the only subway route that does not serve Manhattan.) As shown in Figure 13-1, two stairs provide access to the subway station's fare control area—stair S3 at the northeast corner of Fulton Street/Lafayette Avenue and stair S4 at the southwest corner of the intersection. Access between the fare control area and Queens-bound trains is via an underpass that connects the two platforms near their western ends. The only direct street access to the Queens-bound platform is provided by stair S2 located at the southwest corner of Lafayette and S. Portland Avenues. This entrance is controlled by a single HEET (R312H1) and is open at all times. As new demand from the proposed project is expected to occur at all three entrances, each of these stairs is analyzed for potential project impacts, along with fare array N-422 and the HEET adjacent to stair S2.

As shown in Table 13-3, the Fulton Street IND subway station is the least used of the subway stations serving the project site, with an average weekday ridership of approximately 2,593 entering passengers in 2005. The subway station experienced an increase in ridership of approximately 11.3 percent from 2003 through 2005, and is currently ranked 364th among the subway system's 423 stations based on weekday ridership. As shown in Table 13-6, under existing conditions, all street stairs and fare arrays at the Fulton Street subway station currently operate at LOS A in the weekday AM, PM, and pre-game peak periods.

LAFAYETTE AVENUE IND SUBWAY STATION (C)

As shown in Figure 13-1, the Lafayette Avenue IND subway station is located north of the project site along Fulton Street north of Hanson Place. This subway station, served by the C train, consists of a single large mezzanine from which stairs descend to two side platforms. The mezzanine is divided into a free zone and separate paid zones for the Manhattan-bound and Queens-bound platforms. Access to each paid zone is controlled by a HEET and a high revolving exit gate at the mezzanine's east end, a similar pair at the mezzanine's west end, and

Table 13-5
Existing Conditions at the Bergen Street (2,3) Subway Station

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C	LOS
S4	Stairway @ NE Corner	8-9 AM	3.20	480	128	2.67	0.27	A
	Flatbush Ave/Bergen Street	5-6 PM	3.20	480	32	0.67	0.07	A
	(Manhattan-bound)	7-8 PM	3.20	480	18	0.38	0.04	A
S5	Stairway @ NW Corner	8-9 AM	3.20	480	23	0.48	0.05	A
	Flatbush Ave/Bergen Street	5-6 PM	3.20	480	60	1.25	0.13	A
	(Brooklyn-bound)	7-8 PM	3.20	480	31	0.65	0.06	A

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS
R617	Manhattan-Bound Fare Array	8-9 AM	1,440	344	0.24	B
	3 entry/exit turnstiles	5-6 PM	1,440	63	0.04	A
		7-8 PM	1,440	38	0.03	A
R618	Brooklyn-Bound Fare Array	8-9 AM	2,940	45	0.02	A
	3 entry/exit turnstiles	5-6 PM	2,940	119	0.04	A
	2 high entry/exit turnstiles	7-8 PM	2,940	61	0.02	A
	2 high revolving exit gates					

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Source: PHA April 2004 and March 2006 field counts.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

Table 13-6
Existing Conditions at the Fulton Street (G) Subway Station

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C	LOS
S2	Stairway @ SW Corner	8-9 AM	3.20	480	13	0.27	0.03	A
	Lafayette Ave/S. Portland Ave	5-6 PM	3.20	480	36	0.75	0.08	A
		7-8 PM	3.20	480	21	0.44	0.04	A
S3	Stairway @ NE Corner	8-9 AM	3.20	480	96	2.00	0.20	A
	Fulton St/Ft. Greene Place	5-6 PM	3.20	480	53	1.10	0.11	A
		7-8 PM	3.20	480	28	0.58	0.06	A
S4	Stairway @ SW Corner	8-9 AM	3.20	480	133	2.77	0.28	A
	Fulton St/Ft. Greene Place	5-6 PM	3.20	480	138	2.88	0.29	A
		7-8 PM	3.20	480	83	1.73	0.17	A

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS
N-422	Fulton Street Fare Array	8-9 AM	1,440	229	0.16	A
	3 entry/exit turnstiles	5-6 PM	1,440	191	0.13	A
		7-8 PM	1,440	111	0.08	A
R312H1	S. Portland Ave Fare Array	8-9 AM	300	13	0.04	A
	1 high entry/exit turnstile	5-6 PM	300	36	0.12	A
		7-8 PM	300	21	0.07	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Source: PHA April 2006 field counts.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

three turnstiles adjacent to the subway station's token booth (N-110) at the center of the mezzanine. As shown in Figure 13-1, a total of nine stairs provide access between the mezzanine level and the street. Given the station's location to the north of the project site, project demand is expected to be most concentrated at the four stairs located south of Fulton Street—stairs S2 and S4 at the southeast and northwest corners Hanson Place/S. Oxford Street, respectively, and stairs S6 and S8 at the southeast and southwest corners of Fulton Street and S. Portland Avenue, respectively. These stairs, which are open daily from 5:15 AM to 10 PM, are analyzed for potential project impacts during the weekday 8-9 AM, 5-6 PM and 7-8 PM pre-game peaks.

As shown in Table 13-3, with an average weekday ridership of approximately 3,822 entering passengers in 2005, the Lafayette Avenue IND subway station is ranked 308th in weekday ridership among the subway system's 423 stations. Ridership at this station experienced a decline of approximately four percent from 2003 through 2005. As shown in Table 13-7, under existing conditions, all analyzed stairs and fare arrays currently operate at an acceptable LOS A or B in the weekday AM, PM, and pre-game peak periods.

OTHER SUBWAY STATIONS

In addition to the subway stations discussed above, the Clinton-Washington Avenues IND subway station is also expected to be used by a small number of subway users en route to and from the proposed project. As shown in Figure 13-1, this station is located to the north and east of the project site along Fulton Street between Clinton and Washington Avenues. Like the Lafayette Avenue IND subway station to the west, it is served by the C train. As shown in Table 13-3, with an average weekday ridership of approximately 4,508 entering passengers in 2005, the Clinton-Washington Avenues IND subway station is ranked 272nd in weekday ridership among the subway system's 423 stations. Ridership at this station increased by approximately 2.6 percent from 2003 through 2005.

As discussed later in this chapter, given its distance from the project site, especially the proposed project's arena and commercial components, as well as the availability of C train service at the Lafayette Avenue IND subway station, new project-generated subway trips at the Clinton-Washington Avenues IND subway station are not expected to exceed the 200-trip CEQR threshold for a detailed impact analysis in any peak hour. Conditions at this station are therefore not analyzed in this EIS.

LINE HAUL

Line haul is the volume of transit riders passing a defined point on a given transit route. For subway routes in New York City to and from Brooklyn, line haul is typically measured either at East River bridge and tunnel crossings, or at the actual maximum load point on each subway route (the point where the trains carry the greatest number of passengers during the peak hour). Maximum load point ridership data for 2005 were provided by NYCT and reflect the major line restructuring that occurred after the Manhattan Bridge Reconstruction Project was completed in February 2004.

All of the subway routes serving Downtown Brooklyn and project area subway stations cross the East River cordon line with the exception of the G train which travels between Brooklyn and Queens and does not enter Manhattan. Crossings between Manhattan and Downtown Brooklyn include (from south to north) the Joralemon Street Tunnel (4,5), Montague Street Tunnel (M,R), Clark Street Tunnel (2,3), Cranberry Street Tunnel (A,C), the Manhattan Bridge (B,D,N,Q), and the Rutgers Tunnel (F). The peak direction of travel through these crossings is typically

Table 13-7
Existing Conditions at the Lafayette Avenue (C) Subway Station

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C	LOS
S2	Stairway @ SE Corner	8-9 AM	3.20	480	128	2.67	0.27	A
	Hanson Place/S. Oxford St	5-6 PM	3.20	480	32	0.67	0.07	A
		7-8 PM	3.20	480	18	0.38	0.04	A
S4	Stairway @ NW Corner	8-9 AM	3.20	480	128	2.67	0.27	A
	Hanson Place/S. Oxford St	5-6 PM	3.20	480	32	0.67	0.07	A
		7-8 PM	3.20	480	18	0.38	0.04	A
S6	Stairway @ SE Corner	8-9 AM	3.20	480	7	0.15	0.01	A
	Fulton Street/S. Portland Ave	5-6 PM	3.20	480	22	0.46	0.05	A
		7-8 PM	3.20	480	15	0.31	0.03	A
S8	Stairway @ SW Corner	8-9 AM	3.20	480	28	0.58	0.06	A
	Fulton Street/S. Portland Ave	5-6 PM	3.20	480	31	0.65	0.06	A
		7-8 PM	3.20	480	21	0.44	0.04	A

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS
N110	Manhattan-Bound Fare Array (East)	8-9 AM	750	189	0.25	B
	1 high entry/exit turnstile	5-6 PM	750	23	0.03	A
	1 high revolving exit gate	7-8 PM	750	15	0.02	A
	Manhattan-Bound Fare Array (Center)	8-9 AM	1,440	46	0.03	A
	3 entry/exit turnstiles	5-6 PM	1,440	5	0	A
		7-8 PM	1,440	6	0	A
	Manhattan-Bound Fare Array (West)	8-9 AM	750	125	0.17	A
	1 high entry/exit turnstile	5-6 PM	750	20	0.03	A
	1 high revolving exit gate	7-8 PM	750	13	0.02	A
N110	Brooklyn-Bound Fare Array (East)	8-9 AM	750	14	0.02	A
	1 high entry/exit turnstile	5-6 PM	750	58	0.08	A
	1 high revolving exit gate	7-8 PM	750	69	0.09	A
	Brooklyn-Bound Fare Array (Center)	8-9 AM	1,440	6	0	A
	3 entry/exit turnstiles	5-6 PM	1,440	21	0.01	A
		7-8 PM	1,440	20	0.01	A
	Brooklyn-Bound Fare Array (West)	8-9 AM	750	24	0.03	A
	1 high entry/exit turnstile	5-6 PM	750	57	0.08	A
	1 high revolving exit gate	7-8 PM	750	39	0.05	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Source: PHA April 2004 and March 2006 field counts.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

Manhattan-bound in the AM peak period and Brooklyn-bound in the PM. For the G train, which travels between Queens and Brooklyn, the peak direction of travel in Brooklyn is typically Brooklyn-bound during the AM peak hour and Queens-bound during the PM peak hour.

Table 13-8 shows existing line haul conditions at the maximum load points in the peak direction on each subway line through Downtown Brooklyn during the 8-9 AM and 5-6 PM peak hours. As shown in Table 13-8, with more riders boarding than disembarking Manhattan-bound 2, 3, 4, and 5 trains in the AM at the Atlantic Avenue IRT subway station (due mainly to transfers from BMT lines and the LIRR), the maximum load points on these routes are typically west of the Atlantic Avenue IRT subway station. (The maximum load point for the Nos. 4 and 5 trains is west of the Borough Hall IRT subway station at the Joralemon Street Tunnel.) Conversely, with substantial numbers of riders transferring from B and Q trains to other subway lines at the Atlantic Avenue/Pacific Street subway station complex in the AM, the peak load point for these routes is typically east of the Atlantic Avenue BMT subway station in the AM.

The line haul analysis in Table 13-8 focuses on the peak direction of travel in each hour—Manhattan-bound in the AM and Brooklyn-bound in the PM (Brooklyn-bound in the AM and Queens-bound in the PM for the G train). Existing conditions for each subway route are reported in terms of a volume-to-capacity (v/c) ratio which is determined by dividing the number of peak hour passengers traveling through the maximum load point by the line haul capacity provided. Line haul capacity is based on the practical capacity per subway car multiplied by the number of subway cars crossing the maximum point in the peak hour. (Guideline capacities established by NYCT were used for the analyses.) As shown in Table 13-8, no subway route is currently operating at or above capacity (a v/c ratio equal to or greater than 1.00) in either peak hour based on NYCT 2005 ridership data. V/c ratios are higher in the AM peak hour than in the PM as peak demand is typically more concentrated in the AM. As shown in Table 13-8, A trains typically carry the highest number of passengers with 18,053 Manhattan-bound riders in the AM peak hour and 14,899 Brooklyn-bound riders in the PM. The highest v/c ratios occur on the N train and the No. 3 train in the AM peak hour (0.81 and 0.80, respectively), and on B and A trains in the PM peak hour (0.69 and 0.67, respectively).

BUS SERVICE

The project site is well served by MTA NYCT local bus services. A total of 11 local routes operate within ¼ mile of the project site, connecting it to the Downtown core, other parts of Brooklyn, and Queens. As shown in Figure 13-3, bus corridors in the vicinity of the project site include Flatbush Avenue (which hosts the B41 and B67 routes), Atlantic Avenue (B45, B63 and B65), Bergen/Dean Streets (B65), Vanderbilt Avenue (B69), 3rd Avenue (B37, B103), 5th Avenue (B63), and Fulton Street (B25, B26, B38 and B52). Intermodal connections between local buses and other transit modes are an important aspect of the transit system serving the Downtown Brooklyn area. Key intermodal connections include transfers between the bus, subway and commuter rail modes at the Atlantic Avenue/Pacific Street subway station complex.

The results of the analysis of existing conditions on the local bus routes serving the project site are shown in Table 13-9. The analysis examines conditions at the maximum load point in the peak direction in the weekday 8-9 AM and 5-6 PM peak hours. (The maximum load point is the point where the buses carry the greatest number of passengers during the peak hour.) The analysis shows the average passengers per bus, and the available peak hour capacity on each route based on a maximum of 65 passengers per bus. As shown in Table 13-9, the routes with the greatest demand are

Table 13-8
Existing Subway Line Haul Conditions

Peak Hour	Route	Peak Direction	Maximum Load Point (Leaving Station)	Trains Per Hour (1)	Cars Per Hour (1)	Passengers per Hour (1)	Peak Hour Capacity (2)	V/C Ratio (3)
AM	2	Manhattan-bound	Atlantic Avenue	10	100	8,059	11,000	0.73
	3	Manhattan-bound	Atlantic Avenue	9	90	7,902	9,900	0.80
	4	Manhattan-bound	Borough Hall	14	140	10,725	15,400	0.70
	5	Manhattan-bound	Borough Hall	12	120	9,927	13,200	0.75
	A	Manhattan-bound	Jay Street-Boro Hall	18	144	18,053	25,200	0.72
	C	Manhattan-bound	Jay Street-Boro Hall	8	64	5,439	9,280	0.59
	B	Manhattan-bound	7th Avenue	10	100	11,282	14,500	0.78
	D	Manhattan-bound	36th Street	10	80	9,764	14,000	0.70
	F	Manhattan-bound	Bergen Street	15	120	13,728	21,000	0.65
	M	Manhattan-bound	DeKalb Avenue	7	56	3,485	8,120	0.43
	N	Manhattan-bound	36th Street	10	80	11,285	14,000	0.81
	Q	Manhattan-bound	7th Avenue	10	80	10,093	14,000	0.72
	R	Manhattan-bound	DeKalb Avenue	10	80	7,159	14,000	0.51
	G	Brooklyn-bound	Clinton-Washington Avs	9	36	4,031	6,300	0.64
PM	2	Brooklyn-bound	Nevins Street	10	100	5,382	11,000	0.49
	3	Brooklyn-bound	Nevins Street	8	80	4,856	8,800	0.55
	4	Brooklyn-bound	Bowling Green	15	150	9,018	16,500	0.55
	5	Brooklyn-bound	Bowling Green	8	80	4,987	8,800	0.57
	A	Brooklyn-bound	Jay Street-Boro Hall	16	128	14,899	22,400	0.67
	C	Brooklyn-bound	Jay Street-Boro Hall	7	56	3,582	8,120	0.44
	B	Brooklyn-bound	Atlantic Avenue	10	100	9,991	14,500	0.69
	D	Brooklyn-bound	Pacific Street	10	80	7,149	14,000	0.51
	F	Brooklyn-bound	Jay Street-Boro Hall	13	104	9,363	18,200	0.51
	M	Brooklyn-bound	Lawrence Street	6	48	3,153	6,960	0.45
	N	Brooklyn-bound	Pacific Street	9	72	7,024	12,600	0.56
	Q	Brooklyn-bound	Atlantic Avenue	9	72	7,288	12,600	0.58
	R	Brooklyn-bound	Lawrence Street	10	80	6,321	14,000	0.45
	G	Queens-bound	Fulton Street	8	32	2,658	5,600	0.47

Notes:
(1) Based on Spring and Fall 2005 schedule and ridership data provided by NYC Transit.
(2) Capacity based on NYC Transit guideline capacities of 110 passengers/car for 51' cars, 145 passengers/car for 60' cars and 175 passengers for 75' cars. Guideline capacity for each route is based on the capacity associated with the predominant car type.
(3) Volume-to-capacity ratio.

Table 13-9
Existing Local Bus Conditions

Peak Hour (1)	Route	Peak Direction	Maximum Load Point	Peak Hour Buses (2)	Peak Hour Passengers (2)	Average Passangers Per Bus	Available Capacity (3)	Notes
	B25	WB	Fulton Street/Nostrand Ave	8	356	45	164	
	B26	WB	Halsey Street/Malcom X Blvd	11	546	50	169	
	B37	NB	Third Ave/39th Street	3	110	37	85	
	B38	WB	DeKalb Ave/Vanderbilt Ave	21	1,143	54	222	
	B41	NB	Flatbush Ave/Empire Blvd	26	1,305	50	385	(4)
AM	B45	WB	St. Johns Place/Kingston Ave	8	358	45	162	
	B52	WB	Nostrand Ave/Gates Ave	13	721	55	124	
	B63	NB	Fifth Ave/36th Street	8	353	44	167	
	B65	WB	Bergen Street/Franklin Ave	6	276	46	114	
	B67	NB	10th Ave/20th Street	7	349	50	106	
	B69	NB	Fulton Street/Vanderbilt Ave	5	161	32	164	
	B25	EB	Fulton Street/Nostrand Ave	9	463	51	122	
	B26	EB	Halsey Street/Nostrand Ave	9	436	48	149	
	B37	SB	Third Ave/Atlantic Ave.	3	98	33	97	
	B38	EB	Fulton Street/DeKalb Ave	14	745	53	165	
	B41	SB	Flatbush Ave/Church Ave	23	1,024	45	471	(4)
PM	B45	EB	St. Johns Place/Kingston Ave	7	310	44	145	
	B52	EB	Fulton Street/Green Ave	10	501	50	149	
	B63	SB	Fifth Ave/50th Street	8	295	37	225	
	B65	EB	Dean Street/Washington Ave	6	246	41	144	
	B67	SB	7th Ave/Union Street	5	213	43	112	
	B69	SB	Fulton Street/Vanderbilt Ave	3	76	25	119	

Notes:
(1) Peak hours: weekday 8-9 AM and 5-6 PM.
(2) Based on most currently available data from NYC Transit.
(3) Available capacity based on a maximum of 65 passengers per bus.
(4) Combined local and limited service.

the B38 and B41 which carry 1,143 and 1,305 peak direction passengers, respectively, at their maximum load points during the AM peak hours, and 745 and 1,024 passengers respectively, in the PM peak hour. The B52 has the highest utilization rate compared with capacity with an average of 55 passengers per bus in the peak westbound direction in the AM peak hour. No routes were found to be operating at or over capacity in either peak hour under existing conditions.

The following provides a brief description of each of the eleven routes operating within ¼-mile of the project site and which are expected to attract demand from the proposed project.

B25

The B25 operates between East New York and Downtown Brooklyn via Fulton Street and Cadman Plaza West to Fulton Landing. This grid route service, which operates primarily on Fulton Street, services the business and shopping districts of Downtown Brooklyn, Fort Greene, and Bedford-Stuyvesant. During the AM peak hour, the maximum load point in the peak westbound direction occurs at Fulton Street/Nostrand Avenue, with an average of 45 passengers per bus. During the PM peak hour, the maximum load point in the peak eastbound direction also occurs at Fulton Street/Nostrand Avenue, with an average of 51 passengers per bus.

B26

The B26 provides local service in Brooklyn from Cadman Plaza West and Tillary Street in Downtown Brooklyn to Wyckoff Avenue in Bushwick, traveling via Fulton and Halsey Streets in both directions. This grid route serves the business districts of Downtown Brooklyn, Fort Greene, and Bedford-Stuyvesant. During the AM peak hour, the maximum load point in the peak westbound direction occurs at Halsey Street/Malcolm X Boulevard, with an average of 50 passengers per bus. During the PM peak hour, the maximum load point in the peak eastbound direction occurs at Halsey Street/Nostrand Avenue, with an average of 48 passengers per bus.

B37

The B37 travels between a southern terminus at Shore Road/4th Avenue in Bay Ridge and a northern terminus at Jay/High Streets in Downtown Brooklyn, traveling mainly along 3rd Avenue, and Fulton and Jay Streets. This grid route serves the business districts of Downtown Brooklyn, Sunset Park and Bay Ridge. During the AM peak hour, the maximum load point in the peak northbound direction occurs at 3rd Avenue/39th Street, with an average of 37 passengers per bus. During the PM peak hour, the maximum load point in the peak southbound direction occurs at 3rd Avenue/Atlantic Avenue, with an average of 33 passengers per bus.

B38

The B38 travels between Cadman Plaza West/Tillary Street in Downtown Brooklyn and Catalpa/Seneca Avenues in Ridgewood, Queens, traveling mainly along DeKalb Avenue in the westbound direction and via Fulton Street and Lafayette Avenue in the eastbound direction. At all times except midnight hours, a branch operates to Starr Street and Metropolitan Avenue in Ridgewood, diverging from the main route at Stanhope Street and Seneca Avenue and operating via Stanhope Street and Grandview Avenue, using Starr and Woodward Streets to return. The B38 functions as a grid route in northern Brooklyn and western Queens, serving Downtown Brooklyn, Ft. Greene, Clinton Hill and Bushwick. During the AM peak hour, the maximum load point in the peak westbound direction occurs at DeKalb/Vanderbilt Avenues, with an average of

54 passengers per bus. During the PM peak hour, the maximum load point in the peak eastbound direction occurs at Fulton Street/DeKalb Avenue with an average of 53 passengers per bus.

B41

The B41, which provides local and limited-stop service in Brooklyn, operates to Downtown Brooklyn from two southern terminals, Kings Plaza in Mill Basin, and Veterans Avenue and East 71st Street in Bergen Beach. The B41 travels along Veterans Avenue, Avenue N, Flatbush Avenue, Livingston Street, Joralemon Street and Cadman Plaza West. It serves as a major grid service and as feeder service to the Flatbush Avenue/Nostrand Avenue IRT subway station, as well as the LIRR terminal at Atlantic/Flatbush Avenues. Existing stops for B41 buses are located adjacent to the project site on Flatbush Avenue at 5th Avenue. Additional stops along Flatbush Avenue are located at Bergen Street and north of Atlantic Avenue. During the AM peak hour, the maximum load point in the peak northbound direction occurs at Flatbush Avenue/Empire Boulevard, with an average of 50 passengers per bus. During the PM peak hour, the maximum load point in the peak southbound direction occurs at Flatbush/Church Avenues, with an average of 45 passengers per bus.

B45

The B45 operates between Ralph Avenue/St. John's Place in Ocean Hill and Court/Livingston Streets in Downtown Brooklyn, via Livingston Street, Atlantic Avenue, Flatbush Avenue, Washington Avenue and St. John's Place. The B45 functions as a grid route, and serves Downtown Brooklyn, Prospect Heights, Crown Height and Ocean Hill. Existing stops for B45 buses are located adjacent to the project site on Atlantic Avenue at Ft. Greene Place (eastbound-only), S. Portland Avenue, Carlton Avenue, Clermont Avenue (eastbound-only), and Vanderbilt Avenue (westbound-only). During the AM peak hour, the maximum load point in the peak westbound direction occurs at St. John's Place/Kingston Avenue, with an average of 45 passengers per bus. During the PM peak hour, the maximum load point in the peak eastbound direction also occurs at St. John's Place/Kingston Avenue, with an average of 44 passengers per bus.

B52

The B52 is a grid route which operates from Ridgewood, Queens to Cadman Plaza West in Downtown Brooklyn. The B52 travels via Cadman Plaza West, Tillary Street, Adams Street (Court Street northbound), Fulton Street and Gates Avenue, and serves Downtown Brooklyn, Bedford-Stuyvesant and Bushwick. During the AM peak hour, the maximum load point in the peak westbound direction occurs at Nostrand/Gates Avenues, with an average of 55 passengers per bus. During the PM peak hour, the maximum load point in the peak eastbound direction occurs at Fulton Street/Green Avenue, with an average of 50 passengers per bus.

B63

The B63 operates between a southern terminus at Shore Road/4th Avenue in Bay Ridge and a northern terminus at Atlantic Avenue/Columbia Street in Cobble Hill, traveling primarily via 5th and Atlantic Avenues. This major grid route serves the business districts of Bay Ridge, Sunset Park, Park Slope and Downtown Brooklyn. As shown in Figure 13-3, northbound B63 buses currently traverse the project site on 5th Avenue before turning westbound onto Atlantic Avenue. In the southbound direction, B63 buses utilize Flatbush Avenue to reach 5th Avenue from Atlantic Avenue. Existing stops for the B63 in the immediate vicinity of the project site are located on 5th Avenue approaching Atlantic Avenue (northbound) and at Dean Street

(southbound), on Flatbush Avenue between Atlantic and Pacific Streets (southbound) and on Atlantic Avenue west of 4th Avenue. During the AM peak hour, the maximum load point in the peak northbound direction occurs at 5th Avenue/36th Street, with an average of 44 passengers per bus. During the PM peak hour, the maximum load point in the peak southbound direction occurs at 5th Avenue/50th Street, with an average of 37 passengers per bus.

B65

The B65 operates between its western terminus at Smith/Fulton Streets in Downtown Brooklyn and its eastern terminus at Ralph Avenue/St. John's Place in Crown Heights. This grid route operates primarily via Atlantic Avenue and Dean Street eastbound, and Bergen and Smith Streets westbound. Existing eastbound stops for the B65 in the immediate vicinity of the project site are located along Dean Street at Flatbush, Carlton and Vanderbilt Avenues. Westbound stops are located along Bergen Street, also at Flatbush, Carlton, and Vanderbilt Avenues. During the AM peak hour, the maximum load point in the peak westbound direction occurs at Bergen Street/Franklin Avenue, with an average of 46 passengers per bus. During the PM peak hour, the maximum load point in the peak eastbound direction occurs at Dean Street/Washington Avenue, with an average of 41 passengers per bus.

B67

The B67 operates between a southern terminus at MacDonald Avenue/Cortelyou Road in Kensington and a northern terminus at Jay/High Streets (High Street IND subway station) in Downtown Brooklyn. This grid route operates primarily via McDonald, 7th, and Flatbush Avenues, and Livingston and Jay Streets, and serves the Downtown Brooklyn and Park Slope shopping districts. Existing B67 stops in the immediate vicinity of the project site are located along Flatbush Avenue at Bergen Street, 5th Avenue, and 4th Avenue. During the AM peak hour, the maximum load point in the peak northbound direction occurs at 10th Avenue/20th Street, with an average of 50 passengers per bus. During the PM peak hour, the maximum load point in the peak southbound direction occurs at 7th Avenue/Union Street, with an average of 43 passengers per bus.

B69

The B69 operates between 19th Street/Prospect Park West in Park Slope and Sands and Jay Streets in Brooklyn Heights, traversing Fort Greene and Prospect Heights. This grid route operates primarily via Flushing Avenue, Vanderbilt Avenue, 8th Avenue (northbound), and Prospect Park West (southbound). In the vicinity of the project site, the B69 operates along Vanderbilt Avenue with stops at Bergen Street and at Atlantic Avenue. During the AM peak hour, the maximum load point in the peak northbound direction occurs at Fulton Street/Vanderbilt Avenue, with an average of 32 passengers per bus. During the PM peak hour, the maximum load point also occurs at Fulton Street/Vanderbilt Avenue, with an average of 25 passengers per bus.

OTHER BUS ROUTES

The B103 is a limited service that operates between East 94th Street/Flatlands Avenue in Canarsie and Tillary and Adams Streets in Downtown Brooklyn. Operation of this route was assumed by the MTA from Command Bus Company on December 5, 2005, and ridership data for the B103 is currently not available. In the vicinity of the project site, B103 buses operate express along 3rd Avenue.

COMMUTER VAN SERVICES

Another element of the transit network providing access to the study area is commuter van service. Privately operated commuter vans, each with a typical capacity of 14 to 15 passengers, connect outlying areas of the borough to Downtown Brooklyn. These vans typically charge $1 or $1.50 and operate along commercial corridors. Field observations indicate that the majority of vans approach Downtown Brooklyn on the major arterials such as Flatbush Avenue, and then loop through the area on westbound Schermerhorn Street, northbound Smith Street, and eastbound Livingston Street. As the northbound left-turn from Flatbush Avenue to Schermerhorn Street is prohibited, northbound Ashland Place, and westbound Lafayette Avenue are typically used to reach Schermerhorn Street. To facilitate these van services, the New York City Department of Transportation (DOT) has designated six locations in Downtown Brooklyn as commuter van stops. These locations are indicated by curbside regulatory signage. The nearest such stop in the vicinity of the project site is located on northbound Ashland Place at Hanson Place. Additional stops are located on Schermerhorn, Nevins and Hoyt Streets. Field observations indicate that, while some of these designated stops are utilized, much of the pick-up and drop-off activity continues to occur at non-designated locations. In addition to the commuter vans serving Downtown Brooklyn, commuter vans operating between Brooklyn and Manhattan traverse the study area on Flatbush Avenue en route to and from the Manhattan Bridge.

LIRR COMMUTER RAIL SERVICE

In addition to subway and bus transit, Downtown Brooklyn and the project site are served by commuter rail, with the LIRR operating out of Atlantic Terminal at Flatbush and Atlantic Avenues. The railroad's Atlantic Terminal consists of three platforms serving six stub-end tracks. As part of a 2004 upgrade to the subway station complex, LIRR ticketing facilities were relocated to a new street-level concourse that also provides access to the Atlantic Terminal office and retail development located above the subway station complex. This concourse can be reached via stairs located on each platform.

Direct connections to subway lines are available at the Atlantic Avenue/Pacific Street subway station complex which incorporates the LIRR terminal. Stairs connect each LIRR platform to a central connecting corridor that provides access to the Atlantic Avenue IRT, Atlantic Avenue BMT and Pacific Street BMT subway stations. Direct access is also available to the platform for Manhattan-bound Nos. 2 and 3 trains which is at the same level and adjacent to the LIRR platforms.

From Atlantic Terminal, LIRR trains operate to Jamaica and points east, with connections available to all LIRR branches with the exception of the Port Washington Branch. Based on Spring 2006 schedules, the number of LIRR trains arriving at Atlantic Terminal during the weekday AM commuter period peaks at ten between 7:30 and 8:30 AM. During the weekday evening peak commuter period, upwards of nine LIRR trains are scheduled to depart Downtown Brooklyn in a one hour period. During the weekday midday off-peak periods, trains typically arrive and depart Atlantic Terminal twice per hour.

Overall, the LIRR carries approximately 274,000 passengers each weekday (approximately 81 million passengers per year) on 10 branches serving 124 subway stations. An estimated 10 to 12 percent of all Downtown Brooklyn office commuters use the LIRR for their commute. In addition to serving Downtown Brooklyn, Atlantic Terminal is also a major transfer point between the LIRR and the subway, especially for trips en route to and from Lower Manhattan. As shown in Table 13-3, weekday LIRR ridership at this terminal is approximately 25,310 persons daily, and has decreased by 1.1 percent from 2003 to 2005.

The Vanderbilt Yard south of the terminal (on the project site) is presently used as a daytime storage and cleaning facility for the LIRR trains serving Atlantic Terminal. The yard has 10 tracks of varying lengths and is accessed via a lead track from the main line just west of Vanderbilt Avenue. After storage and cleaning, the trains return to service to accommodate PM ridership to Jamaica and points east. The yard is empty overnight and on weekends.

PEDESTRIANS

The analysis of pedestrian conditions focuses on those pedestrian elements—sidewalks, corner areas, and crosswalks—that would be utilized by substantial numbers of new project-generated trips, or that would be physically altered as a result of development of the proposed project. Figure 13-4 shows the locations of the pedestrian elements selected for analysis of potential project impacts. The locations selected would typically serve as key links between the project site and the surrounding street system, and/or would be used by concentrations of project-generated pedestrian demand linked to other modes (such as en route to subway stations, bus stops or off-site parking garages). As shown in Figure 13-4, elements selected for analysis include sidewalks adjoining the project site along Atlantic Avenue, Flatbush Avenue, Dean Street, and Vanderbilt Avenue. In addition to serving as the primary pathways for general pedestrian access between the project site and the surrounding street system, these corridors would be used by pedestrians en route to and from the proposed new entrance to the Atlantic Avenue/Pacific Street subway station complex at the intersection of Atlantic and Flatbush Avenues, as well as for access to bus routes that operate along these corridors. Existing sidewalk widths along Atlantic Avenue adjacent to the project site are typically 10 to 12 feet, while sidewalks along Flatbush and Vanderbilt Avenues are typically 18 to 20 feet in width. The sidewalks on Dean Street adjacent to the project site are approximately 18 feet in width.

Selected sidewalks along 4th Avenue and Pacific Street adjacent to development sites have also been included in the analysis. Adjacent to Site 5 (Block 927), the sidewalk on 4th Avenue (S2 in Figure 13-4) is approximately 18 feet in width. Along Pacific Street, the sidewalks along the north side of the street are typically 15 feet in width while those along the south side of the street are typically 17 to 18 feet in width.

As discussed in more detail later in this chapter, with implementation of the proposed project, sidewalks along 6th Avenue between Atlantic and Flatbush Avenues, and along Carlton Avenue between Atlantic Avenue and Pacific Street, would be reconstructed to accommodate two-way vehicular traffic along these blocks. These sidewalks are therefore also analyzed for potential project-related impacts. Ten-foot-wide sidewalks are currently provided along the two existing bridges carrying 6th Avenue and Carlton Avenue over the LIRR rail yard between Atlantic Avenue and Pacific Street. South of Pacific Street, the sidewalks along 6th Avenue are typically 18 feet in width.

It should be noted that the analysis of sidewalk conditions is based on the "effective width" which is the width actually available to accommodate pedestrian flow. Along many analyzed sidewalks, the effective width is reduced by the presence of trees, building stoops, light poles, signs, and other street furniture.

In addition to sidewalks, the analysis of pedestrian conditions includes crosswalks and adjoining corner areas that would link the project site to the surrounding street system. Notable among these are the crosswalks at the intersection of Atlantic and Flatbush Avenues. The proposed new on-site subway entrance on Block 1118 would eliminate the need for the majority of pedestrians to cross Atlantic Avenue en route between the project site and the subway. However, substantial numbers of project-generated pedestrian trips en route to and from off-site parking facilities

(many located north and west of the project site), the LIRR and Atlantic Center would still occur on crosswalks at this heavily trafficked intersection. As shown in Figure 13-4, also included in the analysis are key pedestrian crossings along Dean Street and Atlantic, Flatbush, Vanderbilt, and 4th Avenues that would be utilized by pedestrians en route to and from outlying subway stations, parking facilities, bus routes and surrounding neighborhoods. (An assessment of the potential for accidents involving vehicles and pedestrians at intersections in the vicinity of the project site is provided in Chapter 12, "Traffic and Parking.")

In general, the majority of crosswalks in the vicinity of the project site range from 12 to 16 feet in width, with wider crosswalks provided on major avenue crossings and locations with higher pedestrian traffic. For example, at the intersection of Flatbush and Atlantic Avenues adjacent to Atlantic Terminal, the east crosswalk on Atlantic Avenue (location X7 in Figure 13-4) is 21 feet in width, while the south crosswalk on Flatbush Avenue (X6) is approximately 20 feet in width. By contrast, the crosswalks on Dean Street at Carlton Avenue are approximately nine and 13 feet in width.

Tables 13-10 through 13-12 show existing peak 15-minute two-way pedestrian volumes on analyzed sidewalks, corner areas, and crosswalks in the weekday 8-9 AM, 5-6 PM, and 7-8 PM (pre-game) and Saturday 1-2 PM (pre-game) periods. Existing pedestrian volumes in the vicinity of the project site vary considerably, with higher volumes typically found at the west end of the site than to the east due to the proximity of retail uses at Atlantic Terminal, Atlantic Center, and Site 5, as well as the Atlantic Avenue/Pacific Street subway station complex and the LIRR terminus. As shown in Table 13-10, the east sidewalk on 4th Avenue adjacent to Site 5 (location S2 in Figure 13-4) experiences the highest volumes of all analyzed sidewalks, with peak 15-minute two-way flows ranging from 91 persons in the weekday AM peak hour to 196 persons in the PM. Peak 15-minute pedestrian flows along sidewalk S3 on Atlantic Avenue adjacent to Site 5 range from 41 in the AM to 97 in the PM, while volumes on sidewalk S4 on Flatbush Avenue adjacent to Site 5 range from 32 in the weekday PM to 112 in the Saturday midday. Across Flatbush Avenue, sidewalk S5 between Atlantic and 5th Avenues experiences peak 15-minute volumes ranging from 36 in the weekday AM to 51 in the Saturday midday. By contrast, pedestrian flows along sidewalk S12 on Atlantic Avenue between Vanderbilt and Carlton Avenues at the east end of the site (adjacent to Block 1121) currently average six or seven persons in the peak 15-minutes.

Existing pedestrian flows on analyzed crosswalks are similarly higher in the vicinity of 4th and Flatbush Avenues than at crosswalks farther east. As shown in Table 13-12, the highest volumes are typically found on the east crosswalk on Atlantic Avenue at 4th Avenue (location X4 in Figure 13-4), with peak 15-minute volumes ranging from 80 in the weekday AM to 142 in the PM. The east crosswalk on Pacific Street at 4th Avenue (X1) experiences peak 15-minute volumes ranging from 65 in the weekday 7-8 PM pre-game period to 117 in the AM. Peak 15-minute volumes on the east crosswalk on Atlantic Avenue at Ft. Greene Place (X9) total six and 15 in the weekday AM and 7-8 PM pre-game periods, respectively, and 111 and 99 in the weekday PM and Saturday midday periods, respectively. The substantially higher volumes in the weekday PM and Saturday midday periods likely reflect retail-based demand en route to and from Atlantic Center and Atlantic Terminal. The east crosswalk on Atlantic Avenue at Flatbush Avenue (X7) currently experiences peak 15-minute flows ranging from 38 in the AM to 91 in the Saturday midday. By contrast, fewer than 10 persons use the east crosswalk on Atlantic Avenue at Carlton Avenue (X15) in the peak 15-minutes of any analyzed peak hour.

Table 13-10
Existing Sidewalk Conditions

Facility No.	Location	Effective Width (feet)	Peak 15-Min Volumes				Average Conditions								Platoon Conditions							
			AM	PM	EVE	SAT	AM		PM		EVE		SAT		AM		PM		EVE		SAT	
							PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS
S1	Pacific St btwn 4th & 5th Avs - north	8.5	25	33	21	28	0.20	A	0.25	A	0.16	A	0.22	A	4.20	A	4.25	A	4.16	A	4.22	A
S2	4th Av btwn Pacific St & Atlantic Av - east	5.0	91	196	105	127	1.21	A	2.60	A	1.37	A	1.71	A	5.21	B	6.60	B	5.37	B	5.71	B
S3	Atlantic Av btwn 4th & Flatbush Avs - south	6.5	41	97	51	59	0.42	A	0.99	A	0.52	A	0.61	A	4.42	A	4.99	A	4.52	A	4.61	A
S4	Flatbush Av btwn Atlantic Av & Pacific St - west	12.5	36	32	42	112	0.19	A	0.22	A	0.22	A	0.27	A	4.19	A	4.22	A	4.22	A	4.27	A
S5	Flatbush Av btwn Atlantic Av & Pacific St - east	16.5	36	41	42	51	0.15	A	0.13	A	0.17	A	0.45	A	4.15	A	4.13	A	4.17	A	4.45	A
S6	Atlantic Av btwn Ft Greene Pl & S Portland Av - south	7.5	9	6	8	8	0.08	A	0.05	A	0.07	A	0.07	A	4.08	A	4.05	A	4.07	A	4.07	A
S7	6th Av btwn Atlantic Av & Pacific St - west	7.0	12	18	23	15	0.11	A	0.17	A	0.22	A	0.14	A	4.11	A	4.17	A	4.22	A	4.14	A
S8	6th Av btwn Atlantic Av & Pacific St - east	7.0	13	29	25	15	0.12	A	0.28	A	0.24	A	0.14	A	4.12	A	4.28	A	4.24	A	4.14	A
S9	Atlantic Av btwn S Portland & Carlton Avs - south	6.5	6	12	9	7	0.06	A	0.12	A	0.09	A	0.07	A	4.06	A	4.12	A	4.09	A	4.07	A
S10	Carlton Av btwn Atlantic Av & Pacific St - west	7.0	6	7	12	4	0.06	A	0.07	A	0.11	A	0.04	A	4.06	A	4.07	A	4.11	A	4.04	A
S11	Carlton Av btwn Atlantic Av & Pacific St - east	7.0	6	5	10	6	0.06	A	0.05	A	0.10	A	0.06	A	4.06	A	4.05	A	4.10	A	4.06	A
S12	Atlantic Av btwn Carlton & Vanderbilt Avs - south	7.0	6	7	6	7	0.06	A	0.07	A	0.06	A	0.07	A	4.05	A	4.07	A	4.06	A	4.07	A
S13	Vanderbilt Av btwn Atlantic Av & Pacific St - west	15.0	12	12	5	6	0.05	A	0.05	A	0.02	A	0.03	A	4.05	A	4.05	A	4.02	A	4.03	A
S14	Dean St btwn Carlton & Vanderbilt Avs - north	11.5	21	16	24	4	0.12	A	0.09	A	0.14	A	0.02	A	4.12	A	4.09	A	4.14	A	4.02	A
S15	Pacific St btwn S Portland & Carlton Avs - north	6.5	9	9	10	12	0.09	A	0.09	A	0.10	A	0.12	A	4.09	A	4.09	A	4.10	A	4.12	A
S16	Pacific St btwn S Portland & Carlton Avs - south	11.5	11	14	6	9	0.06	A	0.08	A	0.03	A	0.05	A	4.06	A	4.08	A	4.03	A	4.05	A
S17	Dean St btwn 6th & Carlton Avs - north	10.5	7	12	13	27	0.04	A	0.08	A	0.08	A	0.17	A	4.04	A	4.08	A	4.08	A	4.17	A
S18	Dean St btwn Flatbush & 6th Av - north	11.5	13	15	32	12	0.08	A	0.07	A	0.19	A	0.07	A	4.08	A	4.07	A	4.19	A	4.07	A
S19	6th Av btwn Pacific St & Dean St - west	11.5	12	24	22	15	0.07	A	0.14	A	0.13	A	0.09	A	4.07	A	4.14	A	4.13	A	4.09	A
S20	6th Av btwn Pacific St & Dean St - east	11.5	15	21	23	13	0.09	A	0.12	A	0.13	A	0.08	A	4.09	A	4.12	A	4.13	A	4.08	A
S21	6th Av btwn Dean St & Bergen St - west	7.5	40	31	22	24	0.36	A	0.28	A	0.20	A	0.21	A	4.36	A	4.28	A	4.20	A	4.21	A
S22	6th Av btwn Dean St & Bergen St - east	6.5	32	20	14	29	0.33	A	0.21	A	0.14	A	0.30	A	4.33	A	4.21	A	4.14	A	4.30	A
S23	6th Av btwn Bergen St & Flatbush Av - west	15.0	20	15	16	11	0.09	A	0.07	A	0.07	A	0.05	A	4.09	A	4.07	A	4.07	A	4.05	A
S24	6th Av btwn Bergen St & Flatbush Av - east	9.5	34	27	18	20	0.24	A	0.19	A	0.13	A	0.14	A	4.24	A	4.19	A	4.13	A	4.14	A

This table has been revised since the DEIS.

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

EVE - weekday 7-8 PM

SAT - Saturday 1-2 PM

PFM - persons per foot of effective width per minute.

LOS - level of service.

Table 13-11
Existing Corner Conditions

Facility No.	Intersection	Corner	Peak 15-Min Volumes				Average Conditions							
							AM		PM		Pre		SAT	
			AM	PM	EVE	SAT	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS
C1	4th Av @ Pacific St	northeast	15	9	9	18	337.1	A	453.7	A	576.4	A	322.7	A
C2	Atlantic Av @ 4th Av	southeast	17	68	31	31	238.5	A	121.2	A	196.4	A	141.0	A
C3	Flatbush Av @ Atlantic Av	southwest	11	52	43	3	883.7	A	414.6	A	596.8	A	525.3	A
C4	Flatbush Av @ Atlantic Av	southeast	1	1	1	54	773.6	A	539.8	A	677.2	A	300.2	A
C5	Atlantic Av @ 6th Av	southwest	2	3	0	3	826.7	A	427.3	A	438.3	A	386.5	A
C6	Atlantic Av @ 6th Av	southeast	2	1	0	2	1,715.8	A	959.5	A	902.8	A	938.4	A
C7	Atlantic Av @ Carlton Av	southwest	4	4	0	1	396.1	A	1,155.0	A	1,457.8	A	968.6	A
C8	Atlantic Av @ Carlton Av	southeast	8	0	3	1	826.7	A	805.6	A	999.7	A	1,115.7	A
C9	Atlantic Av @ Vanderbilt Av	southwest	4	2	2	3	1,098.9	A	1,155.0	A	1,446.3	A	1,359.7	A
C10	Dean St @ Vanderbilt Av	northwest	2	4	3	1	2,244.5	A	1,902.9	A	4,839.0	A	3,934.4	A
C11	Dean St @ Carlton Av	northeast	3	2	3	3	5,584.9	A	3,526.5	A	4,788.0	A	4,187.8	A
C12	Dean St @ Carlton Av	northwest	13	2	3	0	2,034.4	A	2,372.8	A	3,050.8	A	1,708.1	A
C13	Dean St @ 6th Av	northeast	8	8	20	7	1,382.1	A	953.5	A	647.8	A	1,442.1	A
C14	Dean St @ 6th Av	northwest	11	19	26	1	854.5	A	476.3	A	414.7	A	1,523.0	A
C15	Flatbush Av @ Dean St	northeast	5	9	4	3	3,555.3	A	2,270.5	A	2,635.6	A	866.0	A

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

Pre - weekday 7-8 PM

SAT - Saturday 1-2 PM

SF/Ped - average square feet per pedestrian.

LOS - level of service.

Table 13-12
Existing Crosswalk Conditions

Facility No.	Location	Street Width (feet)	Crosswalk Width (feet)	Peak 15-Min Volumes				Avg. Conditions (w/Conflicting Vehicles)							
								AM		PM		EVE		SAT	
				AM	PM	EVE	SAT	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS
X1	4th Av @ Pacific St - east	30.0	8.0	117	83	65	107	54.7	B	211.9	A	275.0	A	161.0	A
X2	4th Av @ Pacific St - north	85.0	14.0	15	17	13	28	1,552.1	A	427.8	A	554.2	A	254.1	A
X3	Atlantic Av @ 4th Av - south	83.0	16.0	35	47	47	71	541.2	A	365.8	A	357.4	A	128.5	A
X4	Atlantic Av @ 4th Av - east	73.0	14.0	80	142	83	121	94.4	A	48.9	B	88.3	A	110.7	A
X5	Flatbush Av @ Atlantic Av - west	127.0	18.0	38	30	14	51	763.7	A	969.0	A	2,080.7	A	455.5	A
X6	Flatbush Av @ Atlantic Av - south	138.0	20.0	36	78	54	72	360.0	A	163.4	A	230.8	A	367.5	A
X7	Flatbush Av @ Atlantic Av - east	123.0	21.0	38	42	42	91	806.5	A	728.3	A	728.3	A	264.8	A
X8	Atlantic Av @ Ft Greene Pl - west	90.0	12.5	10	53	32	82	1,410.8	A	252.1	A	426.9	A	242.5	A
X9	Atlantic Av @ Ft Greene Pl - east	90.0	17.5	6	111	15	99	3,133.4	A	160.0	A	1,231.8	A	240.8	A
X10	Atlantic Av @ 6th Av - west	111.0	13.5	17	36	39	37	448.1	A	218.3	A	203.3	A	212.3	A
X11	Atlantic Av @ 6th Av - south	34.0	11.0	5	7	6	11	3,263.6	A	2,310.0	A	2,722.9	A	1,471.3	A
X12	Atlantic Av @ 6th Av - east	112.0	16.0	10	22	26	18	985.9	A	445.5	A	376.2	A	545.5	A
X13	Atlantic Av @ Carlton Av - west	115.0	14.0	21	10	2	7	402.5	A	850.3	A	4,270.6	A	1,216.8	A
X14	Atlantic Av @ Carlton Av - south	34.0	14.0	11	4	8	7	1,889.2	A	5,226.4	A	2,604.3	A	2,978.8	A
X15	Atlantic Av @ Carlton Av - east	115.0	15.0	4	6	8	9	2,129.9	A	1,418.4	A	1,100.7	A	959.6	A
X16	Atlantic Av @ Vanderbilt Av - west	115.0	12.0	11	11	5	8	595.2	A	445.1	A	983.3	A	797.1	A
X17	Atlantic Av @ Vanderbilt Av - south	60.0	13.0	6	7	9	6	2,045.5	A	1,669.3	A	1,497.1	A	2,103.5	A
X18	Dean St @ Vanderbilt Av - north	60.0	16.0	9	12	5	4	821.2	A	614.6	A	1,482.3	A	1,854.1	A
X19	Dean St @ Vanderbilt Av - west	34.0	13.0	17	17	5	11	1,172.8	A	1,172.8	A	4,018.1	A	1,819.4	A
X20	Dean St @ Carlton Av - east	34.0	9.0	3	7	7	6	3,507.9	A	1,516.6	A	1,492.5	A	1,793.6	A
X21	Dean St @ Carlton Av - north	38.0	12.0	6	10	4	7	1,348.7	A	806.5	A	2,026.5	A	1,155.0	A
X22	Dean St @ Carlton Av - west	34.0	13.0	2	6	7	18	7,797.2	A	2,593.3	A	2,221.6	A	858.7	A
X23	Dean St @ 6th Av - east	34.0	12.0	22	25	43	22	504.3	A	442.8	A	254.2	A	504.3	A
X24	Dean St @ 6th Av - north	34.0	14.0	17	35	38	16	765.4	A	367.7	A	338.0	A	813.8	A
X25	Dean St @ 6th Av - west	34.0	12.0	29	48	53	15	380.6	A	226.9	A	204.8	A	743.3	A
X26	Flatbush Av @ Dean St - east	65.0	12.0	13	23	20	68	1,389.1	A	789.4	A	909.0	A	262.2	A
X27	Flatbush Av @ Dean St - north	95.0	14.0	5	4	7	23	2,075.4	A	2,595.9	A	1,480.5	A	446.1	A
X28	Flatbush Av @ 5th Av - south	83.0	12.0	19	46	33	60	478.7	A	193.4	A	272.5	A	146.7	A
X29	Flatbush Av @ 5th Av - north	78.0	14.0	17	24	24	71	633.9	A	446.7	A	446.7	A	145.9	A

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

EVE - weekday 7-8 PM

SAT - Saturday 1-2 PM

SF/Ped - average square feet per pedestrian.

LOS - level of service.

Tables 13-10 through 13-12 show the results of the analyses of existing sidewalk, corner area and crosswalk conditions for the weekday AM, PM, pre-game, and Saturday pre-game peak hours. As shown in Table 13-10, during these peak hours all analyzed sidewalks currently operate at an uncongested LOS A or B under platoon conditions. As shown in Tables 13-11 and 13-12, all analyzed corner areas and crosswalks also currently operate at LOS A or B in the weekday AM, PM, pre-game, and Saturday pre-game peak hours. The uncongested conditions reflect the low pedestrian volumes currently found in the vicinity of much of the project site. The proposed project would both improve these facilities (by widening sidewalks, for example), and result in notable increases in pedestrian activity.

E. FUTURE WITHOUT THE PROPOSED PROJECT—2010

Through 2010, it is expected that demand at analyzed transit and pedestrian facilities will modestly increase due to long-term background growth as well as the development of new office/commercial, residential, cultural, community facility, court and retail space in Downtown Brooklyn and the area surrounding the project site. In order to forecast the 2010 future without the proposed project (the 2010 No Build condition), the principal development projects listed in Table 2-1 and shown in Figure 2-1 in Chapter 2, "Procedural and Analytical Framework," expected to be completed by 2010 were considered. Several large development projects that are located outside of the land use study area but that are expected to add trips to analyzed subway and bus routes by 2010 were also considered. Three additional projects were added as discrete No Build sites for the FEIS in response to recent information on new proposed developments made public subsequent to the publication of the DEIS, or in response to agency and public comments on the DEIS. (A list of all discrete No Build sites considered in the transportation analyses is provided in Appendix C.) Currently, no plans for new development resulting from the Downtown Brooklyn Development project (which examined a 2013 analysis year) have been finalized. The projected developments associated with this rezoning project are therefore included in the analysis of 2016 No Build conditions.

In addition to demand from new developments, an annual background growth rate of 0.5 percent per year was applied to existing transit and pedestrian demand for the 2006 through 2010 period. This background growth rate, recommended in the *CEQR Technical Manual* for projects in Downtown Brooklyn, is applied to account for smaller projects, as-of-right developments not reflected in Table 2-1, and general increases in travel demand not attributable to specific development projects.

During the 2006 through 2010 period, it is anticipated that reconstruction/rehabilitation work at the Atlantic Avenue/Pacific Street subway station complex will be completed, including an enlarged concourse and air conditioned waiting room for the LIRR, and a major new entrance to the facility at the corner of Hanson Place and Flatbush Avenue. Also during this period, it is anticipated that DOT will implement pedestrian improvement measures developed as part of the *Downtown Brooklyn Traffic Calming Project (DBTCP)*. With the exception of the November 2003 conversion of Smith Street to one-way northbound operation from Atlantic Avenue to Schermerhorn Street, no specific measures in the *DBTCP* have been identified for implementation within the study area at this time, however all measures remain candidates for implementation. Therefore the analyses of future pedestrian conditions conservatively assumes no improvements to analyzed pedestrian facilities. No other substantive changes to analyzed transit or pedestrian facilities are expected during the 2006 through 2010 period.

The following sections describe how the growth in travel demand in the vicinity of the project site is expected to affect transit and pedestrian facilities in the 2010 future without the proposed project.

SUBWAY SERVICE

During the 2006 through 2010 period it is anticipated that the final elements of the reconstruction/rehabilitation of the Atlantic Avenue/Pacific Street subway station complex will be completed. These elements will include an enlarged concourse and air conditioned waiting room for the LIRR and a major new entrance to the facility at the corner of Hanson Place and Flatbush Avenue. No other changes to subway facilities or service in the vicinity of the project site are anticipated by 2010.

Tables 13-13 through 13-16 show the expected peak 15-minute volumes as well as v/c ratios and levels of service at analyzed subway station stairs and fare arrays in the 2010 future without the proposed project. As shown in Tables 13-13 through 13-16, by 2010 all analyzed stairways and fare arrays at subway stations in the vicinity of the project site will continue to operate at LOS B or better in the weekday 8-9 AM, 5-6 PM, and 7-8 PM pre-game peak hours.

Table 13-17 shows the anticipated line haul conditions at the maximum load points on subway routes serving Downtown Brooklyn and the project site in the 2010 future without the proposed project. The data in Table 13-17 reflect a 0.5 percent per year background growth rate for the 2006 through 2010 period and the addition of demand from No Build sites. As shown in Table 13-17, in the AM peak hour, A trains will continue to carry the highest number of passengers with 18,756 Manhattan-bound riders in the AM peak hour and 15,490 Brooklyn-bound riders in the PM. The highest v/c ratios will continue to occur on No. 3 trains and on N trains in the AM peak hour (0.84 and 0.83, respectively, compared with 0.80 and 0.81, respectively, under existing conditions), and on B and A trains in the PM peak hour (0.71 and 0.69, respectively, compared with 0.69 and 0.67, respectively, under existing conditions). No subway routes are expected to be operating over capacity in either analyzed peak hour in the 2010 future without the proposed project.

BUS SERVICE

During the 2006 through 2010 period, demand on local bus routes in Downtown Brooklyn is expected to increase as a result of new developments and general background growth. Table 13-18 shows the estimated peak hour, peak direction ridership at the maximum load point of each of the local bus routes serving the project site in the 2010 future without the proposed project. As shown in Table 13-18, all analyzed local bus routes are expected to operate with available capacity at their maximum load points in both peak periods in the 2010 future without the proposed project.

Table 13-13
No Build Conditions at the
Atlantic Avenue/Pacific Street Subway Station Complex - 2010

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	Volume to Capacity Ratio	LOS
S2	Stairway @ NE Corner	8-9 AM	5.20	780	157	2.01	0.20	A
	Fourth Ave/Pacific Street	5-6 PM	5.20	780	148	1.90	0.19	A
		7-8 PM	5.20	780	85	1.09	0.11	A

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	Volume to Capacity Ratio	LOS
C-9	Pacific St Station Fare Array	8-9 AM	3,840	516	0.13	A
	@ 4th Ave/Pacific Street	5-6 PM	3,840	427	0.11	A
	8 entry/exit turnstiles	7-8 PM	3,840	238	0.06	A

Notes:

(1) Effective width measured as stairwell width less 1.5 feet to account for center and side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Assumes 0.5 percent/year background growth for the 2006 - 2010 period plus demand from No Build developments.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

Table 13-14
No Build Conditions at the Bergen Street (2,3) Subway Station - 2010

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C	LOS
S4	Stairway @ NE Corner	8-9 AM	3.20	480	131	2.73	0.27	A
	Flatbush Ave/Bergen Street	5-6 PM	3.20	480	33	0.69	0.07	A
	(Manhattan-bound)	7-8 PM	3.20	480	18	0.38	0.04	A
S5	Stairway @ NW Corner	8-9 AM	3.20	480	24	0.50	0.05	A
	Flatbush Ave/Bergen Street	5-6 PM	3.20	480	62	1.29	0.13	A
	(Brooklyn-bound)	7-8 PM	3.20	480	32	0.67	0.07	A

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS
R617	Manhattan-Bound Fare Array	8-9 AM	1,440	353	0.25	B
	3 entry/exit turnstiles	5-6 PM	1,440	65	0.05	A
		7-8 PM	1,440	39	0.03	A
R618	Brooklyn-Bound Fare Array	8-9 AM	2,940	46	0.02	A
	3 entry/exit turnstiles	5-6 PM	2,940	122	0.04	A
	2 high entry/exit turnstiles	7-8 PM	2,940	63	0.02	A
	2 high revolving exit gates					

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Assumes 0.5 percent/year background growth for the 2006 - 2010 period plus demand from No Build developments.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

Table 13-15
No Build Conditions at the Fulton Street (G) Subway Station - 2010

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C	LOS
S2	Stairway @ SW Corner	8-9 AM	3.20	480	13	0.27	0.03	A
	Lafayette Ave/S. Portland Ave	5-6 PM	3.20	480	37	0.77	0.08	A
		7-8 PM	3.20	480	22	0.46	0.05	A
S3	Stairway @ NE Corner	8-9 AM	3.20	480	98	2.04	0.20	A
	Fulton St/Ft. Greene Place	5-6 PM	3.20	480	54	1.13	0.11	A
		7-8 PM	3.20	480	29	0.60	0.06	A
S4	Stairway @ SW Corner	8-9 AM	3.20	480	136	2.83	0.28	A
	Fulton St/Ft. Greene Place	5-6 PM	3.20	480	141	2.94	0.29	A
		7-8 PM	3.20	480	85	1.77	0.18	A

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS
N-422	Fulton Street Fare Array	8-9 AM	1,440	235	0.16	A
	3 entry/exit turnstiles	5-6 PM	1,440	196	0.14	A
		7-8 PM	1,440	114	0.08	A
R312H1	S. Portland Ave Fare Array	8-9 AM	300	13	0.04	A
	1 high entry/exit turnstile	5-6 PM	300	37	0.12	A
		7-8 PM	300	22	0.07	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Assumes 0.5 percent/year background growth for the 2006 - 2010 period plus demand from No Build developments.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

Table 13-16
No Build Conditions at the Lafayette Avenue (C) Subway Station - 2010

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C	LOS
S2	Stairway @ SE Corner	8-9 AM	3.20	480	131	2.73	0.27	A
	Hanson Place/S. Oxford St	5-6 PM	3.20	480	33	0.69	0.07	A
		7-8 PM	3.20	480	18	0.38	0.04	A
S4	Stairway @ NW Corner	8-9 AM	3.20	480	131	2.73	0.27	A
	Hanson Place/S. Oxford St	5-6 PM	3.20	480	33	0.69	0.07	A
		7-8 PM	3.20	480	18	0.38	0.04	A
S6	Stairway @ SE Corner	8-9 AM	3.20	480	7	0.15	0.01	A
	Fulton Street/S. Portland Ave	5-6 PM	3.20	480	23	0.48	0.05	A
		7-8 PM	3.20	480	15	0.31	0.03	A
S8	Stairway @ SW Corner	8-9 AM	3.20	480	33	0.69	0.07	A
	Fulton Street/S. Portland Ave	5-6 PM	3.20	480	39	0.81	0.08	A
		7-8 PM	3.20	480	25	0.52	0.05	A

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS
N110	Manhattan-Bound Fare Array (East)	8-9 AM	750	194	0.26	B
	1 high entry/exit turnstile	5-6 PM	750	24	0.03	A
	1 high revolving exit gate	7-8 PM	750	15	0.02	A
	Manhattan-Bound Fare Array (Center)	8-9 AM	1,440	47	0.03	A
	3 entry/exit turnstiles	5-6 PM	1,440	5	0.00	A
		7-8 PM	1,440	6	0.00	A
	Manhattan-Bound Fare Array (West)	8-9 AM	750	131	0.17	A
	1 high entry/exit turnstile	5-6 PM	750	23	0.03	A
	1 high revolving exit gate	7-8 PM	750	14	0.02	A
N110	Brooklyn-Bound Fare Array (East)	8-9 AM	750	14	0.02	A
	1 high entry/exit turnstile	5-6 PM	750	59	0.08	A
	1 high revolving exit gate	7-8 PM	750	71	0.09	A
	Brooklyn-Bound Fare Array (Center)	8-9 AM	1,440	6	0.00	A
	3 entry/exit turnstiles	5-6 PM	1,440	22	0.02	A
		7-8 PM	1,440	21	0.01	A
	Brooklyn-Bound Fare Array (West)	8-9 AM	750	25	0.03	A
	1 high entry/exit turnstile	5-6 PM	750	63	0.08	A
	1 high revolving exit gate	7-8 PM	750	43	0.06	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Assumes 0.5 percent/year background growth for the 2006 - 2010 period plus demand from No Build developments.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

Table 13-17
No Build Subway Line Haul Conditions - 2010

Peak Hour	Route	Peak Direction	Trains per Hour (1)	Cars per Hour (1)	Passengers per Hour (2)	Peak Hour Capacity (3)	V/C Ratio (4)
AM	2	Manhattan-bound	10	100	8,441	11,000	0.77
	3	Manhattan-bound	9	90	8,275	9,900	0.84
	4	Manhattan-bound	14	140	11,160	15,400	0.72
	5	Manhattan-bound	12	120	10,332	13,200	0.78
	A	Manhattan-bound	18	144	18,756	25,200	0.74
	C	Manhattan-bound	8	64	5,653	9,280	0.61
	B	Manhattan-bound	10	100	11,611	14,500	0.80
	D	Manhattan-bound	10	80	10,029	14,000	0.72
	F	Manhattan-bound	15	120	14,226	21,000	0.68
	M	Manhattan-bound	7	56	3,624	8,120	0.45
	N	Manhattan-bound	10	80	11,576	14,000	0.83
	Q	Manhattan-bound	10	80	10,391	14,000	0.74
	R	Manhattan-bound	10	80	7,425	14,000	0.53
	G	Brooklyn-bound	9	36	4,150	6,300	0.66
PM	2	Brooklyn-bound	10	100	5,679	11,000	0.52
	3	Brooklyn-bound	8	80	5,183	8,800	0.59
	4	Brooklyn-bound	15	150	9,413	16,500	0.57
	5	Brooklyn-bound	8	80	5,271	8,800	0.60
	A	Brooklyn-bound	16	128	15,490	22,400	0.69
	C	Brooklyn-bound	7	56	3,735	8,120	0.46
	B	Brooklyn-bound	10	100	10,280	14,500	0.71
	D	Brooklyn-bound	10	80	7,353	14,000	0.53
	F	Brooklyn-bound	13	104	9,779	18,200	0.54
	M	Brooklyn-bound	6	48	3,300	6,960	0.47
	N	Brooklyn-bound	9	72	7,209	12,600	0.57
	Q	Brooklyn-bound	9	72	7,510	12,600	0.60
	R	Brooklyn-bound	10	80	6,583	14,000	0.47
	G	Queens-bound	8	32	2,740	5,600	0.49

This table has been revised since the DEIS.

Notes:

(1) Based on Spring and Fall 2005 schedule and ridership data provided by NYC Transit.

(2) Based on 2005 Existing demand increased by 0.5 percent/year background growth for the 2005 - 2010 period plus demand from No Build development sites.

(3) Capacity based on NYC Transit guideline capacities of 110 passengers/car for 51' cars, 145 passengers/car for 60' cars and 175 passengers/car for 75' cars. Guideline capacity for each route is based on the capacity associated with the predominant car type.

Table 13-18
No Build Local Bus Conditions - 2010

Peak Hour (1)	Route	Peak Direction	Maximum Load Point	2010 Peak Hour Passengers (2)	No Build Conditions with Current Service Levels			No Build Conditions with Potential Service Adjustments			Notes
					Peak Hour Buses (3)	Average Passengers/Bus	Available Capacity (4)	Peak Hour Buses (5)	Average Passengers/Bus	Available Capacity (4)	
	B25	WB	Fulton Street/Nostrand Ave	390	8	49	130	8	49	130	
	B26	WB	Halsey Street/Malcom X Blvd	594	11	54	121	11	54	121	
	B37	NB	Third Ave/39th Street	117	3	39	78	3	39	78	
	B38	WB	DeKalb Ave/Vanderbilt Ave	1,245	21	59	120	21	59	120	
	B41	NB	Flatbush Ave/Empire Blvd	1,436	26	55	254	26	55	254	(7)
PM	B45	WB	St. Johns Place/Kingston Ave	370	8	46	150	8	46	150	
	B52	WB	Nostrand Ave/Gates Ave	779	13	60	66	13	60	66	
	B63	NB	Fifth Ave/36th Street	364	8	46	156	8	46	156	(6)
	B65	WB	Bergen Street/Franklin Ave	285	6	48	105	6	48	105	
	B67	NB	10th Ave/20th Street	376	7	54	79	7	54	79	
	B69	NB	Fulton Street/Vanderbilt Ave	164	5	33	161	5	33	161	
	B25	EB	Fulton Street/Nostrand Ave	517	9	57	68	9	57	68	
	B26	EB	Halsey Street/Nostrand Ave	496	9	55	89	9	55	89	
	B37	SB	Third Ave/Atlantic Ave.	129	3	43	66	3	43	66	
	B38	EB	Fulton Street/DeKalb Ave	824	14	59	86	14	59	86	
	B41	SB	Flatbush Ave/Church Ave	1,191	23	52	304	23	52	304	(7)
PM	B45	EB	St. Johns Place/Kingston Ave	342	7	49	113	7	49	113	
	B52	EB	Fulton Street/Green Ave	560	10	56	90	10	56	90	
	B63	SB	Fifth Ave/50th Street	325	8	41	195	8	41	195	
	B65	EB	Dean Street/Washington Ave	270	6	45	120	6	45	120	
	B67	SB	7th Ave/Union Street	246	5	49	79	5	49	79	
	B69	SB	Fulton Street/Vanderbilt Ave	78	3	26	117	3	26	117	

This table has been revised since the DEIS.

Notes:

(1) Peak hours: weekday 8-9 AM and 5-6 PM.
(2) Assumes 0.5 percent per year background growth plus demand from No Build sites developed by 2010.
(3) Based on most currently available NYC Transit ridership summaries, unless otherwide noted.
(4) Available capacity based on a maximum of 65 passengers for a standard 40-seat bus as per CEQR criteria.
(5) Assumes service levels adjusted to address capacity shortfalls during the 2006 through 2010 period.
(6) Based on data from *Atlantic Terminal Office Development FEIS* , June 21, 2002.
(7) Combined local and limited service.

COMMUTER VAN SERVICES

During the 2006 through 2010 period, demand for commuter van services in Downtown Brooklyn will likely increase as a result of new developments and general background growth. It is anticipated that Flatbush Avenue will continue to function as the primary access route to and from Downtown Brooklyn for these vans.

LIRR COMMUTER RAIL SERVICE

As discussed above, it is expected that the final elements of the reconstruction of the Atlantic Avenue/Pacific Street subway station complex, which includes the LIRR's Atlantic Terminal, will be complete by 2010. These elements include an enlarged concourse and air conditioned waiting room for the LIRR and a major new entrance to the facility at the corner of Hanson Place and Flatbush Avenue. With new development in Downtown Brooklyn as well as general background growth, it is likely that LIRR ridership through Atlantic Terminal will increase during the 2006 through 2010 period.

PEDESTRIANS

Pedestrian flow conditions at analyzed sidewalks, corners areas, and crosswalks were analyzed for the 2010 future without the proposed project, incorporating anticipated demand from new development and a background growth rate of 0.5 percent per year for the 2006 through 2010 period. During this period, it is anticipated that the DOT will implement traffic calming measures developed as part of the *Downtown Brooklyn Traffic Calming Project (DBTCP)*. Under this project, which was initiated by DOT in 1997, a comprehensive area-wide strategy of physical and operational traffic calming measures was developed for Downtown Brooklyn on a corridor-by-corridor basis. Among the project's objectives are to improve pedestrian safety and access, including safer crossings at problem locations, reduce vehicular speeds and enhance mobility between neighborhoods. In 2001 a pilot program was implemented to evaluate various candidate traffic calming measures. Measures implemented included the widening of the median refuges on Tillary Street at Adams Street to reduce north-south crosswalk distance; and the introduction of a pedestrian refuge (subsequently removed in late summer 2002), new left-turn lane and changes to parking regulations on Atlantic Avenue at Bond Street, along with curb extensions on Bond Street at Atlantic Avenue. After evaluating the effectiveness of the pilot program treatments, an action plan was developed with recommendations for implementing an area-wide traffic calming strategy. With the exception of the conversion of Smith Street from two-way to one-way northbound operation from Atlantic Avenue to Schermerhorn Street in November 2003, no specific measures in the *DBTCP* have been identified for implementation within the study area at this time. However, all measures remain candidates for implementation. DOT is working with the Community Boards on prioritizing these measures. DOT intends to implement measures based upon further detailed review, analysis of impacts, and community review. As no measures have been identified for implementation, the analysis of future pedestrian conditions therefore assumes that no additional improvements are implemented at analyzed pedestrian facilities in the 2010 future without the proposed project.

Tables 13-19 through 13-21 show the results of the analyses of sidewalk, corner area and crosswalk conditions for the weekday AM, PM, pre-game and Saturday pre-game hours in the 2010 future without the proposed project. As shown in Table 13-19, during these peak hours all analyzed sidewalks would continue to operate at an uncongested LOS A or B under platoon conditions. As shown in Tables 13-20 and 13-21, all analyzed corner areas and crosswalks would also continue to operate at LOS A or B in the weekday AM, PM, pre-game, and Saturday pre-game peak hours in the 2010 future without the proposed project.

Table 13-19
No Build Sidewalk Conditions - 2010

Facility No.	Location	Effective Width (feet)	Peak 15-Min Volumes				Average Conditions								Platoon Conditions							
			AM	PM	EVE	SAT	AM		PM		EVE		SAT		AM		PM		EVE		SAT	
							PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS
S1	Pacific St btwn 4th & 5th Avs - north	8.5	25	34	21	28	0.20	A	0.27	A	0.16	A	0.22	A	4.20	A	4.27	A	4.22	A	4.22	A
S2	4th Av btwn Pacific St & Atlantic Av - east	5.0	93	200	107	130	1.24	A	2.67	A	1.43	A	1.73	A	5.24	B	6.67	B	5.73	B	5.73	B
S3	Atlantic Av btwn 4th & Flatbush Avs - south	6.5	41	99	52	60	0.42	A	1.02	A	0.53	A	0.62	A	4.42	A	5.02	B	4.62	A	4.61	A
S4	Flatbush Av btwn Atlantic Av & Pacific St - west	12.5	37	32	43	114	0.20	A	0.17	A	0.23	A	0.61	A	4.20	A	4.17	A	4.23	A	4.21	A
S5	Flatbush Av btwn Atlantic Av & Pacific St - east	16.5	37	41	42	52	0.15	A	0.17	A	0.17	A	0.21	A	4.15	A	4.17	A	4.17	A	4.28	A
S6	Atlantic Av btwn Ft Greene Pl & S Portland Av - south	7.5	9	6	8	8	0.08	A	0.05	A	0.07	A	0.07	A	4.08	A	4.05	A	4.07	A	4.07	A
S7	6th Av btwn Atlantic Av & Pacific St - west	7.0	12	18	23	15	0.11	A	0.17	A	0.22	A	0.14	A	4.11	A	4.17	A	4.14	A	4.14	A
S8	6th Av btwn Atlantic Av & Pacific St - east	7.0	13	29	25	15	0.12	A	0.28	A	0.24	A	0.14	A	4.12	A	4.28	A	4.14	A	4.14	A
S9	Atlantic Av btwn S Portland & Carlton Avs - south	6.5	6	12	9	7	0.06	A	0.12	A	0.09	A	0.07	A	4.06	A	4.12	A	4.07	A	4.07	A
S10	Carlton Av btwn Atlantic Av & Pacific St - west	7.0	6	7	12	4	0.06	A	0.07	A	0.11	A	0.04	A	4.06	A	4.07	A	4.04	A	4.04	A
S11	Carlton Av btwn Atlantic Av & Pacific St - east	7.0	6	5	10	6	0.06	A	0.05	A	0.10	A	0.06	A	4.06	A	4.05	A	4.06	A	4.06	A
S12	Atlantic Av btwn Carlton & Vanderbilt Avs - south	7.0	6	7	6	7	0.06	A	0.07	A	0.06	A	0.07	A	4.06	A	4.07	A	4.07	A	4.07	A
S13	Vanderbilt Av btwn Atlantic Av & Pacific St - west	15.0	12	12	5	6	0.05	A	0.05	A	0.02	A	0.03	A	4.05	A	4.05	A	4.03	A	4.03	A
S14	Dean St btwn Carlton & Vanderbilt Avs - north	11.5	21	16	24	4	0.12	A	0.09	A	0.14	A	0.02	A	4.12	A	4.09	A	4.02	A	4.02	A
S15	Pacific St btwn S Portland & Carlton Avs - north	6.5	9	9	10	12	0.09	A	0.09	A	0.10	A	0.12	A	4.09	A	4.09	A	4.12	A	4.12	A
S16	Pacific St btwn S Portland & Carlton Avs - south	11.5	11	14	6	9	0.06	A	0.08	A	0.03	A	0.05	A	4.06	A	4.08	A	4.05	A	4.05	A
S17	Dean St btwn 6th & Carlton Avs - north	10.5	7	12	13	27	0.04	A	0.08	A	0.08	A	0.17	A	4.04	A	4.08	A	4.17	A	4.17	A
S18	Dean St btwn Flatbush & 6th Av - north	11.5	13	15	33	12	0.08	A	0.09	A	0.19	A	0.07	A	4.08	A	4.09	A	4.07	A	4.07	A
S19	6th Av btwn Pacific St & Dean St - west	11.5	12	24	22	15	0.07	A	0.14	A	0.13	A	0.09	A	4.07	A	4.14	A	4.09	A	4.09	A
S20	6th Av btwn Pacific St & Dean St - east	11.5	15	21	23	13	0.09	A	0.12	A	0.13	A	0.08	A	4.09	A	4.12	A	4.08	A	4.08	A
S21	6th Av btwn Dean St & Bergen St - west	7.5	41	31	22	24	0.36	A	0.28	A	0.20	A	0.21	A	4.36	A	4.28	A	4.21	A	4.21	A
S22	6th Av btwn Dean St & Bergen St - east	6.5	33	20	14	29	0.34	A	0.21	A	0.14	A	0.30	A	4.34	A	4.21	A	4.30	A	4.30	A
S23	6th Av btwn Bergen St & Flatbush Av - west	15.0	20	15	16	11	0.09	A	0.07	A	0.07	A	0.05	A	4.09	A	4.07	A	4.05	A	4.05	A
S24	6th Av btwn Bergen St & Flatbush Av - east	9.5	34	27	18	20	0.24	A	0.19	A	0.13	A	0.14	A	4.24	A	4.19	A	4.14	A	4.14	A

This table has been revised since the DEIS.

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

EVE - weekday 7-8 PM

SAT - Saturday 1-2 PM

PFM - persons per foot of effective width per minute.

LOS - level of service.

Table 13-20
No Build Corner Conditions - 2010

Facility No.	Intersection	Corner	Peak 15-Min Volumes				Average Conditions							
							AM		PM		Pre		SAT	
			AM	PM	EVE	SAT	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS
C1	4th Av @ Pacific St	northeast	15	9	9	18	330.3	A	445.4	A	556.9	A	318.6	A
C2	Atlantic Av @ 4th Av	southeast	17	69	32	32	234.8	A	119.7	A	193.7	A	138.3	A
C3	Flatbush Av @ Atlantic Av	southwest	11	53	44	3	771.6	A	409.8	A	645.1	A	513.0	A
C4	Flatbush Av @ Atlantic Av	southeast	1	1	1	55	865.1	A	530.8	A	670.3	A	293.2	A
C5	Atlantic Av @ 6th Av	southwest	2	3	0	3	826.7	A	435.3	A	438.3	A	386.5	A
C6	Atlantic Av @ 6th Av	southeast	2	1	0	2	1,715.8	A	959.5	A	902.8	A	938.4	A
C7	Atlantic Av @ Carlton Av	southwest	4	4	0	1	396.1	A	805.6	A	1,457.8	A	968.6	A
C8	Atlantic Av @ Carlton Av	southeast	8	0	3	1	826.7	A	1,898.8	A	999.7	A	1,115.7	A
C9	Atlantic Av @ Vanderbilt Av	southwest	4	2	2	3	1,098.9	A	1,155.0	A	1,442.4	A	1,359.7	A
C10	Dean St @ Vanderbilt Av	northwest	2	4	3	1	2,244.5	A	1,902.9	A	4,839.0	A	3,934.3	A
C11	Dean St @ Carlton Av	northeast	3	2	3	3	5,584.9	A	3,526.5	A	4,788.0	A	4,187.8	A
C12	Dean St @ Carlton Av	northwest	13	2	3	0	2,034.4	A	2,372.8	A	3,050.0	A	1,707.1	A
C13	Dean St @ 6th Av	northeast	8	8	20	7	1,382.1	A	953.5	A	635.1	A	1,442.1	A
C14	Dean St @ 6th Av	northwest	11	19	27	1	855.2	A	471.7	A	407.6	A	1,523.0	A
C15	Flatbush Av @ Dean St	northeast	5	9	4	3	3,555.3	A	2,270.5	A	2,635.6	A	847.6	A

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

Pre - weekday 7-8 PM

SAT - Saturday 1-2 PM

SF/Ped - average square feet per pedestrian.

LOS - level of service.

Table 13-21
No Build Crosswalk Conditions - 2010

Facility No.	Location	Street Width (feet)	Crosswalk Width (feet)	Peak 15-Min Volumes				Avg. Conditions (w/Conflicting Vehicles)							
								AM		PM		EVE		SAT	
				AM	PM	EVE	SAT	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS
X1	4th Av @ Pacific St - east	30.0	8.0	119	85	67	109	53.6	B	206.6	A	266.3	A	157.7	A
X2	4th Av @ Pacific St - north	85.0	14.0	15	17	13	28	1,545.2	A	426.5	A	552.9	A	253.7	A
X3	Atlantic Av @ 4th Av - south	83.0	16.0	35	47	47	73	540.1	A	364.6	A	159.7	A	123.9	A
X4	Atlantic Av @ 4th Av - east	73.0	14.0	82	144	85	124	91.7	A	47.9	B	193.4	A	107.6	A
X5	Flatbush Av @ Atlantic Av - west	127.0	18.0	39	30	14	52	744.0	A	969.0	A	2,083.7	A	446.6	A
X6	Flatbush Av @ Atlantic Av - south	138.0	20.0	36	80	55	74	358.4	A	157.5	A	225.1	A	243.7	A
X7	Flatbush Av @ Atlantic Av - east	123.0	21.0	39	42	42	93	784.8	A	727.0	A	727.2	A	258.9	A
X8	Atlantic Av @ Ft Greene Pl - west	90.0	12.5	10	55	32	74	1,017.5	A	171.9	A	304.7	A	235.6	A
X9	Atlantic Av @ Ft Greene Pl - east	90.0	17.5	6	113	15	101	2,209.8	A	109.2	A	862.7	A	235.6	A
X10	Atlantic Av @ 6th Av - west	111.0	13.5	17	36	39	37	489.0	A	218.0	A	203.1	A	212.0	A
X11	Atlantic Av @ 6th Av - south	34.0	11.0	5	7	6	11	3,263.6	A	2,308.7	A	2,722.9	A	1,471.3	A
X12	Atlantic Av @ 6th Av - east	112.0	16.0	10	22	26	18	901.7	A	445.5	A	376.2	A	545.5	A
X13	Atlantic Av @ Carlton Av - west	115.0	14.0	21	10	2	7	402.5	A	850.3	A	4,270.6	A	1,216.8	A
X14	Atlantic Av @ Carlton Av - south	34.0	14.0	11	4	8	7	1,889.2	A	5,226.4	A	2,604.3	A	2,978.8	A
X15	Atlantic Av @ Carlton Av - east	115.0	15.0	4	6	8	9	2,126.3	A	1,416.1	A	1,099.5	A	955.1	A
X16	Atlantic Av @ Vanderbilt Av - west	115.0	12.0	11	11	5	8	594.8	A	444.8	A	982.6	A	796.2	A
X17	Atlantic Av @ Vanderbilt Av - south	60.0	13.0	6	7	9	6	2,041.9	A	1,658.1	A	1,493.1	A	1,973.3	A
X18	Dean St @ Vanderbilt Av - north	60.0	16.0	9	12	5	4	821.2	A	614.6	A	1,482.3	A	1,854.1	A
X19	Dean St @ Vanderbilt Av - west	34.0	13.0	17	17	5	11	1,172.8	A	1,172.8	A	4,018.1	A	1,819.4	A
X20	Dean St @ Carlton Av - east	34.0	9.0	2	7	7	6	3,505.3	A	1,536.2	A	1,536.2	A	2,348.9	A
X21	Dean St @ Carlton Av - north	38.0	12.0	6	10	4	7	1,348.7	A	806.5	A	2,026.5	A	1,155.0	A
X22	Dean St @ Carlton Av - west	34.0	13.0	0	6	7	18	7,797.2	A	2,560.1	A	2,156.8	A	792.0	A
X23	Dean St @ 6th Av - east	34.0	12.0	22	25	44	22	504.3	A	442.8	A	248.2	A	504.3	A
X24	Dean St @ 6th Av - north	34.0	14.0	17	35	38	16	765.4	A	367.7	A	338.0	A	813.8	A
X25	Dean St @ 6th Av - west	34.0	12.0	29	49	54	15	380.6	A	222.1	A	200.8	A	743.3	A
X26	Flatbush Av @ Dean St - east	65.0	12.0	13	23	20	70	789.2	A	789.2	A	908.7	A	248.9	A
X27	Flatbush Av @ Dean St - north	95.0	14.0	5	4	7	23	25.0	A	2,595.9	A	1,480.5	A	446.1	A
X28	Flatbush Av @ 5th Av - south	83.0	12.0	19	46	33	62	478.7	A	193.4	A	272.5	A	141.7	A
X29	Flatbush Av @ 5th Av - north	78.0	14.0	17	24	24	73	633.9	A	446.7	A	446.7	A	141.7	A

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

EVE - weekday 7-8 PM

SAT - Saturday 1-2 PM

SF/Ped - average square feet per pedestrian.

LOS - level of service.

F. PROBABLE IMPACTS OF THE PROPOSED PROJECT—2010

This section provides an analysis of transit and pedestrian conditions in the 2010 future with the proposed project, examining transit and pedestrian conditions with completion of Phase I of the development program in 2010. A later section of this chapter examines conditions upon completion of the full development program, which includes construction of Buildings 5 through 15, by 2016.

SUBWAY SERVICE

Development of Phase I of the proposed project would include construction of a major new on-site subway entrance and other internal circulation improvements at the southern end of the Atlantic Avenue/Pacific Street subway station complex. These improvements would attract the majority of new project-generated demand, as well as some non-project demand that would otherwise use existing subway station stairways, corridors and fare arrays. Figures 13-5 and 13-6 show the proposed plan for the new subway station entrance and control area, which would be located at the western end of Block 1118 at the intersection of Flatbush and Atlantic Avenues, immediately adjacent to Building 1 and the proposed arena. Figure 13-7 shows the proposed plan for internal circulation improvements at the southern end of the Atlantic Avenue IRT subway station platforms, and at the mezzanine and platform levels of the Atlantic Avenue BMT subway station. These improvements would incorporate an existing but currently unused 13-foot-wide subpassage beneath the south end of the IRT platforms, and portions of the BMT mezzanine that are also currently closed to the public. All of the proposed improvements, whether newly constructed or incorporating rehabilitated facilities, would be designed to conform to all applicable building codes.

As shown in Figure 13-5, two 48-inch escalators (E1 and E2), each paired with a 9-foot-wide stair (O1 and O2), would lead down to a new control area from the proposed Urban Room, a large publicly accessible, glass-enclosed atrium that would be located at the southeast corner of Flatbush and Atlantic Avenues beneath Building 1. In addition to serving as an entrance to the Atlantic Avenue/Pacific Street subway station complex, the Urban Room would also serve as an entrance to the proposed arena and as a pedestrian pass-through. A new elevator (for ADA access) would also connect the control area to street level. With this new entrance, existing subway riders coming from the south would no longer have to cross Atlantic Avenue at grade to enter the subway station complex. Consequently, it is possible that there will be a reduction in the use of the existing subway station entrance stairway at Hanson Place. It is also likely that there would be a reduction in demand at fare array R-610 adjacent to the Manhattan-bound IRT 2,3 platform compared with the No Build condition. As there would only be direct access between the new Urban Room entrance and the LIRR platforms through the paid zone for the subway, it is anticipated that project-generated trips via the LIRR would continue to use the existing entrances on Flatbush Avenue and at Hanson Place.

As shown in Figure 13-6, the new control area would include a token booth, a minimum of eight turnstiles and a single HEET. Two new 4-foot-wide stairs (O3 and O4) flanking a new 48-inch escalator (E3) would provide access between the control area and the mezzanine level of the Atlantic Avenue BMT subway station. A new 10-foot-wide ramp (R1) would provide access up to the platform for Manhattan-bound IRT 2,3 trains, and a new 14-foot-wide ramp (R2) would provide access down to the existing subpassage beneath the IRT platforms. An existing short stair within the subpassage would be replaced by a ramp (R3). As shown in Figure 13-7, the existing 11-foot-4-inch stair (U9/U11) from the subpassage to the IRT 4,5 platform would be rehabilitated, and a new 10-foot-6-inch stair (U5/U7) would be constructed in place of an existing 6-foot-7-inch

switchback stair to provide access to the Brooklyn-bound IRT 2,3 platform. A new 6-foot-wide emergency exit stair from the subpassage to the Flatbush Avenue sidewalk adjacent to Site 5 would also be provided. At sidewalk level, this stair would be located at curbside and would be surrounded by an enclosed structure. Lastly, the southern end of the BMT subway station mezzanine would be rehabilitated, and two new 6-foot-wide stairs (O5 and O6) would be constructed to provide access to the platform level. Subway riders using the new entrance en route to or from the Pacific Street BMT subway station would utilize the subpassage and the Brooklyn-bound IRT 2,3 platform as a connecting walkway for access to the complex's central corridor. Some riders transferring between the Atlantic Avenue IRT and BMT subway stations are also expected to use the new connections. The final design of the subway station improvements would be developed in consultation with and subject to the approval of NYCT.

Table 12-12 in Chapter 12, "Traffic and Parking," shows the numbers of subway trips that would be generated by Phase I development on Site 5 and the arena block in 2010 under the commercial mixed-use variation (the RWCS for the weekday transit analyses). Table 13-22 shows the numbers of new entering and exiting subway trips that would be generated in 2010 at individual subway stations serving the project site in the weekday 8-9 AM, 5-6 PM and 7-8 PM pre-game peak hours. The distribution of project-generated subway trips by route and station reflect data provided by MTA, NYCT, census data, data developed for the Downtown Brooklyn Development project, and the anticipated trip origins/destinations for arena spectators. The assignment assumes that transit trips via PATH, Metro-North Commuter Railroad (via Grand Central Terminal), and NJ Transit trains and buses would continue their journeys via the transit mode, utilizing the subway for access to and from the project site in Downtown Brooklyn.

As shown in Table 13-22, the proposed project would generate an estimated 2,996, 4,299 and 8,006 new subway trips (entering and exiting combined) during the weekday AM, PM and pre-game peak hours, respectively. Demand would be highest during the 7-8 PM pre-game period due to a combination of residual commuter trips and peak demand en route to a basketball game at the arena. The greatest number of trips would occur at the three subway stations comprising the Atlantic Avenue/Pacific Street subway station complex which would be immediately adjacent to the project site and accessible via the new on-site entrance. A combined total of 7,399 new trips would occur at these three subway stations during the 7-8 PM peak hour in 2010. Substantially fewer trips would occur at more outlying subway stations, with upwards of 351 peak hour trips at the Lafayette Avenue IND subway station, upwards of 199 trips at the Fulton Street IND subway station, and upwards of 130 trips at the Bergen Street IRT subway station anticipated during the busiest peak hours. As development in Phase I of the proposed project would be closer to the Lafayette Avenue IND subway station than to the Clinton-Washington Avenues IND subway station (which is located east of Vanderbilt Avenue), no new project-generated trips are expected to occur at the Clinton-Washington Avenues IND subway station in 2010.

The *CEQR Technical Manual* typically requires a detailed analysis of a subway station when the incremental increase in peak hour trips totals 200 persons per hour or more. As discussed later in this chapter, new subway trips generated by full build-out of the proposed project in 2016 would exceed this threshold in one or more analyzed peak hours at the Atlantic Avenue/Pacific Street subway station complex, the Bergen Street IRT, the Lafayette Avenue IND, and the Fulton Street IND subway stations. These stations are therefore analyzed quantitatively in this EIS. The following sections discuss the effects of trips from development of Phase I of the proposed project at each analyzed subway station in 2010. The identification of significant adverse impacts at analyzed station processors is based on criteria presented in the *CEQR Technical Manual* and discussed earlier in this chapter in Section C, "Methodology."

Table 13-22
Peak Hour Project Increment Subway Trips by Subway Station—2010

Subway Station	8-9 AM Peak Hour			5-6 PM Peak Hour			7-8 PM (Pre-Game) Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Atlantic Ave IRT (2,3,4,5)	250	958	1,208	1,118	696	1,814	337	3,940	4,277
Atlantic Ave BMT (B,Q)	106	409	515	487	277	764	145	1,452	1,597
Pacific St BMT (D,M,N,R)	116	714	830	848	283	1,131	233	1,292	1,525
Bergen St IRT (2,3)	30	71	101	97	33	130	31	26	57
Lafayette Ave IND (C)	39	189	228	228	77	305	64	287	351
Clinton-Wash. Aves IND (C)	0	0	0	0	0	0	0	0	0
Fulton St IND (G)	14	100	114	119	36	155	32	167	199
Total	555	2,441	2,996	2,897	1,402	4,299	842	7,164	8,006

Note: Numbers shown are entering and exiting the subway stations.

ATLANTIC AVENUE/PACIFIC STREET SUBWAY STATION COMPLEX

The results of the analysis of future 2010 conditions with the proposed project at existing and proposed processors at the Atlantic Avenue/Pacific Street subway station complex are shown in Tables 13-23 and 13-24. As shown in Table 13-23, existing Pacific Street BMT subway station stair S2 at the northeast corner of 4th Avenue and Pacific Street would operate at LOS A or B in all analyzed peak hours. From 198 to 263 new project-generated trips would be added to this stair and adjacent fare array C-9 in the peak 15-minutes in 2010, many from the development proposed for Site 5 located immediately adjacent to stair S2. As shown in Table 13-24, fare array C-9 would operate at LOS A or better in all analyzed peak hours.

As shown in Tables 13-23 and 13-24, all of the new stairways, escalators and ramps associated with the proposed Urban Room entrance and internal circulation improvements would operate at LOS C or better in all analyzed peak hours in 2010 with the exception of the two Urban Room escalators (E1 and E2). These two escalators would operate at LOS E (a v/c ratio of 0.81) in the pre-game peak hour, primarily as a result of demand exiting the subway en route to a basketball game at the arena. (It is assumed that both escalators would operate in the up direction in the pre-game period.) It should, however, be noted that, as shown in Figure 13-5, both escalator E1 and escalator E2 are paired with an immediately adjacent 9-foot-wide stair (O1 and O2, respectively) operating at LOS A with which it would operate as a combined system. The LOS E condition at the escalators reflects the fact that most pedestrians would select to use the escalators for convenience, and that this would typically result in capacity conditions on the escalators during periods of peak demand, even with uncongested conditions on the adjacent stairs. As shown in Table 13-23, both stair O1 and stair O2 would operate at uncongested LOS A in the pre-game peak period in 2010, with more than 60 percent of their capacity available. It is therefore expected that, if queuing at the escalators increased, pedestrian demand would increasingly shift to uncongested stairs O1 and O2. As the escalators would operate as a combined system with the adjacent stairs, both of which would have substantial available capacity in the pre-game peak hour, the projected LOS E conditions at new escalators E1 and E2 are not considered an unacceptable condition for a special event such as the pre-game peak hour for a Nets basketball game.

Table 13-23
Future With the Proposed Project Stairway and Escalator Conditions at the Atlantic Avenue/Pacific Street Subway Station Complex - 2010

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume (3)	2010 No Build PFM (2)	2010 No Build V/C	2010 No Build LOS	2010 Build PFM (2)	2010 Build V/C	2010 Build LOS	Width Increment Threshold in Inches (5)
O1	New Urban Room Stairway	8-9 AM	6.00	900	n/a	135	135	n/a	n/a	n/a	1.50	0.15	A	---
	@ Atlantic Avenue	5-6 PM	6.00	900	n/a	348	348	n/a	n/a	n/a	3.87	0.39	A	---
		7-8 PM	6.00	900	n/a	346	346	n/a	n/a	n/a	3.84	0.38	A	---
O2	New Urban Room Stairway	8-9 AM	6.00	900	n/a	296	296	n/a	n/a	n/a	3.29	0.33	A	---
	@ Flatbush Avenue	5-6 PM	6.00	900	n/a	287	287	n/a	n/a	n/a	3.19	0.32	A	---
		7-8 PM	6.00	900	n/a	346	346	n/a	n/a	n/a	3.84	0.38	A	---
E1	New Urban Room Escalator	8-9 AM	4.00	1,050	n/a	215	215	n/a	n/a	n/a	n/a	0.20	B	---
	@ Atlantic Avenue (4)	5-6 PM	4.00	1,050	n/a	149	149	n/a	n/a	n/a	n/a	0.14	A	---
		7-8 PM	4.00	1,050	n/a	852	852	n/a	n/a	n/a	n/a	0.81	E	---
E2	New Urban Room Escalator	8-9 AM	4.00	1,050	n/a	56	56	n/a	n/a	n/a	n/a	0.05	A	---
	@ Flatbush Avenue (4)	5-6 PM	4.00	1,050	n/a	211	211	n/a	n/a	n/a	n/a	0.20	B	---
		7-8 PM	4.00	1,050	n/a	852	852	n/a	n/a	n/a	n/a	0.81	E	---
S2	Stairway @ NE Corner	8-9 AM	5.20	780	157	200	357	2.01	0.20	A	4.58	0.46	A	---
	@ Fourth Ave/Pacific Street	5-6 PM	5.20	780	148	263	411	1.90	0.19	A	5.27	0.53	B	---
		7-8 PM	5.20	780	85	198	283	1.09	0.11	A	3.63	0.36	A	---
O3	New Urban Room Stairway	8-9 AM	2.40	360	n/a	79	79	n/a	n/a	n/a	2.19	0.22	A	---
	to BMT Mezzanine (east)	5-6 PM	2.40	360	n/a	129	129	n/a	n/a	n/a	3.58	0.36	A	---
		7-8 PM	2.40	360	n/a	118	118	n/a	n/a	n/a	3.28	0.33	A	---
O4	New Urban Room Stairway	8-9 AM	2.40	360	n/a	79	79	n/a	n/a	n/a	2.19	0.22	A	---
	to BMT Mezzanine (west)	5-6 PM	2.40	360	n/a	129	129	n/a	n/a	n/a	3.58	0.36	A	---
		7-8 PM	2.40	360	n/a	118	118	n/a	n/a	n/a	3.28	0.33	A	---
O5	New BMT Platform Stairway	8-9 AM	4.00	600	n/a	148	148	n/a	n/a	n/a	2.47	0.25	A	---
	(south)	5-6 PM	4.00	600	n/a	204	204	n/a	n/a	n/a	3.40	0.34	A	---
		7-8 PM	4.00	600	n/a	264	264	n/a	n/a	n/a	4.40	0.44	A	---
O6	New BMT Platform Stairway	8-9 AM	4.00	600	n/a	184	184	n/a	n/a	n/a	3.07	0.31	A	---
	(north)	5-6 PM	4.00	600	n/a	180	180	n/a	n/a	n/a	3.00	0.30	A	---
		7-8 PM	4.00	600	n/a	403	403	n/a	n/a	n/a	6.72	0.67	B	---
E3	New Urban Room Escalator	8-9 AM	4.00	1,050	n/a	174	174	n/a	n/a	n/a	n/a	0.17	A	---
	from BMT Mezzanine	5-6 PM	4.00	1,050	n/a	125	125	n/a	n/a	n/a	n/a	0.12	A	---
		7-8 PM	4.00	1,050	n/a	431	431	n/a	n/a	n/a	n/a	0.41	C	---
U5/U7	Reconstructed Subpassage	8-9 AM	7.20	1,080	n/a	298	298	n/a	n/a	n/a	2.76	0.28	A	---
	Stairway to Brooklyn-bound	5-6 PM	7.20	1,080	n/a	474	474	n/a	n/a	n/a	4.39	0.44	A	---
	IRT 2,3 Platform	7-8 PM	7.20	1,080	n/a	994	994	n/a	n/a	n/a	9.20	0.92	C	---
U9/U11	Rehabilitated Subpassage	8-9 AM	7.84	1,176	n/a	294	294	n/a	n/a	n/a	2.50	0.25	A	---
	Stairway to IRT 4,5 Platform	5-6 PM	7.84	1,176	n/a	380	380	n/a	n/a	n/a	3.23	0.32	A	---
		7-8 PM	7.84	1,176	n/a	849	849	n/a	n/a	n/a	7.22	0.72	C	---

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails and 1.5 feet for both center and side handrails.
Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM). Escalator capacity based on 70 persons per minute for a four-foot-wide escalator.

(3) Includes new demand from the commercial mixed-use variation, the reasonable worst case scenario for the weekday peak periods.
Demand at new processors includes No Build volumes diverted from existing processors.

(4) Escalators E1 and E3 assumed to operate in the up direction at all times. Escalator E2 assumed to operate in the up direction in the 7-8 PM period only.

(5) Width increment threshold needed to restore processor to No Build conditions.

* Denotes a significant adverse impact based on CEQR criteria.

This table has been revised since the DEIS.

Table 13-24
Future With the Proposed Project Walkway and Fare Array Conditions at the Atlantic Avenue/Pacific Street Subway Station Complex - 2010

WALKWAYS

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume (3)	2010 No Build PFM (2)	2010 No Build V/C	2010 No Build LOS	2010 Build PFM (2)	2010 Build V/C	2010 Build LOS	Width Increment Threshold in Inches (4)
R1	New Urban Room Ramp	8-9 AM	4.80	1,080	n/a	210	210	n/a	n/a	n/a	2.92	0.19	A	----
	to Manhattan-bound IRT 2,3	5-6 PM	4.80	1,080	n/a	202	202	n/a	n/a	n/a	2.81	0.19	A	----
	Platform	7-8 PM	4.80	1,080	n/a	204	204	n/a	n/a	n/a	2.83	0.19	A	----
R2	New Urban Room Ramp	8-9 AM	9.60	2,160	n/a	560	560	n/a	n/a	n/a	3.89	0.26	A	----
	to IRT Subpassage	5-6 PM	9.60	2,160	n/a	748	748	n/a	n/a	n/a	5.19	0.35	A	----
		7-8 PM	9.60	2,160	n/a	1,770	1,770	n/a	n/a	n/a	12.29	0.82	C	----
R3	New Ramp Within IRT	8-9 AM	8.80	1,980	n/a	560	560	n/a	n/a	n/a	4.24	0.28	A	----
	Subpassage	5-6 PM	8.80	1,980	n/a	748	748	n/a	n/a	n/a	5.67	0.38	A	----
		7-8 PM	8.80	1,980	n/a	1,770	1,770	n/a	n/a	n/a	13.41	0.89	C	----

FARE ARRAYS AND EXIT GATES

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (5)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume (3)	2010 No Build V/C	2010 No Build LOS	2010 Build V/C	2010 Build LOS
----	New Urban Room Fare Array	8-9 AM	4,140	n/a	702	702	n/a	n/a	0.17	A
	@ Atlantic Ave/Flatbush Ave	5-6 PM	4,140	n/a	991	991	n/a	n/a	0.24	B
	8 entry/exit turnstiles	7-8 PM	4,140	n/a	2,398	2,398	n/a	n/a	0.58	C
	1 high entry/exit turnstile									
C-9	Pacific St Station Fare Array	8-9 AM	3,840	516	200	716	0.13	A	0.19	A
	@ 4th Ave/Pacific Street	5-6 PM	3,840	427	263	690	0.11	A	0.18	A
	8 entry/exit turnstiles	7-8 PM	3,840	238	198	436	0.06	A	0.11	A

Notes:

(1) Effective width measured as walkway width less two feet to account for wall avoidance. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Walkway capacity in persons per 15 minutes based on NYC Transit guidelines of 15 persons per foot-width per minute (PFM).

(3) Includes new demand from the commercial mixed-use variation, the reasonable worst case scenario for the weekday peak periods. Demand at new processors includes No Build volumes diverted from existing processors.

(4) Width increment threshold needed to restore walkway to No Build conditions.

(5) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYC Transit guidelines.

* Denotes a significant adverse impact based on CEQR criteria.

This table has been revised since the DEIS.

It should be noted that stairs O1 and O2 were originally proposed to be eight feet in width in the DEIS. Although the DEIS analysis indicated that 8-foot-wide stairs, in combination with the adjacent escalators, would function at acceptable levels of service under CEQR criteria, the wider 9-foot-wide stairs were incorporated to comply with NYCT station design criteria.

Crowding on the platforms at the Atlantic Avenue/Pacific Street subway station complex is not expected to be problematic during the weekday AM, PM, and 7-8 PM pre-game periods. During the weekday and Saturday pre-game periods, much of the new project-generated demand would be exiting the station en route to the arena, and again, platform crowding is not expected to be problematic. Subway service is typically not as frequent during the weekday 10-11 PM and Saturday 4-5 PM post-game periods, when surges of subway trips generated by an event at the arena would be arriving on the platforms. The potential may therefore exist for crowding on the platforms at the Atlantic Avenue/Pacific Street subway station complex under certain post-game or major event situations in 2010. Such crowding, if it were to occur, would constitute a significant adverse impact, which would be addressed by providing additional subway service (i.e., more trains) during post-game periods.

Overall, the processors proposed as part of the major new on-site entrance and internal circulation improvements at the Atlantic Avenue/Pacific Street subway station complex would be adequate to accommodate new project-generated demand at acceptable levels of service in 2010. Existing stair S2 and fare array C-9 at the Pacific Street subway station would also continue to operate at acceptable levels of service. The proposed project would therefore not result in significant adverse impacts to analyzed stairways, escalators, ramps, and fare arrays at the Atlantic Avenue/Pacific Street subway station complex with completion of Phase I development in 2010.

Several aspects of the design of the proposed Urban Room entrance and internal circulation improvements at the Atlantic Avenue/Pacific Street subway station complex have been refined as a result of ongoing discussions with MTA NYC Transit. An analysis of these refinements and their effects on pedestrian flow with full build-out of the proposed project, after giving effect to traffic demand management mitigation strategies, has been included in Chapter 19, "Mitigation." As discussed in Chapter 19, these refinements would generally result in improved pedestrian flow and would not result in significant adverse impacts.

BERGEN STREET IRT SUBWAY STATION (2,3)

The results of the analysis of the 2010 future with the proposed project at the Bergen Street IRT subway station are shown in Table 13-25. As shown in Table 13-25, stairs S4 and S5 (where new project-generated trips would be concentrated) and fare arrays R617 and R618 would all continue to operate at an acceptable LOS A or B in all analyzed peak hours. The proposed project would therefore not result in significant adverse impacts at the Bergen Street subway station with completion of Phase I development in 2010.

FULTON STREET IND SUBWAY STATION (G)

The results of the analysis of future 2010 conditions with the proposed project at the Fulton Street IND subway station are shown in Table 13-26. As shown in Table 13-26, stairs S3 and S4 and fare array N-422 at Fulton Street/Ft. Greene Place would all continue to operate at an acceptable LOS A in all analyzed peak hours. Stair S2 at and the adjacent HEET (R312H1) at S. Portland Avenue would also continue to operate at LOS A in all analyzed peak hours. The

proposed project would therefore not result in significant adverse impacts at the Fulton Street subway station with completion of Phase I development in 2010.

LAFAYETTE AVENUE IND SUBWAY STATION (C)

The results of the analysis of future 2010 conditions with the proposed project at the Lafayette Avenue IND subway station are shown in Table 13-27. As shown in Table 13-27, stairs S2, S4, S6 and S8 on the south side of Fulton Street (where new project-generated trips would be concentrated) and the fare arrays serving each of the station's two platforms (Brooklyn-bound and Manhattan-bound) would all continue to operate at an acceptable LOS A or B in all analyzed peak hours. The proposed project would therefore not result in significant adverse impacts at the Lafayette Avenue subway station with completion of Phase I development in 2010.

In summary, the proposed project's commercial mixed-use variation (the RWCS for the subway analyses) would not result in significant adverse impacts to existing or planned stairways, escalators, ramps and fare arrays at subway stations serving the project site with completion of Phase I development in 2010, although there is the potential for significant crowding on platforms during the post-game or major event period, unless additional subway service is provided. As demonstrated in Tables 12-11 and 12-12 in Chapter 12, "Traffic and Parking," the proposed project's residential mixed-use variation would generate 1,154 fewer subway trips in the weekday AM peak hour than the commercial mixed-use variation, 1,333 fewer trips in the PM peak hour, and 48 fewer trips in the 7-8 PM pre-game peak hour. As it would generate a lower level of subway demand during the weekday peak hours than was analyzed for the commercial mixed-use variation, no new impacts to subway stations are likely to result from Phase I development of the proposed project's residential mixed-use variation in 2010.

LINE HAUL

As shown in Table 13-22, in 2010 the proposed project would generate a net total of 2,441 subway trips inbound to the project site and 555 trips outbound from the site in the AM peak hour, and 1,402 inbound and 2,897 outbound trips by subway in the PM peak hour. These trips would be distributed among the numerous subway routes serving the project site both to and from Brooklyn and Queens, and to and from Manhattan. The assignment of trips to each route was based on data provided by MTA NYCT, census data, data developed for the Downtown Brooklyn Development project, and the anticipated origins/destinations for arena spectators. Given the project site's location outside of the Manhattan CBD and the anticipated directions of travel for project-generated trips in each peak period, it is anticipated that the majority of this new demand would not occur at the maximum load points in the peak direction of travel. For example, AM peak hour trips traveling on the Nos. 2, 3, 4, and 5 trains en route to the project's commercial components from outlying areas of Brooklyn would exit the subway system at the Bergen Street and Atlantic Avenue IRT subway stations before reaching the maximum load points on these routes which are located west of the Atlantic Avenue IRT subway station on the Nos. 2 and 3, and west of the Borough Hall IRT subway station on the Nos. 4 and 5. AM peak hour trips traveling on A and C trains en route to the project site from outlying areas of Brooklyn and southeastern Queens would similarly exit the subway system (at the Lafayette Avenue IND subway station) before reaching the maximum load point on these routes (located west of the Jay Street-Borough Hall IND subway station). Trips using B or Q trains en route to Manhattan from the project's residential components in the AM would enter the subway system at the Atlantic

Table 13-25
Future With the Proposed Project Conditions at the Bergen Street (2,3) Subway Station - 2010

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume	2010 No Build PFM (2)	2010 No Build V/C	2010 No Build LOS	2010 Build PFM (2)	2010 Build V/C	2010 Build LOS	Width Increment Threshold in Inches (4)
S4	Stairway @ NE Corner	8-9 AM	3.20	480	131	17	148	2.73	0.27	A	3.08	0.31	A	---
	Flatbush Ave/Bergen Street	5-6 PM	3.20	480	33	20	53	0.69	0.07	A	1.10	0.11	A	---
	(Manhattan-bound)	7-8 PM	3.20	480	18	10	28	0.38	0.04	A	0.58	0.06	A	---
S5	Stairway @ NW Corner	8-9 AM	3.20	480	24	14	38	0.50	0.05	A	0.79	0.08	A	---
	Flatbush Ave/Bergen Street	5-6 PM	3.20	480	62	21	83	1.29	0.13	A	1.73	0.17	A	---
	(Brooklyn-bound)	7-8 PM	3.20	480	32	8	40	0.67	0.07	A	0.83	0.08	A	---

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (5)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume	2010 No Build V/C	2010 No Build LOS	2010 Build V/C	2010 Build LOS
R617	Manhattan-Bound Fare Array	8-9 AM	1,440	353	17	370	0.25	B	0.26	B
	3 entry/exit turnstiles	5-6 PM	1,440	65	20	85	0.05	A	0.06	A
		7-8 PM	1,440	39	10	49	0.03	A	0.03	A
R618	Brooklyn-Bound Fare Array	8-9 AM	2,940	46	14	60	0.02	A	0.02	A
	3 entry/exit turnstiles	5-6 PM	2,940	122	21	143	0.04	A	0.05	A
	2 high entry/exit turnstiles	7-8 PM	2,940	63	8	71	0.02	A	0.02	A
	2 high revolving exit gates									

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Incremental demand from the commercial mixed-use variation, the reasonable worst case scenario for the weekday peak periods.

(4) Width increment threshold needed to restore processor to No Build conditions.

(5) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

* Denotes a significant adverse impact based on CEQR criteria.

This table has been revised since the DEIS.

Table 13-26
Future With the Proposed Project Conditions at the Fulton Street (G) Subway Station - 2010

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume	2010 No Build PFM (2)	2010 No Build V/C	2010 No Build LOS	2010 Build PFM (2)	2010 Build V/C	2010 Build LOS	Width Increment Threshold in Inches (4)
S2	Stairway @ SW Corner	8-9 AM	3.20	480	13	5	18	0.27	0.03	A	0.38	0.04	A	---
	Lafayette Ave/S. Portland Ave	5-6 PM	3.20	480	37	13	50	0.77	0.08	A	1.04	0.10	A	---
		7-8 PM	3.20	480	22	9	31	0.46	0.05	A	0.65	0.06	A	---
S3	Stairway @ NE Corner	8-9 AM	3.20	480	98	3	101	2.04	0.20	A	2.10	0.21	A	---
	Fulton St/Ft. Greene Place	5-6 PM	3.20	480	54	1	55	1.13	0.11	A	1.15	0.11	A	---
		7-8 PM	3.20	480	29	6	35	0.60	0.06	A	0.73	0.07	A	---
S4	Stairway @ SW Corner	8-9 AM	3.20	480	136	29	165	2.83	0.28	A	3.44	0.34	A	---
	Fulton St/Ft. Greene Place	5-6 PM	3.20	480	141	34	175	2.94	0.29	A	3.65	0.36	A	---
		7-8 PM	3.20	480	85	52	137	1.77	0.18	A	2.85	0.29	A	---

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (5)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume	2010 No Build V/C	2010 No Build LOS	2010 Build V/C	2010 Build LOS
N-422	Fulton Street Fare Array	8-9 AM	1,440	235	32	267	0.16	A	0.19	A
	3 entry/exit turnstiles	5-6 PM	1,440	196	36	232	0.14	A	0.16	A
		7-8 PM	1,440	114	58	172	0.08	A	0.12	A
R312H1	S. Portland Ave Fare Array	8-9 AM	300	13	5	18	0.04	A	0.06	A
	1 high entry/exit turnstile	5-6 PM	300	37	13	50	0.12	A	0.17	A
		7-8 PM	300	22	9	31	0.07	A	0.10	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Incremental demand from the commercial mixed-use variation, the reasonable worst case scenario for the weekday peak periods.

(4) Width increment threshold needed to restore processor to No Build conditions.

(5) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

* Denotes a significant adverse impact based on CEQR criteria.

This table has been revised since the DEIS.

Table 13-27

Future With the Proposed Project Conditions at the Lafayette Avenue (C) Subway Station - 2010

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume	2010 No Build PFM (2)	2010 No Build V/C	2010 No Build LOS	2010 Build PFM (2)	2010 Build V/C	2010 Build LOS	Width Increment Threshold in Inches (4)
S2	Stairway @ SE Corner	8-9 AM	3.20	480	131	0	131	2.73	0.27	A	2.73	0.27	A	---
	Hanson Place/S. Oxford St	5-6 PM	3.20	480	33	0	33	0.69	0.07	A	0.69	0.07	A	---
		7-8 PM	3.20	480	18	0	18	0.38	0.04	A	0.38	0.04	A	---
S4	Stairway @ NW Corner	8-9 AM	3.20	480	131	0	131	2.73	0.27	A	2.73	0.27	A	---
	Hanson Place/S. Oxford St	5-6 PM	3.20	480	33	0	33	0.69	0.07	A	0.69	0.07	A	---
		7-8 PM	3.20	480	18	0	18	0.38	0.04	A	0.38	0.04	A	---
S6	Stairway @ SE Corner	8-9 AM	3.20	480	7	0	7	0.15	0.01	A	0.15	0.01	A	---
	Fulton Street/S. Portland Ave	5-6 PM	3.20	480	23	0	23	0.48	0.05	A	0.48	0.05	A	---
		7-8 PM	3.20	480	15	0	15	0.31	0.03	A	0.31	0.03	A	---
S8	Stairway @ SW Corner	8-9 AM	3.20	480	33	71	104	0.69	0.07	A	2.17	0.22	A	---
	Fulton Street/S. Portland Ave	5-6 PM	3.20	480	39	95	134	0.81	0.08	A	2.79	0.28	A	---
		7-8 PM	3.20	480	25	117	142	0.52	0.05	A	2.96	0.30	A	---

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (5)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume	2010 No Build V/C	2010 No Build LOS	2010 Build V/C	2010 Build LOS
N110	Manhattan-Bound Fare Array (East)	8-9 AM	750	194	0	194	0.26	B	0.26	B
	1 high entry/exit turnstile	5-6 PM	750	24	0	24	0.03	A	0.03	A
	1 high revolving exit gate	7-8 PM	750	15	0	15	0.02	A	0.02	A
	Manhattan-Bound Fare Array (Center)	8-9 AM	1,440	47	6	53	0.03	A	0.04	A
	3 entry/exit turnstiles	5-6 PM	1,440	5	4	9	0.00	A	0.01	A
		7-8 PM	1,440	6	9	15	0.00	A	0.01	A
	Manhattan-Bound Fare Array (West)	8-9 AM	750	131	51	182	0.17	A	0.24	B
	1 high entry/exit turnstile	5-6 PM	750	23	24	47	0.03	A	0.06	A
	1 high revolving exit gate	7-8 PM	750	14	85	99	0.02	A	0.13	A
N110	Brooklyn-Bound Fare Array (East)	8-9 AM	750	14	0	14	0.02	A	0.02	A
	1 high entry/exit turnstile	5-6 PM	750	59	0	59	0.08	A	0.08	A
	1 high revolving exit gate	7-8 PM	750	71	0	71	0.09	A	0.09	A
	Brooklyn-Bound Fare Array (Center)	8-9 AM	1,440	6	3	9	0.00	A	0.01	A
	3 entry/exit turnstiles	5-6 PM	1,440	22	13	35	0.02	A	0.02	A
		7-8 PM	1,440	21	4	25	0.01	A	0.02	A
	Brooklyn-Bound Fare Array (West)	8-9 AM	750	25	12	37	0.03	A	0.05	A
	1 high entry/exit turnstile	5-6 PM	750	63	55	118	0.08	A	0.16	A
	1 high revolving exit gate	7-8 PM	750	43	18	61	0.06	A	0.08	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Incremental demand from the commercial mixed-use variation, the reasonable worst case scenario for the weekday peak periods.

(4) Width increment threshold needed to restore processor to No Build conditions.

(5) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

* Denotes a significant adverse impact based on CEQR criteria.

This table has been revised since the DEIS.

Avenue BMT subway station, and would not pass through the maximum load point on these routes which is located north of the 7th Avenue BMT subway station. By contrast, AM peak hour trips from the project's residential components en route to Manhattan and the Bronx via the Nos. 2, 3, 4, and 5 trains would pass through the maximum load point on these routes as the trains headed west from the Bergen Street and Atlantic Avenue IRT subway stations. Overall, it is estimated that approximately 27 percent of subway trips generated by the proposed project in 2010 would occur at the maximum load points in the peak direction on routes serving the project site in the AM peak period, and 32 percent in the PM peak period.

Table 13-28 shows the results of the analysis of subway line haul conditions at the maximum load point on each route in the 2010 future with the proposed project. As shown in Table 13-28, all routes would continue to operate below capacity in the peak direction in the AM and PM at their maximum load points in 2010. The highest v/c ratios in the AM peak hour would occur on Manhattan-bound No. 3 trains and N and B trains (0.84, 0.84, and 0.81, respectively). In the PM peak hour, Brooklyn-bound B and A trains would experience the highest v/c ratios (0.72 and 0.69, respectively). The proposed project would add an average of fewer than three passengers per subway car to peak direction trains serving the project site in each peak hour in 2010.

Under CEQR criteria, any increases in load levels that remain within practical capacity limits are generally not considered significant impacts. (Guideline capacities established by NYC Transit were used for the analyses. These are 110 passengers/car for a 51-foot subway car, 145 passengers/car for a 60-foot car, and 175 passengers/car for a 75-foot car.) Projected increases from a No Build condition to a Build condition that exceed practical capacity may be considered significant impacts if the proposed action generates five or more additional passengers per car. As demonstrated by the analysis shown in Table 13-28, all subway routes through Downtown Brooklyn are expected to continue to operate below their practical capacity in the peak direction in each peak hour with development of Phase I of the proposed project in 2010. Development of Phase I of the proposed project is therefore not expected to result in significant adverse impacts to subway line haul conditions in Downtown Brooklyn under CEQR criteria.

As demonstrated in Tables 12-11 and 12-12 in Chapter 12, "Traffic and Parking," the proposed project's residential mixed-use variation would generate 1,154 fewer subway trips in the weekday AM peak hour than the commercial mixed-use variation and 1,333 fewer trips in the PM peak hour. In addition, with 1,105 more residential units and a hotel, and 1.27 million gsf less office space, the directional distribution of subway trips generated by the residential mixed-use variation with Phase I development in 2010 would also differ somewhat from the commercial mixed-use variation. For example, the higher number of residential units would likely result in a somewhat higher percentage of trips traveling to Manhattan from the project site in the AM peak hour and from Manhattan in the PM. However, as all subway routes would continue to operate with available peak direction capacity in each peak hour under the commercial mixed-use variation, and given the substantially fewer numbers of subway trips that would be generated by the residential mixed-use variation in the weekday peak hours, the residential mixed-use variation is not expected to result in new significant adverse subway line haul impacts with Phase I development in 2010.

In summary, the proposed project's commercial variation (the RWCS for the subway analyses) would not result in significant adverse impacts to existing or planned stairways, escalators, ramps and fare arrays at subway stations serving the project site with completion of Phase I development in 2010 although there is the potential for significant crowding on platforms during post-game or major event periods, unless additional subway service is provided. Line haul conditions would also not be significantly adversely impacted in 2010 under this variation.

Table 13-28
Future with the Proposed Project Subway Line Haul Conditions - 2010

Peak Hour	Route	Peak Direction	Trains per Hour (1)	Cars per Hour (1)	Peak Hour Capacity (2)	2010 No Build		2010 Build		
						Passengers per Hour (3)	V/C Ratio (4)	Passengers per Hour	V/C Ratio (4)	Avg. Added Passengers per Car
AM	2	Manhattan-bound	10	100	11,000	8,441	0.77	8,497	0.77	0.6
	3	Manhattan-bound	9	90	9,900	8,275	0.84	8,329	0.84	0.6
	4	Manhattan-bound	14	140	15,400	11,160	0.72	11,208	0.73	0.3
	5	Manhattan-bound	12	120	13,200	10,332	0.78	10,380	0.79	0.4
	A	Manhattan-bound	18	144	25,200	18,756	0.74	18,763	0.74	0.0
	C	Manhattan-bound	8	64	9,280	5,653	0.61	5,655	0.61	0.0
	B	Manhattan-bound	10	100	14,500	11,611	0.80	11,736	0.81	1.3
	D	Manhattan-bound	10	80	14,000	10,029	0.72	10,211	0.73	2.3
	F	Manhattan-bound	15	120	21,000	14,226	0.68	14,231	0.68	0.0
	M	Manhattan-bound	7	56	8,120	3,624	0.45	3,630	0.45	0.1
	N	Manhattan-bound	10	80	14,000	11,576	0.83	11,700	0.84	1.6
	Q	Manhattan-bound	10	80	14,000	10,391	0.74	10,515	0.75	1.6
	R	Manhattan-bound	10	80	14,000	7,425	0.53	7,438	0.53	0.2
	G	Brooklyn-bound	9	36	6,300	4,150	0.66	4,162	0.66	0.3
PM	2	Brooklyn-bound	10	100	11,000	5,679	0.52	5,826	0.53	1.5
	3	Brooklyn-bound	8	80	8,800	5,183	0.59	5,321	0.60	1.7
	4	Brooklyn-bound	15	150	16,500	9,413	0.57	9,558	0.58	1.0
	5	Brooklyn-bound	8	80	8,800	5,271	0.60	5,416	0.62	1.8
	A	Brooklyn-bound	16	128	22,400	15,490	0.69	15,496	0.69	0.0
	C	Brooklyn-bound	7	56	8,120	3,735	0.46	3,737	0.46	0.0
	B	Brooklyn-bound	10	100	14,500	10,280	0.71	10,432	0.72	1.5
	D	Brooklyn-bound	10	80	14,000	7,353	0.53	7,574	0.54	2.8
	F	Brooklyn-bound	13	104	18,200	9,779	0.54	9,783	0.54	0.0
	M	Brooklyn-bound	6	48	6,960	3,300	0.47	3,318	0.48	0.4
	N	Brooklyn-bound	9	72	12,600	7,209	0.57	7,360	0.58	2.1
	Q	Brooklyn-bound	9	72	12,600	7,510	0.60	7,662	0.61	2.1
	R	Brooklyn-bound	10	80	14,000	6,583	0.47	6,627	0.47	0.6
	G	Queens-bound	8	32	5,600	2,740	0.49	2,773	0.50	1.0

This table has been revised since the DEIS.

Notes:

(1) Based on Spring and Fall 2005 schedule and ridership data provided by NYC Transit.

(2) Capacity based on NYC Transit guideline capacities of 110 passengers/car for 51' cars, 145 passengers/car for 60' cars and 175 passengers/car for 75' cars. Guideline capacity for each route is based on the capacity of the predominant car type.

(3) Based on 2005 Existing demand increased by 0.5 percent/year background growth for the 2005 - 2010 period plus demand from No Build development sites.

BUS SERVICE

As shown in Figure 12-5 in Chapter 12, "Traffic and Parking," with implementation of Phase I of the proposed project in 2010, 5th Avenue would be permanently closed between Flatbush and Atlantic Avenues for development of the arena. Northbound B63 buses which currently use this street segment would instead turn from 5th Avenue onto northbound Flatbush Avenue to access westbound Atlantic Avenue. (The existing left-turn prohibition on northbound Flatbush Avenue at Atlantic Avenue would be modified to exclude buses.) The existing stop for northbound B63 buses on 5th Avenue at Atlantic Avenue would likely be replaced by a new stop along the proposed lay-by lane on Flatbush Avenue adjacent to the arena.

Table 12-12 in Chapter 12, "Traffic and Parking," shows the numbers of local bus trips that would be generated by Phase I development on Site 5 and the arena block in 2010 under the commercial mixed-use variation (the RWCS for the weekday transit analyses). As shown in Table 12-12, the proposed project would generate an estimated 215 inbound and 34 outbound local bus trips in the AM peak hour, and 87 inbound and 268 outbound in the PM peak hour. These trips were assigned to the maximum load points on each of the 11 NYCT local bus routes serving project site based on existing demand patterns and the proximity of the project site to each of the maximum load points. Table 13-29 shows resulting conditions on these local bus routes at the maximum load points with development of Phase I of the proposed project in 2010. As shown in Table 13-29, the proposed project would add from one to 33 peak direction passengers to each bus route in the AM peak hour, and from two to 20 peak direction passengers in the PM peak hour. With this added demand, all analyzed local bus routes would continue to operate with available capacity at their maximum load points in the peak direction in each peak hour.

According to current NYCT guidelines, increases in bus load levels to above their maximum capacity at any load point is considered a significant adverse impact as it would necessitate the addition of more bus service along that route. As all analyzed local bus routes would continue to operate with available capacity at their maximum load points with development of Phase I of the proposed project, no significant adverse impacts to local bus service are anticipated in 2010. It should be noted, however, that traffic congestion and significant adverse traffic impacts were identified for 2010 at a number of intersections along corridors used by local bus routes including Atlantic, Flatbush, 4th, and Vanderbilt Avenues, and Dean and Bergen Streets (see Chapter 12, "Traffic and Parking"). Although the proposed traffic mitigation plan presented in Chapter 19, "Mitigation," would address many of these impacts, delays to bus travel under 2010 Build and 2010 Build With Mitigation conditions may occur, especially in the vicinity of the arena during the pre- and post-game peak periods. Additional buses may therefore be needed during these periods to maintain the current headways and service schedules.

As demonstrated in Tables 12-11 and 12-12 in Chapter 12, "Traffic and Parking," in 2010 the proposed project's residential mixed-use variation would generate 133 fewer bus trips in the weekday AM peak hour than the commercial mixed-use variation (the RWCS for the weekday transit analyses), and 155 fewer trips in the PM peak hour. As the proposed project's commercial mixed-use variation would not result in significant adverse bus impacts in 2010, and as the residential mixed-use variation would generate a lower number of bus trips, no new significant adverse impacts to other bus routes are expected under the residential mixed-use variation in 2016.

Table 13-29
Future With the Proposed Project Local Bus Conditions - 2010

Peak Hour (1)	Route	Peak Direction	Maximum Load Point	Peak Hour Buses (2)	No Build Available Capacity (3)	Project Increment	Available Capacity w/Proposed Project (3)	Notes
AM	B25	WB	Fulton Street/Nostrand Ave	8	130	8	122	
	B26	WB	Halsey Street/Malcom X Blvd	11	121	12	109	
	B37	NB	Third Ave/39th Street	3	78	1	77	
	B38	WB	DeKalb Ave/Vanderbilt Ave	21	120	31	89	
	B41	NB	Flatbush Ave/Empire Blvd	26	254	33	221	(4)
	B45	WB	St. Johns Place/Kingston Ave	8	150	7	143	
	B52	WB	Nostrand Ave/Gates Ave	13	66	9	57	
	B63	NB	Fifth Ave/36th Street	8	156	6	150	
	B65	WB	Bergen Street/Franklin Ave	6	105	5	100	
	B67	NB	10th Ave/20th Street	7	79	7	72	
	B69	NB	Fulton Street/Vanderbilt Ave	5	161	3	158	
PM	B25	EB	Fulton Street/Nostrand Ave	9	68	8	60	
	B26	EB	Halsey Street/Nostrand Ave	9	89	7	82	
	B37	SB	Third Ave/Atlantic Ave.	3	66	2	64	
	B38	EB	Fulton Street/DeKalb Ave	14	86	13	73	
	B41	SB	Flatbush Ave/Church Ave	23	304	6	298	(4)
	B45	EB	St. Johns Place/Kingston Ave	7	113	5	108	
	B52	EB	Fulton Street/Green Ave	10	90	20	70	
	B63	SB	Fifth Ave/50th Street	8	195	2	193	
	B65	EB	Dean Street/Washington Ave	6	120	8	112	
	B67	SB	7th Ave/Union Street	5	79	3	76	
	B69	SB	Fulton Street/Vanderbilt Ave	3	117	2	115	

This table has been revised since the DEIS.

Notes:

(1) Peak hours: weekday 8-9 AM and 5-6 PM.

(2) Assumes service levels adjusted to address capacity shortfalls in the No Build condition. No adjustments necessary for 2010.

(3) Available capacity based on a maximum of 65 passengers per bus.

(4) Combined limited and local service.

* Denotes a significant adverse impact based on current NYC Transit guidelines.

COMMUTER VAN SERVICE

As discussed previously, field observations indicate that the majority of commuter vans approach Downtown Brooklyn on the major arterials such as Flatbush Avenue, and then loop through the Downtown area on westbound Schermerhorn Street, northbound Smith Street, and eastbound Livingston Street. As the northbound left-turn from Flatbush Avenue to Schermerhorn Street is prohibited, northbound Ashland Place, and westbound Lafayette Avenue are typically used to reach Schermerhorn Street. DOT has designated six locations in Downtown Brooklyn as commuter van stops, with the nearest one to the project site located on northbound Ashland Place at Hanson Place. Street closures and other changes to the study area traffic network associated with Phase I development of the proposed project in 2010 are not expected to adversely affect the operation of these van services. The proposed project would include the installation of lay-by lanes along both Flatbush and Atlantic Avenues adjacent to the project site, and these new lay-by lanes would facilitate the pick-up and drop-off of passengers en route to and from the proposed project. While Phase I development would likely increase demand for commuter vans in 2010, the overall numbers of new trips are expected to be very small relative to other modes.

LIRR COMMUTER RAIL SERVICE

As shown in Table 12-12 in Chapter 12, "Traffic and Parking," during weekday peak hours, Phase I development under the commercial mixed-use variation (the RWCS for the weekday transit analyses) would generate 444 trips on the LIRR in the AM peak hour, 36 in the midday, 628 trips in the PM peak hour, 1,188 trips in the pre-game peak hour, and 1,487 trips in the post-game peak hour in 2010. As shown in Table 12-11 in Chapter 12, on Saturdays, Phase I development under the residential mixed-use variation (the RWCS for the Saturday transit analyses) would generate 1,092 LIRR trips in the 1-2 PM pre-game peak hour and 1,242 trips in the 4-5 PM post-game peak hour in 2010. These trips would utilize the LIRR's nearby Atlantic Terminal at Flatbush and Atlantic Avenues via the entrance to the LIRR's street-level concourse on Flatbush Avenue north of Atlantic Avenue. (Project-generated LIRR trips would typically not use the same entrances to the Atlantic Avenue/Pacific Street subway station complex as project-generated subway trips as there would be no direct access to the LIRR platforms via the proposed Urban Room entrance except through the paid zone for the subway.) The largest numbers of new peak hour LIRR trips would be generated by a basketball game at the proposed arena, and would occur in the off-peak direction (inbound from Long Island in the 5-6 PM and 7-8 PM peak hours, for example). These trips are therefore not expected to adversely affect LIRR line haul conditions.

In addition to generating new commuter rail demand, the proposed project would also result in a reconfiguration of the LIRR's train storage and servicing facilities (see Figure 1-13 in Chapter 1, "Project Description"). The LIRR's Vanderbilt Yard south of the terminal (on the project site) is presently used as a daytime storage and cleaning facility for the LIRR trains serving Atlantic Terminal. The existing yard has ten tracks of varying lengths and is accessed via a lead track from the main line just west of Vanderbilt Avenue. After the AM peak period, trains are stored in the yard, cleaned, and then returned to service to accommodate PM ridership to Jamaica and points east. The yard is empty overnight and on weekends.

In its current configuration, the Vanderbilt Yard is not optimal to handle the demands of modern rail operations. For example, there is no direct rail connection between the yard and the terminal. Trains leaving the terminal en route to the yard have to move eastward under Atlantic Avenue, then stop and reverse direction to move onto a track leading to the yard. Once there, the trains

are stored on parallel tracks that are too close to one another to allow toilet servicing of any but the trains on the outer tracks. To clean the cars and empty waste, the trains must be moved in and out of position until each train has had its turn on an outer track.

With implementation of Phase I of the proposed project in 2010, a reconfigured and upgraded yard, with expanded storage and servicing capacity and improved yard functionality, would be built below street grade on the eastern end of the existing rail yard footprint to allow for both the continuance of LIRR yard operations and the operation of the arena. In order to provide for the continuance of LIRR operations during construction of the arena, construction would be staged to provide a temporary storage yard in Blocks 1120 and 1121 prior to the completion of the improved rail yard. While the improved yard is under construction, toilet servicing for a portion of the trains would take place within LIRR's existing Hillside Yard Storage Facility in Queens, which would require minor modifications for this purpose, including widening the distance between two existing tracks for a service road and installation of hydrants. No impact on LIRR passenger service is anticipated from either the work at Hillside or Vanderbilt Yards (see Chapter 17, "Construction Impacts").

Because of ADA requirements, new rail cars accommodate fewer passengers than older cars, and thus longer trains are needed to accommodate the same number of passengers. The new yard would consist of longer eight- and 10-car tracks, facilitating the use of these longer trains, which cannot be as readily accommodated in the existing rail yard. Additionally, the new yard would provide wider areas between tracks for servicing; relocate and replace the existing electrical substation; and provide more modern switching, signal, and toilet servicing equipment. These improvements would modernize the yard equipment and improve train circulation within the yard and between the yard and Atlantic Terminal. Storage space and parking would be provided in a location and manner satisfactory to LIRR.

The west end of the improved rail yard would include a new portal (West Portal) which would provide a direct route to and from the LIRR Atlantic Terminal and the storage yard. The West Portal would also provide an emergency detour route for passenger train egress from the LIRR Atlantic Terminal. Lastly, the new rail yard would be designed to accommodate support for substantial portions of the development that would be built on a platform covering the new rail yard by 2016.

PEDESTRIANS

Phase I development of the proposed project would result in physical changes to pedestrian facilities at the project site by 2010. The proposed development of an arena and residential and commercial uses on Site 5 and the arena block would also result in notable increases in pedestrian activity on analyzed sidewalks, corner areas and crosswalks, many of which are currently lightly utilized. As shown in Figure 12-5 in Chapter 12, "Traffic and Parking," the arena and other proposed buildings would be set back to provide for 20-foot-wide sidewalks along Atlantic Avenue compared with the existing 10- to 12-foot-wide sidewalks. The adjoining crosswalks on 6th Avenue and on Carlton Avenue at Atlantic Avenue would also be widened to approximately 18 feet in width. Twenty-foot-wide sidewalks would also be provided along Flatbush Avenue adjacent to the arena block and Site 5. Sidewalks along Dean Street adjacent to the arena block would be maintained at 18 feet in width, and the adjoining crosswalks on 6th Avenue and Carlton Avenue at Dean Street would be widened to approximately 16 feet in width. The sidewalk along 4th Avenue adjacent to Site 5 would be maintained at 18 feet in width, while the sidewalk along Pacific Street adjacent to Site 5 would be maintained at 15 feet in width.

With reconstruction of the bridge carrying 6th Avenue over the LIRR rail yard, sidewalks along 6th Avenue would be widened from 10 feet to 15 feet in width between Atlantic Avenue and Pacific Street. South of Pacific Street, 6th Avenue would be reconstructed with 15-foot-wide sidewalks and a 40-foot-wide roadway compared with the existing 18-foot-wide sidewalks and 34-foot-wide roadway in order to accommodate two-way traffic flow between Atlantic and Flatbush Avenues. The bridge carrying Carlton Avenue over the LIRR rail yard between Atlantic Avenue and Pacific Street would also be reconstructed during Phase I of the proposed project, and the sidewalks widened from 10 feet to 16 feet in width.

With implementation of Phase I of the proposed project, 5th Avenue between Atlantic and Flatbush Avenues would be developed over and permanently closed to traffic, as would Pacific Street between Flatbush and 6th Avenues, and between Carlton and Vanderbilt Avenues. As a result, as shown in Figure 12-5 in Chapter 12, "Traffic and Parking," the south crosswalk on 5th Avenue at Atlantic Avenue and the north crosswalk on 5th Avenue at Flatbush Avenue would be replaced by continuous sidewalks, as would crossings of Pacific Street between Flatbush and 6th Avenues, and between Carlton and Vanderbilt Avenues. The north and south crosswalks on Flatbush Avenue at 5th Avenue would be realigned perpendicular to the travel lanes, thereby shortening the crossing distance for pedestrians to 60 feet from a maximum of 83 feet. Improvements would also include the installation of new high visibility crosswalks and improved lighting at this and other key intersections adjacent to the project site.

In addition to physical changes to pedestrian facilities, development of Site 5 and the arena block in Phase I would add new pedestrian demand to analyzed sidewalks, corner areas and crosswalks by 2010. This new demand would include walk-only trips, pedestrians en route to and from subway stations, bus stops and the LIRR, arena patrons en route to and from off-site parking facilities, and pedestrians diverted as a result of the closures of 5th Avenue and Pacific Street to accommodate development on the arena block. The east sidewalk along Flatbush Avenue adjacent to the arena block (location S5 in Figure 13-4) would experience the greatest numbers of new pedestrian trips in the peak hours, with peak 15-minute two-way flows increasing by approximately 572, 408, 858, and 997 trips in the weekday 8-9 AM, 5-6 PM, 7-8 PM (pre-game) and Saturday 1-2 PM peak hours, respectively compared with 2010 No Build conditions. Much of this new demand would be trips en route to and from the proposed new entrance to the Atlantic Avenue/Pacific Street subway station complex on the arena block, as well as trips by arena spectators (in the 7-8 PM and Saturday 1-2 PM pre-game periods) en route from off-site parking facilities, many of which are located north and west of the project site. Increases in peak 15-minute two-way flows along the south sidewalk on Atlantic Avenue adjacent to the Arena block (location S6 in Figure 13-4) would range from 140 to 230 in each peak hour. The west sidewalks on 6th Avenue adjacent to the arena block adjacent to Buildings 3 and 4 (locations S7 and S19) would experience increases ranging from 140 to 340 trips in each peak period, while peak 15-minute flows along Dean Street would increase by 90 to 240 trips west of 6th Avenue (S18).

New Phase I project-generated demand at analyzed crosswalks would be most concentrated on the east and south crosswalks at the intersection of Flatbush and Atlantic Avenues. Although the proposed Urban Room subway entrance would allow subway riders en route to and from the project site to access the subway without crossing Atlantic Avenue, substantial numbers of new pedestrians would still use these crosswalks, especially during the pre- and post-game periods, to access bus stops, off-site parking facilities (primarily arena patrons), the LIRR and retail establishments at Atlantic Terminal. During the Saturday 1-2 PM pre-game peak hour, for example, approximately 564 peak 15-minute trips would be added to the south crosswalk on

Flatbush Avenue (location X6 in Figure 13-4), and 835 new trips would be added to the east crosswalk on Atlantic Avenue (X7). One block to the east, the east crosswalk on Atlantic Avenue at 6th Avenue/Fort Greene Place (location X9) would experience 252 new trips in the peak 15 minutes in the Saturday 1-2 PM peak hour, while to the west, approximately 289 new trips would be added to the south crosswalk on 4th Avenue at Atlantic Avenue (X3). Also of note are the north crosswalks on 6th and Carlton Avenues at Dean Street (locations X24 and X21, respectively) which would experience increases of up to 528 new trips in the peak 15 minutes during the Saturday 1-2 PM pre-game period when substantial numbers of pedestrians would be en route to the arena from a temporary 944-space parking facility that would be located on Block 1129. In general, the highest numbers of new pedestrian trips at analyzed facilities in 2010 would typically occur during the weekday 7-8 PM and Saturday 1-2 PM pre-game periods.

Tables 13-30 through 13-32 show total peak 15-minute volumes and conditions at analyzed sidewalks, corner areas and crosswalks in the 2010 future with the proposed project. According to CEQR criteria, a significant impact to a sidewalk in Downtown Brooklyn occurs when the platoon flow rate increases by two or more pedestrians per foot per minute (PFM) over No Build conditions characterized by flow rates over 15 PFM (the threshold of LOS D/E). As shown in Table 13-30, in the 2010 Build condition, all analyzed sidewalks would operate at an acceptable LOS C or better under platoon conditions in the weekday AM, PM, pre-game, and Saturday pre-game peak hours. This includes the sidewalks along 6th Avenue between Pacific Street and Flatbush Avenue which would be narrowed from 18 to 15 feet in width to accommodate two-way traffic flow on 6th Avenue. No significant adverse sidewalk impacts are therefore anticipated in the 2010 Build condition.

As noted earlier in the chapter in the discussion of 2010 Build subway conditions, a new 6-foot-wide emergency exit stair from the rehabilitated subpassage at the southern end of the Atlantic Avenue IRT subway station to the Flatbush Avenue sidewalk would be provided adjacent to Site 5 (location S4). At sidewalk level, this stair would be located at curbside and would be surrounded by an enclosed structure. The width of the sidewalk would be narrowed to approximately 11-feet-6-inches adjacent to this proposed stair. However, the sidewalk would continue to operate at an acceptable LOS B or better in all peak hours at this location, and no significant sidewalk impacts are expected to occur adjacent to this proposed stair in the 2010 Build condition.

For crosswalk and corner areas within Downtown Brooklyn, CEQR criteria define a significant adverse impact as a decrease in pedestrian space of one or more square feet per pedestrian (SF/ped) when the No Build condition has an average occupancy of 15 SF/ped (the LOS D/E threshold) or less. A deterioration from LOS C or better to LOS E or F would also be considered a significant impact. As shown in Table 13-31, all analyzed corner areas would operate at an acceptable LOS C or better in all peak hours, and no significant adverse impacts to corner areas are therefore anticipated in the 2010 Build condition. As shown in Table 13-32, in the 2010 Build condition five crosswalks would operate at LOS D in the weekday pre-game and/or Saturday pre-game peak hours—the south crosswalk on 4th Avenue at Atlantic Avenue (X3), the south crosswalk on Flatbush Avenue at Atlantic Avenue (X6), the east crosswalk on Atlantic Avenue at Flatbush Avenue (X7), the north crosswalk on Carlton Avenue at Dean Street (X21), and the north crosswalk on 6th Avenue at Dean Street (X24). As all of these crosswalks would continue to operate with greater than 15 SF/ped in all periods, none would be considered significantly adversely impacted under CEQR criteria. All remaining analyzed crosswalks would operate at an acceptable LOS C or better in all peak hours under 2010 Build conditions.

Table 13-30
Future With the Proposed Project Sidewalk Conditions - 2010

Facility No.	Location	Effective Width (feet)	Peak 15-Min Volumes				Average Conditions								Platoon Conditions							
			AM	PM	EVE	SAT	AM		PM		EVE		SAT		AM		PM		EVE		SAT	
							PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS
S1	Pacific St btwn 4th & 5th Avs - north	8.5	28	40	54	101	0.22	A	0.31	A	0.42	A	0.79	A	4.22	A	4.31	A	4.42	A	4.81	A
S2	4th Av btwn Pacific St & Atlantic Av - east	5.0	108	235	117	221	1.44	A	3.13	A	1.56	A	2.95	A	5.44	B	7.13	C	5.56	B	8.71	C
S3	Atlantic Av btwn 4th & Flatbush Avs - south	13.5	162	316	472	560	0.80	A	1.56	A	2.33	A	2.77	A	4.80	A	5.56	B	6.33	B	6.79	B
S4	Flatbush Av btwn Atlantic Av & Pacific St - west	13.5	55	80	89	156	0.27	A	0.40	A	0.44	A	0.77	A	4.27	A	4.40	A	4.44	A	4.77	A
S5	Flatbush Av btwn Atlantic Av & Pacific St - east	13.5	609	449	900	1,049	3.01	A	2.22	A	4.44	A	5.18	B	7.01	C	6.22	B	8.44	C	9.21	C
S6	Atlantic Av btwn Ft Greene Pl & S Portland Av - south	13.5	158	228	170	150	0.78	A	1.13	A	0.84	A	0.80	A	4.78	A	5.13	B	4.84	A	4.80	A
S7	6th Av btwn Atlantic Av & Pacific St - west	8.5	192	267	171	172	1.51	A	2.09	A	1.34	A	1.35	A	5.51	B	6.09	B	5.34	B	5.44	B
S8	6th Av btwn Atlantic Av & Pacific St - east	8.5	16	29	58	15	0.13	A	0.23	A	0.45	A	0.12	A	4.13	A	4.23	A	4.45	A	4.12	A
S9	Atlantic Av btwn S Portland & Carlton Avs - south	3.5	23	46	79	101	0.44	A	0.88	A	1.50	A	1.92	A	4.44	A	4.88	A	5.50	B	5.96	B
S10	Carlton Av btwn Atlantic Av & Pacific St - west	7.0	6	7	12	4	0.06	A	0.07	A	0.11	A	0.04	A	4.06	A	4.07	A	4.11	A	4.04	A
S11	Carlton Av btwn Atlantic Av & Pacific St - east	7.0	6	5	10	6	0.06	A	0.05	A	0.10	A	0.06	A	4.06	A	4.05	A	4.10	A	4.06	A
S12	Atlantic Av btwn Carlton & Vanderbilt Avs - south	3.0	18	32	26	45	0.40	A	0.71	A	0.58	A	1.00	A	4.40	A	4.71	A	4.58	A	5.04	B
S13	Vanderbilt Av btwn Atlantic Av & Pacific St - west	15.0	16	13	5	6	0.07	A	0.06	A	0.02	A	0.03	A	4.07	A	4.06	A	4.02	A	4.03	A
S14	Dean St btwn Carlton & Vanderbilt Avs - north	11.5	21	23	62	53	0.12	A	0.13	A	0.36	A	0.31	A	4.12	A	4.13	A	4.36	A	4.31	A
S15	Pacific St btwn S Portland & Carlton Avs - north	6.5	9	9	10	12	0.09	A	0.09	A	0.10	A	0.12	A	4.09	A	4.09	A	4.10	A	4.12	A
S16	Pacific St btwn S Portland & Carlton Avs - south	11.5	14	20	39	46	0.08	A	0.12	A	0.23	A	0.27	A	4.08	A	4.12	A	4.23	A	4.27	A
S17	Dean St btwn 6th & Carlton Avs - north	10.5	30	59	248	304	0.19	A	0.37	A	1.57	A	1.93	A	4.19	A	4.37	A	5.57	B	5.94	B
S18	Dean St btwn Flatbush & 6th Av - north	11.5	167	249	153	104	0.97	A	1.44	A	0.89	A	0.60	A	4.97	A	5.44	B	4.89	A	4.64	A
S19	6th Av btwn Pacific St & Dean St - west	8.5	202	327	332	352	1.58	A	2.56	A	2.60	A	2.76	A	5.58	B	6.56	B	6.60	B	6.84	B
S20	6th Av btwn Pacific St & Dean St - east	8.5	15	21	23	13	0.12	A	0.16	A	0.18	A	0.10	A	4.12	A	4.16	A	4.18	A	4.10	A
S21	6th Av btwn Dean St & Bergen St - west	4.5	110	175	228	266	1.63	A	2.59	A	3.38	A	3.94	A	5.63	B	6.59	B	7.38	C	8.01	C
S22	6th Av btwn Dean St & Bergen St - east	6.5	33	47	177	216	0.34	A	0.48	A	1.82	A	2.22	A	4.34	A	4.48	A	5.82	B	6.22	B
S23	6th Av btwn Bergen St & Flatbush Av - west	12.0	88	130	57	64	0.49	A	0.72	A	0.32	A	0.36	A	4.49	A	4.72	A	4.32	A	4.38	A
S24	6th Av btwn Bergen St & Flatbush Av - east	6.5	34	80	344	394	0.35	A	0.82	A	3.53	A	4.04	A	4.35	A	4.82	A	7.53	C	8.04	C

This table has been revised since the DEIS.

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

EVE - weekday 7-8 PM

SAT - Saturday 1-2 PM

PFM - persons per foot of effective width per minute.

LOS - level of service.

Shading denotes a significant adverse impact based on CEQR criteria.

Table 13-31
Future With the Proposed Project Corner Conditions - 2010

Facility No.	Intersection	Corner	Peak 15-Min Volumes				Average Conditions							
							AM		PM		Pre		SAT	
			AM	PM	EVE	SAT	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS
C1	4th Av @ Pacific St	northeast	15	9	9	162	295.7	A	337.2	A	500.1	A	147.4	A
C2	Atlantic Av @ 4th Av	southeast	296	359	237	231	152.6	A	106.6	A	118.9	A	96.7	A
C3	Flatbush Av @ Atlantic Av	southwest	26	92	55	7	458.9	A	247.2	A	155.3	A	130.6	A
C4	Flatbush Av @ Atlantic Av	southeast	74	135	89	230	250.5	A	124.0	A	56.9	B	44.3	B
C5	Atlantic Av @ 6th Av	southwest	127	57	23	107	187.2	A	236.1	A	137.7	A	77.6	A
C6	Atlantic Av @ 6th Av	southeast	2	1	0	2	1,606.2	A	585.3	A	136.0	A	234.2	A
C7	Atlantic Av @ Carlton Av	southwest	9	13	81	94	268.5	A	277.0	A	131.1	A	98.9	A
C8	Atlantic Av @ Carlton Av	southeast	8	0	3	1	541.7	A	540.3	A	484.1	A	341.5	A
C9	Atlantic Av @ Vanderbilt Av	southwest	4	3	2	3	698.3	A	512.0	A	642.3	A	418.9	A
C10	Dean St @ Vanderbilt Av	northwest	2	4	3	1	1,962.5	A	1,425.1	A	1,233.0	A	965.6	A
C11	Dean St @ Carlton Av	northeast	3	2	3	3	1,908.6	A	736.5	A	119.4	A	121.0	A
C12	Dean St @ Carlton Av	northwest	21	2	3	0	821.2	A	653.8	A	96.8	A	81.7	A
C13	Dean St @ 6th Av	northeast	8	8	20	7	696.3	A	521.1	A	78.1	A	74.8	A
C14	Dean St @ 6th Av	northwest	116	183	189	150	218.0	A	124.4	A	56.3	B	55.9	B
C15	Flatbush Av @ Dean St	northeast	258	364	139	93	226.5	A	155.0	A	342.8	A	270.0	A

This table has been revised since the DEIS.

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

Pre - weekday 7-8 PM

SAT - Saturday 1-2 PM

SF/Ped - average square feet per pedestrian.

LOS - level of service.

Shading denotes a significant adverse impact based on CEQR criteria.

Table 13-32
Future With the Proposed Project Crosswalk Conditions - 2010

Facility No.	Location	Street Width (feet)	Crosswalk Width (feet)	Peak 15-Min Volumes				Avg. Conditions (w/Conflicting Vehicles)							
								AM		PM		EVE		SAT	
				AM	PM	EVE	SAT	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS
X1	4th Av @ Pacific St - east	30.0	8.0	132	113	75	137	47.3	B	147.2	A	219.6	A	114.0	A
X2	4th Av @ Pacific St - north	85.0	14.0	18	24	15	35	1,270.7	A	259.0	A	461.4	A	197.0	A
X3	Atlantic Av @ 4th Av - south	83.0	16.0	65	113	274	362	334.6	A	145.3	A	53.9	A	20.2	D
X4	Atlantic Av @ 4th Av - east	73.0	14.0	127	203	103	158	56.9	B	31.4	C	68.9	A	82.6	A
X5	Flatbush Av @ Atlantic Av - west	127.0	18.0	44	39	16	63	658.7	A	744.0	A	1,822.4	A	367.6	A
X6	Flatbush Av @ Atlantic Av - south	138.0	20.0	148	268	516	638	83.8	A	44.3	B	21.0	D	24.6	C
X7	Flatbush Av @ Atlantic Av - east	123.0	21.0	96	224	803	928	315.0	A	131.3	A	32.8	C	21.5	D
X8	Atlantic Av @ Ft Greene Pl - west	90.0	12.5	139	205	132	161	67.0	A	41.8	B	69.0	A	104.0	A
X9	Atlantic Av @ Ft Greene Pl - east	90.0	17.5	101	228	242	353	128.3	A	51.5	B	47.9	B	62.1	A
X10	Atlantic Av @ 6th Av - west	111.0	13.5	95	137	227	261	76.5	A	52.7	A	32.6	C	26.6	C
X11	Atlantic Av @ 6th Av - south	40.0	18.0	25	49	174	223	1,025.5	A	528.1	A	132.5	A	101.6	A
X12	Atlantic Av @ 6th Av - east	112.0	16.0	10	22	30	23	911.4	A	414.3	A	298.9	A	407.6	A
X13	Atlantic Av @ Carlton Av - west	115.0	14.0	21	10	2	7	402.5	A	850.3	A	4,270.6	A	1,216.8	A
X14	Atlantic Av @ Carlton Av - south	38.0	18.0	23	29	28	45	1,169.7	A	929.6	A	938.0	A	577.7	A
X15	Atlantic Av @ Carlton Av - east	115.0	15.0	4	6	8	9	2,058.4	A	1,360.7	A	1,063.9	A	940.5	A
X16	Atlantic Av @ Vanderbilt Av - west	115.0	12.0	11	11	5	8	582.0	A	440.9	A	966.1	A	786.4	A
X17	Atlantic Av @ Vanderbilt Av - south	60.0	12.0	18	31	29	44	673.4	A	367.1	A	455.8	A	260.2	A
X18	Dean St @ Vanderbilt Av - north	68.0	16.0	13	20	11	17	566.9	A	366.7	A	670.9	A	432.3	A
X19	Dean St @ Vanderbilt Av - west	38.0	13.0	17	20	37	47	1,172.8	A	995.0	A	532.1	A	416.3	A
X20	Dean St @ Carlton Av - east	34.0	9.0	3	7	7	6	3,351.8	A	1,501.2	A	1464.1	A	1723.4	A
X21	Dean St @ Carlton Av - north	38.0	16.0	29	57	430	503	366.4	A	183.4	A	20.0	D	16.5	D
X22	Dean St @ Carlton Av - west	34.0	13.0	2	6	7	18	7,797.2	A	2,593.3	A	2221.6	A	858.7	A
X23	Dean St @ 6th Av - east	34.0	12.0	22	29	72	54	499.7	A	380.6	A	144.7	A	189.7	A
X24	Dean St @ 6th Av - north	40.0	16.0	40	87	492	544	371.0	A	166.8	A	24.8	C	22.0	D
X25	Dean St @ 6th Av - west	34.0	12.0	67	119	180	175	160.4	A	85.0	A	55.3	B	57.1	B
X26	Flatbush Av @ Dean St - east	65.0	12.0	39	60	43	113	447.0	A	294.5	A	415.9	A	150.1	A
X27	Flatbush Av @ Dean St - north	95.0	14.0	24	41	30	61	427.2	A	247.4	A	340.5	A	164.3	A
X28	Flatbush Av @ 5th Av - south	60.0	12.0	39	66	66	102	236.9	A	136.2	A	135.9	A	84.7	A
X29	Flatbush Av @ 5th Av - north	60.0	14.0	35	56	55	100	311.2	A	190.8	A	194.5	A	102.8	A

This table has been revised since the DEIS.

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

EVE - weekday 7-8 PM

SAT - Saturday 1-2 PM

SF/Ped - average square feet per pedestrian.

LOS - level of service.

Shading denotes a significant adverse impact based on CEQR criteria.

As demonstrated in Tables 12-11 and 12-12 in Chapter 12, "Traffic and Parking," in 2010 the proposed project's residential mixed-use variation would generate an overall lower level of weekday travel demand than the commercial mixed-use variation analyzed as the RWCS for the weekday pedestrian analyses. There would be a total of approximately 1,797 fewer person trips by all modes in the AM peak hour, 2,099 fewer trips in the PM, and 104 fewer in the 7-8 PM pre-game peak hour. As this substantially lower level of overall travel demand would translate into a correspondingly lower level of pedestrian activity on sidewalks, corner areas and crosswalks in the vicinity of the project site, no new significant adverse impacts to these pedestrian facilities are expected in the weekday peak hours under the proposed project's residential mixed-use variation in 2010.

For the Saturday 1-2 PM peak hour, the residential mixed-use variation was analyzed as the RWCS as it would generate approximately 540 more person trips than the commercial mixed-use variation during this period. As no significant adverse pedestrian impacts are expected to result from the residential mixed-use variation during the Saturday 1-2 PM peak hour, the commercial mixed-use variation, with its lower overall level of travel demand in this period, is also not expected to result in significant adverse pedestrian impacts.

G. FUTURE WITHOUT THE PROPOSED PROJECT—2016

Through 2016, it is expected that the demand at analyzed transit and pedestrian facilities will increase due to long-term background growth as well as the development of new office/commercial, residential, cultural, community facility, court, and retail space in the vicinity of the project site. To forecast the 2016 future without the proposed project (the 2016 No Build condition), the principal development projects listed in Table 2-1 and shown in Figure 2-1 in Chapter 2, "Procedural and Analytical Framework," expected to be completed by 2016 were considered. Several large development projects that are located outside of the land use study area but that are expected to add trips to analyzed subway and bus routes by 2016 were also considered, including all of the projected development sites for the Downtown Brooklyn Development project. Three additional projects were added as discrete No Build sites for the FEIS in response to recent information on new proposed developments made public subsequent to the publication of the DEIS, or in response to agency and public comments on the DEIS. (A list of all discrete No Build sites considered in the transportation analyses is provided in Appendix C.)

In addition to demand from new developments, an annual background growth rate of 0.5 percent per year was applied to existing transit and pedestrian demand for the 2006 through 2016 period. This background growth rate, recommended in the *CEQR Technical Manual* for projects in Downtown Brooklyn, is applied to account for smaller projects, as-of-right developments not reflected in Table 2-1, and general increases in travel demand not attributable to specific development projects.

During the 2006 through 2016 period, it is anticipated that reconstruction/rehabilitation work at the Atlantic Avenue/Pacific Street subway station complex will be completed (prior to 2010), including an enlarged concourse and air conditioned waiting room for the LIRR, and a major new entrance to the facility at the corner of Hanson Place and Flatbush Avenue. Also during this period, it is anticipated that DOT will implement pedestrian improvement measures developed as part of the *Downtown Brooklyn Traffic Calming Project (DBTCP)*. With the exception of the November 2003 conversion of Smith Street to one-way northbound operation from Atlantic Avenue to Schermerhorn Street, no specific measures in the *DBTCP* have been identified for implementation

within the study area at this time; however, all measures remain candidates for implementation. DOT is working with the Community Boards on prioritizing these measures, and intends to implement measures based upon further detailed review, analysis of impacts, and community review. As no measures have been identified for implementation, the analysis of future pedestrian conditions assumes no improvements to analyzed pedestrian facilities. No other substantive changes to analyzed transit or pedestrian facilities are expected during the 2006 through 2016 period.

The following sections describe how the growth in travel demand in the project study area is expected to affect transit and pedestrian facilities in the 2016 future without the proposed project.

SUBWAY SERVICE

As mentioned above, during the 2006 through 2016 period it is anticipated that the final elements of the reconstruction/rehabilitation of the Atlantic Avenue/Pacific Street subway station complex will be completed. These elements will include an enlarged concourse and air conditioned waiting room for the LIRR and a major new entrance to the facility at the corner of Hanson Place and Flatbush Avenue. No other changes to subway facilities or service in the vicinity of the project site are anticipated by 2016.

Tables 13-33 through 13-36 show the expected peak 15-minute volumes as well as v/c ratios and levels of service at analyzed subway station stairs and fare arrays in the 2016 future without the proposed project. As shown in Tables 13-33 through 13-36, in 2016 all analyzed stairways and fare arrays at subway stations in the vicinity of the project site will continue to operate at LOS B or better in the weekday 8-9 AM, 5-6 PM and 7-8 PM pre-game peak hours.

Table 13-37 shows the anticipated line haul conditions at the maximum load points on subway routes serving Downtown Brooklyn and the project site in the 2016 future without the proposed project. The data in Table 13-37 reflect a 0.5 percent per year background growth rate for the 2006 through 2016 period and the addition of demand from No Build sites. As shown in Table 13-37, in the AM peak hour, A trains will continue to carry the highest number of passengers with 19,931 Manhattan-bound riders in the AM peak hour and 16,462 Brooklyn-bound riders in the PM. The highest v/c ratios in the AM peak hour will continue to occur on No. 3 trains and on N trains in the AM peak hour (0.91 and 0.86, respectively, compared with 0.80 and 0.81, respectively, under existing conditions). No. 2 trains and B trains will each operate at a v/c ratio of 0.84 in the AM in the 2016 No Build. In the PM peak hour, B and A trains will continue to operate with the highest v/c ratios (0.75 and 0.73, respectively, compared with 0.69 and 0.67, respectively, under existing conditions). No subway routes are expected to be operating over capacity in either analyzed peak hour in the 2016 future without the proposed project.

BUS SERVICE

During the 2006 through 2016 period, demand on local bus routes in Downtown Brooklyn is expected to increase as a result of new developments and general background growth. Table 13-38 shows the estimated peak hour, peak direction ridership at the maximum load point of each of the local bus routes serving the project site in the 2016 future without the proposed project. As shown in Table 13-38, several analyzed local bus routes are expected to experience capacity shortfalls at their maximum load points in one or both peak periods in the 2016 No Build. B38 buses would experience a shortfall of 43 spaces westbound in the AM peak hour, and 72 spaces eastbound in the PM. B52 buses would experience a shortfall of 17 spaces westbound in the AM peak hour, and one space eastbound in the PM. Eastbound B25 and B26 buses would experience

Table 13-33
No Build Conditions at the
Atlantic Avenue/Pacific Street Subway Station Complex - 2016

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	Volume to Capacity Ratio	LOS
S2	Stairway @ NE Corner	8-9 AM	5.20	780	162	2.08	0.21	A
	Fourth Ave/Pacific Street	5-6 PM	5.20	780	152	1.95	0.19	A
		7-8 PM	5.20	780	88	1.13	0.11	A

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (2)	Volume to Capacity Ratio	LOS
C-9	Pacific St Station Fare Array	8-9 AM	3,840	531	0.14	A
	@ 4th Ave/Pacific Street	5-6 PM	3,840	439	0.11	A
	8 entry/exit turnstiles	7-8 PM	3,840	245	0.06	A

Notes:

(1) Effective width measured as stairwell width less 1.5 feet to account for center and side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Assumes 0.5 percent/year background growth for the 2006 - 2016 period plus demand from No Build developments.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

Table 13-34
No Build Conditions at the Bergen Street (2,3) Subway Station - 2016

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C	LOS
S4	Stairway @ NE Corner	8-9 AM	3.20	480	135	2.81	0.28	A
	Flatbush Ave/Bergen Street	5-6 PM	3.20	480	34	0.71	0.07	A
	(Manhattan-bound)	7-8 PM	3.20	480	19	0.40	0.04	A
S5	Stairway @ NW Corner	8-9 AM	3.20	480	24	0.50	0.05	A
	Flatbush Ave/Bergen Street	5-6 PM	3.20	480	63	1.31	0.13	A
	(Brooklyn-bound)	7-8 PM	3.20	480	33	0.69	0.07	A

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS
R617	Manhattan-Bound Fare Array	8-9 AM	1,440	363	0.25	B
	3 entry/exit turnstiles	5-6 PM	1,440	67	0.05	A
		7-8 PM	1,440	40	0.03	A
R618	Brooklyn-Bound Fare Array	8-9 AM	2,940	48	0.02	A
	3 entry/exit turnstiles	5-6 PM	2,940	126	0.04	A
	2 high entry/exit turnstiles	7-8 PM	2,940	64	0.02	A
	2 high revolving exit gates					

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Assumes 0.5 percent/year background growth for the 2006 - 2016 period plus demand from No Build developments.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

Table 13-35
No Build Conditions at the Fulton Street (G) Subway Station - 2016

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C	LOS
S2	Stairway @ SW Corner	8-9 AM	3.20	480	13	0.27	0.03	A
	Lafayette Ave/S. Portland Ave	5-6 PM	3.20	480	37	0.77	0.08	A
		7-8 PM	3.20	480	22	0.46	0.05	A
S3	Stairway @ NE Corner	8-9 AM	3.20	480	98	2.04	0.20	A
	Fulton St/Ft. Greene Place	5-6 PM	3.20	480	54	1.13	0.11	A
		7-8 PM	3.20	480	29	0.60	0.06	A
S4	Stairway @ SW Corner	8-9 AM	3.20	480	104	2.17	0.22	A
	Fulton St/Ft. Greene Place	5-6 PM	3.20	480	59	1.23	0.12	A
		7-8 PM	3.20	480	32	0.67	0.07	A

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS
N-422	Fulton Street Fare Array	8-9 AM	1,440	245	0.17	A
	3 entry/exit turnstiles	5-6 PM	1,440	205	0.14	A
		7-8 PM	1,440	119	0.08	A
R312H1	S. Portland Ave Fare Array	8-9 AM	300	13	0.04	A
	1 high entry/exit turnstile	5-6 PM	300	37	0.12	A
		7-8 PM	300	22	0.07	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Assumes 0.5 percent/year background growth for the 2006 - 2016 period plus demand from No Build developments.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

Table 13-36
No Build Conditions at the Lafayette Avenue (C) Subway Station - 2016

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	Peak 15 Minute Volume (3)	PFM (2)	V/C	LOS
S2	Stairway @ SE Corner	8-9 AM	3.20	480	135	2.81	0.28	A
	Hanson Place/S. Oxford St	5-6 PM	3.20	480	34	0.71	0.07	A
		7-8 PM	3.20	480	19	0.40	0.04	A
S4	Stairway @ NW Corner	8-9 AM	3.20	480	135	2.81	0.28	A
	Hanson Place/S. Oxford St	5-6 PM	3.20	480	34	0.71	0.07	A
		7-8 PM	3.20	480	19	0.40	0.04	A
S6	Stairway @ SE Corner	8-9 AM	3.20	480	7	0.15	0.01	A
	Fulton Street/S. Portland Ave	5-6 PM	3.20	480	23	0.48	0.05	A
		7-8 PM	3.20	480	16	0.33	0.03	A
S8	Stairway @ SW Corner	8-9 AM	3.20	480	87	1.81	0.18	A
	Fulton Street/S. Portland Ave	5-6 PM	3.20	480	110	2.29	0.23	A
		7-8 PM	3.20	480	69	1.44	0.14	A

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (4)	Peak 15 Minute Volume (3)	V/C	LOS
N110	Manhattan-Bound Fare Array (East)	8-9 AM	750	200	0.27	B
	1 high entry/exit turnstile	5-6 PM	750	24	0.03	A
	1 high revolving exit gate	7-8 PM	750	16	0.02	A
	Manhattan-Bound Fare Array (Center)	8-9 AM	1,440	82	0.06	A
	3 entry/exit turnstiles	5-6 PM	1,440	16	0.01	A
		7-8 PM	1,440	10	0.01	A
	Manhattan-Bound Fare Array (West)	8-9 AM	750	150	0.20	B
	1 high entry/exit turnstile	5-6 PM	750	30	0.04	A
	1 high revolving exit gate	7-8 PM	750	20	0.03	A
N110	Brooklyn-Bound Fare Array (East)	8-9 AM	750	15	0.02	A
	1 high entry/exit turnstile	5-6 PM	750	61	0.08	A
	1 high revolving exit gate	7-8 PM	750	73	0.10	A
	Brooklyn-Bound Fare Array (Center)	8-9 AM	1,440	10	0.01	A
	3 entry/exit turnstiles	5-6 PM	1,440	54	0.04	A
		7-8 PM	1,440	35	0.02	A
	Brooklyn-Bound Fare Array (West)	8-9 AM	750	27	0.04	A
	1 high entry/exit turnstile	5-6 PM	750	85	0.11	A
	1 high revolving exit gate	7-8 PM	750	64	0.09	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Assumes 0.5 percent/year background growth for the 2006 - 2016 period plus demand from No Build developments.

(4) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

Table 13-37
No Build Subway Line Haul Conditions - 2016

Peak Hour	Route	Peak Direction	Trains per Hour (1)	Cars per Hour (1)	Passengers per Hour (2)	Peak Hour Capacity (3)	V/C Ratio (4)
AM	2	Manhattan-bound	10	100	9,230	11,000	0.84
	3	Manhattan-bound	9	90	9,049	9,900	0.91
	4	Manhattan-bound	14	140	11,829	15,400	0.77
	5	Manhattan-bound	12	120	10,955	13,200	0.83
	A	Manhattan-bound	18	144	19,931	25,200	0.79
	C	Manhattan-bound	8	64	6,011	9,280	0.65
	B	Manhattan-bound	10	100	12,166	14,500	0.84
	D	Manhattan-bound	10	80	10,516	14,000	0.75
	F	Manhattan-bound	15	120	15,286	21,000	0.73
	M	Manhattan-bound	7	56	3,904	8,120	0.48
	N	Manhattan-bound	10	80	12,097	14,000	0.86
	Q	Manhattan-bound	10	80	10,862	14,000	0.78
	R	Manhattan-bound	10	80	7,922	14,000	0.57
	G	Brooklyn-bound	9	36	4,309	6,300	0.68
PM	2	Brooklyn-bound	10	100	6,360	11,000	0.58
	3	Brooklyn-bound	8	80	5,876	8,800	0.67
	4	Brooklyn-bound	15	150	9,978	16,500	0.60
	5	Brooklyn-bound	8	80	5,673	8,800	0.64
	A	Brooklyn-bound	16	128	16,462	22,400	0.73
	C	Brooklyn-bound	7	56	4,060	8,120	0.50
	B	Brooklyn-bound	10	100	10,840	14,500	0.75
	D	Brooklyn-bound	10	80	7,792	14,000	0.56
	F	Brooklyn-bound	13	104	10,686	18,200	0.59
	M	Brooklyn-bound	6	48	3,585	6,960	0.52
	N	Brooklyn-bound	9	72	7,617	12,600	0.60
	Q	Brooklyn-bound	9	72	7,909	12,600	0.63
	R	Brooklyn-bound	10	80	7,106	14,000	0.51
	G	Queens-bound	8	32	2,850	5,600	0.51

This table has been revised since the DEIS.

Notes:

(1) Based on Spring and Fall 2005 schedule and ridership data provided by NYC Transit.

(2) Based on 2005 Existing demand increased by 0.5 percent/year background growth for the 2005 - 2016 period plus demand from No Build development sites.

(3) Capacity based on NYC Transit guideline capacities of 110 passengers/car for 51' cars, 145 passengers/car for 60' cars and 175 passengers/car for 75' cars. Guideline capacity for each route is based on the capacity associated with the predominant car type.

shortfalls of 162 spaces and six spaces, respectively, in the PM peak hour. As standard practice, NYCT routinely conducts periodic ridership counts and increases service where operationally warranted and fiscally feasible. It is therefore anticipated that in the 2016 No Build, NYCT would increase frequency on these routes to address their capacity shortfalls. As shown in Table 13-38, in the AM peak hour, the addition of one westbound B38 bus and one westbound B52 bus would fully address the capacity shortfalls on these routes in the AM. In the PM peak hour, the addition of three eastbound B25 buses, one eastbound B26 bus, two eastbound B38 buses and one eastbound B52 bus would fully address the capacity shortfalls on these routes in the PM in the 2016 No Build.

COMMUTER VAN SERVICES

During the 2006 through 2016 period, demand for commuter van services in Downtown Brooklyn will likely increase as a result of new developments and general background growth. It is anticipated that Flatbush Avenue will continue to function as the primary access route to and from Downtown Brooklyn for these vans.

LIRR COMMUTER RAIL SERVICE

As previously discussed, it is expected that the final elements of the reconstruction of the Atlantic Avenue/Pacific Street subway station complex, which includes the LIRR's Atlantic Terminal, will be completed during the 2006 through 2016 period. These elements include an enlarged concourse and air conditioned waiting room for the LIRR, and a major new entrance to the facility at the corner of Hanson Place and Flatbush Avenue. With new development in Downtown Brooklyn as well as general background growth, it is likely that LIRR ridership through the Flatbush Avenue terminal will increase during the 2006 through 2016 period.

PEDESTRIANS

Pedestrian flow conditions at analyzed sidewalks, corner areas, and crosswalks were analyzed for the 2016 future without the proposed project, incorporating anticipated demand from new development and a background growth rate of 0.5 percent per year for the 2006 through 2016 period. As previously discussed for the 2010 No Build analysis, the 2006 through 2016 period may also see the implementation of additional measures associated with DOT's ongoing *Downtown Brooklyn Traffic Calming Project (DBTCP)*. Although no specific measures in the *DBTCP* have been identified for implementation within the study area at this time, all measures remain candidates for implementation. DOT is working with the Community Boards on prioritizing these measures. DOT intends to implement additional measures based upon further detailed evaluation, analysis of impacts, and community review. The analysis of future pedestrian conditions therefore conservatively assumes that no additional improvements are implemented at analyzed pedestrian facilities in the 2016 future without the proposed project.

Tables 13-39 through 13-41 show the results of the analyses of sidewalk, corner area and crosswalk conditions for the weekday AM, PM, pre-game and Saturday pre-game hours in the 2016 future without the proposed project. As shown in Table 13-39, during these peak hours all analyzed sidewalks would continue to operate at an uncongested LOS A or B under platoon conditions. As shown in Tables 13-40 and 13-41, all analyzed corner areas and crosswalks would also continue to operate at LOS A or B in the weekday AM, PM, pre-game, and Saturday pre-game peak hours in the 2016 No Build condition.

Table 13-38
No Build Local Bus Conditions - 2016

Peak Hour (1)	Route	Peak Direction	Maximum Load Point	2016 Peak Hour Passengers (2)	No Build Conditions with Current Service Levels			No Build Conditions with Potential Service Adjustments			Notes
					Peak Hour Buses (3)	Average Passengers/Bus	Available Capacity (4)	Peak Hour Buses (5)	Average Passengers/Bus	Available Capacity (4)	
	B25	WB	Fulton Street/Nostrand Ave	502	8	63	18	8	63	18	
	B26	WB	Halsey Street/Malcom X Blvd	671	11	61	44	11	61	44	
	B37	NB	Third Ave/39th Street	135	3	45	60	3	45	60	
	B38	WB	DeKalb Ave/Vanderbilt Ave	1,408	21	67	-43	22	64	22	
	B41	NB	Flatbush Ave/Empire Blvd	1,598	26	61	92	26	61	92	(6)
AM	B45	WB	St. Johns Place/Kingston Ave	410	8	51	110	8	51	110	
	B52	WB	Nostrand Ave/Gates Ave	862	13	66	-17	14	62	48	
	B63	NB	Fifth Ave/36th Street	439	8	55	81	9	49	146	
	B65	WB	Bergen Street/Franklin Ave	299	6	50	91	6	50	91	
	B67	NB	10th Ave/20th Street	412	7	59	43	7	59	43	
	B69	NB	Fulton Street/Vanderbilt Ave	172	5	34	153	5	34	153	
	B25	EB	Fulton Street/Nostrand Ave	747	9	83	-162	12	62	33	
	B26	EB	Halsey Street/Nostrand Ave	591	9	66	-6	10	59	59	
	B37	SB	Third Ave/Atlantic Ave.	156	3	52	39	3	52	39	
	B38	EB	Fulton Street/DeKalb Ave	982	14	70	-72	16	61	58	
	B41	SB	Flatbush Ave/Church Ave	1,403	23	61	92	23	61	92	(6)
PM	B45	EB	St. Johns Place/Kingston Ave	400	7	57	55	7	57	55	
	B52	EB	Fulton Street/Green Ave	651	10	65	-1	11	59	64	
	B63	SB	Fifth Ave/50th Street	449	8	56	71	8	56	71	
	B65	EB	Dean Street/Washington Ave	289	6	48	101	6	48	101	
	B67	SB	7th Ave/Union Street	298	5	60	27	5	60	27	
	B69	SB	Fulton Street/Vanderbilt Ave	82	3	27	113	3	27	113	

This table has been revised since the DEIS.

Notes:

(1) Peak hours: weekday 8-9 AM and 5-6 PM.
(2) Assumes 0.5 percent per year background growth plus demand from No Build sites developed by 2016.
(3) Based on most currently available NYC Transit ridership summaries, unless otherwide noted.
(4) Available capacity based on a maximum of 65 passengers for a standard 40-seat bus as per CEQR criteria.
(5) Assumes service levels adjusted to address capacity shortfalls during the 2006 through 2016 period.
(6) Combined local and limited service.

Table 13-39
No Build Sidewalk Conditions - 2016

Facility No.	Location	Effective Width (feet)	Peak 15-Min Volumes				Average Conditions								Platoon Conditions							
			AM	PM	EVE	SAT	AM		PM		EVE		SAT		AM		PM		EVE		SAT	
							PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS
S1	Pacific St btwn 4th & 5th Avs - north	8.5	26	34	22	30	0.20	A	0.27	A	0.17	A	0.24	A	4.20	A	4.27	A	4.17	A	4.24	A
S2	4th Av btwn Pacific St & Atlantic Av - east	5.0	96	206	110	133	1.28	A	2.75	A	1.33	A	1.77	A	5.28	B	6.75	B	5.33	B	5.77	B
S3	Atlantic Av btwn 4th & Flatbush Avs - south	6.5	44	103	53	62	0.45	A	1.06	A	0.54	A	0.64	A	4.45	A	5.06	B	4.54	A	4.64	A
S4	Flatbush Av btwn Atlantic Av & Pacific St - west	12.5	38	36	44	118	0.20	A	0.19	A	0.23	A	0.63	A	4.20	A	4.19	A	4.23	A	4.63	A
S5	Flatbush Av btwn Atlantic Av & Pacific St - east	16.5	38	43	44	54	0.15	A	0.17	A	0.18	A	0.22	A	4.15	A	4.17	A	4.18	A	4.22	A
S6	Atlantic Av btwn Ft Greene Pl & S Portland Av - south	7.5	9	6	8	8	0.08	A	0.05	A	0.07	A	0.07	A	4.08	A	4.05	A	4.07	A	4.07	A
S7	6th Av btwn Atlantic Av & Pacific St - west	7.0	12	18	24	15	0.11	A	0.17	A	0.23	A	0.14	A	4.11	A	4.17	A	4.23	A	4.14	A
S8	6th Av btwn Atlantic Av & Pacific St - east	7.0	13	31	26	16	0.12	A	0.30	A	0.25	A	0.15	A	4.12	A	4.30	A	4.25	A	4.15	A
S9	Atlantic Av btwn S Portland & Carlton Avs - south	6.5	6	13	9	7	0.06	A	0.13	A	0.09	A	0.07	A	4.06	A	4.13	A	4.09	A	4.07	A
S10	Carlton Av btwn Atlantic Av & Pacific St - west	7.0	6	7	12	4	0.06	A	0.07	A	0.11	A	0.04	A	4.06	A	4.07	A	4.11	A	4.04	A
S11	Carlton Av btwn Atlantic Av & Pacific St - east	7.0	6	5	10	6	0.06	A	0.05	A	0.10	A	0.06	A	4.06	A	4.05	A	4.10	A	4.06	A
S12	Atlantic Av btwn Carlton & Vanderbilt Avs - south	7.0	6	7	6	7	0.06	A	0.07	A	0.06	A	0.07	A	4.06	A	4.07	A	4.06	A	4.07	A
S13	Vanderbilt Av btwn Atlantic Av & Pacific St - west	15.0	12	12	5	6	0.05	A	0.05	A	0.02	A	0.03	A	4.05	A	4.05	A	4.02	A	4.03	A
S14	Dean St btwn Carlton & Vanderbilt Avs - north	11.5	76	16	26	4	0.13	A	0.09	A	0.15	A	0.02	A	4.13	A	4.09	A	4.15	A	4.02	A
S15	Pacific St btwn S Portland & Carlton Avs - north	6.5	9	9	10	12	0.09	A	0.09	A	0.10	A	0.12	A	4.09	A	4.09	A	4.10	A	4.12	A
S16	Pacific St btwn S Portland & Carlton Avs - south	11.5	11	15	6	9	0.06	A	0.09	A	0.03	A	0.05	A	4.06	A	4.09	A	4.03	A	4.05	A
S17	Dean St btwn 6th & Carlton Avs - north	10.5	7	12	13	29	0.04	A	0.08	A	0.08	A	0.18	A	4.04	A	4.08	A	4.08	A	4.18	A
S18	Dean St btwn Flatbush & 6th Av - north	11.5	13	15	33	12	0.08	A	0.09	A	0.20	A	0.07	A	4.08	A	4.09	A	4.20	A	4.07	A
S19	6th Av btwn Pacific St & Dean St - west	11.5	12	26	24	15	0.07	A	0.15	A	0.14	A	0.09	A	4.07	A	4.15	A	4.14	A	4.09	A
S20	6th Av btwn Pacific St & Dean St - east	11.5	16	23	25	13	0.09	A	0.13	A	0.14	A	0.08	A	4.09	A	4.13	A	4.14	A	4.08	A
S21	6th Av btwn Dean St & Bergen St - west	7.5	42	32	23	25	0.37	A	0.28	A	0.20	A	0.22	A	4.37	A	4.28	A	4.20	A	4.22	A
S22	6th Av btwn Dean St & Bergen St - east	6.5	33	21	14	31	0.34	A	0.22	A	0.14	A	0.32	A	4.34	A	4.22	A	4.14	A	4.32	A
S23	6th Av btwn Bergen St & Flatbush Av - west	15.0	21	15	17	11	0.09	A	0.07	A	0.08	A	0.05	A	4.09	A	4.07	A	4.08	A	4.05	A
S24	6th Av btwn Bergen St & Flatbush Av - east	9.5	36	28	19	21	0.25	A	0.20	A	0.13	A	0.15	A	4.25	A	4.20	A	4.13	A	4.15	A

This table has been revised since the DEIS.

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

EVE - weekday 7-8 PM

SAT - Saturday 1-2 PM

PFM - persons per foot of effective width per minute.

LOS - level of service.

Table 13-40
No Build Corner Conditions - 2016

Facility No.	Intersection	Corner	Peak 15-Min Volumes				Average Conditions							
							AM		PM		Pre		SAT	
			AM	PM	EVE	SAT	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS
C1	4th Av @ Pacific St	northeast	16	9	9	19	319.4	A	433.7	A	485.3	A	308.6	A
C2	Atlantic Av @ 4th Av	southeast	18	71	33	33	224.5	A	114.7	A	70.7	A	133.6	A
C3	Flatbush Av @ Atlantic Av	southwest	12	55	45	3	728.7	A	383.3	A	449.4	A	497.3	A
C4	Flatbush Av @ Atlantic Av	southeast	1	1	1	57	821.6	A	501.5	A	900.9	A	285.4	A
C5	Atlantic Av @ 6th Av	southwest	2	3	0	3	792.6	A	408.9	A	584.2	A	371.4	A
C6	Atlantic Av @ 6th Av	southeast	2	1	0	2	1,715.8	A	927.7	A	611.2	A	909.1	A
C7	Atlantic Av @ Carlton Av	southwest	4	4	0	1	384.6	A	805.6	A	1,457.8	A	968.6	A
C8	Atlantic Av @ Carlton Av	southeast	8	0	3	1	826.7	A	1,898.8	A	999.7	A	1,115.7	A
C9	Atlantic Av @ Vanderbilt Av	southwest	4	2	2	3	1,002.8	A	1,100.0	A	1,446.3	A	1,359.7	A
C10	Dean St @ Vanderbilt Av	northwest	2	4	3	1	2,244.5	A	1,905.7	A	4,839.0	A	3,934.4	A
C11	Dean St @ Carlton Av	northeast	3	2	3	3	6,093.0	A	3,721.3	A	4,788.0	A	4,187.8	A
C12	Dean St @ Carlton Av	northwest	14	2	3	0	1,857.4	A	2,247.6	A	3,050.8	A	1,642.4	A
C13	Dean St @ 6th Av	northeast	8	8	21	7	1,159.7	A	681.3	A	605.3	A	1,380.6	A
C14	Dean St @ 6th Av	northwest	12	20	27	1	920.0	A	586.5	A	394.3	A	1,523.0	A
C15	Flatbush Av @ Dean St	northeast	5	9	4	3	3,555.6	A	2,095.0	A	2,477.9	A	821.6	A

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

Pre - weekday 7-8 PM

SAT - Saturday 1-2 PM

SF/Ped - average square feet per pedestrian.

LOS - level of service.

Table 13-41
No Build Crosswalk Conditions - 2016

Facility No.	Location	Street Width (feet)	Crosswalk Width (feet)	Peak 15-Min Volumes				Avg. Conditions (w/Conflicting Vehicles)							
								AM		PM		EVE		SAT	
				AM	PM	EVE	SAT	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS
X1	4th Av @ Pacific St - east	30.0	8.0	123	87	68	112	51.5	B	201.5	A	262.2	A	153.1	A
X2	4th Av @ Pacific St - north	85.0	14.0	15	18	14	29	1,544.9	A	402.1	A	516.6	A	224.6	A
X3	Atlantic Av @ 4th Av - south	83.0	16.0	38	50	49	75	496.7	A	339.5	A	188.5	B	119.4	A
X4	Atlantic Av @ 4th Av - east	73.0	14.0	84	150	87	127	89.1	A	45.5	B	152.1	A	104.5	A
X5	Flatbush Av @ Atlantic Av - west	127.0	18.0	40	32	14	54	725.2	A	908.1	A	2,083.7	A	429.9	A
X6	Flatbush Av @ Atlantic Av - south	138.0	20.0	39	85	58	76	335.8	A	152.3	A	217.5	A	239.3	A
X7	Flatbush Av @ Atlantic Av - east	123.0	21.0	40	44	44	95	765.0	A	693.7	A	693.9	A	253.2	A
X8	Atlantic Av @ Ft Greene Pl - west	90.0	12.5	20	72	40	87	496.1	A	124.4	A	289.9	A	198.1	A
X9	Atlantic Av @ Ft Greene Pl - east	90.0	17.5	11	123	18	111	1,199.2	A	99.5	A	715.2	A	213.4	A
X10	Atlantic Av @ 6th Av - west	111.0	13.5	18	38	41	39	420.8	A	206.0	A	284.4	A	200.6	A
X11	Atlantic Av @ 6th Av - south	34.0	11.0	5	7	6	11	3,263.6	A	2,308.7	A	2,722.9	A	1,470.4	A
X12	Atlantic Av @ 6th Av - east	112.0	16.0	10	23	28	19	985.9	A	425.9	A	236.8	A	516.6	A
X13	Atlantic Av @ Carlton Av - west	115.0	14.0	22	10	2	7	384.0	A	850.3	A	4,270.6	A	1,216.8	A
X14	Atlantic Av @ Carlton Av - south	34.0	14.0	11	4	8	7	1,889.2	A	5,226.4	A	2,604.3	A	2,978.8	A
X15	Atlantic Av @ Carlton Av - east	115.0	15.0	4	6	8	9	2,120.5	A	1,412.2	A	1,098.4	A	953.5	A
X16	Atlantic Av @ Vanderbilt Av - west	115.0	12.0	12	12	5	8	544.9	A	407.1	A	981.8	A	795.3	A
X17	Atlantic Av @ Vanderbilt Av - south	60.0	13.0	7	7	9	6	1,893.7	A	1,643.9	A	1,488.4	A	1,966.2	A
X18	Dean St @ Vanderbilt Av - north	60.0	16.0	9	12	5	4	821.2	A	614.6	A	1,482.3	A	1,854.1	A
X19	Dean St @ Vanderbilt Av - west	34.0	13.0	17	17	5	11	1,172.8	A	1,172.8	A	4,018.1	A	1,819.4	A
X20	Dean St @ Carlton Av - east	34.0	9.0	2	7	7	6	5,258.0	A	1,769.3	A	1,490.3	A	1,760.4	A
X21	Dean St @ Carlton Av - north	38.0	12.0	6	10	4	7	1,348.7	A	806.5	A	2,026.5	A	1,155.0	A
X22	Dean St @ Carlton Av - west	34.0	13.0	0	6	7	19	5,195.2	A	2,221.6	A	2,221.6	A	813.1	A
X23	Dean St @ 6th Av - east	34.0	12.0	23	26	46	24	367.7	A	217.5	A	237.1	A	461.6	A
X24	Dean St @ 6th Av - north	34.0	14.0	18	37	40	16	722.5	A	347.4	A	320.7	A	813.8	A
X25	Dean St @ 6th Av - west	34.0	12.0	30	50	56	15	482.0	A	425.5	A	193.4	A	743.3	A
X26	Flatbush Av @ Dean St - east	65.0	12.0	13	26	22	71	3,625.3	A	696.5	A	824.7	A	245.1	A
X27	Flatbush Av @ Dean St - north	95.0	14.0	5	4	7	25	794.2	A	2,595.9	A	1,480.5	A	409.9	A
X28	Flatbush Av @ 5th Av - south	83.0	12.0	25	53	38	70	362.0	A	167.0	A	235.7	A	124.7	A
X29	Flatbush Av @ 5th Av - north	78.0	14.0	23	36	30	84	466.4	A	295.1	A	355.7	A	122.2	A

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

EVE - weekday 7-8 PM

SAT - Saturday 1-2 PM

SF/Ped - average square feet per pedestrian.

LOS - level of service.

H. PROBABLE IMPACTS OF THE PROPOSED PROJECT—2016

This section provides an analysis of transit and pedestrian conditions in the 2016 future with the proposed project. As previously discussed in the section, "Probable Impacts of the Proposed Project—2010," under Phase I of the proposed project, the arena, Site 5, Buildings 1 through 4, two permanent parking garages (on Site 5 and the arena block) plus interim parking (on Blocks 1120 and 1129), and a new on-site entrance to the Atlantic Avenue/Pacific Street subway station complex at the intersection of Flatbush and Atlantic Avenues would be completed by 2010. Also included in this phase would be the closure of the existing LIRR rail yard at the west end of the site and the development of an improved LIRR rail yard at the east end of the site along with a new portal for direct train access between the new yard and the LIRR's Atlantic Terminal. Under Phase II, construction of Buildings 5 through 15 by 2016 would complete the full development program.

The proposed development considers two program variations: residential mixed-use and commercial mixed-use. The variations reflect the fact that the programs for three of the project's 17 buildings are not fixed and could be used for a mixture of residential and commercial uses.

SUBWAY SERVICE

As discussed in more detail in the previous section, "Probable Impacts of the Proposed Project—2010," Phase I of the proposed project would include construction of a major new on-site subway entrance and other internal circulation improvements at the southern end of the Atlantic Avenue/Pacific Street subway station complex. These improvements would attract the majority of new project-generated demand, as well as some non-project demand that would otherwise use existing station stairways, corridors, and fare arrays. As shown in Figures 13-5 through 13-7, the new subway station entrance and control area would be located at the western end of Block 1118 at the intersection of Flatbush and Atlantic Avenues, immediately adjacent to the proposed arena. Two 48-inch escalators (E1 and E2), each paired with a 9-foot-wide stair (O1 and O2), would lead down to a new control area from the proposed Urban Room, a large publicly accessible, glass-enclosed atrium that would be located at the southeast corner of Flatbush and Atlantic Avenues beneath Building 1. A new elevator (for ADA access) would also connect the control area to street level. The new control area would include a token booth, a minimum of eight turnstiles and a single HEET. Two new 4-foot-wide stairs (O3 and O4) flanking a new 48-inch escalator (E3) would provide access between the control area and the mezzanine level of the Atlantic Avenue BMT subway station. A new 10-foot-wide ramp (R1) would provide access up to the platform for Manhattan-bound IRT 2,3 trains, and a new 14-foot-wide ramp (R2) would provide access down to an existing subpassage beneath the IRT platforms. An existing short stair within the subpassage would be replaced by a ramp (R3). The existing 11-foot-4-inch stair (U9/U11) from the subpassage to the IRT 4,5 platform would be rehabilitated, and a new 10-foot-6-inch stair (U5/U7) would be constructed in place of an existing 6-foot-7-inch switchback stair to provide access to the Brooklyn-bound IRT 2,3 platform. A new 6-foot-wide emergency exit stair from the subpassage to the Flatbush Avenue sidewalk adjacent to Site 5 would also be provided. At sidewalk level, this stair would be located at curbside and would be surrounded by an enclosed structure. Lastly, the southern end of the BMT subway station mezzanine would be rehabilitated, and two new 6-foot-wide stairs (O5 and O6) would be constructed to provide access to the platform level. Subway riders using the new entrance en route to or from the Pacific Street BMT subway station would utilize the subpassage and the Brooklyn-bound IRT 2,3 platform as a connecting walkway for access to the complex's central corridor. Some riders transferring between the Atlantic Avenue IRT and BMT subway stations are also expected to use the new connections.

As there would be no direct access between the new Urban Room entrance and the LIRR platforms except through the paid zone for the subway, it is anticipated that project-generated trips via the LIRR would use the existing entrance to the LIRR's street-level concourse on Flatbush Avenue north of Atlantic Avenue. The final design of the subway station improvements would be developed in consultation with and subject to the approval of NYCT.

Table 12-28 in Chapter 12, "Traffic and Parking," shows the numbers of subway trips that would be generated by full build-out of the proposed project in 2016 under the commercial mixed-use variation (the RWCS for the weekday transit analyses). Table 13-42 shows the numbers of new entering and exiting subway trips that would be generated in 2016 at individual subway stations serving the project site in the weekday 8-9 AM, 5-6 PM, and 7-8 PM pre-game peak hours. The distribution of project-generated subway trips by route and station reflect data provided by MTA NYCT, census data, data developed for the Downtown Brooklyn Development project, and the anticipated trip origins/destinations for arena spectators. The assignment assumes that trips via PATH, Metro-North Commuter Railroad (via Grand Central Terminal), and NJ Transit trains and buses would utilize the subway mode for access to and from the project site in Downtown Brooklyn.

Table 13-42
Peak Hour Project Increment Subway Trips by Subway Station—2016

Subway Station	8-9 AM Peak Hour			5-6 PM Peak Hour			7-8 PM (Pre-Game) Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
Atlantic Ave IRT (2,3,4,5)	1,142	1,190	2,332	1,608	1,574	3,182	649	4,654	5,303
Atlantic Ave BMT (B,Q)	475	510	985	708	655	1,363	279	1,749	2,028
Pacific St BMT (D,M,N,R)	462	816	1,278	1,080	659	1,739	364	1,572	1,936
Bergen St IRT (2,3)	146	104	250	172	157	329	75	120	195
Lafayette Ave IND (C)	110	209	319	272	151	423	90	344	434
Clinton-Wash. Aves IND (C)	57	17	74	37	61	98	22	46	68
Fulton St IND (G)	52	112	164	146	79	225	47	198	245
Total	2,444	2,958	5,402	4,023	3,336	7,359	1,526	8,683	10,209

Notes: Numbers shown are entering and exiting the subway stations.

As shown in Table 13-42, the proposed project would generate an estimated 5,402, 7,359, and 10,209 new subway trips (entering and exiting combined) during the weekday AM, PM, and pre-game peak hours, respectively. Demand would be highest during the 7-8 PM pre-game period due to a combination of residual commuter trips and peak demand en route to a basketball game at the arena. The greatest number of trips would occur at the three subway stations comprising the Atlantic Avenue/Pacific Street subway station complex which would be immediately adjacent to the project site and accessible via the new on-site entrance. A combined total of 9,267 new trips would occur at these three subway stations during the 7-8 PM peak hour in 2016. Substantially fewer trips would occur at more outlying subway stations, with 434 peak hour trips at the Lafayette Avenue IND, 329 trips at the Bergen Street IRT, and 245 trips at the Fulton Street IND subway stations anticipated during the busiest peak hours. The Clinton-Washington Avenues IND subway station, located east of Vanderbilt Avenue, would attract up to 98 new trips in each peak hour, primarily from the residential development at the east end of the site on blocks 1121 and 1129.

The *CEQR Technical Manual* typically requires a detailed analysis of a subway station when the incremental increase in peak hour trips totals 200 persons per hour or more. As new subway trips generated by full build-out of the proposed project in 2016 would exceed this threshold in one or more analyzed peak hours at the Atlantic Avenue/Pacific Street subway station complex, the Bergen Street IRT, the Fulton Street, and the Lafayette Avenue IND subway stations, these stations are analyzed quantitatively in this EIS. The following sections discuss the effects of trips generated at each analyzed subway station by full build-out of the proposed project in 2016. The identification of significant adverse impacts at analyzed station processors is based on criteria presented in the *CEQR Technical Manual* and discussed earlier in this chapter in Section C, "Methodology."

ATLANTIC AVENUE/PACIFIC STREET SUBWAY STATION COMPLEX

The results of the analysis of conditions in the 2016 future with the proposed project at existing and proposed stairways, escalators, passageways, and fare arrays at the Atlantic Avenue/Pacific Street subway station complex are shown in Tables 13-43 and 13-44. As shown in Table 13-43, existing Pacific Street subway station stair S2 at the northeast corner of 4th Avenue and Pacific Street would operate at an acceptable LOS B or better in all analyzed peak hours. From 237 to 320 new project-generated trips would be added to this stair and adjacent fare array C-9 in the peak 15-minutes in 2016, many from the development proposed for Site 5 located immediately adjacent to stair S2. As shown in Table 13-44, existing fare array C-9 would operate at LOS B or better in all analyzed peak hours.

As shown in Tables 13-43 and 13-44, all of the new stairways, escalators, ramps, and fare arrays associated with the proposed Urban Room entrance and internal circulation improvements would operate at LOS C or better in all analyzed peak hours in 2016 with the exception of the two Urban Room escalators (E1 and E2), stair U5/U7 connecting the subpassage to the platform for Brooklyn-bound Nos. 2 and 3 trains, ramp R3 within the subpassage, and the new fare array controlling access to and from the Urban Room. As shown in Table 13-43, escalators E1 and E2 would operate essentially at capacity in the pre-game peak hour with LOS E conditions (a v/c ratio of 0.96), primarily as a result of demand exiting the subway en route to a basketball game at the arena. (It is assumed that both escalators would operate in the up direction in the pre-game period.) However, it should be noted that, as shown in Figure 13-5, both escalator E1 and escalator E2 are paired with an immediately adjacent 9-foot-wide stair (O1 and O2, respectively) with which it would operate as a combined system. The LOS E condition at the escalators reflects the fact that most pedestrians would select to use the escalators for convenience, and that this would typically result in capacity conditions on the escalators during periods of peak demand, even with uncongested conditions on the adjacent stairs. As shown in Table 13-43, both stair O1 and stair O2 would operate at uncongested LOS B in the pre-game peak period, with almost 50 percent of their capacity available. It is therefore expected that, as queuing at the escalators increased, pedestrian demand would increasingly shift to uncongested stairs O1 and O2. As the escalators would operate as a combined system with the adjacent stairs, and as these stairs would have substantial available capacity in the pre-game peak hour, the projected LOS E conditions at new escalators E1 and E2 are not considered an unacceptable condition for a special event condition such as the pre-game peak hour prior to a Nets basketball game.

It should be noted that stairs O1 and O2 were originally proposed to be eight feet in width in the DEIS. Although the DEIS analysis indicated that 8-foot-wide stairs, in combination with the adjacent escalators, would function at acceptable levels of service under CEQR criteria, the wider 9-foot-wide stairs were incorporated to comply with NYCT station design criteria.

Table 13-43

Future With the Proposed Project Stairway and Escalator Conditions at the Atlantic Avenue/Pacific Street Subway Station Complex - 2016

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume (3)	2016 No Build PFM (2)	2016 No Build V/C	2016 No Build LOS	2016 Build PFM (2)	2016 Build V/C	2016 Build LOS	Width Increment Threshold in Inches (5)
O1	New Urban Room Stairway	8-9 AM	6.00	900	n/a	384	384	n/a	n/a	n/a	4.27	0.43	A	---
	@ Atlantic Avenue	5-6 PM	6.00	900	n/a	532	532	n/a	n/a	n/a	5.91	0.59	B	---
		7-8 PM	6.00	900	n/a	470	470	n/a	n/a	n/a	5.22	0.52	B	---
O2	New Urban Room Stairway	8-9 AM	6.00	900	n/a	435	435	n/a	n/a	n/a	4.83	0.48	A	---
	@ Flatbush Avenue	5-6 PM	6.00	900	n/a	569	569	n/a	n/a	n/a	6.32	0.63	B	---
		7-8 PM	6.00	900	n/a	470	470	n/a	n/a	n/a	5.22	0.52	B	---
E1	New Urban Room Escalator	8-9 AM	4.00	1,050	n/a	268	268	n/a	n/a	n/a	n/a	0.26	B	---
	@ Atlantic Avenue (4)	5-6 PM	4.00	1,050	n/a	340	340	n/a	n/a	n/a	n/a	0.32	B	---
		7-8 PM	4.00	1,050	n/a	1,003	1,003	n/a	n/a	n/a	n/a	0.96	E	---
E2	New Urban Room Escalator	8-9 AM	4.00	1,050	n/a	217	217	n/a	n/a	n/a	n/a	0.21	B	---
	@ Flatbush Avenue (4)	5-6 PM	4.00	1,050	n/a	304	304	n/a	n/a	n/a	n/a	0.29	B	---
		7-8 PM	4.00	1,050	n/a	1,003	1,003	n/a	n/a	n/a	n/a	0.96	E	---
S2	Stairway @ NE Corner	8-9 AM	5.20	780	162	241	403	2.08	0.21	A	5.17	0.52	B	---
	@ Fourth Ave/Pacific Street	5-6 PM	5.20	780	152	320	472	1.95	0.19	A	6.05	0.61	B	---
		7-8 PM	5.20	780	88	237	325	1.13	0.11	A	4.17	0.42	A	---
O3	New Urban Room Stairway	8-9 AM	2.40	360	n/a	142	142	n/a	n/a	n/a	3.94	0.39	A	---
	to BMT Mezzanine (east)	5-6 PM	2.40	360	n/a	178	178	n/a	n/a	n/a	4.94	0.49	A	---
		7-8 PM	2.40	360	n/a	149	149	n/a	n/a	n/a	4.14	0.41	A	---
O4	New Urban Room Stairway	8-9 AM	2.40	360	n/a	142	142	n/a	n/a	n/a	3.94	0.39	A	---
	to BMT Mezzanine (west)	5-6 PM	2.40	360	n/a	178	178	n/a	n/a	n/a	4.94	0.49	A	---
		7-8 PM	2.40	360	n/a	149	149	n/a	n/a	n/a	4.14	0.41	A	---
O5	New BMT Platform Stairway	8-9 AM	4.00	600	n/a	239	239	n/a	n/a	n/a	3.98	0.40	A	---
	(south)	5-6 PM	4.00	600	n/a	293	293	n/a	n/a	n/a	4.88	0.49	A	---
		7-8 PM	4.00	600	n/a	324	324	n/a	n/a	n/a	5.40	0.54	B	---
O6	New BMT Platform Stairway	8-9 AM	4.00	600	n/a	247	247	n/a	n/a	n/a	4.12	0.41	A	---
	(north)	5-6 PM	4.00	600	n/a	285	285	n/a	n/a	n/a	4.75	0.48	A	---
		7-8 PM	4.00	600	n/a	479	479	n/a	n/a	n/a	7.98	0.80	C	---
E3	New Urban Room Escalator	8-9 AM	4.00	1,050	n/a	203	203	n/a	n/a	n/a	n/a	0.19	A	---
	from BMT Mezzanine	5-6 PM	4.00	1,050	n/a	222	222	n/a	n/a	n/a	n/a	0.21	B	---
		7-8 PM	4.00	1,050	n/a	505	505	n/a	n/a	n/a	n/a	0.48	C	---
U5/U7	Reconstructed Subpassage	8-9 AM	7.20	1,080	n/a	455	455	n/a	n/a	n/a	4.21	0.42	A	---
	Stairway to Brooklyn-bound	5-6 PM	7.20	1,080	n/a	742	742	n/a	n/a	n/a	6.87	0.69	B	---
	IRT 2,3 Platform	7-8 PM	7.20	1,080	n/a	1,190	1,190	n/a	n/a	n/a	11.02	1.10	D	---
U9/U11	Rehabilitated Subpassage	8-9 AM	7.84	1,176	n/a	469	469	n/a	n/a	n/a	3.99	0.40	A	---
	Stairway to IRT 4,5 Platform	5-6 PM	7.84	1,176	n/a	594	594	n/a	n/a	n/a	5.05	0.51	B	---
		7-8 PM	7.84	1,176	n/a	1,005	1,005	n/a	n/a	n/a	8.55	0.85	C	---

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails and 1.5 feet for both center and side handrails.
Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM). Escalator capacity based on 70 persons per minute for a four-foot-wide escalator.

(3) Includes new demand from the commercial mixed-use variation, the reasonable worst case scenario for the weekday peak periods.
Demand at new processors includes No Build volumes diverted from existing processors.

(4) Escalators E1 and E3 assumed to operate in the up direction at all times. Escalator E2 assumed to operate in the up direction in the 7-8 PM period only.

(5) Width increment threshold needed to restore processor to No Build conditions.

* Denotes a significant adverse impact based on CEQR criteria.

This table has been revised since the DEIS.

Table 13-44
Future With the Proposed Project Walkway and Fare Array Conditions at the Atlantic Avenue/Pacific Street Subway Station Complex - 2016

WALKWAYS

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume (3)	2016 No Build PFM (2)	2016 No Build V/C	2016 No Build LOS	2016 Build PFM (2)	2016 Build V/C	2016 Build LOS	Width Increment Threshold in Inches (4)
R1	New Urban Room Ramp	8-9 AM	4.80	1,080	n/a	336	336	n/a	n/a	n/a	4.67	0.31	A	----
	to Manhattan-bound IRT 2,3	5-6 PM	4.80	1,080	n/a	298	298	n/a	n/a	n/a	4.14	0.28	A	----
	Platform	7-8 PM	4.80	1,080	n/a	269	269	n/a	n/a	n/a	3.74	0.25	A	----
R2	New Urban Room Ramp	8-9 AM	9.60	2,160	n/a	893	893	n/a	n/a	n/a	6.20	0.41	A	----
	to IRT Subpassage	5-6 PM	9.60	2,160	n/a	1,224	1,224	n/a	n/a	n/a	8.50	0.57	B	----
		7-8 PM	9.60	2,160	n/a	2,120	2,120	n/a	n/a	n/a	14.72	0.98	C	----
R3	New Ramp Within IRT	8-9 AM	8.80	1,980	n/a	893	893	n/a	n/a	n/a	6.77	0.45	A	----
	Subpassage	5-6 PM	8.80	1,980	n/a	1,224	1,224	n/a	n/a	n/a	9.27	0.62	B	----
		7-8 PM	8.80	1,980	n/a	2,120	2,120	n/a	n/a	n/a	16.06	1.07	D	----

FARE ARRAYS AND EXIT GATES

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (5)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume (3)	2016 No Build V/C	2016 No Build LOS	2016 Build V/C	2016 Build LOS
----	New Urban Room Fare Array	8-9 AM	4,140	n/a	1,303	1,303	n/a	n/a	0.31	B
	@ Atlantic Ave/Flatbush Ave	5-6 PM	4,140	n/a	1,743	1,743	n/a	n/a	0.42	C
	8 entry/exit turnstiles	7-8 PM	4,140	n/a	2,948	2,948	n/a	n/a	0.71	D
	1 high entry/exit turnstile									
C-9	Pacific St Station Fare Array	8-9 AM	3,840	531	241	772	0.14	A	0.20	B
	@ 4th Ave/Pacific Street	5-6 PM	3,840	439	320	759	0.11	A	0.20	B
	8 entry/exit turnstiles	7-8 PM	3,840	245	237	482	0.06	A	0.13	A

Notes:

(1) Effective width measured as walkway width less two feet to account for wall avoidance. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Walkway capacity in persons per 15 minutes based on NYC Transit guidelines of 15 persons per foot-width per minute (PFM).

(3) Includes new demand from the commercial mixed-use variation, the reasonable worst case scenario for the weekday peak periods. Demand at new processors includes No Build volumes diverted from existing processors.

(4) Width increment threshold needed to restore walkway to No Build conditions.

(5) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYC Transit guidelines.

* Denotes a significant adverse impact based on CEQR criteria.

This table has been revised since the DEIS.

Crowding on the platforms at the Atlantic Avenue/Pacific Street subway station complex is not expected to be problematic during the weekday AM, PM, and 7-8 PM pre-game periods. During the weekday and Saturday pre-game periods, much of the new project-generated demand would be exiting the station en route to the arena, and again, platform crowding is not expected to be problematic. Subway service is typically not as frequent during the weekday 10-11 PM and Saturday 4-5 PM post-game periods, when surges of subway trips generated by an event at the arena would be arriving on the platforms. The potential may therefore exist for crowding on the platforms at the Atlantic Avenue/Pacific Street subway station complex under certain post-game or major event situations in 2016. Such crowding, if it were to occur, would constitute a significant adverse impact, and would be addressed by providing additional subway service (i.e., more trains) during post-game periods or after major arena events.

As also shown in Table 13-43, in the pre-game peak hour, stair U5/U7 would be operating at 11.02 PFM (over its practical capacity of 10 PFM), with LOS D conditions and a v/c ratio of 1.10, primarily as a result of surged demand en route to the arena. This reconstructed 10-foot-6-inch stair would connect the subpassage to the Brooklyn-bound 2, 3 platform, and would replace an existing 6-foot-7-inch switchback stair. Demand on this stair would consist of trips en route to and from Brooklyn-bound Nos. 2 and 3 trains, as well as trips using the Brooklyn-bound 2,3 platform and subpassage as a link between the new Urban Room entrance and the Pacific Street BMT subway station. Although this stair would be operating above its practical capacity of 10 PFM in the pre-game peak hour, it would still be operating below its absolute capacity of 15 PFM (LOS E/F), and each surge of alighting passengers will create some queuing at this stair. The proposed design of stair U5/U7 was developed in consultation with NYCT, which has indicated that LOS D would be an acceptable condition for this stair during a special event condition such as a basketball game or other large event at the proposed Atlantic Yards Arena. Stair U5/U7 would operate at an acceptable LOS A and C in the AM and PM commuter peak hours, respectively.

As shown in Table 13-44, in the pre-game peak hour, ramp R3 would be operating at 16.06 PFM (over its practical capacity of 15 PFM), with LOS D conditions and a v/c ratio of 1.07. These conditions would primarily result from surged demand en route to the arena. This new ramp would replace a short stair that would have functioned as a constraint within the east end of the subpassage. Although this ramp would be operating above its practical capacity of 15 PFM in the pre-game peak hour, it would still be operating below its absolute capacity of about 22 PFM (LOS E/F). There would be some queuing in the underpass leading to R3 only when there are simultaneous discharges of passengers from a southbound 2, 3 train and a southbound 4 or 5 train. As was the case for stair U5/U7, NYCT has indicated that LOS D would be an acceptable level of service for this ramp during a special event condition such as a Nets basketball game or other large event at the proposed Atlantic Yards Arena.

Lastly, as shown Table 13-44, the proposed new fare array controlling access from the Urban Room entrance would experience LOS D conditions in the 7-8 PM pre-game peak hour. However, this fare array would be operating below its capacity with a v/c ratio of 0.71. Overall, the major new on-site entrance and internal circulation improvements proposed at the Atlantic Avenue/Pacific Street subway station complex would be adequate to accommodate projected demand in 2016 at acceptable levels of service based on NYCT standards. Existing stair S2 and fare array C-9 at the Pacific Street subway station would also continue to operate at acceptable levels of service. The proposed project would therefore not result in significant adverse impacts to the Atlantic Avenue/Pacific Street subway station complex with development of Phase II in 2016. However, the potential may exist for crowding on the platforms in certain post-game

situations. Such crowding, if it were to occur, would constitute a significant adverse impact, which would be addressed by providing additional subway service (i.e., more trains) during post-game periods.

Several aspects of the design of the proposed Urban Room entrance and internal circulation improvements at the Atlantic Avenue/Pacific Street subway station complex have been refined as a result of ongoing discussions with MTA NYC Transit. These refinements include an expansion of the Urban Room fare array and reconfiguration of access to the Atlantic Avenue BMT station's mezzanine and platform levels. An analysis of these refinements and their effects on pedestrian flow with full build-out of the proposed project, after giving effect to traffic demand management mitigation strategies, has been included in Chapter 19, "Mitigation." As discussed in Chapter 19, these refinements would generally result in improved pedestrian flow and would not result in significant adverse impacts.

BERGEN STREET IRT SUBWAY STATION (2,3)

The results of the analysis of future 2016 conditions with the proposed project at the Bergen Street IRT subway station are shown in Table 13-45. As shown in Table 13-45, stairs S4 and S5 (where new project-generated trips would be concentrated) and fare arrays R617 and R618 would all continue to operate at an acceptable LOS A or B in all analyzed peak hours. The proposed project would therefore not result in significant adverse impacts at the Bergen Street IRT subway station in 2016.

FULTON STREET IND SUBWAY STATION (G)

The results of the analysis of future 2016 conditions with the proposed project at the Fulton Street IND subway station are shown in Table 13-46. As shown in Table 13-46, stairs S3 and S4 and fare array N-422 at Fulton Street/Fort Greene Place would all continue to operate at an acceptable LOS A or B in all analyzed peak hours. Stair S2 at and the adjacent HEET (R312H1) at S. Portland Avenue would also continue to operate at LOS A in all analyzed peak hours. The proposed project would therefore not result in significant adverse impacts at the Fulton Street IND subway station in 2016.

LAFAYETTE AVENUE IND SUBWAY STATION (C)

The results of the analysis of future 2016 conditions with the proposed project at the Lafayette Avenue IND subway station are shown in Table 13-47. As shown in Table 13-47, stairs S2, S4, S6, and S8 on the south side of Fulton Street (where new project-generated trips would be concentrated) and the fare arrays serving each of the station's two platforms (Brooklyn-bound and Manhattan-bound) would all continue to operate at an uncongested LOS A or B in all analyzed peak hours. The proposed project would therefore not result in significant adverse impacts at the Lafayette Avenue IND subway station in 2016.

In summary, the proposed project's commercial mixed-use variation (the RWCS for the subway analyses) would not result in significant adverse impacts to existing or planned stairways, escalators, ramps, and fare arrays at subway stations serving the project site in 2016. As demonstrated in Tables 12-27 and 12-28 in Chapter 12, "Traffic and Parking," the proposed project's residential mixed-use variation would generate 1,154 fewer subway trips in the weekday AM peak hour than the commercial mixed-use variation, 1,333 fewer trips in the PM peak hour, and 48 fewer trips in the 7-8 PM pre-game peak hour. As it would generate a lower

Table 13-45
Future With the Proposed Project Conditions at the Bergen Street (2,3) Subway Station - 2016

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume	2016 No Build PFM (2)	2016 No Build V/C	2016 No Build LOS	2016 Build PFM (2)	2016 Build V/C	2016 Build LOS	Width Increment Threshold in Inches (4)
S4	Stairway @ NE Corner	8-9 AM	3.20	480	135	38	173	2.81	0.28	A	3.60	0.36	A	---
	Flatbush Ave/Bergen Street	5-6 PM	3.20	480	34	52	86	0.71	0.07	A	1.79	0.18	A	---
	(Manhattan-bound)	7-8 PM	3.20	480	19	32	51	0.40	0.04	A	1.06	0.11	A	---
S5	Stairway @ NW Corner	8-9 AM	3.20	480	24	39	63	0.50	0.05	A	1.31	0.13	A	---
	Flatbush Ave/Bergen Street	5-6 PM	3.20	480	63	51	114	1.31	0.13	A	2.38	0.24	A	---
	(Brooklyn-bound)	7-8 PM	3.20	480	33	29	62	0.69	0.07	A	1.29	0.13	A	---

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (5)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume	2016 No Build V/C	2016 No Build LOS	2016 Build V/C	2016 Build LOS
R617	Manhattan-Bound Fare Array	8-9 AM	1,440	363	38	401	0.25	B	0.28	B
	3 entry/exit turnstiles	5-6 PM	1,440	67	52	119	0.05	A	0.08	A
		7-8 PM	1,440	40	32	72	0.03	A	0.05	A
R618	Brooklyn-Bound Fare Array	8-9 AM	2,940	48	39	87	0.02	A	0.03	A
	3 entry/exit turnstiles	5-6 PM	2,940	126	51	177	0.04	A	0.06	A
	2 high entry/exit turnstiles	7-8 PM	2,940	64	29	93	0.02	A	0.03	A
	2 high revolving exit gates									

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Incremental demand from the commercial mixed-use variation, the reasonable worst case scenario for the weekday peak periods.

(4) Width increment threshold needed to restore processor to No Build conditions.

(5) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

* Denotes a significant adverse impact based on CEQR criteria.

This table has been revised since the DEIS.

Table 13-46
Future With the Proposed Project Conditions at the Fulton Street (G) Subway Station - 2016

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume	2016 No Build PFM (2)	2016 No Build V/C	2016 No Build LOS	2016 Build PFM (2)	2016 Build V/C	2016 Build LOS	Width Increment Threshold in Inches (4)
S2	Stairway @ SW Corner	8-9 AM	3.20	480	13	13	26	0.27	0.03	A	0.54	0.05	A	---
	Lafayette Ave/S. Portland Ave	5-6 PM	3.20	480	37	20	57	0.77	0.08	A	1.19	0.12	A	---
		7-8 PM	3.20	480	22	13	35	0.46	0.05	A	0.73	0.07	A	---
S3	Stairway @ NE Corner	8-9 AM	3.20	480	98	4	102	2.04	0.20	A	2.13	0.21	A	---
	Fulton St/Ft. Greene Place	5-6 PM	3.20	480	54	3	57	1.13	0.11	A	1.19	0.12	A	---
		7-8 PM	3.20	480	29	7	36	0.60	0.06	A	0.75	0.08	A	---
S4	Stairway @ SW Corner	8-9 AM	3.20	480	104	34	138	2.17	0.22	A	2.88	0.29	A	---
	Fulton St/Ft. Greene Place	5-6 PM	3.20	480	59	47	106	1.23	0.12	A	2.21	0.22	A	---
		7-8 PM	3.20	480	32	61	93	0.67	0.07	A	1.94	0.19	A	---

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (5)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume	2016 No Build V/C	2016 No Build LOS	2016 Build V/C	2016 Build LOS
N-422	Fulton Street Fare Array	8-9 AM	1,440	245	38	283	0.17	A	0.20	B
	3 entry/exit turnstiles	5-6 PM	1,440	205	50	255	0.14	A	0.18	A
		7-8 PM	1,440	119	68	187	0.08	A	0.13	A
R312H1	S. Portland Ave Fare Array	8-9 AM	300	13	13	26	0.04	A	0.09	A
	1 high entry/exit turnstile	5-6 PM	300	37	20	57	0.12	A	0.19	A
		7-8 PM	300	22	13	35	0.07	A	0.12	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Incremental demand from the commercial mixed-use variation, the reasonable worst case scenario for the weekday peak periods.

(4) Width increment threshold needed to restore processor to No Build conditions.

(5) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

* Denotes a significant adverse impact based on CEQR criteria.

This table has been revised since the DEIS.

Table 13-47

Future With the Proposed Project Conditions at the Lafayette Avenue (C) Subway Station - 2016

Stairways

No.	Station Element/Location	Peak Period	Effective Width in Feet (1)	Maximum 15 Minute Capacity (2)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume	2016 No Build PFM (2)	2016 No Build V/C	2016 No Build LOS	2016 Build PFM (2)	2016 Build V/C	2016 Build LOS	Width Increment Threshold in Inches (4)
S2	Stairway @ SE Corner	8-9 AM	3.20	480	135	23	158	2.81	0.28	A	3.29	0.33	A	---
	Hanson Place/S. Oxford St	5-6 PM	3.20	480	34	30	64	0.71	0.07	A	1.33	0.13	A	---
		7-8 PM	3.20	480	19	22	41	0.40	0.04	A	0.85	0.09	A	---
S4	Stairway @ NW Corner	8-9 AM	3.20	480	135	1	136	2.81	0.28	A	2.83	0.28	A	---
	Hanson Place/S. Oxford St	5-6 PM	3.20	480	34	2	36	0.71	0.07	A	0.75	0.08	A	---
		7-8 PM	3.20	480	19	1	20	0.40	0.04	A	0.42	0.04	A	---
S6	Stairway @ SE Corner	8-9 AM	3.20	480	7	4	11	0.15	0.01	A	0.23	0.02	A	---
	Fulton Street/S. Portland Ave	5-6 PM	3.20	480	23	5	28	0.48	0.05	A	0.58	0.06	A	---
		7-8 PM	3.20	480	16	3	19	0.33	0.03	A	0.40	0.04	A	---
S8	Stairway @ SW Corner	8-9 AM	3.20	480	87	71	158	1.81	0.18	A	3.29	0.33	A	---
	Fulton Street/S. Portland Ave	5-6 PM	3.20	480	110	95	205	2.29	0.23	A	4.27	0.43	A	---
		7-8 PM	3.20	480	69	117	186	1.44	0.14	A	3.88	0.39	A	---

Fare Arrays and Exit Gates

No.	Station Element/Location	Peak Period	Maximum 15 Minute Capacity (5)	No Build Pk 15 Min Volume	Pk 15 Min Project Increment (3)	Build Pk 15 Min Volume	2016 No Build V/C	2016 No Build LOS	2016 Build V/C	2016 Build LOS
N110	Manhattan-Bound Fare Array (East)	8-9 AM	750	200	10	210	0.27	B	0.28	B
	1 high entry/exit turnstile	5-6 PM	750	24	13	37	0.03	A	0.05	A
	1 high revolving exit gate	7-8 PM	750	16	9	25	0.02	A	0.03	A
	Manhattan-Bound Fare Array (Center)	8-9 AM	1,440	82	9	91	0.06	A	0.06	A
	3 entry/exit turnstiles	5-6 PM	1,440	16	8	24	0.01	A	0.02	A
		7-8 PM	1,440	10	12	22	0.01	A	0.02	A
	Manhattan-Bound Fare Array (West)	8-9 AM	750	150	52	202	0.20	B	0.27	B
	1 high entry/exit turnstile	5-6 PM	750	30	26	56	0.04	A	0.07	A
	1 high revolving exit gate	7-8 PM	750	20	87	107	0.03	A	0.14	A
N110	Brooklyn-Bound Fare Array (East)	8-9 AM	750	15	10	25	0.02	A	0.03	A
	1 high entry/exit turnstile	5-6 PM	750	61	13	74	0.08	A	0.10	A
	1 high revolving exit gate	7-8 PM	750	73	9	82	0.10	A	0.11	A
	Brooklyn-Bound Fare Array (Center)	8-9 AM	1,440	10	5	15	0.01	A	0.01	A
	3 entry/exit turnstiles	5-6 PM	1,440	54	16	70	0.04	A	0.05	A
		7-8 PM	1,440	35	7	42	0.02	A	0.03	A
	Brooklyn-Bound Fare Array (West)	8-9 AM	750	27	14	41	0.04	A	0.05	A
	1 high entry/exit turnstile	5-6 PM	750	85	56	141	0.11	A	0.19	A
	1 high revolving exit gate	7-8 PM	750	64	19	83	0.09	A	0.11	A

Notes:

(1) Effective width measured as stairwell width less one foot to account for side handrails. Effective width is further reduced by 20 percent to account for friction where there are two-way flows.

(2) Stair capacity in persons per 15 minutes based on NYC Transit guidelines of 10 persons per foot-width per minute (PFM).

(3) Incremental demand from the commercial mixed-use variation, the reasonable worst case scenario for the weekday peak periods.

(4) Width increment threshold needed to restore processor to No Build conditions.

(5) Fare array capacity based on 32 ppm for turnstiles, 20 ppm for high entry/exit turnstiles, and 30 ppm for high revolving exit gates as per NYCT guidelines.

* Denotes a significant adverse impact based on CEQR criteria.

This table has been revised since the DEIS.

level of subway demand during the weekday peak hours than was analyzed for the commercial mixed-use variation, no new significant adverse impacts to subway stations are likely to result from the residential mixed-use variation in 2016.

LINE HAUL

As shown in Table 13-42, in 2016 the proposed project's commercial mixed-use variation (the RWCS for the transit analyses) would generate a net total of 2,958 subway trips inbound to the project site and 2,444 trips outbound from the site in the AM peak hour, and 3,336 inbound and 4,023 outbound trips by subway in the PM peak hour. These trips would be distributed among the numerous subway routes serving the project site both to and from Brooklyn and Queens, and to and from Manhattan. The assignment of trips to each route was based on data provided by MTA, NYCT, census data, data developed for the downtown Brooklyn Development project, and the anticipated origins/destinations for arena spectators. As previously discussed in more detail for the analysis of line haul conditions in the 2010 future with the proposed project, given the project site's location outside of the Manhattan CBD and the anticipated directions of travel for project-generated trips in each peak period, it is anticipated that the majority of project-generated demand would not occur at the maximum load points in the peak direction of travel. Overall, it is estimated that approximately 34 percent of subway trips generated by the proposed project in 2016 would occur at the maximum load points in the peak direction on routes serving the project site in the AM peak period, and approximately 33 percent in the PM peak period.

Table 13-48 shows the results of the analysis of subway line haul conditions at the maximum load point on each route in the 2016 future with the proposed project. As shown in Table 13-48, all routes would continue to operate below capacity in the peak direction in the AM and PM at their maximum load points in 2016. The highest v/c ratios in the AM peak hour would occur on Manhattan-bound No. 3 trains and N trains with v/c ratios of 0.94 and 0.87, respectively. Manhattan-bound No. 2 trains would operate with a v/c ratio of 0.86, while No. 5 and B trains would each operate with a v/c ratio of 0.85 in the AM peak hour. In the PM peak hour, the Brooklyn-bound B trains would be most crowded with a v/c ratio of 0.76, followed by A and No. 3 trains which would operate at v/c ratios of 0.74 and 0.71, respectively. The proposed project would add an average of fewer than four passengers per subway car to peak direction trains serving the project site in each peak hour in 2016, with the exception of Brooklyn-bound Nos. 3 and 5 trains which would experience an average increase of 4.2 and 4.0 passengers per car, respectively, in the PM peak hour.

Under *CEQR Technical Manual* criteria, any increases in load levels that remain within practical capacity limits are generally not considered significant impacts. Projected increases from a No Build condition to a Build condition that exceed practical capacity may be considered significant impacts if the proposed action generates five or more additional passengers per car. As demonstrated by the analysis shown in Table 13-48, all subway routes through the project study area are expected to continue to operate below their practical capacity in the peak direction in each peak hour with full build-out of the proposed project in 2016. The proposed project is therefore not expected to result in significant adverse impacts to subway line haul conditions serving the project study area under *CEQR Technical Manual* criteria.

As demonstrated in Tables 12-27 and 12-28 in Chapter 12, "Traffic and Parking," the proposed project's residential mixed-use variation would generate 1,154 fewer subway trips in the weekday AM peak hour than the commercial mixed-use variation and 1,333 fewer trips in the PM peak hour. In addition, with 1,105 more residential units and a hotel, and a 1.27 million gsf

Table 13-48
Future with the Proposed Project Subway Line Haul Conditions - 2016

Peak Hour	Route	Peak Direction	Trains per Hour (1)	Cars per Hour (1)	Peak Hour Capacity (2)	2016 No Build		2016 Build		
						Passengers per Hour (3)	V/C Ratio (4)	Passengers per Hour	V/C Ratio (4)	Avg. Added Passengers per Car
AM	2	Manhattan-bound	10	100	11,000	9,230	0.84	9,499	0.86	2.7
	3	Manhattan-bound	9	90	9,900	9,049	0.91	9,312	0.94	2.9
	4	Manhattan-bound	14	140	15,400	11,829	0.77	12,063	0.78	1.7
	5	Manhattan-bound	12	120	13,200	10,955	0.83	11,187	0.85	1.9
	A	Manhattan-bound	18	144	25,200	19,931	0.79	19,967	0.79	0.3
	C	Manhattan-bound	8	64	9,280	6,011	0.65	6,022	0.65	0.2
	B	Manhattan-bound	10	100	14,500	12,166	0.84	12,312	0.85	1.5
	D	Manhattan-bound	10	80	14,000	10,516	0.75	10,719	0.77	2.5
	F	Manhattan-bound	15	120	21,000	15,286	0.73	15,313	0.73	0.2
	M	Manhattan-bound	7	56	8,120	3,904	0.48	3,936	0.48	0.6
	N	Manhattan-bound	10	80	14,000	12,097	0.86	12,242	0.87	1.8
	Q	Manhattan-bound	10	80	14,000	10,862	0.78	11,007	0.79	1.8
	R	Manhattan-bound	10	80	14,000	7,922	0.57	7,969	0.57	0.6
	G	Brooklyn-bound	9	36	6,300	4,309	0.68	4,356	0.69	1.3
PM	2	Brooklyn-bound	10	100	11,000	6,360	0.58	6,706	0.61	3.5
	3	Brooklyn-bound	8	80	8,800	5,876	0.67	6,210	0.71	4.2
	4	Brooklyn-bound	15	150	16,500	9,978	0.60	10,301	0.62	2.2
	5	Brooklyn-bound	8	80	8,800	5,673	0.64	5,993	0.68	4.0
	A	Brooklyn-bound	16	128	22,400	16,462	0.73	16,496	0.74	0.3
	C	Brooklyn-bound	7	56	8,120	4,060	0.50	4,069	0.50	0.2
	B	Brooklyn-bound	10	100	14,500	10,840	0.75	11,042	0.76	2.0
	D	Brooklyn-bound	10	80	14,000	7,792	0.56	8,072	0.58	3.5
	F	Brooklyn-bound	13	104	18,200	10,686	0.59	10,707	0.59	0.2
	M	Brooklyn-bound	6	48	6,960	3,585	0.52	3,628	0.52	0.9
	N	Brooklyn-bound	9	72	12,600	7,617	0.60	7,818	0.62	2.8
	Q	Brooklyn-bound	9	72	12,600	7,909	0.63	8,111	0.64	2.8
	R	Brooklyn-bound	10	80	14,000	7,106	0.51	7,183	0.51	1.0
	G	Queens-bound	8	32	5,600	2,850	0.51	2,921	0.52	2.2

This table has been revised since the DEIS.

Notes:

(1) Based on Spring and Fall 2005 schedule and ridership data provided by NYC Transit.

(2) Capacity based on NYC Transit guideline capacities of 110 passengers/car for 51' cars, 145 passengers/car for 60' cars and 175 passengers/car for 75' cars. Guideline capacity for each route is based on the capacity of the predominant car type.

(3) Based on 2005 Existing demand increased by 0.5 percent/year background growth for the 2005 - 2016 period plus demand from No Build development sites.

(4) Volume-to-capacity ratio.

less office space in 2016, the directional distribution of subway trips generated by the residential mixed-use variation would also differ somewhat from the commercial mixed-use variation. For example, the higher number of residential units would likely result in a somewhat higher percentage of trips traveling to Manhattan from the project site in the AM peak hour and from Manhattan in the PM. However, as all subway routes would continue to operate with available peak direction capacity in each peak hour under the commercial mixed-use variation, and given the substantially fewer numbers of subway trips that would be generated by the residential mixed-use variation in the weekday peak hours, the residential mixed-use variation is not expected to result in new significant adverse subway line haul impacts in 2016.

BUS SERVICE

As previously discussed, with implementation of Phase I of the proposed project in 2010, 5th Avenue would be permanently closed and developed on between Flatbush and Atlantic Avenues. Northbound B63 buses which currently use this street segment would instead turn from 5th Avenue onto northbound Flatbush Avenue to access westbound Atlantic Avenue. (The existing left-turn prohibition on northbound Flatbush Avenue at Atlantic Avenue would be modified to exclude buses.) The existing stop for northbound B63 buses on 5th Avenue at Atlantic Avenue would likely be replaced by a new stop along the proposed lay-by lane on Flatbush Avenue adjacent to the arena.

Table 12-28 in Chapter 12, "Traffic and Parking," shows the numbers of local bus trips that would be generated by the proposed project in 2016 under the commercial mixed-use variation (the RWCS for the weekday transit analyses). As shown in Table 12-28, the proposed project would generate an estimated 249 inbound and 125 outbound local bus trips in the AM peak hour, and 206 inbound and 354 outbound in the PM peak hour. These trips were assigned to the maximum load points on each of the 11 NYCT local bus routes serving project site based on existing demand patterns and the proximity of the project site to each of the maximum load points. Table 13-49 shows resulting conditions on these local bus routes at the maximum load points with full build-out of the proposed project in 2016. As shown in Table 13-49, the proposed project would add from two to 38 peak direction passengers to each analyzed bus route in the AM peak hour, and from two to 26 additional passengers in the PM peak hour. With this added demand, the westbound B38 route would be operating with a capacity shortfall of 14 spaces in the AM peak hour, compared with a surplus of 22 spaces in the 2016 No Build. All other analyzed bus routes would continue to operate with available capacity in the peak direction at their peak load points in the 2016 future with the proposed project.

According to current NYCT guidelines, increases in bus load levels to above their maximum capacity at any load point is considered a significant adverse impact as it would necessitate the addition of more bus service along that route. Based on this criteria, westbound B38 buses would be significantly adversely impacted by project-generated demand in the AM peak hour in 2016. As discussed in Chapter 19, "Mitigation," 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 is proposed for the potential impact to westbound B38 service. In addition, it should be noted that traffic congestion and significant adverse traffic impacts were identified for 2016 at a number of intersections along corridors used by local bus routes including Atlantic, Flatbush, 4th, and Vanderbilt Avenues, and Dean and Bergen Streets (see Chapter 12, "Traffic and Parking"). Although the proposed traffic mitigation plan presented in Chapter 19, "Mitigation," would address many of these impacts, and additional measures to further address traffic impacts will be evaluated for the FEIS, delays to bus travel under 2016

Table 13-49
Future With the Proposed Project Local Bus Conditions - 2016

Peak Hour (1)	Route	Peak Direction	Maximum Load Point	Peak Hour Buses (2)	No Build Available Capacity (3)	Project Increment	Available Capacity w/Proposed Project (3)		Notes
AM	B25	WB	Fulton Street/Nostrand Ave	8	18	10	8		
	B26	WB	Halsey Street/Malcom X Blvd	11	44	14	30		
	B37	NB	Third Ave/39th Street	3	60	2	58		
	B38	WB	DeKalb Ave/Vanderbilt Ave	22	22	36	-14	*	
	B41	NB	Flatbush Ave/Empire Blvd	26	92	38	54		(4)
	B45	WB	St. Johns Place/Kingston Ave	8	110	8	102		
	B52	WB	Nostrand Ave/Gates Ave	14	48	10	38		
	B63	NB	Fifth Ave/36th Street	9	146	6	140		
	B65	WB	Bergen Street/Franklin Ave	6	91	5	86		
	B67	NB	10th Ave/20th Street	7	43	9	34		
	B69	NB	Fulton Street/Vanderbilt Ave	5	153	4	149		
PM	B25	EB	Fulton Street/Nostrand Ave	12	33	10	23		
	B26	EB	Halsey Street/Nostrand Ave	10	59	9	50		
	B37	SB	Third Ave/Atlantic Ave.	3	39	2	37		
	B38	EB	Fulton Street/DeKalb Ave	16	58	17	41		
	B41	SB	Flatbush Ave/Church Ave	23	92	9	83		(4)
	B45	EB	St. Johns Place/Kingston Ave	7	55	7	48		
	B52	EB	Fulton Street/Green Ave	11	64	26	38		
	B63	SB	Fifth Ave/50th Street	8	71	3	68		
	B65	EB	Dean Street/Washington Ave	6	101	10	91		
	B67	SB	7th Ave/Union Street	5	27	3	24		
	B69	SB	Fulton Street/Vanderbilt Ave	3	113	3	110		

This table has been revised since the DEIS.

Notes:

(1) Peak hours: weekday 8-9 AM and 5-6 PM.

(2) Assumes service levels adjusted to address capacity shortfalls in the 2010 No Build condition.

(3) Available capacity based on a maximum of 65 passengers per bus.

(4) Combined limited and local service.

* Denotes a significant adverse impact based on current NYC Transit guidelines.

Build and 2016 Build With Mitigation conditions may occur, especially in the vicinity of the arena during the pre- and post-game peak periods. Additional buses may therefore be needed during these periods to maintain the current headways and service schedules.

As demonstrated in Tables 12-27 and 12-28 in Chapter 12, "Traffic and Parking," the proposed project's residential mixed-use variation would generate 133 fewer bus trips in the weekday AM peak hour than the commercial mixed-use variation, and 155 fewer trips in the PM peak hour. As it would generate a lower level of bus demand during the weekday peak hours than was analyzed for the commercial mixed-use variation, the capacity shortfall on the westbound B38 route in the AM peak hour may not occur under the residential mixed-use variation, and no new significant adverse impacts to other bus routes are expected under the residential mixed-use variation in 2016.

COMMUTER VAN SERVICE

As discussed previously, field observations indicate that the majority of commuter vans approach the project study area on the major arterials such as Flatbush Avenue, and then loop through the area on westbound Schermerhorn Street, northbound Smith Street and eastbound Livingston Street. As the northbound left-turn from Flatbush Avenue to Schermerhorn Street is prohibited, northbound Ashland Place and westbound Lafayette Avenue are typically used to reach Schermerhorn Street. DOT has designated six locations as commuter van stops, with the nearest one to the project site located on northbound Ashland Place at Hanson Place. Street closures and other changes to the study area traffic network associated with full build-out of the proposed project in 2016 are not expected to adversely affect the operation of these van services. The proposed project would include the installation of lay-by lanes along both Flatbush and Atlantic Avenues adjacent to the project site, and these new lay-by lanes would facilitate the pick-up and drop-off of passengers en route to and from the proposed project. While development of the proposed project would likely increase demand for commuter vans in 2016, the overall numbers of new trips are expected to be very small relative to other modes.

LIRR COMMUTER RAIL SERVICE

As shown in Table 12-28 in Chapter 12, "Traffic and Parking," during weekday peak hours, development of the proposed project's commercial mixed-use variation (the RWCS for the weekday transit analyses) would generate 475 trips on the LIRR in the AM peak hour, 54 trips in the midday, 666 trips in the PM peak hour, 1,217 trips in the pre-game peak hour, and 1,499 trips in the post-game peak hour in 2016. As shown in Table 12-27 in Chapter 12, on Saturdays the proposed project's residential mixed-use variation (the RWCS for the Saturday transit analyses) would generate 1,116 LIRR trips in the 1-2 PM pre-game peak hour and 1,266 trips in the 4-5 PM post-game peak hour in 2016. These trips would utilize the LIRR's nearby Atlantic Terminal at Flatbush and Atlantic Avenues via the existing entrance on Flatbush Avenue north of Atlantic Avenue. (Project-generated LIRR trips would typically not use the same entrances to the Atlantic Avenue/Pacific Street subway station complex as project-generated subway trips as there would be no direct access to the LIRR platforms via the proposed Urban Room entrance except through the paid zone for the subway.) The largest numbers of new peak hour LIRR trips would be generated by a basketball game at the proposed arena, and would occur in the off-peak direction (inbound from Long Island in the 5-6 PM and 7-8 PM peak hours, for example). These trips are therefore not expected to adversely affect LIRR line haul conditions.

In addition to generating new commuter rail demand, the proposed project would also result in a reconfiguration of the LIRR's train storage and servicing facilities at the project site (see Figure 1-

13 in Chapter 1, "Project Description"). As discussed in more detail in the section on Future Conditions With the Proposed Project—2010, with implementation of Phase I of the proposed project in 2010, a reconfigured and upgraded Vanderbilt Yard, with expanded storage and servicing capacity and improved yard functionality, would be built below street grade on the eastern end of the existing rail yard footprint to allow for both the continuance of LIRR yard operations and the operation of the arena. To provide for the continuance of LIRR operations during construction of the arena, construction would be staged to provide a temporary storage yard in Blocks 1120 and 1121 prior to the completion of the improved rail yard. While the improved yard is under construction, toilet servicing for a portion of the trains would take place within LIRR's existing Hillside Yard Storage Facility in Queens, which would require minor modifications for this purpose, including widening the distance between two existing tracks for a service road and installation of hydrants. No impact on LIRR passenger service is anticipated from either the work at Hillside or Vanderbilt Yards (see Chapter 17, "Construction Impacts").

The west end of the improved rail yard would include a new portal (West Portal) which would provide a direct route to and from the LIRR Atlantic Terminal to the storage yard. The new West Portal would also provide an emergency detour route for passenger train egress from the LIRR Atlantic Terminal. Lastly, the new rail yard would be designed to accommodate support for substantial portions of the development that would be built on a platform covering the new rail yard by 2016.

PEDESTRIANS

Full development of the proposed project would result in physical and operational changes to pedestrian facilities at the project site by 2016. The proposed development of an arena and residential and commercial uses on the project site would also result in notable increases in pedestrian activity on analyzed sidewalks, corner areas and crosswalks, many of which are currently lightly utilized. As shown in Figure 12-5 in Chapter 12, "Traffic and Parking," the arena and other proposed buildings would be set back to provide for 20-foot-wide sidewalks along Atlantic and Flatbush Avenues adjacent to the project site (compared with the existing 10- to 12-foot-wide sidewalks). Sidewalks along Dean Street would be maintained at 18 feet in width, as would the sidewalk along 4th Avenue adjacent to Site 5. The sidewalk along Pacific Street adjacent to Site 5 would be maintained at 15 feet in width, while between 6th and Carlton Avenues, Pacific Street would remain flanked by a 14-foot-wide sidewalk on the north side of the street, and an 18-foot-wide sidewalk on the south side of the street. A 20-foot-wide sidewalk would be provided adjacent to the project site along Vanderbilt Avenue.

With reconstruction of the bridge carrying 6th Avenue over the LIRR rail yard, sidewalks along 6th Avenue would be widened from 10 feet to 15 feet in width between Atlantic Avenue and Pacific Street. South of Pacific Street, 6th Avenue would be reconstructed with 15-foot-wide sidewalks and a 40-foot-wide roadway compared with the existing 18-foot-wide sidewalks and 34-foot-wide roadway in order to accommodate two-way traffic flow between Atlantic and Flatbush Avenues. The bridge carrying Carlton Avenue over the LIRR rail yard between Atlantic Avenue and Pacific Street would also be reconstructed, and the sidewalks widened from 10 feet to 16 feet in width.

With implementation of the proposed project, 5th Avenue between Atlantic and Flatbush Avenues, and Pacific Street between Flatbush and 6th Avenues would be permanently closed to accommodate the footprint of the proposed arena. Pacific Street would also be closed between Carlton and Vanderbilt Avenues to accommodate the development of new open space. As a result, the south crosswalk on 5th Avenue at Atlantic Avenue and the north crosswalk on 5th

Avenue at Flatbush Avenue would be replaced by continuous sidewalks, as would crossings of Pacific Street between Flatbush and 6th Avenues, and between Carlton and Vanderbilt Avenues. As the closed section of Pacific Street between Carlton and Vanderbilt Avenues would be replaced by new open space, this corridor would still be accessible to pedestrians. The north and south crosswalks on Flatbush Avenue at 5th Avenue would be realigned perpendicular to the travel lanes, thereby shortening the crossing distance for pedestrians from approximately 78 to 60 feet. Improvements would also include the installation of new high visibility crosswalks and improved lighting at this and other key intersections adjacent to the project site.

In addition to physical changes to pedestrian facilities, full build-out of the proposed project would add new pedestrian demand to analyzed sidewalks, corner areas and crosswalks by 2016. This new demand would include walk-only trips; pedestrians en route to and from subway stations, bus stops, and the LIRR; arena patrons en route to and from off-site parking facilities; and pedestrians diverted as a result of the closures of 5th Avenue and Pacific Street to accommodate development on the arena block. In 2016, new project-generated pedestrian demand would typically be higher at the west end of the site in the vicinity of the arena, than to the east, primarily due to the proximity of the new subway entrance, LIRR terminal, off-site parking facilities, and retail. Much of this new demand would be concentrated on the sidewalks along Atlantic and Flatbush Avenues. New trips added to the east sidewalk on Flatbush Avenue adjacent to the proposed Urban Room subway entrance (location S5 in Figure 13-4) would total 788, 698, 1,048 and 1,162 in the peak 15-minutes during the 8-9 AM, 5-6 PM, 7-8 PM (pre-game) and Saturday 1-2 PM peak hours, respectively. New peak 15-minute trips added to the south sidewalk on Atlantic Avenue adjacent to the arena (S6) would total 645, 925, 615, and 512 in each peak hour, respectively. By contrast, new pedestrian trips along the south sidewalk on Atlantic Avenue east of Carlton Avenue (S12) would range from 310 to 454 in the peak 15-minutes of each analyzed peak hour.

As noted above, sidewalks along 6th Avenue between Pacific Street and Flatbush Avenue would be narrowed from 18 to 15 feet in width to accommodate a widened roadway for two-way traffic flow but widened north of Pacific Street from 10 to 16 feet. The proposed project would add up to 350 new trips to the sidewalks on the west side of 6th Avenue in the peak 15-minutes of each peak hour, and up to 420 new trips to sidewalks on the east side of the avenue. Much of this new demand would be en route to and from the Bergen Street subway station.

Although the new Urban Room subway entrance would allow subway riders en route to and from the project site to access the subway without crossing Atlantic Avenue, substantial numbers of new pedestrians would still use crosswalks along Atlantic and Flatbush Avenues to access bus stops, off-site parking facilities (primarily arena patrons), the LIRR and retail establishments at Atlantic Terminal and Atlantic Center. The highest numbers of new trips would occur on the east crosswalk on Atlantic Avenue at Flatbush Avenue (location X7 in Figure 13-4) where an estimated 79, 225, 780, and 887 new trips would be added in the peak 15-minutes during the weekday 8-9 AM, 5-6 PM, and 7-8 PM; and Saturday 1-2 PM peak hours, respectively. The adjacent south crosswalk on Flatbush Avenue (X6) would experience 179, 354, 522, and 686 new peak 15-minute trips in each peak hour, respectively. One block to the west, the south crosswalk on 4th Avenue at Atlantic Avenue (X3) would experience from 40 to 350 new pedestrian trips in the peak 15 minutes of each peak hour. New pedestrian demand on crosswalks at the east end of the project site would typically be lower than at the west end of the site in the vicinity of the arena. For example, demand on the west crosswalk on Atlantic Avenue at Vanderbilt Avenue (X16) would increase by up to 35 trips in the peak 15 minutes of each

peak hour. Peak 15-minute project-generated trips on the adjacent south crosswalk on Vanderbilt Avenue (X17) would increase by up to 106 in each peak hour.

Also of note are the north crosswalks on 6th and Carlton Avenues at Dean Street (locations X24 and X21, respectively, in Figure 13-4) which would experience increases of up to 745 trips in the peak 15 minutes, primarily during the weekday 7-8 PM and Saturday 1-2 PM pre-game periods when substantial numbers of pedestrians would be en route to the arena from the proposed 1,970-space parking garage that would be located on Block 1129.

Tables 13-50 through 13-52 show total peak 15-minute volumes and conditions at analyzed sidewalks, corner areas and crosswalks in the 2016 future with the proposed project. According to CEQR criteria, a significant impact to a sidewalk in Downtown Brooklyn occurs when the platoon flow rate increases by two or more pedestrians per foot per minute (PFM) over No Build conditions characterized by flow rates over 15 PFM (the threshold of LOS D/E). As shown in Table 13-50, in the 2016 Build condition, the east sidewalk on Flatbush Avenue between Atlantic Avenue and Pacific Street (S5) adjacent to the proposed Urban Room entrance would operate at LOS D under platoon conditions in the Saturday pre-game peak hour and LOS C during other periods. As the flow rate along this sidewalk would remain below 15 PFM in the Saturday pre-game peak hour, it would not be considered significantly adversely impacted under CEQR criteria. All other analyzed sidewalks would operate at an acceptable LOS C or better under platoon conditions in the weekday AM, PM, pre-game and Saturday pre-game peak hours. This includes the sidewalks along 6th Avenue between Pacific Street and Flatbush Avenue which would be narrowed from 18 to 15 feet in width to accommodate two-way traffic flow on 6th Avenue. No significant adverse sidewalk impacts are therefore anticipated as a result of development of the proposed project in 2016.

As noted earlier in the chapter in the discussion of 2016 Build subway conditions, a new 6-foot-wide emergency exit stair from the rehabilitated subpassage at the southern end of the Atlantic Avenue IRT subway station to the Flatbush Avenue sidewalk would be provided adjacent to Site 5 (location S4). At sidewalk level, this stair would be located at curbside and would be surrounded by an enclosed structure. The width of the sidewalk would be narrowed to approximately 11-feet-6-inches adjacent to this proposed stair. However, the sidewalk would continue to operate at an acceptable LOS B or better in all peak hours at this location, and no significant sidewalk impacts are expected to occur adjacent to this proposed stair in the 2016 Build condition.

For crosswalk and corner areas within Downtown Brooklyn, CEQR criteria define a significant adverse impact as a decrease in pedestrian space of one or more square feet per pedestrian (SF/ped) when the No Build condition has an average occupancy of 15 SF/ped (the LOS D/E threshold) or less. A deterioration from LOS C or better to LOS E or F would also be considered a significant impact. As shown in Table 13-51, all analyzed corner areas would operate at an acceptable LOS C or better in all peak hours, and no significant adverse impacts to corner areas are therefore anticipated with development of the proposed project in 2016. As shown in Table 13-52, in the 2016 Build condition, two crosswalks would deteriorate to LOS E from LOS A in the 2016 No Build—the north crosswalk on Carlton Avenue at Dean Street (X21) in the weekday and Saturday pre-game peak hours, and the north crosswalk on 6th Avenue at Dean Street (X24) in the Saturday pre-game peak hour only. These two crosswalks would therefore be significantly adversely impacted during these periods under CEQR criteria. Mitigation for these significant adverse impacts is discussed in Chapter 19, "Mitigation."

Table 13-50
Future With the Proposed Project Sidewalk Conditions - 2016

Facility No.	Location	Effective Width (feet)	Peak 15-Min Volumes				Average Conditions								Platoon Conditions							
							AM		PM		EVE		SAT		AM		PM		EVE		SAT	
			AM	PM	EVE	SAT	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS	PFM	LOS
S1	Pacific St btwn 4th & 5th Avs - north	8.5	42	59	68	113	0.33	A	0.46	A	0.53	A	0.89	A	4.33	A	4.46	A	4.53	A	4.89	A
S2	4th Av btwn Pacific St & Atlantic Av - east	5.0	111	241	120	224	1.48	A	3.21	A	1.60	A	2.99	A	5.48	B	7.21	C	5.60	B	6.99	B
S3	Atlantic Av btwn 4th & Flatbush Avs - south	13.5	215	466	520	637	1.06	A	2.30	A	2.57	A	3.15	B	5.06	B	6.30	B	6.57	B	7.15	C
S4	Flatbush Av btwn Atlantic Av & Pacific St - west	13.5	56	84	90	160	0.28	A	0.41	A	0.44	A	0.79	A	4.28	A	4.41	A	4.44	A	4.79	A
S5	Flatbush Av btwn Atlantic Av & Pacific St - east	13.5	826	741	1,092	1,216	4.04	A	3.66	A	5.39	B	6.00	B	8.08	C	7.66	C	9.39	C	10.00	D
S6	Atlantic Av btwn Ft Greene Pl & S Portland Av - south	13.5	654	931	623	520	3.23	A	4.60	A	3.08	A	2.57	A	7.23	C	8.60	C	7.08	C	6.57	B
S7	6th Av btwn Atlantic Av & Pacific St - west	8.5	194	269	174	174	1.52	A	2.11	A	1.36	A	1.36	A	5.52	B	6.11	B	5.36	B	5.36	B
S8	6th Av btwn Atlantic Av & Pacific St - east	8.5	60	121	108	95	0.47	A	0.95	A	0.85	A	0.75	A	4.47	A	4.95	A	4.85	A	4.75	A
S9	Atlantic Av btwn S Portland & Carlton Avs - south	13.5	489	732	506	502	2.41	A	3.61	A	2.50	A	2.48	A	6.41	B	7.61	C	6.50	B	6.48	B
S10	Carlton Av btwn Atlantic Av & Pacific St - west	9.5	30	49	34	56	0.21	A	0.34	A	0.24	A	0.39	A	4.21	A	4.34	A	4.24	A	4.39	A
S11	Carlton Av btwn Atlantic Av & Pacific St - east	9.5	81	115	71	103	0.57	A	0.81	A	0.50	A	0.72	A	4.57	A	4.81	A	4.50	A	4.72	A
S12	Atlantic Av btwn Carlton & Vanderbilt Avs - south	13.5	336	461	316	334	1.66	A	2.28	A	1.56	A	1.65	A	5.66	B	6.28	B	5.56	B	5.65	B
S13	Vanderbilt Av btwn Atlantic Av & Pacific St - west	13.5	60	91	45	85	0.30	A	0.45	A	0.22	A	0.42	A	4.30	A	4.45	A	4.22	A	4.42	A
S14	Dean St btwn Carlton & Vanderbilt Avs - north	11.5	249	363	274	282	1.44	A	2.10	A	1.58	A	1.63	A	5.44	B	6.10	B	5.58	B	5.63	B
S15	Pacific St btwn S Portland & Carlton Avs - north	7.5	14	19	15	24	0.12	A	0.17	A	0.13	A	0.21	A	4.12	A	4.17	A	4.13	A	4.21	A
S16	Pacific St btwn S Portland & Carlton Avs - south	11.5	20	33	44	60	0.12	A	0.19	A	0.26	A	0.35	A	4.12	A	4.19	A	4.26	A	4.35	A
S17	Dean St btwn 6th & Carlton Avs - north	11.5	225	334	422	468	1.30	A	1.94	A	2.45	A	2.71	A	5.30	B	5.94	B	6.45	B	6.71	B
S18	Dean St btwn Flatbush & 6th Av - north	11.5	396	575	364	302	2.30	A	3.33	A	2.11	A	1.75	A	6.30	B	7.33	C	6.11	B	5.75	B
S19	6th Av btwn Pacific St & Dean St - west	8.5	208	340	338	358	1.63	A	2.67	A	2.65	A	2.81	A	5.63	B	6.67	B	6.65	B	6.81	B
S20	6th Av btwn Pacific St & Dean St - east	8.5	95	145	98	95	0.75	A	1.14	A	0.77	A	0.77	A	4.75	A	5.14	B	4.77	A	4.77	A
S21	6th Av btwn Dean St & Bergen St - west	4.5	135	217	250	295	2.00	A	3.21	A	3.70	A	4.37	A	6.00	B	7.21	C	7.70	C	8.37	C
S22	6th Av btwn Dean St & Bergen St - east	6.5	68	108	210	272	0.70	A	1.11	A	2.15	A	2.79	A	4.70	A	5.11	B	6.15	B	6.79	B
S23	6th Av btwn Bergen St & Flatbush Av - west	12.0	147	206	110	106	0.82	A	1.14	A	0.61	A	0.59	A	4.82	A	5.14	B	4.61	A	4.59	A
S24	6th Av btwn Bergen St & Flatbush Av - east	6.5	50	113	358	434	0.51	A	1.16	A	3.67	A	4.45	A	4.51	A	5.16	B	7.67	C	8.45	C

This table has been revised since the DEIS.

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

EVE - weekday 7-8 PM

SAT - Saturday 1-2 PM

PFM - persons per foot of effective width per minute.

LOS - level of service.

Shading denotes a significant adverse impact based on CEQR criteria.

Table 13-51
Future With the Proposed Project Corner Conditions - 2016

Facility No.	Intersection	Corner	Peak 15-Min Volumes				Average Conditions							
							AM		PM		Pre		SAT	
			AM	PM	EVE	SAT	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS
C1	4th Av @ Pacific St	northeast	29	28	12	173	268.1	A	293.0	A	476.0	A	141.0	A
C2	Atlantic Av @ 4th Av	southeast	326	448	264	251	136.6	A	87.6	A	110.0	A	86.7	A
C3	Flatbush Av @ Atlantic Av	southwest	27	94	56	7	323.9	A	159.0	A	135.2	A	103.4	A
C4	Flatbush Av @ Atlantic Av	southeast	88	157	99	254	184.5	A	86.5	A	52.8	B	39.1	C
C5	Atlantic Av @ 6th Av	southwest	128	58	24	109	59.9	B	46.0	B	49.1	B	43.9	B
C6	Atlantic Av @ 6th Av	southeast	37	62	36	57	96.1	A	67.5	A	79.2	A	77.9	A
C7	Atlantic Av @ Carlton Av	southwest	38	44	94	133	133.5	A	112.7	A	124.7	A	112.3	A
C8	Atlantic Av @ Carlton Av	southeast	55	69	41	48	159.9	A	129.1	A	171.4	A	162.8	A
C9	Atlantic Av @ Vanderbilt Av	southwest	25	48	28	50	730.1	A	400.7	A	725.0	A	357.3	A
C10	Dean St @ Vanderbilt Av	northwest	17	36	19	34	1,025.6	A	542.0	A	810.4	A	438.2	A
C11	Dean St @ Carlton Av	northeast	30	50	27	40	190.6	A	114.6	A	77.5	A	65.5	A
C12	Dean St @ Carlton Av	northwest	26	2	3	0	216.6	A	149.2	A	88.9	A	77.4	A
C13	Dean St @ 6th Av	northeast	11	9	24	13	132.1	A	86.9	A	52.7	A	50.2	A
C14	Dean St @ 6th Av	northwest	119	187	191	151	96.2	A	59.4	A	42.5	B	42.8	B
C15	Flatbush Av @ Dean St	northeast	459	635	323	241	131.3	A	89.5	A	170.1	A	152.4	A

This table has been revised since the DEIS.

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

Pre - weekday 7-8 PM

SAT - Saturday 1-2 PM

SF/Ped - average square feet per pedestrian.

LOS - level of service.

Shading denotes a significant adverse impact based on CEQR criteria.

Table 13-52
Future With the Proposed Project Crosswalk Conditions - 2016

Facility No.	Location	Street Width (feet)	Crosswalk Width (feet)	Peak 15-Min Volumes				Avg. Conditions (w/Conflicting Vehicles)							
								AM		PM		EVE		SAT	
				AM	PM	EVE	SAT	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS	SF/Ped	LOS
X1	4th Av @ Pacific St - east	30.0	8.0	136	115	76	140	34.7	C	144.4	A	216.5	A	116.1	A
X2	4th Av @ Pacific St - north	85.0	14.0	18	25	16	36	1,270.4	A	248.2	A	431.9	A	186.9	A
X3	Atlantic Av @ 4th Av - south	83.0	16.0	78	162	294	421	233.4	A	30.1	C	49.7	B	16.7	D
X4	Atlantic Av @ 4th Av - east	73.0	14.0	129	209	105	161	55.8	B	98.2	A	67.2	A	80.6	A
X5	Flatbush Av @ Atlantic Av - west	127.0	18.0	62	78	32	111	465.7	A	368.9	A	908.1	A	206.1	A
X6	Flatbush Av @ Atlantic Av - south	138.0	20.0	218	439	580	762	56.6	B	26.5	C	18.7	D	20.2	D
X7	Flatbush Av @ Atlantic Av - east	123.0	21.0	119	269	824	982	252.9	A	108.3	A	31.8	C	20.1	D
X8	Atlantic Av @ Ft Greene Pl - west	90.0	12.5	150	229	145	180	60.6	B	35.3	C	61.4	B	91.7	A
X9	Atlantic Av @ Ft Greene Pl - east	90.0	17.5	105	240	246	366	131.9	A	54.1	B	52.7	B	62.0	A
X10	Atlantic Av @ 6th Av - west	111.0	13.5	103	157	235	285	70.0	A	46.6	B	30.2	C	24.0	C
X11	Atlantic Av @ 6th Av - south	40.0	18.0	525	713	632	612	37.6	C	23.5	D	29.0	C	30.5	C
X12	Atlantic Av @ 6th Av - east	112.0	16.0	25	53	50	54	391.4	A	164.6	A	177.1	A	170.4	A
X13	Atlantic Av @ Carlton Av - west	115.0	14.0	43	46	19	37	194.2	A	181.2	A	445.3	A	226.4	A
X14	Atlantic Av @ Carlton Av - south	38.0	18.0	297	356	290	278	78.3	A	65.5	A	77.2	A	81.2	A
X15	Atlantic Av @ Carlton Av - east	115.0	15.0	35	53	36	57	226.5	A	168.2	A	231.0	A	142.9	A
X16	Atlantic Av @ Vanderbilt Av - west	115.0	12.0	31	47	23	42	203.6	A	99.6	A	207.2	A	146.0	A
X17	Atlantic Av @ Vanderbilt Av - south	60.0	12.0	45	87	50	112	266.0	A	119.8	A	253.5	A	94.2	A
X18	Dean St @ Vanderbilt Av - north	68.0	16.0	18	32	16	31	408.0	A	227.3	A	459.7	A	234.8	A
X19	Dean St @ Vanderbilt Av - west	38.0	13.0	36	66	55	101	547.3	A	293.0	A	354.0	A	187.5	A
X20	Dean St @ Carlton Av - east	34.0	9.0	38	65	37	68	261.8	A	156.6	A	273.0	A	146.7	A
X21	Dean St @ Carlton Av - north	38.0	16.0	221	333	605	668	43.2	C	27.2	C	13.1	**E**	11.6	**E**
X22	Dean St @ Carlton Av - west	34.0	13.0	13	33	17	52	1,192.3	A	464.6	A	909.7	A	291.8	A
X23	Dean St @ 6th Av - east	34.0	12.0	58	90	107	110	184.8	A	111.7	A	94.9	A	90.5	A
X24	Dean St @ 6th Av - north	40.0	16.0	289	446	722	761	45.9	B	27.9	C	15.5	D	14.5	**E**
X25	Dean St @ 6th Av - west	34.0	12.0	92	160	203	203	114.8	A	65.8	A	48.4	B	48.4	B
X26	Flatbush Av @ Dean St - east	65.0	12.0	39	70	45	114	446.7	A	250.8	A	396.7	A	148.6	A
X27	Flatbush Av @ Dean St - north	95.0	14.0	53	93	57	114	190.0	A	105.7	A	176.2	A	85.1	A
X28	Flatbush Av @ 5th Av - south	60.0	12.0	46	76	72	111	193.3	A	114.3	A	120.7	A	76.0	A
X29	Flatbush Av @ 5th Av - north	60.0	14.0	40	68	61	111	264.8	A	152.7	A	171.0	A	90.7	A

This table has been revised since the DEIS.

Notes:

AM - weekday 7-8 AM

PM - weekday 5-6 PM

EVE - weekday 7-8 PM

SAT - Saturday 1-2 PM

SF/Ped - average square feet per pedestrian.

LOS - level of service.

Shading denotes a significant adverse impact based on CEQR criteria.

As previously discussed, much of the project-generated demand on crosswalks X21 and X24 in the pre-game periods would be en route to the arena from the proposed 1,970-space parking garage that would be located on Block 1129. As many of these same pedestrians would traverse these crosswalks en route back to the parking garage on Block 1129 at the conclusion of a basketball game at the arena, these two crosswalks may be similarly significantly adversely impacted in the weekday and Saturday post-game periods.

All remaining analyzed crosswalks would operate at LOS D or better with more than 15 SF/ped in each peak hour, and would not be significantly adversely impacted by development of the proposed project in 2016.

As demonstrated in Tables 12-27 and 12-28 in Chapter 12, "Traffic and Parking," in 2016 the proposed project's residential mixed-use variation would generate an overall lower level of weekday travel demand than the commercial mixed-use variation analyzed as the RWCS for the weekday pedestrian analyses. There would be a total of approximately 1,842 fewer person trips by all modes in the AM peak hour, 2,099 fewer trips in the PM, and 104 fewer in the 7-8 PM pre-game peak hour. As this substantially lower level of overall travel demand would translate into a correspondingly lower level of pedestrian activity on sidewalks, corner areas, and crosswalks in the vicinity of the project site, no new significant adverse impacts to these pedestrian facilities are expected in the weekday peak hours under the proposed project's residential mixed-use variation in 2016.

For the Saturday 1-2 PM pre-game peak hour, the residential mixed-use variation was analyzed as the RWCS as it would generate approximately 540 more person trips than the commercial mixed-use variation during this period. The commercial mixed-use variation, with its lower overall level of travel demand in this period, is therefore not expected to result in new significant adverse pedestrian impacts. As the impacts to crosswalks X21 and X24 in the weekday and Saturday pre-game (and potentially post-game) periods would result mostly from trips en route between the arena and the proposed 1,970-space parking garage that would be located on Block 1129, these impacts would likely occur under both project variations as arena travel demand is the same in each.

It should be noted that the location of an area being assessed for pedestrian impacts is an important consideration under *CEQR Technical Manual* criteria. To reflect some sensitivity to local area's current pedestrian usage levels, the *CEQR Technical Manual* specifies one set of impact criteria for the Manhattan CBD and Downtown Brooklyn, and a second more stringent set of criteria for other areas of the City. Given the proposed project's location on the periphery of Downtown Brooklyn adjacent to a major transit terminal and retail center, the analyses of potential pedestrian impacts are based on the *CEQR Technical Manual* criteria specified for Downtown Brooklyn. However, existing pedestrian densities in the vicinity of much of the project site are relatively low (the exception being the west end of the site near the intersections of Flatbush, Atlantic and 4th Avenues). The site also borders residential neighborhoods on the south. The potential for impacts under the non-Downtown Brooklyn CEQR criteria was therefore considered. Under these criteria, a significant impact to a sidewalk occurs when the platoon flow rate increases by two or more pedestrians PFM for No Build conditions characterized by flow rates over 13 PFM (mid-LOS D). For crosswalk and corner areas, a significant adverse impact is defined as a decrease in pedestrian space of one or more square feet per pedestrian (SF/ped) when the No Build condition has an average occupancy under 20 SF/ped (the mid-LOS D). Increments of one square foot or more applied to No Build conditions within

LOS D or any deterioration from LOS C or better to LOS D may be perceptible, but not necessarily significant impacts.

As shown in Tables 13-30 and 13-50, with the proposed project, no analyzed sidewalk would operate with more than 10 PFM in either 2010 or 2016. As this is below the 13 PFM (mid-LOS D) threshold for a significant sidewalk impact under the non-Downtown Brooklyn *CEQR Technical Manual* criteria, no new significant adverse sidewalk impacts would occur based on these criteria. Similarly, as shown in Tables 13-31 and 13-51, as all analyzed corner areas would continue to operate at LOS C or better in both 2010 and 2016 with the proposed project, no new significant adverse impacts to corner areas would result based on these criteria.

As shown in Tables 13-32 and 13-52, in addition to the north crosswalk on Carlton Avenue at Dean Street (X21) and the north crosswalk on 6th Avenue at Dean Street (X24) which would operate at LOS E in one or more peak hours, four additional crosswalks would operate at LOS D in one or more peak hours in 2010 and/or 2016. These include the south crosswalk on 4th Avenue at Atlantic Avenue (X3); the south crosswalk on Flatbush Avenue at Atlantic Avenue (X6); the east crosswalk on Atlantic Avenue at Flatbush Avenue (X7); and the south crosswalk on 6th Avenue at Atlantic Avenue (X11). All of these crosswalks will operate at LOS B or better under No Build conditions. The deteriorations in the levels of service to LOS D from LOS A or B in the No Build would likely be perceptible (given the low existing volumes on some of these crosswalks), but would not be considered significant adverse impacts under the non-Downtown Brooklyn criteria.

As shown in Table 13-52, the north crosswalk on Carlton Avenue at Dean Street (X21) and the north crosswalk on 6th Avenue at Dean Street (X24), would both deteriorate from LOS A in the No Build to LOS E in the 2016 Build condition in one or more peak hours, with occupancies under 20 SF/ped and incremental decreases of more than one square foot per person. Both of these crosswalks would therefore be considered significantly adversely impacted under the non-Downtown Brooklyn impact criteria, as they are for the criteria specified for Downtown Brooklyn.

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