Chapter 21: Mitigation

A. INTRODUCTION

In accordance with the 2020 *City Environmental Quality Review (CEQR) Technical Manual*, where significant adverse impacts have been identified, mitigation measures must be examined that eliminate or reduce the impacts to the fullest extent practicable. These mitigation measures are examined and described below. Measures to further mitigate adverse impacts have been evaluated between the Draft Environmental Impact Statement (DEIS) and Final EIS (FEIS). This chapter has been updated to include more complete information and commitments on all practicable mitigation measures to be implemented with the Proposed Actions.

PRINCIPAL CONCLUSIONS

The Proposed Actions would result in significant adverse impacts related to community facilities (early childhood programs), open space, shadows, historic and cultural resources (architectural and archaeological resources), transportation (traffic, pedestrians, and transit), air quality, and construction (noise). Mitigation measures being proposed to address those impacts, where feasible and/or practical, are discussed below. If no possible mitigation can be identified, an unavoidable significant adverse impact would result.

COMMUNITY FACILITIES

The Proposed Actions would result in a significant adverse impact on publicly funded early childhood programs. With the Proposed Actions, child care facilities would operate over capacity by approximately 1,700 slots and exhibit an increase in the utilization rate of approximately 25 percentage points over the No Action condition.

Possible mitigation measures for this significant adverse impact may include provision of suitable space in projected developments for early childhood programs, provision of suitable locations within the study area that are also within a reasonable distance (at a rate affordable to New York City Department of Education [DOE] providers), or funding/making program or physical improvements to support adding capacity to existing facilities if determined feasible through consultation with DOE's Division of Early Childhood Education. Between the DEIS and the FEIS, feasible and practical mitigation measures were not identified. Absent the implementation of mitigation measures, the Proposed Actions would have an unmitigated significant adverse impact on publicly funded early childhood programs.

OPEN SPACE

The Proposed Actions would result in a significant adverse impact associated with the active open space ratio. Measures being considered by DCP to mitigate the significant adverse open space impact include improvements to existing parks to allow for expanded programming and enhanced usability, and making New York City public school playgrounds accessible to the community after school hours through the Schoolyards to Playgrounds Program. These measures were explored by DCP in consultation with the Department of Parks and Recreation (NYC Parks) and the Department of Education

(DOE) between the DEIS and FEIS, and a partial mitigation measure was identified through the Schoolyards to Playground program, providing use of an additional 22,000 sf of active open space at PS 32 in the open space study area. The addition of PS32 would increase the usability of and enhance open space resources for the existing and additional population introduced by the Proposed Actions, and would partially mitigate the significant adverse open space impact. In addition, as discussed in Chapter 4, "Open Space," the DEIS identified a direct significant adverse shadow impact to the Douglass and Degraw Pool in Thomas Greene Playground. Mitigation measures for the significant adverse impact shadow impact were explored between the Draft and Final EIS and partial mitigation was identified; this is discussed further below under "Shadows."

SHADOWS

The Proposed Actions would result in significant adverse impacts to two sunlight-sensitive resources: Our Lady of Peace Church, located on Carroll Street between Whitwell and Denton Places, and the Douglass and Degraw Pool in Thomas Greene Playground. With regard to the church, project-generated incremental shadows would fall on some of the stained-glass windows for a portion of the day, and the extent and/or duration of the shadows would be substantial enough to significantly affect the potential enjoyment or appreciation by the public of the church's interior spaces. With regard to the Douglass and Degraw Pool, project-generated incremental shadows would cover most of the large main pool and the small kiddie pool for approximately two hours in the late afternoon of the May 6/August 6 analysis day, significantly impacting the user experience of the pool on this analysis day.

Possible measures that could mitigate significant adverse shadow impacts to sunlight-sensitive architectural resources may include artificial lighting and modifications to the height, shape, size, or orientation of proposed developments that cause or contribute to the significant adverse shadow impact. DCP, as lead agency, explored possible mitigation measures between publication of the DEIS and FEIS. No feasible measures were identified to mitigate the shadow impact on Our Lady of Peace Church, and therefore this significant adverse shadows impact remains unmitigated.

Potential measures that could mitigate the significant adverse shadow impact to Douglass and Degraw Pool may include modifications to the height, shape, size, or orientation of proposed developments that cause or contribute to the significant adverse shadow impact. In addition, Thomas Greene Playground may be renovated in the No Action condition. Currently, the programming and layout of the reconstructed park is not confirmed, and the future placement of the Douglass and Degraw Pool is unknown. DCP explored potential mitigation measures between the DEIS and FEIS, and identified bulk modifications to adjacent Potential Development Site W, which are presented in the new CPC Modifications Alternative. The changes in the tower height significantly reduce the shadows cast on the resources, and the with that modification in place the significant adverse impact would be considered partially mitigated.

HISTORIC AND CULTURAL RESOURCES

The Proposed Actions would result in direct and indirect significant adverse impacts to both architectural and archaeological resources, as described below.

Architectural Resources

The Proposed Actions would result in a significant adverse impact to architectural resources as a result of demolition and adjacent construction. The Proposed Actions would result in significant adverse direct impacts to the State and National Registers of Historic Places (S/NR)-eligible Gowanus Canal Historic District and the Gowanus Canal bulkheads as a result of the demolition of contributing

resources to the historic district. In addition, potential significant adverse impacts would occur to contributing resources in the S/NR-eligible Gowanus Canal Historic District as a result of adjacent construction located within 90 feet of projected or potential development sites, and such impacts may also result to three other S/NR-eligible resources as a result of adjacent construction: Our Lady of Peace Church Complex, the Gowanus Canal Flushing Tunnel, and the IND Subway Viaduct.

The significant adverse impacts as a result of demolition would be unavoidable, as the contributing buildings and Gowanus Canal bulkheads are privately owned and could be demolished and modified to allow for developments constructed as-of-right under the Proposed Actions. The resources identified above that could experience construction-related damage are not S/NR-listed or designated New York City Landmarks (NYCL) and would therefore, as discussed in more detail below, not be afforded the added special protections under New York City Department of Buildings (DOB) requirements.

Archaeological Resources

The Proposed Actions would result in construction activity on 54 projected or potential development sites that were identified as potentially archaeologically significant by LPC. A Phase 1A Archaeological Documentary Study of those sites identified all or portions of 46 potential and projected development sites as archaeologically sensitive. In order to mitigate the significant adverse impact on archaeological resources, additional archaeological analysis would be required on each of the development sites prior to redevelopment. However, there are no mechanisms currently in place to ensure that such archaeological analysis would occur on private property subsequent to the rezoning, and such analysis can only be legally required on City-owned properties. Only one of the 46 archaeologically sensitive sites (Projected Development Site 47 on Block 471, Lot 100) is currently owned by the City of New York. With the completion of additional archaeological analyses as necessary and continued consultation with LPC, the Proposed Actions would not result in significant adverse impacts on Projected Development Site 47. However, none of the remaining 45 development sites identified as archaeologically sensitive are under City control. Future development on these properties would occur on an as-of-right basis and there would be no mechanism available to require archaeological analysis to determine the presence of archaeological resources; therefore, these impacts would be unmitigated.

TRANSPORTATION

As described below, the Proposed Actions would result in significant adverse impacts to: a) vehicular traffic at 43 intersections, b) four stairs and a fare array at one subway station, and c) pedestrians at nine sidewalks and four crosswalks. Mitigation measures that could address the significant adverse transportation impacts are discussed below.

Traffic

As described in greater detail in Chapter 14, "Transportation," the Proposed Actions would result in significant adverse traffic impacts at 43 study area intersections (31 signalized and 12 unsignalized) during one or more analyzed peak hours; specifically 60 lane groups at 37 intersections during the weekday AM peak hour, 31 lane groups at 23 intersections during the midday peak hour, 60 lane groups at 36 intersections during the PM peak hour, and 43 lane groups at 33 intersections during the Saturday peak hour. Implementation of traffic engineering improvements such as signal timing changes, the installation of new traffic signals, and modifications to lane striping and curbside parking regulations are being proposed and would provide mitigation for many of the anticipated traffic impacts. These proposed traffic engineering improvements are subject to review and approval by the New York City Department of

Transportation (DOT). Absent the identification and implementation of feasible mitigation measures that would mitigate the traffic impacts to the greatest extent practicable, the Proposed Actions would result in unmitigated significant adverse traffic impacts.

Assuming all the proposed mitigation measures were implemented, **Table 21-1** shows that significant adverse impacts would be fully mitigated at 10 lane groups in the weekday AM peak hour, 13 lane groups in the midday peak hour, 12 lane groups in the weekday PM peak hour, and 12 lane groups in the Saturday peak hour. Intersections where all impacts would be fully mitigated would total 7, 12, 9, and 11 during these same periods, respectively. **Table 21-2** provides a more detailed summary of the intersections and lane groups that would have unmitigated significant adverse traffic impacts. In total, impacts to one or more lane groups would remain unmitigated in one or more peak hours at 34 intersections.

Table 21-1
Summary of Lane Groups/Intersections with Significant Adverse Traffic Impacts

Peak Hour	Lane Groups/ Intersections Analyzed	Lane Groups/ Intersections With No Significant Impacts	Lane Groups/ Intersections With Significant Impacts	Mitigated Lane Groups/ Intersections	Unmitigated Lane Groups/ Intersections
Weekday AM	198/60	138/23	60/37	10/7	50/30
Weekday Midday	198/60	167/37	31/23	13/12	18/11
Weekday PM	198/60	138/24	60/36	12/9	48/27
Saturday	198/60	155/27	43/33	12/11	31/22

Table 21-2
Lane Groups With Unmitigated Significant Adverse Traffic Impacts

	Peak Hour			
	Weekday AM	**Weekday Midday**	**Weekday PM**	**Saturday**
Signalized Intersections				
Court Street & 4th Place	WB-TR	---	---	---
Smith Street & 3rd Street	WB-R	WB-R	WB-R	WB-R
Smith Street & Union Street	---	---	NB-TR	NB-TR
Smith Street & 9th Street	WB-R, NB-LT	---	---	---
Hoyt Street & Union Street	EB-TR	---	EB-TR	---
Bond Street & Baltic Street	NB-LTR	---	NB-LTR	---
Bond Street & Union Street	NB-TR	---	EB-LT	---
Bond Street & 3rd Street	EB-LT, WB-TR, NB-LTR	---	WB-TR, NB-LTR	WB-TR
3rd Avenue & Union Street	EB-LTR, WB-LR, NB-TR	WB-LR, NB-TR	WB-LR, NB-TR	WB-LR, NB-TR
3rd Avenue & Carroll Street	EB-LTR	EB-LTR	EB-LTR	EB-LTR
3rd Avenue & 1st Street/Driveway	WB-LTR	---	WB-LTR, SB-TR	WB-LTR
3rd Avenue & 3rd Street	EB-L, EB-TR, WB-LTR, NB-L, SB-L, SB-TR	EB-L, EB-TR, WB-LTR, NB-L, SB-L, SB-TR	EB-L, EB-TR, WB-LTR, NB-L, SB-L, SB-TR	EB-L, EB-TR, WB-LTR, NB-L, SB-TR, SB-L
3rd Avenue & 9th Street	EB-L, WB-TR, SB-TR	NB-L, SB-TR	WB-TR, NB-L, NB-TR, SB-TR	NB-L, SB-TR
3rd Avenue & Prospect Avenue	SB (on-ramp)-TR	---	SB (on-ramp)-TR	SB (on-ramp)-TR
4th Avenue & Union Street	EB-LTR, WB-LTR	---	EB-LTR	SB-L
4th Avenue & Carroll Street	---	---	---	SB-L
4th Avenue & 3rd Street	EB-LTR, NB-TR, SB-TR	---	EB-LTR, NB-L, SB-TR	---
4th Avenue & 9th Street	EB-LT	---	EB-LT, SB-TR	---
4th Avenue & 17th Street	EB-LTR, SB-L	EB-LTR	EB-LTR, NB-T, SB-L	EB-LTR, SB-L

Table 21-2 (cont'd)
Lane Groups With Unmitigated Significant Adverse Traffic Impacts

	Peak Hour			
	Weekday AM	**Weekday Midday**	**Weekday PM**	**Saturday**
Signalized Intersections (continued)				
5th Avenue & Union Street	WB-LTR	---	NB-LTR	---
Atlantic Avenue & Bond Street	NB-LTR	---	NB-LTR	NB-LTR
Atlantic Avenue & Nevins Street	WB-LT, SB-TR	WB-LT	EB-TR, SB-TR, WB-LT	SB-TR, WB-LT
Atlantic Avenue & 3rd Street	WB-T, NB-LTR	---	NB-LTR---	---
Atlantic Avenue & 4 Avenue	WB-T, NB-LR, SB-LT	---	EB-T, WB-T, NB-LR, SB-LT	SB-LT
Unsignalized Intersections				
Court Street & Luquer Street	EB-TR	---	EB-TR	EB-TR
Smith Street & 4th Street/5th Place	NB-LT	---	---	---
Smith Street & Luquer Street	NB-TR	---	---	NB-TR
Smith Street & Huntington Street	EB-LT	EB-LT	EB-LT	EB-LT
Hoyt Street & Sackett Street	WB-LT	---	---	---
Hoyt Street & 3rd Street	WB-LT	---	---	---
Hoyt Street & 4th Street	EB-TR	EB-TR	EB-TR	EB-TR
Bond Street & Butler Street	WB-R	WB-R	WB-R	WB-R
Nevins Street & Degraw Street	---	WB-LT	WB-LT	WB-LT
Nevins Street & Carroll Street	---	---	SB-LR	SB-LR

Notes: NB—northbound, SB—southbound, EB—eastbound, WB—westbound L—left-turn, T—through, R—right-turn

Transit

Subway Stations

The Proposed Actions would result in significant impacts to two street stairs and one fare array in the AM peak hour and two stairs in the PM peak hour at the Union Street (R) subway station on the 4th Avenue Line. Stairway widening is the most common form of mitigation for significant stairway impacts, provided that New York City Transit (NYCT) deems it practicable (i.e., that it is worthwhile to disrupt service on an existing stairway to widen it and that a given platform and sidewalk affected by such mitigation are wide enough to accommodate the stairway widening). Another potential mitigation measure would be to add vertical capacity (i.e., adding an elevator, escalator, or additional stairway) in the vicinity of the impacted stairway. Increasing the number of turnstiles is a common form of mitigation for significant fare array impacts. Absent the identification and implementation of feasible mitigation measures that would mitigate the AM and PM peak hour subway stair and fare array impacts at the Union Street (R) subway sation to the greatest extent practicable, the Proposed Actions would result in unmitigated significant adverse subway station impacts.

Subway Line Haul

In the 2035 future with the Proposed Actions, northbound F trains are expected to be operating over capacity in the AM peak hour, and the Proposed Actions would increase this demand by an average of approximately 13.98 passengers per car. This significant adverse impact could be fully mitigated by the addition of two northbound F trains during the AM peak hour. As standard practice, NYCT routinely conducts periodic ridership counts and adjusts subway frequency to meet its service criteria, within fiscal and operating constraints which would mitigate this impact. In the absence of these measures, this impact would remain unmitigated.

Pedestrians

Incremental demand from the Proposed Actions would significantly adversely impact nine sidewalks and four crosswalks in one or more analyzed peak hours. There would be no significant impacts to any corner areas in any period. Recommended mitigation measures consisting of the relocation/removal of impediments to sidewalk flow and the widening of crosswalks would fully mitigate the impacts to three sidewalks and all four crosswalks. Implementation of the proposed mitigation measures would be subject to review and approval by DOT, as well as NYC Parks if a street tree is to be removed. Absent the identification and implementation of additional feasible mitigation measures that would mitigate the pedestrian impacts to the greatest extent practicable, the Proposed Actions would result in unmitigated significant adverse pedestrian impacts.

AIR QUALITY

The Proposed Actions would result in a significant adverse mobile source air quality impact at the intersection of Smith Street and 5th Street, which is predicted to exceed the annual *de minimis* criterion for fine particulate matter less than 2.5 microns in diameter ($PM_{2.5}$), defined as an incremental increase greater than 0.1 micrograms per cubic meter ($\mu g/m^3$).

The intersection of Smith Street and 5th Streets would experience a significant adverse traffic impact. The proposed mitigation measures for the impact is the installation of a traffic signal, and providing an additional turning lane by installing "No Stopping Anytime" restrictions along the east and west curbs of Smith Street and on the south curb of 5th Street to the east of Smith Street. As discussed below, the results of a mobile source analysis with the proposed traffic mitigation measures developed to reduce congestion and increase speeds along corridors in the affected area indicate that the maximum annual incremental concentration of $PM_{2.5}$ would be significantly lower than the With Action condition, and would not exceed the *de minimis* criteria for $PM_{2.5}$. Therefore, the incorporation of the traffic mitigation measures would mitigate the significant adverse air quality impact.

CONSTRUCTION

Chapter 20, "Construction," concludes that the Proposed Actions would have the potential to result in significant adverse construction noise impacts throughout the Project Area.

Because the analysis is based on construction phases, it does not capture the natural daily and hourly variability of construction noise at each receptor. The level of noise produced by construction fluctuates throughout the days and months of the construction phases, while the construction noise analysis is based on the worst-case time periods only, which is conservative. The noise analysis results show that the predicted noise levels could exceed the *CEQR Technical Manual* impact criteria throughout the Project Area. The analysis is based on a conceptual site plan and construction schedule. It is possible that the actual construction may be of less magnitude, or that construction on multiple projected development sites may not overlap, in which case construction noise would be less intense than the analysis predicts.

Proposed mitigation could include a variety of source and path controls. Between publication of the DEIS and FEIS, all possible mitigation measures to address the identified construction noise impacts were explored. No additional practicable or feasible mitigation measures were identified, and therefore the significant adverse construction noise impacts would remain unavoidable.

B. COMMUNITY FACILITIES

EARLY CHILDHOOD PROGRAMS

Based on the *CEQR Technical Manual* early childhood multipliers, the development would result in approximately 615 children under the age of six who would be eligible for publicly funded early childhood programs. With the addition of these children, early childhood programs in the study area would operate at 169.3 percent utilization with a deficit of 1,700 slots. Total enrollment in the study area would increase to 4,159 children, compared with a capacity of 2,459 slots, which represents an increase in the utilization rate of approximately 25 percentage points over the No Action condition.

As noted above, the *CEQR Technical Manual* guidelines indicate that a demand for slots greater than the remaining capacity of early childhood programs and an increase in demand of five percentage points of the study area capacity could result in a significant adverse impact. In the With Action condition, early childhood programs in the study area would operate over capacity by approximately 1,700 slots and exhibit an increase in the utilization rate of approximately 25 percentage points as compared with the No Action condition. Therefore, the Proposed Actions would result in a significant adverse impact on early childhood programs.

Several factors may reduce the number of children in need of slots for publicly funded early childhood programs slots in DOE-contracted early childhood facilities. Families in the study area could make use of alternatives to publicly funded early childhood programs. There are slots at homes licensed to provide family-based early childhood programs that families of eligible children could elect to use instead of public early childhood programs. As noted above, these facilities provide additional slots in the study area but are not included in the quantitative analysis. Parents of eligible children are also not restricted to enrolling their children in child care facilities in a specific geographical area and could use public early childhood programs outside of the study area.

Possible mitigation measures for this significant adverse impact were explored, including provision of suitable space on-site for a child care center, provision of a suitable location off-site and within a reasonable distance (at a rate affordable to DOE providers), or funding or making program or physical improvements to support adding capacity to existing facilities if determined feasible through consultation with DOE's Division of Early Childhood Education, or providing new early childhood programs within or near the project sites. As a City agency, DOE does not directly provide new child care facilities, instead it contracts with providers in areas of need. DOE is also working to create public/private partnerships to facilitate the development of new early childhood programs where there is an area of need. As part of that initiative, DOE may be able to contribute capital funding, if it is available, towards such projects to facilitate the provision of new programs.

C. OPEN SPACE

The Proposed Actions would result in a significant adverse impact associated with the active open space ratio. In addition, the Proposed Actions would result in a direct significant adverse shadow impact to the Douglass and Degraw Pool in Thomas Greene Playground. Mitigation measures for the significant adverse impact related to incremental shadow are discussed below under Section D, "Shadows."

Open spaces within this study area are concentrated in the residential neighborhoods of Park Slope, Boerum Hill, and—to a lesser extent—Carroll Gardens. To the south of the non-residential

study area, there are a number of open spaces that follow the route of the Prospect Expressway. These open spaces include the Purple Playground and Prospect Expressway Park, often simply labeled as "Park" on NYC Parks signage. These open spaces are primarily passive and include seating areas and planted landscaping. The existing non-residential study area includes a total of 17.30 acres of open space, of which approximately 5.83 acres (39 percent) are utilized for passive recreation. A total of 31,599 people work and 10,551 residents live within the non-residential study area. The combined residential and non-residential population is estimated to be 102,150 persons. The non-residential study area has a passive open space ratio of 0.184 acres per 1,000 workers, which is above the City's guideline of 0.15 acres per 1,000 workers. For informational purposes, the combined worker and resident passive open space ratio is 0.057 acres per 1,000 residents. As noted in the *CEQR Technical Manual*, residents are more likely to travel farther to reach parks and recreational facilities and they use both passive and active open spaces.

The Proposed Actions would result in 5.46 acres of new publicly accessible open spaces including a new approximately 1.48-acre park at the Gowanus Green Site and approximately 3.98 acres of new publicly accessible waterfront open space. As a result, within the non-residential study area the total public open space would increase from 18.90 acres in the No Action condition to 24.36 acres in the With Action condition. In the residential study area, total publicly accessible open space would increase from 57.42 acres in the No Action condition to 62.88 acres in the With Action condition. However, the active open space ratio would decrease by approximately 2.70 percent over the No Action condition. Therefore, the Proposed Actions would result in a significant adverse impact to open space primarily due to the low active open space ratio.

The reduction in the active open space ratio would most likely affect adults and younger people. These populations use court facilities (e.g., basketball courts) and sports fields, such as football or soccer fields. They may also use facilities that provide more individualized recreation, such as fitness stations, or cycle paths and other grade-separated jogging paths. The quantitative assessment indicates that the residential study area population is currently underserved in active open space—a trend expected to continue in the future with or without the Proposed Actions.

Measures were considered to mitigate the significant adverse open space impact include making improvements to existing parks to allow for expanded programming and enhanced usability, and making New York City public school playgrounds accessible to the community after school hours through the Schoolyards to Playgrounds program. The Department of Parks and Recreation's (NYC Parks) Schoolyards to Playgrounds Program converts elementary and middle school schoolyards to community playgrounds for use by the general public after school hours, on the weekends, and during school breaks. These measures were explored by DCP in consultation with (NYC Parks and the Department of Education (DOE) between the DEIS and FEIS, and a partial mitigation measure was identified through the Schoolyards to Playground program, providing use of an additional 22,000 sf of active open space at PS 32 in the open space studyarea.

D. SHADOWS

As described in Chapter 6, "Shadows," the Proposed Actions would result in significant adverse shadow impacts to two sunlight-sensitive resources: Our Lady of Peace Church, located on Carroll Street between Whitwell and Denton Places, and the Douglass and Degraw Pool located in Thomas Greene Playground.

OUR LADY OF PEACE CHURCH

The Our Lady of Peace Church Complex is an S/NR-eligible building complex located along Carroll Street between Whitwell and Denton Places. The complex includes a midblock church flanked by a school to the west and a rectory and war memorial to the east. The church, built between 1902 and 1904, was constructed in the Romanesque Revival style. Sunlight-sensitive features include 11 stained-glass windows on the front (north) façade of the church, six stained-glass windows on the east façade, and six on the west façade. Further, there is a rounded, arched chapel at the church's back (south) that also has five stained-glass windows that open into the sanctuary space. The qualities that the stained-glass windows impart to the sanctuary interior are a major aspect of the overall architectural intent of such Romanesque Revival-style structures.

The Proposed Actions would result in project-generated incremental shadows that would reach a maximum of six of the church's 23 stained-glass windows at any one time, but would result in the complete elimination of direct sunlight on the stained-glass windows for approximately 37 minutes on the morning of the March 21/September 21 analysis day and for approximately 55 minutes on the morning of the December 21 analysis day. The total duration of incremental shadow on the morning of the December 21 analysis day would be approximately 2 hours and 19 minutes, including the 55-minute period when all remaining direct sunlight would be eliminated. The long duration and at times complete elimination of direct sun would significantly affect the public's enjoyment or appreciation of the church interior during this time, especially given that winter mornings are typically when the church holds holiday services. Therefore the incremental shadow constitutes a significant adverse shadow impact. Incremental shadow would fall on the church windows on the spring, summer, and fall analysis days as well, but the extent and duration would be limited.

The *CEQR Technical Manual* identifies potential mitigation strategies to reduce or eliminate, to the greatest extent practicable, adverse shadow impacts to sunlight-sensitive architectural features, including changes to the bulk or configuration of projected or potential development sites that cause or contribute to the adverse impact. For adverse impacts to stained-glass windows, potential mitigation measures could also include the provision of artificial lighting to simulate the effect of direct sunlight. DCP, as lead agency, explored possible mitigation measures between publication of the DEIS and FEIS. No feasible measures were identified to mitigate the shadow impact on Our Lady of Peace Church, and therefore this significant adverse shadows impact remains unmitigated.

DOUGLASS AND DEGRAW POOL IN THOMAS GREENE PLAYGROUND

Thomas Greene Playground occupies the entire block bounded by Douglass Street, Degraw Street, 3rd Avenue, and Nevins Street. It currently contains seating areas, planted landscaping, a playground with spray showers, handball courts, basketball courts, a skate park, and the Douglass and Degraw Pool—which is open in the summer months only. In the No Action condition (as well as the With Action condition) Thomas Greene Playground is anticipated to be substantially renovated, as discussed in Chapter 5, "Open Space." Currently, the programming and layout of the reconstructed park is not confirmed. The analysis in Chapter 6, "Shadows," therefore focused on identifying the extent and duration of incremental shadows on various areas of the park, and how potential features and vegetation might fare in the resulting shade conditions. However, given the heavy use of the Douglass and Degraw Pool in the summer months, the analysis included a consideration of incremental shadow effects on the pool at its current location in the western part of the park, on the May 6/August 6 and June 21 analysis days. The facility includes two pools—a large main pool and a small "kiddie" pool—and a concrete deck surrounding them. The pool is open in the summer from 11:00 AM to 7:00 PM Eastern Daylight Time (EDT), with a break for

pool cleaning between 3:00 PM and 4:00 PM EDT. The pool's operating hours in Eastern Standard Time (which is used throughout the analysis per CEQR guidelines) are from 10:00 AM to 6:00 PM, with a cleaning break from 2:00 PM to 3:00 PM.

On the May 6/August 6 analysis day the pool would be entirely in sun from the time it opens until 3:15 PM, when incremental shadow would enter from the west. From 4:00 PM to closing time at 6:00 PM (7:00 PM EDT), both the main pool and the kiddie pool would be mostly covered by incremental shadow. This substantial extent and duration of new shadow would significantly impact the user experience of the pools on this analysis day. Incremental shadow would fall on a portions of the pool in the late afternoon of the June 21 analysis day, but the extent would be limited and large areas of the pool would remain in sun during that time. The *CEQR Technical Manual* identifies potential mitigation strategies to reduce or eliminate, to the greatest extent practicable, adverse shadow impacts to active as well as passive recreational features in parks and open spaces, including changes to the bulk or configuration of projected or potential development sites that cause or contribute to the adverse impact. Other mitigation measure include relocating the affected feature within the open space or to another nearby location if feasible. However, the feasibility of this option is not yet known, and is contingent upon the renovation of Thomas Greene Playground. As mentioned above, Thomas Greene Playground may be renovated in the No Action condition. Currently, the programming and layout of the reconstructed park is not confirmed. If relocation is a feasible option given scheduling and programming associated with the park renovations, relocating the pool in the northern half of the park, which would receive much less shadow than the southern half throughout the summer months, could potentially mitigate this significant adverse impact. DCP explored potential mitigation measures between the DEIS and FEIS, and identified bulk modifications to adjacent Potential Development Site W, which are presented in the new CPC Modifications Alternative (see Chapter 22, Alternatives). The changes in the tower height significantly reduce the shadows cast on the resources, and the with that modification in place the significant adverse impact would be considered partially mitigated.

E. HISTORIC AND CULTURAL RESOURCES

The Proposed Actions would result in direct and indirect significant adverse impacts to both archaeological and architectural resources. This includes direct and indirect impacts on the S/NR-eligible Gowanus Canal Historic District, construction-related impacts to contributing properties located within the boundaries of the district from adjacent projected construction, and construction-related impacts on properties that were determined to be archaeologically sensitive.

ARCHITECTURAL RESOURCES

The Proposed Actions would result in significant direct adverse impacts to the S/NR-eligible Gowanus Canal Historic District as a result of the demolition of contributing resources to the historic district. These significant adverse impacts would be unavoidable, as the contributing buildings and Gowanus Canal bulkheads are privately owned and would be demolished and modified to allow for developments constructed as-of-right subsequent to approval of the Proposed Actions. Potential mitigation measures for the significant adverse shadow impact on the S/NR-eligible Our Lady of Peace Church are discussed above under "Shadows."

Potential significant adverse impacts would occur to contributing resources in the S/NR-eligible Gowanus Canal Historic District as a result of adjacent construction located within 90 feet of projected or potential development sites, and such impacts may also result to three other S/NR-eligible resources as a result of adjacent construction: Our Lady of Peace Church Complex, the Gowanus Canal Flushing Tunnel, and the IND Subway Viaduct.

Buildings or structures that are S/NR-listed or NYCLs would be afforded standard protection under DOB's Technical Policy and Procedure Notice (TPPN) #10/88, regulations applicable to all buildings located adjacent (within 90 feet) to construction sites; however, since the resources identified above are not S/NR-listed or NYCLs, they are not afforded the added special protections under TPPN #10/88. Additional protective measures afforded under TPPN #10/88, which include a monitoring program to reduce the likelihood of construction damage to adjacent S/NR-listed resources or NYCLs, would only become applicable if the S/NR-eligible resources are listed or designated in the future prior to the initiation of construction. Otherwise, there is the potential for inadvertent construction damage and impacts to occur as a result of adjacent development resulting from the Proposed Actions.

ARCHAEOLOGICAL RESOURCES

The Proposed Actions would result in construction activity on 54 projected or potential development sites that were identified as potentially archaeologically significant by LPC. A Phase 1A Archaeological Documentary Study of those sites identified all or portions of 46 potential and projected development sites as archaeologically sensitive for resources associated with the Gowanus Canal bulkhead and associated landfill; 19th century shaft features; and/or evidence associated with milling or agricultural activities dating between the 17th and 19th centuries, including evidence of the role of forced labor and enslavement as they related to those efforts. The Project Area was determined to have low sensitivity for precontact archaeological resources, some of which may be deeply buried; evidence of industrial uses in the 19th and 20th centuries; and for human remains associated with the Revolutionary War or with homestead burial grounds.

As discussed in Chapter 7, "Historic and Cultural Resources," the Phase 1A Study recommended additional archaeological analysis for certain development sites, including archaeological monitoring; Phase 1B Archaeological Testing; a geomorphological assessment of deeply buried landscapes; and the preparation of an Unanticipated Human Remains Discoveries Plan in addition to continued consultation with LPC and submission and concurrence of all required work plans.

In order to mitigate the significant adverse impact on archaeological resources, additional archaeological analysis would be required on each of the development sites before they are redeveloped. However, there are no mechanisms currently in place to ensure that such archaeological analysis would occur on privately owned property subsequent to the rezoning, and such analysis can only be legally required on City-owned properties. Only one of the 46 archaeologically sensitive sites (Projected Development Site 47 on Block 471, Lot 100) is currently owned by the City of New York—the site, also known as the Gowanus Green site, is under the jurisdiction of the Department of Housng Preservation and Development (HPD). With the completion of additional archaeological analyses as necessary and continued consultation with LPC, the Proposed Actions would not result in significant adverse impacts on Projected Development Site 47. The additional archaeological analysis at Projected Development Site 47 would be required through the Land Disposition Agreement between HPD and the selected developer of the the Gowanus Green site.

None of the remaining 45 development sites identified as archaeologically sensitive are under the City's control. Future development on these properties would occur on an as-of-right basis and there would be no mechanism available to require archaeological analysis to determine the presence of archaeological resources (i.e., Phase 1B testing) or mitigation for any identified significant resource through avoidance or excavation and data recovery (i.e., Phase 2 or Phase 3 archaeological testing). Therefore, the Proposed Actions would result in significant adverse impacts on archaeological resources. However, it should be noted that if any of these sites were to

be developed through future discretionary actions that would be subject to review under CEQR, additional archaeological analysis would be completed to confirm the presence or absence of archaeological resources.

F. TRANSPORTATION

The Proposed Actions would result in significant adverse impacts to: a) vehicular traffic at 43 intersections, b) four subway stairs and one fare array at the Union Street (R) subway station, c) subway line haul conditions on northbound F trains in the AM peak hour, and d) pedestrian conditions at nine sidewalks and four crosswalks. Mitigation measures that could address the significant adverse impacts are discussed below.

TRAFFIC

As described in Chapter 14, "Transportation," the Proposed Actions would result in significant adverse traffic impacts at 43 study area intersections (31 signalized and 12 unsignalized) during one or more analyzed peak hours; specifically 60 lane groups at 37 intersections during the weekday AM peak hour, 31 lane groups at 23 intersections during the midday peak hour, 60 lane groups at 36 intersections during the PM peak hour, and 43 lane groups at 33 intersections during the Saturday peak hour.

As demonstrated below, many of these impacts could be mitigated through the implementation of traffic engineering improvements, including:

- Modification of existing traffic signal phasing and/or timing,
- Installation of new traffic signals or all-way stop control,
- Elimination of on-street parking to add a travel lane, and
- Modifications to lane striping.

The types of mitigation measures proposed herein are standard measures that are routinely identified by the City and considered feasible for implementation. **Table 21-3** summarizes the recommended mitigation measures for each of the intersections with significant adverse traffic impacts during the weekday AM, midday, PM, and Saturday peak hours. Implementation of the recommended traffic engineering improvements is subject to review and approval by DOT. In the absence of the application of mitigation measures, the impacts would remain unmitigated.

Tables 21-4 through **21-7** show the v/c ratios, delays, and levels of service (LOS) for impacted lane groups at each intersection with implementation of the recommended mitigation measures and compares them to No Action and With Action conditions for the weekday AM, midday, PM, and Saturday peak hours, respectively. (The Action-with-Mitigation level of service analyses for all lane groups at each impacted intersection are shown in **Table G-6** in **Appendix G**.) According to *CEQR Technical Manual* criteria, an impact is considered fully mitigated when the resulting LOS degradation under the Action-with-Mitigation Condition compared with the No Action Condition is no longer deemed significant following the impact criteria described in Chapter 14, "Transportation." **Tables 21-4 through 21-7** show that significant adverse impacts would be fully mitigated at 10 lane groups in the weekday AM peak hour, 13 lane groups in the midday, 12 lane groups in the PM, and 12 lane groups in the Saturday peak hour. Intersections where all impacts would be fully mitigated would total 7, 12, 9, and 11 during these same periods, respectively. In total, impacts to one or more lane group(s) would remain unmitigated in one or more peak hours at 34 intersections. Consequently, these impacts would constitute unavoidable significant adverse

traffic impacts as a result of the Proposed Actions (see also Chapter 23, "Unavoidable Adverse Impacts").

EFFECTS OF PEDESTRIAN MITIGATION ON TRAFFIC CONDITIONS

Proposed pedestrian mitigation measures would not affect traffic conditions at any analyzed intersection in any peak hour.

PROPOSED SCHEDULE FOR TRAFFIC MITIGATION MEASURES

Subject to the approval of DOT, the mitigation measures summarized in **Table 21-3** would be implemented to mitigate the significant adverse traffic impacts resulting from full build-out of the Proposed Actions in 2035. As the development of the Proposed Actions would be expected to occur over an approximately 15-year period, it is possible that some of the significant adverse traffic impacts could occur prior to full build-out in 2035.

Based on the anticipated construction schedule shown in Chapter 20, "Construction," incremental vehicle trips associated with traffic generated by projected development sites could potentially result in significant adverse traffic impacts beginning in the third quarter of 2024 when completed incremental development on 15 projected development sites would result in a net increase of 413 dwelling units, 30,641 gsf of retail/supermarket space, 54,795 gsf of office space, 4,011 gsf of innovation economy space, 19,440 gsf of light industrial space and 1,558 gsf of community facility (medical office) space, along with the net displacement of 54,662 gsf of light industrial/warehouse uses and 7,416 gsf of community center uses. This level of new development would generate more than the *CEQR Technical Manual* analysis threshold of 50 peak hour vehicle trip ends in all peak periods. At this earlier time, implementation of some or all of the mitigation measures developed for full build-out of the Proposed Actions in 2035 would be considered by DOT at impacted intersections, likely focusing on those corridors where project-generated traffic would be most concentrated, such as along Union Street and along 4th Avenue.

EFFECTS OF TRAFFIC MITIGATION ON PARKING CONDITIONS

As discussed above, the proposed traffic mitigation plan would incorporate a number of modifications to curbside parking regulations. As shown in **Table 21-3**, new restrictions would be implemented along the east and west curbs of Smith Street between 3rd Street and 4th Street and between 5th Street and Luquer Street. New "no standing anytime" restrictions on these blocks would displace a total of 34 on-street parking spaces during the analyzed weekday midday and overnight periods including 18 spaces between 3rd and 4th Streets and 16 spaces between 5th and Luquer Streets.

As discussed in Chapter 14, "Transportation," in the future with the Proposed Actions there would be shortfalls of approximately 2,980 on-street parking spaces in proximity to the Project Area during the weekday midday period and 2,838 spaces during the overnight period. With the proposed traffic mitigation, these shortfalls would increase by 34 spaces during each of these periods, to a total of 3,014 spaces in the weekday midday and 2,875 spaces overnight. As a shortfall in on-street parking in this area of Brooklyn is not considered a significant adverse impact based on *CEQR Technical Manual* criteria (see Section F, "Transportation Analysis Methodologies," in Chapter 14, "Transportation"), the proposed traffic mitigation measures would not result in new significant adverse impacts to on-street parking conditions.

Table 21-3[1]
Proposed Traffic Mitigation Measures

Intersection	Signal Phase	No Action Signal Timing (Seconds) (1) AM	MD	PM	SAT	Proposed Signal Timing (Seconds) (1) AM	MD	PM	SAT	Recommended Mitigation
Court Street & 4th Place	WB	25	25	25	25	25	25	28	25	- Transfer 3s of green time from SB to WB in PM.
	SB	35	35	35	35	35	35	32	35	
Court Street & Hamilton Ave WB	WB/WB-L	20	15	15	15	20	15	15	15	- Transfer 1s of green time from WB to SB in AM.
	WB	64	72	55	59	63	72	55	59	
	SB	36	33	50	46	37	33	50	46	
Smith Street & Union Street	EB	30	30	30	30	27	28	30	30	- Transfer 3s of green time from EB to NB in AM; 2s in midday.
	NB	30	30	30	30	33	32	30	30	
Smith Street & 3rd Street	Ped	7	7	7	7	7	7	7	7	- Install "No Stopping Anytime" regulation along east and west curb of NB approach from 3rd Street to 4th Street. - Shift the bike lane on Smith Street to the east curb. - Restripe NB approach to one 10' thru and one 10' right-turn lane.
	WB	25	25	25	25	25	25	25	25	
	NB	28	28	28	28	28	28	28	28	
Smith Street & 9th Street	WB	33	33	33	33	33	32	33	31	- Transfer 1s of green time from WB to NB in midday; 2s in Saturday.
	NB	27	27	27	27	27	28	27	29	
Smith Street & Hamilton Ave WB	EB-L	17	30	23	23	17	30	23	24	- Transfer 2s of green time from NB to WB in AM. - Transfer 1s of green time from NB to EB-L in Saturday.
	WB	77	64	71	71	79	64	71	71	
	NB	41	41	41	41	39	41	41	40	
Hoyt Street & Union Street	EB	24	24	24	24	24	27	24	27	- Transfer 3s of green time from SB to EB in midday and Saturday.
	SB	36	36	36	36	36	33	36	33	
Bond Street & Baltic Street	EB	24	24	24	24	24	24	24	21	- Transfer 3s of green time from EB to NB in Saturday.
	NB	36	36	36	36	36	36	36	39	
Bond Street & Union Street	EB	24	24	24	24	24	24	24	27	- Transfer 3s of green time from NB to EB in Saturday.
	NB	36	36	36	36	36	36	36	33	
Bond Street & 3rd Street	EB/WB	36	36	36	36	36	36	36	36	Unmitigatable
	NB	24	24	24	24	24	24	24	24	
Nevins Street & Union Street	EB	36	36	36	36	36	36	33	36	- Transfer 3s of green time from EB to NB/SB in PM.
	NB/SB	24	24	24	24	24	24	27	24	
3rd Avenue & Douglass Street	EB	55	26	35	40	55	26	37	40	- Transfer 4s of green time from NB/SB to EB in PM.
	NB/SB	65	64	85	80	65	64	83	80	
	EB	50	22	30	35	50	22	32	35	
	NB/SB	70	68	90	85	70	68	88	85	
3rd Avenue & Union Street	NB/SB	73	55	81	78	73	55	81	78	Unmitigatable
	PED	7	7	7	7	7	7	7	7	
	EB/WB	40	28	32	35	40	28	32	35	
	NB/SB	78	60	86	83	78	60	86	83	
	PED	7	7	7	7	7	7	7	7	
	EB/WB	35	23	27	30	35	23	27	30	
3rd Avenue & Carroll Street	EB	35	30	35	40	35	30	35	40	Unmitigatable
	NB/SB	85	60	85	80	85	60	85	80	
	EB	30	26	30	35	30	26	30	35	
	NB/SB	90	64	90	85	90	64	90	85	
3rd Avenue & 1st Street/Driveway	EB/WB	35	30	35	40	35	31	35	40	- Transfer 3s of green time from NB/SB to EB/WB in midday.
	NB/SB	85	60	85	80	85	59	85	80	
	EB/WB	30	26	30	35	30	28	30	35	
	NB/SB	90	64	90	85	90	62	90	85	
3rd Avenue & 3rd Street	NB/SB	66	44	63	66	66	44	63	66	Unmitigatable
	PED	7	7	7	7	7	7	7	7	
	EB/WB	30	28	36	36	30	28	36	36	
	NB	17	11	14	11	17	11	14	11	
3rd Avenue & 9th Street	PED	7	7	7	7	7	7	7	7	Unmitigatable
	EB/WB	85	79	85	79	85	79	85	79	
	NB/SB	43	49	43	49	43	49	43	49	
3rd Avenue & Prospect Avenue	WB	34	41	34	41	36	41	34	41	- Transfer 2s of green time from NB/NB-L to WB in AM. - Transfer 1s of green time from NB/NB-L to NB/SB in midday.
	NB/SB	36	45	47	45	36	46	47	45	
	NB/NB-L	65	49	54	49	63	48	54	49	
3rd Avenue & 17th Street	EB	31	33	34	33	32	34	36	33	- Transfer 1s of green time from NB/SB to EB in AM and midday; 2s in PM. - Transfer 2s of green time from NB/SB to SB in AM.
	SB	19	17	26	17	21	17	26	17	
	NB/SB	85	85	75	85	82	84	73	85	
4th Avenue & Union Street	EB/WB	40	66	40	66	40	66	44	66	- Transfer 4s of green time from NB/SB to EB/WB in PM.
	NB/SB	80	54	80	54	80	54	76	54	
4th Avenue & Carroll Street	PED	7	7	7	7	7	7	7	7	- Unmitigable
	EB	35	60	35	60	35	60	35	60	
	NB/SB	78	53	78	53	78	53	78	53	

[1] This table has been revised for the FEIS.

Table 21-3 (cont'd)
Proposed Traffic Mitigation Measures

Intersection	Signal Phase	No Action Signal Timing (Seconds) (1) AM	MD	PM	SAT	Proposed Signal Timing (Seconds) (1) AM	MD	PM	SAT	Recommended Mitigation
4th Avenue &	EB	36	46	32	46	36	46	32	45	- Transfer 1s of green time from EB to NB/SB in Saturday.
3rd Street	NB	14	14	14	14	14	14	14	14	
	NB/SB	70	60	74	60	70	60	74	61	
4th Avenue &	PED	7	7	7	7	7	7	7	7	- Transfer 1s of green time from EB/WB to NB/SB in Saturday.
9th Street	EB/WB	40	50	40	50	40	50	40	49	
	NB	11	11	11	11	11	11	11	11	
	NB/SB	62	52	62	52	62	52	62	53	
4th Avenue &	PED	7	7	7	7	7	7	7	7	- Transfer 1s of green time from NB to WB in PM.
Prospect Avenue	WB	38	36	34	36	38	36	35	36	- Transfer 1s of green time from NB to NB/SB in PM.
	NB	24	18	18	18	24	18	16	18	
	NB/SB	51	59	61	59	51	59	62	59	
4th Avenue &	EB	34	52	40	52	34	52	40	52	Unmitigatable
17th Street	SB	15	16	23	16	15	16	23	16	
	NB/SB	71	52	57	52	71	52	57	52	
5th Avenue &	EB/WB	45	45	45	45	45	45	45	44	- Transfer 1s of green time from EB/WB to NB/SB in Saturday.
Union Street	NB/SB	45	45	45	45	45	45	45	46	
Atlantic Avenue &	PED	7	7	7	7	7	7	7	7	- Transfer 3s of green time from EB/WB to NB in midday.
Bond Street	EB/WB	65	50	70	70	65	47	70	70	
	NB	48	33	43	43	48	36	43	43	
Atlantic Avenue &	PED	7	7	7	7	7	7	7	7	Unmitigatable
Nevins Street	WB	12	12	12	12	12	12	12	12	
	EB/WB	60	44	64	64	60	44	64	64	
	SB	41	27	37	37	41	27	37	37	
Atlantic Avenue &	PED	7	7	7	7	7	7	7	7	- Transfer 1s of green time from EB/WB to NB in midday and Saturday.
3rd Street	EB/WB	61	67	64	67	61	66	64	66	
	NB	45	39	42	39	45	40	42	40	
	PED	7	7	7	7	7	7	7	7	
Atlantic Avenue &	EB/WB	7	7	7	7	7	7	7	7	- Transfer 2s of green time from EB/WB to SB in midday.
4th Avenue	EB/WB	50	44	40	44	50	42	40	44	
	NB	30	32	30	32	30	32	30	32	
	SB	33	37	43	37	33	39	43	37	
Atlantic Avenue &	EB/WB	44	44	44	44	45	44	45	44	- Transfer 1s of green time from NB/SB to EB/WB in AM and PM.
Flatbush Avenue	EB-T/WB-T	15	15	15	15	15	15	15	15	
	NB/SB	61	61	61	61	60	61	60	61	
Court Street &	EB	Stop-Controlled				-	-	-	-	Unmitigatable
Luquer Street	NB					-	-	-	-	
Smith Street &	WB	Stop-Controlled				22	22	22	22	- Install new traffic signal and crosswalks with timing plan shown.
4th Place/ 5th Street	NB					38	38	38	38	- Install "No Stopping Anytime" regulation along east and west curb of NB approach from 5th Street to Luquer Street. - Shift the bike lane on Smith Street to the east curb. - Restripe NB approach to one 11' left-turn and one 11' thru lane. - Install "No Standing Anytime" regulation for 150' along south curb of the WB approach. - Restripe WB approach to one 11' thru and one 10' right-turn lane.
Smith Street &	EB	Stop-Controlled				22	22	21	21	- Install new traffic signal and crosswalks with timing plan shown.
Luquer Street	NB					38	38	39	39	
Smith Street &	EB/WB	Stop-Controlled				-	-	-	-	Unmitigatable
Huntington Street	NB					-	-	-	-	
Hoyt Street &	WB	Stop-Controlled				-	-	-	-	Unmitigatable
Sacket Street	SB					-	-	-	-	
Hoyt Street &	WB	Stop-Controlled				24	24	24	24	- Install new traffic signal and crosswalks with timing plan shown.
President Street	SB					36	36	36	36	
Hoyt Street &	EB/WB	Stop-Controlled				-	-	-	-	Unmitigatable
3rd Street	SB					-	-	-	-	
Hoyt Street &	WB	Stop-Controlled				-	-	-	-	Unmitigatable
4th Street	SB					-	-	-	-	
Bond Street &	WB	Stop-Controlled				-	-	-	-	Unmitigatable
Butler Street	NB					-	-	-	-	
Bond Street &	WB	Stop-Controlled				23	23	23	23	- Install new traffic signal and crosswalks with timing plan shown.
Carroll Street	NB					37	37	37	37	
Nevins Street &	EB/WB	Stop-Controlled				-	-	-	-	Unmitigatable
Degraw Street	SB					-	-	-	-	
Nevins Street &	EB	Stop-Controlled				-	-	-	-	Unmitigatable
Carroll Street	SB					-	-	-	-	

Notes :
(1) Signal timings shown indicate green plus yellow (including all red) for each phase.

Table 21-4[2]
Action-With-Mitigation Conditions at Impacts Lane Groups
Weekday AM Peak Hour

		No Action AM Peak Hour				With Action AM Peak Hour				Mitigation AM Peak Hour			
Intersections	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Lane Group	V/C Ratio	Delay (sec/veh)	LOS
Court St & 4th Pl	WB	TR	0.90	43.9	D	TR	1.40	215.9	F	TR	1.40	214.1	F
Court St & Hamilton Ave WB	SB	TR	0.83	52.4	D	TR	0.91	60.2	E	TR	0.88	55.9	E
Smith St & Union St	NB	TR	1.24	144.6	F	TR	1.37	197.2	F	TR	1.20	126.1	F
Smith St & 3rd St	WB	R	1.09	98.7	F	R	2.24	598.5	F	R	2.24	598.5	F
	NB									T	0.81	28.4	C
	NB									R	0.79	33.3	C
	NB	TR	1.07	73.2	E	TR	1.37	194.6	F	TR	-	29.6	C
Smith St & 9th St	WB	R	0.94	62.2	E	R	0.98	68.5	E	R	0.98	68.5	E
	NB	LT	1.07	78.3	E	LT	1.25	143.9	F	LT	1.25	143.9	F
Smith St & Hamilton Ave WB	WB	TR	1.06	65.7	E	TR	1.09	78.5	E	TR	1.06	65.8	E
Hoyt St & Union St	EB	TR	1.41	221.4	F	TR	1.82	401.3	F	TR	1.82	399.8	F
Bond St & Baltic St	NB	LTR	1.11	84.4	F	LTR	1.43	214.6	F	LTR	1.43	214.6	F
Bond St & Union St	NB	TR	0.75	20.6	C	TR	1.04	45.7	D	TR	1.04	46.8	D
Bond St & 3rd St	EB	LT	0.55	14.6	B	LT	1.42	228.2	F	LT	1.42	228.2	F
	WB	TR	1.25	138.2	F	TR	1.82	389.3	F	TR	1.82	389.3	F
	NB	LTR	0.58	22.9	C	LTR	1.19	129.5	F	LTR	1.19	129.5	F
3rd Ave & Union St	EB	LTR	1.59	372.5	F	LTR	1.70	421.0	F	LTR	1.70	421.0	F
	WB	LR	1.14	149.4	F	LR	1.60	353.5	F	LR	1.60	353.5	F
	NB	TR	0.78	45.9	D	TR	0.90	59.2	E	TR	0.90	59.2	E
3rd Ave & Carroll St	EB	LTR	1.17	204.1	F	LTR	2.22	600.0+	F	LTR	2.22	600.0+	F
3rd Ave & 1st St/Driveway	WB	LTR	0.77	111.0	F	LTR	1.02	167.9	F	LTR	1.02	167.9	F
3rd Ave & 3rd St	EB	L	0.96	163.0	F	L	1.60	404.3	F	L	1.60	404.3	F
	EB	TR	1.13	146.3	F	TR	1.84	441.8	F	TR	1.84	441.8	F
	WB	LTR	2.00	495.6	F	LTR	4.56	600.0+	F	LTR	4.56	600.0+	F
	NB	L	1.26	163.0	F	L	2.05	530.3	F	L	2.05	530.3	F
	SB	L	0.88	103.3	F	L	1.12	149.9	F	L	1.12	150.1	F
	SB	TR	1.19	117.7	F	TR	1.46	233.8	F	TR	1.46	250.9	F
3rd Ave & 9th St	EB	L	0.89	109.9	F	L	0.93	119.7	F	L	0.93	119.7	F
	WB	TR	1.03	104.3	F	TR	1.04	107.6	F	TR	1.04	107.6	F
	SB	TR	0.80	29.9	C	TR	1.03	67.1	E	TR	1.03	67.1	E
3rd Ave & Prospect Ave	WB	LT	1.13	140.9	F	LT	1.20	167.3	F	LT	1.12	136.5	F
	SB (On-Ramp)	TR	1.05	106.6	F	TR	1.22	167.8	F	TR	1.22	167.8	F
3rd Ave & 17th St	EB	LTR	0.77	60.7	E	LTR	0.87	68.4	E	LTR	0.84	64.3	E
	SB	L	0.42	46.2	D	L	0.72	61.4	E	L	0.63	50.6	D
4th Ave & Union St	EB	LTR	1.13	101.2	F	LTR	1.45	243.8	F	LTR	1.45	243.5	F
	WB	LTR	1.50	284.0	F	LTR	1.86	441.5	F	LTR	1.86	441.5	F
4th Ave & 3rd St	EB	LTR	1.03	76.4	E	LTR	1.09	88.7	F	LTR	1.09	88.7	F
	NB	TR	1.07	67.7	E	TR	1.08	72.1	E	TR	1.08	72.1	E
	SB	TR	0.95	40.2	D	TR	0.98	46.0	D	TR	0.98	46.0	D
4th Ave & 9th St	EB	LT	0.94	84.1	F	LT	0.96	88.7	F	LT	0.96	88.7	F
4th Ave & 17th St	EB	LTR	0.63	45.4	D	LTR	0.76	50.8	D	LTR	0.76	50.8	D
	SB	L	1.02	84.4	F	L	1.13	115.9	F	L	1.13	115.9	F
5th Ave & Union St	WB	LTR	0.97	57.9	E	LTR	1.07	85.9	F	LTR	1.07	85.9	F
Atlantic Ave & Bond St	NB	LTR	1.22	157.5	F	LTR	1.53	287.9	F	LTR	1.53	287.9	F
Atlantic Ave & Nevins St	WB	LT	1.47	226.2	F	LT	1.51	248.7	F	LT	1.51	248.7	F
	SB	TR	1.04	100.9	F	TR	1.09	116.7	F	TR	1.09	116.7	F
Atlantic Ave & 3rd Ave	WB	T	1.29	150.9	F	T	1.32	162.3	F	T	1.32	162.3	F
	NB	LTR	0.82	46.0	D	LTR	0.90	53.6	D	LTR	0.90	53.6	D
Atlantic Ave & 4th Ave	WB	T	1.08	48.4	D	T	1.10	57.1	E	T	1.10	58.1	E
	NB	LR	1.15	158.6	F	LR	1.19	172.6	F	LR	1.19	172.6	F
	SB	LT	1.22	162.2	F	LT	1.26	180.4	F	LT	1.26	180.4	F
Atlantic Ave & Flatbush Ave	WB	T	0.99	54.5	D	T	1.01	59.7	E	T	0.99	54.4	D
Court St & Luquer St	EB	TR	0.37	37.1	E	TR	1.13	231.8	F	TR	1.13	231.8	F
Smith St & 4th Pl/5th St	WB	-	-	-	-	-	-	-	-	T	0.70	29.5	C
	WB	-	-	-	-	-	-	-	-	R	0.53	26.2	C
	WB	TR	1.78	440.8	F	TR	10.00+	600.0+	F	TR	-	28.4	C
	NB	-	-	-	-	-	-	-	-	L	0.44	7.2	A
	NB	-	-	-	-	-	-	-	-	T	1.16	83.4	F
	NB	-	-	-	-	-	-	-	-	LT	-	68.1	E
Smith St & Luquer St	EB	L	1.12	170.4	F	LT	4.71	600.0+	F	LT	1.01	70.2	E
	NB	TR	-	-	-	TR	-	-	-	TR	1.15	96.9	F
Smith St & Huntington St	EB	LT	0.96	113.9	F	LT	10.00+	600.0+	F	LT	10.00+	600.0+	F
Hoyt St & Sackett St	WB	LT	0.67	47.5	E	LT	0.97	118.0	F	LT	0.97	118.0	F
Hoyt St & President St	WB	L	0.31	20.1	C	L	0.64	56.5	F	L	0.56	17.3	C
Hoyt St & 3rd St	WB	LT	-	14.9	B	LT	-	38.8	E	LT	-	38.8	E
Hoyt St & 4th St	EB	TR	0.42	16.6	C	TR	2.74	600.0+	F	TR	2.74	600.0+	F
Bond St & Butler St	WB	R	0.71	31.1	D	R	1.31	201.4	F	R	1.31	201.4	F
Bond St & Carroll St	EB	LT	0.41	32.8	D	LT	1.42	345.9	F	LT	0.35	11.3	B

Shading denotes significant adverse impact that would remain unmitigated.

+ denotes v/c ratio >10.00 or delay >600 seconds.

[2] This table has been revised for the FEIS.

Table 21-5[3]
Action-With-Mitigation Conditions at Impacted Lane Groups
Weekday Midday Peak Hour

Signalized Intersections	Approach	No-Action Midday Peak Hour				With-Action Midday Peak Hour				Mitigation Midday Peak Hour			
		Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Lane Group	V/C Ratio	Delay (sec/veh)	LOS
Smith St & Union St	NB	TR	0.99	56.1	E	TR	1.10	88.6	F	TR	1.01	60.0	E
Smith St & 3rd St	WB	R	0.55	22.5	C	R	1.04	95.1	F	R	1.04	95.1	F
										T	0.82	36.0	D
										R	0.73	39.0	D
	NB	TR	0.97	47.4	D	TR	1.27	153.5	F	TR	-	36.9	D
Smith St & 9th St	NB	LT	0.87	34.5	C	LT	0.96	49.2	D	LT	0.92	40.2	D
Hoyt Street & Union St	EB	TR	0.95	54.1	D	TR	1.13	104.0	F	TR	0.96	48.0	D
3rd Ave & Union St	WB	LR	1.82	471.9	F	LR	2.05	575.9	F	LR	2.05	575.9	F
	NB	TR	0.80	38.1	D	TR	0.87	45.6	D	TR	0.87	45.6	D
3rd Ave & Carroll St	EB	LTR	0.96	111.5	F	LTR	1.60	357.9	F	LTR	1.60	357.9	F
3rd Ave & 1st St/Driveway	WB	LTR	0.39	60.2	E	LTR	0.53	67.6	E	LTR	0.49	62.9	E
3rd Ave & 3rd St	EB	L	0.71	56.6	E	L	1.06	138.2	F	L	1.06	138.2	F
	EB	TR	1.22	160.7	F	TR	1.53	293.4	F	TR	1.53	293.4	F
	WB	LTR	1.30	193.8	F	LTR	1.63	340.1	F	LTR	1.63	340.1	F
	NB	L	1.09	116.8	F	L	1.15	137.9	F	L	1.15	137.9	F
	SB	L	0.68	45.8	D	L	0.84	69.8	E	L	0.84	67.9	E
	SB	TR	1.31	161.6	F	TR	1.56	272.8	F	TR	1.56	272.4	F
3rd Ave & 9th St	NB	L	0.49	33.7	C	L	0.60	47.3	D	L	0.60	47.3	D
	SB	TR	1.10	93.5	F	TR	1.15	114.7	F	TR	1.15	114.7	F
3rd Ave & Prospect Ave	SB (On-Ramp)	TR	0.90	64.6	E	TR	0.95	72.5	E	TR	0.93	67.4	E
3rd Ave & 17th St	EB	LTR	0.89	67.6	E	LTR	0.94	75.4	E	LTR	0.91	69.3	E
4th Ave & 17th St	EB	LTR	1.10	107.7	F	LTR	1.13	118.5	F	LTR	1.13	118.5	F
Atlantic Ave & Bond St	NB	LTR	1.29	182.4	F	LTR	1.43	241.1	F	LTR	1.27	171.8	F
Atlantic Ave & Nevins St	WB	LT	1.36	188.6	F	LT	1.38	199.1	F	LT	1.38	199.1	F
Atlantic Ave & 3rd Ave	NB	LTR	0.87	55.2	E	LTR	0.90	59.4	E	LTR	0.88	55.1	E
Atlantic Ave & 4th Ave	SB	LT	1.14	129.0	F	LT	1.19	147.4	F	LT	1.12	118.0	F
Smith St & 4th Pl/5th St	WB	-	-	-	-	-	-	-	-	T	0.53	23.4	C
	WB	-	-	-	-	-	-	-	-	R	0.60	32.4	C
	WB	TR	1.21	189.8	F	TR	10.00+	600.0+	F	TR	-	26.5	C
	NB	-	-	-	-	-	-	-	-	L	0.09	5.8	A
	NB	-	-	-	-	-	-	-	-	T	0.79	10.9	B
	NB	-	-	-	-	-	-	-	-	LT	-	10.5	B
Smith St & Luquer St	EB	L	0.37	25.3	D	LT	0.82	75.9	F	LT	0.42	20.9	C
Smith St & Huntington St	EB	LT	0.73	68.6	F	LT	10.00+	600.0+	F	LT	10.00+	600.0+	F
Hoyt St & 4th St	EB	TR	0.64	33.4	D	TR	2.14	582.2	F	TR	2.14	582.2	F
Bond St & Butler St	WB	R	0.44	19.3	C	R	0.70	38.8	E	R	0.70	39.0	E
Bond St & Carroll St	EB	LT	0.08	14.7	B	LT	0.30	50.4	E	LT	0.11	8.8	A
Nevins St & Degraw St	WB	LT	0.13	17.2	C	LT	0.40	46.7	E	LT	0.40	46.7	E

Shading denotes significant adverse impact that would remain unmitigated.

+ denotes v/c ratio >10.00 or delay >600 seconds.

[3] This table has been revised for the FEIS.

Table 21-6[4]
Action-With-Mitigation Conditions at Impacted Lane Groups
Weekday PM Peak Hour

		No-Action PM Peak Hour				With-Action PM Peak Hour				Mitigation PM Peak Hour			
Signalized Intersections	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Lane Group	V/C Ratio	Delay (sec/veh)	LOS
Court St & 4th Pl	WB	TR	0.65	26.5	C	TR	1.11	100.8	F	TR	0.96	43.4	D
Smith St & Union St	NB	TR	1.02	65.6	E	TR	1.20	125.8	F	TR	1.20	126.9	F
Smith St & 3rd St	WB	R	0.71	30.3	C	R	1.57	305.0	F	R	1.57	305.0	F
										T	0.63	24.4	C
										R	0.84	44.8	D
	NB	TR	0.93	39.7	D	TR	1.26	150.9	F	TR	-	30.9	C
Hoyt St & Union St	EB	TR	1.28	163.8	F	TR	1.74	361.5	F	TR	1.74	361.5	F
Bond St & Baltic St	NB	LTR	0.94	35.4	D	LTR	1.25	138.8	F	LTR	1.25	138.8	F
Bond St & Union St	EB	LT	0.99	21.9	C	LT	1.30	145.7	F	LT	1.30	145.7	F
Bond St & 3rd St	WB	TR	0.75	19.3	B	TR	1.08	77.4	E	TR	1.08	77.4	E
	NB	LTR	0.73	28.4	C	LTR	1.76	373.8	F	LTR	1.76	373.8	F
Nevins St & Union St	SB	LT	0.92	48.7	D	LT	1.07	87.5	F	LT	0.92	44.8	D
3rd Ave & Douglass St	EB	LTR	0.63	92.5	F	LTR	0.76	102.8	F	LTR	0.70	94.4	F
3rd Ave & Union St	WB	LR	1.64	364.5	F	LR	2.39	600.0+	F	LR	2.39	600.0+	F
	NB	TR	0.83	39.5	D	TR	0.92	52.4	D	TR	0.92	52.4	D
3rd Ave & Carroll St	EB	LTR	1.47	322.6	F	LTR	2.52	600.0+	F	LTR	2.51	600.0+	F
3rd Ave & 1st St/Driveway	WB	LTR	0.39	83.2	F	LTR	0.54	92.5	F	LTR	0.54	92.5	F
	SB	TR	0.82	29.7	C	TR	0.92	45.6	D	TR	0.92	45.6	D
3rd Ave & 3rd St	EB	L	1.01	128.2	F	L	1.28	228.0	F	L	1.28	228.0	F
	EB	TR	1.76	400.3	F	TR	3.09	600.0+	F	TR	3.09	600.0+	F
	WB	LTR	2.07	534.9	F	LTR	3.70	600.0+	F	LTR	3.70	600.0+	F
	NB	L	1.23	179.0	F	L	1.36	231.2	F	L	1.36	231.2	F
	SB	L	1.02	131.4	F	L	1.21	183.0	F	L	1.21	183.0	F
	SB	TR	1.38	200.8	F	TR	1.62	307.9	F	TR	1.58	288.1	F
3rd Ave & 9th St	WB	TR	0.94	83.9	F	TR	0.96	88.6	F	TR	0.96	88.6	F
	NB	L	0.34	21.8	C	L	0.87	121.5	F	L	0.87	121.5	F
	NB	TR	0.94	45.7	D	TR	0.98	54.7	D	TR	0.98	54.7	D
	SB	TR	1.07	80.7	F	TR	1.35	195.1	F	TR	1.35	195.1	F
3rd Ave & Prospect Ave	SB (On-Ramp)	TR	0.95	70.0	E	TR	1.18	142.8	F	TR	1.18	142.8	F
3rd Ave & 17th St	EB	LTR	0.87	64.6	E	LTR	0.94	74.6	E	LTR	0.88	64.1	E
4th Ave & Union St	EB	LTR	1.51	278.9	F	LTR	1.82	417.6	F	LTR	1.59	312.3	F
	WB	LTR	1.37	239.9	F	LTR	1.67	366.3	F	LTR	1.38	233.8	F
4th Ave & 3rd St	EB	LTR	1.28	175.8	F	LTR	1.35	206.9	F	LTR	1.35	206.9	F
	NB	L	0.89	83.1	F	L	0.91	89.6	F	L	0.91	89.6	F
	SB	TR	1.08	74.2	E	TR	1.12	87.5	F	TR	1.12	87.5	F
4th Ave & 9th St	EB	LT	1.02	96.9	F	LT	1.04	102.8	F	LT	1.04	102.8	F
	SB	TR	1.16	116.4	F	TR	1.20	129.9	F	TR	1.20	129.9	F
4th Ave & Prospect Ave	WB	LTR	1.07	94.6	F	LTR	1.09	101.0	F	LTR	1.05	87.1	F
	SB	T	0.95	46.2	D	T	0.98	51.4	D	T	0.96	47.3	D
4th Ave & 17th St	EB	LTR	0.89	54.4	D	LTR	0.98	68.2	E	LTR	0.98	68.2	E
	NB	T	1.05	75.0	E	T	1.08	85.3	F	T	1.08	85.3	F
	SB	L	0.94	49.9	D	L	1.01	62.9	E	L	1.01	63.9	E
5th Ave & Union St	NB	LTR	0.92	46.6	D	LTR	0.98	58.7	E	LTR	0.98	58.7	E
Atlantic Ave & Bond St	NB	LTR	1.35	217.6	F	LTR	1.65	345.9	F	LTR	1.65	345.9	F
Atlantic Ave & Nevins St	EB	TR	1.08	52.2	D	TR	1.09	57.5	E	TR	1.09	57.5	E
	WB	LT	1.51	262.4	F	LT	1.54	272.5	F	LT	1.54	272.5	F
	SB	TR	1.63	341.8	F	TR	1.72	380.7	F	TR	1.72	380.7	F
Atlantic Ave & 3rd Ave	NB	LTR	0.90	55.5	E	LTR	0.95	63.5	E	LTR	0.95	63.5	E
Atlantic Ave & 4th Ave	EB	T	1.11	76.0	E	T	1.12	81.6	E	T	1.12	81.6	E
	WB	T	1.09	64.3	E	T	1.10	69.2	E	T	1.10	69.9	E
	NB	LR	1.13	154.5	F	LR	1.17	166.6	F	LR	1.17	166.6	F
	SB	LT	1.39	225.9	F	LT	1.43	245.3	F	LT	1.43	245.3	F
Atlantic Ave & Flatbush Av	EB	T	1.06	46.8	D	T	1.08	55.7	E	T	1.06	46.9	D
Court St & Luquer St	EB	TR	0.28	32.3	D	TR	0.77	111.4	F	TR	0.74	100.7	F
Smith St & 4th Pl/5th St	WB	-	-	-	-	-	-	-	-	T	0.75	32.5	C
	WB	-	-	-	-	-	-	-	-	R	0.72	35.0	C
	WB	TR	1.26	205.9	F	TR	10.00+	600.0+	F	TR	-	33.5	C
	NB	-	-	-	-	-	-	-	-	L	0.18	6.4	A
	NB	-	-	-	-	-	-	-	-	T	0.96	22.7	C
	NB	-	-	-	-	-	-	-	-	LT	-	20.6	C
Smith St & Luquer St	EB	L	0.52	37.8	E	L	1.75	423.2	F	LT	0.62	26.8	C
Smith St & Huntington St	EB	LT	0.58	46.0	E	LT	10.00+	600.0+	F	LT	10.00+	600.0+	F
Hoyt St & 4th St	EB	TR	0.60	23.0	C	TR	1.93	463.3	F	TR	1.93	463.3	F
Bond St & Butler St	WB	R	0.49	21.4	C	R	0.99	93.0	F	R	1.01	98.4	F
Bond St & Carroll St	EB	LT	0.22	16.9	C	LT	0.95	138.0	F	LT	0.30	10.2	B
Nevins St & Degraw St	WB	LT	0.22	17.0	C	LT	0.62	49.2	E	LT	0.62	49.2	E
Nevins St & Carroll St	SB	LR	0.36	13.0	B	LR	0.78	36.5	E	LR	0.78	36.5	E

Shading denotes significant adverse impact that would remain unmitigated.

\+ denotes v/c ratio >10.00 or delay >600 seconds.

[4] This table has been revised for the FEIS.

Table 21-7[5]
Action-With-Mitigation Conditions at Impacted Lane Groups
Saturday Peak Hour

Signalized Intersections	Approach	No-Action SAT Peak Hour				With-Action SAT Peak Hour				Mitigation SAT Peak Hour			
		Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	Lane Group	V/C Ratio	Delay (sec/veh)	LOS
Smith St & Union St	NB	TR	1.20	128.5	F	TR	1.33	180.3	F	TR	1.33	180.3	F
Smith St & 3rd St	WB	R	0.69	28.5	C	R	1.43	243.7	F	R	1.43	243.7	F
										T	0.79	31.2	C
										R	0.90	51.6	D
	NB	TR	1.21	125.5	F	TR	1.47	238.0	F	TR	-	37.0	D
Smith St & 9th St	NB	LT	0.95	45.4	D	LT	1.04	68.6	E	LT	0.96	43.9	D
Smith St & Hamilton Ave WB	EB	L	0.92	96.2	F	L	0.94	100.0	F	L	0.89	89.3	F
Hoyt St & Union St	EB	TR	1.27	161.3	F	TR	1.48	249.7	F	TR	1.27	153.6	F
Bond St & Baltic St	NB	LTR	0.90	28.9	C	LTR	1.09	76.4	E	LTR	0.99	42.3	D
Bond St & Union St	EB	LT	1.02	30.1	C	LT	1.19	98.9	F	LT	1.02	29.4	C
Bond St & 3rd St	WB	TR	0.91	32.6	C	TR	1.23	131.8	F	TR	1.23	131.8	F
3rd Ave & Union St	WB	LR	1.97	549.5	F	LR	2.19	600.0+	F	LR	2.23	600.0+	F
	NB	TR	0.84	44.0	D	TR	0.92	55.0	D	TR	0.91	54.3	D
3rd Ave & Carroll St	EB	LTR	1.34	260.5	F	LTR	1.95	530.5	F	LTR	1.95	530.5	F
3rd Ave & 1st St/Driveway	WB	LTR	0.56	83.5	F	LTR	0.69	94.3	F	LTR	0.69	94.3	F
3rd Ave & 3rd St	EB	L	1.00	131.1	F	L	1.10	166.4	F	L	1.10	166.4	F
	EB	TR	1.53	300.2	F	TR	1.84	435.1	F	TR	1.83	432.0	F
	WB	LTR	1.70	347.2	F	LTR	2.83	600.0+	F	LTR	2.83	600.0+	F
	NB	L	2.32	600.0+	F	L	2.32	600.0+	F	L	2.32	600.0+	F
	SB	L	0.68	51.0	D	L	0.82	68.5	E	L	0.82	68.5	E
	SB	TR	1.46	236.3	F	TR	1.48	246.7	F	TR	1.48	246.7	F
3rd Ave & 9th St	NB	L	0.64	50.1	D	L	1.05	163.9	F	L	1.05	163.9	F
	SB	TR	1.10	95.3	F	TR	1.19	128.8	F	TR	1.19	128.8	F
3rd Ave & Prospect Ave	SB (On-Ramp)	TR	0.86	57.8	E	TR	0.91	64.0	E	TR	0.91	64.0	E
4th Ave & Union St	SB	L	0.74	81.6	F	L	0.87	108.7	F	L	0.87	108.7	F
4th Ave & Carroll St	SB	L	0.90	133.4	F	L	0.96	151.1	F	L	0.96	151.1	F
4th Ave & 3rd St	SB	TR	0.98	54.7	D	TR	1.01	62.3	E	TR	1.00	56.9	E
4th Ave & 9th St	SB	TR	1.07	85.9	F	TR	1.09	92.7	F	TR	1.07	83.9	F
4th Ave & 17th St	EB	LTR	1.06	91.8	F	LTR	1.11	108.3	F	LTR	1.11	108.3	F
	SB	L	0.98	71.6	E	L	1.03	83.6	F	L	1.03	83.6	F
5th Ave & Union St	NB	LTR	0.89	43.3	D	LTR	0.95	52.7	D	LTR	0.92	47.1	D
Atlantic Ave & Bond St	NB	LTR	1.24	169.7	F	LTR	1.42	243.5	F	LTR	1.42	243.5	F
Atlantic Ave & Nevins St	WB	LT	1.48	244.3	F	LT	1.50	252.2	F	LT	1.50	252.9	F
	SB	TR	1.34	218.1	F	TR	1.36	223.2	F	TR	1.36	223.2	F
Atlantic Ave & 3rd Ave	NB	LTR	1.01	77.6	E	LTR	1.04	86.1	F	LTR	1.00	76.2	E
Atlantic Ave & 4th Ave	SB	LT	1.08	105.8	F	LT	1.11	116.8	F	LT	1.11	116.8	F
Court St & Luquer St	EB	TR	0.56	42.3	E	TR	0.82	88.8	F	TR	0.82	88.8	F
Smith St & 4th Pl/5th St	WB	-	-	-	-	-	-	-	-	T	0.53	23.2	C
	WB	-	-	-	-	-	-	-	-	R	0.28	19.3	C
	WB	TR	1.53	343.0	F	TR	10.00+	600.0+	F	TR	-	22.1	C
	NB	-	-	-	-	-	-	-	-	L	0.19	6.5	A
	NB	-	-	-	-	-	-	-	-	T	1.01	26.7	C
	NB	-	-	-	-	-	-	-	-	LT	-	24.2	C
Smith St & Luquer St	EB	L	0.56	37.2	E	LT	1.24	202.4	F	LT	0.55	24.6	C
	NB	TR	-	-	-	TR	-	-	-	TR	1.08	73.7	E
Smith St & Huntington St	EB	LT	0.80	80.9	F	LT	5.19	600.0+	F	LT	5.19	600.0+	F
Hoyt St & 4th St	EB	TR	0.47	18.8	C	TR	1.18	144.2	F	TR	1.18	144.2	F
Bond St & Butler St	WB	R	0.53	23.3	C	R	0.93	78.2	F	R	0.93	78.2	F
Bond St & Carroll St	EB	LT	0.30	24.4	C	LT	1.01	179.9	F	LT	0.26	10.4	B
Nevins St & Degraw St	WB	LT	0.23	18.1	C	LT	0.54	46.2	E	LT	0.54	46.2	E
Nevins St & Caroll St	SB	LR	0.60	21.9	C	LR	1.10	113.8	F	LR	1.10	113.8	F

Shading denotes significant adverse impact that would remain unmitigated.

+ denotes v/c ratio >10.00 or delay >600 seconds.

[5] This table has been revised for the FEIS.

TRANSIT

SUBWAY STATIONS

As summarized in **Table 21-8**, under the Proposed Actions, four street stairs at the Union Street (R) subway station on the 4th Avenue Line would be significantly adversely impacted by project-generated demand: two in the AM peak hour and two in the PM peak hour. One fare array at this station would also be impacted in the AM peak hour.

Table 21-8
Summary of Significant Subway Station Impacts

Subway Station	Station Element	Impacted Time Period
Union Street (R)	Street Stair S2/P2	AM
	Street Stair S4/P4	AM
	Street Stair S1/P1	PM
	Street Stair S3/P3	PM
	Fare Array C010	AM

Stairway widening is the most common form of mitigation for significant stairway impacts, provided that NYCT deems it practicable (i.e., that it is worthwhile to disrupt service on an existing stairway to widen it and that a given platform and sidewalk affected by such mitigation are wide enough to accommodate the stairway widening). Another potential mitigation measure would be to add vertical capacity (i.e., adding an elevator, escalator or additional stairway) in the vicinity of the impacted stairway.

Table 21-9 shows the minimum stair widening that would be required to fully mitigate the Proposed Actions' significant adverse stair impacts at the Union Street (R) subway station based on *CEQR Technical Manual* criteria. As shown in **Table 21-9**, widening each stair by from six inches (stair S1/P1) to 1'-6" (stair S3/P3) would return each of the four impacted stairs to LOS D conditions with a width increment threshold (WIT) below the seven-inch LOS D impact threshold.

Table 21-9
Minimum Required Subway Stairway Widening to Mitigate Impacts at the Union Street (R) Station

		With Action						Action-With-Mitigation						
Peak Hour	Stair	Total Width (ft.)	Effective Width (ft.)	V/C Ratio	LOS	WIT	Impact Threshold (inches)	Total Width (ft.)	Effective Width (ft.)	V/C Ratio	LOS	WIT (inches)	Impact Threshold (inches)	Minimum Required Widening
AM	S2/P2	4.00	3.00	1.57	E *	20.47	3	5.25	4.25	1.11	D	5.47	7	1'-3"
	S4/P4	4.67	3.67	1.45	E *	19.74	4	5.75	4.75	1.12	D	6.74	7	1'-1"
PM	S1/P1	4.50	3.50	1.30	D *	12.61	5	5	4	1.14	D	6.61	7	0'-6"
	S3/P3	4.50	3.50	1.53	E *	22.18	3	6	5	1.07	D	4.18	8	1'-6"

Notes:
WIT - Width Increment Threshold
* - Denotes a significant adverse impact per *CEQR Technical Manual* criteria.

It should be noted that actual stair widening is planned based on NYCT guidance. Typically, stair widths are considered in terms of 30-inch (2.5-foot) pedestrian lanes. Thus, each of these stairs would ideally be widened to 7.5 feet to provide three pedestrian lanes.

Increasing throughput capacity through the installation of additional turnstiles is a common form of mitigation for significant fare array impacts, provided that NYCT deems it practicable (i.e., that sufficient space is available to accommodate the additional fare array elements). As shown in

Table 21-10, with the addition of one turnstile, fare array C010 would operate below capacity (i.e., at v/c ratio of 0.76) in the AM peak hour and would no longer be considered significantly adversely impacted.

Table 21-10
Minimum Increase in Fare Array Capacity to Mitigate Impacts at the Union Street (R) Station

Peak Hour	Fare Array	With Action					Action With Mitigation					Minimum Required Additional Element(s)
		Control Elements			V/C Ratio	LOS	Control Elements			V/C Ratio	LOS	
		Turnstile	HEET	HXT			Turnstile	HEET	HXT			
AM	C010	3	0	0	1.02	D *	4	0	0	0.76	C	1 turnstile

As noted in Chapter 1, "Project Description, the Proposed Actions include a zoning incentive specific to the Union Street (R train) subway station that would allow an increase in density on Site 27 in exchange for identified transit improvements to the station entrance. Absent the identification and implementation of feasible mitigation measures that would mitigate the subway station impacts to the greatest extent practicable, the Proposed Actions would result in unmitigated significant adverse subway station impacts.

SUBWAY LINE HAUL

As shown in Table 14-43 in Chapter 14, "Transportation," development associated with the Proposed Actions would add approximately 1,761 new subway trips, or an average of approximately 13.98 passengers per car, to northbound F trains in the AM peak hour, increasing the volume-to-capacity ratio from 1.00 in the No Action condition to 1.11 in the future with the Proposed Actions. As AM peak hour demand on northbound F trains would exceed practical capacity in the 2035 With Action condition, and as the Proposed Actions would increase this demand by more than the five passengers per car *CEQR Technical Manual* impact threshold, northbound F trains would be considered significantly adversely impacted by the Proposed Actions based on *CEQR Technical Manual* criteria.

As standard practice, NYCT routinely conducts periodic ridership counts and adjusts subway frequency to meet its service criteria within fiscal and operating constraints. As shown in **Table 21-11**, given the level of new demand generated by the Proposed Actions, the addition of two northbound F trains during the AM peak hour (increasing average frequency from 12.6 to 14.6 trains per hour) would result in below-capacity conditions (i.e., a v/c ration of 0.96), mitigating the potential impact. In the absence of the additional frequencies or other mitigation measures in the AM peak hour, the impact to northbound F service would remain unmitigated.

Table 21-11
Summary of Significant Subway Line Haul Impacts

Peak Hour	Route	Direction	Maximum Load Point (leaving station)	Average Trains per Hour	Average Cars per Hour	Guideline Passengers per Car[1]	Average Passengers per Hour	Average Passengers per Car	V/C Ratio[2]	Average Additional Passengers per Car
2035 With-Action Condition										
AM	F	NB	Bergen St	12.6	126	135	18,848	150	1.11	13.98*
2035 Action-With-Mitigation Condition										
AM	F	NB	Bergen St	14.6	146	135	18,848	129	0.96	12.06

Notes:
[1] Guideline capacities are based on NYCT rush hour loading guidelines, which vary by car type, line, and location based on frequency and type of service.
[2] Volume to guideline capacity ratio.
***** denotes a significant adverse impact based on *CEQR Technical Manual* criteria.

PEDESTRIANS

As discussed in Chapter 14, "Transportation," the results of the analyses of pedestrian conditions show that demand from the Proposed Actions would significantly adversely impact nine sidewalks and four crosswalks in one or more peak hours under the With Action Condition (see **Table 21-12**). There would be no significant impacts to any corner area in any period.

Table 21-12
Summary of Significant Pedestrian Impacts

Corridor/Intersection	Impacted Element	Peak Hour		
		AM	Midday	PM
Smith Street between 3rd and 4th Streets	East Sidewalk	X		X
Smith Street between 4th and 5th Streets	East Sidewalk	X		X
5th Street between Smith and Hoyt Streets	North Sidewalk		X	
Union Street between Bond Street and the Gowanus Canal	South Sidewalk	X	X	X
Bond Street between 2nd and 3rd Streets	East Sidewalk	X		X
3rd Avenue between Carroll and 1st Streets	West Sidewalk	X	X	X
3rd Street between the Gowanus Canal and Third Ave	North Sidewalk			X
4th Avenue between Union Street and Subway Entrance	East Sidewalk	X		
4th Avenue between Union Street and Subway Entrance	West Sidewalk			X
Smith Street at President Street	North Crosswalk	X		X
3rd Avenue at Union Street	South Crosswalk			X
3rd Avenue at Carroll Street	South Crosswalk	X		X
4th Avenue at President Street	East Crosswalk	X		

A significant adverse pedestrian impact is considered mitigated if measures implemented return the anticipated conditions to an acceptable level, following the same criteria used in determining

impacts. Standard mitigation for projected significant adverse pedestrian impacts can include providing additional signal green time or new signal phases; widening crosswalks; relocating or removing street furniture or other impediments to pedestrian flow; providing curb extensions, neck-downs, or lane reductions to reduce pedestrian crossing distance; and sidewalk widening. Discussed below are recommended mitigation measures to address the Proposed Actions' significant adverse pedestrian impacts. The mitigation measures generally consist of the relocation/removal of impediments to sidewalk flow along with crosswalk widening.

SIDEWALKS

Of the 81 sidewalks analyzed, nine are expected to be significantly adversely impacted by incremental demand from the Proposed Actions. **Table 21-13** shows the recommended mitigation measures to address these impacts and their effectiveness. As shown in **Table 21-13** and discussed below, with implementation of the proposed mitigation measures, the Proposed Actions' significant adverse impacts to three sidewalks would be fully mitigated. Practicable mitigation measures could not be identified for significant adverse impacts in one or more peak hours at six sidewalks, and these impacts would therefore remain unmitigated.

Table 21-13
Action-With-Mitigation Sidewalk Conditions

Location	Side	No Action			With Action			Action-With-Mitigation			
		Effective Width (ft)	Average Space (ft^2/ped)	LOS	Effective Width (ft)	Average Space (ft^2/ped)	LOS	Effective Width (ft)	Average Space (ft^2/ped)	LOS	Mitigation Measures
AM Peak Hour											
Smith St btw. 3rd St & 4th St	East	4.0	185.0	B	4.0	26.7	D*	7.5	52.6	C	Mitigated by removing two tree pits from existing constraint points
Smith St btw. 4th St & 5th St	East	2.5	196.3	B	2.5	23.0	D*	2.5	23.0	D*	Unmitigated
Union St btw. Bond St & Gowanus Canal	South	1.5	62.5	C	1.5	18.9	E*	1.5	18.9	E*	Unmitigated
Bond St btw. 2nd St & 3rd St	East	1.5	137.7	B	1.5	35.3	D*	1.8	41.7	D	Mitigated by removing a tree pit from an existing constraint point
3rd Ave btw. Carroll St & 1st St	West	1.0	72.9	C	1.0	27.7	D*	1.0	27.7	D*	Unmitigated
4th Ave btw. Union St & Subway Entrance	East	6.5	72.2	C	6.5	39.5	D*	6.5	39.5	D*	Unmitigated
Midday Peak Hour											
5th St btw. Smith St & Hoyt St	North	1.0	45.7	C	1.0	26.0	D*	2.0	55.0	C	Mitigated by moving street light pole to a less constrained point
Union St btw. Bond St & Gowanus Canal	South	1.5	162.8	B	1.5	35.8	D*	1.5	35.8	D*	Unmitigated
3rd Ave btw. Carroll St & 1st St	West	1.0	48.0	C	1.0	21.6	E*	1.0	21.6	E*	Unmitigated
PM Peak Hour											
Smith St btw. 3rd St & 4th St	East	4.0	191.1	B	4.0	32.5	D*	7.5	63.1	C	Mitigated by removing two tree pits from existing constraint points
Smith St btw. 4th St & 5th St	East	2.5	355.8	B	2.5	33.8	D*	2.5	33.8	D*	Unmitigated
Union St btw. Bond St & Gowanus Canal	South	1.5	86.0	C	1.5	29.7	D*	1.5	29.7	D*	Unmitigated
Bond St btw. 2nd St & 3rd St	East	1.5	104.3	B	1.5	36.6	D*	1.8	43.2	C	Mitigated by removing a tree pit from an existing constraint point
3rd Ave btw. Carroll St & 1st St	West	1.0	51.2	C	1.0	21.7	E*	1.0	21.7	E*	Unmitigated
3rd St btw. Gowanus Canal & 3rd Ave	North	3.0	110.9	B	3.0	38.1	D*	3.0	38.2	D*	Unmitigated
4th Ave btw. Union St & Subway Entrance	West	5.5	80.0	C	5.5	37.0	D*	5.5	37.0	D*	Unmitigated

Note: * denotes a significant adverse impact based on *CEQR Technical Manual* criteria.

East Sidewalk on Smith Street between 3rd and 4th Streets

Pedestrian flow along this sidewalk is constrained by two curbside tree pits, one located midblock opposite a waste bin enclosure that extends from the adjacent building, and the second located near the south end of the block. Removing these tree pits would fully mitigate the significant adverse impacts in the AM and PM peak hours. Implementation of this mitigation measure would be subject to review and approval by DPR. In the absence of the application of this mitigation measure, the impacts would remain unmitigated.

East Sidewalk on Smith Street between 4th and 5th Streets

Pedestrian flow along this sidewalk is constrained at a point an ADA entrance ramp for an adjacent building extends into the sidewalk opposite a curbside fire hydrant and a utility pole. Waste bins from the building stored alongside the ramp also constrain pedestrian flow at this point. As relocating these impediments would likely prove impracticable, the Proposed Actions significant adverse impacts in the AM and PM peak hours would remain unmitigated.

North Sidewalk on 5th Street between Smith and Hoyt Streets

Pedestrian flow along this sidewalk is most constrained at a point where a street light pole is located opposite a low fence enclosing the front yard of an adjacent building. Relocation of this light pole would fully mitigate the significant adverse impact in the midday peak hour. In the absence of the application of this mitigation measure, the impact would remain unmitigated.

South Sidewalk on Union Street between Bond Street and the Gowanus Canal

Pedestrian flow along this sidewalk is constrained by multiple tree pits located along the length of this sidewalk. As removal or relocation of all of the tree pits along this block would be impracticable, the Proposed Actions' significant adverse impacts in the AM, midday, and PM peak hours would remain unmitigated.

East Sidewalk on Bond Street between 2nd and 3rd Streets

Pedestrian flow along this sidewalk is constrained near 2nd Street where a curbside tree pit is located opposite a low fence enclosing the side yard of an adjacent building. Removing or relocating the tree pit to a less constrained point along the sidewalk would fully mitigate the significant adverse impact in the AM and PM peak hours. Implementation of this mitigation measure would be subject to review and approval by DPR. In the absence of the application of this mitigation measure, the impact would remain unmitigated.

West Sidewalk on 3rd Avenue between Carroll and 1st Streets

Pedestrian flow along this sidewalk is constrained by building stoops which narrow the sidewalk to only four feet in width. The presence of street light poles and utility poles further reduces the effective width. As relocating the stoops and light and utility poles would be impracticable, the Proposed Actions' significant adverse impacts in the AM, midday and PM peak hours would remain unmitigated.

North Sidewalk on 3rd Street between the Gowanus Canal and 3rd Avenue

Pedestrian flow along this sidewalk is constrained by multiple tree pits located along this sidewalk. As removal or relocation of all of the tree pits along this block would be impracticable, the Proposed Actions' significant adverse impact in the PM peak hour would remain unmitigated.

East Sidewalk on 4th Avenue between Union Street and the Subway Station Entrance

Pedestrian flow along this sidewalk is constrained by the presence of two subway station entrance stairs at curbside between Union and President Streets. As removal or relocation of these stairs would be impracticable, the Proposed Actions' significant adverse impact in the AM peak hour would remain unmitigated.

West Sidewalk on 4th Avenue between Union Street and the Subway Station Entrance

Pedestrian flow along this sidewalk is constrained by the presence of two subway station entrance stairs at curbside between Union and President Streets. As removal or relocation of these stairs would be impracticable, the Proposed Actions' significant adverse impact in the PM peak hour would remain unmitigated.

CROSSWALKS

Of the 51 crosswalks analyzed, four are expected to be significantly adversely impacted by incremental demand from the Proposed Actions in the AM and/or PM peak hours. **Table 21-14** shows the recommended mitigation measures to address these impacts and their effectiveness. As shown in **Table 21-14** and discussed below, with implementation of the proposed mitigation measures, all of the impacts would be fully mitigated in both periods.

Table 21-14
Action-With-Mitigation Crosswalk Conditions

Location	Crosswalk	No Action			With Action			Action-With-Mitigation			
		Width (ft)	Average Space (ft^2/ped)	LOS	Width (ft)	Average Space (ft^2/ped)	LOS	Width (ft)	Average Space (ft^2/ped)	LOS	Mitigation Measures
AM Peak Hour											
Smith St & President St	North	9.0	29.7	C	9.0	23.7	D*	10.0	26.4	C	Mitigated by widening the crosswalk by 1 ft.
3rd Ave & Carroll St	South	13.0	69.3	A	13.0	21.9	D*	14.5	24.7	C	Mitigated by widening the crosswalk by 1.5 ft.
4th Ave & President St	East	10.5	47.6	B	10.5	22.3	D*	11.0	24.9	C	Mitigated by widening the crosswalk by 0.5 ft.
PM Peak Hour											
Smith St & President St	North	9.0	37.1	C	9.0	21.8	D*	10.0	24.2	C	Mitigated by widening the crosswalk by 1 ft.
3rd Ave & Union St	South	13.0	64.5	A	13.0	17.3	D*	17.5	24.8	C	Mitigated by widening the crosswalk by 4.5 ft.
3rd Ave & Carroll St	South	13.0	108.7	A	13.0	22.6	D*	14.5	25.5	C	Mitigated by widening the crosswalk by 1.5 ft.

Note: * denotes a significant adverse impact based on *CEQR Technical Manual* criteria.

North Crosswalk on Smith Street at President Street

As shown in **Table 21-14**, under the Proposed Actions the north crosswalk on Smith Street at President Street would operate at LOS D in both the AM and PM peak hours, and would be considered significantly adversely impacted in both periods based on *CEQR Technical Manual* criteria. With a one-foot widening (to a total of 10 feet in width), conditions would improve to LOS C in both the AM and PM peak hours, and the Proposed Actions' significant adverse impacts to this crosswalk would be fully mitigated. In the absence of the application of this mitigation measure, the impacts would remain unmitigated.

South Crosswalk on 3rd Avenue at Union Street

As shown in **Table 21-14**, under the Proposed Actions the south crosswalk on 3rd Avenue at Union Street would operate at LOS D in the PM peak hour, and would be considered significantly

adversely impacted in the PM based on *CEQR Technical Manual* criteria. With an 4.5-foot widening (to a total of 17.5 feet in width), conditions would improve to LOS C in the PM peak hour, and the Proposed Actions' significant adverse impact to this crosswalk would be fully mitigated. In the absence of the application of this mitigation measure, the impact would remain unmitigated.

South Crosswalk on 3rd Avenue at Carroll Street

As shown in **Table 21-14**, under the Proposed Actions the south crosswalk on 3rd Avenue at Carroll Street would operate at LOS D in both the AM and PM peak hours, and this crosswalk would be considered significantly adversely impacted in both periods based on *CEQR Technical Manual* criteria. With a 1.5-foot widening (to a total of 14.5 feet in width), conditions would improve to LOS C in both the AM and PM peak hours, and the Proposed Actions' significant adverse impacts to this crosswalk would be fully mitigated. In the absence of the application of this mitigation measure, the impacts would remain unmitigated.

East Crosswalk on President Street at 4th Avenue

As shown in **Table 21-14**, under the Proposed Actions the east crosswalk on President Street at 4th Avenue would operate at LOS D in the AM peak hour, and this crosswalk would be considered significantly adversely impacted in this period based on *CEQR Technical Manual* criteria. With a 0.5-foot widening (to a total of 11 feet in width), conditions on this crosswalk would improve to LOS C in the AM peak hour, and the Proposed Actions' significant adverse impacts to this crosswalk would be fully mitigated. In the absence of the application of this mitigation measure, the impact would remain unmitigated.

EFFECTS OF TRAFFIC MITIGATION ON PEDESTRIAN CONDITIONS

Proposed traffic mitigation measures (discussed previously) would potentially affect pedestrian conditions at a total of three analyzed crosswalks and 10 analyzed corner areas at four intersections in one or more peak hours. The recommended traffic mitigation measures at each of these locations would consist of signal timing adjustments of one to four seconds. As shown in **Tables 21-15 and 21-16**, with implementation of these proposed signal timing adjustments, all affected analyzed crosswalks and corner areas would continue to operate at an acceptable LOS C or better in all analyzed peak hours, and there would be no new pedestrian impacts. Sufficient pedestrian crossing time would also continue to be provided at all crosswalks.

Table 21-15
Action-With-Traffic Mitigation Crosswalk Conditions

Intersection	Crosswalk	With-Action Condition						Action-with-Mitigation						Proposed Traffic Mitigation
		Average Pedestrian Space (ft^2/ped)			Level of Service			Average Pedestrian Space (ft^2/ped)			Level of Service			
		AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	
3rd Ave & Douglass St	West	112.9	166.3	114.0	A	A	A	112.9	166.3	110.5	A	A	A	- Transfer 4s of green time from NB/SB to EB in PM.
4th Ave & Union St	East	37.8	57.0	68.1	C	B	A	37.8	57.0	63.4	C	B	A	- Transfer 4s of green time from NB/SB to EB/WB in PM.
	West	65.2	36.2	32.7	A	C	C	65.2	36.2	30.4	A	C	C	

Table 21-16
Action-With-Traffic Mitigation Corner Conditions

Intersection	Corner	With-Action Condition						Action-with-Mitigation						Proposed Traffic Mitigation
		Average Pedestrian Space (ft^2/ped)			Level of Service			Average Pedestrian Space (ft^2/ped)			Level of Service			
		AM	MD	PM	AM	MD	PM	AM	MD	PM	AM	MD	PM	
Smith St & 9th St	NE	43.8	59.2	42.2	B	B	B	43.8	59.2	42.2	B	B	B	- Transfer 1s of green time from WB to NB in MD.
3rd Ave & Douglass St	SE	215.4	141.0	154.9	A	A	A	215.4	141.0	155.1	A	A	A	- Transfer 4s of green time from NB/SB to EB in PM.
	SW	212.8	208.7	161.2	A	A	A	212.8	208.7	160.9	A	A	A	
	NW	204.8	222.0	133.1	A	A	A	204.8	222.0	133.9	A	A	A	
3rd Ave 1st St	NE	226.1	231.9	220.3	A	A	A	226.1	231.7	220.3	A	A	A	- Transfer 3s of green time from NB/SB to EB/WB in MD.
	SE	269.1	258.3	285.0	A	A	A	269.1	258.3	285.0	A	A	A	
4th Ave & Union St	NE	87.7	172.6	131.6	A	A	A	87.7	172.6	131.1	A	A	A	- Transfer 4s of green time from NB/SB to EB/WB in PM.
	SE	54.5	122.9	84.3	B	A	A	54.5	122.9	84.5	B	A	A	
	SW	127.9	179.6	84.5	A	A	A	127.9	179.6	84.5	A	A	A	
	NW	134.2	138.0	84.9	A	A	A	134.2	138.0	84.9	A	A	A	

PROPOSED SCHEDULE FOR PEDESTRIAN MITIGATION MEASURES

Subject to DOT and NYC Parks approval, the pedestrian mitigation measures described above would be implemented to mitigate the significant adverse sidewalk and crosswalk impacts resulting from full build-out of the Proposed Actions in 2035. As the development of the Proposed Actions would be expected to occur over an approximately 15-year period, it is possible that the sidewalk and crosswalk impacts could occur prior to full build-out in 2035.

Based on the anticipated construction schedule shown in Chapter 20, "Construction," 200 or more incremental pedestrian trips generated by the Proposed Actions would potentially occur on the impacted sidewalks and crosswalks beginning in the second quarter of 2026 upon completion of Projected Development Site 37. At this earlier point in time, implementation of the mitigation measures developed for full build-out of the Proposed Actions in 2035 would be considered to address the potential significant adverse pedestrian impacts.

G. AIR QUALITY

Chapter 15, "Air Quality," presents the maximum predicted carbon monoxide (CO) and particulate matter (PM_{10} and $PM_{2.5}$) concentrations related to traffic generated by the Proposed Actions, and concludes that the Proposed Actions would exceed the annual *de minimis* criterion of 0.1 $\mu g/m^3$ for the annual averaging period for Analysis Site 4, at Smith Street and 5th Street. Therefore, air quality mitigation was considered at this location.

For the intersection of Smith Street and 5th Street, traffic mitigation measures were developed to reduce congestion and increase speeds along corridors in the affected area. The proposed mitigation measure for the impact is the installation of a traffic signal and providing an additional

turning lane by installing "No Stopping Anytime" regulations along east and west curbs of Smith Street and south curb of 5th Street to the east of Smith Street. **Table 21-17** presents the results of the mobile source analysis with the proposed traffic mitigation measures for this location.

Table 21-17
Maximum Predicted Annual Average $PM_{2.5}$ With Action and Incremental Concentrations with Traffic Mitigation ($\mu g/m^3$)

Analysis Site	Location	With Action (Without Mitigation)	With Action (With Mitigation)	Increment (Without Mitigation)	Increment (With Mitigation)	*De Minimis* Criterion
4	Smith Street and 5th Street	8.11	7.70	0.44	0.03	0.1

Notes:
NAAQS—annual average 12 $\mu g/m^3$.
With Action concentrations include a background concentration of 7.6 $\mu g/m^3$.
$PM_{2.5}$ *de minimis* criteria—annual (neighborhood scale), 0.1 $\mu g/m^3$.

As shown in the table, the results of this modeling analysis (performed in accordance with methodologies described in Chapter 15, "Air Quality") indicate that annual incremental concentration of $PM_{2.5}$ would be significantly lower than the With Action condition, and would not exceed the *de minimis* criteria for $PM_{2.5}$. Therefore, the incorporation of the traffic mitigation measures would mitigate the significant adverse air quality impact.

H. CONSTRUCTION

As discussed in Chapter 20, "Construction," the Proposed Actions would result in significant adverse construction noise impacts throughout and adjacent to the Project Area (see Figure 20-2), as well as significant adverse impacts to historic architectural resources from construction.

HISTORIC AND CULTURAL RESOURCES

ARCHITECTURAL RESOURCES

Potential significant adverse impacts associated with inadvertent construction damage would occur to contributing resources in the S/NR-Eligible Gowanus Canal Historic District as a result of adjacent construction located within 90 feet of projected or potential development sites. Furthermore, such impacts would result in significant adverse impacts to three other S/NR-Eligible resources as a result of adjacent construction: Our Lady of Peace Church Complex, the Gowanus Canal Flushing Tunnel, and the IND Subway Viaduct.

Buildings or structures that are S/NR-Listed or NYCLs would be afforded standard protection under DOB's TPPN #10/88, regulations applicable to all buildings located adjacent (within 90 feet) to construction sites; however, since the resources identified above are not S/NR-Listed or NYCLs, they are not afforded the added special protections under DOB's TPPN #10/88. Additional protective measures afforded under DOB TPPN #10/88, which include a monitoring program to reduce the likelihood of construction damage to adjacent S/NR-Listed resources or NYCLs, would only become applicable if the S/NR-Eligible resources are listed or designated in the future prior to the initiation of construction. These mitigation measurs were not feasible, and therefore there is the potential for inadvertent construction damage and impacts to occur as a result of adjacent development resulting from the Proposed Actions and this would result in an unavoidable adverse impact to architectural resources due to construction.

CONSTRUCTION NOISE

This analysis was based on a conceptual site plan and construction schedule. The conceptual construction schedule conservatively accounts for overlapping construction activities at development sites in proximity to one another to capture the cumulative nature of construction impacts with respect to number of worker vehicles, trucks, and construction equipment at any given time, within reasonable construction scheduling constraints for each of the development sites in the rezoning area. Because the analysis is based on construction phases, it does not capture the natural daily and hourly variability of construction noise at each receptor. The level of noise produced by construction fluctuates throughout the days and months of the construction phases, while the construction noise analysis is based on the worst-case time periods only, which is conservative.

NOISE REDUCTION MEASURES

Construction of the Proposed Project would be required to follow the requirements of the NYC Noise Control Code for construction noise control measures. Specific noise control measures would be incorporated in noise mitigation plan(s) required under the NYC Noise Control Code. These measures could include a variety of source and path controls.

The following proposed mitigation measures beyond the noise control measures already identified in Chapter 20, "Construction," may partially mitigate significant adverse impacts (and substantially reduce construction-related noise levels) at some locations:

- Noise barriers constructed from plywood or other materials at a height of 12 to 16 feet utilized to provide shielding;
- Utilization of isolation pads between the pile driver hammer and piles;
- Acoustical shrouds surrounding the pile driver hammer and piles;
- Electric cranes or cranes with exhaust silencers that have lower noise emission levels; and
- Excavators with exhaust silencers that have lower noise emission levels.

Between publication of the DEIS and FEIS, the above mitigation measures were explored, however none were determined feasible and practicable. It should be noted that even if all of the above mitigation measures were determined to be feasible and practicable, some significant adverse construction noise impacts could potentially continue to be experienced at sensitive receptors and, as the result, be unavoidable. Therefore, the significant adverse construction noise impacts associated with Projected Development Site 47, Projected Development Sites represented by Site 15, and Projected Development Sites represented by Site 19, as identified in Chapter 20, "Construction," would be unavoidable. ✷