# Chapter 21: Mitigation

## 21.1 Introduction

In accordance with the *City Environmental Quality Review (CEQR) Technical Manual,* where significant adverse impacts are identified, mitigation measures to reduce or eliminate the impacts to the fullest extent practicable are developed and evaluated. Measures to further mitigate adverse impacts will be evaluated between the Draft Environmental Impact Statement (DEIS) and the Final EIS (FEIS). Therefore, the FEIS will include more complete information and commitments on all practicable mitigation measures to be implemented with the Proposed Actions.

## 21.2 Principal Conclusions

**COMMUNITY FACILITIES**

### *Public Schools*

As discussed in Chapter 4, "Community Facilities and Services," the Proposed Actions would result in significant adverse impacts to elementary and intermediate schools in CSD 9, Sub-district 2 and elementary schools in CSD 10, Sub-district 4. Based on the conceptual construction schedule, CSD 9, Sub-district 2 is anticipated to exceed significant adverse impact thresholds for elementary schools in 2020 and intermediate schools in 2019 and CSD 10, Sub-district 4 is anticipated to exceed significant adverse impacts for elementary schools in 2025. Possible administrative and capital mitigation measures have been identified:

- Restructuring or reprogramming existing school space under the DOE control in order to make available more capacity in existing school buildings located within CSD 9, Sub-district 2 and CSD 10, Sub-district 4;
- Relocating administrative functions to another site, thereby freeing up space for classrooms; and/or

- Creating additional capacity in the area by constructing a new school(s), building additional capacity at existing schools, or leasing additional school space constructed as part of projected development within CSD 9, Sub-district 2 and CSD 10, Sub-district 4.

The New York City Department of City Planning (DCP), as lead agency, will explore possible mitigation measures with the New York City School Construction Authority (SCA)/Department of Education (DOE) between DEIS and FEIS. However, even if mitigation measures are determined to be feasible and practicable, some significant adverse public school impacts could potentially continue to be experienced, as a result, be unavoidable. Consequently, the significant adverse public school impacts identified in Chapter 4, "Community Facilities and Services," would be unavoidable.

## SHADOWS

As discussed in Chapter 6, "Shadows," the Proposed Actions would result in significant shadows impacts at eight open space resources. The analysis determined that six resources (Bronx School of Young Leaders, PS 306 Schoolyard, Mount Hope Playground, Goble Playground, Inwood Park, Keltch Park) would experience significant incremental shadow coverage, duration, and/or periods of complete sunlight loss that could have the potential to affect open space utilization or enjoyment. Two resources (Edward L Grant Greenstreet, Jerome Avenue/Grant Avenue Greenstreet) would not receive adequate sunlight during the growing season (at least the four to six hour minimum specified in the *CEQR Technical Manual*) as a result of incremental shadow coverage and vegetation at these resources could be significantly impacted.

Possible measures that could mitigate significant adverse shadow impacts on open spaces may include relocating sunlight-sensitive features within an open space to avoid sunlight loss; relocating or replacing vegetation; undertaking additional maintenance to reduce the likelihood of species loss; or providing replacement facilities on another nearby site. Other potential mitigation strategies include the redesign or reorientation of the open space site plan to provide for replacement facilities, vegetation, or other features. The *CEQR Technical Manual* guidelines also discuss strategies to reduce or eliminate shadow impacts, including modifications to the height, shape, size, or orientation of a proposed development that creates the significant adverse shadow impact. The New York City Department of City Planning (DCP), as lead agency, will explore possible mitigation measures with the New York City Department of Parks and Recreation (NYC Parks) between the DEIS and FEIS. Absent the identification and implementation of feasible and practicable measures, the Proposed Actions would result in unmitigated significant adverse shadows impacts.

## TRANSPORTATION

### *Traffic*

As described in Chapter 13, "Transportation," the Proposed Actions would result in significant adverse traffic impacts at 22 study area intersections during one or more analyzed peak hours; specifically, 16 lane groups at 14 intersections during the weekday AM peak hour, 19 lane groups at 15 intersections in the weekday midday peak hour, 32 lane groups at 21 intersections in the weekday PM peak hour, and 30 lane groups at 19 intersections during the Saturday midday peak hour. Implementation of traffic engineering improvements such as signal timing changes or modifications to curbside parking regulations would provide mitigation for many, but not all, of the anticipated traffic impacts. Implementation of the recommended traffic engineering improvements is subject to review and approval by DOT. If, prior to implementation, DOT determines that an identified mitigation measure is infeasible, an alternative and equivalent mitigation measure will be identified.

Table 21-1, "Summary of Lane Groups/Intersections with Significant Adverse Traffic Impacts," lists that significant adverse impacts would be fully mitigated at all intersections except three lane groups at two intersections during the weekday AM peak hour, three lane groups at two intersections during the midday peak hours, 18 lane groups at nine intersections during the PM peak hour, and nine lane groups at five intersections during the Saturday midday peak hour. Table 21-2, "Lane Groups with Unmitigated Significant Adverse Traffic Impacts," provides a more detailed summary of the intersections and lane groups that would have significant adverse traffic impacts. In total, impacts to one or more approach movements would remain unmitigated in one or more peak hours at up to eight study 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 | 162/36 | 146/22 | 16/14 | 13/12 | 3/2 |
| Weekday Midday | 162/36 | 143/31 | 19/15 | 16/13 | 3/2 |
| Weekday PM | 162/36 | 129/15 | 32/21 | 14/12 | 18/9 |
| Saturday Midday | 162/36 | 132/17 | 30/19 | 21/14 | 9/5 |

**Table 21-2: Lane Groups with Unmitigated Significant Adverse Traffic Impacts**

| Signalized Intersections | Peak Hour | | | |
|---|---|---|---|---|
| | Weekday AM | Weekday Midday | Weekday PM | Saturday Midday |
| Jerome Avenue and Kingsbridge Road | -- | -- | NB - LTR | NB - LTR |
| Jerome Avenue and Fordham Road | -- | -- | NB - LTR, SB - LTR | -- |
| Jerome Avenue and Burnside Avenue | -- | SB - LTR | WB - LTR, SB - LTR | WB - LTR, SB - LTR |
| Jerome Avenue and 167th Street | EB - R, NB - DefL | EB - R, NB - DefL | EB - R, NB - DefL | EB - R, NB - DefL, NB - TR |
| River Avenue and 167th Street | -- | -- | NB - LTR | -- |
| Grand Concourse and Burnside Avenue | -- | -- | EB - LTR | EB - LTR |
| Grand Concourse and Tremont Avenue | -- | -- | EB - TR, WB – L, NB - L | -- |
| Grand Concourse and Mt. Eden Avenue | -- | -- | EB - LTR, WB - LTR, NB - L | -- |
| Grand Concourse and 167th Street | EB - TR | -- | EB – L, EB – TR, WB - TR | EB – TR, WB - L |

## *Transit*

### Bus

The Proposed Actions would result in a capacity shortfall on the east and westbound Bx11, southbound Bx32, and eastbound Bx35 in the AM peak hour and on the westbound Bx11, north and southbound Bx32, and east and westbound Bx35 in the PM peak hour. The significant adverse impacts to Bx11, Bx32, and Bx35 local bus service could be fully mitigated by the addition of a total of five standard buses in the AM peak hour and six standard buses in the PM peak hour. The general policy of NYCT is to provide additional bus service where demand warrants, taking into account financial and operational constraints.

## *Pedestrians*

Incremental demand from the Proposed Actions would significantly adversely impact one sidewalk, one crosswalk, and one corner area in one or more peak hours. Recommended mitigation measures to

address these impacts are discussed below. Implementation of these measures would be subject to review and approval by DOT. If, prior to implementation, DOT determines that an identified mitigation measure is infeasible, an alternative and equivalent mitigation measure will be identified.

**Sidewalks**

One of the 33 analyzed sidewalks would be significantly adversely impacted by the Proposed Actions—the south sidewalk of West 170th Street between Edward L. Grant Highway and Cromwell Avenue in the Saturday midday peak hour. The sidewalk at this location is eight feet wide with a five foot grass buffer between the sidewalk and the fence line of the adjacent property. Paving this five foot grass verge would increase the width of this sidewalk and fully mitigate the significant adverse impact to this sidewalk. No unmitigated significant adverse sidewalk impacts would remain upon incorporation of the recommended mitigation measures.

**Crosswalks**

One of the 41 analyzed crosswalks would be significantly adversely impacted by the Proposed Actions—south crosswalk of East 167th Street and Jerome Avenue is projected to operate at LOS D during the weekday PM and Saturday midday peak hours. No unmitigated significant adverse crosswalk impacts would remain with implementation of the recommended mitigation measures.

**Corner Areas**

One of the 37 analyzed corner areas would be significantly adversely impacted by the Proposed Actions—the northeast corner of East 167th Street and Jerome Avenue is projected to operate at LOS D during the Weekday PM and Saturday midday peak hours. No feasible mitigation measures could be identified that would mitigate this significant adverse impact and this would remain an unmitigated significant adverse impact (refer to Chapter 22, “Unavoidable Adverse Impacts”).

## CONSTRUCTION

### *Transportation*

As described in Chapter 19, “Construction,” construction-related traffic would have significant adverse impacts at one intersection during the weekday construction 6-7 AM peak hour and 13 intersections during the weekday construction PM peak hour (3-4 PM). Most significant adverse impacts would be mitigated with the implementation of recommended mitigation measures, but unmitigated significant adverse impacts remain at one intersection during the construction AM peak hour and five intersections during the construction PM peak hour. No basic intersection improvement measures could mitigate the significant adverse construction-related impacts at these five intersections. Further measures to address these impacts will be explored with the relevant agencies between the DEIS and FEIS. If no additional

practicable mitigation is identified, these impacts would constitute unavoidable significant adverse traffic impacts as a result of the Proposed Action.

## *Noise*

As discussed in Chapter 19, "Construction," construction activities associated with the Proposed Action would occur on multiple development sites within the same geographic area and, as a result, has the potential to increase interior noise levels of existing adjacent commercial and residential buildings. These increases would likely approach or marginally exceed the impact threshold for short periods of time. The same potential to exceed the noise limits exist during other construction quarters bordering the peak construction period

The findings indicate that noise levels above the CEQR impact threshold are expected at several existing buildings adjacent to Projected Development Sites 33, 34, 35, 36 and to Projected Development Sites 43, 44, 45. For Projected Development Sites 33, 34, 35, 36 the highest noise levels are projected to be at top-level receptor locations adjacent to existing commercial and residential buildings on Cromwell Street between West Clarke Place and East 170$^{th}$ Street. For Projected Development Sites 43, 44, 45 the highest noise levels are projected to be at mid-level receptor locations adjacent to existing residential buildings o Gerard Street between McLellan Street and West 167$^{th}$ Street.

Although these locations are expected to experience exterior noise levels significantly above CEQR limits, for those buildings with double-paned glazed-glass windows and a closed ventilation system, it would keep interior noise levels for those buildings below or near the CEQR 50-dBA L10 impact threshold for commercial buildings and the CEQR 45-dBA L10 impact threshold for residential buildings. The interior noise levels of these adjacent buildings would likely approach or marginally exceed the CEQR L10 impact thresholds for short periods of time. The same potential for noise impacts also exist for similar noise-level increases at these and/or other receptor locations in the immediate vicinity of Project Development Sites 33, 34, 35, 36 and 43,44,45 during other construction quarters bordering this peak construction period (i.e., second quarter of 2018 and third quarter of 2022). If the peak construction scenario conservatively assumed for simultaneous construction on Project Development Sites 33, 34, 35, 36 and 43, 44, 45, the Proposed Action would result in a significant adverse construction noise impact.

## *Noise Reduction Measures*

Construction of the Proposed Projected 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 Code. These measures could include a variety of source and path controls.

The following proposed mitigation measures go beyond the noise control measures already identified in Chapter 19, "Construction," and 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;
- Utilizaion of isolation pads between 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 the DEIS and FEIS, the above mitigation measures will be explored, which are intended to address the pieces of construction equipment that would produce the highest noise levels. However, even if all of the above mitigation measures are determined to be feasible and practicable, some significant adverse construction noise impacts could potentially continue to be experienced at sensitive receptors and, as a result, be unavoidable. In the event no additional practicable or feasible mitigation measures are determined, the significant adverse construction noise impacts identified in Chapter 19, "Construction," would be unavoidable.

The proposed measures discussed above are considered partial mitigations only. Consequently, these impacts would not be completely eliminated and they would constitute an unmitigated significant adverse construction noise impact, as is discussed in Chapter 22, "Unavoidable Adverse Impacts."

## 21.3 Community Facilities

**PUBLIC SCHOOLS**

As discussed in Chapter 4, "Community Facilities and Services," in the future with the Proposed Actions, the elementary and intermediate school enrollment of Sub-district 2 of CSD 9 is anticipated to exceed the significant adverse impact threshold in the years 2020 and 2019 (respectively) based on the conceptual construction schedule. CSD 9, Sub-district 2 elementary schools would increase from a No-Action utilization rate of 128.7 percent to 151.5 percent in the With-Action condition (a 22.8 percentage point increase). CSD 9, Sub-district 2 intermediate schools would increase from a No-Action utilization rate of 125.9 to 171.2 in the With-Action condition (a 45.3 percentage point increase). As CSD 9, Sub-district 2 elementary and intermediate schools would operate over capacity in the future with the Proposed Actions

with an increase of five percentage points or more to their collective utilization rates between the No-Action and With-Action conditions, significant adverse impacts to this sub-district would result.

In the future with the Proposed Actions, the elementary school enrollment of Sub-district 4 of CSD 10 is anticipated to exceed the significant adverse impact threshold in the year 2025 based on the conceptual construction schedule. CSD 10, Sub-district 4 elementary schools would increase from a No-Action utilization rate of 115.7 percent to 121.9 percent in the With-Action condition (a 6.2 percentage point increase). As CSD 10, Sub-district 4 elementary schools would operate over capacity in the future with the Proposed Actions with an increase of five percentage points or more to their collective utilization rates between the No-Action and With-Action conditions, significant adverse impacts to this sub-district would result.

In the RWCDS, 1,947 incremental DUs would be developed within CSD 9, Sub-district 2 (compared to the No-Action condition), which would result in significant adverse impacts on elementary schools within the sub-district that are projected to occur in the year 2020, based on the conceptual construction schedule. To avoid the identified significant adverse elementary school impact in CSD 9, Sub-district 2, the number of incremental dwelling units that could be developed would have to be reduced to 427, generating 166 elementary school students as compared to No-Action conditions. This would represent a decrease of 1,520 Dus (78.1 percent) in CSD 9, Sub-district 2. An increase of 166 elementary school students within Sub-district 2 of CSD 9, would increase the No-Action utilization rate in the sub-district by less than five percentage points and would be below the *CEQR Technical Manual* threshold and thus, not a significant adverse impact.

In the RWCDS, 1,947 incremental Dus would be developed within CSD 9, sub-district 2 (compared to the No-Action condition), which would result in significant adverse impacts on intermediate schools within the sub-district that are projected to occur in the year 2019, based on the conceptual construction schedule. To avoid the significant adverse intermediate school impact in CSD 9, Sub-district 2, the number of incremental dwelling units that could be developed would have to be reduced to 210 Dus, generating 34 intermediate school students as compared to the No Action condition. This would represent a decrease of 1,737 Dus (89.2 percent) in CSD 9, Sub-district 2. The 34 intermediate school students within CSD 19, Sub-district 2 would increase the No-Action utilization rate in the sub-district by less than five percentage points and would similarly be below the *CEQR Technical Manual* threshold that would be considered a significant adverse impact.

In the RWCDS, 819 incremental Dus would be developed within CSD 10, Sub-district 4 (compared to the No-Action condition), which would result in significant adverse impacts on elementary schools within the sub-district that are projected to occur in the year 2025, based on the conceptual construction schedule. To avoid the significant adverse elementary school impact in CSD 10, Sub-district 4, the number of incremental dwelling units that could be developed would have to be reduced to 660 Dus, generating 257 elementary school students as compared to No-Action conditions. This would represent a decrease of 159 Dus (19.4 percent) in CSD 10, Sub-district 4. An increase of 257 elementary school students within

Sub-district 4 of CSD 10, would increase the No-Action utilization rate in the sub-district by less than five percentage points and would be below the *CEQR Technical Manual* threshold and thus, not a significant adverse impact.

While the Proposed Actions would also result in 398 and 66 incremental Dus in Sub-districts 1 and 3 of CSD 9, no significant adverse public school impacts would occur in these sub-districts in the 2026 With-Action condition. Additionally, the 819 Dus in Sub-district 4 of CSD 10 would not create a significant adverse impact on intermediate schools in the 2026 With-Action condition and therefore would not require mitigation measures.

Table 21-3, "Elementary and Intermediate School Impact Thresholds and Mitigation School Seats," below, indicates the number of incremental dwelling units within CSD 9, Sub-district 2 and CSD 10, Sub-district 4 that would result in a significant adverse impact requiring mitigation, as well as the number of additional elementary and intermediate schools that would need to be provided in order to mitigate the identified significant adverse impacts. In accordance with the *CEQR Technical Manual* impact criteria, the number of seats needed to mitigate the significant adverse impacts would either: (1) reduce the incremental increase in the sub-district's elementary or intermediate school capacity to less than five percent over the No-Action condition; or (2) reduce the With-Action utilization rate to less than 100 percent.

**Table 21-3: Elementary and Intermediate School Impact Thresholds and Mitigation School Seats**

| District and Sub-District and Grade Level | Impact Thresholds[1] | Mitigation Seats Needed to Fully Mitigate the Significant Adverse Impact |
|---|---|---|
| CSD 9, Sub-District 2, Elementary | 427 Dus (166 students) | 594 |
| CSD 9, Sub-District 2, Intermediate | 210 Dus (34 students) | 279 |
| CSD 10, Sub-District 4, Elementary | 660 Dus (257 students) | 63 |
| **Notes:**<br>[1]Represents increment over No-Action Condition | | |

Alternatively, several administrative and capital measures could be available to mitigate the significant adverse impacts, including:

- Restructuring or reprogramming existing school space under the DOE's control in order to make available more capacity in existing school buildings located within CSD 9, Sub-district 2 and CSD 10, Sub-district 4;
- Relocating administrative functions to another site, thereby freeing up space for classrooms; and/or
- Creating additional capacity in the area by constructing a new school(s), building additional capacity at existing schools, or leasing additional school space constructed as part of projected development within CSD 9, Sub-district 2 and CSD 10, Sub-district 4.

In general, the Proposed Actions would allow for the development of community facility space, including new school facilities, within the project area. It should also be noted that any new school facility would be subject to its own site selection process and separate environmental review. The New York City Department of City Planning (DCP), as lead agency, will explore possible mitigation measures with the New York City School Construction Authority (SCA)/Department of Education (DOE) between DEIS and FEIS. However, even if mitigation measures are determined to be feasible and practicable, some significant adverse public school impacts could potentially continue to be experienced, as a result, be unavoidable. Consequently, the significant adverse public school impacts identified in Chapter 4, "Community Facilities and Services," would be unavoidable.

## 21.4 Shadows

As discussed in Chapter 6, Shadows, a detailed shadows analysis determined that development resulting from the Proposed Actions would result in significant adverse shadow impacts on eight open space resources. No historic resources would be affected by incremental shadows. The 146 projected and potential development sites identified in the RWCDS would result in incremental shadow coverage on 41 open space resources. The detailed shadows analysis identified significant adverse impacts at eight open space resources. The analysis determined that six resources (Bronx School of Young Leaders, PS 306 Schoolyard, Mount Hope Playground, Goble Playground, Inwood Park, Keltch Park) would experience significant incremental shadow coverage, duration, and/or periods of complete sunlight loss that could have the potential to affect open space utilization or enjoyment. Two resources (Edward L Grant Greenstreet, Jerome Avenue/Grant Avenue Greenstreet) would not receive adequate sunlight during the growing season (at least the four to six hour minimum specified in the *CEQR Technical Manual*) as a result of incremental shadow coverage and vegetation at these resources could be significantly impacted. Measures to reduce or eliminate the significant adverse shadow impacts will be explored between the DEIS and FEIS. If no feasible or practicable mitigation measures can be identified and/or implemented to mitigate these shadow impacts, the Proposed Actions would result in an unavoidable significant adverse shadow impacts on these open space resources.

**BRONX SCHOOL OF YOUNG LEADERS**

On March 21, May 6, and June 21, the Bronx School of Young Leaders schoolyard would receive sizeable incremental shadow coverage during the morning hours when children are likely to be at recess and during the early afternoon hours when the schoolyard would be open to the general public. Incremental shadows would predominantly affect active recreational uses such as basketball and handball courts, a baseball diamond, running track, and blacktop game areas. As shadows are not static and move from west to east throughout the day, these amenities would continue to receive some direct sunlight on these three representative analysis days (see Chapter 6, "Shadows," Figure 6-9). In addition, incremental shadows on

active recreational uses during the months surrounding the summer solstice when temperatures are warmer would not significantly affect the usability of the open space.

On December 21, while the affected basketball and handball courts, baseball diamond, running track, and blacktop game areas would receive sizeable incremental shadow coverage, they would continue to receive some direct sunlight as shadows move from west to east throughout the day. Incremental shadow coverage on December 21, when temperatures would be colder and the use of the active recreational space would not be as high (compared to warmer months), would not affect the utilization or enjoyment of this open space resource. However, given the extended nature of incremental shadow coverage and periods of complete sunlight loss, incremental shadows may have the potential to affect the public's enjoyment of this resource, and therefore it is expected that the Bronx School of Young Leaders would experience a significant adverse shadow impact due to development resulting from the Proposed Actions.

### PS 306 SCHOOLYARD

On all four representative analysis days, the PS 306 schoolyard would receive sizeable incremental shadow coverage during the morning hours when children are likely to be at recess and early afternoon hours when the schoolyard would be open to the general public. Incremental shadows would affect a jungle-gym and bench seating. As shadows are not static and move from west to east throughout the day, these amenities would continue to receive some direct sunlight during the afternoon on these representative analysis days (see Chapter 6, "Shadows," Figure 6-9). However, given the extended nature of incremental shadow coverage and periods of complete sunlight loss, incremental shadows may have the potential to affect the public's enjoyment of this resource, and therefore, it is expected that the PS 306 Schoolyard would experience a significant adverse shadow impact due to development resulting from the Proposed Actions.

### MOUNT HOPE PLAYGROUND

On all four representative analysis days, the Mount Hope Playground would receive sizeable incremental shadow coverage during the late afternoon hours. Incremental shadows would affect both active (jungle-gym, basketball courts) and passive (bench seating) amenities. As shadows are not static and move from west to east throughout the day, these amenities would continue to receive some direct sunlight on these representative analysis days (see, Chapter 6, "Shadows," Figure 6-10). In addition, incremental shadows on active recreational uses during the months surrounding the summer solstice when temperatures are warmer would not significantly affect the usability of the open space. Incremental shadow coverage on December 21, when temperatures would be colder and the use of the active recreational space would not be as high (compared to warmer months), would not affect the utilization or enjoyment of this open space resource. Further, the open space would still receive adequate sunlight during the growing season (at least the four to six hours specified in the *CEQR Technical Manual*), and vegetation (trees, plantings) would

not be affected. However, given the extended nature of incremental shadow coverage, incremental shadows may have the potential to affect the public's enjoyment of this resource, and therefore, it is expected that the Mount Hope Playground would experience a significant adverse shadow impact due to development resulting from the Proposed Actions.

## GOBLE PLAYGROUND

On March 21, May 6, and June 21 incremental shadows would generally be limited to portions of the open space that feature active recreational uses such as basketball and handball courts, a jungle-gym, and swings. As shadows are not static and move from west to east throughout the day, these amenities would continue to receive some direct sunlight on these three representative analysis days (see Chapter 6, "Shadows," Figure 6-16). In addition, incremental shadows on active recreational uses during the months surrounding the summer solstice when temperatures are warmer would not significantly affect the usability of the open space. Further, the open space would continue to receive adequate sunlight during the growing season (at least the four to six hour minimum specified in the *CEQR Technical Manual*) and vegetation would not be affected.

On December 21, while the playground would receive sizeable incremental shadow coverage, affected amenities would continue to receive some direct sunlight as shadows move from west to east throughout the day. Incremental shadow coverage on December 21, when temperatures would be colder and the use of the active recreational space would not be as high (compared to warmer months), would not affect the utilization or enjoyment of this open space resource. In addition, bench seating areas would only be temporarily affected by incremental shadows, and a number of benches would receive direct sunlight throughout the afternoon, an important period of the day for users of this resource during the winter timeframe. Further, any vegetation would not be affected by incremental shadows, as the December 21 analysis day falls outside the plant growing season defined by the *CEQR Technical Manual*. However, given the extended nature of incremental shadow coverage and periods of complete sunlight loss, incremental shadows may have the potential to affect the public's enjoyment of this resource, and therefore, it is expected that Goble Playground would experience a significant adverse shadow impact due to development resulting from the Proposed Actions.

## INWOOD PARK

Inwood Park is an approximately 0.36-acre open space located on West Mount Eden Avenue between Jerome Avenue and Inwood Avenue. The park is comprised of paved blacktop with trees and benches located along the perimeter.

This open space resource would experience incremental shadow coverage on all four representative analysis days, with incremental shadow duration ranging from approximately 6 hours and 2 minutes on December 21 to 12 hours and 4 minutes on June 21 (see Chapter 6, "Shadows," Figure 6-14). While the park would receive sizeable incremental shadow coverage, shadows are not static and would move from west to east throughout the day, allowing the affected benches and trees to continue to receive some direct sunlight on all representative analysis days (see Chapter 6, "Shadows," Figure 6-14). In addition, the open space would continue to receive adequate sunlight during the growing season (at least the four to

six hour minimum specified in the *CEQR Technical Manual*) and any vegetation present would not be affected.

On December 21, trees and vegetation would not be affected by incremental shadows, as the December 21 analysis day falls outside the plant growing season defined by the *CEQR Technical Manual*. In addition, some benches would receive direct sunlight throughout the afternoon, an important period of the day for users of this resource during the winter timeframe. Bench seating would also be available nearby at Jerome Playground South, which is located approximately one block to the east of Inwood Park. However, given the extended nature of incremental shadow coverage, incremental shadows may have the potential to affect the public's enjoyment of this resource, and therefore, it is expected that Inwood Park would experience a significant adverse shadow impact due to development resulting from the Proposed Actions.

### KELTCH PARK

On the March 21, May 6, and June 21 representative analysis days, incremental shadows would be concentrated in the morning and afternoon hours. As shadows are not static and move from west to east throughout the day, the park's amenities would continue to receive some direct sunlight on these three representative analysis days (see Chapter 6, "Shadows," Figure 6-21). Between 11:15 AM and 2:08 PM, the park would not receive any incremental shadow coverage and would receive adequate sunlight during the growing season (at least the four to six hour minimum specified in the *CEQR Technical Manual*). On December 21, which falls outside the plant growing season defined by the *CEQR Technical Manual*, vegetation would not be affected. However, given the extended nature of incremental shadow coverage, incremental shadows may have the potential to affect the public's enjoyment of this resource, and therefore, it is expected that Keltch Park would experience a significant adverse shadow impact due to development resulting from the Proposed Actions.

### EDWARD L GRANT GREENSTREET

This open space resource serves as a median for Edward L Grant Highway, stretching the entire length of the street from University Avenue in the north to Jerome Avenue in the south. Each block of the Greenstreet is predominantly paved with trees interspersed at varying intervals.

This Greenstreet would experience incremental shadow coverage on all four representative analysis days ranging from 6 hours 2 minutes on December 21 to 9 hours 46 minutes on June 21 (see Chapter 6, "Shadows," Table 6-4). While incremental shadows would last up to 9 hours 46 minutes, the areas affected by incremental shadows are predominantly paved and feature few trees. As shadows are not static and move from west to east throughout the day, the Greenstreet would continue to receive some direct sunlight on all representative analysis days (see Chapter 6, "Shadows," figures 6-17, 6-19, 6-20, 6-25, 6-26). However, some areas of the Edward L Grant Greenstreet could be significantly impacted and the Greenstreet may no longer be able to support a variety of plant life, as compared to the No-Action condition. Therefore, Edward L. Grant Greenstreet would experience a significant adverse shadow impact due to development resulting from the Proposed Actions.

### JEROME AVENUE/EDWARD L GRANT HIGHWAY GREENSTREET

On all four representative analysis days, the Jerome/Grant Greenstreet would receive sizeable incremental shadow coverage during the morning and late afternoon hours. Incremental shadows would primarily affect plantings found within the open space. As shadows are not static and move from west to east throughout the day, these amenities would continue to receive some direct sunlight on these representative analysis days (see Chapter 6, "Shadows," Figure 6-26). Though the open space would continue to receive uninterrupted direct sunlight throughout portions of the afternoon, it may not receive adequate sunlight during the growing season (at least the four to six hour minimum specified in the *CEQR Technical Manual*) and as a result, this open space resource may no longer be able to support a variety of plant life, as compared to the No-Action condition. Therefore, it is expected that Jerome Avenue/ Edward L. Grant Highway Greenstreet would experience a significant adverse shadow impact due to development resulting from the Proposed Actions.

Possible measures that could mitigate significant adverse shadow impacts on open spaces may include relocating sunlight-sensitive features within an open space to avoid sunlight loss; relocating or replacing vegetation; undertaking additional maintenance to reduce the likelihood of species loss; or providing replacement facilities on another nearby site. Other potential mitigation strategies include the redesign or reorientation of the open space site plan to provide for replacement facilities, vegetation, or other features. The *CEQR Technical Manual* guidelines also discuss strategies to reduce or eliminate shadow impacts, including modifications to the height, shape, size, or orientation of a proposed development that creates the significant adverse shadow impact. The New York City Department of City Planning (DCP), as lead agency, will explore possible mitigation measures with the New York City Department of Parks and Recreation (NYC Parks) between the DEIS and FEIS. Absent the identification and implementation of feasible and practicable measures, the Proposed Actions would result in unmitigated significant adverse shadows impacts.

## 21.5 Transportation

### TRAFFIC

As described in Chapter 13, "Transportation," the Proposed Actions would result in significant adverse traffic impacts at 22 study area intersections during one or more analyzed peak hours; specifically, 16 lane groups at 14 intersections during the weekday AM peak hour, 19 lane groups at 15 intersections during the midday peak hour, 32 lane groups at 21 intersections during the PM peak hour, and 31 lane groups at 19 intersections during the Saturday midday peak hour.

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

- Modification of traffic signal phasing and/or timing
- Elimination of on-street parking within 100 feet of intersections to add a limited travel/turn lane, known as "daylighting"

The types of mitigation measures proposed herein are standard measures that are routinely identified by the City and considered feasible for implementation. Table 21-5, "Proposed Traffic Mitigation Measures," summarizes the recommended mitigation measures for each of the intersections with significant adverse traffic impacts during the weekday AM, midday, and PM, and Saturday midday peak hours. Implementation of the recommended traffic engineering improvements is subjected to review and approval by DOT. If, prior to implementation, DOT determines that an identified mitigation measure is infeasible, an alternative and equivalent mitigation measure will be identified. The impacts would remain unmitigated in the absence of the application of mitigation measures.

As discussed previously in Chapter 13, "Transportation," the With-Action RWCDS includes the development of a total of 45 projected development sites that were identified and are considered for the purposes of the transportation analyses (see Chapter 13, "Transportation," Figure 13-1, "Traffic Study Areas"). Table 13-1, "RWCDS No-Action and With-Action Land Uses," lists the total anticipated No-Action and With-Action land uses on projected development sites in 2026 in the RWCDS. As listed in Table 13-1, in the RWCDS, the Proposed Actions would facilitate the incremental development of up to approximately 3,250 dwelling units (DUs); 35,575 square feet (sf) of commercial uses; and 72,272 sf of community facility uses (including 53,896 sf for a community center and 21,083 sf for a day-care center); as well as a net reduction of 47,795 sf of industrial uses and 99 accessory parking spaces.

Tables 21-6 through 21-9 show the v/c ratios, delays, and levels of service (LOS) for impacted lane groups at each intersection with implementation of these mitigation measures and compares them to No-Action and With-Action conditions for the weekday AM, midday, and PM, and Saturday midday peak hours, respectively. (The Action-With-Mitigation level of service analyses for all lane groups at each impacted intersection are listed in Appendix E2, "Level of Service (LOS) Tables and Parking Regulations") According to CEQR *Technical Manual* criteria, an impact is considered fully mitigated when the resulting LOS degradation under the Action-with-Mitigation condition compared to the No-Action condition is no longer deemed significant following the impact criteria described in Chapter 13, "Transportation." Tables 21-6 through 21-9 demonstrate that significant adverse impacts would be fully mitigated at all intersections except three lane groups at two intersections during the weekday AM peak hour, three lane groups at two intersections during the midday peak hours, 18 lane groups at nine intersections during the PM peak hour, and nine lane groups at five intersections during the Saturday midday peak hour. Table 21-2, "Lane Groups with Unmitigated Significant Adverse Traffic Impacts," provides a more detailed summary of the intersections and lane groups that would have significant adverse traffic impacts. In total, impacts to one

or more approach movements would remain unmitigated in one or more peak hours at up to nine study intersections. Consequentially, these impacts would constitute unavoidable significant adverse traffic impacts as a result of the Proposed Action (refer to Chapter 22, “Unavoidable Adverse Impacts”).

## Table 21-5: Proposed Traffic Mitigation Measures

| Intersection | Signal Phase | No-Action Signal Timing (Seconds) | | | | Proposed Signal Timing (Seconds) | | | | Recommended Mitigation |
|---|---|---|---|---|---|---|---|---|---|---|
| | | AM | MD | PM | SAT MD | AM | MD | PM | SAT MD | |
| Jerome Avenue and Kingsbridge Road | EB/WB | 54 | 39 | 54 | 39 | 54 | 36 | 54 | 39 | - Transfer 3 seconds of green time from EB/WB to NB/SB during Midday.<br>- PM and Saturday are unmitigatable. |
| | Ped | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| | NB/SB | 52 | 37 | 52 | 37 | 52 | 40 | 52 | 37 | |
| | Ped | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| Jerome Avenue and Fordham Road | EB/WB | 81 | 56 | 86 | 78 | 75 | 51 | 86 | 72 | - Transfer 5 seconds of green time from EB/WB to NB/SB during Midday; 6 seconds on Saturday; 7 seconds during AM.<br>- PM is unmitigatable. |
| | NB/SB | 39 | 34 | 34 | 42 | 45 | 39 | 34 | 48 | |
| Jerome Avenue and Burnside Avenue | EB/WB | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | - Midday, PM and Saturday are unmitigatable. |
| | NB/SB | 60 | 60 | 60 | 60 | 60 | 60 | 60 | 60 | |
| Jerome Avenue and Tremont Avenue | EB/WB | 57 | 57 | 57 | 57 | 58 | 58 | 60 | 60 | - Transfer 1 seconds of green time from NB/SB to EB/WB during AM and Midday, 3 seconds during PM, and on Saturday. |
| | Ped | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| | NB/SB | 56 | 56 | 56 | 56 | 55 | 55 | 53 | 53 | |
| Jerome Avenue and Featherbed Lane | EB/WB | 30 | 30 | 30 | 30 | 31 | 31 | 31 | 31 | - Transfer 1 second of green time from NB/SB to EB/WB during AM, Midday, PM and Saturday. |
| | NB/SB | 60 | 60 | 60 | 60 | 59 | 59 | 59 | 59 | |
| Jerome Avenue and SB I-95 Off Ramps | WB | 45 | 45 | 45 | 45 | 45 | 45 | 43 | 44 | - Transfer 2 seconds of green time from WB to NB/SB during PM.<br>- Transfer 1 second of green time from WB to NB/SB on Saturday. |
| | NB/SB | 45 | 45 | 45 | 45 | 45 | 45 | 47 | 46 | |
| Jerome Avenue and NB I-95 Off Ramps | EB | 43 | 43 | 43 | 43 | 40 | 42 | 41 | 42 | - Transfer 3 seconds of green time from EB to SB-L during AM; 1 second during Midday and Saturday.<br>- Transfer 2 seconds during PM, 1 second for NB/SB and 1 second for SB-L. |
| | NB/SB | 32 | 32 | 32 | 32 | 32 | 32 | 33 | 32 | |
| | SB-L | 15 | 15 | 15 | 15 | 18 | 16 | 16 | 16 | |
| Jerome Avenue and Macombs Dam Bridge | EB | 21 | 21 | 26 | 21 | 22 | 22 | 27 | 21 | - Transfer 1 second of green time from NB/SB to EB during AM, Midday, and PM. |
| | Ped | 31 | 31 | 31 | 31 | 31 | 31 | 31 | 31 | |
| | NB/SB | 38 | 38 | 33 | 38 | 37 | 37 | 32 | 38 | |
| Jerome Avenue and 170th Street | EB/WB | 31 | 31 | 31 | 31 | 33 | 34 | 35 | 34 | - Transfer 2 seconds of green time from NB/SB to EB/WB during AM; 3 during Midday and on Saturday.<br>- Transfer 4 seconds of green time from NB/SB to EB/WB during PM |
| | Ped | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| | NB/SB | 52 | 52 | 52 | 52 | 50 | 49 | 48 | 49 | |
| Jerome Avenue and 167th Street | EB/WB-R | 28 | 28 | 28 | 28 | 28 | 28 | 28 | 28 | - AM, Midday, PM, and Saturday are unmitigatable. |
| | WB/NE | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | |
| | NB/SB | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | |
| Jerome Avenue and E. 165th Street | WB | 36 | 36 | 36 | 36 | 37 | 36 | 37 | 36 | - Transfer 1 second of green time from NB/SB to WB during AM and PM. |
| | NB/SB | 54 | 54 | 54 | 54 | 53 | 54 | 53 | 54 | |

## Table 21-5 (continued): Proposed Traffic Mitigation Measures

| Intersection | Signal Phase | No-Action Signal Timing (Seconds) | | | | Proposed Signal Timing (Seconds) | | | | Recommended Mitigation |
|---|---|---|---|---|---|---|---|---|---|---|
| | | AM | MD | PM | SAT MD | AM | MD | PM | SAT MD | |
| Grand Concourse and 176th Street | EB/WB | 38 | 41 | 38 | 41 | 39 | 43 | 39 | 41 | - Transfer 1 second of green time from NB/SB to EB/WB during AM and PM; 2 seconds Midday |
| | SB/SB-L | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | |
| | Ped | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| | NB/SB | 60 | 57 | 60 | 57 | 59 | 55 | 59 | 57 | |
| Grand Concourse and Burnside Avenue | EB/WB | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | - PM and Saturday are unmitigatable. |
| | NB-L/SB-L | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | |
| | NB/SB | 62 | 62 | 62 | 62 | 62 | 62 | 62 | 62 | |
| Grand Concourse and Tremont Avenue | EB/WB | 36 | 36 | 36 | 36 | 37 | 37 | 36 | 38 | - Transfer 1 second of green time from NB/SB to EB/WB in the AM and Midday. |
| | NB-L/SB-L | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 17 | - Transfer 2 seconds of green time from NB/SB; increase NB-L/SB-L 1 second, and EB/WB 1 second on Saturday. |
| | Ped | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| | NB/SB | 61 | 61 | 61 | 61 | 60 | 60 | 61 | 58 | - PM is unmitigatable |
| Grand Concourse and Mt. Eden Avenue | EB/WB | 42 | 42 | 42 | 42 | 49 | 43 | 42 | 43 | - Transfer 3 seconds of green time from NB/SB; increase NB-L/SB-L 2 seconds, and EB/WB 1 second during Midday. |
| | NB-L/SB-L | 15 | 15 | 15 | 15 | 15 | 17 | 15 | 16 | |
| | Ped | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | - Transfer 2 seconds of green time from NB/SB; increase NB-L/SB-L 1 second, and EB/WB 1 seconds on Saturday. |
| | NB/SB | 56 | 56 | 56 | 56 | 56 | 53 | 56 | 54 | |
| Grand Concourse and 170th Street | EB/WB | 45 | 45 | 45 | 45 | 45 | 45 | 44 | 45 | - Transfer 1 second of green time from EB/WB, 1 second of green time from NB/SB, and increase NB-L/SB-L green time by 2 seconds during PM. |
| | NB-L/SB-L | 15 | 15 | 15 | 15 | 15 | 15 | 17 | 16 | |
| | NB/SB | 60 | 60 | 60 | 60 | 60 | 60 | 59 | 59 | - Transfer 1 second of green time from NB/SB to NB-L/SB-L on Saturday. |
| Grand Concourse and 167th Street | EB/WB | 42 | 43 | 42 | 43 | 42 | 48 | 42 | 43 | - Transfer 5 seconds of green time from NB/SB to EB/WB in the Midday. |
| | SB-L | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | -AM, PM, and Saturday are unmitigatable. |
| | Ped | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| | NB/SB | 56 | 55 | 56 | 55 | 56 | 50 | 56 | 55 | |
| Cromwell Avenue and 170th Street | EB/WB | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 49 | - Transfer 1 second of green time from EB/WB to NB/SB on Saturday. |
| | NB/SB | 40 | 40 | 40 | 40 | 40 | 40 | 40 | 41 | |
| River Avenue and 167th Street | EB/WB | 52 | 52 | 52 | 52 | 54 | 50 | 52 | 50 | - Transfer 2 seconds from EB/WB to NB/SB during Midday and on Saturday. |
| | Ped | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | - PM is unmitigatable. |
| | NB/SB | 31 | 31 | 31 | 31 | 36 | 33 | 31 | 33 | |
| Edward L. Grant Highway and W. 170th Street | EB/WB | 40 | 40 | 40 | 40 | 42 | 44 | 42 | 42 | - Transfer 2 seconds of green time from NB/SB to EB/WB during AM, PM, and Saturday. - Transfer 4 seconds from NB/SB to EB/WB during Midday. |
| | NB/SB | 80 | 80 | 80 | 80 | 78 | 76 | 78 | 78 | |
| Inwood Avenue and W. 170th Street | EB/WB | 46 | 46 | 46 | 46 | 47 | 46 | 46 | 48 | - Transfer 1 second from NB to EB/WB during AM. |
| | Ped | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | - Daylight EB approach to allow for two 10' lanes for Midday and PM. Transfer 2 seconds of green time from NB to EB/WB on Saturday. |
| | NB | 30 | 30 | 30 | 30 | 29 | 30 | 30 | 28 | |
| | Ped | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | |
| University Avenue and Washington Bridge Off-Ramps | EB | 30 | 30 | 30 | 30 | 31 | 30 | 31 | 31 | - Transfer 1 second of green time from NB/SB2 to EB during AM, PM, and Saturday. |
| | NB2/SB2 | 33 | 33 | 35 | 33 | 32 | 33 | 34 | 32 | |
| | NB/SB | 27 | 27 | 25 | 27 | 27 | 27 | 25 | 27 | |

## Table 21-6: Action-With-Mitigation Conditions at Impacted Lane Groups – Weekday AM Peak Hour

| INTERSECTION & APPROACH | | Mvt. | AM No-Action | | | AM With-Action | | | AM Mitigated | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | V/C | Control Delay | LOS | V/C | Control Delay | LOS | V/C | Control Delay | LOS |
| **Jerome Avenue and Fordham Road** | | | | | | | | | | | |
| Jerome Avenue | NB | LTR | 0.88 | 67.6 | E | 1.16 | 147.3 | F | 0.92 | 67.5 | E |
| **Jerome Avenue and Tremont Avenue** | | | | | | | | | | | |
| Tremont Avenue | EB | LTR | 1.07 | 95.4 | F | 1.09 | 101.9 | F | 1.06 | 92.6 | F |
| **Jerome Avenue and Featherbed Lane** | | | | | | | | | | | |
| Featherbed Lane | EB | DefL | 1.11 | 152.9 | F | 1.13 | 159.0 | F | 1.04 | 127.6 | F |
| **Jerome Avenue and NB I-95 Ramps** | | | | | | | | | | | |
| Jerome Avenue | SB | DefL | 1.02 | 78.0 | E | 1.13 | 118.2 | F | 1.00 | 73.3 | E |
| **Jerome Avenue and Macombs Dam Bridge** | | | | | | | | | | | |
| Jerome Avenue | EB | L | 0.88 | 64.9 | E | 0.91 | 71.1 | E | 0.86 | 60.9 | E |
| **Jerome Avenue and 170th Street** | | | | | | | | | | | |
| 170th Street | EB | LTR | 0.88 | 51.9 | D | 0.93 | 60.3 | E | 0.87 | 47.8 | D |
| | WB | LTR | 1.07 | 96.4 | F | 1.13 | 114.7 | F | 1.05 | 85.1 | F |
| **Jerome Avenue and 167th Street** | | | | | | | | | | | |
| Edward L. Grant Highway | EB | R | 1.18 | 154.9 | F | 1.43 | 257.8 | F | 1.43 | 257.8 | F |
| Jerome Avenue | NB | DefL | 0.84 | 63.6 | E | 0.96 | 87.4 | F | 0.96 | 87.4 | F |
| **Jerome Avenue and E. 165th Street** | | | | | | | | | | | |
| E. 165th Street | WB | LR | 0.94 | 61.8 | E | 0.97 | 67.7 | E | 0.94 | 60.0 | E |
| **Grand Concourse and 176th Street** | | | | | | | | | | | |
| 176th Street | EB | LTR | 0.78 | 62.5 | E | 0.82 | 66.8 | E | 0.79 | 62.1 | E |
| **Grand Concourse and Tremont Avenue** | | | | | | | | | | | |
| Tremont Avenue | EB | TR | 1.38 | 247.1 | F | 1.42 | 263.2 | F | 1.37 | 240.1 | F |
| **Grand Concourse and 167th Street** | | | | | | | | | | | |
| 167th Street | EB | TR | 1.04 | 110.4 | F | 1.18 | 156.4 | F | 1.18 | 156.4 | F |
| **Edward L. Grant Highway and W. 170th Street** | | | | | | | | | | | |
| W. 170th Street | WB | LTR | 1.00 | 84.7 | F | 1.06 | 102.9 | F | 0.99 | 80.3 | F |
| **Inwood Avenue and W. 170th Street** | | | | | | | | | | | |
| W. 170th Street | EB | LT | 1.02 | 71.6 | E | 1.04 | 77.0 | E | 1.00 | 64.2 | E |
| **University Avenue and Washington Bridge Off-Ramps** | | | | | | | | | | | |
| Washington Bridge Off-Ramps | EB | R | 1.03 | 84.6 | F | 1.05 | 90.3 | F | 1.00 | 77.2 | E |

**Note:** shaded cells indicate unmitigated delays.

## Table 21-7: Action-With-Mitigation Conditions at Impacted Lane Groups – Weekday Midday Peak Hour

| INTERSECTION & APPROACH | | Mvt. | Midday No-Action | | | Midday With-Action | | | Midday Mitigated | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | V/C | Control Delay | LOS | V/C | Control Delay | LOS | V/C | Control Delay | LOS |
| **Jerome Avenue and Kingsbridge Road** | | | | | | | | | | | |
| Jerome Avenue | NB | LTR | 1.09 | 104.5 | F | 1.29 | 180.0 | F | 1.07 | 94.2 | F |
| **Jerome Avenue and Fordham Road** | | | | | | | | | | | |
| Jerome Avenue | NB | LTR | 0.99 | 75.0 | E | 1.26 | 168.6 | F | 1.01 | 75.0 | E |
| | SB | LTR | 0.95 | 65.5 | E | 1.08 | 98.6 | F | 0.87 | 45.8 | D |
| **Jerome Avenue and Burnside Avenue** | | | | | | | | | | | |
| Jerome Avenue | SB | LTR | 0.68 | 31.8 | C | 0.90 | 49.5 | D | 0.90 | 49.5 | D |
| **Jerome Avenue and Tremont Avenue** | | | | | | | | | | | |
| Tremont Avenue | EB | LTR | 1.05 | 91.0 | F | 1.07 | 97.3 | F | 1.05 | 87.6 | F |
| **Jerome Avenue and Featherbed Lane** | | | | | | | | | | | |
| Featherbed Lane | EB | DefL | 1.02 | 116.7 | F | 1.09 | 136.8 | F | 1.02 | 113.2 | F |
| **Jerome Avenue and NB I-95 Ramps** | | | | | | | | | | | |
| Jerome Avenue | SB | DefL | 0.88 | 51.9 | D | 0.93 | 61.2 | E | 0.89 | 53.5 | D |
| **Jerome Avenue and Macombs Dam Bridge** | | | | | | | | | | | |
| Jerome Avenue | EB | L | 0.95 | 78.1 | E | 0.98 | 85.3 | F | 0.92 | 70.8 | E |
| **Jerome Avenue and 170th Street** | | | | | | | | | | | |
| 170th Street | WB | LTR | 0.88 | 54.0 | D | 0.99 | 76.0 | E | 0.88 | 50.9 | D |
| **Jerome Avenue and 167th Street** | | | | | | | | | | | |
| Edward L. Grant Highway | EB | R | 1.01 | 104.8 | F | 1.18 | 162.7 | F | 1.18 | 162.7 | F |
| Jerome Avenue | NB | DefL | 0.82 | 57.4 | E | 0.99 | 92.8 | F | 0.99 | 92.8 | F |
| **Grand Concourse and 176th Street** | | | | | | | | | | | |
| 176th Street | EB | LTR | 0.77 | 56.7 | E | 0.85 | 65.3 | E | 0.80 | 57.3 | E |
| **Grand Concourse and Tremont Avenue** | | | | | | | | | | | |
| Tremont Avenue | EB | TR | 0.76 | 61.4 | E | 0.79 | 64.3 | E | 0.77 | 60.3 | E |
| **River Avenue and 167th Street** | | | | | | | | | | | |
| River Avenue | NB | LTR | 1.07 | 112.6 | F | 1.17 | 146.0 | F | 1.08 | 112.8 | F |
| **Grand Concourse and Mt. Eden Avenue** | | | | | | | | | | | |
| Mt. Eden Avenue | EB | LTR | 1.09 | 123.2 | F | 1.12 | 135.8 | F | 1.08 | 118.9 | F |
| | WB | LTR | 1.14 | 141.2 | F | 1.17 | 152.0 | F | 1.14 | 137.2 | F |
| Grand Concourse Mainline | NB | L | 0.53 | 66.7 | E | 0.63 | 73.5 | E | 0.53 | 63.0 | E |
| **Grand Concourse and 167th Street** | | | | | | | | | | | |
| 167th Street | EB | TR | 1.15 | 144.4 | F | 1.33 | 213.4 | F | 1.16 | 140.7 | F |
| **Edward L. Grant Highway and W. 170th Street** | | | | | | | | | | | |
| W. 170th Street | WB | LTR | 0.83 | 55.0 | D | 0.98 | 80.7 | F | 0.86 | 56.2 | E |
| **Inwood Avenue and W. 170th Street** | | | | | | | | | | | |
| W. 170th Street | EB | LT | 1.04 | 78.8 | E | 1.14 | 114.3 | F | - | - | - |
| | | L | - | - | - | - | - | - | 0.60 | 26.7 | C |
| | | T | - | - | - | - | - | - | 0.32 | 16.7 | B |

**Note:** shaded cells indicate unmitigated delays.

## Table 21-8: Action-With-Mitigation Conditions at Impacted Lane Groups – Weekday PM Peak Hour

| INTERSECTION & APPROACH | | Mvt. | PM No-Action | | | PM With-Action | | | PM Mitigated | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | V/C | Control Delay | LOS | V/C | Control Delay | LOS | V/C | Control Delay | LOS |
| **Jerome Avenue and Kingsbridge Road** | | | | | | | | | | | |
| Jerome Avenue | NB | LTR | 1.34 | 206.1 | F | 1.47 | 260.8 | F | 1.47 | 260.8 | F |
| **Jerome Avenue and Fordham Road** | | | | | | | | | | | |
| Jerome Avenue | NB | LTR | 1.21 | 163.1 | F | 1.66 | 355.4 | F | 1.66 | 355.4 | F |
| | SB | LTR | 1.34 | 222.4 | F | 1.38 | 239.5 | F | 1.38 | 239.5 | F |
| **Jerome Avenue and Burnside Avenue** | | | | | | | | | | | |
| Burnside Avenue | WB | LTR | 0.85 | 43.3 | D | 0.93 | 53.5 | D | 0.93 | 53.5 | D |
| Jerome Avenue | SB | LTR | 0.79 | 38.3 | D | 0.95 | 59.4 | E | 0.95 | 59.4 | E |
| **Jerome Avenue and Tremont Avenue** | | | | | | | | | | | |
| Tremont Avenue | EB | LTR | 1.23 | 154.6 | F | 1.31 | 188.4 | F | 1.21 | 146.1 | F |
| | WB | LTR | 1.27 | 173.2 | F | 1.31 | 189.1 | F | 1.22 | 147.5 | F |
| **Jerome Avenue and Featherbed Lane** | | | | | | | | | | | |
| Featherbed Lane | EB | DefL | 1.15 | 161.6 | F | 1.24 | 193.6 | F | 1.13 | 151.0 | F |
| **Jerome Avenue and SB I-95 Ramps** | | | | | | | | | | | |
| Jerome Avenue | SB | DefL | 0.85 | 45.2 | D | 0.94 | 60.5 | E | 0.88 | 47.3 | D |
| **Jerome Avenue and NB I-95 Ramps** | | | | | | | | | | | |
| Jerome Avenue | SB | DefL | 1.01 | 81.4 | F | 1.09 | 106.9 | F | 1.01 | 81.1 | F |
| **Jerome Avenue and Macombs Dam Bridge** | | | | | | | | | | | |
| Jerome Avenue | EB | L | 0.69 | 41.6 | D | 0.80 | 48.8 | D | 0.77 | 44.8 | D |
| **Jerome Avenue and 170th Street** | | | | | | | | | | | |
| 170th Street | WB | LTR | 1.01 | 78.8 | E | 1.17 | 133.6 | F | 1.01 | 73.7 | E |
| **Jerome Avenue and 167th Street** | | | | | | | | | | | |
| Edward L. Grant Highway | EB | R | 1.34 | 228.3 | F | 1.55 | 314.2 | F | 1.55 | 314.2 | F |
| Jerome Avenue | NB | DefL | 1.28 | 191.3 | F | 1.55 | 301.6 | F | 1.55 | 301.6 | F |
| **River Avenue and 167th Street** | | | | | | | | | | | |
| River Avenue | NB | LTR | 1.00 | 90.5 | F | 1.08 | 113.5 | F | 1.08 | 113.5 | F |
| **Jerome Avenue and E. 165th Street** | | | | | | | | | | | |
| E. 165th Street | WB | LR | 1.04 | 84.0 | F | 1.07 | 93.0 | F | 1.03 | 81.1 | F |
| **Grand Concourse and 176th Street** | | | | | | | | | | | |
| 176th Street | EB | LTR | 1.05 | 116.6 | F | 1.10 | 132.7 | F | 1.06 | 118.0 | F |
| **Grand Concourse and Burnside Avenue** | | | | | | | | | | | |
| Burnside Avenue | EB | LTR | 0.73 | 51.0 | D | 0.79 | 55.3 | E | 0.79 | 55.3 | E |
| **Grand Concourse and Tremont Avenue** | | | | | | | | | | | |
| Tremont Avenue | EB | TR | 1.06 | 119.1 | F | 1.12 | 139.7 | F | 1.12 | 139.7 | F |
| | WB | L | 0.70 | 66.1 | E | 0.75 | 73.3 | E | 0.75 | 73.3 | E |
| Grand Concourse Mainline | NB | L | 0.78 | 84.7 | F | 0.81 | 89.0 | F | 0.81 | 89.0 | F |
| **Grand Concourse and Mt. Eden Avenue** | | | | | | | | | | | |
| Mt. Eden Avenue | EB | LTR | 1.03 | 103.6 | F | 1.05 | 110.3 | F | 1.05 | 110.3 | F |
| | WB | LTR | 1.20 | 163.5 | F | 1.23 | 175.9 | F | 1.23 | 175.9 | F |
| Grand Concourse Mainline | NB | L | 0.72 | 80.9 | F | 0.80 | 90.6 | F | 0.80 | 90.6 | F |
| **Grand Concourse and 170th Street** | | | | | | | | | | | |
| Grand Concourse Mainline | NB | L | 0.67 | 76.1 | E | 0.83 | 96.0 | F | 0.69 | 73.5 | E |

## Table 21-8 (continued): Action-With-Mitigation Conditions at Impacted Lane Groups – Weekday PM Peak Hour

| INTERSECTION & APPROACH | | Mvt. | PM No-Action | | | PM With-Action | | | PM Mitigated | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | V/C | Control Delay | LOS | V/C | Control Delay | LOS | V/C | Control Delay | LOS |
| **Grand Concourse and 167th Street** | | | | | | | | | | | |
| 167th Street | EB | L | 1.16 | 172.6 | F | 1.17 | 176.3 | F | 1.17 | 176.3 | F |
| | | TR | 1.00 | 95.3 | F | 1.12 | 131.6 | F | 1.12 | 131.6 | F |
| | WB | TR | 1.15 | 142.2 | F | 1.16 | 145.7 | F | 1.16 | 145.7 | F |
| **Edward L. Grant Highway and W. 170th Street** | | | | | | | | | | | |
| W. 170th Street | WB | LTR | 0.95 | 72.0 | E | 1.03 | 91.8 | F | 0.97 | 74.5 | E |
| **Inwood Avenue and W. 170th Street** | | | | | | | | | | | |
| W. 170th Street | EB | LT | 1.13 | 109.4 | F | 1.28 | 169.4 | F | - | - | - |
| | | L | - | - | - | - | - | - | 0.72 | 34.2 | C |
| | | T | - | - | - | - | - | - | 0.32 | 15.4 | B |
| **University Avenue and Washington Bridge Off-Ramps** | | | | | | | | | | | |
| Washington Bridge Off-Ramps | EB | L | 1.08 | 103.9 | F | 1.11 | 115.1 | F | 1.06 | 94.6 | F |
| | | R | 1.00 | 78.8 | E | 1.06 | 95.4 | F | 1.02 | 81.1 | F |

**Note:** shaded cells indicate unmitigated delays.

## Table 21-9: Action-With-Mitigation Conditions at Impacted Lane Groups – Saturday Midday Peak Hour

| INTERSECTION & APPROACH | | Mvt. | Saturday Midday No-Action | | | Saturday Midday With-Action | | | Saturday Midday Mitigated | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | V/C | Control Delay | LOS | V/C | Control Delay | LOS | V/C | Control Delay | LOS |
| **Jerome Avenue and Kingsbridge Road** | | | | | | | | | | | |
| Jerome Avenue | NB | LTR | 0.85 | 44.8 | D | 0.99 | 69.6 | E | 0.99 | 69.6 | E |
| **Jerome Avenue and Fordham Road** | | | | | | | | | | | |
| Jerome Avenue | NB | LTR | 0.99 | 84.9 | F | 1.23 | 166.0 | F | 1.00 | 81.5 | F |
| | SB | LTR | 0.91 | 68.3 | E | 1.01 | 90.8 | F | 0.83 | 50.6 | D |
| **Jerome Avenue and Burnside Avenue** | | | | | | | | | | | |
| Burnside Avenue | WB | LTR | 0.82 | 40.2 | D | 0.86 | 45.2 | D | 0.86 | 45.2 | D |
| Jerome Avenue | SB | LTR | 0.73 | 34.0 | C | 0.89 | 48.5 | D | 0.89 | 48.5 | D |
| **Jerome Avenue and Tremont Avenue** | | | | | | | | | | | |
| Tremont Avenue | EB | LTR | 1.09 | 102.7 | F | 1.14 | 119.3 | F | 1.06 | 88.3 | F |
| | WB | LTR | 1.03 | 83.2 | F | 1.10 | 106.8 | F | 1.03 | 78.7 | E |
| **Jerome Avenue and Featherbed Lane** | | | | | | | | | | | |
| Featherbed Lane | EB | DefL | 1.21 | 180.4 | F | 1.21 | 204.1 | F | 1.19 | 169.4 | F |
| **Jerome Avenue and SB I-95 Ramps** | | | | | | | | | | | |
| Jerome Avenue | SB | DefL | 0.76 | 37.5 | D | 0.84 | 46.2 | D | 0.81 | 41.7 | D |
| **Jerome Avenue and NB I-95 Ramps** | | | | | | | | | | | |
| Jerome Avenue | SB | DefL | 0.99 | 78.3 | E | 1.02 | 86.6 | F | 0.97 | 72.1 | E |
| **Jerome Avenue and 170th Street** | | | | | | | | | | | |
| 170th Street | WB | LTR | 1.00 | 77.2 | E | 1.12 | 113.6 | F | 1.00 | 73.9 | E |
| Jerome Avenue | NB | LTR | 0.39 | 13.7 | B | 0.40 | 13.9 | B | 0.43 | 16.0 | B |
| **Jerome Avenue and 167th Street** | | | | | | | | | | | |
| Edward L. Grant Highway | EB | R | 1.34 | 221.9 | F | 1.58 | 325.0 | F | 1.58 | 325.0 | F |
| Jerome Avenue | NB | LTR | 0.88 | 46.9 | D | - | - | - | - | - | - |
| | | DefL | - | - | - | 0.87 | 61.7 | E | 0.87 | 61.7 | E |
| | | TR | - | - | - | 0.90 | 58.4 | E | 0.90 | 58.4 | E |
| **River Avenue and 167th Street** | | | | | | | | | | | |
| River Avenue | NB | LTR | 1.14 | 130.4 | F | 1.25 | 174.4 | F | 1.14 | 127.6 | F |
| **Grand Concourse and Burnside Avenue** | | | | | | | | | | | |
| Burnside Avenue | EB | LTR | 0.83 | 57.4 | E | 0.87 | 61.7 | E | 0.87 | 61.7 | E |
| | WB | LTR | 0.73 | 52.9 | D | 0.78 | 56.3 | E | 0.78 | 56.3 | E |
| **Grand Concourse and Tremont Avenue** | | | | | | | | | | | |
| Tremont Avenue | EB | L | 0.74 | 67.5 | E | 0.78 | 72.5 | E | 0.70 | 60.2 | E |
| | EB | TR | 0.94 | 88.5 | F | 1.02 | 108.5 | F | 0.95 | 86.2 | F |
| | WB | TR | 0.86 | 72.3 | E | 0.91 | 79.9 | E | 0.84 | 67.0 | E |
| Grand Concourse Mainline | NB | L | 0.72 | 78.1 | E | 0.77 | 83.1 | F | 0.70 | 74.0 | E |
| **Grand Concourse and Mt. Eden Avenue** | | | | | | | | | | | |
| Mt. Eden Avenue | WB | LTR | 1.06 | 114.1 | F | 1.09 | 124.5 | F | 1.05 | 110.2 | F |
| Grand Concourse Mainline | NB | L | 0.66 | 75.6 | E | 0.72 | 81.0 | F | 0.66 | 72.4 | E |
| **Grand Concourse and 170th Street** | | | | | | | | | | | |
| Grand Concourse Mainline | NB | L | 0.47 | 63.4 | E | 0.59 | 70.2 | E | 0.54 | 64.9 | E |
| **Grand Concourse and 167th Street** | | | | | | | | | | | |
| 167th Street | EB | TR | 1.04 | 104.4 | F | 1.15 | 141.8 | F | 1.15 | 141.8 | F |
| | WB | L | 0.76 | 67.3 | E | 0.83 | 80.5 | F | 0.83 | 80.5 | F |
| **Edward L. Grant Highway and W. 170th Street** | | | | | | | | | | | |
| W. 170th Street | WB | LTR | 1.05 | 98.3 | F | 1.11 | 118.1 | F | 1.04 | 92.8 | F |
| **Inwood Avenue and W. 170th Street** | | | | | | | | | | | |
| W. 170th Street | EB | LT | 1.16 | 116.7 | F | 1.27 | 160.1 | F | 1.16 | 115.4 | F |
| **Cromwell Avenue and W. 170th Street** | | | | | | | | | | | |
| Cromwell Avenue | SB | LTR | 0.79 | 35.6 | D | 0.87 | 45.2 | D | 0.77 | 33.7 | C |
| **University Avenue and Washington Bridge Off-** | | | | | | | | | | | |
| Washington Bridge Off-Ramps | EB | L | 1.03 | 86.9 | F | 1.04 | 90.8 | F | 0.99 | 74.6 | E |
| | | R | 1.06 | 94.4 | F | 1.09 | 104.8 | F | 1.05 | 88.6 | F |

**Note:** shaded cells indicate unmitigated delays.

## *Effects of Traffic Mitigation on Parking Conditions*

As discussed above, the proposed traffic mitigation plan would incorporate curbside parking restrictions at the eastbound approach of 170th Street at Inwood Avenue that would displace approximately four on-street parking spaces. As discussed in Chapter 13, "Transportation," sufficient parking would be available within a ¼-mile radius of the study area to accommodate projected demand during the weekday midday, weekday overnight, and Saturday midday periods. There is projected to be a parking shortfall within a ¼-mile of projected development sites 30, 32, and 33 during the weekday midday (88-space deficit) and overnight periods (453-space deficit). These shortfalls would increase by four spaces to a total of 92 spaces during the weekday midday period and 457 spaces during the weekday overnight period. As described in Chapter 13, "Transportation," this parking shortfall for the projected development sites 30, 32, and 33 would not be considered a significant adverse impact, based on *CEQR Technical Manual* criteria, due to the availability of sufficient parking outside the ¼-mile radius within the overall study area and the magnitude of available alternative modes of transportation. Therefore, the proposed traffic mitigation measure would not result in a new significant adverse impact to parking conditions.

## *Effects of Pedestrian Mitigation on Traffic Conditions*

Proposed pedestrian mitigation measures include widening a sidewalk towards the building property line and widening an existing crosswalk by three feet. The pedestrian mitigation measures would not change any roadway geometric or traffic signal timing/phasing operations; therefore, these measures would not result in new significant adverse traffic impacts at any of the analyzed study intersections.

## *Proposed Schedule for Traffic Mitigation Measures*

Subject to the approval of DOT, the mitigation measures summarized in Table 21-5, "Proposed Traffic Mitigation Measures," would be implemented to mitigate the significant adverse traffic impacts resulting from full build-out of the Proposed Action in 2026. As the development of the Proposed Actions would be expected to occur over an approximately ten-year period, it is possible that some of the significant adverse traffic impacts could occur prior to full build-out in 2026. Based on the anticipated construction schedule shown in Chapter 19, "Construction," incremental vehicle trips associated with traffic generated by projected development sites could potentially result in significant adverse traffic impacts in the second quarter of 2024. At this time, implementation of some or all of the mitigation measures developed for full build-out of the Proposed Actions in 2026 would be considered at impacted intersections. A traffic monitoring program will be prepared to evaluate and assess the need for traffic mitigation, and it will be coordinated between DCP and DOT between draft and final EIS.

## TRANSIT

### *Bus*

As discussed in Chapter 13, "Transportation," the Proposed Actions would add approximately 555 and 935 incremental bus trips on nine local bus routes during the weekday AM and PM peak hours, respectively. This increment results in a capacity shortfall through the maximum load point on the east and westbound Bx11, southbound Bx32, and eastbound Bx35 in the AM peak hour and on the westbound Bx11, north and southbound Bx32, and east and westbound Bx35 in the PM peak hour. Therefore, four bus lines would be significantly adversely impacted in the AM peak hour and five bus lines would be significantly adversely impacted in the PM peak hour based on *CEQR Technical Manual* criteria. As listed in Table 21-10, "Action-With-Mitigation Local Bus Analysis," these significant adverse impacts could be fully mitigated by the addition of a total of five standard buses in the AM peak hour and six standard buses in the PM peak hour. The general policy of NYCT is to provide additional bus service where demand warrants, taking into account financial and operational constraints.

**Table 21-10: Action-With-Mitigation Local Bus Analysis**

| Peak Hour | Route | Direction | Maximum Load Point(s) | Peak Hour Buses (1) | No-Action Available Capacity (2) | Project Increment | Available Capacity w/ Proposed Actions (2) | Additional Peak Hour Buses Needed to Accommodate Project-Generated Demand | Available Capacity with Mitigation(2) |
|---|---|---|---|---|---|---|---|---|---|
| AM | Bx11 | EB | Claremont Pky and Webster Av / W 170th St and Jerome Av | 13 | 29 | 93 | -63 | 2 | 45 |
| | | WB | E 170th St and Jerome Ave / Claremont Pky and Webster Av | 13 | 19 | 22 | -3 | 1 | 51 |
| | Bx32 | SB | Morris Av and E 170th St / Morris Av and E 161st St | 8 | 37 | 72 | -35 | 1 | 19 |
| | Bx35 | EB | E 167th St and Grand Concourse / Webster Av and E 168th St | 15 | 13 | 41 | -28 | 1 | 26 |
| PM | Bx11 | WB | Claremont Pky and Webster Av | 12 | 36 | 114 | -78 | 2 | 30 |
| | Bx32 | NB | Morris Av and E 170th St | 6 | 75 | 100 | -25 | 1 | 29 |
| | | SB | Morris Av and E 170th St | 5 | 57 | 69 | -11 | 1 | 43 |
| | Bx35 | EB | E 167th St and Grand Concourse | 10 | 24 | 45 | -21 | 1 | 33 |
| | | WB | E 167th St and Grand Concourse / Webster Av and E 168th St | 11 | 11 | 61 | -50 | 1 | 4 |

**Notes:**
(1) Assumes service levels adjusted to address capacity shortfalls in the No-Action Condition.
(2) Available capacity based on NYCT loading guideline of 54 passengers per standard bus.

**PEDESTRIANS**

As described in Chapter 13, "Transportation," the Proposed Actions would result in significant adverse pedestrian impacts at three study area pedestrian elements during one or more analyzed peak hours. Specifically, there would be significant adverse impacts to one corner and one crosswalk during the weekday PM and Saturday midday peak hours, and to one sidewalk during the Saturday midday peak hour. Significant adverse impacts at two of these pedestrian elements could be mitigated through standard pedestrian mitigation measures including sidewalk and crosswalk widenings.

## *Sidewalks*

A significant adverse impact is projected at the south sidewalk of West 170th Street between Edward L. Grant Highway and Cromwell Avenue during the Saturday midday peak hour in the Proposed Actions. The sidewalk at this location is eight feet wide with a five foot grass buffer between the sidewalk and the fence line of the adjacent property. Paving this five foot grass verge would increase the width of this sidewalk and mitigate the significant adverse impact during the Saturday midday peak hour. Table 21-11, "Action-With-Mitigation: Sidewalk Conditions," lists the available pedestrian space, LOS, and identified mitigation measures for each significant impact location. All costs associated with the design and construction of the sidewalk widening will be the responsibility of the City operating agency.

**Table 21-11: Action-With-Mitigation: Sidewalk Conditions**

| Intersection | Sidewalk | No-Action | | | With-Action | | | Action-With-Mitigation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Effective Width | SFP | LOS | Effective Width | SFP | LOS | Effective Width | SFP | LOS | Mitigation Measures |
| **Weekday AM Peak Hour** | | | | | | | | | | | |
| West 170th Street between Edward L. Grant Highway and Cromwell Avenue | South | 3 | 66.5 | C | 3 | 44.8 | C | 8 | 122.0 | B | Not a significant impact in AM. 5' sidewalk widening addresses Saturday MD impact |
| **Weekday MD Peak Hour** | | | | | | | | | | | |
| West 170th Street between Edward L. Grant Highway and Cromwell Avenue | South | 3 | 152.3 | B | 3 | 41.8 | C | 8 | 489.0 | B | Not a significant impact in MD. 5' sidewalk widening addresses Saturday MD impact |
| **Weekday PM Peak Hour** | | | | | | | | | | | |
| West 170th Street between Edward L. Grant Highway and Cromwell Avenue | South | 3 | 115.6 | B | 3 | 46.4 | C | 8 | 347.8 | B | Not a significant impact in PM. 5' sidewalk widening addresses Saturday MD impact |
| **Saturday MD Peak Hour** | | | | | | | | | | | |
| West 170th Street between Edward L. Grant Highway and Cromwell Avenue | South | 3 | 126.1 | B | 3 | 33.8 | D | **8** | **93.6** | **B** | **Pave 5' grass verge (13' total width)** |

**Note:** Bold Text indicates Mitigated Significant Adverse Impact

## *Crosswalks*

A significant adverse impact is projected at the south crosswalk of East 167th and Jerome Avenue (crossing Jerome Avenue) during the weekday PM and Saturday midday peak hours in the Proposed Actions. Widening this crosswalk by three feet to a total width of 16 feet would mitigate the impact in both affected peak hours. Table 21-12, "Action-With-Mitigation: Crosswalk Conditions," lists the available pedestrian space, LOS, and identified mitigation measures for each significant impact location.

**Table 21-12: Action-With-Mitigation: Crosswalk Conditions**

| Intersection | Crosswalk | No-Action | | | With-Action | | | Action-With-Mitigation | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Width | SFP | LOS | Width | SFP | LOS | Width | SFP | LOS | Mitigation Measures |
| **Weekday AM Peak Hour** | | | | | | | | | | | |
| East 167th Street and Jerome Avenue | South | 13 | 37.8 | C | 13 | 33.7 | C | 16 | 41.8 | B | Not a significant impact, 3' widening addresses PM and Saturday MD impacts. |
| **Weekday MD Peak Hour** | | | | | | | | | | | |
| East 167th Street and Jerome Avenue | South | 13 | 32.3 | C | 13 | 24.5 | C | 16 | 30.4 | C | Not a significant impact, 3' widening addresses PM and Saturday MD impacts. |
| **Weekday PM Peak Hour** | | | | | | | | | | | |
| East 167th Street and Jerome Avenue | South | 13 | 22.8 | D | 13 | 20.3 | D | **16** | **25.3** | **C** | **3' crosswalk widening (1' mitigates PM, 3' mitigates Saturday MD)** |
| **Saturday MD Peak Hour** | | | | | | | | | | | |
| East 167th Street and Jerome Avenue | South | 13 | 33.3 | C | 13 | 19.4 | D | **16** | **24.3** | **C** | **3' crosswalk widening (1' mitigates PM, 3' mitigates Saturday MD)** |

**Note:** Bold Text indicates Mitigated Significant Adverse Impact

## *Corner Areas*

Under the Proposed Actions, a significant adverse impact is projected at the northeast corner of East 167th Street and Jerome Avenue during the weekday PM and Saturday midday peak hours. No feasible mitigation measures could be identified that would mitigate this significant adverse impact and this would remain an unmitigated significant adverse impact. Table 21-13, "Action-With-Mitigation: Corner Conditions," lists available pedestrian space, LOS, and identified mitigation measures for each significant impact location.

**Table 21-14: Action-With-Mitigation: Corner Conditions**

| Intersection | Corner | No-Action | | With-Action | | Action-With-Mitigation | | |
|---|---|---|---|---|---|---|---|---|
| | | SFP | LOS | SFP | LOS | SFP | LOS | Mitigation Measures |
| **Weekday AM Peak Hour** | | | | | | | | |
| No significant impacts | | | | | | | | |
| **Weekday Midday Peak Hour** | | | | | | | | |
| No significant impacts | | | | | | | | |
| **Weekday PM Peak Hour** | | | | | | | | |
| East 167th Street and Jerome Avenue | Northeast | 22.7 | D | 15.8 | D | 15.8 | D | Unmitigated |
| **Saturday MD Peak Hour** | | | | | | | | |
| East 167th Street and Jerome Avenue | Northeast | 74.3 | A | 19.7 | D | 19.7 | D | Unmitigated |
| **Note:** Bold Text indicates Mitigated Significant Adverse Impact | | | | | | | | |

### *Effects of Traffic Mitigation on Pedestrian Conditions*

Identified traffic mitigation measures were incorporated into the pedestrian Action-with-Mitigation analysis. Signal timing changes associated with traffic mitigation resulted in minor changes to available pedestrian space at analyzed crosswalks and corners. These changes did not result in new significant adverse impacts at any of the analyzed corners or crosswalks.

## 21.6 Construction

**TRANSPORTATION**

As described in Chapter 19, "Construction," construction-related traffic would have significant adverse impacts at one intersection during the construction 6-7 AM peak hour and 13 intersections during the construction PM peak hour (3-4 PM). Implementation of signal timing changes only would provide mitigation for most of the anticipated traffic impacts. Table 21-14, "Proposed Traffic Mitigation Measures – Construction," summarizes the recommended mitigation measures for each of these intersections during the construction PM peak hours, which are subject to review and approval by DOT.

## Table 21-14: Proposed Traffic Mitigation Measures – Construction

| Intersection | Signal Phase | No-Action Signal Timing (Seconds) | | Proposed Signal Timing (Seconds) | | Recommended Mitigation |
|---|---|---|---|---|---|---|
| | | AM | PM | AM | PM | |
| Jerome Avenue and Kingsbridge Road | EB/WB | 54 | 54 | 54 | 54 | - Unmitigatable |
| | Ped | 7 | 7 | 7 | 7 | |
| | NB/SB | 52 | 52 | 52 | 52 | |
| | Ped | 7 | 7 | 7 | 7 | |
| Jerome Avenue and Fordham Road | EB/WB | 81 | 86 | 81 | 78 | - Transfer 8 seconds of green time from EB/WB to NB/SB during PM. |
| | NB/SB | 39 | 34 | 39 | 42 | |
| Jerome Avenue and Burnside Avenue | EB/WB | 60 | 60 | 60 | 60 | - Unmitigatable |
| | NB/SB | 60 | 60 | 60 | 60 | |
| Jerome Avenue and Tremont Avenue | EB/WB | 57 | 57 | 57 | 59 | - Transfer 2 seconds of green time from NB/SB to EB/WB during PM. |
| | Ped | 7 | 7 | 7 | 7 | |
| | NB/SB | 56 | 56 | 56 | 54 | |
| Jerome Avenue and SB I-95 Ramps | WB | 45 | 45 | 45 | 44 | - Transfer 1 second of green time from WB to NB/SB during PM. |
| | NB/SB | 45 | 45 | 45 | 46 | |
| Jerome Avenue and Featherbed Lane | EB/WB | 30 | 30 | 30 | 31 | - Transfer 1 second of green time from NB/SB to EB/WB during PM. |
| | NB/SB | 60 | 60 | 60 | 59 | |
| Jerome Avenue and NB I-95 Ramps | EB | 43 | 43 | 43 | 40 | - Transfer 3 seconds of green time from EB to NB/SB during PM. |
| | NB/SB | 32 | 32 | 32 | 35 | |
| | SB-L | 15 | 15 | 15 | 15 | |
| Jerome Avenue and 170th Street | EB/WB | 31 | 31 | 31 | 33 | - Transfer 2 seconds of green time from NB/SB to EB/WB during PM. |
| | Ped | 7 | 7 | 7 | 7 | |
| | NB/SB | 52 | 52 | 52 | 50 | |
| Jerome Avenue and 167th Street | EB/WB-R | 28 | 28 | 28 | 28 | - Unmitigatable |
| | WB/NE | 30 | 30 | 30 | 30 | |
| | NB/SB | 32 | 32 | 32 | 32 | |
| River Avenue and 167th Street | EB/WB | 52 | 52 | 52 | 52 | - Unmitigatable |
| | Ped | 7 | 7 | 7 | 7 | |
| | NB/SB | 31 | 31 | 31 | 31 | |
| Jerome Avenue and E. 165th Street | WB | 36 | 36 | 36 | 39 | - Transfer 3 seconds of green time from NB/SB to WB during PM. |
| | NB/SB | 54 | 54 | 54 | 51 | |
| Grand Concourse and 170th Street | EB/WB | 45 | 45 | 45 | 44 | - Transfer 1 second of green time from EB/WB and 1 second from NB/SB to add 2 seconds to NB-L/SB-L during PM. |
| | NB-L/SB-L | 15 | 15 | 15 | 17 | |
| | NB/SB | 60 | 60 | 60 | 59 | |
| Grand Concourse and 167th Street | EB/WB | 42 | 42 | 42 | 42 | - Unmitigatable |
| | SB-L | 15 | 15 | 15 | 15 | |
| | Ped | 7 | 7 | 7 | 7 | |
| | NB/SB | 56 | 56 | 56 | 56 | |

Most significant adverse impacts would be mitigated with the implementation of recommended mitigation measures, but unmitigated significant adverse impacts remain at one intersection during the construction AM peak hour (see Table 21-15, "Action-With-Mitigation Conditions at Impacted Lane

Groups – Construction AM Peak Hour") and five intersections during the construction PM peak hour (see Table 21-16, "Action-With-Mitigation Conditions at Impacted Lane Groups – Construction PM Peak Hour") Four of the five unmitigated intersections are also unmitigated intersections as a result of the Proposed Actions; River Avenue and 167th Avenue is an additional unmitigated significant adverse impact. No basic intersection improvement measures could mitigate the significant adverse construction-related impacts at these five intersections; therefore, these traffic impacts would remain unmitigated (refer to Chapter 22, "Unavoidable Adverse Impacts").

**Table 21-15: Action-With-Mitigation Conditions at Impacted Lane Groups – Construction AM Peak Hour**

| INTERSECTION & APPROACH | | Mvt. | AM No-Action | | | AM Action | | | AM Mitigated | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | V/C | Control Delay | LOS | V/C | Control Delay | LOS | V/C | Control Delay | LOS |
| **Jerome Avenue and 167th Street** | | | | | | | | | | | |
| Edward L. Grant Highway | EB | R | 0.68 | 49.7 | D | 0.76 | 57.2 | E | 0.76 | 57.2 | E |
| **Note:** shaded cells indicate unmitigated delays. | | | | | | | | | | | |

## Table 21-16: Action-With-Mitigation Conditions at Impacted Lane Groups – Construction PM Peak Hour

| INTERSECTION & APPROACH | | Mvt. | PM No-Action | | | PM With-Action | | | PM Mitigated | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | V/C | Control Delay | LOS | V/C | Control Delay | LOS | V/C | Control Delay | LOS |
| **Jerome Avenue and Kingsbridge Road** | | | | | | | | | | | |
| Jerome Avenue | NB | LTR | 1.22 | 156.7 | F | 1.34 | 204.7 | F | 1.34 | 204.7 | F |
| **Jerome Avenue and Fordham Road** | | | | | | | | | | | |
| Jerome Avenue | NB | LTR | 1.13 | 134.0 | F | 1.40 | 244.7 | F | 1.05 | 99.4 | F |
| | SB | LTR | 1.23 | 177.6 | F | 1.32 | 215.2 | F | 0.93 | 72.2 | E |
| **Jerome Avenue and Burnside Avenue** | | | | | | | | | | | |
| Burnside Avenue | WB | LTR | 0.80 | 38.7 | D | 0.87 | 45.4 | D | 0.87 | 45.4 | D |
| Jerome Avenue | SB | LTR | 0.73 | 34.6 | C | 0.87 | 47.2 | D | 0.87 | 47.2 | D |
| **Jerome Avenue and Tremont Avenue** | | | | | | | | | | | |
| Tremont Avenue | EB | LTR | 1.16 | 127.4 | F | 1.19 | 138.3 | F | 1.13 | 115.2 | F |
| | WB | LTR | 1.19 | 137.8 | F | 1.25 | 162.5 | F | 1.19 | 136.0 | F |
| **Jerome Avenue and SB I-95 Ramps** | | | | | | | | | | | |
| Jerome Avenue | SB | DefL | 0.79 | 38.2 | D | 0.85 | 45.6 | D | 0.82 | 41.1 | D |
| **Jerome Avenue and Featherbed Lane** | | | | | | | | | | | |
| Featherbed Lane | EB | DefL | 0.99 | 110.2 | F | 1.06 | 130.7 | F | 0.99 | 105.2 | F |
| **Jerome Avenue and NB I-95 Ramps** | | | | | | | | | | | |
| Jerome Avenue | SB | DefL | 0.93 | 62.1 | E | 1.01 | 82.1 | F | 0.94 | 63.5 | E |
| **Jerome Avenue and 170th Street** | | | | | | | | | | | |
| 170th Street | WB | LTR | 0.99 | 75.7 | E | 1.06 | 94.5 | F | 0.98 | 70.0 | E |
| **Jerome Avenue and 167th Street** | | | | | | | | | | | |
| Edward L. Grant | EB | R | 1.38 | 244.4 | F | 1.47 | 282.1 | F | 1.47 | 282.1 | F |
| Jerome Avenue | NB | DefL | 1.24 | 173.4 | F | 1.40 | 240.4 | F | 1.40 | 240.4 | F |
| **River Avenue and 167th Street** | | | | | | | | | | | |
| River Avenue | NB | LTR | 0.97 | 82.3 | F | 1.20 | 156.7 | F | 1.20 | 156.7 | F |
| **Jerome Avenue and E. 165th Street** | | | | | | | | | | | |
| E. 165th Street | WB | LR | 0.99 | 70.4 | E | 1.11 | 105.6 | F | 1.00 | 71.5 | E |
| **Grand Concourse and 170th Street** | | | | | | | | | | | |
| Grand Concourse Mainline | NB | L | 0.64 | 73.7 | E | 0.73 | 81.7 | F | 0.60 | 66.9 | E |
| **Grand Concourse and 167th Street** | | | | | | | | | | | |
| 167th Street | EB | L | 1.04 | 130.8 | F | 1.05 | 136.0 | F | 1.05 | 136.0 | F |
| | | TR | 0.96 | 83.5 | F | 1.14 | 136.6 | F | 1.14 | 136.6 | F |
| | WB | TR | 1.09 | 120.0 | F | 1.10 | 123.1 | F | 1.10 | 123.1 | F |

**Note:** shaded cells indicate unmitigated delays.

**NOISE**

As discussed in Chapter 19, "Construction," construction activities associated with the Proposed Action would occur on multiple development sites within the same geographic area and, as a result, has the potential to increase interior noise levels of existing adjacent commercial and residential buildings. These increases would likely approach or marginally exceed the impact threshold for short periods of time. The same potential to exceed the noise limits exist during other construction quarters bordering the peak construction period

The findings indicate that noise levels above the CEQR impact threshold are expected at several existing buildings adjacent to Projected Development Sites 33, 34, 35, 36 and to Projected Development Sites 43, 44, 45. For Projected Development Sites 33, 34, 35, 36 the highest noise levels are projected to be at top-level receptor locations adjacent to existing commercial and residential buildings on Cromwell Street between West Clarke Place and East 170th Street. For Projected Development Sites 43, 44, 45 the highest noise levels are projected to be at mid-level receptor locations adjacent to existing residential buildings o Gerard Street between McLellan Street and West 167th Street.

Although these locations are expected to experience exterior noise levels significantly above CEQR limits, for those buildings with double-paned glazed-glass windows and a closed ventilation system, it would keep interior noise levels for those buildings below or near the CEQR 50-dBA L10 impact threshold for commercial buildings and the CEQR 45-dBA L10 impact threshold for residential buildings. The interior noise levels of these adjacent buildings would likely approach or marginally exceed the CEQR L10 impact thresholds for short periods of time. The same potential for noise impacts also exist for similar noise-level increases at these and/or other receptor locations in the immediate vicinity of Project Development Sites 33, 34, 35, 36 and 43,44,45 during other construction quarters bordering this peak construction period (i.e., second quarter of 2018 and third quarter of 2022). If the peak construction scenario conservatively assumed for simultaneous construction on Project Development Sites 33, 34, 35, 36 and 43, 44, 45, the Proposed Action would result in a significant adverse construction noise impact.

## *Noise Reduction Measures*

Construction of the Proposed Projected 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 Code. These measures could include a variety of source and path controls.

The following proposed mitigation measures go beyond the noise control measures already identified in Chapter 19, "Construction," and 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;

- Utilizaion of isolation pads between 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 the DEIS and FEIS, the above mitigation measures will be explored, which are intended to address the pieces of construction equipment that would produce the highest noise levels. However, even if all of the above mitigation measures are determined to be feasible and practicable, some significant adverse construction noise impacts could potentially continue to be experienced at sensitive receptors and, as a result, be unavoidable. In the event no additional practicable or feasible mitigation measures are determined, the significant adverse construction noise impacts identified in Chapter 19, "Construction," would be unavoidable.

The proposed measures discussed above are considered partial mitigations only. Consequently, these impacts would not be completely eliminated and they would constitute an unmitigated significant adverse construction noise impact, as is discussed in Chapter 22, "Unavoidable Adverse Impacts."