A. INTRODUCTION

This chapter summarizes the potential for construction activities required to facilitate the Proposed Project to result in significant adverse impacts during the construction period. Construction activities, although temporary, can include noticeable and disruptive effects from an action that involves or could induce construction. Construction impacts are usually important when construction activity could affect traffic conditions, hazardous materials, archaeological resources, the integrity of historic resources, community noise patterns, and/or air quality conditions.

As discussed in **Chapter 02.0, "Project Alternatives,"** there are three feasible alternatives under consideration for implementation of the Proposed Project. These include: Alternative 2 – the Rezoning Alternative; Alternative 3 – the Non-Rezoning Alternative; and Alternative 4 – the Midblock Bulk Alternative. A discussion of Alternative 5 – Rehabilitation and Infill Alternative, which has been determined to be infeasible, is presented in **Chapter 05.22, "Rehabilitation and Infill Alternative Analysis."** Refer to **Chapter 04.0, "Analysis Framework," Table 04.0-4,** for information on the analysis approach for the three feasible alternatives for each technical area.

As described in **Chapters 01.0, "Purpose and Need for the Proposed Project,"** the Proposed Project involves the demolition, excavation, and replacement of the existing 18 buildings on the Project Sites with new mixed-use buildings. Under the Rezoning Alternative this would include 15 new buildings with a total building area of approximately 5.0 million gross square feet (gsf). Under the Non-Rezoning Alternative this would include 17 new buildings with a total building area of approximately 3.6 million gsf. Under the Midblock Bulk Alternative, this would include 16 new buildings with a total building area of approximately 5.0 million gsf. Under the three alternatives, there also would be accessory open space and parking. Project construction would occur over an approximately 16-year period of continuous staging from 2025 to 2041. Construction activities under the Proposed Project, as is the case with most any construction projects, are expected to result in temporary disruptions in the surrounding area.

Determination of the significance of construction impacts and the need for mitigation are generally based on the duration, magnitude, and affected area of the impacts. According to the 2021 *City Environmental Quality Review Technical Manual* (*CTM*), construction duration is often broken down into short-term (less than two years) and long-term (two or more years). Where the duration of construction is expected to be short-term, any impacts resulting from such short-term construction generally do not require detailed assessment. As the Proposed Project would involve ongoing construction for approximately 16 years, the forecasted construction schedule conservatively accounts for overlapping construction activities and the simultaneous operating of construction equipment, thus capturing the cumulative nature of potential construction impacts which would result at nearby receptors.

In addition to describing the construction plans for the Proposed Project under each of the alternatives analyzed herein, this chapter describes the City, State, and Federal regulations and policies that govern construction, followed by the conceptual construction schedule and the types of activities likely to occur during construction. The types of construction equipment are also discussed, along with the expected number of workers and truck deliveries. Finally, the potential impacts from construction activities are assessed. This focuses on transportation, air quality, noise and vibration, as well as consideration of other technical areas including land use and neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, hazardous materials, and natural resources.

B. PRINCIPAL CONCLUSIONS

Construction associated with the Proposed Project would result in temporary disruptions on the Project Sites and the surrounding area. As described below, the Proposed Project's construction activities would result in unmitigable significant adverse transportation (traffic and pedestrian) and noise impacts under the Rezoning Alternative, Non-Rezoning Alternative, and Midblock Bulk Alternative. For all other technical areas, construction activities associated with the Proposed Project would not result in significant adverse impacts. Findings specific to each of the key technical areas are summarized below.

Transportation

Construction travel demand is expected to peak in the first quarter of 2034 under the Rezoning Alternative and Midblock Bulk Alternative, and this period is therefore analyzed for potential transportation impacts during construction. The Rezoning Alternative would result in significant adverse construction transportation impacts to: a) vehicular traffic at six intersections and b) pedestrian conditions at three sidewalks and one crosswalk. As the Rezoning Alternative is similar to the Midblock Bulk Alternative in terms of the total development program, it is anticipated that the Midblock Bulk Alternative would result in significant construction traffic and pedestrian impacts similar to the Rezoning Alternative.

Construction travel demand is expected to peak in the second quarter of 2037 under the Non-Rezoning Alternative, and this period is therefore analyzed for potential transportation impacts during construction. The Non-Rezoning Alternative would result in significant adverse construction transportation impacts to: a) vehicular traffic at eight intersections and b) pedestrian conditions at two sidewalks.

No construction impacts to transit or parking conditions are anticipated under the three alternatives. Potential measures to mitigate the construction traffic and pedestrian impacts are described in **Section H, "Construction Mitigation."** Assuming that all the proposed mitigation measures are implemented, construction traffic impacts under the Rezoning Alternative would be fully mitigated at all intersections, with the exception of one lane group at one intersection during the construction PM peak hour; and construction pedestrian impacts would be mitigated at one sidewalk during the construction AM peak hour. Practicable mitigation measures could not be identified for significant adverse pedestrian impacts at one crosswalk during the construction PM peak hour; and one and three sidewalks during the construction AM and PM peak hours, respectively, and these impacts would therefore remain unmitigated. The mitigation measures proposed for the Rezoning Alternative's significant adverse construction traffic and pedestrian impacts would also improve the conditions of the impacted pedestrian and traffic locations under the Midblock Bulk Alternative. Assuming all the proposed mitigation measures are implemented, construction traffic impacts under the Non-Rezoning Alternative would be fully mitigated at all intersections and construction pedestrian impacts would be mitigated at one of the two sidewalks. The significant adverse construction traffic and pedestrian construction impacts that cannot be fully mitigated would constitute unavoidable significant adverse impacts and are described in **Chapter 07.0, "Unavoidable Adverse Impacts."** While the Permanent Affordability Commitment Together (PACT) Partner and New York City Housing Authority (NYCHA) would be required to coordinate with the NYCDOT regarding implementation of recommended transportation-related engineering improvements, implementation itself will subject to final review and approval by NYCDOT. If the recommended mitigation measures are not found to be feasible, and no other alternative mitigation measures can be identified, the impacts would remain unmitigated.

Air Quality

Measures would be taken to reduce pollutant emissions during construction of the Proposed Project under the Rezoning, Non-Rezoning, and Midblock Bulk Alternatives in accordance with all applicable laws, regulations, and building codes. These include the use of ultra-low sulfur diesel (ULSD) fuel, dust suppression measures, abatement of all asbestos containing materials (ACM), idling restrictions, and diesel equipment reduction. In addition, construction of the Proposed Project would utilize newer equipment (e.g., equipment meeting the US Environmental Protection Agency's [EPA] Tier 3 emission standard) and best available tailpipe reduction technologies (e.g., use of diesel particulate filters) to further reduce air pollutant emissions. With the implementation of these emission reduction measures, the dispersion modeling analysis of construction-related air emissions for both non-road (i.e., equipment) and on-road sources (i.e., worker and truck trips) determined that particulate matter ($PM_{2.5}$ and PM_{10}), annual average nitrogen dioxide (NO_2), and carbon monoxide (CO) concentrations would be below the National Air Quality Ambient Standards (NAAQS).

Therefore, construction of the Proposed Project would not result in significant adverse air quality impacts during construction.

Noise

Based on the projected construction activities predicted at the Project Sites, including both on-site equipment and construction vehicle trips (i.e., worker and truck trips), the Proposed Project would have the potential to result in significant adverse impacts at receptors adjacent to the construction areas under the Rezoning, Non-Rezoning, and Midblock Bulk Alternatives. Receptors where noise level increases were predicted to exceed the construction noise evaluation thresholds for extended durations were identified.

For each alternative, the construction noise analysis predicted noise levels due to construction could exceed the *CTM* impact criteria at receptors which represent residences, hotels, commercial offices, community facilities, and publicly accessible open spaces throughout the Project Sites, including at project Site buildings that are completed and occupied while other nearby or adjacent Proposed Project buildings are under construction. At some receptors, construction could produce noise levels that would be noticeable and potentially intrusive during the most noise-intensive construction activities. While the highest levels of predicted construction noise would not persist throughout the entire construction period, and noise levels would fluctuate resulting in noise increases that would be intermittent, these locations would experience construction noise levels whose magnitude and duration could constitute significant adverse impacts.

At most locations predicted to experience an exceedance of the noise impact threshold criteria, the exceedances would be due primarily to noise generated by on-site construction activities, rather than construction-related traffic. The construction noise analysis examined the reasonable worst-case peak hourly noise levels resulting from construction in each analyzed time period and is therefore conservative in predicting increases in noise levels. Typically, the loudest hourly noise level during each analysis period would not persist throughout the entire analysis period.

The Proposed Project would comply with New York City Noise Control Code regulations, which regulate, among other things equipment noise emissions and construction work hours, as well as commit to constructing pile installation and foundation elements by drilling rather than impact pile driving, commit to quieter equipment to meet the equipment noise emission levels shown in **Table 05.19-15**, and other additional noise control measures beyond the minimum required by code. As required under the New York City Noise Control Code, a site-specific noise mitigation plan for the Proposed Project would be developed and implemented.

In addition, a robust noise control program and measures will be implemented during construction of the Proposed Project to minimize noise emissions to the maximum extent practicable. These noise reduction measures (including those that go beyond the measures required by the New York City Noise Control Code) are discussed in detail below in **Section H.** The feasibility and practicability of additional construction noise control measures will be evaluated between this Draft EIS and the Final EIS.

Other Technical Areas

Under the alternatives analyzed herein, the Proposed Project would not result in significant adverse impacts construction impacts related to the other technical areas considered in construction analyses, including Vibration, Land Use and Neighborhood Character, Socioeconomic Conditions, Community Facilities and Services, Open Space, Historic and Cultural Resources,[1] Hazardous Materials, and Natural Resources.

[1] As discussed in **Chapter 05.06,** the demolition of the State and National Register of Historic Places (S/NR)-eligible Elliott-Chelsea Houses has been determined to be a direct significant adverse historic and cultural resources impact of the Proposed Project. This impact is considered an unavoidable adverse impact of the Proposed Project as there are no measures that could avoid or fully mitigate this impact and meet the purpose and need for the Proposed Project (see **Chapter 01.0**). This is not considered a construction impact as it not a consequence of the effects of construction, such as due to the potential effects of construction vibrations on a historic resource or due to the effects of excavation on an area sensitive for the presence of archaeological resources. Rather, this would be a consequence of the Proposed Project development program, which includes replacement of all of the existing Project Site buildings.

C. CONSTRUCTION SCHEDULE

The following section describes the expected schedule, methods, and means of construction. While the methods and means described below have been developed with an experienced New York City construction manager, the discussion is only illustrative, as other means and methods may be chosen at the time of construction. The described means and methods are conservatively chosen to serve as the basis of the analyses in this chapter and are representative of the reasonable worst-case for potential impacts.

Project Site Context

The Project Sites consist of two distinct areas located a ¼-mile apart in Manhattan Community District 4, the Fulton Houses Project Site which occupies portions of four blocks (Blocks 714 to 717 bound by W. 20th Street, 9th Avenue, W. 16th Street, and 10th Avenue), and the Elliott-Chelsea Houses Project Site which occupies portions of two blocks (Blocks 723 and 724) bound by W. 27th Drive, 9th Avenue, W. 25th Street, and 10th Avenue. Refer to **Figures 01.0-1a** and **01.0-1b** in **Chapter 01.0** which identifies the Project Sites including the block numbers.

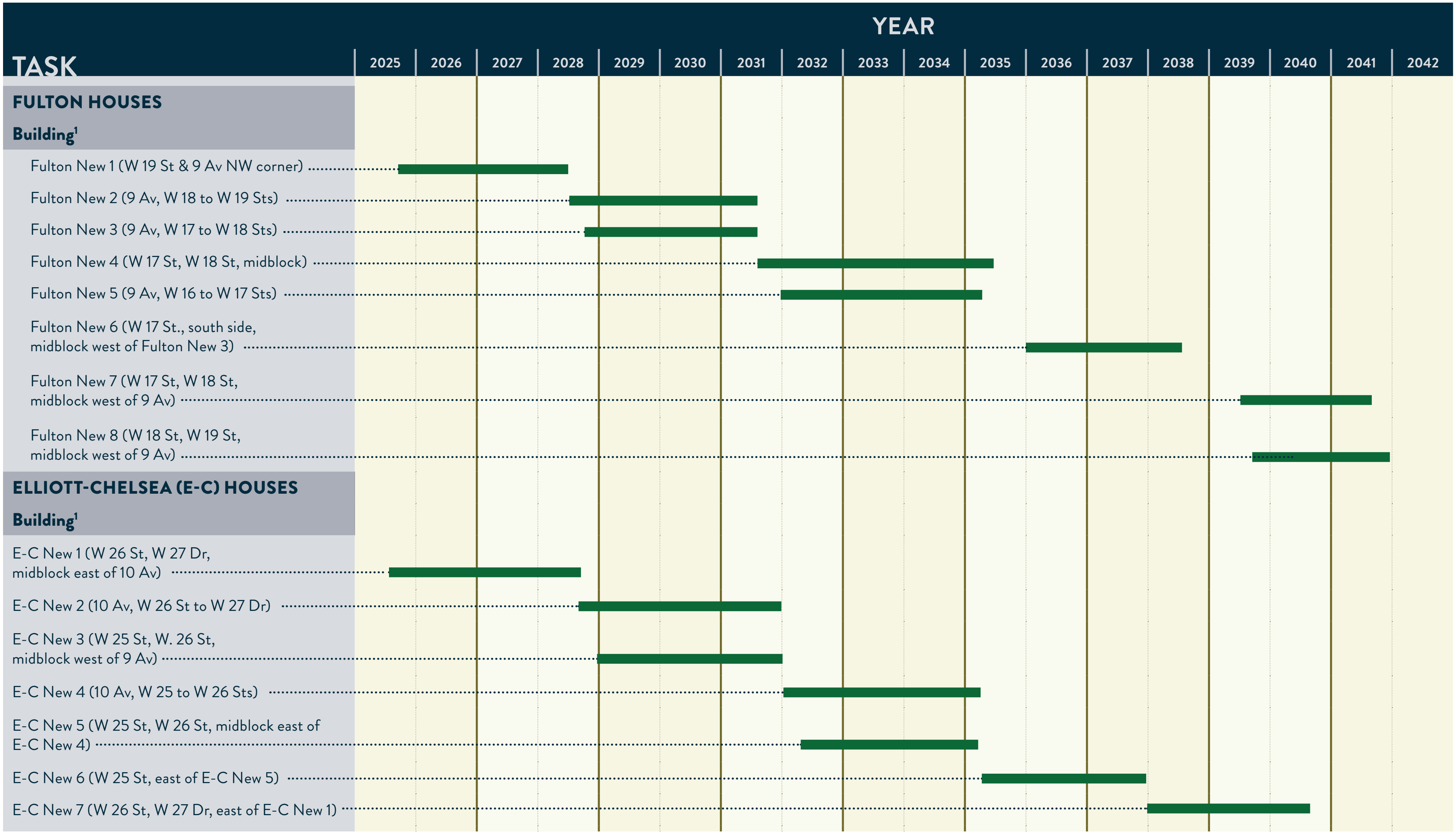
Under the Rezoning Alternative, on the Fulton Houses Project Site the 12 existing NYCHA buildings would be demolished and eight new buildings would be constructed, including two new buildings on Block 714, three new buildings on Block 715, two new buildings on Block 716, and one new building on Block 717. On the Elliott-Chelsea Project Site, the ten existing NYCHA buildings would be demolished and seven new buildings would be constructed, including four on Block 723 and three on Block 724.

Under the Non-Rezoning Alternative, on the Fulton Houses Project Site the 12 existing NYCHA buildings would be demolished and ten new buildings would be constructed, including three new buildings on Block 714, four new buildings on Block 715, two new buildings on Block 716, and one new buildings on Block 717. On the Elliott-Chelsea Houses Project Site the ten existing NYCHA buildings would be demolished and seven new buildings would be constructed, including four on Block 723 and three on Block 724.

Under the Midblock Bulk Alternative on the Fulton Houses Project Site the 12 existing NYCHA buildings would be demolished and nine new buildings would be constructed, including two new buildings on Block 714, four new buildings on Block 715, two new buildings on Block 716, and one new building on Block 717. On the Elliott-Chelsea Project Site, the ten existing NYCHA buildings would be demolished and seven new buildings would be constructed, including four on Block 723 and three on Block 724.

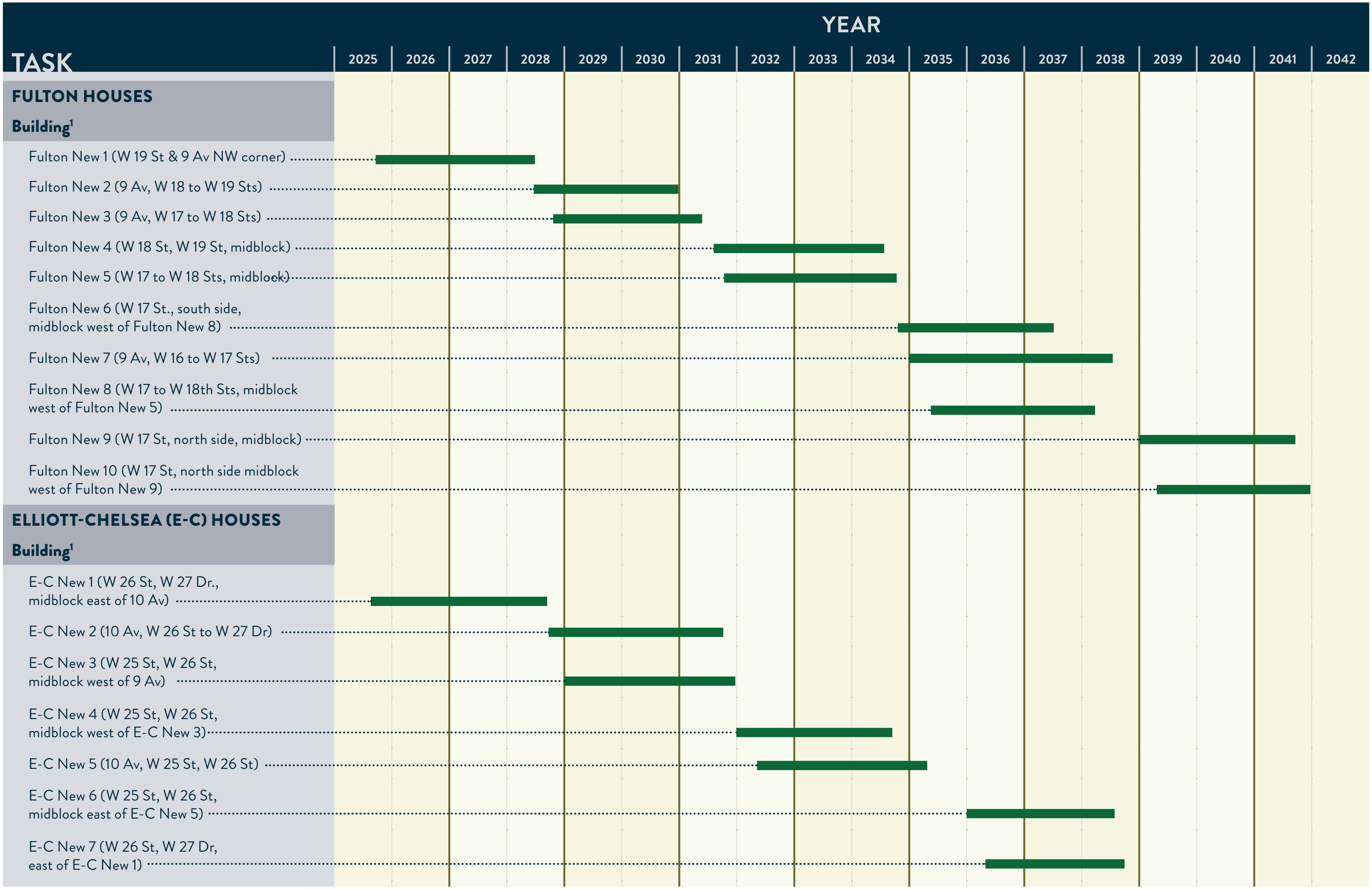
Preliminary Construction Schedule

As discussed in the following section, construction for each building begins with demolition of existing buildings. Refer to **Figures 05.19-1a/1b/1c** for preliminary construction schedule for the Rezoning Alternative, Non-Rezoning Alternative, and Midblock Bulk Alternative, respectively.



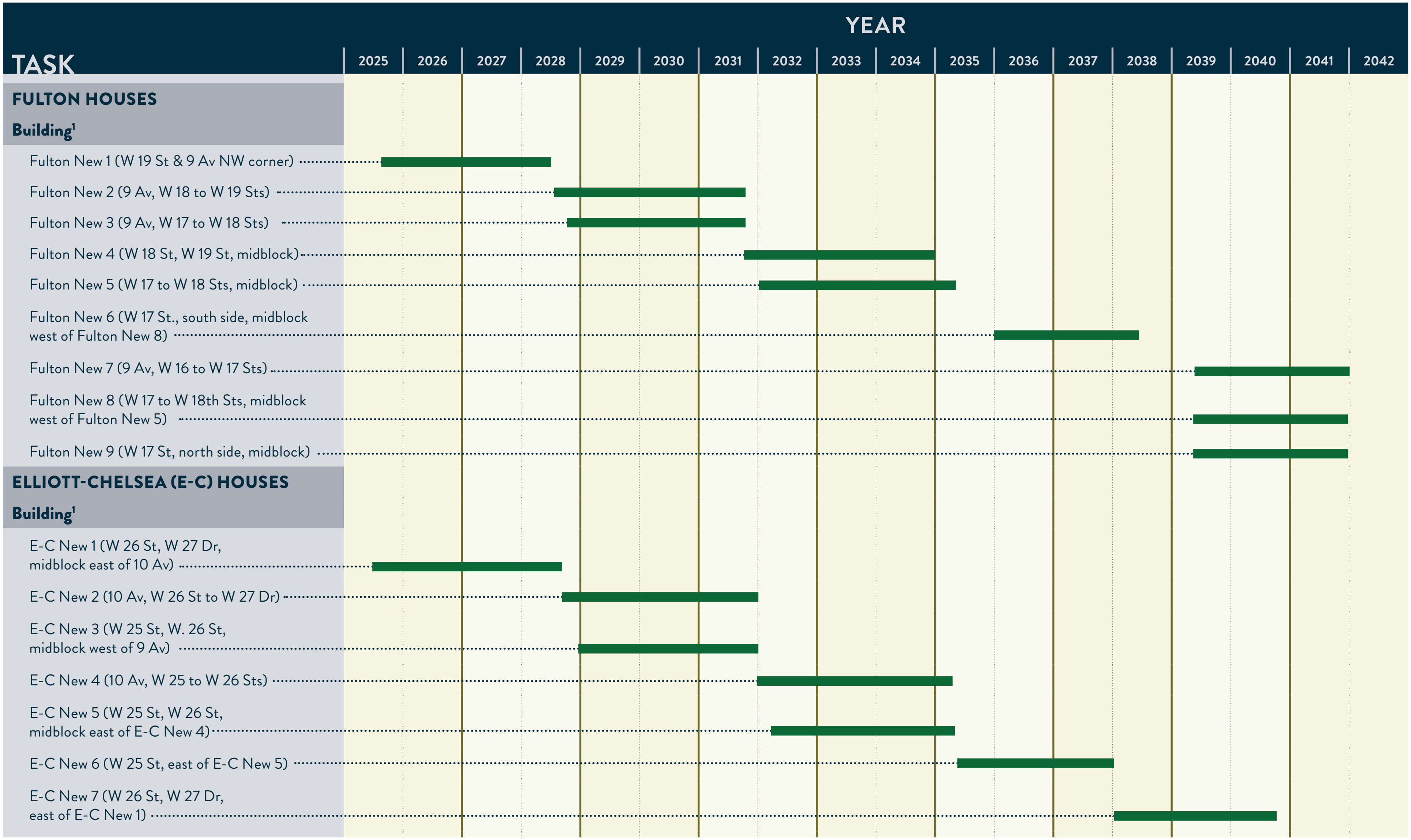
NOTES:
[1] Refer to Figure 02.01a for building numbers.

Figure 05.19-1a
Anticipated Construction Schedule for Rezoning Alternative



NOTES:
[1] Refer to Figure 02.01a for building numbers.

Figure 05.19-1b
Anticipated Construction Schedule for Non-Rezoning Alternative



NOTES:
[1] Refer to Figure 02.01a for building numbers.

Figure 05.19-1c
Anticipated Construction Schedule for Midblock Bulk Alternative

Alternative 2 – Rezoning Alternative; Alternative 3 – Non-Rezoning Alternative; and Alternative 4 – Midblock Bulk Alternative

Construction on the Rezoning Alternative's 15 new buildings, the Non-Rezoning Alternative's 17 new buildings, including demolition of existing buildings, and the Midblock Bulk Alternative's 16 buildings, would occur in stages over 16 years. Construction of the initial two buildings, one on each of the Project Sites, is projected to begin in the third quarter of 2025 and these initial buildings would be as-of-right under zoning. Subsequent buildings under the Rezoning Alternative and Midblock Bulk Alternative would be pursuant to a rezoning, as discussed in **Chapter 02.0** while subsequent buildings under the Non-Rezoning Alternative would be developed as-of-right under existing zoning. Under each of the alternatives analyzed herein, construction would proceed through continuous, overlapping stages until the completion of the final building, which is expected in 2041. **Tables 05.19-1a** and **05.19-1b** show the Rezoning Alternative's projected overall schedule for the new Fulton Houses Project Site and Elliott-Chelsea Houses Project Site, respectively. **Tables 05.19-2a** and **05.19-2b** show the Non-Rezoning Alternative's projected overall schedule for the new Fulton Houses Project Site and Elliott-Chelsea Houses Project Site, respectively. **Tables 05.19-3a** and **05.19-3b** show the Midblock Bulk Alternative's projected overall schedule for the new Fulton Houses Project Site and Elliott-Chelsea Houses Project Site, respectively. It should be noted that the Elliott-Chelseas Houses Project Site overall construction schedule are the same for the Rezoning Alternative and the Midblock Bulk Alternative as shown in **Tables 05.19-1b** and **05.19-3b**.

Table 05.19-1a: Fulton Houses Project Site Forecasted Overall Construction Schedule for Rezoning Alternative

Building[1]	Start Quarter/ Year	Finish Quarter/ Year	Approximate Duration (months)
Fulton New 1 (W 19 St & 9 Av NW corner)	Q3, 2025	Q2, 2028	34
Fulton New 2 (9 Av, W 18 to W 19 Sts)	Q3, 2028	Q3, 2031	38
Fulton New 3 (9 Av, W 17 to W 18 Sts)	Q4, 2028	Q3, 2031	36
Fulton New 4 (W 17 St, W 18 St, midblock)	Q4, 2031	Q2, 2035	41
Fulton New 5 (9 Av, W 16 to W 17 Sts)	Q1, 2032	Q1, 2035	35
Fulton New 6 (W 17 St., south side, midblock west of Fulton New 3)	Q1, 2036	Q2, 2038	30
Fulton New 7 (W 17 St, W 18 St, midblock west of 9 Av)	Q2, 2039	Q3, 2041	28
Fulton New 8 (W 18 St, W 19 St, midblock west of 9 Av)	Q3, 2039	Q4, 2041	28

Notes:
[1] Refer to **Figure 02.01a** for building numbers.

Table 05.19-1b: Elliott-Chelsea (E-C) Houses Project Site Forecasted Overall Construction Schedule for Rezoning Alternative

Building[1]	Start Quarter/ Year	Finish Quarter/ Year	Approximate Duration (months)
E-C New 1 (W 26 St, W 27 Dr, midblock east of 10 Av)	Q3, 2025	Q3, 2028	38
E-C New 2 (10 Av, W 26 St to W 27 Dr)	Q4, 2028	Q4, 2031	36
E-C New 3 (W 25 St, W. 26 St, midblock west of 9 Av)	Q1, 2029	Q4, 2031	35
E-C New 4 (10 Av, W 25 to W 26 Sts)	Q1, 2032	Q1, 2035	37
E-C New 5 (W 25 St, W 26 St, midblock east of E-C New 4)	Q2, 2032	Q1, 2035	33
E-C New 6 (W 25 St, east of E-C New 5)	Q2, 2035	Q4, 2037	30
E-C New 7 (W 26 St, W 27 Dr, east of E-C New 1)	Q1, 2038	Q3, 2040	33

Notes:
[1] Refer to **Figure 02.01a** for building numbers.

Table 05.19-2a: Fulton Houses Project Site Forecasted Overall Construction Schedule for Non-Rezoning Alternative

Building[1]	Start Quarter/ Year	Finish Quarter/ Year	Approximate Duration (months)
Fulton New 1 (W 19 St & 9 Av NW corner)	Q3, 2025	Q2, 2028	34
Fulton New 2 (9 Av, W 18 to W 19 Sts)	Q3, 2028	Q1, 2031	32
Fulton New 3 (9 Av, W 17 to W 18 Sts)	Q4, 2028	Q2, 2031	33
Fulton New 4 (W 18 St, W 19 St, midblock)	Q3, 2031	Q2, 2034	34
Fulton New 5 (W 17 to W 18 Sts, midblock)	Q4, 2031	Q3, 2034	33
Fulton New 6 (W 17 St., south side, midblock west of Fulton New 8)	Q4, 2034	Q3, 2037	33
Fulton New 7 (9 Av, W 16 to W 17 Sts)	Q1, 2035	Q2, 2038	40
Fulton New 8 (W 17 to W 18th Sts, midblock west of Fulton New 5)	Q2, 2035	Q1, 2038	35
Fulton New 9 (W 17 St, north side, midblock)	Q1, 2039	Q3, 2041	29
Fulton New 10 (W 17 St, north side midblock west of Fulton New 9)	Q2, 2039	Q4, 2041	29

Notes:
1 Refer to **Figure 02.01a** for building numbers.

Table 05.19-2b: Elliott-Chelsea (E-C) Houses Project Site Forecasted Overall Construction Schedule for Non-Rezoning Alternative

Building[1]	Start Quarter/ Year	Finish Quarter/ Year	Approximate Duration (months)
E-C New 1 (W 26 St, W 27 Dr., midblock east of 10 Av)	Q3, 2025	Q3, 2028	38
E-C New 2 (10 Av, W 26 St to W 27 Dr)	Q4, 2028	Q3, 2031	34
E-C New 3 (W 25 St, W 26 St, midblock west of 9 Av)	Q1, 2029	Q4, 2031	34
E-C New 4 (W 25 St, W 26 St, midblock west of E-C New 3)	Q1, 2032	Q3, 2034	31
E-C New 5 (10 Av, W 25 St, W 26 St)	Q2, 2032	Q1, 2035	33
E-C New 6 (W 25 St, W 26 St, midblock east of E-C New 5)	Q1, 2036	Q2, 2038	30
E-C New 7 (W 26 St, W 27 Dr, east of E-C New 1)	Q2, 2036	Q3, 2038	30

Notes:
1 Refer to **Figure 02.01a** for building numbers.

Table 05.19-3a: Fulton Houses Project Site Forecasted Overall Construction Schedule for Midblock Bulk Alternative

Building[1]	Start Quarter/ Year	Finish Quarter/ Year	Approximate Duration (months)
Fulton New 1 (W 19 St & 9 Av NW corner)	Q3, 2025	Q2, 2028	34
Fulton New 2 (9 Av, W 18 to W 19 Sts)	Q3, 2028	Q3, 2031	38
Fulton New 3 (9 Av, W 17 to W 18 Sts)	Q4, 2028	Q3, 2031	36
Fulton New 4 (W 18 St, W 19 St, midblock)	Q4, 2031	Q4, 2034	37
Fulton New 5 (W 17 to W 18 Sts, midblock)	Q1, 2032	Q2, 2035	38
Fulton New 6 (W 17 St., south side, midblock west of Fulton New 8)	Q1, 2036	Q2 2038	30
Fulton New 7 (9 Av, W 16 to W 17 Sts)	Q2, 2039	Q4 2041	31
Fulton New 8 (W 17 to W 18th Sts, midblock west of Fulton New 5)	Q2, 2039	Q4 2041	31
Fulton New 9 (W 17 St, north side, midblock)	Q2, 2039	Q4 2041	33

Notes:
1 Refer to **Figure 02.01a** for building numbers.

Table 05.19-3b: Elliott-Chelsea (E-C) Houses Project Site Forecasted Overall Construction Schedule for Midblock Bulk Alternative

Building[1]	Start Quarter/ Year	Finish Quarter/ Year	Approximate Duration (months)
E-C New 1 (W 26 St, W 27 Dr, midblock east of 10 Av)	Q3, 2025	Q3, 2028	38
E-C New 2 (10 Av, W 26 St to W 27 Dr)	Q4, 2028	Q4, 2031	36
E-C New 3 (W 25 St, W. 26 St, midblock west of 9 Av)	Q1, 2029	Q4, 2031	35
E-C New 4 (10 Av, W 25 to W 26 Sts)	Q1, 2032	Q1, 2035	37
E-C New 5 (W 25 St, W 26 St, midblock east of E-C New 4)	Q2, 2032	Q1, 2035	33
E-C New 6 (W 25 St, east of E-C New 5)	Q2, 2035	Q4, 2037	30
E-C New 7 (W 26 St, W 27 Dr, east of E-C New 1)	Q1, 2038	Q3, 2040	33

Notes:
[1] Refer to **Figure 02.01a** for building numbers.

General Construction Information

Table 05.19-4 summarizes the general construction information for the four major tasks of the building process. The time durations listed show a range, which reflects variations due to building size, footprint, and site condition. For example, some new buildings require longer demolition depending on the size and number of buildings they are replacing. The first task is demolition, excavation, and foundation, which varies from 12 to 21 months, with an average of 16 months. This is followed by superstructure construction, which varies from 4 to 10 months, with an average of 7 months. The next task, exteriors (windows, walls, and roofing) overlaps with the preceding and succeeding tasks and varies from 5 to 12 months, with an average of 9 months. The final major task, interiors, which begins before exteriors are completed, varies from 9 to 15 months, with an average of 13 months.

Hours of Work

Construction activities for buildings in the City generally take place Monday through Friday, with exceptions that are discussed separately below. In accordance with City laws and regulations, construction work would generally begin at 7 AM on weekdays, with workers arriving to prepare work areas between 6 and 7 AM. Normally, work would end at 3:30 PM, but at times the workday could be extended to complete some specific tasks beyond normal work hours, such as completing the drilling of piles, finishing a concrete pour for a floor deck, or completing the bolting of a steel frame erected that day. The extended workday would generally last until about 6 PM and would generally include fewer construction workers on-site, just those involved in the specific tasks requiring additional work time.

Table 05.19-4: FEC Construction Typical Building Stage Schedule per Building

Task	Approximate Duration (months)[1]
Demolition, Excavation, and Foundation	12-21; 16 average
Superstructure	4-10; 7 average
Exteriors (Window Wall, Roofing)	5-12; 9 average
Interiors	9-15; 13 average
Total[2]	27-40; 33 average

Notes:
[1] Task duration variations reflect differences in building area, footprint, and site condition
[2] Due to overlap between superstructure and exteriors, and exteriors and interiors, total is not a sum of the four individual tasks.

Occasionally, Saturday or overtime hours may be required to complete some time-sensitive tasks. Weekend work requires a permit from the DOB and, in certain instances, approval of a noise mitigation plan from the DEP under the City's Noise Code. The NYC Noise Control Code, as amended December 2005 and effective July 1, 2007, limits construction (absent special circumstances as described below) to weekdays between the hours of 7 AM and 6 PM and sets noise limits for certain specific pieces of construction equipment. Construction activities occurring after hours (weekdays between 6 PM and 7 AM and on weekends) may be permitted only to accommodate: (i) emergency conditions; (ii) public safety; (iii) construction projects by or on behalf of City agencies; (iv) construction activities with minimal noise impacts; and (v) undue hardship resulting from unique site characteristics, unforeseen conditions, scheduling conflicts, and/or financial considerations. In such cases, the number of workers and pieces of equipment in operation would be limited to those needed to complete the particular authorized task. Therefore, the level of activity for any weekend work would be less than a normal workday. The typical weekend workday would be on Saturday from roughly 7 AM with worker arrival and site preparation to 3:30 PM for site cleanup similar to the typical weekday.

Deliveries and Access

During construction of the Proposed Project, access to the construction site would be controlled. The work areas would be fenced off, and limited access points for workers and trucks would be provided. Security guards and flaggers would be posted as necessary. After work hours, the gates would be closed and locked. Security guards may patrol the construction site after work hours and over the weekends to prevent unauthorized access.

Truck movements would be spread throughout the day and would generally occur between the hours of 6 AM and 3 PM, depending on the stage of construction. Material deliveries to the site would be controlled and scheduled, and unscheduled deliveries would be minimized. To aid in adhering to the delivery schedules, as is normal for building construction in New York City, it is anticipated that flaggers would be employed at each of the gates. The flaggers could be supplied by the subcontractor on-site at the time or by the construction manager. The flaggers would control trucks entering and exiting the site so that they would not interfere with one another. In addition, they would provide an additional traffic aid as the trucks enter and exit the on-street traffic streams.

Sidewalk and Lane Closures

The NYC Department of Transportation, Office of Construction Mitigation and Coordination (DOT-OCMC) reviews and approves all maintenance and protection of traffic (MPT) plans which specify any planned sidewalk or lane closures and staging for all construction sites. As a general practice and as part of the DOT-OCMC required review process, construction managers for major projects on adjacent sites would coordinate their activities to avoid delays and inefficiencies.

Given that the Project Sites occupy 12 acres and the existing buildings' occupy a low proportion of the lot area, to the extent feasible construction staging would occur on-site to minimize public sidewalk and roadway lane closures. While some temporary sidewalk and lane closures adjacent to the Project Sites to allow for certain construction activities during construction may occur, no rerouting of traffic is anticipated, and pedestrian circulation and access would be maintained throughout the construction period. DOT-OCMC review and approval is required for any closures and would determine the appropriate protective measures for ensuring pedestrian safety surrounding the building site, if warranted.

Public Safety

A variety of measures would typically be employed to ensure public safety during the construction, including sidewalk bridges to provide overhead protection; safety signs to alert the public about active construction work; safety barriers to ensure the safety of the public passing by construction areas; flag persons to control trucks entering and exiting the construction areas and/or to provide guidance for pedestrians and bicyclists safety; and safety nettings as the superstructure work advances upward to prevent debris from falling to the ground. All DOB safety requirements would be followed to ensure the safety of the community and the construction workers themselves.

Rodent Control

Construction contracts would typically include provisions for a rodent (i.e., mouse and rat) control program. Before the start of construction, the contractor would survey and bait the appropriate areas and provide for proper site sanitation. During construction, the contractor would carry out a maintenance program, as necessary. Signage would be posted, and coordination would be conducted with appropriate agencies.

D. DESCRIPTION OF CONSTRUCTION ACTIVITIES

Prior to the commencement of construction, the work area would typically be prepared for construction, including the installation of public safety measures such as barriers, netting, and signs. The construction areas would be fenced off. Worker and truck access points would be established, and existing street trees would be protected.

Demolition

Before the commencement of demolition activities on the existing buildings on the Project Sites, the buildings would be surveyed for asbestos by an asbestos investigator who is certified by the New York State Department of Labor (NYSDOL) and the New York City Department of Environmental Protection (DEP) and all asbestos-containing materials (ACM) would be removed and disposed of in accordance with local, state, and federal requirements. Any activities with the potential to disturb lead-based paint (LBP) or non-paint components with lead content would be performed in accordance with the applicable OSHA regulations (including federal OSHA regulation 29 CFR 1926.62—Lead Exposure in Construction). In addition, any suspected polychlorinated biphenyls (PCB)-containing equipment that would be disturbed (such as fluorescent light ballasts) would be evaluated prior to disturbance. Unless labeling or test data indicate the contrary, such equipment would be assumed to contain PCBs, and would be removed and disposed of at properly licensed facilities in accordance with all applicable regulatory requirements.

All of these procedures related to the handling of ACM, LBP, lead-containing components, and potential PCB-containing equipment would be contained in the DEP-approved Construction Health and Safety Plan (CHASP).

The first-stage sites will comply with the Remedial Action Work Plan (RAP) and CHASP which were submitted to DEP in February 2024 and found acceptable by DEP in March 2024, as modified to address DEP's comments and recommendations. Requirements for site assessment, investigation, remediation, monitoring, and reporting, as warranted, for subsequent stages of the Proposed Project under all three alternatives will be memorialized in a legally binding document between NYCHA and the PACT Partner. Each of these steps in the process will be subject to DEP review and approval. Any DEP-required remedial action must be identified before permits for the demolition of a given building can be issued and, thereafter, a DEP-approved site closure report is required to be issued before a temporary certificate of occupancy is sought or issued by DOB. With these requirements in place, under any alternative selected for the Proposed Project all of the building sites on the Project Sites will be subject to site investigation, testing, remediation (as warranted), and site closure report requirements, subject to DEP review and approvals.

Prior to demolition, any economically salvageable materials that could be reused would typically be removed. Then the buildings would be demolished using jackhammers. Demolition activities would typically involve the use of jackhammers, compressors, and bobcats. Demolition debris would typically be sorted prior to being disposed at landfills to maximize recycling opportunities.

Excavation

Excavation work would typically begin with the installation of walls and berms to contain soil around the excavation area, and excavators would then be used to excavate soil. The soil would be loaded onto dump trucks for transport to a licensed disposal facility or stored for reuse on any portion of the Project Sites that needs fill if this is permitted in accordance with the findings of hazardous materials investigations and remedial action work plans. Excavation activities would also typically involve the use of bobcats, generators, compressors, and loaders.

Water from rain and snow collected in the excavation area during construction would be removed using a dewatering pump. If groundwater dewatering is required, it would be performed in accordance with DEP sewer use requirements.

Refer to **Chapter 05.09, "Hazardous Materials,"** which discusses the environmental remediation work that would be conducted (as warranted) for the Project Sites in coordination with construction.

Foundation

This stage would include the construction of the foundation and below-grade elements of the proposed buildings. The foundation stage may include pile installation activities with the use of drill rigs. Concrete trucks would be used to pour the foundation and the below-grade structures. Foundation activities would also typically involve the use of bar bending machines and concrete vibrators.

Superstructure

The superstructure work would include the framework for the proposed buildings, such as beams, slabs, and columns. Construction of the interior structure—or core—of the buildings would include elevator shafts; vertical risers for mechanical, electrical, and plumbing systems; electrical and mechanical equipment rooms; core stairs; and restroom areas. A crane would be used to lift structural components and other large material during the superstructure task. Superstructure activities would also typically include the use of bar bending machines, concrete vibrators, concrete finishers, forklift, and a variety of trucks. In addition, temporary construction elevators (hoists) would be used for the vertical movement of workers and materials during superstructure activities.

Exteriors

During this stage of construction, the exterior envelope systems of the proposed buildings would be installed. The exterior units would typically be transported via a hoist to the appropriate floors for installation or lift into place by a crane. This stage of construction would typically overlap with a portion of the superstructure work.

Interiors

Activities during the interiors stage would include the construction of interior partitions, installation of lighting fixtures and interior finishes (e.g., flooring, painting, etc.), and mechanical and electrical work, such as the installation of elevators and lobby finishes. Final cleanup and touchup of the buildings and final building systems (e.g., electrical system, fire alarm, plumbing, etc.) testing and inspections would be part of this stage of construction. Equipment used during interiors and finishing would typically include a hoist, welders, and a variety of small handheld tools.

Interiors and finishing would typically be the quietest period of construction in terms of its effect on the public, because most of the construction activities would occur inside the buildings with the façades substantially complete and the proposed buildings enclosed. This stage of construction would include the final finishing of the buildings and grounds.

Number of Construction Workers and Materials Deliveries

Alternative 2 – Rezoning Alternative

Tables 05.19-5a and **05.19-5b** shows the estimated averaged daily numbers of workers and deliveries for the Fulton Houses Project Site and Elliott-Chelsea Houses Project Site, respectively, by calendar quarter for all construction activities under the Rezoning Alternative. **Table 05.19-5c** shows the total daily number of workers and deliveries for the Project Site under the Rezoning Alternative. For the Fulton Houses Project Site, the peak daily average construction worker count would occur in the first quarter of 2034, when it would be 520. For the Elliott-Chelsea Houses Project Site, the peak daily average construction worker count would occur in the first quarter of

2034, when it would be 440. Overall, for the Project Sites combined the peak daily average construction worker count would be 960.

For the Fulton Houses Project Site, the peak daily average truck count would occur in the first quarter of 2034, when it would be 117. For the Elliott-Chelsea Houses Project Site, the peak daily average truck count would occur in the first quarter of 2034, when it would be 107. Overall, for the Project Sites combined the peak daily average truck count would occur in the first quarter of 2034, when it would be 224.

Table 05.19-5a: Fulton Houses Project Site, Forecasted Average Number of Daily Workers and Trucks by Quarter – Rezoning Alternative

Year	**2025**				**2026**				**2027**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	-	-	10	10	18	43	42	83	170	230	170	180
Trucks	-	-	10	10	17	37	33	30	52	55	40	37
Year	**2028**				**2029**				**2030**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	175	58	10	20	20	58	78	58	198	370	380	333
Trucks	25	8	10	20	20	50	68	57	65	97	90	73
Year	**2031**				**2032**				**2033**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	315	350	292	3	13	20	33	48	92	58	142	283
Trucks	48	50	42	3	13	20	30	40	82	57	62	80
Year	**2034**				**2035**				**2036**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	**520**	433	363	355	233	58	0	0	10	18	25	42
Trucks	**117**	100	80	62	33	8	0	0	10	17	20	38
Year	**2037**				**2038**				**2039**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	58	113	237	170	188	175	0	0	0	10	33	57
Trucks	32	33	53	40	38	250	0	0	0	10	30	48
Year	**2040**				**2041**				**Average**		**Peak**	
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**				
Workers	67	100	172	317	410	355	233	58	140		520	
Trucks	60	70	65	80	83	62	33	8	41		117	

Source: Related Companies, Design and Construction

Table 05.19-5b: Elliott-Chelsea Houses Project Site, Forecasted Average Number of Daily Workers and Trucks by Quarter – Rezoning Alternative

Year	**2025**				**2026**				**2027**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	-	-	10	10	18	25	42	25	115	220	230	170
Trucks	-	-	10	10	17	20	37	25	40	58	55	40
Year	**2028**				**2029**				**2030**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	178	175	117	7	17	20	33	57	67	117	253	420
Trucks	42	25	17	7	17	20	30	48	60	62	77	103
Year	**2031**				**2032**				**2033**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	413	350	357	233	3	13	20	33	57	67	117	253
Trucks	97	77	57	33	3	13	20	30	48	60	62	77
Year	**2034**				**2035**				**2036**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	**440**	393	348	357	292	7	23	33	33	83	170	250
Trucks	**107**	93	82	57	42	7	20	28	32	30	47	57
Year	**2037**				**2038**				**2039**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	183	180	175	58	10	18	25	42	58	113	270	230
Trucks	43	37	25	8	10	17	20	38	32	33	60	53
Year	**2040**				**2041**				**Average**		**Peak**	
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**				
Workers	170	182	175	0	0	0	0	0	140		440	
Trucks	40	32	25	0	0	0	0	0	40		107	

Source: Related Companies, Design and Construction

Table 05.19-5c: The Project Site, Forecasted Total Number of Daily Workers and Trucks by Quarter – Rezoning Alternative

Year	**2025**				**2026**				**2027**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	-	-	20	20	37	68	83	108	285	450	400	350
Trucks	-	-	20	20	33	57	70	55	92	113	95	77
Year	**2028**				**2029**				**2030**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	353	233	127	27	37	78	112	115	265	487	633	753
Trucks	67	33	27	27	37	70	98	105	125	158	167	177
Year	**2031**				**2032**				**2033**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	728	700	648	237	17	33	53	82	148	125	258	537
Trucks	145	127	98	37	17	33	50	70	130	117	123	157
Year	**2034**				**2035**				**2036**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	960	827	712	712	525	65	23	33	43	102	195	292
Trucks	223	193	162	118	75	15	20	28	42	47	67	95
Year	**2037**				**2038**				**2039**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	242	293	412	228	198	193	25	42	58	123	303	287
Trucks	75	70	78	48	48	42	20	38	32	43	90	102
Year	**2040**				**2041**				**Average**		**Peak**	
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**				
Workers	237	282	347	317	410	355	233	58	261		960	
Trucks	100	102	90	80	83	62	33	8	76		223	

Source: Related Companies, Design and Construction

Alternative 3 – Non-Rezoning Alternative

Tables 05.19-6a and **05.19-6b** shows the estimated averaged daily numbers of workers and deliveries for the Fulton Houses Project Site and Elliott-Chelsea Houses Project Site, respectively, by calendar quarter for all construction activities under the Non-Rezoning Alternative. **Table 05.19-6c** shows the total daily number of workers and deliveries for the Project Site under the Non-Rezoning Alternative. For the Fulton Houses Project Site, the peak daily average construction worker count would occur in the second quarter of 2037, when it would be 615. For the Elliott-Chelsea Houses Project Site, the peak daily average construction worker count would occur in the fourth quarter of 2037, when it would be 467. Overall, for the Project Sites combined the peak daily average construction worker count would be 814 in the fourth quarter of 2037.

For the Fulton Houses Project Site, the peak daily average truck count would occur in the first quarter of 2037, when it would be 138. For the Elliott-Chelsea Houses Project Site, the peak daily average truck count would occur in the fourth quarter of 2037, when it would be 107. Overall, for the Project Sites combined the peak daily average truck count would occur in the first quarter of 2037, when it would be 208.

Table 05.19-6a: Fulton Houses Project Site, Forecasted Average Number of Daily Workers and Trucks by Quarter – Non-Rezoning Alternative

Year	**2025**				**2026**				**2027**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	-	-	10	10	17	30	30	83	170	230	170	180
Trucks	-	-	10	10	15	28	27	30	47	53	40	37
Year	**2028**				**2029**				**2030**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	175	58	10	20	27	43	70	115	278	417	450	370
Trucks	25	8	10	20	28	35	65	60	82	103	103	70
Year	**2031**				**2032**				**2033**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	298	175	3	13	27	30	57	53	115	253	367	360
Trucks	48	25	3	13	28	25	52	48	60	77	93	80
Year	**2034**				**2035**				**2036**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	347	350	117	5	18	23	36	68	45	168	250	393
Trucks	60	50	17	5	19	27	32	48	41	84	100	108
Year	**2037**				**2038**				**2039**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	600	615	412	347	350	117	0	0	2	7	20	33
Trucks	138	129	92	60	50	17	0	0	3	8	21	30
Year	**2040**				**2041**				**Average**		**Peak**	
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**				
Workers	32	92	240	420	463	382	233	58	168		615	
Trucks	30	38	74	99	96	64	33	8	47		138	

Source: Related Companies, Design and Construction

Table 05.19-6b: Elliott-Chelsea Houses Project Site, Forecasted Average Number of Daily Workers and Trucks by Quarter – Non-Rezoning Alternative

Year	2025				2026				2027			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	-	-	10	10	18	25	33	33	115	220	230	170
Trucks	-	-	10	10	20	20	28	32	35	53	53	40
Year	2028				2029				2030			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	178	175	117	7	17	20	33	57	67	117	253	420
Trucks	42	25	17	7	17	20	33	52	60	62	77	103
Year	2031				2032				2033			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	453	373	292	117	7	7	20	38	70	67	140	335
Trucks	98	67	42	17	7	17	20	37	63	62	60	88
Year	2034				2035				2036			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	418	405	290	175	58	0	0	0	10	28	43	67
Trucks	95	78	47	25	8	0	0	0	10	30	40	58
Year	2037				2038				2039			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	100	172	383	467	372	350	175	0	0	0	0	0
Trucks	70	65	93	107	72	50	25	0	0	0	0	0
Year	2040				2041				Average		Peak	
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th				
Workers	0	0	0	0	0	0	0	0	147		467	
Trucks	0	0	0	0	0	0	0	0	43		107	

Source: Related Companies, Design and Construction

Table 05.19-6c: The Project Site, Total Number of Daily Workers and Trucks by Quarter – Non-Rezoning Alternative

Year	2025				2026				2027			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	-	-	20	20	35	55	63	117	285	450	400	350
Trucks	-	-	20	20	35	48	55	62	82	107	93	77
Year	2028				2029				2030			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	353	233	127	27	43	63	103	172	345	533	703	790
Trucks	67	33	27	27	45	55	98	112	142	165	180	173
Year	2031				2032				2033			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	753	548	295	130	33	47	77	92	185	320	507	695
Trucks	147	92	45	30	35	42	72	85	123	138	153	168
Year	2034				2035				2036			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	765	755	407	180	76	23	36	68	55	197	293	460
Trucks	155	128	63	30	27	27	32	48	51	114	140	167
Year	2037				2038				2039			
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	700	787	795	813	722	467	175	0	2	7	20	33
Trucks	208	194	185	167	122	67	25	0	3	8	21	30
Year	2040				2041				Average		Peak	
Quarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th				
Workers	32	92	240	420	463	382	233	58	284		813	
Trucks	30	38	74	99	96	64	33	8	80		208	

Source: Related Companies, Design and Construction

Alternative 4 – Midblock Bulk Alternative

Tables 05.19-7a and **05.19-7b** shows the estimated averaged daily numbers of workers and deliveries for the Fulton Houses Project Site and Elliott-Chelsea Houses Project Site, respectively, by calendar quarter for all construction activities under the Midblock Bulk Alternative. **Table 05.19-7c** shows the total daily number of workers and deliveries for the Project Site under the Midblock Bulk Alternative. For the Fulton Houses Project Site, the peak daily average construction worker count would occur in the first quarter of 2041, when it would be 610. For the Elliott-Chelsea Houses Project Site, which would be the same as under the Rezoning Alternative, the peak daily average construction worker count would occur in the first quarter of 2034, when it would be 440. Overall, for the Project Sites combined the peak daily average construction worker count would be 813 in the second quarter of 2034.

For the Fulton Houses Project Site, the peak daily average truck count would occur in the first quarter of 2041, when it would be 147. For the Elliott-Chelsea Houses Project Site, the peak daily average truck count would occur in the first quarter of 2034, when it would be 107. Overall, for the Project Sites combined the peak daily average truck count would occur in the first quarter of 2034, when it would be 197.

Table 05.19-7a: Fulton Houses Project Site, Forecasted Average Number of Daily Workers and Trucks by Quarter – Midblock Bulk Alternative

Year	2025				2026				2027			
uarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	-	-	10	10	18	43	42	83	170	230	170	180
rucks	-	-	10	10	17	37	33	30	52	55	40	37
Year	2028				2029				2030			
uarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	175	58	10	20	20	50	70	67	173	333	500	367
rucks	25	8	10	20	20	43	60	63	67	87	113	87
Year	2031				2032				2033			
uarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	328	348	292	3	13	20	37	43	60	125	203	333
rucks	62	55	42	3	13	20	33	38	55	67	78	87
Year	2034				2035				2036			
uarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	353	420	358	305	175	58	0	0	10	18	25	42
rucks	90	97	68	55	25	8	0	0	10	17	20	38
Year	2037				2038				2039			
uarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th
Workers	58	113	237	170	188	175	0	0	0	23	30	47
rucks	32	33	53	40	38	25	0	0	0	23	30	43
Year	2040				2041				Average		Peak	
uarter	1st	2nd	3rd	4th	1st	2nd	3rd	4th				
Workers	73	117	183	310	610	547	538	408	155		610	
rucks	60	105	102	97	147	117	88	58	45		147	

Source: Related Companies, Design and Construction

Table 05.19-7b: Elliott-Chelsea Houses Project Site, Forecasted Average Number of Daily Workers and Trucks by Quarter – Midblock Bulk Alternative

Year	**2025**				**2026**				**2027**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	-	-	10	10	18	25	42	25	115	220	230	170
Trucks	-	-	10	10	17	20	37	25	40	58	55	40
Year	**2028**				**2029**				**2030**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	178	175	117	7	17	20	33	57	67	117	253	420
Trucks	42	25	17	7	17	20	30	48	60	62	77	103
Year	**2031**				**2032**				**2033**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	413	350	357	233	3	13	20	33	57	67	117	253
Trucks	97	77	57	33	3	13	20	30	48	60	62	77
Year	**2034**				**2035**				**2036**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	**440**	393	348	357	292	7	23	33	33	83	170	250
Trucks	**107**	93	82	57	42	7	20	28	32	30	47	57
Year	**2037**				**2038**				**2039**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	183	180	175	58	10	18	25	42	58	113	270	230
Trucks	43	37	25	8	10	17	20	38	32	33	60	53
Year	**2040**				**2041**				**Average**		**Peak**	
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**				
Workers	170	182	175	0	0	0	0	0	140		440	
Trucks	40	32	25	0	0	0	0	0	40		107	

Source: Related Companies, Design and Construction

Table 05.19-7c: The Project Site, Total Number of Daily Workers and Trucks by Quarter – Midblock Bulk Alternative

Year	**2025**				**2026**				**2027**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	-	-	20	20	37	68	83	108	285	450	400	350
Trucks	-	-	20	20	35	57	70	55	92	113	95	77
Year	**2028**				**2029**				**2030**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	353	233	127	27	37	70	103	123	240	450	753	787
Trucks	67	33	27	27	37	63	90	112	127	148	190	190
Year	**2031**				**2032**				**2033**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	742	698	648	237	17	33	57	77	117	192	320	587
Trucks	158	132	98	37	17	33	53	68	103	127	140	163
Year	**2034**				**2035**				**2036**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	793	813	707	662	467	65	23	33	43	102	195	292
Trucks	197	190	150	112	67	15	20	28	42	47	67	95
Year	**2037**				**2038**				**2039**			
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**
Workers	242	293	412	228	198	193	25	42	58	137	300	277
Trucks	75	70	78	48	48	42	20	38	32	57	90	97
Year	**2040**				**2041**				**Average**		**Peak**	
Quarter	**1st**	**2nd**	**3rd**	**4th**	**1st**	**2nd**	**3rd**	**4th**				
Workers	243	298	358	310	610	547	538	408	276		813	
Trucks	100	137	127	97	147	117	88	58	80		197	

Source: Related Companies, Design and Construction

E. METHODOLOGY

Transportation

Construction Worker Modal Splits, Vehicle Occupancy and Temporal Distributions

Modal split and vehicle occupancy rates for construction workers were based on data from 2000 Census reverse journey-to-work data for construction workers employed in census tracts in proximity to the Project Sites[2]. Based on this data, it is anticipated that approximately 56.2 percent of construction workers would use public transportation in their commute to and from the Project Sites, which is well served by subway and bus transit (45.1 percent by subway and 11.1 percent by bus). Approximately 41.2 percent of workers are expected to travel by personal automobile and 1.3 percent by taxi, with an average occupancy of approximately 1.21 persons per vehicle. Approximately 1.3 percent are expected to walk or bicycle.

Table 05.19-8 shows the temporal distribution for these vehicle trips was based on typical work shift allocations and conventional arrival/departure patterns for construction workers. Each worker vehicle was assumed to arrive in the morning and depart in the afternoon or early evening, whereas truck deliveries would occur throughout the construction day. To avoid congestion and ensure that materials are on-site for the start of each shift, construction truck deliveries would often peak during the hour before the regular day shift, overlapping with construction worker arrival traffic. Each truck delivery was assumed to result in two truck trips during the same hour (one inbound and one outbound). For analysis purposes, truck trips were converted into Passenger Car Equivalents (PCEs) based on one truck being equivalent to an average of two PCEs.

Table 05.19-8: Temporal Distribution for Construction Worker Vehicle Trips

Hour	Auto Trips		Taxi Trips		Truck Trips	
	In %	Out %	In %	Out %	In %	Out %
6–7 AM	80%	0%	80%	0%	25%	25%
7–8 AM	20%	0%	20%	0%	10%	10%
8–9 AM	0%	0%	0%	0%	10%	10%
9–10 AM	0%	0%	0%	0%	10%	10%
10–11 AM	0%	0%	0%	0%	10%	10%
11 AM–12 PM	0%	0%	0%	0%	10%	10%
12–1 PM	0%	0%	0%	0%	10%	10%
1–2 PM	0%	0%	0%	0%	5%	5%
2–3 PM	0%	5%	0%	5%	5%	5%
3–4 PM	0%	80%	0%	80%	2.5%	2.5%
4–5 PM	0%	15%	0%	15%	2.5%	2.5%
5–6 PM	0%	0%	0%	0%	0%	0%

[2] AASHTO CTPP 2000 reverse journey-to-work data for the area encompassed by 2010 Manhattan census tracts 83, 89, 93, 97, and 99.

Transportation Assessment

The *CTM* identifies procedures for evaluating the Proposed Project's potential effects on traffic transit, pedestrian, and parking conditions. This methodology begins with a Level 1 trip generation screening assessment to estimate the numbers of person and vehicle trips by mode expected to be generated by the Proposed Project during the peak hours for project-generated travel demand. These estimates are then compared to the *CTM* analysis thresholds to determine if a Level 2 screening and/or quantified operational analyses may be warranted. A Level 2 screening assessment involves the assignment of project-generated trips to the study area street network, pedestrian elements, and transit facilities, and the identification of specific locations where the incremental increase in demand may potentially exceed *CTM* analysis thresholds and therefore require a quantitative analysis. If the results of the Level 2 screening assessment show that the Proposed Project would generate 50 or more peak hour vehicle trips at an intersection, 200 or more peak hour subway trips at a station, 50 or more peak hour bus trips in one direction along a bus route, or 200 or more peak hour pedestrian trips traversing a sidewalk, corner area or crosswalk, then further quantified operational analyses may be warranted to assess the potential for significant adverse impacts on traffic, transit, pedestrians, street user safety, and parking.

Refer to **Section C, "Methodology,"** of **Chapter 05.13, "Transportation,"** for the methodology for detailed analyses.

Air Quality

Construction of the Proposed Project under the Rezoning Alternative, Non-Rezoning Alternative, and Midblock Bulk Alternative would require the use of both non-road construction equipment and on-road vehicles. Non-road construction equipment includes equipment operating on-site, such as cranes, loaders, and excavators. On-road vehicles include worker vehicles and construction trucks arriving to and departing from the construction sites as well as operating on-site. Emissions from non-road construction equipment and on-road vehicles have the potential to affect air quality. In addition, emissions from dust-generating construction activities (i.e., truck loading and unloading operations) also have the potential to affect air quality. A quantitative analysis of the overall combined impact of both non-road and on-road sources of construction-related air emissions, including dust emissions, was performed to determine the potential for significant adverse impacts from these sources of air emissions generated during the construction activities associated with the Proposed Project under the three alternatives analyzed herein.

In general, much of the heavy equipment used in construction is powered by diesel engines that have the potential to produce relatively high levels of nitrogen oxides (NO_x) and particulate matter (PM) emissions. Dust generated by construction activities is also a source of PM. Gasoline engines produce relatively high levels of CO. Since EPA mandates the use of ULSD fuel for all highway and non-road diesel engines, sulfur oxides (SO_x) emitted from the Rezoning Alternative's construction activities would be negligible. Therefore, the pollutants to be analyzed for the construction period are NO_2—which is a component of NO_x (a regulated pollutant)—particles with an aerodynamic diameter of less than or equal to 10 micrometers (PM_{10}), particles with an aerodynamic diameter of less than or equal to 2.5 micrometers ($PM_{2.5}$), and CO.

Chapter 05.14, "Air Quality," contains a review of these air pollutants; applicable regulations, standards, and benchmarks; background concentrations; and general methodology for the air quality analyses. Additional details relevant only to the construction air quality analysis methodology are presented in this section.

Emissions Reduction Measures

Construction activity in general, and large-scale construction in particular, has the potential to adversely affect air quality as a result of diesel emissions. Measures would be taken to reduce pollutant emissions during construction of the Proposed Project under all of the alternatives analyzed herein in accordance with all applicable laws, regulations, and building codes. Contractors would be required under contract specifications to implement an emissions reduction program to minimize the air quality effects from construction, consisting of the following components:

- *Dust Control.* To minimize dust emissions from construction activities, a dust control plan including a robust watering program would be required as part of contract specifications. For example, all trucks hauling loose material would be equipped with tight-fitting tailgates and their loads securely covered prior to leaving the Project Sites; and water sprays would be used for all demolition, excavation, and transfer of soils so that materials would be dampened as necessary to avoid the suspension of dust into the air. Stockpiled soils or debris would be watered, stabilized with a chemical suppressing agent, or covered. All measures required by DEP's *Construction Dust Rules* regulating construction-related dust emissions would be implemented.
- *Idling Restriction.* In addition to adhering to the local law restricting unnecessary idling on roadways, on-site vehicle idle time would be restricted to three minutes for all equipment and vehicles that are not using their engines to operate a loading, unloading, or processing device (e.g., concrete mixing trucks) or are otherwise required for the proper operation of the engine.
- *Clean Fuel.* ULSD fuel would be used exclusively for all diesel engines throughout the Project Sites.
- *Diesel Equipment Reduction.* In accordance with the New York City Noise Control Code as discussed below, under "Noise," electrically powered equipment would be preferred over diesel-powered and gasoline-powered versions of that equipment to the extent practicable. Equipment that would be electrically powered in lieu of the use of diesel engines includes, but may not be limited to, hoists and small equipment (such as welders).
- *Utilization of Newer Equipment.* EPA's Tier 1 through 4 standards for non-road diesel engines regulate the emission of criteria pollutants from new engines, including PM, CO, NOx, and hydrocarbons. All diesel-powered non-road construction equipment 50 horsepower (hp) or greater would meet at least the Tier 3 emissions standard.
- *Best Available Tailpipe Reduction Technologies.* Non-road diesel engines with a power rating of 50 hp or greater and controlled truck fleets (i.e., truck fleets under long-term contract with the project) including but not limited to concrete mixing and pumping trucks would utilize the best available tailpipe (BAT) technology for reducing diesel particulate matter (DPM) emissions. Diesel particulate filters (DPFs) have been identified as being the tailpipe technology currently proven to have the highest reduction capability. Construction

contracts would specify that all diesel non-road engines rated at 50 hp or greater would utilize DPFs, either installed by the original equipment manufacturer or retrofitted. Retrofitted DPFs must be verified by EPA or the California Air Resources Board. Active DPFs or other technologies proven to achieve an equivalent reduction may also be used. The use of DPFs for diesel engines meeting the Tier 3 emissions standard achieves similar emission reductions as the newer Tier 4 particulate matter emission standard. As discussed below under "Engine Emissions," the emission factor calculations for the detailed analysis presented in this chapter took into account this emission reduction measure.

On-Site Construction Activity Assessment

The analyses of air quality for the Rezoning Alternative, Non-Rezoning Alternative, and Midblock Bulk Alternative use the same methodologies and are outlined below.

Engine Emissions

The sizes, types, and number of units of construction equipment was estimated based on the construction activity schedule developed for the Proposed Project. Emission rates for NO_x, CO, PM_{10}, and $PM_{2.5}$ from truck engines was developed using the EPA Motor Vehicle Emission Simulator (MOVES) emission model. Emission factors for NO_x, CO, PM_{10}, and $PM_{2.5}$ from on-site construction engines were developed using the NONROAD emission module included in the MOVES emission model. The emission factor calculations took into account any emissions reduction measures as described above, under "Emissions Reduction Measures," including the utilization of newer equipment (i.e., equipment meeting EPA's Tier 3 emission standard), and the use of DPFs to reduce DPM emissions, that would be required for the Proposed Project.

On-Site Dust Emissions

In addition to engine emissions, dust emissions from operations (e.g., excavation and transferring of excavated materials into dump trucks) was calculated based on EPA procedures delineated in AP-42 Table 13.2.3-1. Since construction is required to follow DEP's Construction Dust Rules[3] regarding construction-related dust emissions, a 50 percent reduction in particulate emissions from fugitive dust was conservatively assumed in the calculation (dust control methods, such as wet suppression and the use of chutes during demolition activities, would often provide at least a 50 percent reduction in particulate emissions).

Dispersion Modeling

Potential impacts from construction sources were evaluated using a refined dispersion model, the EPA/AMS AERMOD dispersion model. AERMOD is a state-of-the-art dispersion model, applicable to rural and urban areas, flat and complex terrain, surface and elevated releases, and multiple sources (including point, area, and volume sources). AERMOD is a steady-state plume model that incorporates current concepts about flow and dispersion in complex terrain and includes

[3] https://www.nyc.gov/assets/dep/downloads/pdf/air/construction-dust-rules.pdf.

updated treatments of the boundary layer theory, understanding of turbulence and dispersion, and handling of terrain interactions.

Source Simulation

For short-term model scenarios (predicting concentration averages for periods of 24 hours or less), all stationary sources—such as compressors and generators, which are expected to operate in a single location—were simulated as point sources. Other engines, such as excavators and loaders, which would move around the site on any given day, were simulated as area sources. All sources would move around the site throughout the year and were therefore simulated as area sources in the annual analyses.

Meteorological Data

The meteorological data set consists of five consecutive years of meteorological data: surface data collected at the LaGuardia Airport National Weather Service Station (2015 to 2019), and concurrent upper air data collected at Brookhaven, New York. The meteorological data provide hour-by-hour wind speeds and directions, stability states, and temperature inversion elevation over the five-year period. These data were processed using the EPA AERMET program to develop data in a format which can be readily processed by the AERMOD model. The land uses around the site where meteorological surface data were available was classified using categories defined in digital United States Geological Survey (USGS) maps. The meteorological dataset processed with the AERMET Version 19191 processor, provided by NYSDEC, was used for the analysis.

Background Concentrations

To estimate the maximum expected total pollutant concentrations, the calculated impacts from the emission sources must be added to a background value that accounts for existing pollutant concentrations from other sources. The background levels were based on concentrations monitored at the nearest DEC ambient air monitoring stations, consistent with the background concentrations used for the operational air quality analysis (see **Chapter 05.14**).

Receptor Locations

Receptors were placed at locations that would be publicly accessible, at residential and other sensitive uses at both ground level and elevated locations, at adjacent sidewalk locations, at publicly accessible open spaces, and completed and occupied portions of the Proposed Project where applicable.

On-Road Sources

A standalone intersection analysis was performed for the Proposed Project to assess whether construction of the Proposed Project has the potential to result in significant adverse air quality impacts due to mobile sources.

Since emissions from on-site construction equipment and on-road construction-related vehicles may contribute to concentration increments concurrently, on-road emissions adjacent to the construction sites was included with on-site emissions in the dispersion analysis (in addition to on-site truck and non-road engine activity) to address all local project-related emissions cumulatively.

On-Road Vehicle Emissions

Vehicular engine emission factors were computed using the EPA mobile source emissions model, MOVES4. This emissions model is capable of calculating engine emission factors for various vehicle types, based on the fuel type (gasoline, diesel, or natural gas), meteorological conditions, vehicle speeds, vehicle age, roadway type and grade, number of starts per day, engine soak time, inspection and maintenance programs and various other factors that influence emissions. The inputs and use of MOVES4 incorporate the most current resources available from DEC.

On-Road Dust Emissions

PM2.5 emission rates were determined with road dust to account for their impacts. Road dust emission factors were calculated according to the latest procedure delineated by EPA. An average weight of 20 tons and 2.6 tons was assumed for construction trucks and worker vehicles in the analyses, respectively.

Intersection Analysis Approach

Traffic data for the intersection analysis were derived from projected future growth in traffic, and other information developed as part of the construction traffic analysis for the Proposed Project presented in this chapter. Traffic data for the future without the project (the No-Action condition) and the With-Action condition were employed in the respective air quality modeling condition. The weekday construction AM and PM peak periods were analyzed and the off-peak volumes were determined using the temporal distribution presented above in **Table 05.19-8** which was based on typical work shift allocations and conventional arrival/departure patterns for construction workers. The intersection analysis also included nearby on-site construction activities (e.g., within 1,000 feet of the analyzed intersection) to assess the potential cumulative effects of on-site and off-site sources.

Consistent with the intersection analysis approach presented in **Chapter 05.14**for the Build condition of the Proposed Project, AERMOD was used to predict the $PM_{2.5}$ as well as CO concentrations due to vehicular emissions adjacent to the analysis sites. Multiple receptors (i.e., precise locations at which concentrations are evaluated) were modeled at the selected analysis sites; receptors were placed along the approach and departure links and roadway segments at regularly spaced intervals. Ground-level receptors were placed at sidewalk or roadside locations with continuous public access near the selected intersection, at a pedestrian height of 1.8 meters. Receptors in the analysis models for predicting annual average neighborhood-scale $PM_{2.5}$ concentrations were placed at a distance of 15 meters, from the nearest moving lane at each analysis location, based on the *CTM* procedure for neighborhood-scale corridor $PM_{2.5}$ modeling.

Analysis Periods

Alternative 2 – Rezoning Alternative

To determine which construction periods constitute the worst-case periods for the pollutants of concern (PM, CO, NO_2), construction-related emissions were calculated for each calendar year throughout the duration of construction on a rolling annual and peak day basis for $PM_{2.5}$. $PM_{2.5}$ was selected for determining the worst-case periods for all pollutants analyzed, because the ratio of predicted $PM_{2.5}$ incremental concentrations to impact criteria is anticipated to be higher than for other pollutants. Therefore, initial estimates of $PM_{2.5}$ emissions throughout the construction years were used for determining the worst-case periods for analysis of all pollutants. Generally, emission patterns of PM_{10} and NO_2 would follow $PM_{2.5}$ emissions, since they are related to diesel engines by horsepower. CO emissions may have a somewhat different pattern but would also be anticipated to be highest during periods when the most activity would occur.

For the Fulton Houses Project Site, based on the resulting multi-year profiles of peak day and annual average emissions of $PM_{2.5}$, May 2029 and the period from March 2029 to February 2030 were identified as worst-case short-term and annual periods of construction, respectively, since the highest project-wide emissions were predicted in these periods. During the worst-case short-term period, demolition and foundation activities associated with Proposed Fulton Building 2 and Building 3 are anticipated to occur. During the worst-case annual period, activities associated with demolition, foundation, as well as structural work for Proposed Fulton Building 2 and Building 3 are anticipated to occur.

For the Elliott-Chelsea Houses Project Site, based on the resulting multi-year profiles of peak day and annual average emissions of $PM_{2.5}$, February 2033 and the period from September 2032 to August 2033 were identified as worst-case short-term and annual periods of construction, respectively, since the highest project-wide emissions were predicted in these periods. During the worst-case short-term period, construction activities associated with Proposed Elliott-Chelsea Building 4's foundation activities, as well as Proposed Elliott-Chelsea Building 5's demolition and foundation activities are anticipated to occur. During the worst-case annual period, demolition, foundation, and structural concrete activities for Proposed Elliott-Chelsea Building 4, as well as demolition and foundation activities for Proposed Elliott-Chelsea Building 5 are expected to occur.

Dispersion of the relevant air pollutants from the construction sites during these periods were analyzed. Broader conclusions regarding potential concentrations during non-peak periods are discussed qualitatively, based on the reasonable worst-case analysis period results.

Intersection Analysis

The construction vehicle trip increment and traffic congestion (i.e., level of service) for each intersection in the traffic study area were reviewed for the intersection analysis based on the *CTM* guidance. 9th Avenue and W. 26th Street has the highest construction vehicle trip increment due to activities at the Fulton Houses Project Site while 9th Avenue and W. 17th Street has the highest construction vehicle trip increment has the highest construction vehicle trip increment due to activities at the Elliott-Chelsea Houses Project Site. These intersections were selected for analysis.

In addition, 10th Avenue and W. 30th Street was also selected for analysis since this intersection is projected to have the worst LOS under the No-Action construction condition.

Alternative 3 – Non-Rezoning Alternative

For the Fulton Houses Project Site, based on the resulting multi-year profiles of peak day and annual average emissions of $PM_{2.5}$, December 2035 and the period from July 2035 to June 2036 were identified as worst-case short-term and annual periods of construction, respectively, since the highest project-wide emissions were predicted in these periods. During both the worst-case short-term and annual periods, foundation activities associated with Proposed Fulton Building 6, as well as demolition and foundation activities associated with Proposed Fulton Building 7 and Building 8 are anticipated to occur.

For the Elliott-Chelsea Houses Project Site, based on the resulting multi-year profiles of peak day and annual average emissions of $PM_{2.5}$, January 2033 and the period from August 2032 to July 2033 were identified as worst-case short-term and annual periods of construction, respectively. While there are two periods (November 2029 and January 2033 for short-term and the period from June 2029 to May 2030 and the period from August 2032 to July 2033 for annual) with very similar project-wide emissions, the period selected would have a higher number of on-site equipment. During the worst-case short-term period, construction activities associated with Proposed Elliott-Chelsea Building 4's foundation activities, as well as Proposed Elliott-Chelsea Building 5's demolition and foundation activities are anticipated to occur. During the worst-case annual period, demolition, foundation, and structural concrete activities for Proposed Elliott-Chelsea Building 4, as well as demolition and foundation activities for Proposed Elliott-Chelsea Building 5 are expected to occur.

Dispersion of the relevant air pollutants from the construction sites during these periods were analyzed. Broader conclusions regarding potential concentrations during non-peak periods are discussed qualitatively, based on the reasonable worst-case analysis period results.

Intersection Analysis

The construction vehicle trip increment and traffic congestion (i.e., level of service) for each intersection in the traffic study area were reviewed for the intersection analysis based on the *CTM* guidance. 9th Avenue and W. 26th Street has the highest construction vehicle trip increment due to activities at the Fulton Houses Project Site while 9th Avenue and W. 17th Street has the highest construction vehicle trip increment has the highest construction vehicle trip increment due to activities at the Elliott-Chelsea Houses Project Site. These intersections were selected for analysis. In addition, 10th Avenue and W. 30th Street was also selected for analysis since this intersection is projected to have the worst LOS under the No-Action construction condition.

Alternative 4 – Midblock Bulk Alternative

For the Fulton Houses Project Site, based on the resulting multi-year profiles of peak day and annual average emissions of $PM_{2.5}$, February 2040 and the period from October 2039 to September 2040 were identified as worst-case short-term and annual periods of construction, respectively, since the highest project-wide emissions were predicted in these periods. During the worst-case short-term period, demolition and/or foundation activities associated with Proposed Fulton Buildings 7, 8, and 9 are anticipated to occur. During the worst-case annual period, activities associated with demolition, foundation, as well as structural work for Proposed Fulton Buildings 7, 8, and 9 are anticipated to occur.

Dispersion of the relevant air pollutants from the construction sites during these periods were analyzed. Broader conclusions regarding potential concentrations during non-peak periods are discussed qualitatively, based on the reasonable worst-case analysis period results.

Intersection Analysis

As discussed above under Transportation, the trips generated under the Midblock Bulk Alternative during the construction peak period is anticipated to be comparable to that of the Rezoning Alternative and the potential transportation impacts of the Midblock Bulk Alternative is assessed by being qualitatively compared with the Rezoning Alternative. Therefore, consistent with the approach for the construction transportation analysis presented above in **Section E, "Methodology,"** the potential air quality effects due to mobile sources under the Midblock Bulk Alternative was assessed by being qualitatively compared with the Rezoning Alternative.

Noise

Construction equipment operation and construction vehicles and delivery vehicles traveling to and from the Project Sites can have potential effects on community noise levels. Noise levels at a given location are dependent on the kind and number of pieces of construction equipment and vehicles being operated, the acoustical utilization factor of the equipment (i.e., the percentage of time a piece of equipment is operating at full power), the distance from the construction site, and any shielding effects from structures such as buildings, walls, or barriers. Noise levels caused by construction activities vary widely, depending on the stage of construction and the location of construction activities relative to receptor locations. Equipment such as pavers and excavators and construction vehicles such as concrete trucks are expected to be the most dominant sources of construction noise.

Construction activities for the Proposed Project would typically be expected to result in increased noise levels due to: (1) the operation of construction equipment on site; and (2) the movement of construction-related vehicles (i.e., worker trips, and material and equipment trips) on the surrounding roadways. The effect of each of these noise sources was evaluated. The results presented below show the effects of construction activities (i.e., noise due to both on-site construction equipment and construction-related vehicle operation).

Sound Level Descriptors

Chapter 05.16, "Noise," defines the sound level descriptors. The $L_{eq(1)}$ is the noise descriptor recommended for use in the *CTM* for vehicular traffic and construction noise impact evaluation and is used to provide an indication of highest expected sound levels. The 1-hour L_{10} is the noise descriptor used in the *CTM* noise exposure guidelines. The maximum 1-hour equivalent sound level ($L_{eq(1)}$) and maximum 1-hour L_{10} were selected as the noise descriptors used in the construction noise impact evaluation.

Construction Noise Analysis Fundamentals

Since construction activities typically increase noise levels as a result of the operation of construction equipment on site and the movement of construction-related vehicles to and from the construction site, the combined effect of each of these noise sources was evaluated, as explained below.

Noise from the on-site operation of construction equipment at a specific receptor location near a construction site is generally calculated by computing the sum of the noise produced by all pieces of equipment operating at the construction site. For each type of equipment, the noise level at a receptor location is a function of the following:

- The noise emission level of the equipment;
- Quantity of equipment;
- A usage factor, which accounts for the percentage of time the equipment is operating at full power[4];
- The distance between the piece of equipment and the receptor;
- Topography and ground effects; and
- Shielding.

Noise levels due to construction-related traffic are a function of the following:

- The noise emission levels of the type of vehicle (e.g., auto, light-duty truck, heavy-duty truck, bus, etc.);
- Volume of vehicular traffic on each roadway segment;
- Vehicular speed;
- The distance between the roadway and the receptor;
- Topography and ground effects; and
- Shielding.

Construction Noise Analysis Methodology

A detailed modeling analysis was conducted to quantify potential construction noise effects at existing noise receptors (e.g., residences, schools, etc.) within and around the Project Sites.

The construction noise methodology was as follows:

- **Measure existing noise levels.** A noise survey was conducted to determine existing condition noise levels at receptors in the vicinity of the construction work areas. A CadnaA model representing the existing conditions (including existing building geometry and existing condition traffic levels) was calibrated based on the measured existing noise levels

[4] Usage factors for equipment as shown in Table 22-1 of *CTM*.

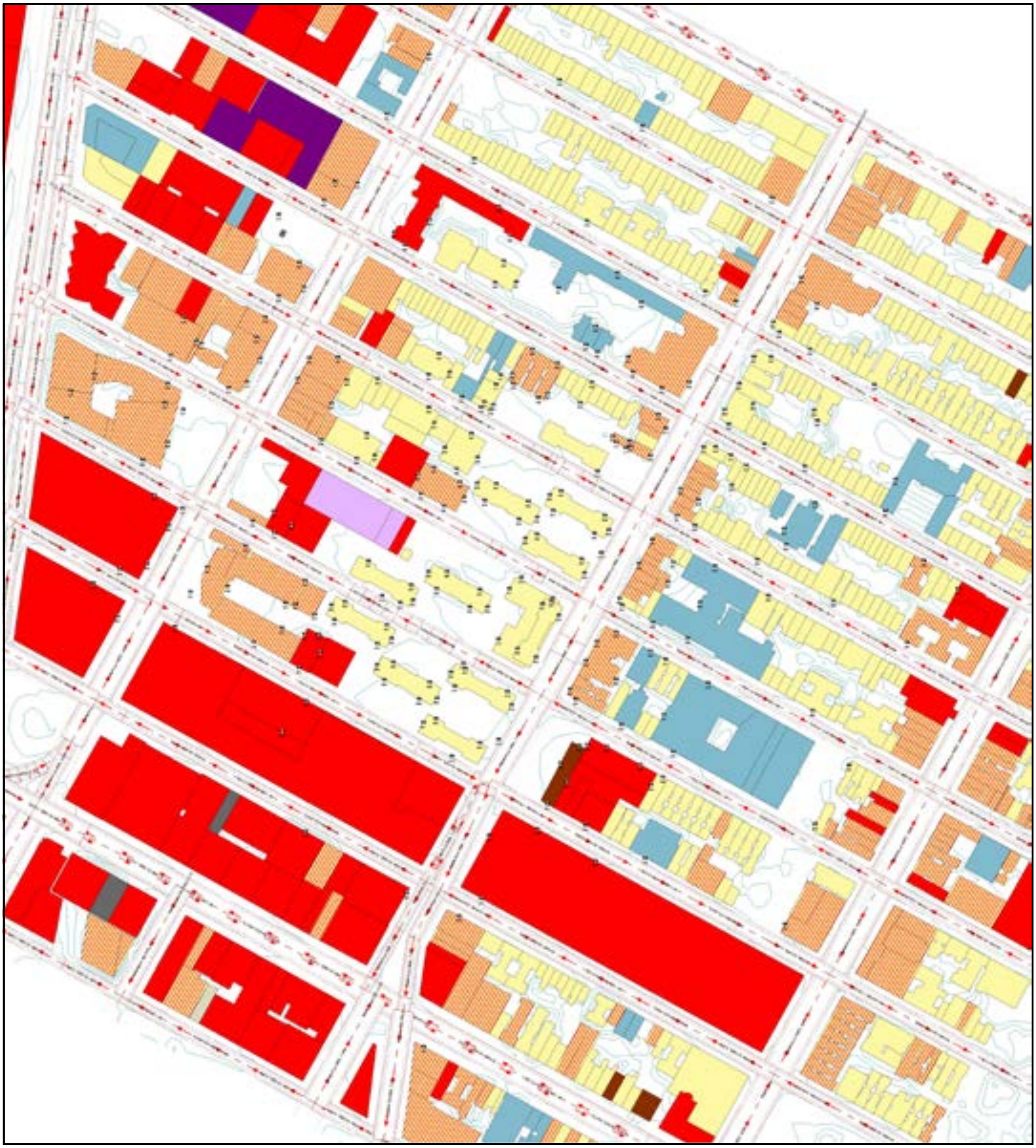
and used to calculate baseline noise levels at the other noise receptor locations included in the analysis. The noise survey methodology and results are described in **Chapter 05.16.**

- **Select noise analysis periods during the construction schedule.** The selected noise analysis periods represent the primary noise-producing construction tasks during the construction schedule. Each period was represented by the month having the greatest potential to result in construction noise effect. The selected time periods are described below in the "Analysis Periods" section.
- **Calculate construction noise levels for each analysis period at each receptor location.** Given the on-site equipment, the construction truck trips expected during each of the analysis periods, and the location of the construction equipment, a CadnaA model for each analysis period was created. The model includes each of the construction noise sources during the analysis period, calculation points representing multiple locations on various façades and floors of the associated receptors identified, as well as the noise control measures that would be used on the construction sites.
- **Determine total noise levels and noise level increments during construction.** For each analysis period and each noise receptor, the calculated level of construction noise was logarithmically added to the existing noise level to determine the cumulative total noise level. The existing noise level was then subtracted from the cumulative noise level in each analysis period to determine the noise level increments.
- **Evaluate magnitude of construction noise increments.** For each analysis period and each noise receptor, the predicted noise level increments from construction were compared with screening thresholds from the *CTM.*
- **Establish construction noise duration.** For each receptor, the noise level increments in each analysis period were evaluated to determine the duration during construction that the receptor would experience elevated levels of noise.
- **Identify potential construction noise impacts.** At each existing receptor where exceedances of construction noise screening thresholds are predicted, a determination was made as to whether the alternative being analyzed would have the potential to result in significant adverse construction noise impacts based on the predicted extent, duration, and magnitude of construction-related noise levels.

Noise Receptor Sites

Selected noise measurement locations from **Chapter 05.16**, (i.e., receptors M1 to M7, M10, and M11) were used to calibrate the existing conditions noise model. Additionally, 522 additional noise analysis receptors (i.e., receptors 1 to 194, 301 to 337, 401 to 651, and 801 to 840; see **Figures 05.19-2a/b/c/d** and **05.19-3a/b/c/d**) were selected to represent receptors where maximum project effects due to construction noise would be expected. These receptors are located in proximity to the proposed construction work areas. Multiple building façades and elevations were selected. The same noise receptor sites were analyzed for the Rezoning Alternative, the Non-Rezoning Alternative, and the Midblock Bulk Alternative. **Table 05.19-9** lists the noise receptor sites and the associated land use.

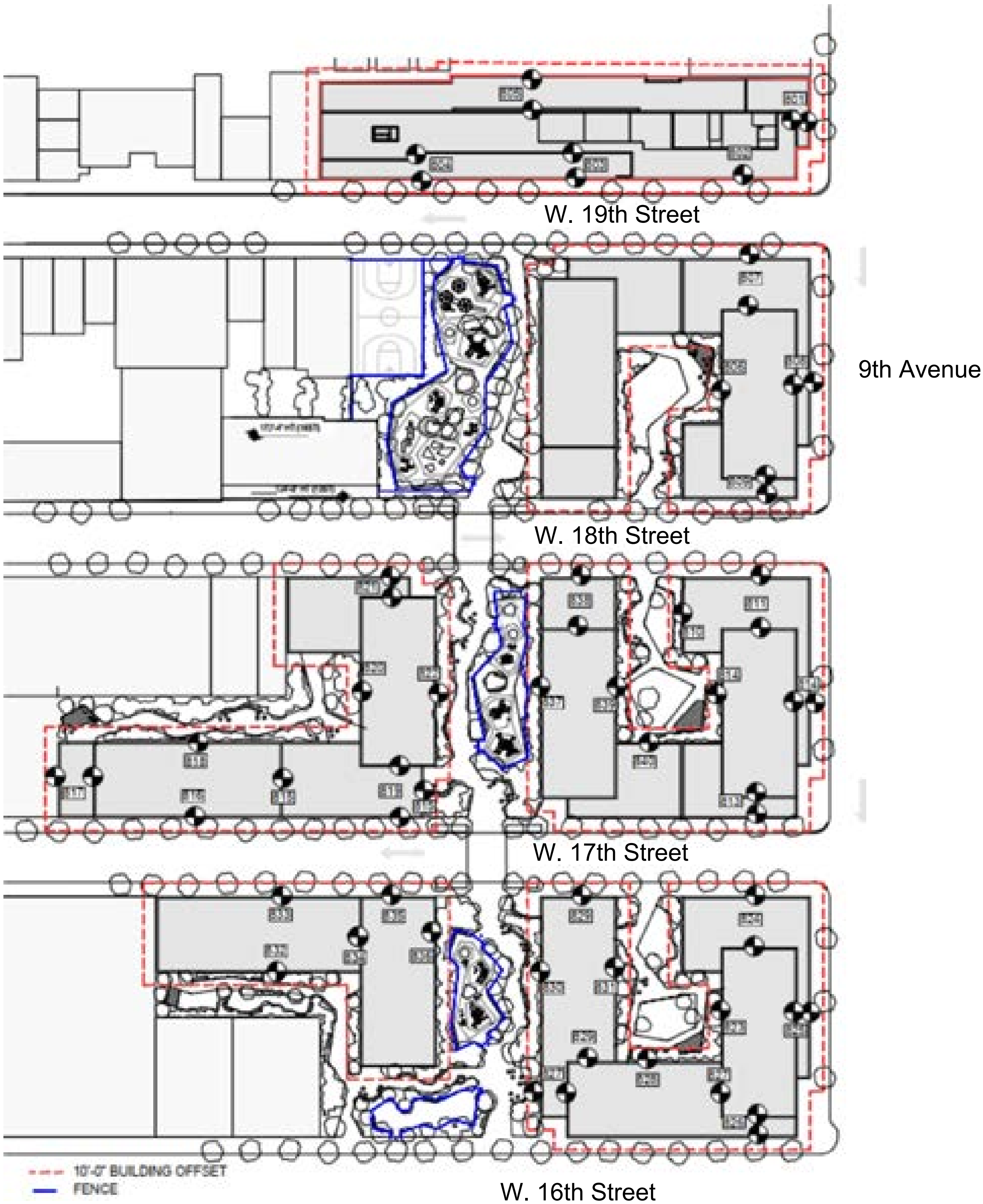
Figure 05.19-2a
Fulton Houses Project Site Noise Receptors



Legend

Noise Receptor Locations

Fulton Houses Project Site - Future Noise Receptors - Rezoning Alternative

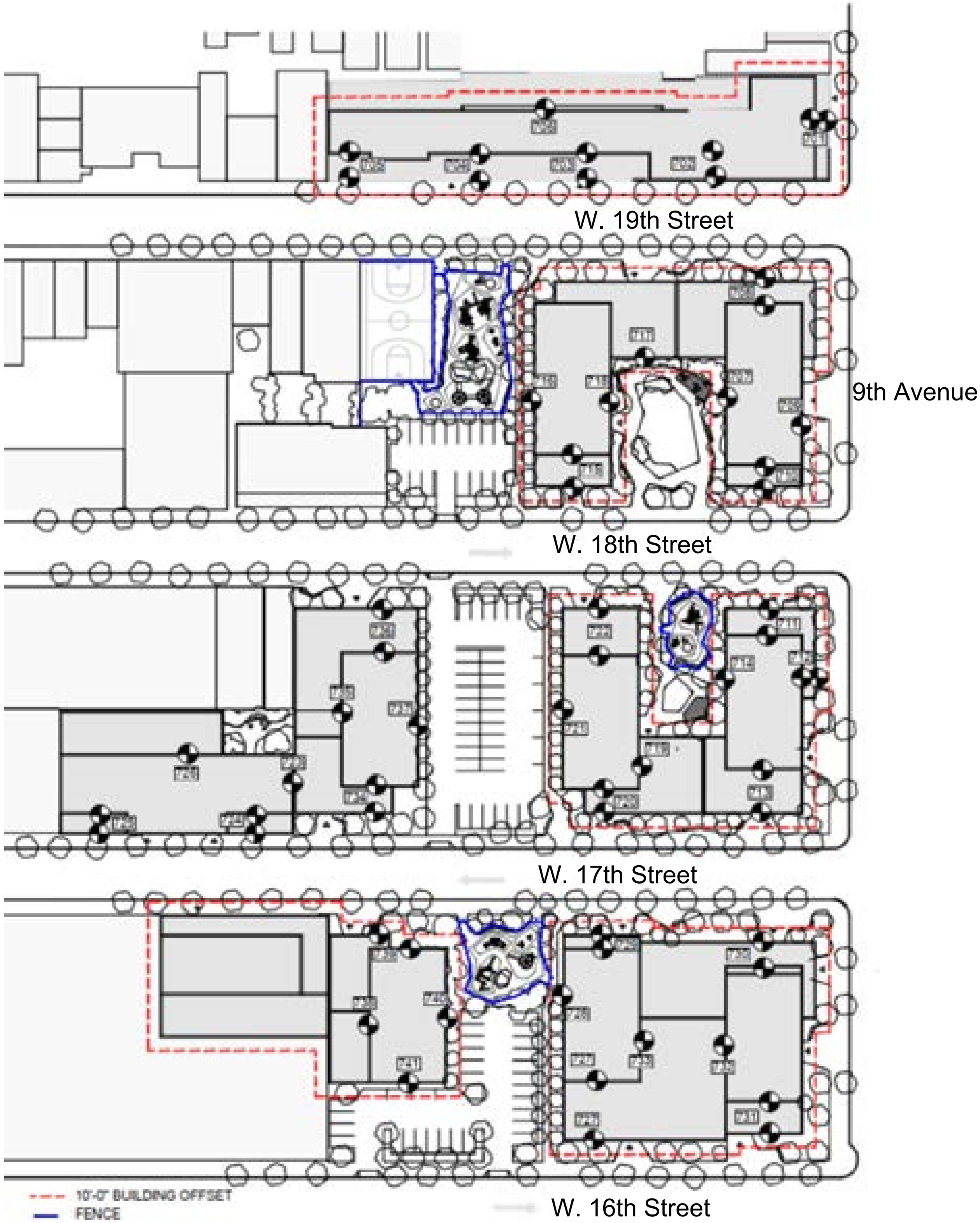


Legend

Noise Receptor Locations

Figure 05.19-2c

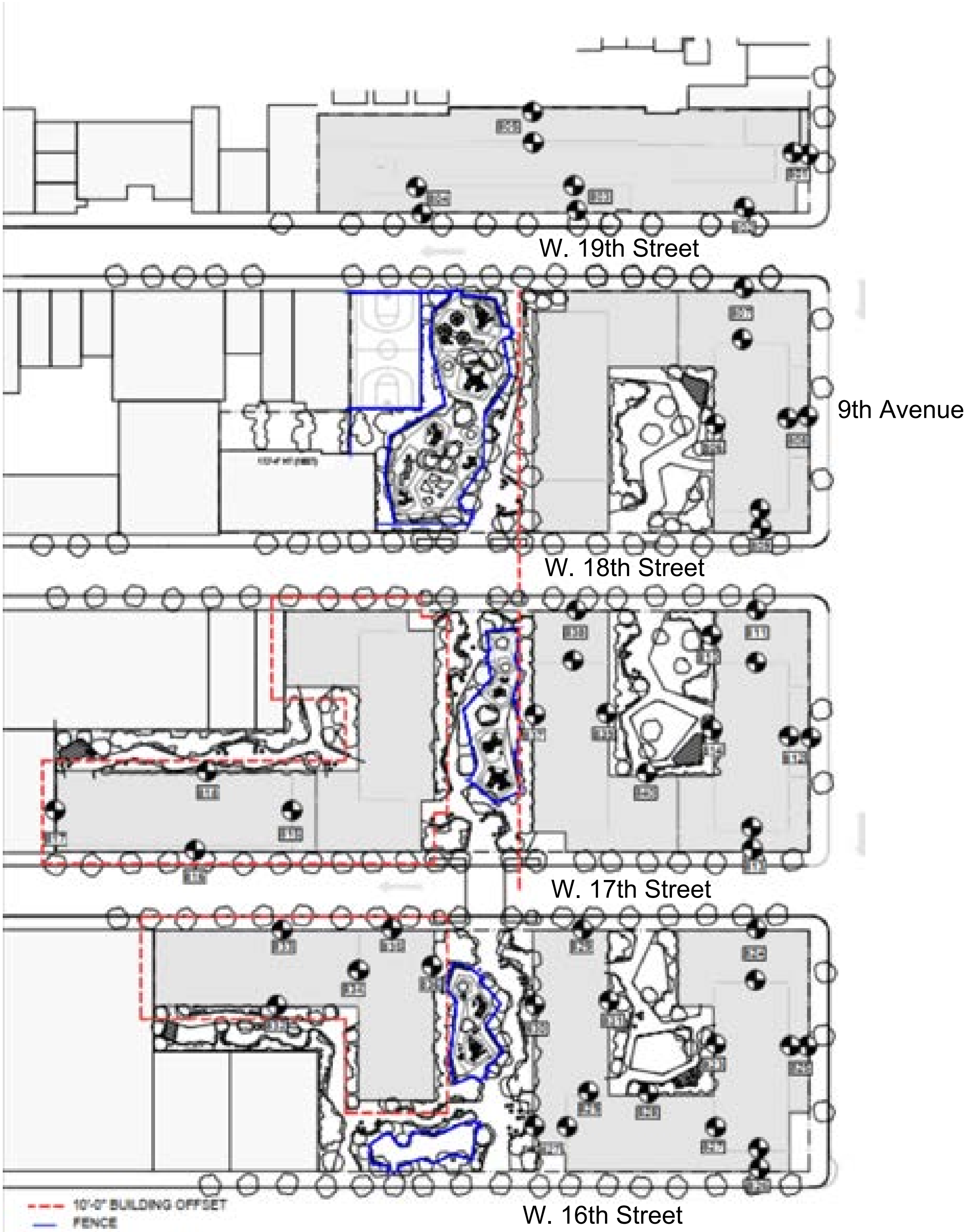
Fulton Houses Project Site - Future Noise Receptors - Non-Rezoning Alternative



Legend

Noise Receptor Locations

Fulton Houses Project Site - Future Noise Receptors - Midblock Bulk Alternative

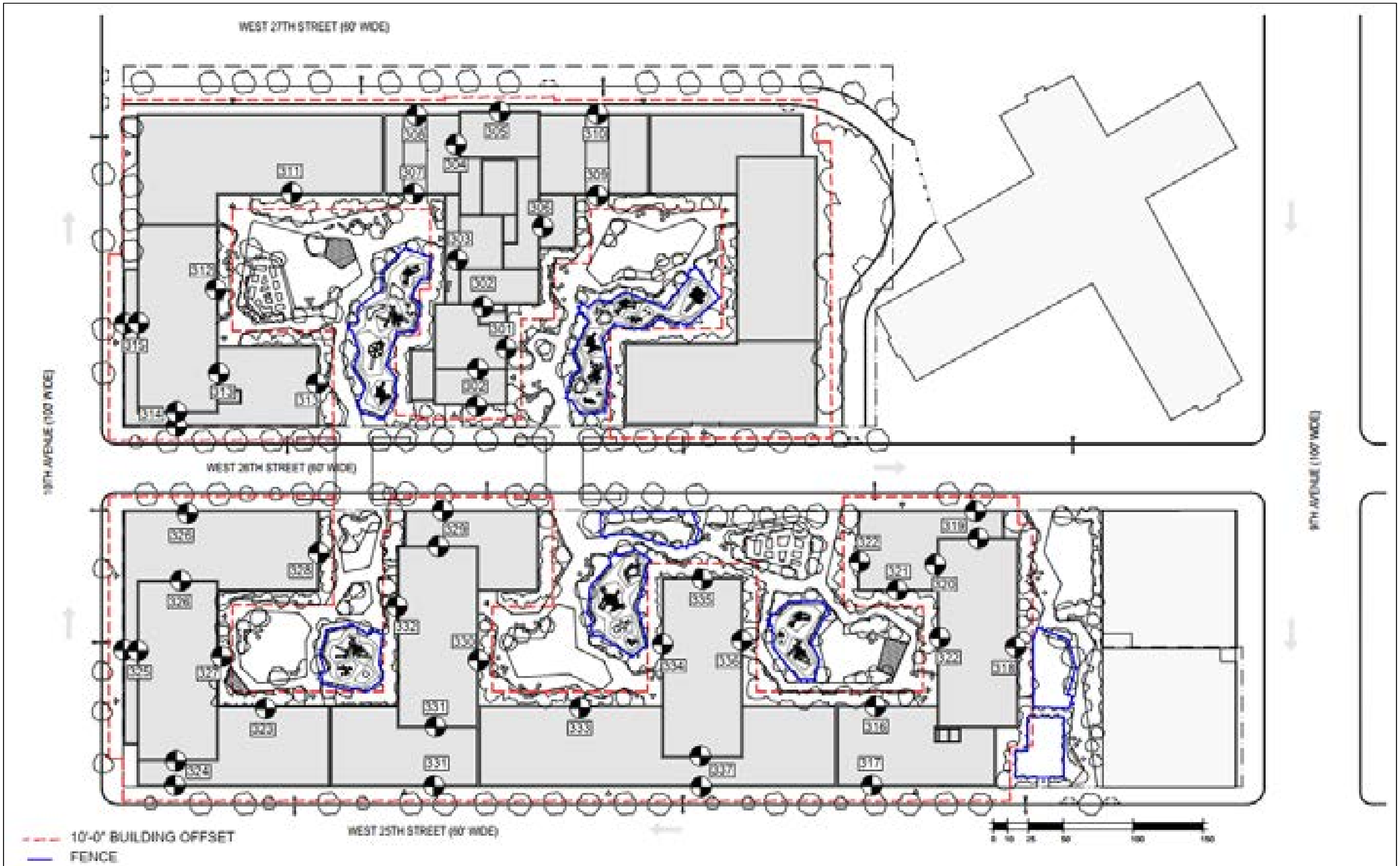


Legend

Noise Receptor Locations

Legend

Noise Receptor Locations

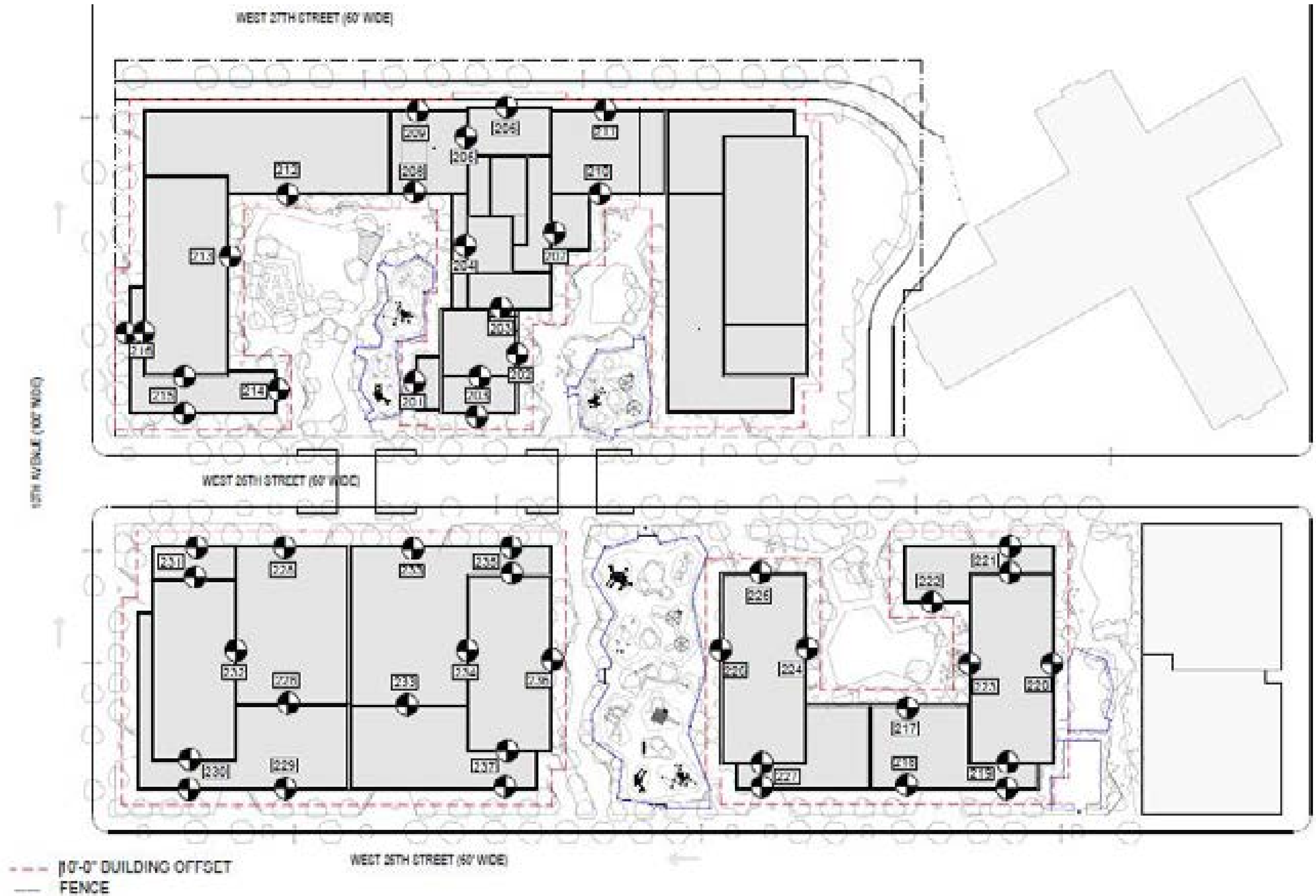


Legend

Noise Receptor Locations

Figure 05.19-3b

Elliott-Chelsea Houses Project Site - Future Noise Receptors - Rezoning Alternative

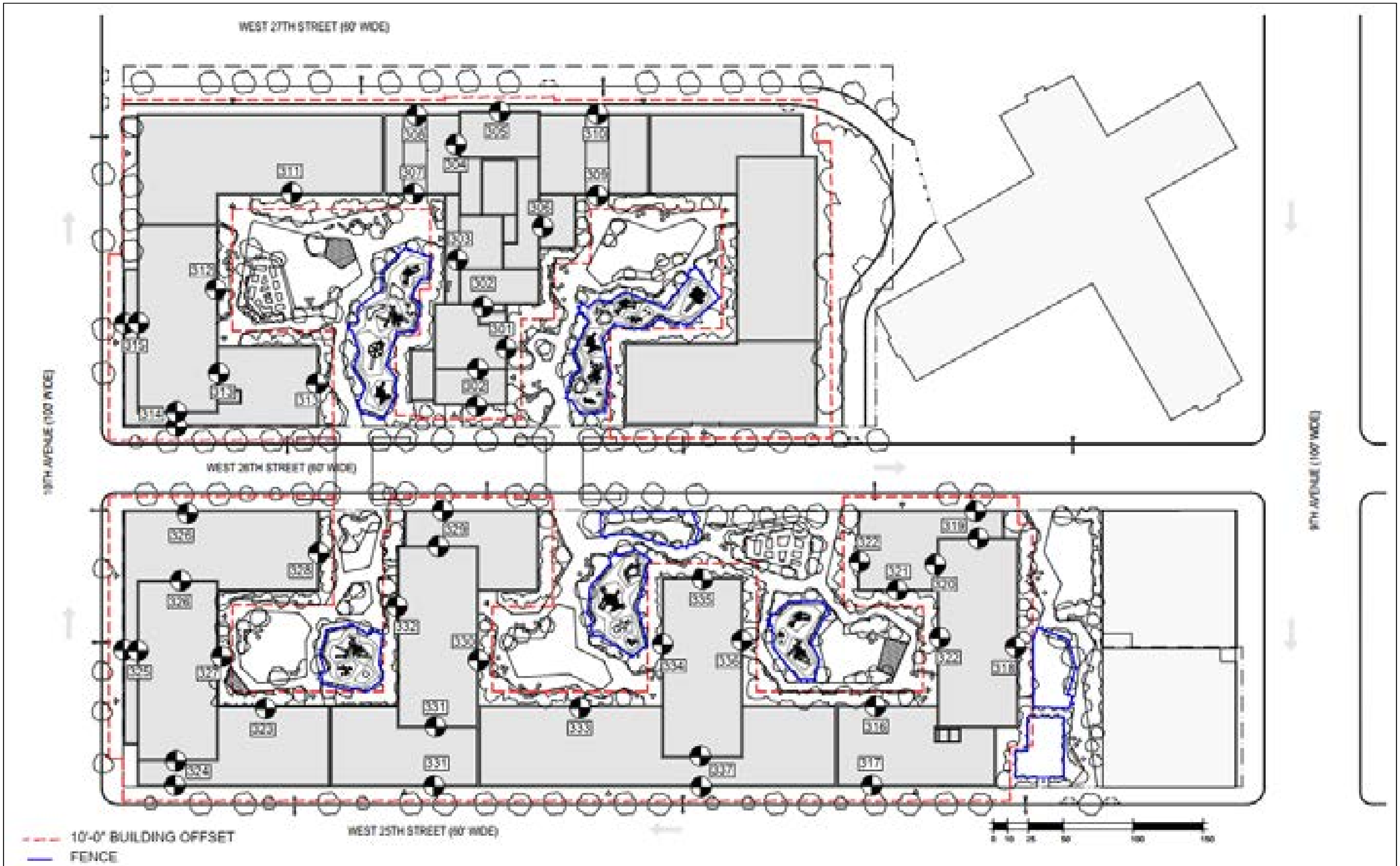


Legend

Noise Receptor Locations

Figure 05.19-3c

Elliott-Chelsea Houses Project Site - Future Noise Receptors - Non-Rezoning Alternative



Legend

Noise Receptor Locations

Elliott-Chelsea Houses Project Site - Future Noise Receptors - Midblock Bulk Alternative

Table 05.19-9: Noise Receptor Sites

Receptor	Location	Block / Lot	Land Use
M1	North Side of W. 19th Street; approximately 100 feet west of Ninth Avenue	N/A	Noise Measurement Location
M2	Midpoint of West Side of Ninth Avenue; approximately 90 feet north of W. 18th Street	N/A	Noise Measurement Location
M3	South Side of W. 18th Street; approximately 140 feet west of Ninth Avenue	N/A	Noise Measurement Location
M4	North Side of W. 17th Street; approximately 400 feet west of Ninth Avenue	N/A	Noise Measurement Location
M5	South Side of W. 17th Street; approximately 160 feet west of Ninth Avenue	N/A	Noise Measurement Location
M6	Midpoint of West Side of Ninth Avenue; approximately 90 feet north of W. 16th Street	N/A	Noise Measurement Location
M7	North Side of W. 16th Street; approximately 80 feet west of Ninth Avenue	N/A	Noise Measurement Location
M10	Northeast corner of the intersection at W. 26th Street and Tenth Avenue	N/A	Noise Measurement Location
M11	North Side of W. 25th Street; approximately 350 feet east of Tenth Avenue	N/A	Noise Measurement Location
1	500 W. 23rd Street	Block 694 / Lot 39	Residential with Commercial Below
2	520 W. 23rd Street	Block 694 / Lot 42	Residential with Commercial Below
3, 4	231 Tenth Avenue	Block 695 / Lot 7504	Residential with Commercial Below
5, 6	508 W. 24th Street	Block 695 / Lot 7508	Residential with Commercial Below
7, 8	503 W. 24th Street	Block 696 / Lot 7503	Residential with Commercial Below
9, 10	245 Tenth Avenue	Block 696 / Lot 7502	Residential with Commercial Below
11, 12	500 W. 25th Street	Block 696 / Lot 7504	Residential with Commercial Below
13-15	511 W. 25th Street	Block 697 / Lot 23	Commercial and Office Buildings
16-19	Avenues the World School – 259 Tenth Avenue	Block 697 / Lot 31	School
20	508 W. 25th Street	Block 697 / Lot 42	Transportation and Utility
21-24	508 W. 26th Street	Block 697 / Lot 42	Commercial and Office Buildings
25	518 W. 26th Street	Block 697 / Lot 47	Commercial and Office Buildings
26-28	543 W. 25th Street	Block 697 / Lot 7501	Commercial and Office Buildings
29, 30	518 W. 27th Street	Block 698 / Lot 47	Hotels
31-33	303 Tenth Avenue	Block 699 / Lot 33	Residential with Commercial Below
34, 35	527 W. 27th Street	Block 699 / Lot 49	Residential
36, 37	532 W. 28th Street	Block 699 / Lot 49	Residential

Receptor	Location	Block / Lot	Land Use
38, 39	503 W. 27th Street	Block 699 / Lot 7501	Residential with Commercial Below
40-42	520 W. 28th Street	Block 699 / Lot 7503	Residential
43-46	509 W. 28th Street	Block 700 / Lot 27	Residential with Commercial Below
47, 48	313 Tenth Avenue	Block 700 / Lot 29	Residential with Commercial Below
49	501 W. 29th Street	Block 701 / Lot 35	Residential with Commercial Below
50	400 W. 23rd Street	Block 720 / Lot 47	Residential
51	450 W. 23rd Street	Block 720 / Lot 72	Residential
52	470 W. 23rd Street	Block 720 / Lot 82	Residential with Commercial Below
53	420 W. 23rd Street	Block 720 / Lot 7501	Residential with Commercial Below
54-58	London Terrace Gardens Apartments (460 West 24th Street)	Block 721 / Lot 7	Residential
59-64	465 W. 23rd Street	Block 721 / Lot 7501	Residential with Commercial Below
65, 66	242 Tenth Avenue	Block 722 / Lot 1	Residential with Commercial Below
67, 68	248 Tenth Avenue	Block 722 / Lot 4	Residential with Commercial Below
69, 70	455 W. 24th Street	Block 722 / Lot 8	Residential
71, 72	443 W. 24th Street	Block 722 / Lot 13	Residential
73, 74	429 W. 24th Street	Block 722 / Lot 20	Residential
75, 76	415 W. 24th Street	Block 722 / Lot 26	Residential
77	229 Ninth Avenue	Block 722 / Lot 37	Residential with Commercial Below
78, 79	241 Ninth Avenue	Block 722 / Lot 43	Residential with Commercial Below
80	416 W. 25th Street	Block 722 / Lot 50	Residential
81, 82	450 W. 25th Street	Block 722 / Lot 67	Residential
83, 84	460 W. 25th Street	Block 722 / Lot 72	Residential
85, 86	258 Tenth Avenue	Block 722 / Lot 74	Residential with Commercial Below
87	254 Tenth Avenue	Block 722 / Lot 76	Residential with Commercial Below
88-91	420 W. 25th Street	Block 722 / Lot 7501	Residential
92-94	263 Ninth Avenue	Block 723 / Lot 7501	Residential

Receptor	Location	Block / Lot	Land Use
95-99	401 W. 25th Street	Block 723 / Lot 7502	Residential with Commercial Below
100-108	PS 33 Chelsea Prep – 281 Ninth Avenue	Block 724 / Lot 23	School
109, 110	Chelsea Park	Block 724 / Lot 100	Open Space
111, 112	303 Ninth Avenue	Block 724 / Lot 82	Public Facilities and Institutions
113	368 W. 23rd Street	Block 746 / Lot 78	Residential
114	212 Ninth Avenue	Block 747 / Lot 1	Residential
115-117	311 W. 24th Street	Block 748 / Lot 1	Residential
118-121	250 Ninth Avenue	Block 749 / Lot 1	Residential
122	341 W. 25th Street	Block 749 / Lot 17	Public Facilities and Institutions
123	313 Eighth Avenue	Block 749 / Lot 24	Residential
124-134	345 Eighth Avenue	Block 751 / Lot 1	Residential
135, 136	298 Ninth Avenue	Block 751 / Lot 76	Public Facilities and Institutions
137, 138	36 W. 28th Street	Block 751 / Lot 7501	Residential
139, 140	305 Ninth Avenue	Block 752 / Lot 1	Residential
141	334 Ninth Avenue	Block 753 / Lot 2	Residential with Commercial Below
142	342 Ninth Avenue	Block 753 / Lot 78	Residential with Commercial Below
143-146, 596-600	The High Line	N/A	Open Space
147-155	Elliott Building 2	Block 723 / Lot 1	Residential
156-166	Elliott Building 3	Block 723 / Lot 1	Residential
167-172	Chelsea Building 1	Block 723 / Lot 15	Residential
173-176	Chelsea Building 2	Block 723 / Lot 15	Residential
177-184	Elliott Building 1	Block 724 / Lot 1	Residential
185-194	Elliott Building 4	Block 724 / Lot 15	Residential
201-211	Future Elliott-Chelsea Building 1 (Non-Rezoning Alternative)	Block 724 / Lots 1, 10, 15	Residential
212-216	Future Elliott-Chelsea Building 2 (Non-Rezoning Alternative)	Block 724 / Lots 1, 10, 15	Residential
217-223	Future Elliott-Chelsea Building 3 (Non-Rezoning Alternative)	Block 723 / Lots 1, 15	Residential

Receptor	Location	Block / Lot	Land Use
224-227	Future Elliott-Chelsea Building 4 (Non-Rezoning Alternative)	Block 723 / Lots 1, 15	Residential
228-232	Future Elliott-Chelsea Building 5 (Non-Rezoning Alternative)	Block 723 / Lots 1, 15	Residential
233-237	Future Elliott-Chelsea Building 6 (Non-Rezoning Alternative)	Block 723 / Lots 1, 15	Residential
301-310	Future Elliott-Chelsea Building 1 (Rezoning and Midblock Bulk Alternative)	Block 724 / Lots 1, 10, 15	Residential
311-315	Future Elliott-Chelsea Building 2 (Rezoning and Midblock Bulk Alternative)	Block 724 / Lots 1, 10, 15	Residential
316-322	Future Elliott-Chelsea Building 3 (Rezoning and Midblock Bulk Alternative)	Block 723 / Lots 1, 15	Residential
323-328	Future Elliott-Chelsea Building 4 (Rezoning and Midblock Bulk Alternative)	Block 723 / Lots 1, 15	Residential
329-332	Future Elliott-Chelsea Building 5 (Rezoning and Midblock Bulk Alternative)	Block 723 / Lots 1, 15	Residential
333-337	Future Elliott-Chelsea Building 6 (Rezoning and Midblock Bulk Alternative)	Block 723 / Lots 1, 15	Residential
401	350 W. 14th Street	Block 629 / Lot 7502	Residential with Commercial Below
402, 403	85 Tenth Avenue	Block 687 / Lot 29	Commercial and Office Buildings
404-407	99 Tenth Avenue	Block 688 / Lot 7501	Commercial and Office Buildings
408-412	501 W. 17th Street	Block 689 / Lot 17	Residential with Commercial Below
413-419	515 W. 18th Street	Block 690 / Lot 7503	Residential with Commercial Below
420-422	505 W. 19th Street	Block 691 / Lot 7502	Residential with Commercial Below
423, 424	500 W. 21st Street	Block 692 / Lot 7502	Residential with Commercial Below
425	185 Tenth Avenue	Block 693 / Lot 31	Public Facilities and Institutions
426	500 W. 22nd Street	Block 693 / Lot 7505	Residential with Commercial Below
427	61 Ninth Avenue	Block 712 / Lot 36	Commercial and Office Buildings
428	412 W. 15th Street	Block 712 / Lot 42	Commercial and Office Buildings
429, 430	75 Ninth Avenue	Block 713 / Lot 1	Commercial and Office Buildings
431-434	437 W. 16th Street	Block 714 / Lot 14	Commercial and Office Buildings
435	458 W. 17th Street	Block 714 / Lot 63	Residential with Commercial Below
436-442	450 W. 17th Street	Block 714 / Lot 7501	Residential with Commercial Below
443	457 W. 17th Street	Block 715 / Lot 1	Residential with Commercial Below
444-446	453 W. 17th Street	Block 715 / Lot 5	Commercial and Office Buildings

Receptor	Location	Block / Lot	Land Use
447, 448	136 Tenth Avenue	Block 716 / Lot 4	Residential with Commercial Below
449-452	428 W. 19th Street	Block 716 / Lot 52	Residential
453	448 W. 19th Street	Block 716 / Lot 62	Residential
454, 455	444 W. 19th Street	Block 716 / Lot 7501	Residential
456-458	447 W. 18th Street	Block 716 / Lot 7503	Residential
459	459 W. 18th Street	Block 716 / Lot 7504	Residential with Commercial Below
460-462	456 W. 19th Street	Block 716 / Lot 7505	Residential with Commercial Below
463-468	425 W. 18th Street	Block 716 / Lot 7506	Residential with Commercial Below
469-471	435 W. 19th Street	Block 717 / Lot 17	Residential
472-476	159 Ninth Avenue	Block 717 / Lot 39	Residential with Commercial Below
477, 478	169 Ninth Avenue	Block 717 / Lot 43	Residential with Commercial Below
479, 480	412 W. 20th Street	Block 717 / Lot 50	Residential
481	430 W. 20th Street	Block 717 / Lot 60	Public Facilities and Institutions
482-484	445 W. 19th Street	Block 717 / Lot 7501	Residential
485-490	420 W. 20th Street	Block 717 / Lot 7504	Residential with Commercial Below
491-493	440 W. 21st Street	Block 718 / Lot 1	Public Facilities and Institutions
494, 495	419 W. 20th Street	Block 718 / Lot 98	Public Facilities and Institutions
496	417 W. 20th Street	Block 718 / Lot 99	Public Facilities and Institutions
497-500	177 Ninth Avenue	Block 718 / Lot 7501	Residential with Commercial Below
501-505	180 Tenth Avenue	Block 718 / Lot 7502	Commercial and Office Buildings
506-508	445 W. 20th Street	Block 718 / Lot 7503	Residential
509	463 W. 21st Street	Block 719 / Lot 6	Residential
510	433 W. 21st Street	Block 719 / Lot 20	Residential
511	403 W. 21st Street	Block 719 / Lot 37	Residential
512	401 W. 21st Street	Block 719 / Lot 38	Residential with Commercial Below
513	471 W. 22nd Street	Block 720 / Lot 12	Residential

Receptor	Location	Block / Lot	Land Use
514	443 W. 22nd Street	Block 720 / Lot 25	Public Facilities and Institutions
515	401 W. 22nd Street	Block 720 / Lot 45	Residential with Commercial Below
516	366 W. 15th Street	Block 738 / Lot 7502	Residential with Commercial Below
517-520	111 Eighth Avenue	Block 739 / Lot 1	Commercial and Office Buildings
521-524	363 W. 16th Street	Block 740 / Lot 1	Hotels
525	335 W. 16th Street	Block 740 / Lot 13	Public Facilities and Institutions
526	344 W. 17th Street	Block 740 / Lot 54	Residential
527	127 Eighth Avenue	Block 740 / Lot 7501	Residential with Commercial Below
528-532	355 W. 16th Street	Block 740 / Lot 7502	Hotels
533, 534	108 Ninth Avenue	Block 741 / Lot 1	Residential with Commercial Below
535	353 W. 17th Street	Block 741 / Lot 6	Public Facilities and Institutions
536-538	330 W. 18th Street	Block 741 / Lot 10	Public Facilities and Institutions
539	313 W. 17th Street	Block 741 / Lot 28	Residential
540	310 W. 18th Street	Block 741 / Lot 41	Residential
541	354 W. 18th Street	Block 741 / Lot 62	Residential
542	356 W. 18th Street	Block 741 / Lot 63	Public Facilities and Institutions
543-546	112 Ninth Avenue	Block 741 / Lot 67	Residential with Commercial Below
547, 548	128 Ninth Avenue	Block 742 / Lot 1	Residential
549, 550, 552, 554	James Baldwin School – 335 W. 18th Street	Block 742 / Lot 7	School
555	319 W. 18th Street	Block 742 / Lot 22	Residential
556	340 W. 19th Street	Block 742 / Lot 60	Residential
557	362 W. 19th Street	Block 742 / Lot 71	Residential
558	144 Ninth Avenue	Block 742 / Lot 72	Residential with Commercial Below
559, 560	136 Ninth Avenue	Block 742 / Lot 76	Residential with Commercial Below
561	148 Ninth Avenue	Block 743 / Lot 1	Residential with Commercial Below
562, 563	152 Ninth Avenue	Block 743 / Lot 3	Residential with Commercial Below

Receptor	Location	Block / Lot	Land Use
564	367 W. 19th Street	Block 743 / Lot 5	Residential
565	351 W. 19th Street	Block 743 / Lot 13	Residential
566	333 W. 19th Street	Block 743 / Lot 22	Residential
567	177 Eighth Avenue	Block 743 / Lot 38	Residential with Commercial Below
568	312 W. 20th Street	Block 743 / Lot 53	Residential with Commercial Below
569-571	336 W. 20th Street	Block 743 / Lot 70	Public Facilities and Institutions
572, 573	358 W. 20th Street	Block 743 / Lot 78	Residential
574-576	160 Ninth Avenue	Block 743 / Lot 80	Residential
577	300 W. 20th Street	Block 743 / Lot 7501	Commercial and Office Buildings
578-580	363 W. 20th Street	Block 744 / Lot 1	Residential
581-583	170 Ninth Avenue	Block 744 / Lot 3	Residential
584	357 W. 20th Street	Block 744 / Lot 8	Residential
585	345 W. 20th Street	Block 744 / Lot 14	Residential
586, 587	315 W. 20th Street	Block 744 / Lot 24	Public Facilities and Institutions
588, 589	342 W. 21st Street	Block 744 / Lot 63	Residential
590, 591	180 Ninth Avenue	Block 745 / Lot 1	Residential
592	355 W. 21st Street	Block 745 / Lot 7	Residential
593	337 W. 21st Street	Block 745 / Lot 14	Residential
594, 595	360 W. 22nd Street	Block 745 / Lot 7502	Residential with Commercial Below
601-603	Fulton Building 1	Block 714 / Lot 31	Residential
604-609	Fulton Building 2	Block 714 / Lot 31	Residential
610-614	Fulton Building 3	Block 714 / Lot 31	Residential
615-620	Fulton Building 4	Block 714 / Lot 31	Residential
621-624	Fulton Building 5	Block 715 / Lot 10	Residential
625-630	Fulton Building 6	Block 715 / Lot 10	Residential
631-635	Fulton Building 7	Block 715 / Lot 10	Residential

Receptor	Location	Block / Lot	Land Use
636-639	Fulton Building 8	Block 716 / Lot 17	Residential
640-645	Fulton Building 9	Block 716 / Lot 17	Residential
646-651	Fulton Building 10	Block 716 / Lot 17	Residential
701-706	Future Fulton Building 1 (Non-Rezoning Alternative)	Block 717 / Lot 19	Residential
707-710	Future Fulton Building 2 (Non-Rezoning Alternative)	Block 716 / Lot 17	Residential
711-714	Future Fulton Building 3 (Non-Rezoning Alternative)	Block 715 / Lot 10	Residential
715-718	Future Fulton Building 4 (Non-Rezoning Alternative)	Block 716 / Lot 17	Residential
719-722	Future Fulton Building 5 (Non-Rezoning Alternative)	Block 715 / Lot 10	Residential
723-726	Future Fulton Building 6 (Non-Rezoning Alternative)	Block 715 / Lot 10	Residential
727-733	Future Fulton Building 7 (Non-Rezoning Alternative)	Block 714 / Lot 31	Residential
734-737	Future Fulton Building 8 (Non-Rezoning Alternative)	Block 715 / Lot 10	Residential
738-741	Future Fulton Building 9 (Non-Rezoning Alternative)	Block 714 / Lot 31	Residential
701-706	Future Fulton Building 1 (Non-Rezoning Alternative)	Block 717 / Lot 19	Residential
801-805	Future Fulton Building 1 (Rezoning and Midblock Bulk Alternative)	Block 717 / Lot 19	Residential
806-809	Future Fulton Building 2 (Rezoning and Midblock Bulk Alternative)	Block 716 / Lot 17	Residential
810-814	Future Fulton Building 3 (Rezoning Alternative); Future Fulton Building 4 (Midblock Bulk Alternative)	Block 715 / Lot 10	Residential
815-822	Future Fulton Building 4 (Rezoning Alternative); Future Fulton Building 3 (Midblock Bulk Alternative)	Block 715 / Lot 10	Residential
823-831	Future Fulton Building 5 (Rezoning and Midblock Bulk Alternative)	Block 714 / Lot 31	Residential
832-836	Future Fulton Building 6 (Rezoning and Midblock Bulk Alternative)	Block 714 / Lot 31	Residential
837-840	Future Fulton Building 7 (Rezoning and Midblock Bulk Alternative)	Block 715 / Lot 10	Residential

Construction Noise Modeling

Noise effects from construction activities were evaluated using the CadnaA model, a computerized model developed by DataKustik for noise prediction and assessment. The model can be used for the analysis of a wide variety of noise sources, including stationary sources (e.g., construction equipment, industrial equipment, power generation equipment), transportation sources (e.g., roads, highways, railroad lines, busways, airports), and other specialized sources (e.g., sporting facilities). The model takes into account the reference sound pressure levels of the noise sources at 50 feet, attenuation with distance, ground contours, reflections from barriers and structures, and attenuation due to shielding, etc. The CadnaA model is based on the acoustic propagation standards promulgated in International Standard ISO 9613-2. This standard is currently under review for adoption by the American National Standards Institute (ANSI) as an American Standard. The CadnaA model is a state-of-the-art tool for noise analysis and approved for construction noise level prediction by the *CTM*.

Geographic input data used with the CadnaA model included site work areas, adjacent building footprints and heights, locations of streets, and locations of sensitive receptors. For each analysis period, the approximate geographic location and operational characteristics—including equipment usage rates (percentage of time operating at full power) for each piece of construction equipment operating at the proposed development site, as well as noise control measures—were input to the model.

Construction equipment source strength and usage factor were determined by the L_{max} levels presented in Table 22-1 of the *CTM*. For construction equipment not included in this table, other reference sources, manufacturer specifications, or field measured noise levels were used.

Reflections and shielding by barriers erected on the construction site and shielding from adjacent buildings were accounted for in the model. In addition, construction-related vehicles were assigned to the adjacent roadways. The model produced A-weighted Leq(1) noise levels at each receptor location for each analysis period, as well as the contribution from each noise source. The L10(1) noise levels were conservatively estimated by adding 3 dBA to the Leq(1) noise levels, as is standard practice.

Analysis Time Period Selection

The construction noise analysis estimated construction noise levels based on projected activity and equipment usage as well as the level of construction traffic for various stages of construction. Noise analysis periods were selected to cover the most noise-intensive period(s) of each stage of construction.

Alternative 2 – Rezoning Alternative

The selected analysis periods for the Fulton Houses Project Site and Elliott-Chelsea Houses Project Site under the Rezoning Alternative, respectively, are shown in **Tables 05.19-10** and **05.19-11.** These are the time periods with the potential to result in the maximum incremental construction noise at noise receptors.

Table 05.19-10: Fulton Houses Project Sites – Summary of Construction Noise Analysis Periods for the Rezoning Alternative

Months	Construction Activities
July 2025 – February 2026	Building 1: Demolition
March 2026 – June 2026	Building 1: Demolition, Foundations
July 2026 – November 2026	Building 1: Foundations
December 2026 – June 2027	Building 1: Structural Concrete, Façade
July 2027 – October 2027	Building 1: Façade
November 2027 – April 2028	Building 1: Sitework
July 2028 – September 2028	Building 2: Demolition
October 2028 – March 2029	Building 2: Demolition Building 3: Demolition
April 2029 – July 2029	Building 2: Demolition, Drilled Piles, Foundations Building 3: Demolition, Drilled Piles, Foundations
August 2029 – February 2030	Building 2: Drilled Piles, Foundations Building 3: Drilled Piles, Foundations
March 2030 – August 2030	Building 2: Structural Concrete, Façade, Sitework Building 3: Structural Concrete, Façade, Sitework
September 2030 – September 2031	Building 2: Façade, Sitework Building 3: Façade, Sitework
December 2031 – February 2032	Building 4: Demolition
March 2032 – July 2032	Building 4: Demolition Building 5: Demolition
August 2032 – October 2032	Building 4: Drilled Piles, Foundations Building 5: Demolition
November 2032 – August 2033	Building 4: Drilled Piles, Foundations Building 5: Drilled Piles, Foundations
September 2033 – April 2034	Building 4: Structural Concrete, Façade Building 5: Structural Concrete, Façade
May 2034 – July 2034	Building 4: Structural Concrete, Façade Building 5: Façade
August 2034 – October 2034	Building 4: Façade Building 5: Sitework
November 2034 – January 2035	Building 4: Sitework Building 5: Sitework
February 2035 – April 2035	Building 4: Sitework
January 2036 – May 2036	Building 6: Demolition
June 2036 – March 2037	Building 6: Drilled Piles, Foundations
April 2037 – August 2037	Building 6: Structural Concrete, Façade
September 2037 – December 2037	Building 6: Façade
January 2038 – June 2038	Building 6: Sitework
April 2039 – June 2039	Building 7: Demolition
July 2039 – October 2039	Building 7: Drilled Piles, Foundations Building 8: Demolition
November 2039 – June 2040	Building 7: Drilled Piles, Foundations Building 8: Drilled Piles, Foundations
July 2040 – October 2040	Building 7: Structural Concrete, Façade Building 8: Foundations
November 2040 – January 2041	Building 7: Façade Building 8: Structural Concrete, Façade
February 2041 – April 2041	Building 7: Sitework Building 8: Façade
May 2041 – July 2041	Building 7: Sitework Building 8: Sitework
August 2041 – October 2041	Building 8: Sitework

Table 05.19-11: Elliott-Chelsea Houses Project Site – Summary of Construction Noise Analysis Periods for the Rezoning Alternative

Months	Construction Activities
July 2025 – February 2026	Building 1: Demolition
March 2026 – January 2027	Building 1: Drilled Piles, Foundations
February 2027 – September 2027	Building 1: Structural Concrete, Façade
October 2027 – February 2028	Building 1: Façade
March 2028 – August 2028	Building 1: Sitework
November 2028 – January 2029	Building 2: Demolition
February 2029 – July 2029	Building 2: Demolition Building 3: Demolition
August 2029 – October 2029	Building 2: Drilled Piles, Foundations Building 3: Demolition
November 2029 – May 2030	Building 2: Drilled Piles, Foundations Building 3: Drilled Piles, Foundations
June 2030 – August 2030	Building 2: Structural Concrete, Façade Building 3: Foundations
September 2030 – January 2031	Building 2: Structural Concrete, Façade Building 3: Structural Concrete, Façade
February 2031 – April 2031	Building 2: Façade Building 3: Structural Concrete, Façade
May 2031 – June 2031	Building 2: Sitework Building 3: Façade
July 2031 – October 2031	Building 2: Sitework Building 3: Sitework
November 2031 – December 2031	Building 3: Sitework
March 2032 – May 2032	Building 4: Demolition
June 2032 – October 2032	Building 4: Demolition Building 5: Demolition
November 2032 – January 2033	Building 4: Drilled Piles, Foundations Building 5: Demolition
February 2033 – August 2033	Building 4: Drilled Piles, Foundations Building 5: Drilled Piles, Foundations
September 2033 – November 2033	Building 4: Structural Concrete, Façade Building 5: Foundations
December 2033 – May 2034	Building 4: Structural Concrete, Façade Building 5: Structural Concrete, Façade
June 2034 – August 2034	Building 4: Façade Building 5: Façade
September 2034 – March 2035	Building 4: Sitework Building 5: Sitework
May 2035 – July 2035	Building 6: Demolition
August 2035 – May 2036	Building 6: Drilled Piles, Foundations
June 2036 – January 2037	Building 6: Structural Concrete, Façade
February 2037 – April 2037	Building 6: Façade
May 2037 – October 2037	Building 6: Sitework
January 2038 – May 2038	Building 7: Demolition
June 2038 – November 2038	Building 7: Drilled Piles, Foundations
December 2038 – March 2039	Building 7: Foundations
April 2039 – December 2039	Building 7: Structural Concrete, Façade
January 2040 – March 2040	Building 7: Façade
April 2040 – September 2040	Building 7: Sitework

Alternative 3 – Non-Rezoning Alternative

The selected analysis periods for the Fulton Houses Project Site and Elliott-Chelsea Houses Project Site under the Non-Rezoning Alternative, respectively, are shown in **Tables 05.19-12** and **05.19-13**. These are the time periods with the potential to result in the maximum incremental construction noise at nearby receptors.

Table 05.19-12: Fulton Houses Project Site – Summary of Construction Noise Analysis Periods for the Non-Rezoning Alternative

Months	Construction Activities
July 2025 – February 2026	Building 1: Demolition
March 2026 – June 2026	Building 1: Demolition, Foundations
July 2026 – November 2026	Building 1: Foundations
December 2026 – June 2027	Building 1: Structural Concrete, Façade
July 2027 – October 2027	Building 1: Façade
November 2027 – April 2028	Building 1: Sitework
July 2028 – September 2028	Building 2: Demolition
October 2028 – February 2029	Building 2: Demolition Building 3: Demolition
March 2029 – April 2029	Building 2: Demolition, Drilled Piles, Foundations Building 3: Demolition
May 2029 – November 2029	Building 2: Drilled Piles, Foundations Building 3: Demolition, Drilled Piles, Foundations
December 2029 – February 2030	Building 2: Structural Concrete, Façade, Sitework Building 3: Foundations
March 2030 – May 2030	Building 2: Structural Concrete, Façade, Sitework Building 3: Structural Concrete, Façade, Sitework
June 2030 – September 2030	Building 2: Façade, Sitework Building 3: Structural Concrete, Façade, Sitework
October 2030 – February 2031	Building 2: Sitework Building 3: Façade, Sitework
March 2031 – June 2031	Building 3: Sitework
September 2031 – November 2031	Building 4: Demolition
December 2031 – February 2032	Building 4: Demolition Building 5: Demolition
March 2032 – July 2032	Building 4: Drilled Piles, Foundations Building 5: Demolition
August 2032 – February 2033	Building 4: Foundations Building 5: Drilled Piles, Foundations
March 2033 – May 2033	Building 4: Structural Concrete, Façade Building 5: Foundations
June 2033 – August 2033	Building 4: Structural Concrete, Façade Building 5: Structural Concrete, Façade
September 2033 – November 2033	Building 4: Façade Building 5: Structural Concrete, Façade
December 2033 – February 2034	Building 4: Sitework Building 5: Façade
March 2034 – June 2034	Building 4: Sitework Building 5: Sitework
July 2034 – August 2034	Building 5: Sitework
November 2034 – January 2035	Buildings 6 and 8: Shared Demolition
February 2035 – June 2035	Buildings 6 and 8: Shared Demolition Building 7: Demolition

Months	Construction Activities
July 2035 – November 2035	Buildings 6 and 8: Shared Drilled Piles, Foundations Building 7: Demolition
December 2035 – April 2036	Buildings 6 and 8: Shared Foundations Building 7: Drilled Piles, Foundations
May 2036 – October 2036	Buildings 6 and 8: Shared Foundations Building 6: Structural Concrete, Façade Building 7: Foundations
November 2036 – January 2037	Building 6: Façade Building 7: Structural Concrete, Façade Building 8: Structural Concrete, Façade
February 2037 – July 2037	Building 6: Sitework Building 7: Structural Concrete, Façade Building 8: Structural Concrete, Façade
August 2037 – September 2037	Building 7: Façade Building 8: Façade
October 2037 – November 2037	Building 7: Façade Building 8: Sitework
December 2037 – March 2038	Building 7: Sitework Building 8: Sitework
April 2038 – May 2038	Building 7: Sitework
March 2039 – July 2039	Buildings 9 and 10: Shared Demolition
August 2039 – January 2040	Buildings 9 and 10: Shared Demolition, Drilled Piles, Foundations
February 2040 – May 2040	Buildings 9 and 10: Shared Foundations
June 2040 – August 2040	Buildings 9 and 10: Shared Foundations Building 9: Structural Concrete, Façade
September 2040 – January 2041	Building 9: Structural Concrete, Façade Building 10: Structural Concrete, Façade
February 2041 – April 2041	Building 9: Sitework Building 10: Structural Concrete, Façade
May 2041 – July 2041	Building 9: Sitework Building 10: Sitework
August 2041 – October 2041	Building 10: Sitework

Table 05.19-13: Elliott-Chelsea Houses Project Site: Summary of Construction Noise Analysis Periods – Non-Rezoning Alternative

Months	Construction Activities
July 2025 – February 2026	Building 1: Demolition
March 2026 – January 2027	Building 1: Drilled Piles, Foundations
February 2027 – September 2027	Building 1: Structural Concrete, Façade
October 2027 – February 2028	Building 1: Façade
March 2028 – August 2028	Building 1: Sitework
November 2028 – January 2029	Building 2: Demolition
February 2029 – July 2029	Building 2: Demolition Building 3: Demolition
August 2029 – October 2029	Building 2: Drilled Piles, Foundations Building 3: Demolition
November 2029 – May 2030	Building 2: Drilled Piles, Foundations Building 3: Drilled Piles, Foundations
June 2030 – August 2030	Building 2: Structural Concrete, Façade Building 3: Foundations
September 2030 – February 2031	Building 2: Structural Concrete, Façade Building 3: Structural Concrete, Façade

Months	Construction Activities
March 2031 – May 2031	Building 2: Sitework Building 3: Structural Concrete, Façade
June 2031 – August 2031	Building 2: Sitework Building 3: Sitework
September 2031 – November 2031	Building 3: Sitework
February 2032 – April 2032	Building 4: Demolition
May 2032 – September 2032	Building 4: Demolition Building 5: Demolition
October 2032 – December 2032	Building 4: Drilled Piles, Foundations Building 5: Demolition
January 2033 – July 2033	Building 4: Drilled Piles, Foundations Building 5: Drilled Piles, Foundations
August 2033 – October 2033	Building 4: Structural Concrete, Façade Building 5: Foundations
November 2033 – February 2034	Building 4: Structural Concrete, Façade Building 5: Structural Concrete, Façade
March 2034 – July 2034	Building 4: Sitework Building 5: Structural Concrete, Façade
August 2034 – January 2035	Building 5: Sitework
January 2036 – May 2036	Building 6: Demolition
June 2036 – August 2036	Building 6: Drilled Piles, Foundations Building 7: Demolition
September 2036 – March 2037	Building 6: Drilled Piles, Foundations Building 7: Drilled Piles, Foundations
April 2037 – June 2037	Building 6: Structural Concrete, Façade Building 7: Foundations
July 2037 – December 2037	Building 6: Structural Concrete, Façade Building 7: Structural Concrete, Façade
January 2038 – March 2038	Building 6: Sitework Building 7: Structural Concrete, Façade
April 2038 – June 2038	Building 6: Sitework Building 7: Sitework
July 2038 – September 2038	Building 7: Sitework

Alternative 4 – Midblock Bulk Alternative

The selected analysis periods for the Fulton Houses Project Site under the Midblock Bulk Alternative are shown in **Table 05.19-14**. The analysis periods for the Elliott-Chelsea Houses Project Site under the Midblock Bulk Alternative are identical to the Rezoning Alternative and are shown in **Table 05.19-11.** These are the time periods with the potential to result in the maximum incremental construction noise at nearby receptors.

Table 05.19-14: Fulton Houses Project Site – Summary of Construction Noise Analysis Periods for the Midblock Bulk Alternative

Months	Construction Activities
July 2025 – February 2026	Building 1: Demolition
March 2026 – June 2026	Building 1: Demolition, Foundations
July 2026 – November 2026	Building 1: Foundations
December 2026 – June 2027	Building 1: Structural Concrete, Façade
July 2027 – October 2027	Building 1: Façade
November 2027 – April 2028	Building 1: Sitework

Months	Construction Activities
July 2028 – September 2028	Building 2: Demolition
October 2028 – March 2029	Building 2: Demolition Building 3: Demolition
April 2029 – January 2030	Building 2: Demolition, Drilled Piles, Foundations Building 3: Demolition, Drilled Piles, Foundations
February 2030 – November 2030	Building 2: Structural Concrete, Façade Building 3: Drilled Piles, Foundations, Structural Concrete, Façade
December 2030 – February 2031	Building 2: Façade Building 3: Façade
March 2031 – September 2031	Building 2: Sitework Building 3: Façade, Sitework
December 2031 – February 2032	Building 4: Demolition
March 2032 – July 2032	Building 4: Demolition Building 5: Demolition
August 2032 – January 2033	Building 4: Demolition, Drilled Piles, Foundations Building 5: Demolition
February 2033 – May 2033	Building 4: Foundations Building 5: Demolition, Drilled Piles, Foundations
June 2033 – January 2034	Building 4: Structural Concrete, Façade Building 5: Drilled Piles, Foundations, Structural Concrete, Façade
February 2034 – June 2034	Building 4: Façade Building 5: Structural Concrete, Façade
July 2034 – October 2034	Building 4: Sitework Building 5: Structural Concrete, Façade
November 2034 – December 2034	Building 4: Sitework Building 5: Façade, Sitework
January 2035 – April 2035	Building 5: Sitework
February 2036 – May 2036	Building 6: Demolition
June 2036 – March 2037	Building 6: Drilled Piles, Foundations
April 2037 – August 2037	Building 6: Structural Concrete, Façade
September 2037 – December 2037	Building 6: Façade
January 2038 – June 2038	Building 6: Façade, Sitework
April 2039 – May 2039	Building 7: Demolition Building 9: Demolition
June 2039 – November 2039	Building 7: Demolition Building 8: Demolition Building 9: Demolition
December 2039 – January 2040	Building 7: Drilled Piles, Foundations Building 8: Demolition Building 9: Drilled Piles, Foundations
February 2040 – September 2040	Building 7: Drilled Piles, Foundations Building 8: Drilled Piles, Foundations Building 9: Drilled Piles, Foundations
October 2040 – January 2041	Building 7: Structural Concrete, Façade Building 8: Foundations, Structural Concrete, Façade Building 9: Structural Concrete, Façade
February 2041 – April 2041	Building 7: Façade Building 8: Structural Concrete, Façade Building 9: Structural Concrete, Façade
May 2041 – June 2041	Building 7: Sitework Building 8: Façade Building 9: Façade

Months	Construction Activities
July 2041 – October 2041	Building 7: Sitework Building 8: Sitework Building 9: Sitework
November 2041 – December 2041	Building 8: Sitework Building 9: Sitework

Noise Reduction Measures

Construction of the Proposed Project would be required to follow the requirements of the *New York City Noise Control Code* (also known as Chapter 24 of the *Administrative Code of the City of New York*, or Local Law 113) for construction noise control measures. Additionally, construction of the Proposed Project would incorporate some noise control measures that go beyond those required by Code, which are called out separately below as Project Commitments Related to the Environment (PCREs). Specific noise control measures would be incorporated in noise mitigation plan(s) required under the *New York City Noise Control Code* to be available for review by a DEP inspector upon request. These measures could include a variety of source and path controls.

In terms of source controls (i.e., reducing noise levels at the source or during the most sensitive time periods), the following measures would be implemented in accordance with the *New York City Noise Control Code*:

- Equipment that meets the sound level standards specified in Subchapter 5 of the *New York City Noise Control Code* would be utilized from the start of construction. **Table 05.19-15** shows the noise levels for typical construction equipment, which are the mandated noise levels for the equipment that would be used for construction of the proposed project.
- As early in the construction period as logistics would allow, diesel- or gas-powered equipment would be replaced with electrical-powered equipment such as welders and water pumps (i.e., early electrification) to the extent feasible and practicable. Where electrical equipment cannot be used, diesel or gas-powered generators and pumps would be located within buildings to the extent feasible and practicable.
- Where feasible and practicable, construction sites would be configured to minimize back-up alarm noise. In addition, all trucks would not be allowed to idle more than three minutes at the construction site unless the engine is used to operate a loading, unloading or processing device, per Title 24, Chapter 1, Subchapter 7, Section 24-163 of the New York City Administrative Code.
- Contractors and subcontractors would be required to properly maintain equipment and mufflers.

In addition, the source control listed below would be implemented as a project commitment for the construction of the Proposed Project beyond the regulations listed above and would be included in the PCREs:

- Impact pile driving would not be used.
- As shown in **Table 05.19-15**, equipment such as hoists would be required to meet the mandated noise levels to be used for construction of the Proposed Project.

Table 05.19-15: Typical Construction Equipment Noise Emission Levels (dBA)

Equipment List	L_{max} Noise Level at 50 feet[1]
Auger Drill Rig	85
Bar Bender	80
Compactor (Ground)	80
Compressor	80
Concrete Pump	82
Concrete Truck	85
Concrete Trowel (Walk Behind)	70[2]
Concrete Vibrator	76[3]
Crane	85
Excavator	85
Front End Loader	80
Generator	82
Hoist[4]	75[5]
Jackhammer	85
Man Lift	85
Pavement Scarifier	85
Paver	85
Roller	85
Saw	76
Soil Mix Drill Rig	80
Vibratory Concrete Mixer	80
Welder / Torch	73

Notes:
1 Rules for Citywide Construction Noise Mitigation, Chapter 28, DEP, 2007, except where noted.
2 Previous project equipment noise certification.
3 Federal Transit Administration (FTA), Report No. 0123 September 2018, Table 7-1 Construction Equipment Noise Emission Levels.
4 A hoist is a temporary construction elevator.
5 Project Commitment.

In terms of path controls (e.g., placement of equipment, implementation of barriers or enclosures between equipment and sensitive receptors), the following measures for construction would be implemented:

- Noise barriers constructed from plywood or other materials would be utilized to provide shielding (e.g., the construction sites would have a minimum 8-foot-tall barrier around the perimeter).
- Where logistics allow, noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptor locations.
- Concrete trucks would be required to be located inside site-perimeter noise barriers while pouring or being washed out.
- Path noise control measures (i.e., portable noise barriers, panels, enclosures, and acoustical tents) would be implemented for certain dominant noise equipment to the extent feasible and practical based on the results of the construction noise calculations. The details to

construct portable noise barriers, enclosures, tents, etc. are shown in DEP's *Rules for Citywide Construction Noise Mitigation*.[5]

F. AFFECTED ENVIRONMENT

Regulatory Context

City and State Governmental Coordination and Oversight

The governmental oversight of construction in New York City is extensive and involves a number of city, state, and federal agencies. **Table 05.19-16** shows the main agencies involved in construction oversight and each agency's areas of responsibility. The primary responsibilities lie with New York City agencies. The NYC Department of Buildings (DOB) has the primary responsibility for ensuring that construction meets the requirements of the NYC Building Code and that buildings are structurally, electrically, and mechanically safe. In addition, DOB enforces safety regulations to protect both construction workers and the public. The areas of responsibility include the enforcement of regulations pertaining to the installation and operation of construction equipment, such as cranes and lifts, sidewalk sheds, and safety netting and scaffolding. The NYC Department of Environmental Protection (DEP) enforces the NYC Noise Control Code (also known as Chapter 24 of the Administrative Code of the City of New York, or Local Law 113) and the DEP Notice of Adoption Rules for Citywide Construction Noise Mitigation (also known as Chapter 28), approves RAPs and CHASPs, regulates water disposal into the sewer system, requires abatement of all asbestos containing materials (ACM) prior to demolition, and oversees dust control for construction activities. The NYC Fire Department (FDNY) has primary oversight for compliance with the Fire Code and for the installation of tanks containing flammable materials. DOT reviews and approves any traffic lane and sidewalk closures. NYC Transit Authority (NYCTA) is in charge of bus stop relocations, and any subsurface construction within 200 feet of a subway. The NYC Landmarks Preservation Commission (LPC) approves studies and testing to prevent loss of archaeological materials and to prevent damage to fragile historic structures.

The New York State Department of Environmental Conservation (NYSDEC) regulates discharge of water into rivers and streams, releases and disposal of hazardous materials, and removal of bulk petroleum and chemical storage tanks. The New York State Department of Labor (DOL) and DEP licenses asbestos workers. On the federal level, the Environmental Protection Agency (EPA) has wide ranging authority over environmental matters, including air emissions, noise emission standards, hazardous materials, and the use of poisons. Much of the responsibility is delegated to the state level. The Occupational Safety and Health Administration (OSHA) sets standards for work site safety.

[5] As found at http://www.nyc.gov/html/dep/pdf/noise_constr_rule.pdf

Table 05.19-16: Construction Oversight in New York City

Location	Agency	Area(s) of Responsibility
New York City	Department of Buildings	Primary oversight for Building Code and site safety
New York City	Department of Environmental Protection	Noise, hazardous materials, dewatering, dust
New York City	Fire Department	Compliance with Fire Code, tank operation
New York City	Department of Transportation	Traffic lane and sidewalk closures
New York City	New York City Transit[1]	Bus stop relocation; any subsurface construction within 200 feet of a subway
New York City	Landmarks Preservation Commission	Archaeological and historic architectural protection
New York State	Department of Labor	Asbestos workers
New York State	Department of Environmental Conservation	Dewatering, hazardous materials, tanks, Stormwater Pollution Prevention Plan, Industrial SPDES, if any discharge into the Hudson River
United States	Environmental Protection Agency	Air emissions, noise, hazardous materials, toxic substances
United States	Occupational Safety and Health Administration	Worker safety

Note:
[1] NYCTA is a sub-unit of the Metropolitan Transportation (MTA), a state agency

Stormwater Management

The foremost potential construction impacts on water resources are soil erosion and sedimentation, which could occur due to grading activities. Exposed soils from these activities could erode during rainfall events, and possibly affect the existing combined sewer system located adjacent to the Project Sites. A soil erosion control plan would be implemented during construction activities. Furthermore, in accordance with Chapter 19.1 of Title 15 of the Rules of the City of New York, the Stormwater Construction Permit applies to all covered development projects. A covered development project is any development in New York City, public or private, that meets one or both of the following criteria: (1) disturbs 20,000 sf or more of soil; or (2) creates 5,000 sf or more new impervious area. If applicable, the Proposed Project under either the Rezoning Alternative, Non-Rezoning Alternative, or Midblock Bulk Alternative would comply with these requirements. When a permit applies, a stormwater pollution prevention plan (SWPPP) must be prepared.

A SWPPP is a plan for controlling stormwater runoff and pollutants during construction.[6] It identifies potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges. In addition, the SWPPP describes and ensures the implementation of practices which would be used to reduce the pollutants in stormwater discharges and to assure compliance with the terms and conditions of a State Pollutant Discharge Elimination System (SPDES) permit. SWPPPs must include erosion and sediment controls, with fully designed and engineered stormwater management practices with all necessary maps, plans and construction drawings. With these procedures, no construction period impacts from stormwater discharges would be anticipated. SWPPPs are prepared in accordance with applicable permit requirements for stormwater management as outlined in the New York City Stormwater Manual (“SWM”) published by the NYCDEP; the SWPPP must be reviewed and approved by the NYCDEP in order for a Stormwater Construction Permit to be issued. This process provides standards to ensure that

[6] Where required (e.g., for multi-family residential developments such as the Proposed Project), SWPPPs are also required to include post-construction stormwater management practices, which are coordinate with compliance with the Unified Stormwater Rule. See **Chapter 05.10, “Water and Sewer Infrastructure.”**

stormwater discharges from certain construction activities do not degrade water quality of the City's water supply.

Transportation

The transportation modes in the study are regulated, operated, under the jurisdiction of, and/or monitored by public agencies, including the Departments of Transportation of the United States (USDOT), New York State (NYSDOT), and New York City (NYCDOT), New York's Metropolitan Transportation Authority (MTA), and the Port Authority of New York and New Jersey.

This chapter has been prepared to provide determinations and compliance findings required for US Department of Housing and Urban Development (HUD)-assisted projects, per title 24 of the Code of Federal Regulations (CFR), part 58, specifically the transportation and accessibility environmental factor as they relate to the community, such as changes to traffic operations and mobility, public transportation facilities and services, pedestrian elements and flow, safety of all roadway users, and on- and off-street parking as it relates to the construction of the Proposed Project.

Air Quality

Determining the Significance of Air Quality Impacts

As required by the Clean Air Act (CAA), primary and secondary National Ambient Air Quality Standards (NAAQS) have been established for six major air pollutants: CO, NO_2, ozone, PM_{10}, $PM_{2.5}$, sulfur dioxide (SO_2), and lead. The primary standards represent levels deemed appropriate to protect public health, allowing an adequate margin of safety. The secondary standards are intended to protect the nation's welfare, and account for air pollutant effects on soil, water, visibility, materials, vegetation, and other aspects of the environment.

The SEQRA regulations and *CTM* state that the significance of a predicted consequence of a project (i.e., whether it is material, substantial, large, or important) should be assessed in connection with its setting (e.g., urban or rural), its probability of occurrence, its duration, its irreversibility, its geographic scope, its magnitude, and the number of people affected. In terms of the magnitude of air quality impacts, any action predicted to increase the concentration of a criteria air pollutant to a level that would exceed the concentrations defined by the NAAQS (see **Table 05.19-17**) for the pollutants identified for analysis would be deemed to have a potential significant adverse impact.

Table 05.19-17: National Ambient Air Quality Standards (NAAQS)

Pollutant	Averaging Period	Primary ppm	Primary µg/m³	Secondary ppm	Secondary µg/m³
Carbon Monoxide (CO)	8-Hour Average	9(1)	10,000	None	None
Carbon Monoxide (CO)	1-Hour Average	35(1)	40,000	None	None
Nitrogen Dioxide (NO_2)	1-Hour Average(1)	0.100	188	None	None
Nitrogen Dioxide (NO_2)	Annual Average	0.053	100	0.053	100
Respirable Particulate Matter (PM_{10})	24-Hour Average(2)	NA	150	NA	150
Fine Respirable Particulate Matter ($PM_{2.5}$)	Annual Mean(3)	NA	9	NA	15
Fine Respirable Particulate Matter ($PM_{2.5}$)	24-Hour Average(4)	NA	35	NA	35

Notes:
ppm – parts per million (unit of measure for gases only)
µg/m³ – micrograms per cubic meter (unit of measure for gases and particles, including lead)
NA – not applicable
All annual periods refer to calendar year.
Standards are defined in ppm. Approximately equivalent concentrations in µg/m³ are presented.
1 3-year average of the annual 98th percentile daily maximum 1-hr average concentration.
2 Not to be exceeded more than once a year.
3 3-year average of annual mean.
4 Not to be exceeded by the annual 98th percentile when averaged over 3 years.
Source: 40 CFR Part 50: National Primary and Secondary Ambient Air Quality Standards.

Conformity with State Implementation Plans

The conformity requirements of the Clean Air Act (CAA) and regulations promulgated thereunder limit the ability of federal agencies to assist, fund, permit, and approve projects that do not conform to the applicable SIP. As described in **Chapter 03.0, "Process, Coordination, and Public Participation,"** the implementation of the Proposed Project will require federal approvals. Therefore, general conformity regulations would apply to the Proposed Project.

The general conformity requirements of the CAA and its implementing regulations (40 CFR part 93 Subpart B) limit the ability of federal agencies to assist, fund, permit, and approve projects in non-attainment and maintenance areas where the action's direct and indirect emissions have the potential to impact one or more of the six criteria air pollutants or their precursor pollutants at rates equal to or exceeding prescribed *de minimis* thresholds. For the Proposed Project, the prescribed annual thresholds are 25 tons per year (tpy) from either VOCs or NOx (ozone precursors, for an ozone non-attainment area within the ozone transport region) and 100 tpy of direct emissions of $PM_{2.5}$ or $PM_{2.5}$ precursors, including SO_2 (for a $PM_{2.5}$ maintenance area).

If annual emissions exceed one or more of the federal *de minimis* thresholds, a project may not conform to the requirements under the SIP, and would require a full conformity determination be performed to ensure that the annual emissions have are included in the planning of the SIP. However, if no exceedance is identified, the project is assumed to conform to the SIP, and no further assessment is warranted.

Noise

Federal Development Guidelines

The US Department of Housing and Urban Development (HUD) regulates noise for HUD-funded residential housing projects in accordance with 24 Code of Federal Regulations (CFR) Part 51, Subpart B. The intent of HUD's noise rules is to ensure acceptable levels of noise exposure at sites for HUD-funded housing developments. Its guidelines are intended to address the impacts from noise from permanent sources such as aircraft, rail lines, and vehicular traffic on housing developments once constructed. As such, it considers a 24-hour averaged noise level with a penalty applied to noise during night-time hours when residences are more sensitive to noise. Its 24-hour averaged metric would tend to understate the noise effects from construction activities, which would occur for only a limited portion of each 24-hour period (i.e., typically 8 hours). Therefore, HUD's noise rules would not be appropriate for examination of potential noise impacts due to construction of the Proposed Project, and the more conservative *CTM* construction noise evaluation guidelines were used as described below to determine anticipated impacts from construction noise.

CTM Noise Impact Criteria

Chapter 22, Section 100 of the *CTM* breaks construction duration into "short-term" and "long-term" and states that construction noise is not likely to require analysis unless it "affects a sensitive receptor over a long period of time." Consequently, the construction noise analysis considers the increase in noise levels (the "intensity") and whether construction noise would occur for an extended period of time (the "duration") and the affected area in evaluating potential construction noise effects.

The noise impact criteria described in Chapter 19, Section 410 of the *CTM* serve as a screening-level threshold for potential construction noise impacts. If construction of a proposed project would result in any exceedances of these criteria at a given receptor, the intensity and duration of construction noise at that receptor is considered further to determine the potential for significant adverse impacts.

Existing Conditions

Transportation

Traffic Conditions

In order to assess construction traffic conditions, a 2023 existing traffic network was established based on traffic count data collected in May 2023 for the AM construction peak hour (6:00 AM to 7:00 AM) and PM construction peak hour (3:00 PM to 4:00 PM). Physical inventory data needed for operational analysis – e.g., the number of traffic lanes, lane widths, pavement markings, turn prohibitions, bus stops, and typical parking regulations—were also collected during these periods. Signal timing plans for signalized intersections within the study area were obtained from

NYCDOT. The construction traffic analysis examines conditions in the construction AM and PM peak hours at 25 intersections (all signalized) (refer to **Figure 05.19-4**). **Figures J.1-1a** and **J.1-1b in Appendix J.1** show the existing traffic volumes during the construction AM and PM peak hours, respectively.

Intersection Capacity Analysis

The v/c ratios, delays, and LOS for individual lane groups at analyzed intersections during both construction peak periods under existing conditions are shown in **Table 05.19-18**. A lane group is considered congested if it operates at LOS E or F and/or with a v/c ratio of 0.90 or above. A v/c ratio of 1.00 or above reflects capacity conditions. As shown in **Table 05.19-18**, of the 25 analyzed intersections, ten signalized intersections currently have at least one congested lane group in one or more peak hours. Of the ten analyzed congested intersections, nine intersections are located along the 10th Avenue corridor and the remaining intersection is located along the 9th Avenue corridor. One intersection contains one lane group operating at or over capacity (v/c ratio ≥ 1.0) in the construction AM peak hour and one in the construction PM peak hour.

Construction Traffic Analysis Locations

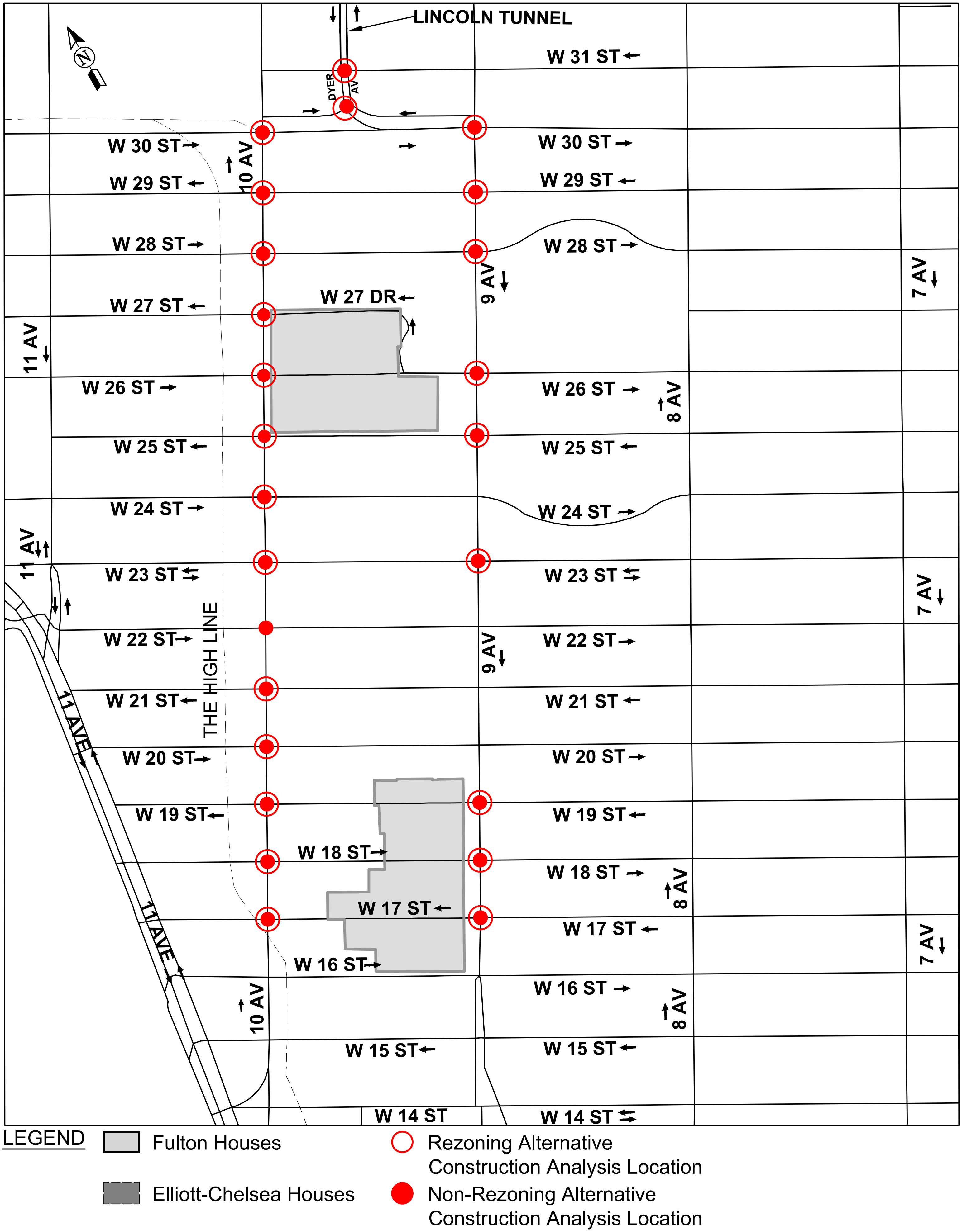


Table 05.19-18: Existing Levels of Service During the Peak Construction Hours

			Weekday AM			Weekday PM		
Intersection	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS
W.30th St (EB) &	EB	L	0.26	47.4	D	0.63	60.0	E *
10th Ave (NB)	EB	T	0.55	56.4	E *	0.41	51.4	D
	NB	TR	0.36	10.8	B	0.55	11.4	B
W.29th St (WB) &	WB	T	0.33	57.4	E *	0.32	71.9	E *
10th Ave (NB)	WB	R	0.37	59.1	E *	0.66	87.1	F *
	NB	LT	0.32	5.8	A	0.51	5.9	A
W.28th St (EB) &	EB	LT	0.26	47.1	D	0.54	54.4	D
10th Ave (NB)	NB	TR	0.30	2.4	A	0.51	3.7	A
W.27th St (WB) &	WB	TR	0.01	42.2	D	0.01	42.2	D
10th Ave (NB)	NB	LT	0.35	3.0	A	0.63	4.4	A
W.26th St (EB) &	EB	LT	0.38	50.6	D	0.81	73.2	E *
10th Ave (NB)	NB	TR	0.36	9.4	A	0.58	13.1	B
W.25th St (WB) &	WB	TR	0.33	48.1	D	0.98	72.3	E *
10th Ave (NB)	NB	LT	0.33	3.5	A	0.51	6.8	A
W.24th St (EB) &	EB	LT	0.27	47.1	D	0.63	57.9	E *
10th Ave (NB)	NB	TR	0.31	11.2	B	0.50	11.4	B
W.23rd St (E-W) &	EB	LT	0.33	20.3	C	0.71	32.1	C
10th Ave (NB)	WB	TR	0.49	24.5	C	1.04	103.5	F *
	NB	LTR	0.37	3.4	A	0.67	9.2	A
W.22nd St & 10th Ave (NB)	NB	LTR	0.35	13.0	B	0.64	10.2	B
W.21st St (E-W) &	EB	L	0.07	43.2	D	0.28	47.5	D
10th Ave (NB)	WB	R	0.37	50.4	D	0.15	45.2	D
	NB	T	0.26	4.4	A	0.49	8.5	A
W.20th St & 10th Ave (NB)	NB	LTR	0.41	17.6	B	0.93	38.4	D
W.19th St &	EB	L	0.04	33.6	C	0.06	33.9	C
10th Ave (NB)	WB	R	0.19	63.2	E *	0.84	43.1	D
	NB	T	0.31	3.7	A	0.61	3.6	A
W.18th St (EB) &	EB	LT	0.53	56.1	E *	0.45	52.6	D
10th Ave (NB)	NB	TR	0.36	10.7	B	0.67	19.2	B
W.17th St (WB) &	WB	TR	0.34	33.7	C	0.87	83.1	F *
10th Ave (NB)	NB	LT	0.25	26.5	C	0.43	29.8	C
W.31st St (WB) &	WB	LTR	0.24	17.1	B	0.59	27.6	C
Dyer Ave (NB)	NB	LT	0.10	24.0	C	0.22	0.9	A
Lincoln Exit (SB)	SB	TR	0.22	8.6	A	0.12	7.9	A
W.30th St (E-W) &	EB	T	0.10	5.4	A	0.38	18.9	B
Dyer Ave (SB)	WB	T	0.01	0.0	A	0.03	0.0	A
	SB	T	0.37	15.6	B	0.20	30.6	C
W.30th St (EB) &	EB	T	0.46	14.4	B	0.24	21.7	C
9th Ave (SB)	EB	R	0.52	16.4	B	0.47	25.9	C
	SB	LT	0.56	5.7	A	0.45	3.9	A
W.29th St (WB) &	WB	L	0.10	19.1	B	0.23	20.7	C
9th Ave (SB)	WB	T	0.29	21.7	C	0.62	29.3	C
	SB	TR	0.70	16.2	B	0.54	12.3	B
W.28th St (EB) &	EB	TR	0.20	33.2	C	0.57	23.8	C
9th Ave (SB)	SB	L	0.28	21.1	C	0.26	26.4	C
	SB	T	0.44	1.9	A	0.38	4.5	A

Table 05.19-18 (continued): Existing Levels of Service During the Peak Construction Hours

Intersection	Approach	Lane Group	Weekday AM V/C Ratio	Weekday AM Delay (sec/veh)	Weekday AM LOS	Weekday PM V/C Ratio	Weekday PM Delay (sec/veh)	Weekday PM LOS
W.26th St (EB) & 9th Ave (SB)	EB	T	0.30	23.4	C	0.53	22.3	C
	EB	R	0.22	23.2	C	0.42	21.6	C
	SB	L	0.42	21.3	C	0.29	22.7	C
	SB	T	0.44	1.8	A	0.43	3.9	A
W.25th St (WB) & 9th Ave (SB)	WB	LT	0.18	18.1	B	0.75	31.9	C
	SB	TR	0.59	4.6	A	0.62	8.4	A
W.23rd St (E-W) & 9th Ave (SB)	EB	T	0.41	28.5	C	0.68	33.1	C
	EB	R	0.11	23.4	C	0.47	31.0	C
	WB	T	0.20	25.5	C	0.52	30.2	C
	SB	L	1.01	102.9	F *	0.62	48.7	D
	SB	TR	0.40	13.8	B	0.48	14.6	B
W.19th St (WB) & 9th Ave (SB)	WB	LT	0.23	24.3	C	0.86	48.8	D
	SB	TR	0.35	14.2	B	0.51	16.1	B
W.18th St (EB) & 9th Ave (SB)	EB	TR	0.51	20.7	C	0.54	33.2	C
	SB	L	0.26	20.8	C	0.40	22.6	C
	SB	T	0.30	2.3	A	0.42	3.4	A
W.17th St (WB) & 9th Ave (SB)	WB	LT	0.17	23.5	C	0.85	48.8	D
	SB	TR	0.36	4.8	A	0.55	6.6	A

Notes:
EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L - left, T - through, R - right, DefL - Analysis considers a defacto left-turn lane on this approach
V/C ratio - volume-to-capacity ratio
Sec/veh - seconds per vehicle
LOS - level of service
* - Denotes a congested movement (LOS E or F, or v/c ratio greater than or equal to 0.9)
Analysis is based on the 2000 Highway Capacity Manual methodology (Synchro 11)

Pedestrians

Data on peak period pedestrian flow volumes were collected along analyzed sidewalks and crosswalks in the vicinity of the Project Sites in May 2023. The construction pedestrian analysis examines pedestrian conditions in the AM construction peak hour and PM construction peak hour for a total of nine pedestrian elements (six sidewalks and two crosswalks) (refer to **Figure 05.19-5**).

Sidewalks

Table 05.19-19 shows the existing peak hour pedestrian volumes, average pedestrian space (in sf/ped), and platoon-adjusted LOS at the analyzed sidewalks. As shown in **Table 05.19-19**, the analyzed sidewalks currently operate at an acceptable LOS C or better in all peak hours, except for two sidewalks.

Analyzed Pedestrian Elements During Construction Peak Periods

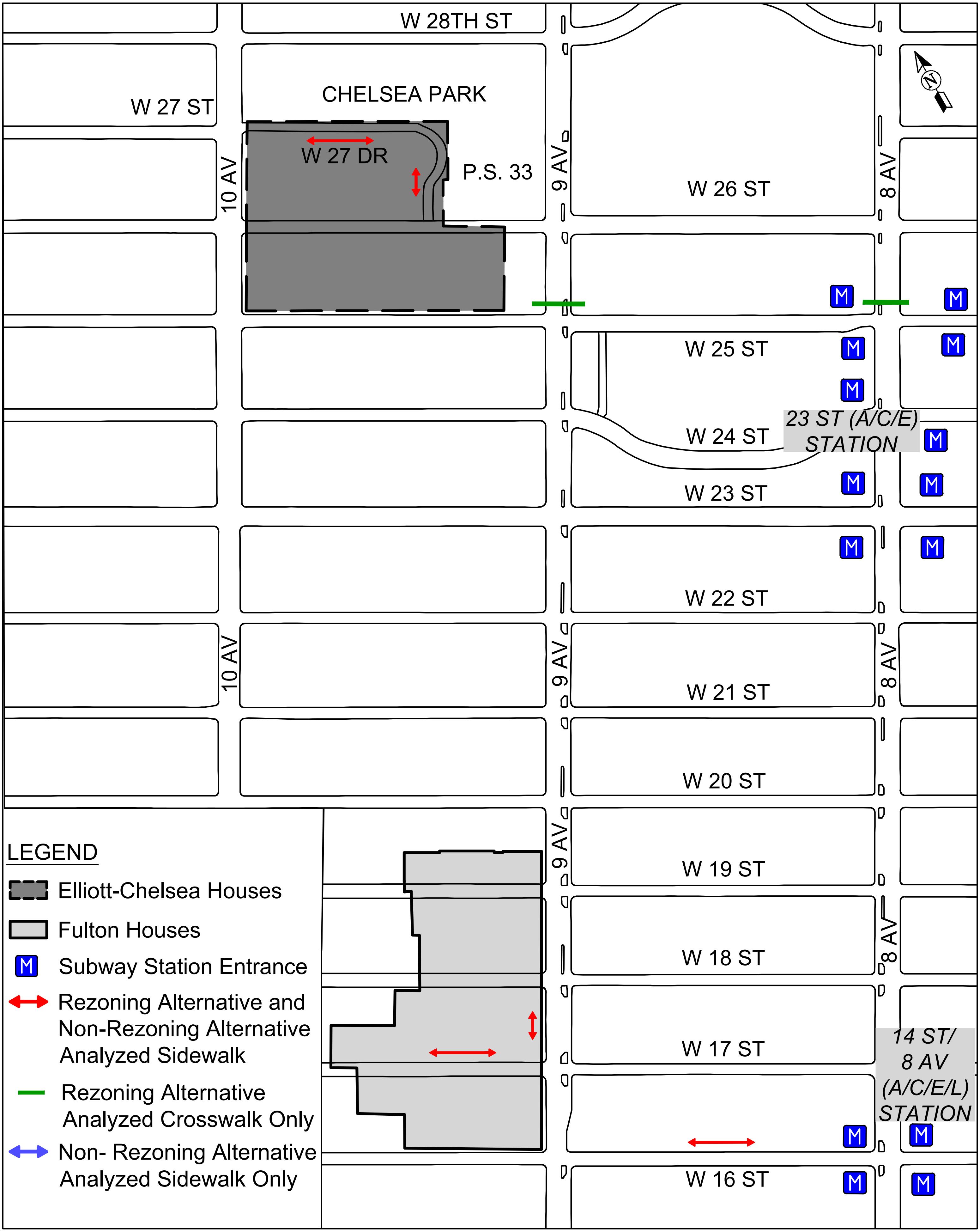


Table 05.19-19: Existing Sidewalk Conditions During the Peak Construction Hours

Location	Effective Width (ft)	Peak Hour Volumes		Average Pedestrian Space (ft^2/ped)		Platoon-Adjusted Level of Service	
		AM	PM	AM	PM	AM	PM
South sidewalk along W 27 Dr btw 10 Ave & W 27 Dr	2.0	12	74	752.4	282.4	A	B
West sidewalk along W 27 Dr btw W 26 St & W 27 Dr	2.0	12	74	752.4	282.4	A	B
North sidewalk along W 25 St btw 8 Ave & 9 Ave	5.0	97	325	532.7	122.2	A	B
West sidewalk along 9 Ave btw W 17 St & W 18 St	4.0	78	462	517.8	90.2	B	B
North sidewalk along W 17 St btw 9 Ave & 10 Ave	1.0	113	334	62.6	20.7	C	E
North sidewalk along W 16 St btw 8 Ave & 9 Ave	1.0	176	597	43.9	13.8	C	E

Crosswalks

Study area intersections are all signalized and generally include pedestrian signals. High visibility crosswalk striping is present at several intersections. **Table 05.19-20** shows the peak hour volumes, average pedestrian space (in sf/ped), and LOS at the analyzed crosswalk during the construction AM and peak hours. As shown in **Table 05.19-20**, all analyzed crosswalks currently operate at an uncongested LOS B or better in all analyzed peak hours.

Table 05.19-20: Existing Crosswalk Conditions During the Peak Construction Hours

Intersection	Crosswalk	Peak Hour Volumes		Average Pedestrian Space (ft^2/ped)		Level of Service	
		AM	PM	AM	PM	AM	PM
9 Ave & W 25 St	North	79	320	290.4	73.0	A	A
8 Ave & W 25 St	North	150	379	111.1	47.5	A	B

Air Quality

The representative criteria pollutant concentrations measured in recent years at NYSDEC air quality monitoring stations nearest to the Project Sites are presented in **Table 05.14-2** (see **Chapter 05.14**).

Noise

The noise monitoring results for existing conditions are shown in **Table 05.16-8** (see **Chapter 05.16**).

G. ENVIRONMENTAL EFFECTS

As with the development of any large project area, construction of the Proposed Project may be disruptive to the adjacent areas (including with the Project Sites) for limited periods of time. While the anticipated construction schedule has been developed by an experienced New York City construction manager, the discussion provided in this chapter is only illustrative. Specific means and methods will be chosen at the time of construction as there are no specific construction programs or finalized designs for the Proposed Project at this time. The conceptual schedule represents a conservative potential timeline for construction with overlapping construction activities and the simultaneous operation of construction equipment.

Similar to many development projects in NYC, construction can cause temporary disruption to the surrounding area throughout the construction period. The following analyses describe potential construction impacts on transportation, air quality, noise and vibration, as well as other technical areas including land use and neighborhood character, socioeconomic conditions, community facilities, open space, historic and cultural resources, hazardous materials, and natural resources.

Transportation

Construction of the Proposed Project under the Rezoning Alternative, Non-Rezoning Alternative, and Midblock Bulk Alternatives would generate trips resulting from arriving and departing construction workers, movement of materials and equipment, and removal of construction waste. As described in the *CTM*, construction activities may affect several elements of the transportation system, including traffic, transit, pedestrians, and parking. A transportation analysis of construction activities is predicated upon the duration, intensity, complexity and/or location of construction activity.

Construction would mostly occur between 7:00 AM and 4:00 PM on weekdays. Construction workers would typically arrive before the typical AM peak commuter period and depart before the PM peak hour, and would therefore not represent a substantial increment during the area's peak travel periods. Truck movements would typically be spread throughout the day on weekdays, and would generally occur between the hours of 6:00 AM and 5:00 PM. Wherever possible, the scheduling of deliveries and other construction activities would take place during off-peak travel hours. The peak hours for project-generated construction vehicular travel demand would occur in the weekday 6:00 to 7:00 AM and 3:00 to 4:00 PM hours.

Construction activities may result in short-term disruption of both traffic and pedestrian movements at the Project Sites. This would occur primarily due to the temporary loss of curbside lanes from the staging of equipment and the movement of materials to and from the sites. Additionally, construction could at times result in temporary or partial closings of sidewalks and streets adjacent to the site particularly along the east-west cross-streets. NYCDOT-OCMC issues permits for any street/sidewalk closures after evaluation of traffic and pedestrian conditions.

Construction workers would use both public transportation and private automobile for personal travel to the Project Sites. To the maximum extent possible, construction workers will be encouraged to avoid driving to the Project Sites reflecting the wide range of public transit services serving the area. In any event, construction worker personal trips mostly occur outside the peak commuting hours in the surrounding street, sidewalk, and transit networks.

Alternative 1 – No-Action Alternative

As discussed above, the peak construction period would occur in the first quarter of 2034 for the Rezoning Alternative and Midblock Bulk Alternative and in the second quarter of 2037 for the Non-Rezoning Alternative. As such, the No-Action Alternative during the construction peak period will assess the analysis year of both 2034 and 2037, where detailed analysis is warranted. In order to forecast future conditions under the No-Action Alternative during the peak construction period, the developments within ½-mile of the Project Sites that were built by the peak construction period from **Table 05.13-18** of **Chapter 05.13** were considered. The future traffic volumes under the No-Action Alternative also reflect annual background growth rates of 0.25 percent per year for the 2023 through 2028 period, and 0.125 percent per year for the 2028 through the peak construction period. These background growth rates, recommended in the *CTM* for projects in Manhattan, is applied to account for smaller projects and as-of-right developments not reflected in **Table 05.13-18** and general increases in travel demand not attributable to specific development projects. Where new developments were found to generate relatively little new vehicular and pedestrian traffic through analyzed locations, demand from these sites was also assumed to be reflected as part of general background growth.

Traffic

Future No-Action Alternative Street Network Changes

NYCDOT is redesigning 9th and 10th Avenues to bring new protected bicycle lanes, to better accommodate micromobility, and to improve safety as part of the Street Improvement Projects (SIPs). As a result, the lane configurations along 10th Avenue will eliminate the rush hour lane and stripe parking protected bicycle lanes. For roads along 10th Avenue that are 60 feet wide, the number of travel lanes would reduce from four in the existing condition to three in the No-Action Alternative. This would include the analyzed traffic intersections along 10th Avenue at W. 17th Street and W. 21st to W. 23rd Streets. Roads along 10th Avenue that are 70 feet wide would continue to have four travel lanes in the No-Action Alternative and under each of the development alternatives. A northbound left turn at 10th Avenue and W. 27th Street is also being proposed, which would remove approximately 4 to 5 parking spaces. The No-Action Alternative traffic analysis also reflects changes to signal timings that will be implemented by NYCDOT in the No-Action Alternative, some of which are signal timings at intersections along 10th Avenue that will be implemented as part of the SIP. It should be noted that most, if not all, of the intersections along 9th Avenue SIP have already been implemented. It should also be noted that the No-Action Alternative traffic analysis reflects that the construction in the existing condition is assumed to be completed by the peak construction period.

Intersection Capacity Analysis

Figures J.1-2a and **J.1-2b** show total traffic volumes under the 2034 No-Action Alternative during the construction AM and PM peak hours, respectively, while **Figures J.1-3a** and **J.1-3b** show total traffic volumes under the 2037 No-Action Alternative during the same periods, respectively. The peak hour v/c ratios, delays and LOS for lane groups at analyzed intersections under both the 2034 and 2037 No-Action Alternatives are shown in **Table 05.19-21**. As shown in **Table 05.19-21**, a total of 13 analyzed signalized intersections would have at least one congested lane group in one or more peak hours in both the 2034 and 2037 No-Action Alternatives, compared to ten signalized intersections under existing conditions. Of the 13 analyzed congested intersections, five intersections are located along the 9th Avenue corridor, one intersection is located along Dyer Avenue, and the remaining seven intersections are located along the 10th Avenue corridor. Intersections with one or more lane groups operating at or over capacity (v/c ≥ 1.0) in both the 2034 and 2037 No-Action Alternatives would total one and seven in the construction AM and peak hours, respectively, compared to one under existing conditions.

Table 05.19-21: No-Action Alternative Traffic Levels of Service During the Construction Peak Hours

			Existing AM			2034 No-Action Alternative AM			2037 No-Action Alternative AM			Existing PM			2034 No-Action Alternative PM			2037 No-Action Alternative PM		
Intersection	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS
W.30th St (EB) & 10th Ave (NB)	EB	L	0.26	47.4	D	0.44	26.1	C	0.44	26.1	C	0.63	60.0	E *	2.18	568.5	F *	2.18	568.5	F *
	EB	T	0.55	56.4	E *	0.65	32.6	C	0.66	32.7	C	0.41	51.4	D	1.25	159.0	F *	1.25	159.0	F *
	NB	TR	0.36	10.8	B	0.45	8.0	A	0.45	8.0	A	0.55	11.4	B	0.77	10.9	B	0.77	10.9	B
W.29th St (WB) & 10th Ave (NB)	WB	T	0.33	57.4	E *	0.47	26.2	C	0.47	26.3	C	0.32	71.9	E *	0.73	36.5	D	0.73	36.6	D
	WB	R	0.37	59.1	E *	0.39	24.8	C	0.39	24.9	C	0.66	87.1	F *	1.00	54.7	D *	1.00	54.6	D *
	NB	LT	0.32	5.8	A	-	-	-	-	-	-	0.51	5.9	A	-	-	-	-	-	-
	NB	L	-	-	-	0.36	25.2	C	0.36	25.2	C	-	-	-	0.39	20.8	C	0.39	20.8	C
	NB	T	-	-	-	0.33	2.9	A	0.33	2.9	A	-	-	-	0.60	3.0	A	0.60	2.9	A
W.28th St (EB) & 10th Ave (NB)	EB	LT	0.26	47.1	D	0.31	25.9	C	0.31	25.9	C	0.54	54.4	D	0.72	36.6	D	0.72	36.7	D
	NB	TR	0.30	2.4	A	0.33	0.4	A	0.33	0.4	A	0.51	3.7	A	0.64	1.9	A	0.64	1.9	A
W.27th St (WB) & 10th Ave (NB)	WB	TR	0.01	42.2	D	0.01	19.4	B	0.01	19.4	B	0.01	42.2	D	0.01	19.4	B	0.01	19.4	B
	NB	LT	0.35	3.0	A	-	-	-	-	-	-	0.63	4.4	A	-	-	-	-	-	-
	NB	L	-	-	-	0.27	16.9	B	0.27	16.8	B	-	-	-	1.03	67.0	E *	1.04	69.2	E *
	NB	T	-	-	-	0.35	2.2	A	0.35	2.2	A	-	-	-	0.60	3.2	A	0.60	3.3	A
W.26th St (EB) & 10th Ave (NB)	EB	LT	0.38	50.6	D	0.36	24.3	C	0.36	24.4	C	0.81	73.2	E *	0.88	50.5	D	0.88	51.2	D
	NB	TR	0.36	9.4	A	0.44	5.2	A	0.44	5.2	A	0.58	13.1	B	0.81	9.1	A	0.81	9.1	A
W.25th St (WB) & 10th Ave (NB)	WB	TR	0.33	48.1	D	0.43	18.2	B	0.43	18.1	B	0.98	72.3	E *	1.13	97.7	F *	1.13	98.5	F *
	NB	LT	0.33	3.5	A	0.40	2.0	A	0.40	2.0	A	0.51	6.8	A	0.72	4.9	A	0.72	5.0	A
W.24th St (EB) & 10th Ave (NB)	EB	LT	0.27	47.1	D	0.26	22.2	C	0.26	22.2	C	0.63	57.9	E *	0.62	29.2	C	0.62	29.3	C
	NB	TR	0.31	11.2	B	0.41	7.3	A	0.41	7.3	A	0.50	11.4	B	0.73	34.4	C	0.73	34.4	C
W.23rd St (E-W) & 10th Ave (NB)	EB	LT	0.33	20.3	C	0.41	21.7	C	0.41	21.7	C	0.71	32.1	C	1.59	308.7	F *	1.59	311.4	F *
	WB	TR	0.49	24.5	C	0.54	25.2	C	0.54	25.2	C	1.04	103.5	F *	1.35	183.9	F *	1.35	186.4	F *
	NB	LTR	0.37	3.4	A	0.47	1.8	A	0.47	1.8	A	0.67	9.2	A	0.92	45.6	D *	0.92	45.8	D *
W.22nd St (EB) & 10th Ave (NB)	NB	LTR	0.35	13.0	B	0.46	8.4	A	0.46	8.4	A	0.64	10.2	B	0.88	11.3	B	0.88	11.6	B
W.21st St (E-W) & 10th Ave (NB)	EB	L	0.07	43.2	D	0.06	20.0	C	0.06	20.0	C	0.28	47.5	D	0.24	22.1	C	0.24	22.1	C
	WB	R	0.37	50.4	D	0.34	24.1	C	0.34	24.2	C	0.15	45.2	D	0.13	21.0	C	0.14	21.1	C
	NB	T	0.26	4.4	A	0.38	1.3	A	0.38	1.3	A	0.49	8.5	A	0.78	5.4	A	0.78	5.5	A
W.20th St & 10th Ave (NB)	NB	LTR	0.41	17.6	B	0.40	4.5	A	0.41	4.5	A	0.93	38.4	D *	0.95	14.0	B *	0.96	14.4	B *
W.19th St & 10th Ave (NB)	EB	L	0.04	33.6	C	0.09	31.5	C	0.09	31.5	C	0.06	33.9	C	0.12	32.0	C	0.12	32.0	C
	WB	R	0.19	63.2	E *	0.25	47.4	D	0.25	47.4	D	0.84	43.1	D	0.89	40.5	D	0.89	40.7	D
	NB	T	0.31	3.7	A	0.41	5.4	A	0.41	5.3	A	0.61	3.6	A	0.88	10.4	B	0.88	10.4	B
W.18th St (EB) & 10th Ave (NB)	EB	L	-	-	-	0.10	20.5	C	0.10	20.5	C	-	-	-	0.13	21.0	C	0.13	21.0	C
	EB	T	-	-	-	0.39	25.2	C	0.39	25.2	C	-	-	-	0.41	25.4	C	0.41	25.3	C
	EB	LT	0.53	56.1	E *	-	-	-	-	-	-	0.45	52.6	D	-	-	-	-	-	-
	NB	TR	0.36	10.7	B	0.41	5.7	A	0.42	5.7	A	0.67	19.2	B	0.83	11.5	B	0.83	11.6	B
W.17th St (WB) & 10th Ave (NB)	WB	TR	0.34	33.7	C	0.34	16.1	B	0.34	16.2	B	0.87	83.1	F *	0.95	55.1	E *	0.96	55.6	E *
	NB	LT	0.25	26.5	C	0.36	17.7	B	0.36	17.7	B	0.43	29.8	C	0.69	22.8	C	0.69	22.8	C

Table 05.19-21 (continued): No-Action Alternative Traffic Levels of Service During the Construction Peak Hours

Intersection	Approach	Lane Group	Existing AM V/C Ratio	Existing AM Delay (sec/veh)	Existing AM LOS	2034 No-Action Alternative AM V/C Ratio	2034 No-Action Alternative AM Delay (sec/veh)	2034 No-Action Alternative AM LOS	2037 No-Action Alternative AM V/C Ratio	2037 No-Action Alternative AM Delay (sec/veh)	2037 No-Action Alternative AM LOS	Existing PM V/C Ratio	Existing PM Delay (sec/veh)	Existing PM LOS	2034 No-Action Alternative PM V/C Ratio	2034 No-Action Alternative PM Delay (sec/veh)	2034 No-Action Alternative PM LOS	2037 No-Action Alternative PM V/C Ratio	2037 No-Action Alternative PM Delay (sec/veh)	2037 No-Action Alternative PM LOS
W.31st St (WB) &	WB	LTR	0.24	17.1	B	0.28	15.1	B	0.28	15.1	B	0.59	27.6	C	1.08	71.5	E *	1.08	72.4	E *
Dyer Ave (NB)	NB	LT	0.10	24.0	C	0.11	26.1	C	0.11	26.0	C	0.22	0.9	A	0.24	9.1	A	0.24	9.1	A
Lincoln Exit (SB)	SB	TR	0.22	8.6	A	0.25	9.3	A	0.25	9.3	A	0.12	7.9	A	0.20	8.8	A	0.20	8.8	A
W.30th St (E-W) &	EB	T	0.10	5.4	A	0.12	6.4	A	0.12	6.4	A	0.38	18.9	B	0.26	16.1	B	0.26	16.2	B
Dyer Ave (SB)	WB	T	0.01	0.0	A	0.02	7.5	A	0.02	7.5	A	0.03	0.0	A	0.08	18.2	B	0.08	18.2	B
	SB	T	0.37	15.6	B	0.37	12.2	B	0.37	12.2	B	0.20	30.6	C	0.32	22.5	C	0.32	22.5	C
W.30th St (EB) &	EB	T	0.46	14.4	B	0.58	20.4	C	0.58	20.4	C	0.24	21.7	C	0.81	39.0	D	0.81	39.0	D
9th Ave (SB)	EB	R	0.52	16.4	B	0.54	20.5	C	0.54	20.6	C	0.47	25.9	C	0.79	41.9	D	0.79	41.9	D
	SB	LT	0.56	5.7	A	0.73	12.5	B	0.73	12.5	B	0.45	3.9	A	0.53	4.6	A	0.54	4.6	A
W.29th St (WB) &	WB	L	0.10	19.1	B	0.38	23.2	C	0.38	23.2	C	0.23	20.7	C	0.74	34.9	C	0.74	34.9	C
9th Ave (SB)	WB	T	0.29	21.7	C	0.44	24.4	C	0.44	24.4	C	0.62	29.3	C	1.20	138.6	F *	1.21	139.5	F *
	SB	TR	0.70	16.2	B	0.76	14.6	B	0.76	14.7	B	0.54	12.3	B	0.70	17.4	B	0.70	17.4	B
W.28th St (EB) &	EB	TR	0.20	33.2	C	0.24	33.0	C	0.24	33.0	C	0.57	23.8	C	0.77	26.3	C	0.77	26.4	C
9th Ave (SB)	SB	L	0.28	21.1	C	0.31	25.5	C	0.31	25.4	C	0.26	26.4	C	0.33	29.6	C	0.33	29.5	C
	SB	T	0.44	1.9	A	0.52	6.2	A	0.52	6.2	A	0.38	4.5	A	0.54	9.4	A	0.54	9.4	A
W.26th St (EB) &	EB	T	0.30	23.4	C	0.31	21.3	C	0.31	21.3	C	0.53	22.3	C	0.58	25.6	C	0.59	25.7	C
9th Ave (SB)	EB	R	0.22	23.2	C	0.22	20.9	C	0.22	20.9	C	0.42	21.6	C	0.47	25.1	C	0.47	25.1	C
	SB	L	0.42	21.3	C	0.46	22.3	C	0.46	22.3	C	0.29	22.7	C	0.34	20.5	C	0.34	20.5	C
	SB	T	0.44	1.8	A	0.54	1.9	A	0.54	1.9	A	0.43	3.9	A	0.61	4.3	A	0.61	4.3	A
W.25th St (WB) &	WB	LT	0.18	18.1	B	0.18	18.2	B	0.18	18.2	B	0.75	31.9	C	0.79	34.2	C	0.79	34.3	C
9th Ave (SB)	SB	TR	0.59	4.6	A	0.72	6.0	A	0.72	6.1	A	0.62	8.4	A	0.91	15.1	B *	0.91	15.3	B *
W.23rd St (E-W) &	EB	T	0.41	28.5	C	0.43	28.0	C	0.43	27.9	C	0.68	33.1	C	0.82	29.2	C	0.82	29.2	C
9th Ave (SB)	EB	R	0.11	23.4	C	0.11	22.4	C	0.12	22.4	C	0.47	31.0	C	0.48	24.9	C	0.48	24.9	C
	WB	T	0.20	25.5	C	0.22	25.8	C	0.23	25.8	C	0.52	30.2	C	0.65	33.4	C	0.65	33.4	C
	SB	L	1.01	102.9	F *	1.04	112.6	F *	1.05	114.0	F *	0.62	48.7	D	0.70	53.8	D	0.70	53.8	D
	SB	TR	0.40	13.8	B	0.47	14.5	B	0.47	14.6	B	0.48	14.6	B	0.61	16.4	B	0.61	16.5	B
W.19th St (WB) &	WB	LT	0.23	24.3	C	0.23	24.4	C	0.23	24.4	C	0.86	48.8	D	0.90	53.8	D *	0.90	54.1	D *
9th Ave (SB)	SB	TR	0.35	14.2	B	0.40	15.3	B	0.40	15.3	B	0.51	16.1	B	0.61	18.3	B	0.61	18.3	B
W.18th St (EB) &	EB	TR	0.51	20.7	C	0.55	22.9	C	0.55	22.9	C	0.54	33.2	C	0.64	38.1	D	0.64	38.3	D
9th Ave (SB)	SB	L	0.26	20.8	C	0.27	20.5	C	0.27	20.5	C	0.40	22.6	C	0.41	20.7	C	0.41	20.8	C
	SB	T	0.30	2.3	A	0.34	2.3	A	0.34	2.3	A	0.42	3.4	A	0.53	3.2	A	0.53	3.2	A
W.17th St (WB) &	WB	LT	0.17	23.5	C	0.18	23.7	C	0.18	23.7	C	0.85	48.8	D	0.91	57.0	E *	0.92	57.8	E *
9th Ave (SB)	SB	TR	0.36	4.8	A	0.42	5.4	A	0.42	5.4	A	0.55	6.6	A	0.70	8.7	A	0.70	8.7	A

Notes:
EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L - left, T - through, R - right, DefL - Analysis considers a defacto left-turn lane on this approach
V/C ratio - volume-to-capacity ratio
Sec/veh - seconds per vehicle
LOS - level of service
* - Denotes a congested movement (LOS E or F, or v/c ratio greater than or equal to 0.9)
Analysis is based on the 2000 Highway Capacity Manual methodology (Synchro 11)

Pedestrians

Sidewalks

Table 05.19-22 shows the peak hour pedestrian volumes, average pedestrian space, and platoon-adjusted LOS at the analyzed sidewalks under the 2034 and 2037 No-Action Alternative. As shown in **Table 05.19-22**, under both No-Action Alternatives, the analyzed sidewalks are expected to operate at an uncongested LOS C or better in all analyzed construction peak hours with the exception of two sidewalks during the construction PM peak hour.

Table 05.19-22: No-Action Alternative Sidewalk Conditions During the Construction Peak Hours

Location	Effective Width (ft)	2034 No-Action Alternative						2037 No-Action Alternative					
		Peak Hour Volumes		Average Pedestrian Space (ft^2/ped)		Platoon-Adjusted Level of Service		Peak Hour Volumes		Average Pedestrian Space (ft^2/ped)		Platoon-Adjusted Level of Service	
		AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
South sidewalk along W 27 Dr btw 10 Ave & W 27 Dr	2.0	12	78	752.4	267.9	A	B	12	78	752.4	267.9	A	B
West sidewalk along W 27 Dr btw W 26 St & W 27 Dr	2.0	12	76	752.4	275.0	A	B	12	76	752.4	275.0	A	B
North sidewalk along W 25 St btw 8 Ave & 9 Ave	5.0	119	844	434.2	46.5	B	C	120	845	430.6	46.4	B	C
West sidewalk along 9 Ave btw W 17 St & W 18 St	4.0	80	499	504.8	83.4	B	C	80	500	504.8	83.3	B	C
North sidewalk along W 17 St btw 9 Ave & 10 Ave	1.0	130	457	81.9	22.9	C	E	130	458	81.9	22.9	C	E
North sidewalk along W 16 St btw 8 Ave & 9 Ave	1.0	181	622	42.6	13.1	C	E	181	625	42.6	13.0	C	E

Crosswalks

Table 05.19-23 shows the peak hour volumes, average pedestrian space, and LOS at the analyzed crosswalk under the 2034 No-Action Alternative. As shown in **Table 05.19-23**, the analyzed crosswalks are expected to operate at an acceptable LOS C or better in all analyzed construction peak hours. It should be noted that a detailed crosswalk analysis is only analyzed under the Rezoning Alternative and no crosswalks were selected for detailed analysis under the Non-Rezoning Alternative, where the selection of detailed crosswalk analysis is discussed below. Therefore, the No-Action Alternative for the crosswalk conditions only examines the 2034 analysis year.

Table 05.19-23: 2034 No-Action Alternative Crosswalk Conditions During the Construction Peak Hours

Intersection	Crosswalk	Peak Hour Volumes		Average Pedestrian Space (ft^2/ped)		Level of Service	
		AM	PM	AM	PM	AM	PM
9 Ave & W 25 St	North	93	713	246.5	30.8	A	C
8 Ave & W 25 St	North	175	690	94.4	24.9	A	C

Alternative 2 – Rezoning Alternative

Peak Hour Construction Worker Vehicle and Truck Trips

As discussed above, average daily on-site construction workers and trucks were forecast for new construction anticipated on each of the sites in the Project Sites under the Rezoning Alternative. (Although some construction workers and trucks would be present in the No-Action Alternative, for conservative analysis purposes, no credit was taken for these trips.) As shown in **Table 05.19-5c**, the average number of workers would peak at an estimated 960 per day in the first quarter of 2034, and the average number of trucks per day would peak at an estimated 223 during this same period. These represent peak days of work, and most other days during the construction period would have substantially fewer construction workers and trucks on-site. Overall, the first quarter of 2034 is expected to be the peak period for total construction travel demand (worker trips and truck trips combined). An assessment of traffic generated during this peak construction period is presented below. **Table 05.19-24** shows a forecast of incremental hourly construction worker auto and construction truck trips during the peak construction period.

As shown in **Table 05.19-24**, in the peak construction period, construction-related traffic is expected to peak during the AM and PM construction peak hours. During the AM construction peak hour, there would be a total of 506 PCE vehicle trips, including 384 inbound trips and 122 outbound trips. During the PM construction peak hour there would be a total of 302 PCE trips, including 20 inbound trips and 282 outbound trips. During these same peak hours there would also be a net increase in operational vehicle trips from completed development on projected development sites (Fulton New 1 to 3 and E-C New 1 to 3). Operational traffic would total approximately 116 PCE trips (45 inbound and 71 outbound) during the AM construction peak hour, and 189 PCE trips (109 inbound and 80 outbound) in the PM construction peak hour. Therefore, as shown in **Table 05.19-25**, peak construction period, the increase in traffic (construction plus operational) during the AM and PM construction peak hours would total approximately 622 and 491 PCE trips, respectively.

Table 05.19-24: 2034 (Q1) Rezoning Alternative Peak Incremental Construction Vehicle Trip Projections (in PCEs)

Hour	Auto Trips					Taxi Trips					Truck Trips					Total Vehicle Trips		
	In		Out			In		Out			In		Out					
	%	#	%	#	Total	%	#	%	#	Total	%	#	%	#	Total	In	Out	Total
6–7 AM	80%	262	0%	0	262	80%	9	0%	9	18	25%	113	25%	113	226	384	122	506
7–8 AM	20%	65	0%	0	65	20%	2	0%	2	4	10%	45	10%	45	90	112	47	159
8–9 AM	0%	0	0%	0	0	0%	0	0%	0	0	10%	45	10%	45	90	45	45	90
9–10 AM	0%	0	0%	0	0	0%	0	0%	0	0	10%	45	10%	45	90	45	45	90
10–11 AM	0%	0	0%	0	0	0%	0	0%	0	0	10%	45	10%	45	90	45	45	90
11 AM–12 PM	0%	0	0%	0	0	0%	0	0%	0	0	10%	45	10%	45	90	45	45	90
12–1 PM	0%	0	0%	0	0	0%	0	0%	0	0	10%	45	10%	45	90	45	45	90
1–2 PM	0%	0	0%	0	0	0%	0	0%	0	0	5%	21	5%	21	42	21	21	42
2–3 PM	0%	0	5%	16	16	0%	0	5%	0	0	5%	21	5%	21	42	21	37	58
3–4 PM	0%	0	80%	262	262	0%	9	80%	9	18	2.5%	11	2.5%	11	22	20	282	302
4–5 PM	0%	0	15%	49	49	0%	2	15%	2	4	2.5%	11	2.5%	11	22	13	62	75
5–6 PM	0%	0	0%	0	0	0%	0	0%	0	0	0%	0	0%	0	0	0	0	0

Table 05.19-25: 2034 (Q1) Rezoning Alternative Peak Incremental Constructional and Operational Vehicle Trip Projections (in PCEs)

	Construction Trips				Operational Trips				Total Construction + Operational Trips
	Auto	Taxi	Truck	Total	Auto	Taxi	Truck	Total	
6 AM–7 AM	262	18	226	506	58	48	10	116	622
3 PM–4 PM	262	18	22	302	113	72	0	189	491

Traffic

Figures J.1-4a and **J.1-4b** show the assignment of the 2034 operational and construction vehicle trips to the study area street network in the AM and PM construction peak hours under Rezoning Alternative, respectively. Operational auto, taxi, and truck trips were assigned to the study area street network based on the assignment methodology described in detail in the *Transportation Planning Factors and Travel Demand Forecast (TPF/TDF) Technical Memorandum* included in **Appendix H.1**. The origins/destinations (O-D) for construction worker trips were based on the 2012–2016 American Community Survey (ACS) 5-year reverse journey-to-work data presented in **Table H.1-8** in the *TPF/TDF Technical Memorandum* in **Appendix H.1**. Based on the O-D data, construction worker auto and taxi trips were first assigned to various portals on the periphery of Chelsea, and from there via the most direct route to the Project Sites. Construction truck trips were assigned to Lincoln Tunnel and West Street/11th Avenue, which are the primary DOT-designated Through Truck Routes in proximity to the Project Sites, and to 7th to 11th Avenues, W. 14th Street, W. 23rd Street, W. 30th Street, and W. 31st Street, which are DOT-designated Local Truck Routes.

The construction worker auto trips were assumed to park at off-street public facilities within a ¼-mile of the Project Sites and were assigned to the nearby off-street public parking facilities. As shown in **Figures J.1-4a** and **J.1-4b**, all 25 intersections in the operational traffic study area would experience a net incremental increase of 50 or more PCEs during the AM and/or PM construction peak hours and were selected for detailed construction traffic analysis. These intersections and the construction peak hour during which they would experience 50 or more PCE trips are listed below. The * denotes an intersection significantly adversely impacted by operational traffic in the AM and/or PM operational peak hours.

Signalized Intersections:

1. 9th Avenue and W. 17th Street* – AM/PM
2. 9th Avenue and W. 18th Street* – AM/PM
3. 9th Avenue and W. 19th Street* – AM
4. 9th Avenue and W. 23rd Street – AM
5. 9th Avenue and W. 25th Street* – AM/PM
6. 9th Avenue and W. 26th Street* – AM/PM
7. 9th Avenue and W. 28th Street – AM
8. 9th Avenue and W. 29th Street* – AM/PM
9. 9th Avenue and W. 30th Street – AM
10. 10th Avenue and W. 17th Street* – AM/PM
11. 10th Avenue and W. 18th Street – AM/PM
12. 10th Avenue and W. 19th Street – AM/PM

13. 10th Avenue and W. 20th Street – AM/PM
14. 10th Avenue and W. 21st Street – AM/PM
15. 10th Avenue and W. 22nd Street – AM/PM
16. 10th Avenue and W. 23rd Street* – AM/PM
17. 10th Avenue and W. 24th Street – AM/PM
18. 10th Avenue and W. 25th Street* – AM/PM
19. 10th Avenue and W. 26th Street* – AM/PM
20. 10th Avenue and W. 27th Street – AM/PM
21. 10th Avenue and W. 28th Street – AM/PM
22. 10th Avenue and W. 29th Street – AM/PM
23. 10th Avenue and W. 30th Street – AM/PM
24. Dyer Avenue and W. 30th Street – AM/PM
25. Dyer Avenue and W. 31st Steet – AM/PM

The vehicle trips by construction workers and trucks along with operational vehicle trips from completed portions of the Rezoning Alternative's RWCDS in the first quarter of 2034 (shown in **Figures J.1-4a** and **J.1-4b**) were added to the 2034 No-Action Alternative (shown in **Figures J.1-2a** and **J.1-2b**) to establish the 2034 Rezoning Alternative (construction) traffic network shown in **Figures J.1-5a** and **J.1-5b**. The volume-to-capacity (v/c) ratios, delays, and levels of service at analyzed intersections during the construction peak periods under the Rezoning Alternative are provided in **Table 05.19-26**. As shown in **Table 05.19-26**, a total of 17 analyzed intersections (all signalized) are expected to have at least one congested lane group in one or both of the construction peak hours in the Rezoning Alternative compared to 13 under 2034 No-Action Alternative. Intersections with one or more lane groups operating at or over capacity (v/c ≥ 1.0) in the Rezoning Alternative would total one and ten in the AM and PM construction peak hours, respectively, compared to one and seven, respectively, under 2034 No-Action Alternative.

The construction traffic impact analysis indicates the potential for significant adverse impacts at six intersections (all signalized) during one or both analyzed construction peak hours in the first quarter of 2034. Significant adverse impacts were identified to one lane group at one intersection during the AM construction peak hour, and five lane groups at five intersections during the PM construction peak hour. Potential measures to mitigate the significant adverse traffic impacts identified in **Table 05.19-26** are discussed in **Section H**.

Table 05.19-26: 2034 (Q1) No-Action and Rezoning Alternatives Traffic Levels of Service During Construction Peak Hours

Intersection	Approach	Lane Group	2034 No-Action Alternative AM			2034 Rezoning Alternative AM			2034 No-Action Alternative PM			2034 Rezoning Alternative PM		
			V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS
W.30th St (EB) &	EB	L	0.44	26.1	C	0.44	26.1	C	2.18	568.5	F	2.18	568.5	F
10th Ave (NB)	EB	T	0.65	32.6	C	0.65	32.6	C	1.25	159.0	F	1.25	159.0	F
	NB	TR	0.45	8.0	A	0.49	7.7	A	0.77	10.9	B	0.82	12.2	B
W.29th St (WB) &	WB	T	0.47	26.2	C	0.47	25.6	C	0.73	36.5	D	0.83	39.3	D
10th Ave (NB)	WB	R	0.39	24.8	C	0.39	24.2	C	1.00	54.7	D	1.10	90.8	F *
	NB	L	0.36	25.2	C	0.36	23.9	C	0.39	20.8	C	0.39	20.3	C
	NB	T	0.33	2.9	A	0.36	2.7	A	0.60	3.0	A	0.63	3.0	A
W.28th St (EB) &	EB	LT	0.31	25.9	C	0.32	26.2	C	0.72	36.6	D	0.72	36.6	D
10th Ave (NB)	NB	TR	0.33	0.4	A	0.36	0.4	A	0.64	1.9	A	0.67	2.0	A
W.27th St (WB) &	WB	TR	0.01	19.4	B	0.01	19.4	B	0.01	19.4	B	0.01	19.4	B
10th Ave (NB)	NB	L	0.27	16.9	B	0.28	15.3	B	1.03	67.0	E	1.05	67.6	E
	NB	T	0.35	2.2	A	0.39	2.1	A	0.60	3.2	A	0.63	3.8	A
W.26th St (EB) &	EB	LT	0.36	24.3	C	0.47	26.6	C	0.88	50.5	D	0.90	53.0	D
10th Ave (NB)	NB	TR	0.44	5.2	A	0.54	6.7	A	0.81	9.1	A	0.86	10.3	B
W.25th St (WB) &	WB	TR	0.43	18.2	B	0.52	17.0	B	1.13	97.7	F	1.18	115.3	F *
10th Ave (NB)	NB	LT	0.40	2.0	A	0.47	2.1	A	0.72	4.9	A	0.75	5.1	A
W.24th St (EB) &	EB	LT	0.26	22.2	C	0.26	22.2	C	0.62	29.2	C	0.62	29.2	C
10th Ave (NB)	NB	TR	0.41	7.3	A	0.47	8.8	A	0.73	34.4	C	0.76	35.2	D
W.23rd St (E-W) &	EB	LT	0.41	21.7	C	0.45	22.6	C	1.59	308.7	F	1.59	311.4	F
10th Ave (NB)	WB	TR	0.54	25.2	C	0.72	31.3	C	1.35	183.9	F	1.35	185.0	F
	NB	LTR	0.47	1.8	A	0.52	2.0	A	0.92	45.6	D	0.97	49.2	D
W.22nd St & 10th Ave (NB)	NB	LTR	0.46	8.4	A	0.50	8.0	A	0.88	11.3	B	0.92	13.1	B
W.21st St (E-W) &	EB	L	0.06	20.0	C	0.06	20.0	C	0.24	22.1	C	0.24	22.1	C
10th Ave (NB)	WB	R	0.34	24.1	C	0.34	24.1	C	0.13	21.0	C	0.13	21.0	C
	NB	T	0.38	1.3	A	0.43	1.4	A	0.78	5.4	A	0.82	6.4	A
W.20th St &	NB	LTR	0.40	4.5	A	0.45	4.4	A	0.95	14.0	B	1.00	19.8	B
10th Ave (NB)														
W.19th St &	EB	L	0.09	31.5	C	0.09	31.5	C	0.12	32.0	C	0.12	32.1	C
10th Ave (NB)	WB	R	0.25	47.4	D	0.26	47.5	D	0.89	40.5	D	0.91	41.8	D
	NB	T	0.41	5.4	A	0.46	5.1	A	0.88	10.4	B	0.92	12.4	B
W.18th St (EB) &	EB	L	0.10	20.5	C	0.10	20.5	C	0.13	21.0	C	0.13	21.0	C
10th Ave (NB)	EB	T	0.39	25.2	C	0.50	27.6	C	0.41	25.4	C	0.47	26.6	C
	NB	TR	0.41	5.7	A	0.48	8.3	A	0.83	11.5	B	0.90	14.6	B
W.17th St (WB) &	WB	TR	0.34	16.1	B	0.52	17.7	B	0.95	55.1	E	1.14	108.7	F *
10th Ave (NB)	NB	LT	0.36	17.7	B	0.38	18.0	B	0.69	22.8	C	0.72	23.5	C
W.31st St (WB) &	WB	LTR	0.28	15.1	B	0.28	15.2	B	1.08	71.5	E	1.08	71.5	E
Dyer Ave (NB)	NB	LT	0.11	26.1	C	0.13	26.0	C	0.24	9.1	A	0.29	9.5	A
Lincoln Exit (SB)	SB	TR	0.25	9.3	A	0.30	9.7	A	0.20	8.8	A	0.21	8.9	A
W.30th St (E-W) &	EB	T	0.12	6.4	A	0.14	7.4	A	0.26	16.1	B	0.32	16.3	B
Dyer Ave (SB)	WB	T	0.02	7.5	A	0.02	7.5	A	0.08	18.2	B	0.08	18.2	B
	SB	T	0.37	12.2	B	0.45	12.9	B	0.32	22.5	C	0.34	22.8	C
W.30th St (EB) &	EB	T	0.58	20.4	C	0.60	22.2	C	0.81	39.0	D	0.81	39.1	D
9th Ave (SB)	EB	R	0.54	20.5	C	0.72	27.6	C	0.79	41.9	D	0.86	46.8	D
	SB	LT	0.73	12.5	B	0.75	13.4	B	0.53	4.6	A	0.54	4.6	A

Table 05.19-26 (continued): 2034 (Q1) No-Action and Rezoning Alternatives Traffic Levels of Service During Construction Peak Hours

			2034 No-Action Alternative AM			2034 Rezoning Alternative AM			2034 No-Action Alternative PM			2034 Rezoning Alternative PM		
Intersection	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS
W.29th St (WB) & 9th Ave (SB)	WB	L	0.38	23.2	C	0.38	23.3	C	0.74	34.9	C	0.75	35.6	D
	WB	T	0.44	24.4	C	0.44	24.4	C	1.20	138.6	F	1.38	213.9	F *
	SB	TR	0.76	14.6	B	0.83	18.4	B	0.70	17.4	B	0.72	18.2	B
W.28th St (EB) & 9th Ave (SB)	EB	TR	0.24	33.0	C	0.26	33.6	C	0.77	26.3	C	0.79	27.7	C
	SB	L	0.31	25.5	C	0.31	23.5	C	0.33	29.6	C	0.33	29.0	C
	SB	T	0.52	6.2	A	0.58	5.8	A	0.54	9.4	A	0.55	9.3	A
W.26th St (EB) & 9th Ave (SB)	EB	T	0.31	21.3	C	0.59	31.0	C	0.58	25.6	C	0.61	27.0	C
	EB	R	0.22	20.9	C	0.31	26.4	C	0.47	25.1	C	0.56	29.4	C
	SB	L	0.46	22.3	C	0.61	26.2	C	0.34	20.5	C	0.34	20.2	C
	SB	T	0.54	1.9	A	0.59	2.2	A	0.61	4.3	A	0.62	4.3	A
W.25th St (WB) & 9th Ave (SB)	WB	LT	0.18	18.2	B	0.18	18.2	B	0.79	34.2	C	0.81	35.6	D
	SB	TR	0.72	6.0	A	0.82	9.6	A	0.91	15.1	B	0.95	18.9	B
W.23rd St (E-W) & 9th Ave (SB)	EB	T	0.43	28.0	C	0.46	28.0	C	0.82	29.2	C	0.82	29.5	C
	EB	R	0.11	22.4	C	0.15	22.8	C	0.48	24.9	C	0.48	25.1	C
	WB	T	0.22	25.8	C	0.30	26.7	C	0.65	33.4	C	0.65	33.4	C
	SB	L	1.04	112.6	F	1.08	122.9	F *	0.70	53.8	D	0.70	53.8	D
	SB	TR	0.47	14.5	B	0.52	15.2	B	0.61	16.4	B	0.62	16.8	B
W.19th St (WB) & 9th Ave (SB)	WB	LT	0.23	24.4	C	0.26	24.7	C	0.90	53.8	D	0.92	58.4	E
	SB	TR	0.40	15.3	B	0.45	15.9	B	0.61	18.3	B	0.63	18.6	B
W.18th St (EB) & 9th Ave (SB)	EB	TR	0.55	22.9	C	0.78	33.1	C	0.64	38.1	D	0.77	43.0	D
	SB	L	0.27	20.5	C	0.27	20.1	C	0.41	20.7	C	0.42	20.6	C
	SB	T	0.34	2.3	A	0.39	2.4	A	0.53	3.2	A	0.54	3.2	A
W.17th St (WB) & 9th Ave (SB)	WB	LT	0.18	23.7	C	0.38	27.3	C	0.91	57.0	E	1.03	83.6	F *
	SB	TR	0.42	5.4	A	0.54	8.7	A	0.70	8.7	A	0.77	11.1	B

Notes:
EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L - left, T - through, R - right, DefL - Analysis considers a defacto left-turn lane on this approach
V/C ratio - volume-to-capacity ratio
Sec/veh - seconds per vehicle
LOS - level of service
* - Denotes a impacted movement
Analysis is based on the 2000 Highway Capacity Manual methodology (Synchro 11)

Transit

As previously discussed and shown in **Table 05.19-5c**, in the first quarter of 2034 for construction travel demand, there would be a net increase of approximately 960 construction workers traveling to and from the Project Sites each day under the Rezoning Alternative. Approximately 56.2 percent of these construction workers are expected to travel to and from the Project Sites by public transit (45.1 percent by subway and 11.1 percent by bus). The Project Sites are located in a neighborhood that is well served by public transportation, with a total of seven subway stations and five bus routes located in the vicinity.

As noted above, it is estimated that approximately 80 percent of all construction workers would arrive and depart in the peak hour before and after each shift. Therefore, in the peak construction period, construction worker travel demand is expected to generate a total of approximately 432 transit trips (346 by subway and 86 by bus) in each of the AM and PM peak hours. During these same construction peak hours there would also be a net increase in operational transit trips from completed development on projected development sites (Fulton New 1 to 3 and E-C New 1 to 3). Operational subway trips would total approximately 528 and 963 in the AM and PM construction peak hours, respectively, while operational bus trips would total approximately 46 and 105 during the same periods, respectively. Therefore, in the peak construction period, the increase in transit demand (construction + operational) during the AM and PM construction peak hours would total approximately 874 and 1,309 subway trips, respectively, and 132 and 191 bus trips respectively.

By comparison, the net increase in operational subway trips with full build-out of the Rezoning Alternative in 2041 would be greater in number, totaling approximately 1,538 and 1,452 trips during the weekday AM and PM commuter peak hours, when overall demand on area subway facilities and services typically peaks. The net increase in operational bus trips in 2041 would also be greater or comparable in number, totaling 170 and 176 trips during the weekday AM and PM commuter peak hours. In addition, the overall demand on transit facilities and services typically peaks during the weekday AM and PM commuter peak hours, which typically generates a greater demand than during the construction AM and PM peak hours. Therefore, peak construction period transit conditions during the AM and PM construction peak hours are expected to be comparable to or generally better than during the analyzed commuter peak hours with full build-out of the Rezoning Alternative in 2041 and is anticipated that there would be no new subway or bus impacts.

Pedestrians

As shown in **Table 05.19-5c** and discussed above, during the peak construction period (first quarter of 2034), it is estimated that there would be approximately 960 construction workers on site daily under the Rezoning Alternative. Most of these workers are expected to arrive and depart the Project Sites on foot, walking to/from nearby subway stations or bus stops (approximately 56.2 percent), or off-street public parking (41.2 percent). A relatively small number (up to 1.3 percent) are expected to walk to or from the Project Sites as their sole mode of travel. (The remaining 1.3 percent are expected to travel by taxi and would not appreciably add to pedestrian demand on area sidewalks.)

As approximately 80 percent of construction worker trips are expected to occur during any one peak hour, incremental travel demand on sidewalks, crosswalks, and corner areas is expected to total approximately 758 trips in each of the AM and PM construction peak hours. These trips would be distributed among the projected development sites that would be under construction in the first quarter of 2034 (Fulton New 4 to 5 and E-C New 4 to 5). During these same peak hours there would also be a net increase of approximately 950 and 2,064 operational pedestrian trips (auto and transit person trips plus walk-only trips) from completed development on projected development sites (Fulton New 1 to 3 and E-C New 1 to 3). Therefore, in the peak construction period, the increase in pedestrian demand (construction and operational) attributable to the Rezoning Alternative during the AM and PM construction peak hours would total approximately 1,708 and 2,822 pedestrian trips, respectively. By comparison, incremental pedestrian trips with full build-out of the Rezoning Alternative in 2041 would be substantially greater in number, totaling 3,471 and 3,805 during the analyzed weekday AM and PM operational peak hours, respectively. Peak construction period pedestrian conditions during the weekday AM and PM construction peak hours are therefore anticipated to be generally better than during the analyzed operational peak hours with full build-out of the Rezoning Alternative in 2041.

In order to determine the potential for the Rezoning Alternative to result in significant adverse pedestrian impacts during the peak construction period, project-generated pedestrian demand (both construction and operational) in the weekday AM and PM construction peak hours was assigned to analyzed pedestrian elements (sidewalks, corner areas and crosswalks). Based on this assignment, a majority of the analyzed pedestrian elements would experience substantially less incremental demand than with full build-out of the Rezoning Alternative in 2041. In addition, only eight pedestrian elements (six sidewalks and two crosswalks) that would be significantly adversely impacted by operational demand under the Rezoning Alternative would experience an incremental increase of 200 or more pedestrian trips in one or both of the construction peak hours in the peak construction period and were selected for detailed construction pedestrian analysis. These pedestrian elements and the construction peak hour during which they would experience 200 or more pedestrian trips are listed below.

Sidewalks:

1. South sidewalk along W. 27th Drive between 10th Avenue and W. 27th Drive – PM
2. West sidewalk along W. 27th Drive between W. 26th Street and W. 27th Drive – PM
3. North sidewalk along W. 25th Street between 8th Avenue and 9th Avenue – AM/PM
4. West sidewalk along 9th Avenue between W. 17th Street and W. 18th Street – AM/PM
5. North sidewalk along W. 17th Street between 9th Avenue and 10th Avenue – AM/PM
6. North sidewalk along W. 16th Street between 8th Avenue and 9th Avenue – AM/PM

Crosswalks:

1. North crosswalk at 9th Avenue and W. 25th Street – AM/PM
2. North crosswalk at 8th Avenue and W. 25th Street – PM

Anticipated conditions at analyzed sidewalks and crosswalks in the future with the Rezoning Alternative during the peak construction period (first quarter of 2034) are shown in **Tables 05.19-27** and **05.19-28.** As discussed below, in the future with the Rezoning Alternative, three sidewalks out of the six analyzed sidewalks and one crosswalk out of the two analyzed crosswalks would be considered significantly adversely impacted in one or both construction peak hours as a result of the Rezoning Alternative during the peak construction period (first quarter of 2034). Potential measures to mitigate these impacts are discussed in **Section H**.

Sidewalks

Table 05.19-27 shows the incremental change in peak hour pedestrian volumes attributable to the Rezoning Alternative and the total Rezoning Alternative pedestrian volumes, average pedestrian space, and platoon-adjusted LOS at the analyzed sidewalks. In addition, **Table 05.19-27** identifies the sidewalks that are expected to be significantly adversely impacted in one or both construction peak hours. As shown in **Table 05.19-27**, there would be significant adverse impacts at three of the six analyzed sidewalks in one or both peak hours. These would include:

- The north sidewalk along W. 25th Street between 8th Avenue and 9th Avenue in the PM construction peak hour;

- The north sidewalk along W. 17th Street between 9th Avenue and 10th Avenue in both the AM and PM construction peak hours; and
- The north sidewalk along W. 16th Street between 8th Avenue and 9th Avenue in both the AM and PM construction peak hours.

Table 05.19-27: 2034 (Q1) Rezoning Alternative Sidewalk Conditions During the Construction Peak Hours

Location	Effective Width (ft)	Project Increment		Peak Hour Volumes		Average Pedestrian Space (ft^2/ped)		Platoon-Adjusted Level of Service	
		AM	PM	AM	PM	AM	PM	AM	PM
South sidewalk along W 27 Dr btw 10 Ave & W 27 Dr	2.0	169	284	181	362	49.3	57.2	C	C
West sidewalk along W 27 Dr btw W 26 St & W 27 Dr	2.0	169	284	181	360	49.3	57.6	C	C
North sidewalk along W 25 St btw 8 Ave & 9 Ave	5.0	243	387	362	1,231	142.5	31.4	B	D *
West sidewalk along 9 Ave btw W 17 St & W 18 St	4.0	395	569	475	1,068	84.7	38.4	C	D
North sidewalk along W 17 St btw 9 Ave & 10 Ave	1.5	497	586	627	1,043	15.3	7.7	E *	F *
North sidewalk along W 16 St btw 8 Ave & 9 Ave	1.0	234	334	415	956	17.3	6.7	E *	F *

Note:
* Denotes a significant impact based on *CTM* criteria.

Crosswalks

Table 05.19-28 shows the incremental change in peak hour pedestrian volumes attributable to the Rezoning Alternative and the total Rezoning Alternative pedestrian volumes, average pedestrian space, and LOS at the analyzed crosswalk. As shown in **Table 05.19-28**, there would be significant adverse impacts at one of the two analyzed crosswalks in the PM construction peak hour – the north crosswalk at 8th Avenue and W. 25th Street.

Table 05.19-28: 2034 (Q1) Rezoning Alternative Crosswalk Conditions During the Construction Peak Hours

Intersection	Crosswalk	Project Increment		Peak Hour Volumes		Average Pedestrian Space (ft^2/ped)		Level of Service	
		AM	PM	AM	PM	AM	PM	AM	PM
9 Ave & W 25 St	North	226	357	319	1,070	69.7	19.9	A	D
8 Ave & W 25 St	North	123	215	298	905	55.4	18.6	B	D *

Note:
* Denotes a significant impact based on *CTM* criteria.

Parking

As shown in **Table 05.19-5c** and discussed above, during the peak construction traffic period (first quarter of 2034), it is estimated that there would be approximately 960 construction workers on site daily, approximately 41.2 percent of whom would be expected to travel to the Project Sites by private auto. Based on an average vehicle occupancy of 1.21 persons per vehicle, the maximum daily parking demand from project site construction workers would total approximately 327 spaces (see **Table 05.19-29**). These workers are assumed to park in off-street public parking facilities in proximity to the Project Sites. In addition, there would also be operational parking demand generated by completed portions of the Rezoning Alternative (i.e., Fulton New 1 to 3 and E-C New 1 to 3). It is estimated that these sites would generate a peak parking demand of approximately 327 spaces during the weekday overnight period. The Project Sites are proposed to provide 96 spaces of on-site accessory parking and is assumed to be completed by the peak construction period. It is assumed that the Section 8 Project-Based Voucher (PBV) dwelling units (DUs) replacing the existing NYCHA DUs use would be the only use allowed to use the on-site accessory parking as the existing NYCHA residents would continue to utilize the on-site accessory parking. Therefore, the parking demand generated by all other uses would have to be accommodated in the surrounding study area. As such, it is estimated that up to 11 spaces of operational parking demand that is generated by all uses other than the Section 8 PBV use would also need to be accommodated in nearby off-street public parking facilities or on-street during the early morning construction worker arrival period in the peak construction period. Therefore, it is estimated that the Rezoning Alternative would generate a total of up to 338 spaces of parking demand at off-street public parking facilities or on-street during the peak construction period. This demand could potentially contribute to, or result in, off-street and on-street parking shortfalls in this period.

Table 05.19-29: 2034 (Q1) Rezoning Alternative Construction Worker Parking Accumulation

Hour	2034 (Q1)		
	In	Out	Accumulation
6–7 AM	262	0	262
7–8 AM	65	0	327
8–9 AM	0	0	327
9–10 AM	0	0	327
10–11 AM	0	0	327
11 AM–12 PM	0	0	327
12–1 PM	0	0	327
1–2 PM	0	0	327
2–3 PM	0	0	327
3–4 PM	0	17	310
4–5 PM	0	270	50
5–6 PM	0	50	0

As discussed in **Chapter 05.13,** under *CTM* guidance, as the Project Sites are located in Parking Zone 1, the inability of the Rezoning Alternative or the surrounding area to accommodate future parking demands would be considered a parking shortfall but would generally not be considered significant due to the magnitude of available alternative modes of transportation. Therefore, should any parking shortfall occur due to incremental demand from construction workers during the first quarter of 2034 peak construction period, it would be short-term and not be considered a significant parking shortfall pursuant to *CTM* guidance.

Alternative 3 – Non-Rezoning Alternative

Peak Hour Construction Worker Vehicle and Truck Trips

As discussed above, average daily on-site construction workers and trucks were forecast for new construction anticipated on each of the sites in the Project Sites under the Non-Rezoning Alternative. (Although some construction workers and trucks would be present in the No-Action

Alternative, for conservative analysis purposes, no credit was taken for these trips.) As shown in **Table 05.19-6c**, the average number of workers would peak at an estimated 813 per day in the fourth quarter of 2037, while the average number of trucks per day would peak at an estimated 208 during the first quarter of 2037. Overall, the second quarter of 2037 is expected experience the largest average travel demand when accounting for both construction worker travel, including personal vehicles, and construction truck trips. An assessment of traffic generated during this peak construction period is presented below. **Table 05.19-30** shows a forecast of incremental hourly construction worker auto and construction truck trips during the peak construction period.

As shown in **Table 05.19-30**, in the peak construction period, construction-related traffic is expected to peak during the AM and PM periods. During the AM construction peak hour, there would be a total of 422 PCE vehicle trips, including 318 inbound trips and 104 outbound trips. During the PM construction peak hour there would be a total of 248 PCE trips, including 17 inbound trips and 231 outbound trips. During these same peak hours there would also be a net increase in operational vehicle trips from completed development on projected development sites (Fulton New 1 to 5 and E-C New 1 to 5). Operational traffic would total approximately 58 PCE trips (23 inbound and 35 outbound) during the AM construction peak hour, and 114 PCE trips (61 inbound and 53 outbound) in the PM construction peak hour. Therefore, as shown in **Table 05.19-31**, peak construction period, the increase in traffic (construction plus operational) during the AM and PM construction peak hours would total approximately 476 and 362 PCE trips, respectively.

Table 05.19-30: 2037 (Q2) Non-Rezoning Alternative Peak Incremental Construction Vehicle Trip Projections (in PCEs)

Hour	Auto Trips					Taxi Trips					Truck Trips					Total Vehicle Trips		
	In		Out			In		Out			In		Out					
	%	#	%	#	Total	%	#	%	#	Total	%	#	%	#	Total	In	Out	Total
6–7 AM	80%	214	0%	0	214	80%	7	0%	7	14	25%	97	25%	97	194	318	104	422
7–8 AM	20%	54	0%	0	54	20%	2	0%	2	4	10%	39	10%	39	78	95	41	136
8–9 AM	0%	0	0%	0	0	0%	0	0%	0	0	10%	39	10%	39	78	39	39	78
9–10 AM	0%	0	0%	0	0	0%	0	0%	0	0	10%	39	10%	39	78	39	39	78
10–11 AM	0%	0	0%	0	0	0%	0	0%	0	0	10%	39	10%	39	78	39	39	78
11 AM–12 PM	0%	0	0%	0	0	0%	0	0%	0	0	10%	39	10%	39	78	39	39	78
12–1 PM	0%	0	0%	0	0	0%	0	0%	0	0	10%	39	10%	39	78	39	39	78
1–2 PM	0%	0	0%	0	0	0%	0	0%	0	0	5%	19	5%	19	38	19	19	38
2–3 PM	0%	0	5%	13	13	0%	0	5%	0	0	5%	19	5%	19	37	19	32	51
3–4 PM	0%	0	80%	214	214	0%	7	80%	7	14	2.5%	10	2.5%	10	20	17	231	248
4–5 PM	0%	0	15%	41	41	0%	2	15%	2	4	2.5%	10	2.5%	10	20	12	53	65
5–6 PM	0%	0	0%	0	0	0%	0	0%	0	0	0%	0	0%	0	0	0	0	0

Table 05.19-31: 2037 (Q1) Non-Rezoning Alternative Peak Incremental Constructional and Operational Vehicle Trip Projections (in PCEs)

	Construction Trips				Operational Trips				Total Construction + Operational Trips
	Auto	Taxi	Truck	Total	Auto	Taxi	Truck	Total	
6 AM–7 AM	214	14	194	422	26	28	4	58	480
3 PM–4 PM	214	14	20	248	58	56	0	114	362

Traffic

Figures J.1-6a and **J.1-6b** show the assignment of the 2037 operational and construction vehicle trips to the study area street network in the AM and PM construction peak hours under Rezoning

Alternative, respectively. Operational auto, taxi, and truck trips were assigned to the study area street network based on the assignment methodology described in detail in the *Transportation Planning Factors and Travel Demand Forecast (TPF/TDF) Technical Memorandum* included in **Appendix H.1**. The origins/destinations (O-D) for construction worker trips were based on the 2012–2016 American Community Survey (ACS) 5-year reverse journey-to-work data presented in **Table H.1-8** in the *TPF/TDF Technical Memorandum* in **Appendix H.1**. Based on the O-D data, construction worker auto and taxi trips were first assigned to various portals on the periphery of Chelsea, and from there via the most direct route to the Project Sites. Construction truck trips were assigned to Lincoln Tunnel and West Street/11th Avenue, which are the primary DOT-designated Through Truck Routes in proximity to the Project Sites, and to 7th to 11th Avenues, W. 14th Street, W. 23rd Street, W. 30th Street, and W. 31st Street, which are DOT-designated Local Truck Routes.

The construction worker auto trips were assumed to park at off-street public facilities within a ¼-mile of the Project Sites and were assigned to the nearby off-street public parking facilities. As shown in **Figures J.1-6a** and **J.1-6b**, all 25 intersections in the operational traffic study area would experience a net incremental increase of 50 or more PCEs during the AM and/or PM construction peak hours and were selected for detailed construction traffic analysis. These intersections and the construction peak hour during which they would experience 50 or more PCE trips are listed below. The * denotes an intersection significantly adversely impacted by operational traffic in the AM and/or PM operational peak hours.)

Signalized Intersections:

3. 9th Avenue and W. 17th Street* – AM
4. 9th Avenue and W. 18th Street* – AM
5. 9th Avenue and W. 19th Street – AM/PM
6. 9th Avenue and W. 23rd Street – AM
7. 9th Avenue and W. 25th Street* – AM
8. 9th Avenue and W. 26th Street* – AM
9. 9th Avenue and W. 28th Street – AM
10. 9th Avenue and W. 29th Street – AM
11. 9th Avenue and W. 30th Street – AM
12. 10th Avenue and W. 17th Street* – AM
13. 10th Avenue and W. 18th Street – AM
14. 10th Avenue and W. 19th Street – PM
15. 10th Avenue and W. 20th Street – PM
16. 10th Avenue and W. 21st Street – PM
17. 10th Avenue and W. 22nd Street – PM
18. 10th Avenue and W. 23rd Street* – AM/PM
19. 10th Avenue and W. 24th Street – AM/PM
20. 10th Avenue and W. 25th Street* – AM/PM
21. 10th Avenue and W. 26th Street* – AM/PM
22. 10th Avenue and W. 27th Street – PM
23. 10th Avenue and W. 28th Street – PM
24. 10th Avenue and W. 29th Street – PM
25. 10th Avenue and W. 30th Street – PM

26. Dyer Avenue and W. 30th Street – AM/PM
27. Dyer Avenue and W. 31st Steet – AM/PM

The vehicle trips by construction workers and trucks along with operational vehicle trips from completed portions of the Non-Rezoning Alternative's RWCDS in the second quarter of 2037 (shown in **Figures J.1-6a** and **J.1-6b**) were added to the 2037 No-Action Alternative (shown in **Figures J.1-3a** and **J.1-3b**) to establish the 2037 Non-Rezoning Alternative (construction) traffic network shown in **Figures J.1-7a** and **J.1-7b**. The volume-to-capacity (v/c) ratios, delays, and levels of service at analyzed intersections during the construction peak periods under the Non-Rezoning Alternative are provided in **Table 05.19-32**. As shown in **Table 05.19-32**, a total of 16 analyzed intersections (all signalized) are expected to have at least one congested lane group in one or both of the construction peak hours in the Non-Rezoning Alternative compared to 13 under 2037 No-Action Alternative. Intersections with one or more lane groups operating at or over capacity ($v/c \geq 1.0$) in the Non-Rezoning Alternative would total one and eleven in the AM and PM construction peak hours, respectively, compared to one and seven, respectively, under 2037 No-Action Alternative.

The construction traffic impact analysis indicates the potential for significant adverse impacts at eight intersections (all signalized) during one or both analyzed construction peak hours in the second quarter of 2037. Significant adverse impacts were identified to one lane group at one intersection during the AM construction peak hour, and eight lane groups at seven intersections during the PM construction peak hour. Potential measures to mitigate the significant adverse traffic impacts identified in **Table 05.19-32** are discussed in **Section H**.

Table 05.19-32: 2037 (Q2) No-Action and Non-Rezoning Alternatives Traffic Levels of Service During Construction Peak Hours

			2037 No-Action Alternative AM			2037 Non-Rezoning Alternative AM			2037 No-Action Alternative PM			2037 Non-Rezoning Alternative PM			
Intersection	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	
W.30th St (EB) &	EB	L	0.44	26.1	C	0.44	26.1	C	2.18	568.5	F	2.18	568.5	F	
10th Ave (NB)	EB	T	0.66	32.7	C	0.66	32.7	C	1.25	159.0	F	1.25	159.0	F	
	NB	TR	0.45	8.0	A	0.47	8.0	A	0.77	10.9	B	0.81	11.7	B	
W.29th St (WB) &	WB	T	0.47	26.3	C	0.47	25.5	C	0.73	36.6	D	0.77	37.6	D	
10th Ave (NB)	WB	R	0.39	24.9	C	0.40	24.3	C	1.00	54.6	D	1.04	66.1	E	*
	NB	L	0.36	25.2	C	0.36	24.5	C	0.39	20.8	C	0.39	20.4	C	
	NB	T	0.33	2.9	A	0.34	2.8	A	0.60	2.9	A	0.62	3.0	A	
W.28th St (EB) &	EB	LT	0.31	25.9	C	0.32	26.1	C	0.72	36.7	D	0.72	36.7	D	
10th Ave (NB)	NB	TR	0.33	0.4	A	0.35	0.4	A	0.64	1.9	A	0.67	2.0	A	
W.27th St (WB) &	WB	TR	0.01	19.4	B	0.01	19.4	B	0.01	19.4	B	0.01	19.4	B	
10th Ave (NB)	NB	L	0.27	16.8	B	0.28	16.0	B	1.04	69.2	E	1.05	68.1	E	
	NB	T	0.35	2.2	A	0.37	2.1	A	0.60	3.3	A	0.63	3.7	A	
W.26th St (EB) &	EB	LT	0.36	24.4	C	0.41	25.2	C	0.88	51.2	D	0.90	53.0	D	
10th Ave (NB)	NB	TR	0.44	5.2	A	0.50	6.1	A	0.81	9.1	A	0.85	9.9	A	
W.25th St (WB) &	WB	TR	0.43	18.1	B	0.49	17.4	B	1.13	98.5	F	1.16	110.1	F	*
10th Ave (NB)	NB	LT	0.40	2.0	A	0.44	2.1	A	0.72	5.0	A	0.75	5.1	A	
W.24th St (EB) &	EB	LT	0.26	22.2	C	0.26	22.2	C	0.62	29.3	C	0.62	29.3	C	
10th Ave (NB)	NB	TR	0.41	7.3	A	0.44	8.1	A	0.73	34.4	C	0.76	35.0	D	
W.23rd St (E-W) &	EB	LT	0.41	21.7	C	0.44	22.4	C	1.59	311.4	F	1.63	327.2	F	*
10th Ave (NB)	WB	T	0.54	25.2	C	0.64	28.3	C	1.35	186.4	F	1.37	195.3	F	*
	NB	LTR	0.47	1.8	A	0.51	2.0	A	0.92	45.8	D	0.96	48.6	D	
W.22nd St (EB) &	NB	LTR	0.46	8.4	A	0.49	8.2	A	0.88	11.6	B	0.91	13.1	B	
10th Ave (NB)															
W.21st St (E-W) &	EB	L	0.06	20.0	C	0.06	20.0	C	0.24	22.1	C	0.24	22.1	C	
10th Ave (NB)	WB	R	0.34	24.2	C	0.34	24.2	C	0.14	21.1	C	0.14	21.1	C	
	NB	T	0.38	1.3	A	0.42	1.4	A	0.78	5.5	A	0.81	6.3	A	
W.20th St (EB) &	NB	LTR	0.41	4.5	A	0.44	4.3	A	0.96	14.4	B	1.00	20.6	C	
10th Ave (NB)															
W.19th St (WB) &	EB	L	0.09	31.5	C	0.09	31.5	C	0.12	32.0	C	0.12	32.1	C	
10th Ave (NB)	WB	R	0.25	47.4	D	0.25	46.7	D	0.89	40.7	D	1.01	54.6	D	
	NB	T	0.41	5.3	A	0.45	5.2	A	0.88	10.4	B	0.89	10.8	B	
W.18th St (EB) &	EB	L	0.10	20.5	C	0.10	20.5	C	0.13	21.0	C	0.13	21.0	C	
10th Ave (NB)	EB	T	0.39	25.2	C	0.50	27.8	C	0.41	25.3	C	0.42	25.6	C	
	NB	TR	0.42	5.7	A	0.46	7.6	A	0.83	11.6	B	0.85	12.1	B	
W.17th St (WB) &	WB	TR	0.34	16.2	B	0.45	17.4	B	0.96	55.6	E	1.00	64.8	E	*
10th Ave (NB)	NB	LT	0.36	17.7	B	0.37	17.9	B	0.69	22.8	C	0.69	23.0	C	
W.31st St (WB) &	WB	LTR	0.28	15.1	B	0.29	15.2	B	1.08	72.4	E	1.08	72.4	E	
Dyer Ave (NB)	NB	LT	0.11	26.0	C	0.12	26.0	C	0.24	9.1	A	0.28	9.4	A	
Lincoln Exit (SB)	SB	TR	0.25	9.3	A	0.29	9.6	A	0.20	8.8	A	0.20	8.8	A	
W.30th St (E-W) &	EB	T	0.12	6.4	A	0.13	7.1	A	0.26	16.2	B	0.30	16.2	B	
Dyer Ave (SB)	WB	T	0.02	7.5	A	0.02	7.5	A	0.08	18.2	B	0.08	18.2	B	
	SB	T	0.37	12.2	B	0.43	12.8	B	0.32	22.5	C	0.33	22.6	C	
W.30th St (EB) &	EB	T	0.58	20.4	C	0.58	21.4	C	0.81	39.0	D	0.81	39.1	D	
9th Ave (SB)	EB	R	0.54	20.6	C	0.68	25.6	C	0.79	41.9	D	0.81	43.1	D	
	SB	LT	0.73	12.5	B	0.75	13.2	B	0.54	4.6	A	0.54	4.6	A	

Table 05.19-32 (continued): 2037 (Q2) No-Action and Non-Rezoning Alternatives Traffic Levels of Service During Construction Peak Hours

			2037 No-Action Alternative AM			2037 Non-Rezoning Alternative AM			2037 No-Action Alternative PM			2037 Non-Rezoning Alternative PM		
Intersection	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS
W.29th St (WB) & 9th Ave (SB)	WB	L	0.38	23.2	C	0.38	23.3	C	0.74	34.9	C	0.74	35.4	D
	WB	T	0.44	24.4	C	0.45	24.6	C	1.21	139.5	F	1.28	167.9	F *
	SB	TR	0.76	14.7	B	0.82	17.7	B	0.70	17.4	B	0.71	17.6	B
W.28th St (EB) & 9th Ave (SB)	EB	TR	0.24	33.0	C	0.25	33.5	C	0.77	26.4	C	0.78	26.5	C
	SB	L	0.31	25.4	C	0.31	23.8	C	0.33	29.5	C	0.33	29.2	C
	SB	T	0.52	6.2	A	0.57	5.9	A	0.54	9.4	A	0.54	9.3	A
W.26th St (EB) & 9th Ave (SB)	EB	T	0.31	21.3	C	0.46	26.6	C	0.59	25.7	C	0.61	26.9	C
	EB	R	0.22	20.9	C	0.28	24.4	C	0.47	25.1	C	0.55	28.8	C
	SB	L	0.46	22.3	C	0.52	23.0	C	0.34	20.5	C	0.34	20.4	C
	SB	T	0.54	1.9	A	0.59	2.1	A	0.61	4.3	A	0.62	4.3	A
W.25th St (WB) & 9th Ave (SB)	WB	LT	0.18	18.2	B	0.19	18.2	B	0.79	34.3	C	0.80	34.9	C
	SB	TR	0.72	6.1	A	0.80	9.0	A	0.91	15.3	B	0.94	18.0	B
W.23rd St (E-W) & 9th Ave (SB)	EB	T	0.43	27.9	C	0.47	27.9	C	0.82	29.2	C	0.82	29.3	C
	EB	R	0.12	22.4	C	0.15	22.5	C	0.48	24.9	C	0.49	25.0	C
	WB	T	0.23	25.8	C	0.27	26.4	C	0.65	33.4	C	0.66	33.7	C
	SB	L	1.05	114.0	F	1.07	121.4	F *	0.70	53.8	D	0.70	53.8	D
	SB	TR	0.47	14.6	B	0.51	15.2	B	0.61	16.5	B	0.62	16.6	B
W.19th St (WB) & 9th Ave (SB)	WB	LT	0.23	24.4	C	0.38	26.9	C	0.90	54.1	D	1.02	79.1	E *
	SB	TR	0.40	15.3	B	0.45	15.9	B	0.61	18.3	B	0.62	18.5	B
W.18th St (EB) & 9th Ave (SB)	EB	TR	0.55	22.9	C	0.73	28.2	C	0.64	38.3	D	0.69	40.2	D
	SB	L	0.27	20.5	C	0.27	22.0	C	0.41	20.8	C	0.41	20.5	C
	SB	T	0.34	2.3	A	0.42	4.6	A	0.53	3.2	A	0.54	3.2	A
W.17th St (WB) & 9th Ave (SB)	WB	LT	0.18	23.7	C	0.23	24.3	C	0.92	57.8	E	0.97	68.9	E *
	SB	TR	0.42	5.4	A	0.55	8.1	A	0.70	8.7	A	0.73	9.6	A

Notes:
EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L - left, T - through, R - right, DefL - Analysis considers a defacto left-turn lane on this approach
V/C ratio - volume-to-capacity ratio
Sec/veh - seconds per vehicle
LOS - level of service
* - Denotes a impacted movement
Analysis is based on the 2000 Highway Capacity Manual methodology (Synchro 11)

Transit

As previously discussed and shown in **Table 05.19-6c**, in the second quarter of 2037 for construction travel demand, there would be a net increase of approximately 787 construction workers traveling to and from the Project Sites each day under the Non-Rezoning Alternative. Approximately 56.2 percent of these construction workers are expected to travel to and from the Project Sites by public transit (45.1 percent by subway and 11.1 percent by bus). The Project Sites are located in a neighborhood that is well served by public transportation, with a total of seven subway stations and five bus routes located in the vicinity.

As noted above, it is estimated that approximately 80 percent of all construction workers would arrive and depart in the peak hour before and after each shift. Therefore, in the peak construction period, construction worker travel demand is expected to generate a total of approximately 354 transit trips (284 by subway and 70 by bus) in each of the AM and PM peak hours. During these same construction peak hours there would also be a net increase in operational transit trips from completed development on projected development sites (Fulton New 1 to 5 and E-C New 1 to 5). Operational subway trips would total approximately 228 and 476 in the AM and PM construction peak hours, respectively, while operational bus trips would total approximately 23 and 56 during the same periods, respectively. Therefore, in the peak construction period, the increase in transit demand (construction + operational) during the AM and PM construction peak hours would total approximately 512 and 760 subway trips, respectively, and 93 and 126 bus trips respectively.

By comparison, the net increase in operational subway trips with full build-out of the Non-Rezoning Alternative in 2041 would be greater in number, totaling approximately 851 and 800 trips during the weekday AM and PM commuter peak hours, when overall demand on area subway facilities and services typically peaks. The net increase in operational bus trips in 2041 would also be greater or comparable in number, totaling 101 and 105 trips during the weekday AM and PM commuter peak hours. In addition, the overall demand on transit facilities and services typically peaks during the weekday AM and PM commuter peak hours, which typically generates a greater demand than during the construction AM and PM peak hours. Therefore, peak construction period transit conditions during the AM and PM construction peak hours are expected to be comparable to or generally better than during the analyzed commuter peak hours with full build-out of the Non-Rezoning Alternative in 2041. Therefore, it is anticipated that there would be no new subway or bus impacts.

Pedestrians

As shown in **Table 05.19-6c** and discussed above, during the peak construction period (second quarter of 2037), it is estimated that there would be approximately 787 construction workers on site daily under the Non-Rezoning Alternative. Most of these workers are expected to arrive and depart the Project Sites on foot, walking to/from nearby subway stations or bus stops (approximately 56.2 percent), or off-street public parking (41.2 percent). A relatively small number (up to 1.3 percent) are expected to walk to or from the Project Sites as their sole mode of travel. (The remaining 1.3 percent are expected to travel by taxi and would not appreciably add to pedestrian demand on area sidewalks.)

As approximately 80 percent of construction worker trips are expected to occur during any one peak hour, incremental travel demand on sidewalks, crosswalks, and corner areas is expected to total approximately 621 trips in each of the AM and PM construction peak hours. These trips would be distributed among the projected development sites that would be under construction in the first quarter of 2034 (Fulton New 6 to 8 and E-C New 6 to 7). During these same peak hours there would also be a net increase of approximately 457 and 1,167 operational pedestrian trips (auto and transit person trips plus walk-only trips) from completed development on projected development sites (Fulton New 1 to 3 and E-C New 1 to 3). Therefore, in the peak construction period, the increase in pedestrian demand (construction and operational) attributable to the Rezoning Alternative during the AM and PM construction peak hours would total approximately 1,078 and 1,788 pedestrian trips, respectively. By comparison, incremental pedestrian trips with full build-out of the Non-Rezoning Alternative in 2041 would be substantially greater in number, totaling 2,122 and 2,321 during the analyzed weekday AM and PM operational peak hours, respectively. Peak construction period pedestrian conditions during the weekday AM and PM construction peak hours are therefore anticipated to be generally better than during the analyzed operational peak hours with full build-out of the Non-Rezoning Alternative in 2041.

In order to determine the potential for the Non-Rezoning Alternative to result in significant adverse pedestrian impacts during the peak construction period, project-generated pedestrian demand (both construction and operational) in the weekday AM and PM construction peak hours was assigned to analyzed pedestrian elements (sidewalks, corner areas and crosswalks). Based on this assignment, a majority of the analyzed pedestrian elements would experience substantially less incremental demand than with full build-out of the Non-Rezoning Alternative in 2041. In addition, only five pedestrian elements (all sidewalks) that would be significantly adversely impacted by operational demand under the Non-Rezoning Alternative would experience an incremental increase of 200 or more pedestrian trips in one or both of the construction peak hours in the peak construction period and were selected for detailed construction pedestrian analysis. These pedestrian elements and the construction peak hour during which they would experience 200 or more pedestrian trips are listed below.

Sidewalks:

1. South sidewalk along W. 27th Drive between 10th Avenue and W. 27th Drive – PM
2. West sidewalk along W. 27th Drive between W. 26th Street and W. 27th Drive – PM
3. West sidewalk along 9th Avenue between W. 17th Street and W. 18th Street – AM/PM
4. North sidewalk along W. 17th Street between 9th Avenue and 10th Avenue – AM/PM
5. North sidewalk along W. 16th Street between 8th Avenue and 9th Avenue – PM

Anticipated conditions at analyzed sidewalks in the future with the Non-Rezoning Alternative during the peak construction period (second quarter of 2037) are shown in **Table 05.19-33**. As discussed below, in the future with the Non-Rezoning Alternative, two sidewalks out of the five analyzed sidewalks would be considered significantly adversely impacted in one or both construction peak hours as a result of the Non-Rezoning Alternative during the peak construction period (second quarter of 2037). Potential measures to mitigate these impacts are discussed in **Section H**.

Sidewalks

Table 05.19-33 shows the incremental change in peak hour pedestrian volumes attributable to the Non-Rezoning Alternative and the total Non-Rezoning Alternative pedestrian volumes, average pedestrian space, and platoon-adjusted LOS at the analyzed sidewalks. In addition, **Table 05.19-33** identifies the sidewalks that are expected to be significantly adversely impacted in one or both construction peak hours. As shown in **Table 05.19-33**, there would be significant adverse impacts at two of the five analyzed sidewalks in one or both peak hours. These would include:

- The north sidewalk along W. 17th Street between 9th Avenue and 10th Avenue in both the AM and PM construction peak hours and
- The north sidewalk along W. 16th Street between 8th Avenue and 9th Avenue in both the AM and PM construction peak hours.

Table 05.19-33: 2037 (Q2) Non-Rezoning Alternative Sidewalk Conditions During the Construction Peak Hours

Location	Effective Width (ft)	Project Increment		Peak Hour Volumes		Average Pedestrian Space (ft^2/ped)		Platoon-Adjusted Level of Service	
		AM	PM	AM	PM	AM	PM	AM	PM
South sidewalk along W 27 Dr btw 10 Ave & W 27 Dr	2.0	167	261	179	339	49.8	61.2	C	C
West sidewalk along W 27 Dr btw W 26 St & W 27 Dr	2.0	167	261	179	337	49.8	61.6	C	C
West sidewalk along 9 Ave btw W 17 St & W 18 St	4.0	411	554	491	1,054	81.9	38.9	C	D
North sidewalk along W 17 St btw 9 Ave & 10 Ave	1.5	414	376	544	834	18.1	10.9	E *	F *
North sidewalk along W 16 St btw 8 Ave & 9 Ave	1.0	181	246	362	871	20.2	7.9	E *	F *

Note:
* Denotes a significant impact based on *CTM* criteria.

Parking

As shown in **Table 05.19-6c** and discussed above, during the peak construction traffic period (first quarter of 2034), it is estimated that there would be approximately 787 construction workers on site daily, approximately 41.2 percent of whom would be expected to travel to the Project Sites by private auto. Based on an average vehicle occupancy of 1.21 persons per vehicle, the maximum daily parking demand from project site construction workers would total approximately 268 spaces (see **Table 05.19-34**). These workers are assumed to park in off-street public parking facilities in proximity to the Project Sites. In addition, there would also be operational parking demand generated by completed portions of the Non-Rezoning Alternative (i.e., Fulton New 1 to 5 and E-C New 1 to 5). It is estimated that these sites would generate a peak parking demand of approximately 370 spaces during the weekday overnight period. The Project Sites are proposed to provide 96 spaces of on-site accessory parking and is assumed to be completed by the peak construction period. It is assumed that the Section 8 PBV DUs replacing the NYCHA units use would be the only use allowed to use the on-site accessory parking as the existing NYCHA residents would continue to utilize the on-site accessory parking. Therefore, the parking demand generated by all other uses would have to be accommodated in the surrounding study area. As such, it is estimated that up to 46 spaces of operational parking demand that is generated by all uses other than the Section 8 PBV use would also need to be accommodated in nearby off-street public parking facilities or on-street during the early morning construction worker arrival period in the peak construction period. Therefore, it is estimated that the Non-Rezoning Alternative would generate a total of up to 260 spaces of parking demand at off-street public parking facilities or on-street in during the peak construction period. This demand could potentially contribute to, or result in, off-street and on-street parking shortfalls in this period.

As discussed in **Chapter 05.13,** under *CTM* guidance, as the Project Sites are located in Parking Zone 1, the inability of the Rezoning Alternative or the surrounding area to accommodate future parking demands would be considered a parking shortfall but would generally not be considered significant due to the magnitude of available alternative modes of transportation. Therefore, should any parking shortfall occur due to incremental demand from construction workers during the first quarter of 2034 peak construction period, it would be short-term and not be considered a significant parking shortfall pursuant to *CTM* guidance.

Table 05.19-34: 2034 (Q1) Rezoning Alternative Construction Worker Parking Accumulation

Hour	2034 (Q1)		
	In	Out	Accumulation
6–7 AM	214	0	214
7–8 AM	54	0	268
8–9 AM	0	0	268
9–10 AM	0	0	268
10–11 AM	0	0	268
11 AM–12 PM	0	0	268
12–1 PM	0	0	268
1–2 PM	0	0	268
2–3 PM	0	0	268
3–4 PM	0	13	255
4–5 PM	0	214	41
5–6 PM	0	41	0

Alternative 4 – Midblock Bulk Alternative

The Midblock Bulk Alternative would have the same overall total development program as the Rezoning Alternative and maintain the Rezoning Alternative's proposed pedestrian and parking entrances, but the arrangement of bulk, i.e., the geographic distribution of buildings, building heights and setbacks, and open areas, on the Fulton Houses Project Site would differ between the two alternatives. While both alternatives would result in new high-rise buildings, under the Rezoning Alternative, the tallest buildings would be located along 9th Avenue, while the tallest buildings would be located in midblock areas under the Midblock Bulk Alternative. These two alternatives would have identical arrangement of bulk on the Elliott-Chelsea Houses Project Site. As the Midblock Bulk Alternative would have the same total development program as the Rezoning Alternative, the number of action-generated vehicle, transit, and pedestrian trips and the demand for on-street and off-street parking would be similar to the numbers of trips and the parking demand that would be generated by the Rezoning Alternative. As such, the trips generated under the Midblock Bulk Alternative during the construction peak period is anticipated to be comparable to that of the Rezoning Alternative and the potential transportation impacts of the Midblock Bulk Alternative is assessed by being qualitatively compared with the Rezoning Alternative.

Peak Hour Construction Worker Vehicle and Truck Trips

As discussed above, average daily on-site construction workers and trucks were forecast for new construction anticipated on each of the sites in the Project Sites under the Midblock Bulk Alternative. (Although some construction workers and trucks would be present in the No-Action Alternative, for conservative analysis purposes, no credit was taken for these trips.) As shown in **Table 05.19-7c**, the average number of workers would peak at an estimated 813 per day in the second quarter of 2034, while the average number of trucks per day would peak at an estimated 197 during the first quarter of 2034. Overall, the first quarter of 2034 is expected experience the largest average travel demand when accounting for both construction worker travel, including personal vehicles, and construction truck trips, which is the same peak construction period as the

Rezoning Alternative. **Table 05.19-35** shows a forecast of incremental hourly construction worker auto and construction truck trips during the peak construction period.

As shown in **Table 05.19-35**, in the peak construction period, construction-related traffic is expected to peak during the AM and PM construction peak hours. During the AM construction peak hour, there would be a total of 426 PCE vehicle trips, including 321 inbound trips and 105 outbound trips. During the PM construction peak hour there would be a total of 250 PCE trips, including 17 inbound trips and 233 outbound trips. During these same peak hours there would also be a net increase in operational vehicle trips from completed development on projected development sites (Fulton New 1 to 3 and E-C New 1 to 3). Operational traffic would total approximately 124 PCE trips (49 inbound and 75 outbound) during the AM construction peak hour, and 197 PCE trips (113 inbound and 84 outbound) in the PM construction peak hour. Therefore, as shown in **Table 05.19-36**, peak construction period, the increase in traffic (construction plus operational) during the AM and PM construction peak hours would total approximately 550 and 447 PCE trips, respectively.

Table 05.19-35: 2034 (Q1) Midblock Bulk Alternative Peak Incremental Construction Vehicle Trip Projections (in PCEs)

	Auto Trips					Taxi Trips					Truck Trips					Total Vehicle Trips		
	In		Out			In		Out			In		Out					
Hour	%	#	%	#	Total	%	#	%	#	Total	%	#	%	#	Total	In	Out	Total
6–7 AM	80%	216	0%	0	216	80%	7	0%	7	14	25%	98	25%	98	196	321	105	426
7–8 AM	20%	54	0%	0	54	20%	2	0%	2	4	10%	39	10%	39	78	95	41	136
8–9 AM	0%	0	0%	0	0	0%	0	0%	0	0	10%	39	10%	39	78	39	39	78
9–10 AM	0%	0	0%	0	0	0%	0	0%	0	0	10%	39	10%	39	78	39	39	78
10–11 AM	0%	0	0%	0	0	0%	0	0%	0	0	10%	39	10%	39	78	39	39	78
11 AM–12 PM	0%	0	0%	0	0	0%	0	0%	0	0	10%	39	10%	39	78	39	39	78
12–1 PM	0%	0	0%	0	0	0%	0	0%	0	0	10%	39	10%	39	78	39	39	78
1–2 PM	0%	0	0%	0	0	0%	0	0%	0	0	5%	21	5%	21	42	21	21	42
2–3 PM	0%	0	5%	14	14	0%	0	5%	0	0	5%	20	5%	20	40	20	34	54
3–4 PM	0%	0	80%	216	216	0%	7	80%	7	14	2.5%	10	2.5%	10	20	17	233	250
4–5 PM	0%	0	15%	40	40	0%	2	15%	2	4	2.5%	10	2.5%	10	20	12	52	64
5–6 PM	0%	0	0%	0	0	0%	0	0%	0	0	0%	0	0%	0	0	0	0	0

Table 05.19-36: 2034 (Q1) Midblock Bulk Alternative Peak Incremental Constructional and Operational Vehicle Trip Projections (in PCEs)

	Construction Trips				Operational Trips				Total Construction + Operational Trips
	Auto	Taxi	Truck	Total	Auto	Taxi	Truck	Total	
6 AM–7 AM	216	14	196	426	60	54	10	124	550
3 PM–4 PM	216	14	20	250	113	84	0	197	447

Traffic

As discussed above and shown in **Table 05.19-36**, the increase in traffic (construction plus operational) during the AM and PM construction peak hours under the Midblock Bulk Alternative would total approximately 550 and 447 PCE trips, respectively. By comparison, the increase in traffic (construction plus operational) during the AM and PM construction peak hours of the Rezoning Alternative would be greater than that of the Midblock Bulk Alternative, totaling 622 and 491 during the same periods, respectively as shown in **Table 05.19-25**. Therefore, peak construction period traffic conditions under the Midblock Bulk Alternative are expected to be generally better than the construction period traffic conditions under the Rezoning Alternative in 2034. As the Midblock Bulk Alternative would generate less vehicle trips in each of the construction peak hours than the Rezoning Alternative during the 2034 peak construction period, it is anticipated that it would not result in any new significant adverse construction traffic impacts compared to the Rezoning Alternative. However, it should be noted that the rearrangement of bulk between the Midblock Bulk Alternative and Rezoning Alternative would result in the land use distribution between the five blocks at the Fulton Houses Project Site to be slightly different (but similar) between the two alternatives, but the completed development on projected development sites between the two alternatives would be comparable during the construction peak period. This may result in a relatively small change in the directional distribution of action-generated trips at some intersections.

Transit

As previously discussed and shown in **Table 05.19-7c**, in the first quarter of 2034 for construction travel demand, there would be a net increase of approximately 793 construction workers traveling to and from the Project Sites each day under the Midblock Bulk Alternative. Approximately 56.2 percent of these construction workers are expected to travel to and from the Project Sites by public transit (45.1 percent by subway and 11.1 percent by bus). The Project Sites are located in a neighborhood that is well served by public transportation, with a total of seven subway stations and five bus routes located in the vicinity.

As noted above, it is estimated that approximately 80 percent of all construction workers would arrive and depart in the peak hour before and after each shift. Therefore, in the peak construction period, construction worker travel demand is expected to generate a total of approximately 356 transit trips (286 by subway and 70 by bus) in each of the AM and PM peak hours. During these same construction peak hours there would also be a net increase in operational transit trips from completed development on projected development sites (Fulton New 1 to 3 and E-C New 1 to 3). Operational subway trips would total approximately 534 and 976 in the AM and PM construction peak hours, respectively, while operational bus trips would total approximately 48 and 110 during the same periods, respectively. Therefore, in the peak construction period, the increase in transit demand (construction + operational) during the AM and PM construction peak hours would total approximately 820 and 1,262 subway trips, respectively, and 118 and 180 bus trips respectively.

By comparison, the increase in transit demand (construction + operational) under the Rezoning Alternative would be greater in number, totaling approximately 874 and 1,309 subway trips during the weekday AM and PM construction peak hours, respectively and 132 and 191 bus trips during the same periods, respectively. Therefore, peak construction period transit conditions during the AM and PM construction peak hours under the Midblock Bulk Alternative are expected to be comparable to or generally better than under the Rezoning Alternative in 2034, and is not anticipated that to result in new subway or bus impacts as the Midblock Bulk Alternative would have the same total development program as the Rezoning Alternative and generally maintain the Rezoning Alternative's proposed pedestrian entrances.

Pedestrians

As shown in **Table 05.19-7c** and discussed above, during the peak construction period (first quarter of 2034), it is estimated that there would be approximately 960 construction workers on site daily under the Rezoning Alternative. Most of these workers are expected to arrive and depart the Project Sites on foot, walking to/from nearby subway stations or bus stops (approximately 56.2 percent), or off-street public parking (41.2 percent). A relatively small number (up to 1.3 percent) are expected to walk to or from the Project Sites as their sole mode of travel. (The remaining 1.3 percent are expected to travel by taxi and would not appreciably add to pedestrian demand on area sidewalks.)

As approximately 80 percent of construction worker trips are expected to occur during any one peak hour, incremental travel demand on sidewalks, crosswalks, and corner areas is expected to total approximately 627 trips in each of the AM and PM construction peak hours. These trips would be distributed among the projected development sites that would be under construction in the first quarter of 2034 (Fulton New 4 to 5 and E-C New 4 to 5). During these same peak hours there would also be a net increase of approximately 985 and 2,090 operational pedestrian trips (auto and transit person trips plus walk-only trips) from completed development on projected development sites (Fulton New 1 to 3 and E-C New 1 to 3). Therefore, in the peak construction period, the increase in pedestrian demand (construction and operational) attributable to the Midblock Bulk Alternative during the AM and PM construction peak hours would total approximately 1,612 and 2,717 pedestrian trips, respectively. By comparison, incremental pedestrian trips during the 2034 construction peak period under the Rezoning Alternative would be greater in number, totaling 1,708 and 2,822 during the analyzed construction AM and PM peak hours, respectively. As the Midblock Bulk Alternative would have the same total development program as the Rezoning Alternative and generally maintain the Rezoning Alternative's proposed pedestrian entrances, peak construction period pedestrian conditions under the Midblock Bulk Alternative during the weekday AM and PM construction peak hours are therefore anticipated to be generally better than during the construction peak hours under the Rezoning Alternative in 2034. Therefore, it is anticipated that the Midblock Alternative would not result in any new significant adverse pedestrian impacts compared to the Rezoning Alternative.

Parking

As shown in **Table 05.19-7c** and discussed above, during the peak construction traffic period (first quarter of 2034), it is estimated that there would be approximately 793 construction workers on site daily, approximately 41.2 percent of whom would be expected to travel to the Project Sites by private auto. Based on an average vehicle occupancy of 1.21 persons per vehicle, the maximum daily parking demand from project site construction workers would total approximately 270 spaces (see **Table 05.19-37**). These workers are assumed to park in off-street public parking facilities in proximity to the Project Sites. In addition, there would also be operational parking demand generated by completed portions of the Midblock Bulk Alternative (i.e., Fulton New 1 to 3 and E-C New 1 to 3). It is estimated that these sites would generate a peak parking demand of approximately 325 spaces during the weekday overnight period. The Project Sites are proposed to provide 96 spaces of on-site accessory parking and is assumed to be completed by the peak construction period. It is assumed that the Section 8 PBV DUs replacing the NYCHA units use would be the only use allowed to use the on-site accessory parking as the existing NYCHA residents would continue to utilize the on-site accessory parking. Therefore, the parking demand generated by all other uses would have to be accommodated in the surrounding study area. As such, it is estimated that up to 13 spaces of operational parking demand that is generated by all uses other than the Section 8 PBV use would also need to be accommodated in nearby off-street public parking facilities or on-street during the early morning construction worker arrival period in the peak construction period. Therefore, it is estimated that the Midblock Bulk Alternative would generate a total of up to 283 spaces of parking demand at off-street public parking facilities or on-street in during the peak construction period. This demand could potentially contribute to, or result in, off-street and on-street parking shortfalls in this period.

Table 05.19-37: 2034 (Q1) Midblock Bulk Alternative Construction Worker Parking Accumulation

Hour	2034 (Q1)		
	In	Out	Accumulation
6–7 AM	216	0	216
7–8 AM	54	0	270
8–9 AM	0	0	270
9–10 AM	0	0	270
10–11 AM	0	0	270
11 AM–12 PM	0	0	270
12–1 PM	0	0	270
1–2 PM	0	0	270
2–3 PM	0	0	270
3–4 PM	0	14	256
4–5 PM	0	216	40
5–6 PM	0	40	0

As discussed in **Chapter 05.13,** under *CTM* guidance, as the Project Sites are located in Parking Zone 1, the inability of the Midblock Bulk Alternative or the surrounding area to accommodate future parking demands would be considered a parking shortfall but would generally not be considered significant due to the magnitude of available alternative modes of transportation. Therefore, should any parking shortfall occur due to incremental demand from construction workers during the first quarter of 2034 peak construction period, it would be short-term and not be considered a significant parking shortfall pursuant to *CTM* guidance.

Air Quality

Alternative 1 – No-Action Alternative

The No-Action Alternative assumes that the Project Sites would remain in their current condition. Therefore, this alternative is not evaluated further as there will no new construction associated with the Proposed Project.

Alternative 2 – Rezoning Alternative

Construction Air Quality Effects

Maximum predicted concentrations during the representative worst-case short-term and annual construction periods for construction of the Rezoning Alternative at the Fulton Houses Project Site and the Elliott-Chelsea Houses Project Site are presented in **Table 05.19-38** and **Table 05.19-39,** respectively. To estimate the maximum total pollutant NO_2, CO, and PM_{10} concentrations, the modeled concentrations were added to a background value that accounts for the existing pollutant concentrations from other nearby sources. As shown in **Tables 05.19-38** and **05.19-39**, the maximum predicted total concentrations of NO_2, CO, and PM_{10} are below the applicable NAAQS. In addition, the maximum predicted $PM_{2.5}$ concentrations would not exceed the applicable *CTM* $PM_{2.5}$ *de minimis* thresholds in the 24-hour and annual averaging periods. Emissions from the other less intensive construction periods would be less than the emissions during the modeled worst-case periods; therefore, the resulting concentrations from these non-peak periods are expected to be less than the concentrations presented in **Tables 05.19-38** and **05.19-39**. Therefore, construction activities associated with the Rezoning Alternative would not result in significant adverse air quality impacts due to construction sources. A Community Air Monitoring Program (CAMP) would be implemented for ground disturbance activities associated with the Proposed Project to ensure that the applicable air quality thresholds would not be exceeded during these peak construction periods.

Table 05.19-38: Maximum Pollutant Concentrations during Worst-Case Construction Period[1] (Fulton Houses Project Site) under the Rezoning Alternative

Pollutant	Averaging Period	Units	Maximum Modeled Impact	Background Concentration[1]	Total Concentration	*De minimis*	NAAQS
NO_2	Annual	µg/m³	10.3	32.8	43.2	-	100
CO	1-hour	ppm	5.2	2.52	7.7	-	35
CO	8-hour	ppm	1.2	1.2	2.4	-	9
PM_{10}	24-hour	µg/m³	19.5	36	55.5	-	150
$PM_{2.5}$	24-hour	µg/m³	3.5	17.8	21.3	8.6	35
$PM_{2.5}$	Annual—Local	µg/m³	0.294	7.6	7.9	0.3	9
$PM_{2.5}$	Annual—Neighborhood	µg/m³	0.005	7.6	7.6	0.1	9

Notes:

1 May 2029 and the period from March 2029 to February 2030 were identified as worst-case short-term and annual periods of construction under the Rezoning Alternative for the Fulton Houses Project Site.

2 The background levels are based on the most representative concentrations monitored at DEC ambient air monitoring stations.

Table 05.19-39: Maximum Pollutant Concentrations during Worst-Case Construction Period[1] (Elliott-Chelsea Houses Project Site) under the Rezoning Alternative

Pollutant	Averaging Period	Units	Maximum Modeled Impact	Background Concentration[1]	Total Concentration	*De minimis*	NAAQS
NO_2	Annual	µg/m³	7.1	32.8	40.0	-	100
CO	1-hour	ppm	5.1	2.52	7.6	-	35
CO	8-hour	ppm	1.1	1.2	2.3	-	9
PM_{10}	24-hour	µg/m³	20.2	36	56.2	-	150
$PM_{2.5}$	24-hour	µg/m³	3.3	17.8	21.2	8.6	35
$PM_{2.5}$	Annual—Local	µg/m³	0.28	7.6	7.9	0.3	9
$PM_{2.5}$	Annual—Neighborhood	µg/m³	0.005	7.6	7.6	0.1	9

Notes:

1 February 2033 and the period from September 2032 to August 2033 were identified as worst-case short-term and annual periods of construction under the Rezoning Alternative for the Elliott-Chelsea Houses Project Site.

2 The background levels are based on the most representative concentrations monitored at DEC ambient air monitoring stations.

Intersection Analysis

Using the methodology previously described, in **Section E, "Methodology,"** of this chapter, maximum predicted 8-hour CO, and 24-hour and annual average $PM_{2.5}$ concentration increments between the With-Action condition under the Rezoning Alternative and the No-Action Alternative was calculated so that they could be compared with the applicable *de minimis* criteria. As presented in **Table 05.19-40**, the maximum predicted incremental CO concentrations are well below the applicable *CTM* CO *de minimis* thresholds in the 8-hour averaging period. Similarly, as presented in **Table 05.19-41**, the maximum predicted $PM_{2.5}$ concentrations are well below the applicable *CTM* $PM_{2.5}$ *de minimis* thresholds in the 24-hour and annual averaging periods. Therefore, construction of the Proposed Project under the Rezoning Alternative would not result in any significant adverse air quality impacts from mobile sources (i.e., worker and truck trips) and on-site equipment sources.

Table 05.19-40: Maximum Predicted CO Incremental Concentration (ppm) during Peak Construction [2034 With-Action]

Analysis Site	Location	Maximum Increment	*De Minimis* Criterion[1]
1	9th Ave and W. 26th St	1.4	3.9
2	9th Ave and W. 17th St	1.4	3.9
3	10th Ave and W. 30th St	1.3	3.9

Notes:
1 CO *de minimis* criterion—8-hour average, not to exceed more than half the difference between baseline (i.e., No-Action) concentration (1.2 ppm) and the 8-hour standard (9 ppm).

Table 05.19-41: Maximum Predicted $PM_{2.5}$ Incremental Concentration (µg/m³) during Peak Construction [2037 With-Action]

Analysis Site	Location	Timer Period	Maximum Increment	*De Minimis* Criterion
1	9th Ave and W. 26th St	24-Hour	0.3	8.6 [1]
1	9th Ave and W. 26th St	Annual	0.02	0.1 [2]
2	9th Ave and W. 17th St	24-Hour	2.4	8.6 [1]
2	9th Ave and W. 17th St	24-Hour	0.04	0.1 [2]
3	9th Ave and W. 30th St	24-Hour	0.1	8.6 [1]
3	9th Ave and W. 30th St	Annual	0.03	0.1 [2]

Notes:
1 $PM_{2.5}$ *de minimis* criterion—24-hour average, not to exceed more than half the difference between the background concentration (17.8 µg/m³) and the 24-hour standard of 35 µg/m³.
2 $PM_{2.5}$ *de minimis* criterion—annual (neighborhood scale), 0.1 µg/m³.

Conformity with State Implementation Plans

Annual combined on-site and off-site construction-related emissions over the scheduled construction duration (2025 to 2041), inclusive of activities at both the Chelsea Houses and Fulton-Elliott Houses Project Sites, are presented in **Table 05.19-42**. The pollutant emissions associated with construction of the Rezoning Alternative would be below any of the *de minimis* criteria. Therefore, the Rezoning Alternative is assumed to conform to the SIP and does not require a full conformity determination.

Table 05.19-42: Emissions from Construction Activities (ton/yr) under the Rezoning Alternative

	$PM_{2.5}$	**NO_x**	**VOC**	**SO_2**
De Minimis Criteria	100	25	25	100
2025	0.06	1.9	0.09	0.002
2026	0.27	9.2	0.50	0.013
2027	0.47	13.5	0.70	0.018
2028	0.19	5.5	0.26	0.008
2029	0.35	11.7	0.65	0.019
2030	0.68	19.2	1.08	0.030
2031	0.47	11.7	0.60	0.018
2032	0.19	5.4	0.31	0.010
2033	0.52	12.6	0.91	0.026
2034	0.74	15.4	0.95	0.029
2035	0.15	3.0	0.20	0.007
2036	0.25	5.1	0.38	0.012
2037	0.28	5.2	0.36	0.011
2038	0.16	3.1	0.22	0.007
2039	0.27	5.5	0.40	0.012
2040	0.37	7.2	0.53	0.016
2041	0.21	3.7	0.24	0.008

Note:
Emissions presented in **bold** represent the highest annual emissions.

Alternative 3 – Non-Rezoning Alternative

Construction Air Quality Effects

Maximum predicted concentrations during the representative worst-case short-term and annual construction periods for construction of the Non-Rezoning Alternative at the Fulton Houses Project Site and the Elliott-Chelsea Houses Project Site are presented in **Table 05.19-43** and **Table 05.19-44,** respectively. To estimate the maximum total pollutant NO_2, CO, and PM_{10} concentrations, the modeled concentrations were added to a background value that accounts for the existing pollutant concentrations from other nearby sources. As shown in **Tables 05.19-43** and **05.19-44**, the maximum predicted total concentrations of NO_2, CO, and PM_{10} are below the applicable NAAQS. In addition, the maximum predicted $PM_{2.5}$ concentrations would not exceed the applicable *CTM* $PM_{2.5}$ *de minimis* thresholds in the 24-hour and annual averaging periods. Emissions from the other less intensive construction periods would be less than the emissions during the modeled worst-case periods; therefore, the resulting concentrations from these non-peak periods are expected to be less than the concentrations presented in **Tables 05.19-43** and **05.19-44**. Therefore, construction activities associated with the Non-Rezoning Alternative would not result in significant adverse air quality impacts due to construction sources. A CAMP would be implemented for ground disturbance activities associated with the Proposed Project to ensure that the applicable air quality thresholds would not be exceeded during these peak construction periods.

Table 05.19-43: Maximum Pollutant Concentrations during Worst-Case Construction Period[1] (Fulton Houses Project Site) under the Non-Rezoning Alternative

Pollutant	Averaging Period	Units	Maximum Modeled Impact	Background Concentration[1]	Total Concentration	*De minimis*	NAAQS
NO_2	Annual	μg/m³	6.0	32.8	38.8	-	100
CO	1-hour	ppm	4.1	2.52	6.6	-	35
CO	8-hour	ppm	1.0	1.2	2.2	-	9
PM_{10}	24-hour	μg/m³	19.8	36	55.8	-	150
$PM_{2.5}$	24-hour	μg/m³	3.2	17.8	21.4	8.6	35
$PM_{2.5}$	Annual—Local	μg/m³	0.22	7.6	7.8	0.3	9
$PM_{2.5}$	Annual—Neighborhood	μg/m³	0.003	7.6	7.6	0.1	9

Notes:
1 December 2035 and the period from July 2035 to June 2036 were identified as worst-case short-term and annual periods of construction under the Non-Rezoning Alternative for the Fulton Houses Project Site.
2 The background levels are based on the most representative concentrations monitored at DEC ambient air monitoring stations.

Table 05.19-44: Maximum Pollutant Concentrations during Worst-Case Construction Period[1] (Elliott-Chelsea Houses Project Site) under the Non-Rezoning Alternative

Pollutant	Averaging Period	Units	Maximum Modeled Impact	Background Concentration[1]	Total Concentration	*De minimis*	NAAQS
NO_2	Annual	μg/m³	8.8	32.8	41.6	-	100
CO	1-hour	ppm	5.2	2.52	7.7	-	35
CO	8-hour	ppm	1.0	1.7	2.7	-	9
PM_{10}	24-hour	μg/m³	20.7	36	56.7	-	150
$PM_{2.5}$	24-hour	μg/m³	3.3	17.8	21.1	8.6	35
$PM_{2.5}$	Annual—Local	μg/m³	0.27	7.6	7.9	0.3	9
$PM_{2.5}$	Annual—Neighborhood	μg/m³	0.004	7.6	7.6	0.1	9

Notes:
1 January 2033 and the period from August 2032 to July 2033 were identified as worst-case short-term and annual periods of construction under the Non-Rezoning Alternative for the Elliott-Chelsea Houses Project Site.
2 The background levels are based on the most representative concentrations monitored at DEC ambient air monitoring stations.

Intersection Analysis

Using the methodology previously described, in **Section E, "Methodology,"** of this chapter, maximum predicted 8-hour CO, and 24-hour and annual average $PM_{2.5}$ concentration increments between the With-Action condition under the Non-Rezoning Alternative and the No-Action Alternative was calculated so that they could be compared with the applicable *de minimis* criteria. As presented in **Table 05.19-45**, the maximum predicted incremental CO concentrations are well below the applicable *CTM* CO *de minimis* thresholds in the 8-hour averaging period. Similarly, as presented in **Table 05.19-46**, the maximum predicted $PM_{2.5}$ concentrations are well below the applicable *CTM* $PM_{2.5}$ *de minimis* thresholds in the 24-hour and annual averaging periods. Therefore, construction of the Proposed Project under the Non-Rezoning Alternative would not result in any significant adverse air quality impacts from mobile sources (i.e., worker and truck trips) and on-site equipment sources.

Table 05.19-45: Maximum Predicted CO Incremental Concentration (ppm) during Peak Construction [2037 With-Action]

Analysis Site	Location	Maximum Increment	*De Minimis* Criterion(1)
1	9th Ave and W. 26th St	1.1	3.9
2	9th Ave and W. 17th St	1.1	3.9
3	10th Ave and W. 30th St	1.1	3.9

Notes:

1 CO *de minimis* criterion—8-hour average, not to exceed more than half the difference between baseline (i.e., No-Action) concentration (1.2 ppm) and the 8-hour standard (9 ppm).

Table 05.19-46: Maximum Predicted $PM_{2.5}$ Incremental Concentration (µg/m^3) during Peak Construction [2037 With-Action]

Analysis Site	Location	Timer Period	Maximum Increment	*De Minimis* Criterion
1	9th Ave and W. 26th St	24-Hour	0.3	8.6(1)
1	9th Ave and W. 26th St	Annual	0.02	0.1(2)
2	9th Ave and W. 17th St	24-Hour	2.3	8.6(1)
2	9th Ave and W. 17th St	Annual	0.03	0.1(2)
3	10th Ave and W. 30th St	24-Hour	0.1	8.6(1)
3	10th Ave and W. 30th St	Annual	0.03	0.1(2)

Note:

1 $PM_{2.5}$ *de minimis* criterion—24-hour average, not to exceed more than half the difference between the background concentration (17.8 µg/m^3) and the 24-hour standard of 35 µg/m^3.

2 $PM_{2.5}$ *de minimis* criterion—annual (neighborhood scale), 0.1 µg/m^3.

Conformity with State Implementation Plans

Annual combined on-site and off-site construction-related emissions over the scheduled construction duration (2025 to 2041), inclusive of activities at both the Chelsea Houses and Fulton-Elliott Houses Project Sites are presented in **Table 05.19-47**. The pollutant emissions associated with construction of the Non-Rezoning Alternative would be below any of the *de minimis* criteria. Therefore, the Non-Rezoning Alternative is assumed to conform to the SIP and does not require a full conformity determination.

Table 05.19-47: Emissions from Construction Activities (ton/yr) under the Non-Rezoning Alternative

	$PM_{2.5}$	NO_x	VOC	SO_2
De Minimis Criteria	100	25	25	100
2025	0.07	2.1	0.09	0.003
2026	0.26	8.7	0.40	0.012
2027	0.45	12.7	0.64	0.017
2028	0.19	5.6	0.27	0.008
2029	0.36	11.9	0.58	0.019
2030	0.71	19.8	1.06	0.031
2031	0.35	9.1	0.46	0.014
2032	0.26	7.2	0.42	0.014
2033	0.58	13.5	0.90	0.027
2034	0.41	8.4	0.50	0.016
2035	0.15	3.5	0.22	0.008
2036	0.47	10.0	0.73	0.023
2037	0.77	14.4	1.01	0.031
2038	0.25	4.4	0.28	0.009
2039	0.07	1.6	0.09	0.003

	$PM_{2.5}$	NO_x	VOC	SO_2
2040	0.24	4.6	0.33	0.010
2041	0.23	4.2	0.28	0.009

Note:
Emissions presented in **bold** represent the highest annual emissions.

Alternative 4 – Midblock Bulk Alternative

Construction Air Quality Effects

Maximum predicted concentrations during the representative worst-case short-term and annual construction periods for construction of the Midblock Bulk Alternative at the Fulton Houses Project Site are presented in **Table 05.19-48**. To estimate the maximum total pollutant NO_2, CO, and PM_{10} concentrations, the modeled concentrations were added to a background value that accounts for the existing pollutant concentrations from other nearby sources. As shown in **Table 05.19-48**, the maximum predicted total concentrations of NO_2, CO, and PM_{10} are below the applicable NAAQS. In addition, the maximum predicted $PM_{2.5}$ concentrations would not exceed the applicable *CTM* $PM_{2.5}$ *de minimis* thresholds in the 24-hour and annual averaging periods. Emissions from the other less intensive construction periods would be less than the emissions during the modeled worst-case periods; therefore, the resulting concentrations from these non-peak periods are expected to be less than the concentrations presented in **Tables 05.19-48**. Therefore, construction activities associated with the Midblock Bulk Alternative would not result in significant adverse air quality impacts due to construction sources. A CAMP would be implemented for ground disturbance activities associated with the Proposed Project to ensure that the applicable air quality thresholds would not be exceeded during these peak construction periods.

Table 05.19-48: Maximum Pollutant Concentrations during Worst-Case Construction Period[1] (Fulton Houses Project Site) under the Midblock Bulk Alternative

Pollutant	Averaging Period	Units	Maximum Modeled Impact	Background Concentration[2]	Total Concentration	*De minimis*	NAAQS
NO_2	Annual	$\mu g/m^3$	6.4	32.8	39.3	-	100
CO	1-hour	ppm	7.7	2.52	10.3	-	35
CO	8-hour	ppm	1.5	1.2	2.7	-	9
PM_{10}	24-hour	$\mu g/m^3$	17.1	36	53.1	-	150
$PM_{2.5}$	24-hour	$\mu g/m^3$	4.0	17.8	21.9	8.6	35
$PM_{2.5}$	Annual—Local	$\mu g/m^3$	0.276	7.6	7.9	0.3	9
$PM_{2.5}$	Annual—Neighborhood	$\mu g/m^3$	0.007	7.6	7.6	0.1	9

Notes:
1 February 2040 and the period from October 2039 to September 2040 were identified as worst-case short-term and annual periods of construction under the Midblock Bulk Alternative for the Fulton Houses Project Site.
2 The background levels are based on the most representative concentrations monitored at DEC ambient air monitoring stations.

Intersection Analysis

As discussed above under transportation, peak construction period traffic conditions under the Midblock Bulk Alternative are expected to be generally better than the construction period traffic conditions under the Rezoning Alternative in 2034. Therefore, the potential transportation impacts of the Midblock Bulk Alternative is assessed by being qualitatively compared with the Rezoning Alternative. As the Midblock Bulk Alternative would generate less vehicle trips in each of the construction peak hours than the Rezoning Alternative during the 2034 peak construction period, it is anticipated that it would not result in any new significant adverse construction traffic impacts compared to the Rezoning Alternative. Therefore, since the intersection analysis performed for the Rezoning Alternative demonstrated that construction would not result in significant adverse impacts due to mobile sources and on-site equipment sources. The Midblock Bulk Alternative would also not result in significant adverse impacts due to mobile sources and on-site equipment sources.

Conformity with State Implementation Plans

Annual combined on-site and off-site construction-related emissions over the scheduled construction duration (2025 to 2041), inclusive of activities at both the Chelsea Houses and Fulton-Elliott Houses Project Sites are presented in **Table 05.19-49**. The pollutant emissions associated with construction of the Midblock Bulk Alternative would be below any of the *de minimis* criteria. Therefore, the Midblock Bulk Alternative is assumed to conform to the SIP and does not require a full conformity determination.

Table 05.19-49: Emissions from Construction Activities (ton/yr) under the Midblock Bulk Alternative

	$PM_{2.5}$	NO_x	VOC	SO_2
De Minimis Criteria	100	25	25	100
2025	0.06	1.9	0.09	0.002
2026	0.27	9.2	0.50	0.013
2027	0.47	13.5	0.70	0.018
2028	0.19	5.5	0.26	0.008
2029	0.35	11.7	0.64	0.019
2030	0.69	19.4	1.11	0.030
2031	0.49	12.2	0.62	0.019
2032	0.19	5.4	0.30	0.010
2033	0.53	12.9	0.92	0.026
2034	0.69	14.3	0.88	0.027
2035	0.14	2.8	0.19	0.006
2036	0.25	5.1	0.38	0.012
2037	0.28	5.2	0.36	0.011
2038	0.12	2.4	0.17	0.006
2039	0.32	6.7	0.44	0.014
2040	0.42	8.3	0.65	0.020
2041	0.47	8.4	0.55	0.018

Note:
Emissions presented in **bold** represent the highest annual emissions.

Noise

Alternative 1 – No-Action Alternative

The No-Action Alternative assumes that the Project Sites would remain in their current condition. Therefore, this alternative is not evaluated further as there will be no new construction associated with the Proposed Project.

Alternative 2 – Rezoning Alternative

Cumulative On-Site Equipment and Construction Truck Noise Analysis

Noise levels resulting from construction of the Rezoning Alternative were predicted to exceed the *CTM* construction noise screening thresholds for some portion of the construction period at several of the analyzed receptors. The potential for significant adverse impacts at these receptors was determined by evaluating the duration and magnitude of these increments. At most receptors, maximum predicted construction noise level increments would be less than 10 dBA throughout construction. While such increases in noise may be noticeable at times, predicted noise level increments would be moderate and would occur over a limited duration. Noise levels generated by construction at these receptors would generally be in the "acceptable" to "marginally unacceptable" categories according to the *CTM* noise exposure criteria throughout construction. Consequently, construction noise associated with the Rezoning Alternative would not rise to the level of a significant adverse impact at the receptors that would not result in an increment of more than 10 dBA throughout construction.

For receptors where noise level increments would exceed 10 dBA, the construction noise level predictions are summarized in **Table 05.19-50** and discussed further below. The full construction noise analysis results are provided in **Appendix J.2.**

Table 05.19-50: Construction Noise Analysis Results in dBA – Rezoning Alternative

Receptor	Address	Maximum Existing L_{10}	Total L_{10}		Change in L_{10}		Maximum Continuous Duration (Months)
			Min	Max	Min	Max	
9, 10	245 Tenth Avenue	73.3	61.7	78.1	0	14.4	24
11, 12	500 W. 25th Street	73.3	66	79.8	0	13	18
16-19	Avenues the World School – 259 Tenth Avenue	73.3	64.7	82.2	0	12.6	18
29, 30	518 W. 27th Street	66.3	61.7	72.7	0	11	10
31-33	303 Tenth Avenue	73.3	61.7	76.5	0	13.9	22
34, 35	527 W. 27th Street	67	61.7	72.6	0	10.9	10
38, 39	503 W. 27th Street	73.3	67.8	78.5	0.1	10.1	10
40-42	520 W. 28th Street	63.1	61.7	72.6	0	10.9	10
54-58	London Terrace Gardens Apartments	68	61.7	75.4	0	11.6	15
59-64	465 W. 23rd Street	73.1	63.9	76.5	0	11.2	10
67, 68	248 Tenth Avenue	73.1	61.7	75.4	0	11.3	9
78, 79	241 Ninth Avenue	72.4	65.6	78.9	0	13.3	13
80	416 W. 25th Street	67.4	65.1	82.8	0	17.7	27
81, 82	450 W. 25th Street	67.1	61.7	84.9	0	19.7	27
83, 84	460 W. 25th Street	67.8	61.7	84.4	0	17.1	27
85, 86	258 Tenth Avenue	73.3	68.7	83.1	0.1	14.1	18
88-91	420 W. 25th Street	67.3	61.7	81.8	0	17.8	27
92-94	263 Ninth Avenue	73.1	62	82.6	0	20.2	35
95-99	401 W. 25th Street	72.3	61.7	83.1	0	21.4	35
100-108	P.S. 33 Chelsea Prep – 281 Ninth Avenue	70.6	61.7	84	0	21.3	27
109, 110	Chelsea Park	63.6	62.1	73.6	0.2	11.4	15
111, 112	303 Ninth Avenue	61.7	61.8	77.3	0.1	15.6	15
147-155	Elliott Building 2	71.7	61.7	83.4	0	17.7	27
156-166	Elliott Building 3	67.2	61.7	83.2	0	19.2	27

Table 05.19-50 (continued): Construction Noise Analysis Results in dBA – Rezoning Alternative

Receptor	Address	Maximum Existing L_{10}	Total L_{10}		Change in L_{10}		Maximum Continuous Duration (Months)
			Min	Max	Min	Max	
167-172	Chelsea Building 1	66.1	61.7	85.5	0	23.8	37
177-184	Elliott Building 1	69	61.7	84.3	0	22.6	27
185-194	Elliott Building 4	67	61.7	83.8	0	22.1	27
301-310	Future Elliott-Chelsea Building 1	66.8	66.8	85	0	18.2	27
311-315	Future Elliott-Chelsea Building 2	74.9	66.8	84	0	14	18
316-322	Future Elliott-Chelsea Building 3	66.8	66.8	82.5	0	15.7	21
329-332	Future Elliott-Chelsea Building 5	66.8	66.8	84.7	0	17.9	21
333-337	Future Elliott-Chelsea Building 6	66.8	66.8	79.8	0	13	15
429, 430	75 Ninth Avenue	64.4	63.9	79.4	0	15.6	20
431-434	437 W. 16th Street	65.1	63.9	82.8	0	18.9	20
436-442	450 W. 17th Street	70.2	63.9	84.4	0	20.6	32
444-446	453 W. 17th Street	67.4	63.9	75.6	0	11.7	18
449-452	428 W. 19th Street	66.7	63.9	82.8	0	18.9	36
454, 455	444 W. 19th Street	67.7	63.9	76.6	0	12.1	12
456-458	447 W. 18th Street	68.7	63.9	75.5	0	11.6	18
463-468	425 W. 18th Street	68.3	63.9	83.4	0	19.6	36
469-471	435 W. 19th Street	67.3	63.9	85	0	21.2	24
472-476	159 Ninth Avenue	72.6	63.9	86.5	0	22.7	28
479, 480	412 W. 20th Street	66.9	63.9	84.1	0	20.3	24
481	430 W. 20th Street	67.5	66.3	77.4	0	11.1	9
485-490	420 W. 20th Street	66.9	63.9	86.4	0	22.6	28
517-520	111 Eighth Avenue	70.3	63.9	76.9	0	12	10
521-524	363 W. 16th Street	67	63.9	80.3	0	15.6	36
528-532	355 W. 16th Street	67.2	63.9	80.5	0	15.6	36
533, 534	108 Ninth Avenue	72.2	68	82.6	0.1	11.9	17
542	356 W. 18th Street	68.4	66.4	76.9	0	10.5	4
543-546	112 Ninth Avenue	72.3	63.9	84	0	13.6	36
547, 548	128 Ninth Avenue	72.6	69.9	83.8	0.1	12.3	17
549-554	James Baldwin School – 335 W. 18th Street	68.6	63.9	79	0	12.7	30
558	144 Ninth Avenue	72.5	71.4	82.3	0.1	11	4
559, 560	136 Ninth Avenue	72.3	63.9	83.3	0	12.6	17
578-580	363 W. 20th Street	72.4	63.9	75.3	0	10.1	4
604-609	Fulton Building 2	63.9	63.9	79.3	0	15.5	36
610-614	Fulton Building 3	70.9	63.9	84	0	18.1	36
615-620	Fulton Building 4	66.9	63.9	82.3	0	17.9	41
621-624	Fulton Building 5	67	63.9	77.4	0	13.5	36
625-630	Fulton Building 6	64.4	63.9	86.2	0	22.4	39
631-635	Fulton Building 7	71.8	63.9	79	0	12.4	3
640-645	Fulton Building 9	64.4	63.9	87	0	23.2	39
646-651	Fulton Building 10	72.5	63.9	83.9	0	18.5	34
801-805	Future Fulton Building 1	75	67.6	83.4	0	15.8	39
806-809	Future Fulton Building 2	75	67.6	84.9	0	13.9	16
810-814	Future Fulton Building 3	73.2	70.3	85.5	0	14.5	19
815-822	Future Fulton Building 4	71	69.7	85.5	0	15.8	19
823-831	Future Fulton Building 5	73.2	68.8	83.9	0	15.1	19
832-836	Future Fulton Building 6	69.7	69.7	80.8	0	11.1	12

Residences "Catty Corner" from Construction Across 10th Avenue – Receptors 9 through 12, 31 through 33

At the existing residential receptors on Block 696 along the western side of 10th Avenue between W. 24th and W. 25th Streets, i.e., receptors 9 through 12, existing weekday noise levels are in the mid-60s to mid-70s dBA. At the existing residential receptors located at 303 10th Avenue, i.e., receptors 31 through 33, existing weekday noise levels are also in the mid-60s to mid-70s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA, in the "marginally unacceptable" range according to the *CTM* noise exposure criteria, and would result in noise level increments up to approximately 15 dBA. At these receptors, noise level increments exceeding 10 dBA would occur for up to approximately 24 consecutive months. However, these receptors were located on buildings containing E-designations for noise that require at least 28 dBA window/wall attenuation and an alternate means of ventilation. These buildings were built after the E-designation was established, and consequently, the interior noise levels of the buildings during the most noise-intensive construction activities would be no greater than the low 50s dBA—comparable to typical noise levels in a commercial office setting. Although the predicted interior noise levels are greater than the recommended 45 dBA threshold, construction of the Rezoning Alternative would typically occur during weekday daytime hours and would therefore not produce noise during nighttime hours when residents would be most sensitive to noise.

With predicted construction noise levels reaching the high 70s dBA during weekday daytime hours and interior noise levels exceeding the 45 dBA threshold at only a portion of the residential apartment units by approximately 7 dBA, construction noise associated with the Rezoning Alternative would not rise to the level of a significant adverse impact at the residential receptors on Block 696 or 303 10th Avenue.

Avenues the World School at 259 10th Avenue – Receptors 16 through 19

At the existing Avenues the World School located along the western side of 10th Avenue between W. 25th and W. 26th Streets, i.e., receptors 16 through 19, existing weekday noise levels are in the high 60s to mid-70s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the low 80s dBA on the school's eastern façade (i.e., receptors 17 and 18 facing toward construction), in the "clearly unacceptable" range, according to the *CTM* noise exposure criteria, and would result in noise level increments up to approximately 13 dBA. At this façade, noise level increments exceeding 10 dBA would occur for up to approximately 18 consecutive months. The Avenues of the World School is subject to a noise E-designation requiring at least 35 dBA window/wall attenuation and the provision of an alternate means of ventilation. A façade upgrade at the building was confirmed to provide at least this level of attenuation. Consequently, interior L_{10} noise levels would be up to approximately 47 dBA—less than the typical noise levels in a commercial office setting. Compared to the CEQR interior noise threshold of 45 dBA for classrooms, interior noise levels would be up to approximately 2 dBA higher. The prediction of "objectionable" noise level increments over an extended duration, "clearly unacceptable" noise levels, and maximum interior levels greater than the recommended threshold for classroom use means construction of the

Rezoning Alternative would result in a significant adverse noise impact at the eastern façade of the school at 259 10th Avenue (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on the school's other façades (i.e., receptors 16 and 19 facing away from construction). Such levels would be "marginally unacceptable" according to the *CTM* noise exposure criteria, and would result in noise level increments up to approximately 11 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 10 consecutive months. This prediction of noise level increments as well as "marginally unacceptable" noise levels means noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impacts at the northern, western, or southern façades of the Avenues the World School at 259 10th Avenue.

Residences at London Terrace Gardens Apartments – Receptors 54 through 58

At the existing residential receptors at the London Terrace Gardens apartment complex (413 to 459 W. 23rd Street and 420 to 460 W. 24th Street) on Block 721, i.e., receptors 54 through 58, existing weekday noise levels are in the low to high 60s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA at the northern façade of 460 W. 24th Street (i.e., receptor 54 facing construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 12 dBA. At this façade, noise level increments exceeding 10 dBA would occur for up to approximately 15 consecutive months. This prediction of potentially disruptive noise level increments over an extended duration as well as noise levels means construction of the Rezoning Alternative would result in a significant adverse noise impact at the northern façade of the residence at 460 W. 24th Street.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the low 70s dBA on these residences' other façades and buildings (i.e., receptors 55 through 58), in the "marginally unacceptable" range, and would result in noise level increments less than 10 dBA. This prediction of predicted noise level increments as well as "marginally unacceptable" noise levels means noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impact at the remaining residences at the London Terrace Gardens apartment complex.

Residences at 229 through 241 9th Avenue – Receptors 78 and 79

At the existing residential receptors at 229 through 241 9th Avenue located along the western side of 9th Avenue between W. 24th and W. 25th Streets, i.e., receptors 78 and 79, existing weekday noise levels are in the high 60s to low 70s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA at the northern façade of 241 9th Avenue (i.e., receptor 78 facing construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 13 dBA. At this façade, noise level increments exceeding 10 dBA would occur for up to approximately 13 consecutive months. This prediction of potentially disruptive noise level increments over an extended duration as well as noise levels means construction of the Rezoning Alternative would result in a significant adverse noise impact at the northern façade of the residence at 241 9th Avenue (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Rezoning Alternative is predicted to produce noise levels up to the low 70s dBA on these residences' other façades (i.e., receptor 79 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments less than 10 dBA. This prediction of predicted noise level increments as well as "marginally unacceptable" noise levels means noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impact at the eastern, western, and southern façades of the residences at 229 through 241 9th Avenue.

Residences on Block 722 at 406 to 420 and 446 to 462 W. 25th Street – Receptors 80 through 86 and 88 through 91

At the existing residential receptors on Block 722 located along the southern side of W. 25th Street, i.e., receptors 80 through 86 and 88 through 91, existing weekday noise levels are in the low 60s to low 70s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA at the northern, eastern, and western façades of these buildings (i.e., receptors 80, 81, 83, 85, and 88 through 90 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 20 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 27 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Rezoning Alternative would result in a significant adverse noise impact at the northern, eastern, and western façades of the residences at 406 to 420 and 446 to 462 W. 25th Street and 258 10th Avenue (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA on these residences' southern façades (i.e., receptors 82, 84, 86, and 91 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments less than 10 dBA. Based on the moderate intensity and limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impact at the southern façades of the residences on Block 722 at 406 to 420 and 446 to 462 W. 25th Street.

Residences on Block 723 at 263 9th Avenue and 401 W. 25th Street – Receptors 92 through 99

At the existing residential receptors on Block 723 located along the western side of 9th Avenue, i.e., receptors 92 through 99, existing weekday noise levels are in the low 60s to low 70s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the low 80s dBA at the western façades of these buildings (i.e., receptors 92, 95, and 96 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 21 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 35 consecutive months. This prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Rezoning Alternative would result in a significant adverse noise impact at the western façades of the residences at 263 9th Avenue and 401 W. 25th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on these residences' northern, eastern, and southern façades (i.e., receptors 93, 94, and 97 through 99 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 10 dBA. While noise level increments in this range would be noticeable and have the potential to be disruptive, they would occur for no more than approximately 7 consecutive months, and construction noise would generally not occur during nighttime hours when residents would be most sensitive to noise. Based on the moderate intensity and limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impacts at northern, eastern, and southern façades of the residences on Block 723 at 263 9th Avenue and 401 W. 25th Street.

PS 33 Chelsea Prep at 281 9th Avenue – Receptors 100 through 108

At the existing PS 33 Chelsea Prep located on Block 724 along the western side of 9th Avenue, i.e., receptors 100 through 108, existing weekday noise levels are in the low 60s to low 70s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA at the northern and western façades of the building (i.e., receptors 100 through 103, 107, and 108 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 21 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 27 consecutive months. Based on field observations, the windows at PS 33 appear to consist of insulated glass and make up only a small portion of the building façade surface area, with the remaining façade consisting of brick/masonry construction. The school also appears to have through-window air conditioners. Consequently, the building façade would be expected to provide approximately 25 dBA window/wall attenuation, making interior noise levels during the most noise-intensive construction activities no greater than the high 50s dBA—comparable to typical noise levels in a commercial office setting. The prediction of potentially disruptive noise level increments over an extended duration, "clearly unacceptable" noise levels, and maximum interior levels greater than the recommended threshold for classroom use means construction of the Rezoning Alternative would result in a significant adverse noise impact at the northern and western façades of the school at 281 9th Avenue (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on this school's southern and eastern façades (i.e., receptors 104 through 106 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments less than 10 dBA. These predicted noise level increments mean noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impact at the eastern and southern façades of PS 33 Chelsea Prep at 281 9th Avenue.

Chelsea Park – Receptors 109 and 110

At Chelsea Park, i.e., receptors 109 and 110, existing ambient noise levels are in the mid-60s dBA, excluding noise generated by users of the park.

Construction of the Rezoning Alternative is predicted to produce noise levels at the park reaching the mid-70s dBA, in the "marginally unacceptable" range, and resulting in noise level increments up to approximately 11 dBA. The predicted noise level increases at these open space locations would be noticeable and would exceed the *CTM* impact criteria; total noise levels would exceed the 55 dBA L_{10} noise level recommended by the *CTM* for passive open spaces by up to approximately 19 dBA. However, noise levels in this area already exceed *CTM*-recommended values under the existing condition. The *CTM* noise guidelines for open spaces provide for a relatively low noise level that is intended as a goal for outdoor areas requiring serenity and quiet, such as passive open spaces, but such levels are often not achieved due to activity on the streets surrounding most New York City open space areas and parks. Chelsea Park consists of a soccer field, handball court, basketball court, playground, and calisthenics area, which are spaces used for active recreation that are not as sensitive to noise as a purely passive open space. Furthermore, according to *CTM* guidance, typical noise levels proximate to playground areas in use would be in the mid-70s dBA, and as such the predicted noise levels during construction would be comparable to existing noise levels when the park is in use. Additionally, construction of the Rezoning Alternative would occur during weekday daytime hours except for occasional Saturday work according to NYCDOB permits (see "Hours of Work" above), leaving the park typically unaffected by noise during evenings and weekends, which are common times of use for the park. Consequently, noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impact at Chelsea Park.

Medical Building at 303 9th Avenue – Receptors 111 and 112

At the medical clinic on Block 724 located within Chelsea Park, i.e., receptors 111 and 112, existing weekday noise levels are in the low 60s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA at the southern and western façades of the building (i.e., receptors 111 and 112 facing construction), in the "marginally unacceptable" range and would result in noise level increments up to approximately 16 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 15 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration means construction of the Rezoning Alternative would result in a significant adverse noise impact at the southern and western façades of the medical clinic at 303 9th Avenue (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

The northern and eastern façades of this building face away from construction and towards 9th Avenue and would consequently experience less construction noise and greater existing ambient noise levels, which would result in lower noise level increments due to construction. As such, noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impact at the northern and eastern façades of 303 9th Avenue.

Commercial Offices at 75 9th Avenue and 437 W. 16th Street – Receptors 429 through 434

At the existing commercial office receptors along W. 16th Street between Ninth and 10th Avenues, i.e., receptors 429 through 434, existing weekday noise levels are in the mid-60s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the low 80s dBA at the northern, eastern, and southern façades of these buildings (i.e., receptors 429 and 431 through 433 facing construction), in the "clearly unacceptable" range, that would result in noise level increments up to approximately 19 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 20 consecutive months. This prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Rezoning Alternative would result in a significant adverse noise impact at the northern façade of the commercial offices at 75 9th Avenue and the northern, eastern, and southern façades of the commercial offices at 437 W. 16th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Rezoning Alternative is predicted to produce noise levels up to the low 70s dBA on these offices' western and eastern façades (i.e., receptors 430 and 434 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments less than 10 dBA. The moderate intensity and limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels means noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impacts at western façade of the commercial offices at 75 9th Avenue nor the western and southern façades of the commercial offices at 437 W. 16th Street.

Residences at 450 W. 17th Street – Receptors 436 through 442

At the existing residential receptors on Block 722 located along the eastern side of 10th Avenue between W. 16th and W. 17th Streets, i.e., receptors 436 through 442, existing weekday noise levels are in the mid-60s to low 70s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA at the northern, eastern, and courtyard northern and southern façades (i.e., receptors 437 and 440 through 442 facing construction), in the "clearly unacceptable" range, and result in noise level increments up to approximately 21 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 32 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Rezoning Alternative would result in a significant adverse noise impact at the northern, eastern, and courtyard northern and southern façades of the residences at 450 W. 17th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on the building's other façades (i.e., receptors 436, 438, and 439 facing away from construction) in the "marginally unacceptable" range, and result in noise level increments up to approximately 10 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 10 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impacts at western, southern, or courtyard eastern façades of the residences at 450 W. 17th Street.

Commercial Offices at 453 W. 17th Street – Receptors 444 through 446

At the existing commercial office receptors along W. 17th Street between Ninth and 10th Avenues, i.e., receptors 429 through 434, existing weekday noise levels are in the mid-60s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA at the eastern façade of this building (i.e., receptor 445 facing construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 12 dBA. At this façade, noise level increments exceeding 10 dBA would occur for up to approximately 18 consecutive months. Based on field observations, the windows on the eastern façade of 453 W. 17th Street appear to consist of insulated glass and make up only a small portion of the building façade surface area, with the remaining façade consisting of brick/masonry construction. Consequently, the building façade would be expected to provide approximately 25 dBA window/wall attenuation, resulting in interior noise levels throughout construction no more than 1 dBA greater than 50 dBA (i.e., the threshold considered acceptable for commercial office use according to *CTM* noise exposure criteria). Consequently, based on the very limited area of effect and duration of noise predicted to result from construction of the Rezoning Alternative, it would not rise to the level of a significant impact at this façade.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on these offices' western and southern façades (i.e., receptors 444 and 446 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments less than 10 dBA. Additionally, with 25 dBA window/wall attenuation, interior noise levels would be in the high 40s dBA, which would be considered acceptable for commercial office use according to *CTM* noise exposure criteria. Based on the moderate intensity and limited duration of predicted noise level increments as well as acceptable interior noise levels, noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impact at the western and southern façades of the commercial offices at 453 W. 17th Street.

Residences at 428 to 444 W. 19th Street and 447 W. 18th Street – Receptors 449 through 458 and 463 through 468

At the existing mid-block residential receptors on Block 716, i.e., receptors 449 through 459 and 463 through 468, existing weekday noise levels are in the mid- to high 60s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA at the northern, southern, and eastern façades of these buildings (i.e., receptors 449 through 451, 454, 457, and 463 through 467 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 20 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 36 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Rezoning Alternative would result in a significant adverse noise impact at the northern, southern, and eastern façades of the residences at 428 to 444 W. 19th Street and 447 W. 18th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on these residences' western façades (i.e., receptors 452, 453, 455, 456, 458, and 468 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 12 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 9 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impacts at the western façades of the residences at 428 to 444 W. 19th Street and 447 W. 18th Street.

Residences at 435 W. 19th Street, 159 9th Avenue, and 412 to 420 W. 20th Street – Receptors 469 through 476, 479, 480, and 485 through 490

At the existing residential receptors on Block 717 surrounding the Future Fulton Residential Building 1 site, i.e., receptors 469 through 476, 479, 480, and 485 through 490, existing weekday noise levels are in the mid-60s to low 70s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA at the façades of these buildings facing construction (i.e., receptors 469, 470, 473 through 475, 479, and 485 through 487), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 23 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 28 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Rezoning Alternative would result in a significant adverse noise impact at the construction-facing façades of the residences at 435 W. 19th Street, 159 9th Avenue, and 412 to 420 W. 20th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Rezoning Alternative is predicted to produce noise levels up to the low 80s dBA on these residences' other façades (i.e., receptors 471, 472, 476, 480, and 488 through 490 facing away from construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 11 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 4 consecutive months. Based on the limited duration of predicted noise level increments as well as "clearly unacceptable" noise levels, noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impacts at the other façades of the residences at 435 W. 19th Street, 159 9th Avenue, and 412 to 420 W. 20th Street.

Hotels at 363 and 355 W. 16th Street – Receptors 521 through 524 and 528 through 532

At the hotel guestroom receptors at 363 and 355 W. 16th Street, i.e., receptors 521 through 524 and 528 through 532, existing weekday noise levels are in the mid-60s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the low 80s dBA at the northern and western façades of these buildings (i.e., receptors 522, 523, 529, and 530 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 16 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 36 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Rezoning Alternative would result in a significant adverse noise impact at the western portion of the northern façade and western façade of the hotels at 363 and 355 W. 16th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on these hotels' southern, eastern, and eastern portion of northern façades (i.e., receptors 521, 524, 528, 531, and 532 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 11 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 10 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impacts at the southern and eastern façades of the hotels at 363 and 355 W. 16th Street.

Residences at 108 through 112 and 128-144 9th Avenue – Receptors 533, 534, 543 through 548, and 558 through 560

At the existing residential receptors on Blocks 741 and 742 located along the eastern side of 9th Avenue between W. 17th and W. 19th Streets, i.e., receptors 533, 534, 543 through 548, and 558 through 560, existing weekday noise levels are in the mid-60s to low 70s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA at the western façades (i.e., receptors 534, 543, 544, 548, and 559 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 14 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 36 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Rezoning Alternative would result in a significant adverse noise impact at the western façades of the residences at 108 through 112 and 128-144 9th Avenue (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on these residences' other façades (i.e., receptors 533, 545 through 547, 558, and 560 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 12 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 11 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impacts at the other façades of the residences at 108 through 112 and 128-144 9th Avenue.

James Baldwin School at 335 W. 18th Street – Receptors 549, 550, 552, and 554

At the existing James Baldwin School located between W. 18th and W. 19th Streets and on the eastern side of 9th Avenue, i.e., receptors 549, 550, 552, and 554, existing weekday noise levels are in the low to high 60s dBA.

Construction of the Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA at the façades in the school's western courtyard (i.e., receptor 552) and westernmost window column on the southern façade (i.e., receptor 550), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 13 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 30 consecutive months. Based on field observations, the windows at James Baldwin School appear to consist of insulated glass and make up only a small portion of the building façade surface area, with the remaining façade consisting of brick/masonry construction. The school also appears to have through-window air conditioners. Consequently, the building façade would be expected to provide approximately 25 dBA window/wall attenuation, making interior noise levels during the most noise-intensive construction activities no greater than the low 50s dBA—comparable to typical noise levels in a commercial office setting. The prediction of " objectionable" noise level increments over an extended duration, "clearly unacceptable" noise levels, and maximum interior levels greater than the recommended threshold for classroom use construction of the Rezoning Alternative would result in a significant adverse noise impact at the western courtyard façades and westernmost window column on the southern façade of the school at 335 W. 18th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA on the school's other façades (i.e., receptors 549 and 554 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 11 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 4 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Rezoning Alternative would not rise to the level of a significant adverse impacts at the other façades of the James Baldwin School at 335 W. 18th Street.

Existing Elliott-Chelsea Residential Buildings – Receptors 147 through 172 and 177 through 194

At the existing Elliott-Chelsea residential buildings on Blocks 723 and 724, including Elliott Buildings 1, 2, 3, and 4, and Chelsea Building 1, i.e., receptors 147 through 172 and 177 through 194, existing weekday noise levels are in the low 60s to low 70s dBA.

Since the construction of the Rezoning Alternative would proceed on a staged schedule, some buildings would remain occupied while construction begins at other adjacent sites. As such, construction is predicted to produce noise levels up to the mid-80s dBA at these buildings while they remain occupied, in the "clearly unacceptable" range, and would result in noise level increments up to approximately 24 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 37 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Rezoning Alternative would result in a significant adverse noise impact at the existing residential buildings at Elliott Buildings 1, 2, 3, and 4, and Chelsea Building 1 while they remain occupied (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Future Elliott Chelsea Residential Buildings 1, 2, 3, 5, and 6 – Receptors 301 through 322 and 329 through 337

Based on the conceptual construction schedule, it is assumed that Future Elliott-Chelsea Buildings 1, 2, 3, 5, and 6 would be completed and occupied prior to the completion of construction of the Rezoning Alternative. Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA, in the "clearly unacceptable" range, and would result in noise level increments up to approximately 18 dBA. At these receptors, noise level increments exceeding 10 dBA would occur for up to approximately 27 consecutive months. As described in **Chapter 05.16,** residential development at these sites would be required to provide at least 28 dBA and up to 33 dBA window/wall attenuation and an alternate means of ventilation. Consequently, interior noise levels during the most noise-intensive construction activities would be no greater than the mid-50s dBA. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction noise associated with the Rezoning Alternative would rise to the level of a significant adverse impact at the newly introduced residences at Future Elliott-Chelsea Buildings 1, 2, 3, 5, and 6 (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Existing Fulton Residential Buildings – Receptors 604 through 630 and 640 through 651

At the existing Fulton residential buildings on Blocks 714, 715, and 716, including Fulton Buildings 2, 3, 4, 5, 6, 9, and 10, i.e., receptors 604 through 630 and 640 through 651, existing weekday noise levels are in the mid-60s to low 70s dBA.

Since the construction of the Rezoning Alternative would proceed on a staged schedule, some buildings would remain occupied while construction begins at other adjacent sites. As such, construction is predicted to produce noise levels up to the mid-80s dBA at these buildings while they remain occupied, in the "clearly unacceptable" range, and would result in noise level increments up to approximately 23 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 41 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Rezoning Alternative would result in a significant adverse noise impact at the existing residential buildings at Fulton Buildings 2, 3, 4, 5, 6, 9, and 10 while they remain occupied (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Future Fulton Residential Buildings 1 through and 6 – Receptors 801 through 836

Based on the conceptual construction schedule, it is assumed that Future Fulton Buildings 1 through 6 would be completed and occupied prior to the completion of construction of the Rezoning Alternative. Construction of the Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA, in the "clearly unacceptable" range, and would result in noise level increments up to approximately 16 dBA. At these receptors, noise level increments exceeding 10 dBA would occur for up to approximately 39 consecutive months. As described in **Chapter 05.16,** residential development at these sites would be required to provide at least 28 dBA and up to 31 dBA window/wall attenuation and an alternate means of ventilation. Consequently, interior noise levels during the most noise-intensive construction activities would be no greater than the mid-50s dBA. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction noise associated with the Rezoning Alternative would rise to the level of a significant adverse impact at the newly introduced residences at Future Fulton Buildings 1 through 6 (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Other Receptors Where Noticeable Construction Noise Would Occur for Less Than One Year

At receptors 29, 30, 34, 35, 38 through 42, 59 through 64, 67, 68, 481, 517 through 520, 542, 558, 578 through 580, and 631 through 635, representing residential and commercial office uses within one block of the construction work areas, construction of the Rezoning Alternative is predicted to produce noise levels up to the low 80s dBA, in the "clearly unacceptable" according to the *CTM* noise exposure criteria, and would result in noise level increments between approximately 10 and 13 dBA. Noise level increments of this magnitude would be noticeable and have the potential to be disruptive at times but would be comparable to noise levels adjacent to typical construction sites in New York City. Total exterior noise levels up to approximately 80 dBA, when reduced by a minimum typical level of window/wall attenuation (i.e., 25 dBA), would result in interior noise levels up to approximately the mid-50s dBA, which would be comparable to typical commercial office setting. Further, noise levels in this range would occur for no more than approximately 10 consecutive months, and construction noise would generally not occur during nighttime hours when residents would be most sensitive to noise. Additionally, the predicted noise level increments would occur only at limited façades and floors of each affected building. Based on the limited magnitude, duration, and area of effect, construction noise associated with the Rezoning Alternative would not rise to the level of a significant adverse impact at these receptors.

Other Receptors

At the remaining receptors, including 1 through 8, 13 through 15, 20 through 28, 36, 37, 43 through 53, 65, 66, 69 through 77, 87, 113 through 146, 173 through 176, 323 through 328, 401 through 428, 435, 443, 447, 448, 453, 459 through 462, 477, 478, 482 through 484, 491 through 516, 525 through 527, 535 through 541, 555 through 557, 561 through 577, 581 through 595, 601 through 603, 636 through 639, and 837 through 840, construction of the Rezoning Alternative is predicted to result in noise level increases that would be no greater than 10 dBA, but would exceed the *CTM* construction noise screening thresholds for some portion of the construction period. While such increases in noise may be noticeable at times, predicted noise level increments would be moderate and would occur over a very limited duration. Noise levels at these receptors would generally be in the "marginally acceptable" or "marginally unacceptable" range throughout construction (as are existing noise levels). Consequently, construction noise associated with the Rezoning Alternative would not rise to the level of a significant adverse impact at these receptors.

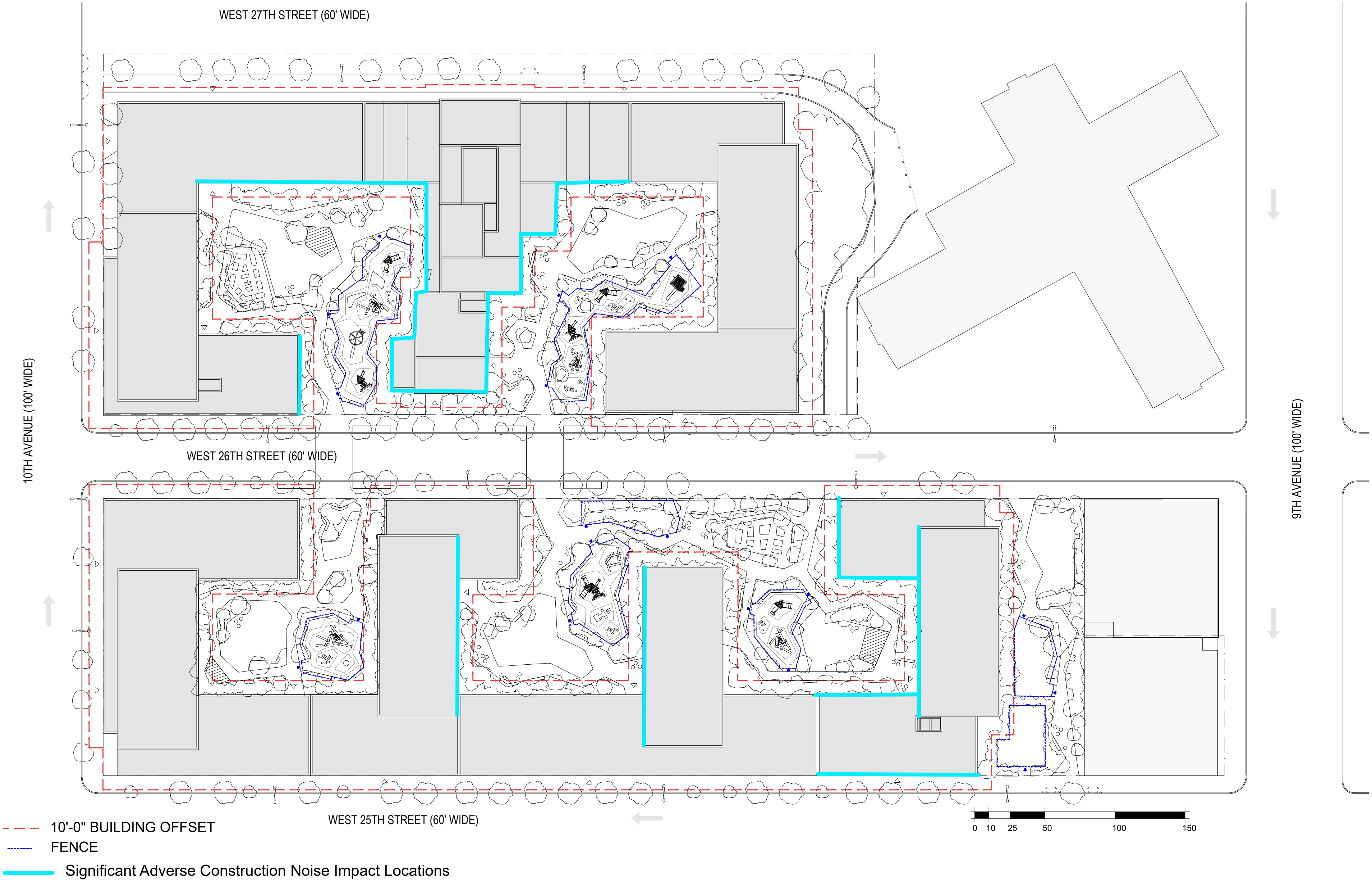
Rezoning Alternative Construction Noise Analysis Conclusion

As discussed above, construction of the Rezoning Alternative is predicted to result in elevated noise levels at several of the analyzed receptors, which represent the residences, hotels, commercial offices, public institutions, and publicly accessible open spaces. At some receptors, construction of the Proposed Project would result in noise level increments that would be noticeable and potentially intrusive over an extended duration with interior noise levels exceeding the acceptable threshold, which would be considered significant adverse impacts. Significant adverse impacts related to construction noise would occur at the locations indicated in **Figures 05.19-6a** through **05.19-7b** and **Table 05.19-51**. See further discussion of these impacts below in **Section H**.

Table 05.19-51: Adverse Significant Construction Noise Impact Locations – Rezoning Alternative

Receptors	Address	Land Use	Façade(s)
17, 18	Avenues the World School – 259 Tenth Avenue	School	E
54	London Terrace Gardens Apartments – 460 W. 24th Street	Residential	N
85	246 through 258 Tenth Avenue	Residential	N
78	229 through 241 Ninth Avenue	Residential with Commercial Below	N
80, 81, 83, 88-90	406 to 420 and 446 to 462 W. 25th Street	Residential	N, E, W
92, 95, 96	263 Ninth Avenue and 401 W. 25th Street	Residential	W
100-103, 107, 108	PS 33 Chelsea Prep – 281 Ninth Avenue	School	N, W
111, 112	303 Ninth Avenue	Medical Clinic	W, S
429, 431-433	75 Ninth Avenue and 437 W. 16th Street	Commercial and Office Buildings	75 Ninth Avenue: N 437 W. 16th Street: N, E, S
437, 440-442	450 W. 17th Street	Residential with Commercial Below	N, E, Courtyard N, Courtyard S
449-451, 454, 457, 463-467	428 to 444 W. 19th Street and 447 W. 18th Street	Residential	N, E, S
469, 470	435 W. 19th Street	Residential	S, E
473-475	159 Ninth Avenue	Residential	W, S
479, 485-487	412 to 420 W. 20th Street	Residential	S, E (construction-facing)
522, 523, 529, 530	363 and 355 W. 16th Street	Hotel	N (construction-facing), W
534, 543, 544, 548, 559	108 through 112 and 128-144 Ninth Avenue	Residential with Commercial Below	W
550, 552	James Baldwin School – 335 W. 18th Street	School	Courtyard W, Western Window Column on S
148, 149, 151, 152	Elliott Building 2	Residential	E
156-162, 164, 166	Elliott Building 3	Residential	All
167-172	Chelsea Building 1	Residential	All
178-182	Elliott Building 1	Residential	E, S
185-189, 191-194	Elliott Building 4	Residential	N, W, S
301, 302, 303, 306, 307, 309	Future Elliott Chelsea Building 1	Residential	E, W, S
311, 313	Future Elliott Chelsea Building 2	Residential	Courtyard S, E
316, 317, 320-322	Future Elliott Chelsea Building 3	Residential	Courtyard N, W, S
330	Future Elliott Chelsea Building 5	Residential	E
334	Future Elliott Chelsea Building 6	Residential	W
605-607	Fulton Building 2	Residential	N, E
611, 612	Fulton Building 3	Residential	N
615-619	Fulton Building 4	Residential	All
623	Fulton Building 5	Residential	E
626-630	Fulton Building 6	Residential	N, E, S
640-645	Fulton Building 9	Residential	All
646-648	Fulton Building 10	Residential	N, W
802-804	Future Fulton Building 1	Residential	S
806	Future Fulton Building 2	Residential	W
810, 813, 814	Future Fulton Building 3	Residential	W, S
815, 816, 819, 822	Future Fulton Building 4	Residential	E, S
823, 824, 827-829	Future Fulton Building 5	Residential	N, Courtyard N, Courtyard W
835, 836	Future Fulton Building 6	Residential	N (construction-facing), E

Fulton Houses Project Site NYCHA Significant Impacts - Rezoning Alternative



Fulton and Elliott-Chelsea Houses Redevelopment Project

Figure 05.19-6b
Elliott-Chelsea Houses Project Site NYCHA Significant Impacts - Rezoning Alternative

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Significant Adverse Construction Noise Impact Locations

Fulton and Elliott-Chelsea Houses Redevelopment Project

Figure 05.19-7a

Fulton Houses Project Site Non-NYCHA Significant Impacts - Rezoning Alternative

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Significant Adverse Construction Noise Impact Locations

Fulton and Elliott-Chelsea Houses Redevelopment Project

Figure 05.19-7b
Elliott-Chelsea Houses Project Site Non-NYCHA Significant Impacts - Rezoning Alternative

Alternative 3 – Non-Rezoning Alternative

Cumulative On-Site Equipment and Construction Truck Noise Analysis

Noise levels resulting from construction of the Non-Rezoning Alternative were predicted to exceed the *CTM* construction noise screening thresholds for some portion of the construction period at several of the analyzed receptors. The potential for significant adverse impacts at these receptors was determined by evaluating the duration and magnitude of these increments. At most receptors, maximum predicted construction noise level increments would be less than 10 dBA throughout construction. While such increases in noise may be noticeable at times, predicted noise level increments would be moderate and would occur over a limited duration. Noise levels generated by construction at these receptors would generally be in the "acceptable" to "marginally unacceptable" categories according to the *CTM* noise exposure criteria throughout construction. Consequently, construction noise associated with the Non-Rezoning Alternative would not rise to the level of a significant adverse impact at these receptors.

For receptors where noise level increments would exceed 10 dBA, the construction noise level predictions are summarized in **Table 05.19-52** and discussed further below. The full construction noise analysis results are provided in **Appendix J.2**.

Table 05.19-52: Construction Noise Analysis Results in dBA – Non-Rezoning Alternative

Receptor	Address	Maximum Existing L_{10}	Total L_{10}		Change in L_{10}		Maximum Continuous Duration (Months)
			Min	Max	Min	Max	
9, 10	245 Tenth Avenue	73.3	61.8	76.9	0.1	12.7	18
11, 12	500 W. 25th Street	73.3	66.2	78.3	0	11.5	7
16-19	Avenue the World School – 259 Tenth Avenue	73.3	64.7	80.4	0	10.8	10
29, 30	518 W. 27th Street	66.3	61.7	72	0	10.3	10
31-33	303 Tenth Avenue	73.3	61.7	76.3	0	13.5	19
40-42	520 W. 28th Street	63.1	61.8	72.1	0.1	10.4	10
59-64	465 W. 23rd Street	73.1	63.9	75.5	0	10.3	7
67, 68	248 Tenth Avenue	73.1	61.8	74.7	0.1	10.9	9
78, 79	241 Ninth Avenue	72.4	65.6	78.9	0	13.2	19
80	416 W. 25th Street	67.4	65.1	82.3	0	17.3	34
81, 82	450 W. 25th Street	67.1	61.9	82.1	0.1	17.2	33
83, 84	460 W. 25th Street	67.8	61.8	82.2	0.1	14.9	22
85, 86	258 Tenth Avenue	73.3	68.7	82.6	0.1	13.6	13
88-91	420 W. 25th Street	67.3	61.7	82	0	17.7	34
92-94	263 Ninth Avenue	73.1	62.1	83.2	0	21	34
95-99	401 W. 25th Street	72.3	61.8	83.1	0	21.4	34
100-108	P.S. 33 Chelsea Prep – 281 Ninth Avenue	70.6	61.7	82.5	0	20.9	34
109, 110	Chelsea Park	63.6	62.1	73.7	0.2	11.8	27
111, 112	303 Ninth Avenue	61.7	61.8	77.8	0.1	16.1	33
147-155	Elliott Building 2	71.7	61.7	82.5	0	17.2	34
156-166	Elliott Building 3	67.2	61.7	85.3	0	22.4	34
167-172	Chelsea Building 1	66.1	61.7	84.3	0	22.6	34
177-184	Elliott Building 1	69	61.7	84.9	0	23.2	27
185-194	Elliott Building 4	67	61.7	83.9	0	22.2	34

Table 05.19-52 (continued): Construction Noise Analysis Results in dBA – Non-Rezoning Alternative

Receptor	Address	Maximum Existing L_{10}	Total L_{10}		Change in L_{10}		Maximum Continuous Duration (Months)
			Min	Max	Min	Max	
201-211	Future Chelsea-Elliott Building 1	66.8	66.8	86.8	0	20	34
212-216	Future Chelsea-Elliott Building 2	74.9	66.8	82.4	0	13.2	18
217-223	Future Chelsea-Elliott Building 3	66.8	66.8	84.7	0	17.9	30
224-227	Future Chelsea-Elliott Building 4	66.8	66.8	82.2	0	15.4	33
228-232	Future Chelsea-Elliott Building 5	74.9	66.8	82.9	0	16.1	24
233-237	Future Chelsea-Elliott Building 6	66.8	66.8	77.7	0	10.9	3
429, 430	75 Ninth Avenue	64.4	63.9	79.9	0	16	29
431-434	437 W. 16th Street	65.1	63.9	85.5	0	21.7	33
435	458 W. 17th Street	68.1	66.9	77.8	0	10.8	6
436-442	450 W. 17th Street	70.2	63.9	86.7	0	22.9	33
443	457 W. 17th Street	68.3	67.3	78.2	0	10.9	6
444-446	453 W. 17th Street	67.4	63.9	79.5	0	15.7	33
449-452	428 W. 19th Street	66.7	63.9	84.6	0	20.8	36
454, 455	444 W. 19th Street	67.7	63.9	77.2	0	12.3	12
456-458	447 W. 18th Street	68.7	63.9	76.9	0	13.1	24
463-468	425 W. 18th Street	68.3	63.9	85.6	0	21.8	36
469-471	435 W. 19th Street	67.3	63.9	84.8	0	21	36
472-476	159 Ninth Avenue	72.6	63.9	87.7	0	23.9	28
479, 480	412 W. 20th Street	66.9	63.9	84.5	0	20.7	24
481	430 W. 20th Street	67.5	66.3	78.6	0	12.3	9
482-484	445 W. 19th Street	67	63.9	74.7	0	10.6	5
485-490	420 W. 20th Street	66.9	63.9	86.2	0	22.4	34
517-520	111 Eighth Avenue	70.3	63.9	78	0	12	19
521-524	363 W. 16th Street	67	63.9	80.1	0	15.2	29
528-532	355 W. 16th Street	67.2	63.9	80.2	0	15.3	29
533, 534	108 Ninth Avenue	72.2	68	82.3	0.1	11.6	7
543-546	112 Ninth Avenue	72.3	63.9	83.4	0	13	24
547, 548	128 Ninth Avenue	72.6	69.8	82.6	0	11.1	9
549, 550, 552, 554	James Baldwin School – 335 W. 18th Street	68.6	63.9	78.4	0	12.5	15
559, 560	136 Ninth Avenue	72.3	63.9	82.2	0	11.5	9
578-580	363 W. 20th Street	72.4	63.9	75.4	0	10.1	4
604-609	Fulton Building 2	63.9	63.9	80.9	0	17	33
610-614	Fulton Building 3	70.9	63.9	84	0	18.5	33
615-620	Fulton Building 4	66.9	63.9	87.6	0	22.4	33
621-624	Fulton Building 5	67	63.9	82.6	0	18.7	33
625-630	Fulton Building 6	64.4	63.9	87.5	0	23.7	36
631-635	Fulton Building 7	71.8	63.9	78.3	0	13.3	3
640-645	Fulton Building 9	64.4	63.9	87.6	0	23.8	36
646-651	Fulton Building 10	72.5	63.9	84.2	0	18.9	34
701-706	Future Fulton Building 1	75	67.6	83.5	0	15.9	32
707-710	Future Fulton Building 2	75	67.6	85.8	0	14.8	18
711-714	Future Fulton Building 3	73.2	70.3	84.9	0	13.9	18
719-722	Future Fulton Building 5	71	70.3	83.5	0	13.2	19
723-726	Future Fulton Building 6	69.7	69.7	86.9	0	17.2	32
727-733	Future Fulton Building 7	70.3	68.8	85.5	0	15.2	24
734-737	Future Fulton Building 8	71	69.7	83.9	0	14.2	27
738-741	Future Fulton Building 9	69.7	68.8	81	0	11.3	3

Residences "Catty Corner" from Construction Across 10th Avenue – Receptors 9 through 12, 31 through 33

At the existing residential receptors on Block 696 along the western side of 10th Avenue between W. 24th and W. 25th Streets, i.e., receptors 9 through 12, and the existing residential receptors located at 303 10th Avenue, i.e., receptors 31 through 33, existing weekday noise levels are in the mid-60s to mid-70s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA, in the "marginally unacceptable" range, according to the *CTM* noise exposure criteria and would result in noise level increments up to approximately 14 dBA. At these receptors, noise level increments exceeding 10 dBA would occur for up to approximately 19 consecutive months. These buildings were constructed on lots containing E-designations for noise requiring at least 28 dBA window/wall attenuation and an alternate means of ventilation. These buildings were built after the E-designation was established, and consequently, interior noise levels during the most noise-intensive construction activities would be no greater than the low 50s dBA—comparable to typical noise levels in a commercial office setting. While the predicted interior noise levels are greater than the recommended 45 dBA threshold, construction under the Non-Rezoning Alternative would typically occur during weekday daytime hours and would therefore not produce noise during nighttime hours when residents would be most sensitive to noise.

Based on the prediction of construction noise levels up to the high 70s dBA occurring during weekday daytime hours and interior noise levels would exceed the 45 dBA threshold at only a portion of the residential apartment units by only approximately 5 dBA, construction noise associated with the Non-Rezoning Alternative would not rise to the level of a significant adverse impact at the residential receptors on Block 696 or 303 10th Avenue.

Residences at 229 through 241 9th Avenue – Receptors 78 and 79

At the existing residential receptors on Block 722 located along the western side of 9th Avenue between W. 24th and W. 25th Streets, i.e., receptors 78 and 79, existing weekday noise levels are in the high 60s to low 70s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA at the northern façade of 241 9th Avenue (i.e., receptor 78 facing construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 13 dBA. At this façade, noise level increments exceeding 10 dBA would occur for up to approximately 19 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as noise levels in the high 70s dBA means construction under the Non-Rezoning Alternative would result in a significant adverse noise impact at the northern façade of the residence at 241 9th Avenue (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the low 70s dBA on these residences' other façades (i.e., receptor 79 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments less than 10 dBA. Based on the moderate intensity and limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction under the Non-Rezoning Alternative would not rise to the level of a significant adverse impacts at eastern, western, and southern façades of the residences at 229 through 241 9th Avenue.

Residences at 406 to 420 and 446 to 462 W. 25th Street – Receptors 80 through 86 and 88 through 91

At the existing residential receptors on Block 722 located along the southern side of W. 25th Street, i.e., receptors 80 through 86 and 88 through 91, existing weekday noise levels are in the low 60s to low 70s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the low 80s dBA at the northern, eastern, and western façades of these buildings (i.e., receptors 80, 81, 83, 85, and 88 through 90 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 18 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 34 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Non-Rezoning Alternative would result in a significant adverse noise impact at the northern, eastern, and western façades of the residences at 406 to 420 and 446 to 462 W. 25th Street and 258 10th Avenue (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on these residences' southern façades (i.e., receptors 82, 84, 86, and 91 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments less than 10 dBA. Based on the moderate intensity and limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction under the Non-Rezoning Alternative would not rise to the level of a significant adverse impact at the southern façades of the residences at 406 to 420 and 446 to 462 W. 25th Street.

Residences at 263 9th Avenue and 401 W. 25th Street – Receptors 92 through 99

At the existing residential receptors on Block 723 located along the W side of 9th Avenue, i.e., receptors 92 through 99, existing weekday noise levels are the mid-60s to low 70s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the low 80s dBA at the western façades of these buildings (i.e., receptors 92, 95, and 96 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 21 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 34 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction under the Non-Rezoning Alternative would result in a significant adverse noise impact at the western façades of the residences at 263 9th Avenue and 401 W. 25th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on these residences' northern, eastern, and southern façades (i.e., receptors 93, 94, and 97 through 99 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 10 dBA. While noise level increments in this range would be noticeable and have the potential to be disruptive, they would occur for no more than approximately 7 consecutive months, and construction noise would generally not occur during nighttime hours when residents would be most sensitive to noise. Additionally, the predicted noise level increments would occur only at limited façades and floors of each affected building. Based on the limited duration and area of effect, noise associated with construction under the Non-Rezoning Alternative would not rise to the level of a significant adverse impact at northern, eastern, and southern façades of the residences at 263 9th Avenue and 401 W. 25th Street.

PS 33 Chelsea Prep at 281 9th Avenue – Receptors 100 through 108

At the existing PS 33 Chelsea Prep located on Block 724 along the western side of 9th Avenue, i.e., receptors 100 through 108, existing weekday noise levels are in the low 60s to low 70s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA at the northern and western façades of the building (i.e., receptors 100 through 103, 107, and 108 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 21 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 34 consecutive months. Based on field observations, the windows at PS 33 appear to consist of insulated glass and make up only a small portion of the building façade surface area, with the remaining façade consisting of brick/masonry construction. The school also appears to have through-window air conditioners. Consequently, the building façade would be expected to provide approximately 25 dBA window/wall attenuation, making interior noise levels during the most noise-intensive construction activities no greater than the high 50s dBA—comparable to typical noise levels in a commercial office setting. The prediction of potentially disruptive noise level increments over an extended duration, "clearly unacceptable" noise levels, and maximum interior levels greater than the recommended threshold for classroom use means construction under the Non-Rezoning Alternative would result in a significant adverse noise impact at the northern and western façades of the school at 281 9th Avenue (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on this school's southern and eastern façades (i.e., receptors 104 through 106 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments less than 10 dBA. Based on the moderate intensity and limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction under the Non-Rezoning Alternative would not rise to the level of a significant adverse impact at the eastern and southern façades of PS 33 Chelsea Prep at 281 9th Avenue.

Chelsea Park – Receptors 109 and 110

At Chelsea Park, i.e., receptors 109 and 110, existing ambient noise levels are in the mid-60s dBA, excluding noise generated by users of the park.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA at the park, in the "marginally unacceptable" range, and would result in noise level increments up to approximately 12 dBA. The predicted noise level increases at these open space locations would be noticeable, and would exceed the *CTM* impact criteria, and the total noise levels would exceed the 55 dBA L_{10} noise level recommended by the *CTM* for passive open spaces by up to approximately 19 dBA. However, noise levels in this area already exceed *CTM*-recommended values under the existing condition. The *CTM* noise guidelines for open spaces provide for a relatively low noise level that is intended as a goal for outdoor areas requiring serenity and quiet, such as passive open spaces, but such spaces are often not achieved due to the activity on the streets surrounding most New York City open space areas and parks. Chelsea Park consists of a soccer field, handball court, basketball court, playground, and calisthenics area, spaces that are used for active recreation, and that are not as sensitive to noise as a purely passive open space. Furthermore, according to *CTM* guidance, typical noise levels proximate to playground areas in use would be in the mid-70s dBA, and as such the predicted noise levels during construction are comparable to existing noise levels when the park is in use. Additionally, construction under the Non-Rezoning Alternative would occur during weekday daytime hours, leaving the Park unaffected by noise during evenings and weekends, which are common times of use for the park. Consequently, noise associated with construction under the Non-Rezoning Alternative would not rise to the level of a significant adverse impact at Chelsea Park.

Medical Building at 303 9th Avenue – Receptors 111 and 112

At the medical clinic on Block 724 located within Chelsea Park, i.e., receptors 111 and 112, existing weekday noise levels are in the low 60s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA at the southern and western façades of the building (i.e., receptors 111 and 112 facing construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 16 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 33 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration means construction under the Non-Rezoning Alternative would result in a significant adverse noise impact at the southern and western façades of the medical clinic at 303 9th Avenue (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Commercial Offices at 75 9th Avenue and 437 W. 16th Street – Receptors 429 through 434

At the existing commercial office receptors along W. 16th Street between Ninth and 10th Avenues, i.e., receptors 429 through 434, existing weekday noise levels are in the mid-60s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA at the northern, eastern, and southern façades of these buildings (i.e., receptors 429 and 431 through 433 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 22 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 33 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction under the Non-Rezoning Alternative would result in a significant adverse noise impact at the northern façade of the commercial offices at 75 9th Avenue and the northern, eastern, and southern façades of the commercial offices at 437 W. 16th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-70s on these offices' western and eastern façades (i.e., receptors 430 and 434 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 10 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 3 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction under the Non-Rezoning Alternative would not rise to the level of a significant adverse impacts at western façade of the commercial offices at 75 9th Avenue nor the western and southern façades of the commercial offices at 437 W. 16th Street.

Residences at 450 W. 17th Street – Receptors 436 through 442

At the existing residential receptors on Block 722 located along the eastern side of 10th Avenue between W. 16th and W. 17th Streets, i.e., receptors 436 through 442, existing weekday noise levels are in the mid-60s to low 70s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA at the northern, eastern, and courtyard northern and southern façades (i.e., receptors 437, 438, and 440 through 442 facing construction), in the "clearly unacceptable" range, resulting in noise level increments up to approximately 23 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 33 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction under the Non-Rezoning Alternative would result in a significant adverse noise impact at the northern, eastern, and courtyard northern, eastern, and southern façades of the residences at 450 W. 17th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the low 70s dBA on the residence's other façades (i.e., receptors 436, 438, and 439 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 13 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 6 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction under the Non-Rezoning Alternative would not rise to the level of a significant adverse impacts at the western or southern façades of the residences at 450 W. 17th Street.

Commercial Offices at 453 W. 17th Street – Receptors 444 through 446

At the existing commercial office receptors along W. 17th Street between Ninth and 10th Avenues, i.e., receptors 429 through 434, existing weekday noise levels are in the low to mid-60s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA at the eastern and southern façades of these offices' (i.e., receptors 444 and 445 facing construction), in the "marginally unacceptable" range, resulting in noise level increments up to approximately 16 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 33 consecutive months. Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-60s dBA on these offices' western façade (i.e., receptor 446 facing away from construction), in the "marginally acceptable" range, and would result in noise level increments less than 10 dBA.

Based on field observations, the windows of 453 W. 17th Street appear to consist of insulated glass and make up only a small portion of the building façade surface area, with the remaining façade consisting of brick/masonry construction. Consequently, the building façade would be expected to provide approximately 25 dBA window/wall attenuation, resulting in interior noise levels throughout construction of no more than 55 dBA. This maximum predicted level is typical for commercial office use and no more than 5 dBA greater than 50 dBA (i.e., the threshold considered acceptable for commercial office use according to *CTM* noise exposure criteria). Consequently, based on the very limited area of effect and duration of noise due to construction under the Non-Rezoning Alternative, it would not rise to the level of a significant impact at the commercial offices at 453 W. 17th Street.

Residences at 428 to 444 W. 19th Street and 447 W. 18th Street – Receptors 449 through 458 and 463 through 468

At the existing mid-block residential receptors on Block 716, i.e., receptors 449 through 459 and 463 through 468, existing weekday noise levels are in the low to high 60s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA at the northern, southern, and eastern façades of these buildings (i.e., receptors 449 through 451, 454, 457, and 463 through 467 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 22 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 36 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction under the Non-Rezoning Alternative would result in a significant adverse noise impact at the northern, southern, and eastern façades of the residences at 428 to 444 W. 19th Street and 447 W. 18th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on these residences' western façades (i.e., receptors 452, 453, 455, 456, 458, and 468 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 12 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 9 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction under the Non-Rezoning Alternative would not rise to the level of a significant adverse impacts at the western façades of the residences at 428 to 444 W. 19th Street and 447 W. 18th Street.

Residences at 435 W. 19th Street, 159 9th Avenue, and 412 to 420 W. 20th Street – Receptors 469 through 476, 479, 480, and 485 through 490

At the existing residential receptors on Block 717 surrounding the Future Fulton Residential Building 1 site, i.e., receptors 469 through 476, 479, 480, and 485 through 490, existing weekday noise levels are in the low 60s to low 70s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the high 80s dBA at the façades of these buildings facing construction (i.e., receptors 469, 470, 473 through 475, 479, and 485 through 487), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 24 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 36 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction under the Non-Rezoning Alternative would result in a significant adverse noise impact at the construction-facing façades of the residences at 435 W. 19th Street, 159 9th Avenue, and 412 to 420 W. 20th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA on these residences' other façades (i.e., receptors 471, 472, 476, 480, and 488 through 490 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 11 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 4 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction under the Non-Rezoning Alternative would not rise to the level of a significant adverse impacts at the other façades of the residences at 435 W. 19th Street, 159 9th Avenue, and 412 to 420 W. 20th Street.

Google Offices at 111 8th Avenue – Receptors 517 through 520

At the Google office receptors at 111 8th Avenue, i.e., receptors 517 through 520, existing weekday noise levels are in the low 70s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA at the northern and western façades of this building (i.e., receptors 518 and 519 facing construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 12 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 19 consecutive months. Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the low 70s dBA on the office's eastern and southern façades (i.e., receptors 517 and 520 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments less than 10 dBA. Based on field observations, the windows on the northern and western façades of 111 8th Avenue appear to consist of brick masonry exterior wall with non-operable insulated glass punch windows, and aerial imagery shows multiple air handling units on its roof, providing alternative means of ventilation and allowing for a closed window condition. Consequently, the building façade would be expected to provide approximately 28 dBA window/wall attenuation, resulting in interior noise levels throughout construction of 50 dBA (i.e., the threshold considered acceptable for commercial office use according to *CTM* noise exposure criteria). Consequently, based on the limited area of effect and duration of noise due to construction under the Non-Rezoning Alternative, it would not rise to the level of a significant impact at the offices at 111 8th Avenue.

Hotels at 363 and 355 W. 16th Street – Receptors 521 through 524 and 528 through 532

At the hotel guestroom receptors at 363 and 355 W. 16th Street, i.e., receptors 521 through 524 and 528 through 532, existing weekday noise levels are in the mid-60s dBA.

Construction for the Non-Rezoning Alternative is predicted to produce noise levels up to the low 80s dBA at the western portion of the northern façade and western façade of these buildings (i.e., receptors 522, 523, 529, and 530 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 15 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 29 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction noise under the Non-Rezoning Alternative would result in a significant adverse noise impact at the northern and western façades of the hotels at 363 and 355 W. 16th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA on these hotels' southern, eastern, and eastern portion of northern façades (i.e., receptors 521, 524, 528, 531, and 532 facing away from construction), in the "marginally unacceptable" range, resulting in noise level increments up to approximately 11 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 7 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Non-Rezoning Alternative would not rise to the level of a significant adverse impacts at the southern and eastern façades of the hotels at 363 and 355 W. 16th Street.

Residences at 112 9th Avenue – Receptors 543 through 546

At the existing residential receptors on Block 741 located along the eastern side of 9th Avenue between W. 17th and W. 18th Streets, i.e., receptors 543 through 546, existing weekday noise levels are in the mid-60s to low 70s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA at the western façades (i.e., receptors 543 and 544 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 13 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 24 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction under the Non-Rezoning Alternative would result in a significant adverse noise impact at the western façades of the residences at 112 9th Avenue (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA on these residences' other façades (i.e., receptors 545 and 546 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 11 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 9 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction under the Non-Rezoning Alternative would not rise to the level of a significant adverse impacts at the other façades of the residences at 112 9th Avenue.

James Baldwin School at 335 W. 18th Street – Receptors 549, 550, 552, and 554

At the existing James Baldwin School located between W. 18th and W. 19th Streets and on the eastern side of 9th Avenue, i.e., receptors 549, 550, 552, and 554, existing weekday noise levels are in the mid- to high 60s dBA.

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-70s dBA at the façades in the school's western courtyard (i.e., receptor 552), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 12 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 15 consecutive months. Based on field observations, the windows at James Baldwin School appear to consist of insulated glass and make up only a small portion of the building façade surface area, with the remaining façade consisting of brick/masonry construction. The school also appears to have through-window air conditioners. Consequently, the building façade would be expected to provide approximately 25 dBA window/wall attenuation, making interior noise levels during the most noise-intensive construction activities no greater than the low 50s dBA—comparable to typical noise levels in a commercial office setting. The prediction of "objectionable" noise level increments over an extended duration, "clearly unacceptable" noise levels, and maximum interior levels greater than the recommended threshold for classroom use means construction under the Non-Rezoning Alternative would result in a significant adverse noise impact at the western courtyard façades of the school at 335 W. 18th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the high 70s dBA on the school's other façades (i.e., receptors 549, 550, and 554 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 13 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 9 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction under the Non-Rezoning Alternative would not rise to the level of a significant adverse impacts at the other façades of the James Baldwin School at 335 W. 18th Street.

Existing Elliott-Chelsea Residential Buildings – Receptors 147 through 172 and 177 through 194

At the existing Elliott-Chelsea residential buildings on Blocks 723 and 724, including Elliott Buildings 1, 2, 3, and 4, and Chelsea Building 1, i.e., receptors 147 through 172 and 177 through 194, existing weekday noise levels are in the low 60s to low 70s dBA.

Since the construction under the Non-Rezoning Alternative would proceed on a staged schedule, some buildings would remain occupied while construction begins at other adjacent sites. As such, construction is predicted to produce noise levels up to the mid-80s dBA at these buildings while they remain occupied, in the "clearly unacceptable" range, and would result in noise level increments up to approximately 23 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 34 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction under the Non-Rezoning Alternative would result in a significant adverse noise impact at the existing residential buildings at Elliott Buildings 1, 2, 3, and 4, and Chelsea Building 1 while they remain occupied (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Future Elliott-Chelsea Residential Buildings 1, 2, 3, 4, and 5 – Receptors 201 through 232

Based on the conceptual construction schedule, it is assumed that Future Elliott-Chelsea Buildings 1 through 5 would be completed and occupied prior to the completion of construction of the buildings under the Non-Rezoning Alternative. Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA, in the "clearly unacceptable" range according to the *CTM* noise exposure criteria, and would result in noise level increments up to approximately 20 dBA. At these receptors, noise level increments exceeding 10 dBA would occur for up to approximately 34 consecutive months. As described in **Chapter 05.16,** residential development at these sites would be required to provide at least 28 dBA window/wall attenuation and an alternate means of ventilation. Consequently, interior noise levels during the most noise-intensive construction activities would be no greater than the mid-50s dBA. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction noise associated with the Non-Rezoning Alternative would rise to the level of a significant adverse impact at the newly introduced residences at Future Elliott-Chelsea Buildings 1 through 5 (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Existing Fulton Residential Buildings – Receptors 604 through 630 and 640 through 651

At the existing Fulton residential buildings on Blocks 714, 715, and 716, including Fulton Buildings 2, 3, 4, 5, 6, 9, and 10, i.e., receptors 604 through 630 and 640 through 651, existing weekday noise levels are in the low 60s to low 70s dBA.

Since the construction under the Non-Rezoning Alternative would proceed on a staged schedule, some buildings would remain occupied while construction begins at other adjacent sites. As such, construction is predicted to produce noise levels up to the high 80s dBA at these buildings while they remain occupied, in the "clearly unacceptable" range, and would result in noise level increments up to approximately 24 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 36 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as “clearly unacceptable” noise levels means construction under the Non-Rezoning Alternative would result in a significant adverse noise impact at the existing residential buildings at Fulton Buildings 2, 3, 4, 5, 6, 9, and 10 while they remain occupied (see further discussion of the impact below under sub-section “Construction Noise” in **Section H**).

Future Fulton Residential Buildings 1, 2, 3, 5, 6, 7, and 8 – Receptors 701 through 714 and 719 through 737

Based on the conceptual construction schedule, it is assumed that Future Fulton Buildings 1 through 8 would be completed and occupied prior to the completion of construction under the Non-Rezoning Alternative. Construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the mid-80s dBA, in the “clearly unacceptable” range, and would result in noise level increments up to approximately 17 dBA. At these receptors, noise level increments exceeding 10 dBA would occur for up to approximately 32 consecutive months. As described in **Chapter 05.16,** residential development at these sites would be required to provide at least 28 dBA window/wall attenuation and an alternate means of ventilation. Consequently, interior noise levels during the most noise-intensive construction activities would be no greater than the mid-50s dBA. The prediction of potentially disruptive noise level increments over an extended duration as well as “clearly unacceptable” noise levels means construction noise associated with the Non-Rezoning Alternative would rise to the level of a significant adverse impact at the newly introduced residences at Future Fulton Buildings 1 through 8 (see further discussion of the impact below under sub-section “Construction Noise” in **Section H**).

Other Receptors Where Noticeable Construction Noise Would Occur for Less Than One Year

At receptors 11, 12, 16 through 19, 29, 30, 40 through 42, 59 through 64, 67, 68, 233 through 237, 435, 443, 481 through 484, 533, 534, 547, 548, 559, 560, 578 through 580, 631 through 635, and 738 through 741, representing residential and commercial office uses within one block of the construction work areas, construction under the Non-Rezoning Alternative is predicted to produce noise levels up to the low 80s dBA, in the “clearly unacceptable” range, and would result in noise level increments between approximately 10 and 13 dBA. Noise level increments of this magnitude would be noticeable and have the potential to be disruptive at times but would be comparable to noise levels adjacent to typical construction sites in New York City. Total exterior noise levels up to approximately 80 dBA, when reduced by a minimum typical level of window/wall attenuation (i.e., 25 dBA), would result in interior noise levels up to approximately the mid-50s dBA, which would be comparable to typical commercial office setting. Further, noise levels in this range would occur for no more than approximately 10 consecutive months, and construction noise would generally not occur during nighttime hours when residents would be most sensitive to noise. Additionally, the predicted noise level increments would occur only at limited façades and floors of each affected building. Based on the limited magnitude, duration, and area of effect, construction noise associated with the Rezoning Alternative would not rise to the level of a significant adverse impact at these receptors.

Other Receptors

At the remaining receptors, including 1 through 8, 13 through 15, 20 through 28, 34 through 39, 43 through 58, 65, 66, 69 through 77, 87, 113 through 146, 173 through 176, 401 through 428, 447, 448, 453, 459 through 462, 477, 478, 491 through 516, 525 through 527, 535 through 542, 555 through 558, 561 through 577, 581 through 603, 636 through 639, and 715 through 718, construction under the Non-Rezoning Alternative is predicted to result in noise level increases that would be no greater than 10 dBA, but would exceed the *CTM* construction noise screening thresholds for some portion of the construction period. While such increases in noise may be noticeable at times, predicted noise level increments would be moderate and would occur over a very limited duration. According to the *CTM* noise exposure criteria, noise levels at these receptors would generally be in the "marginally acceptable" or "marginally unacceptable" categories throughout construction (as are existing noise levels). Consequently, construction noise associated with the Non-Rezoning Alternative would not rise to the level of a significant adverse impact at these receptors.

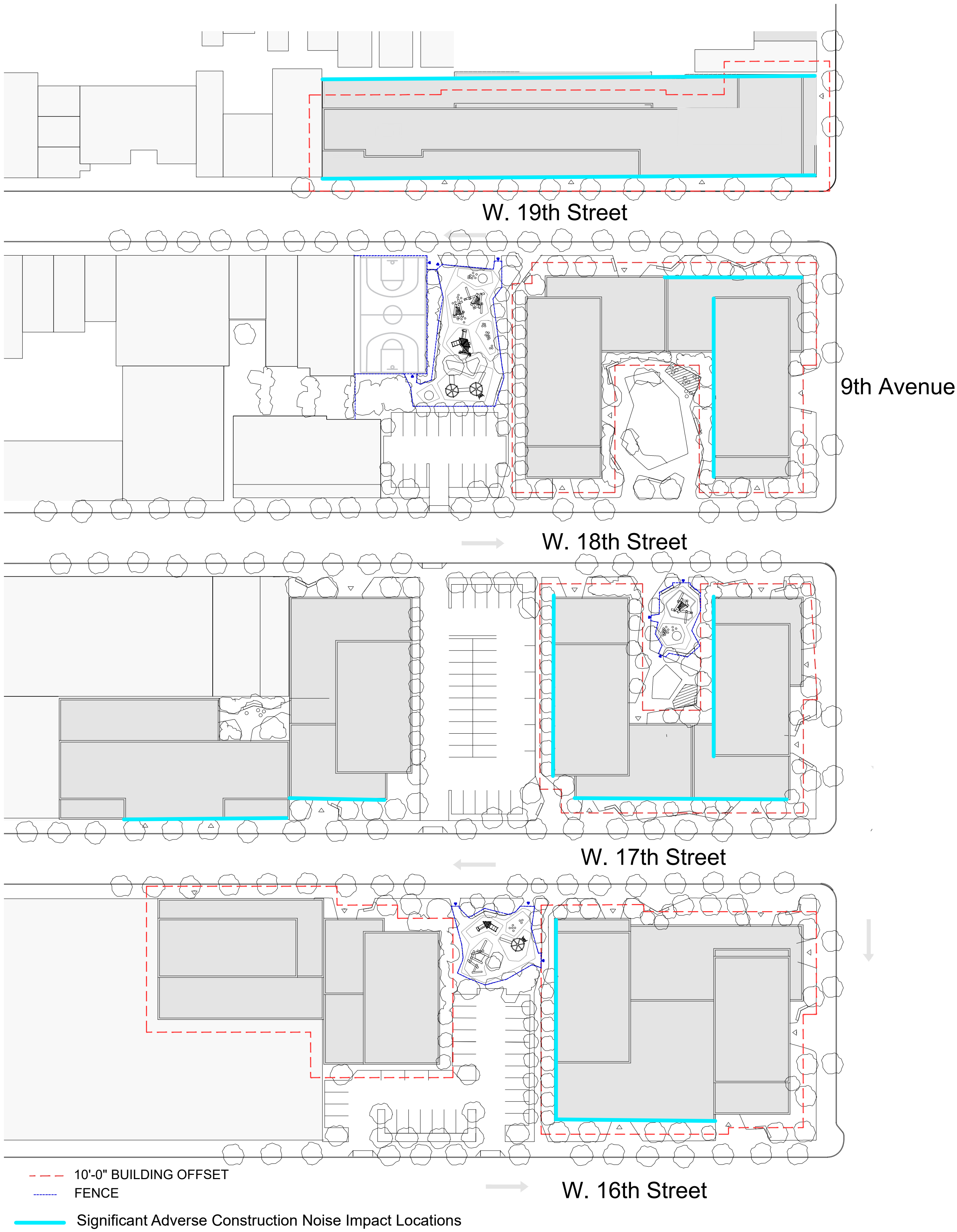
Non-Rezoning Construction Noise Analysis Conclusion

Construction under the Non-Rezoning Alternative is predicted to result in elevated noise levels at several of the analyzed receptors, which represent the residences, hotels, commercial offices, public institutions, and publicly accessible open spaces. At some receptors, construction under the Non-Rezoning Alternative would result in noise level increments that would be noticeable and potentially intrusive over an extended duration with interior noise levels exceeding the acceptable threshold, which would be considered significant adverse impacts. Significant adverse impacts related to construction noise would occur at locations as indicated in **Figures 05.19-8a** through **05.19-9b** and **Table 05.19-53**.

Table 05.19-53: Adverse Significant Construction Noise Impact Locations – Non-Rezoning Alternative

Receptors	Address	Land Use	Façade(s)
78	229 through 241 Ninth Avenue	Residential with Commercial Below	N
85	246 through 258 Tenth Avenue	Residential	N
80, 81, 83, 88-90	406 to 420 and 446 to 462 W. 25th Street	Residential	N, E, W
92, 95, 96	263 Ninth Avenue and 401 W. 25th Street	Residential	W
100-103, 107, 108	PS 33 Chelsea Prep – 281 Ninth Avenue	School	N, W
111, 112	303 Ninth Avenue	Medical Clinic	W, S
429, 431-433	75 Ninth Avenue and 437 W. 16th Street	Commercial and Office Buildings	75 Ninth Avenue: N 437 W. 16th Street: N, E, S
437, 440-442	450 W. 17th Street	Residential with Commercial Below	N, E, Courtyard N, Courtyard S
449-451, 454, 457, 463-467	428 to 444 W. 19th Street and 447 W. 18th Street	Residential	N, E, S
469, 470	435 W. 19th Street	Residential	S, E
473-475	159 Ninth Avenue	Residential	N, W, S
479, 485-487	412 to 420 W. 20th Street	Residential	S, E (construction-facing)
522, 523, 529, 530	363 and 355 W. 16th Street	Hotel	N (construction-facing), W
543, 544	112 Ninth Avenue	Residential with Commercial Below	W
552	James Baldwin School – 335 W. 18th Street	School	Courtyard W
148, 149	Elliott Building 2	Residential	E
156-166	Elliott Building 3	Residential	All
167-171	Chelsea Building 1	Residential	All
178-182	Elliott Building 1	Residential	E, S
185-189, 191-194	Elliott Building 4	Residential	N, W, S
201-204, 207, 208, 210	Future Elliott Chelsea Building 1	Residential	E, W, S
212, 214	Future Elliott Chelsea Building 2	Residential	Courtyard S, E
217-219, 221-223	Future Elliott Chelsea Building 3	Residential	N, W, S
225, 226	Future Elliott Chelsea Building 4	Residential	N, W
228, 232	Future Elliott Chelsea Building 5	Residential	N, Courtyard E
605-607	Fulton Building 2	Residential	N, E
610-612	Fulton Building 3	Residential	N
615-620	Fulton Building 4	Residential	All
621-623	Fulton Building 5	Residential	E
626-630	Fulton Building 6	Residential	N, E, S
641-645	Fulton Building 9	Residential	All
646-648	Fulton Building 10	Residential	N, W
702-706	Future Fulton Building 1	Residential	N, S
707, 708	Future Fulton Building 2	Residential	N, W
713, 714	Future Fulton Building 3	Residential	W, S
720, 721	Future Fulton Building 5	Residential	W, S
724	Future Fulton Building 6	Residential	S (construction-facing)
727, 728	Future Fulton Building 7	Residential	W, S
734	Future Fulton Building 8	Residential	S

Fulton Houses Project Site NYCHA Significant Impacts - Non-Rezoning Alternative



Fulton and Elliott-Chelsea Houses Redevelopment Project

Figure 05.19-8b
Elliott-Chelsea Houses Project Site NYCHA Significant Impacts - Non-Rezoning Alternative

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Significant Adverse Construction Noise Impact Locations

Fulton and Elliott-Chelsea Houses Redevelopment Project

Figure 05.19-9a
Fulton Houses Project Site Non-NYCHA Significant Impacts - Non-Rezoning Alternative

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Significant Adverse Construction Noise Impact Locations

Fulton and Elliott-Chelsea Houses Redevelopment Project

Figure 05.19-9b
Elliott-Chelsea Houses Project Site Non-NYCHA Significant Impacts - Non-Rezoning Alternative

Alternative 4 – Midblock Bulk Alternative

On-Site Equipment and Construction Truck Noise Analysis

Noise levels resulting from construction of the Midblock Bulk Alternative were predicted to exceed the *CTM* construction noise screening thresholds for some portion of the construction period at several of the analyzed receptors. The potential for significant adverse impacts at these receptors was determined by evaluating the duration and magnitude of these increments. At most receptors, maximum predicted construction noise level increments would be less than 10 dBA throughout construction. While such increases in noise may be noticeable at times, predicted noise level increments would be moderate and would occur over a limited duration. Noise levels generated by construction at these receptors would generally be in the "acceptable" to "marginally unacceptable" categories according to the *CTM* noise exposure criteria throughout construction. Consequently, construction noise associated with the Midblock Bulk Alternative would not rise to the level of a significant adverse impact at these receptors.

For receptors where noise level increments would exceed 10 dBA as a result of construction at the Fulton Houses Project Site, the construction noise level predictions are discussed further below. Construction of the Chelsea Houses Project Site under the Midblock Bulk Alternative is identical to the Rezoning Alternative, and for receptors where noise level increments would exceed 10 dBA as a result of construction at the Elliott-Chelsea Houses Project Site, the construction noise level predictions are summarized in **Table 05.19-54** and discussed further under Alternative 2. The full construction noise analysis results are provided in **Appendix J.2**.

Table 05.19-54: Construction Noise Analysis Results in dBA – Midblock Bulk Alternative

Receptor	Address	Maximum Existing L_{10}	Total L_{10}		Change in L_{10}		Maximum Continuous Duration (Months)
			Min	Max	Min	Max	
9, 10	245 Tenth Avenue	73.3	61.7	78.1	0	14.4	24
11, 12	500 W. 25th Street	73.3	66	79.8	0	13	18
16-19	Avenues the World School – 259 Tenth Avenue	73.3	64.7	82.2	0	12.6	18
29, 30	518 W. 27th Street	66.3	61.7	72.7	0	11	10
31-33	303 Tenth Avenue	73.3	61.7	76.5	0	13.9	22
34, 35	527 W. 27th Street	67	61.7	72.6	0	10.9	10
38, 39	503 W. 27th Street	73.3	67.8	78.5	0.1	10.1	10
40-42	520 W. 28th Street	63.1	61.7	72.6	0	10.9	10
54-58	London Terrace Gardens Apartments – 460 W. 24th Street	68	61.7	75.4	0	11.6	15
59-64	465 W. 23rd Street	73.1	63.9	76.5	0	11.2	10
67, 68	248 Tenth Avenue	73.1	61.7	75.4	0	11.3	9
78, 79	241 Ninth Avenue	72.4	65.6	78.9	0	13.3	13
80	416 W. 25th Street	67.4	65.1	82.8	0	17.7	27
81, 82	450 W. 25th Street	67.1	61.7	84.9	0	19.7	27
83, 84	460 W. 25th Street	67.8	61.7	84.4	0	17.1	27
85, 86	258 Tenth Avenue	73.3	68.7	83.1	0.1	14.1	18
88-91	420 W. 25th Street	67.3	61.7	81.8	0	17.8	27
92-94	263 Ninth Avenue	73.1	62	82.6	0	20.2	35

Table 05.19-54 (continued): Construction Noise Analysis Results in dBA – Midblock Bulk Alternative

Receptor	Address	Maximum Existing L_{10}	Total L_{10}		Change in L_{10}		Maximum Continuous Duration (Months)
			Min	Max	Min	Max	
95-99	401 W. 25th Street	72.3	61.7	83.1	0	21.4	35
100-108	P.S. 33 Chelsea Prep – 281 Ninth Avenue	70.6	61.7	84	0	21.3	27
109, 110	Chelsea Park	63.6	62.1	73.6	0.2	11.4	15
111, 112	303 Ninth Avenue	61.7	61.8	77.3	0.1	15.6	15
147-155	Elliott Building 2	71.7	61.7	83.4	0	17.7	27
156-166	Elliott Building 3	67.2	61.7	83.2	0	19.2	27
167-172	Chelsea Building 1	66.1	61.7	85.5	0	23.8	37
177-184	Elliott Building 1	69	61.7	84.3	0	22.6	27
185-194	Elliott Building 4	67	61.7	83.8	0	22.1	27
301-310	Future Elliott-Chelsea Building 1	66.8	66.8	85	0	18.2	27
311-315	Future Elliott-Chelsea Building 2	74.9	66.8	84	0	14	18
316-322	Future Elliott-Chelsea Building 3	66.8	66.8	82.5	0	15.7	21
329-332	Future Elliott-Chelsea Building 5	66.8	66.8	84.7	0	17.9	21
333-337	Future Elliott-Chelsea Building 6	66.8	66.8	79.8	0	13	15
429, 430	75 Ninth Avenue	64.4	63.9	78.9	0	15.1	19
431-434	437 W. 16th Street	65.1	63.9	82.7	0	18.8	19
436-442	450 W. 17th Street	70.2	63.9	84.4	0	20.6	26
444-446	453 W. 17th Street	67.4	63.9	78	0	14.1	26
449-452	428 W. 19th Street	66.7	63.9	83.3	0	19.4	31
454, 455	444 W. 19th Street	67.7	63.9	76.6	0	12.1	16
456-458	447 W. 18th Street	68.7	63.9	79	0	15.2	22
463-468	425 W. 18th Street	68.3	63.9	83.4	0	19.6	36
469-471	435 W. 19th Street	67.3	63.9	85	0	21.2	24
472-476	159 Ninth Avenue	72.6	63.9	86.5	0	22.7	28
479, 480	412 W. 20th Street	66.9	63.9	84.1	0	20.3	24
481	430 W. 20th Street	67.5	66.3	77.4	0	11.1	9
485-490	420 W. 20th Street	66.9	63.9	86.4	0	22.6	28
517-520	111 Eighth Avenue	70.3	63.9	76.9	0	12	10
521-524	363 W. 16th Street	67	63.9	80.3	0	15.6	36
528-532	355 W. 16th Street	67.2	63.9	80.5	0	15.6	36
533, 534	108 Ninth Avenue	72.2	68	82.6	0.1	11.9	17
542	356 W. 18th Street	68.4	66.4	76.9	0	10.5	4
543-546	112 Ninth Avenue	72.3	63.9	84	0	13.6	36
547, 548	128 Ninth Avenue	72.6	69.9	83.8	0.1	12.3	17
549-554	James Baldwin School – 335 W. 18th Street	68.6	63.9	79	0	12.7	30
558	144 Ninth Avenue	72.5	71.4	82.3	0.1	11	4
559, 560	136 Ninth Avenue	72.3	63.9	83.3	0	12.6	17
578-580	363 W. 20th Street	72.4	63.9	75.3	0	10.1	4
604-609	Fulton Building 2	63.9	63.9	79.3	0	15.5	36
610-614	Fulton Building 3	70.9	63.9	84	0	18.1	36
615-620	Fulton Building 4	66.9	63.9	82.3	0	17.9	41
621-624	Fulton Building 5	67	63.9	77.4	0	13.5	36
625-630	Fulton Building 6	64.4	63.9	86.2	0	22.4	39
631-635	Fulton Building 7	71.8	63.9	79	0	12.4	3
640-645	Fulton Building 9	64.4	63.9	87	0	23.2	39

Table 05.19-54 (continued): Construction Noise Analysis Results in dBA – Midblock Bulk Alternative

Receptor	Address	Maximum Existing L_{10}	Total L_{10}		Change in L_{10}		Maximum Continuous Duration (Months)
			Min	Max	Min	Max	
646-651	Fulton Building 10	72.5	63.9	83.9	0	18.5	34
801-805	Future Fulton Building 1	75	67.6	83.4	0	15.8	39
806-809	Future Fulton Building 2	75	67.6	84.9	0	13.9	16
810-814	Future Fulton Building 3	73.2	70.3	85.5	0	14.5	19
815-822	Future Fulton Building 4	71	69.7	85.5	0	15.8	19
823-831	Future Fulton Building 5	73.2	68.8	83.9	0	15.1	19
832-836	Future Fulton Building 6	69.7	69.7	80.8	0	11.1	12

Commercial Offices at 75 9th Avenue and 437 W. 16th Street – Receptors 429 through 434

At the existing commercial office receptors along W. 16th Street between Ninth and 10th Avenues, i.e., receptors 429 through 434, existing weekday noise levels are in the mid-60s dBA.

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the low 80s dBA at the northern, eastern, and southern façades of these buildings (i.e., receptors 429, 432, and 433 facing construction), in the “clearly unacceptable” range, that would result in noise level increments up to approximately 19 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 19 consecutive months. This prediction of potentially disruptive noise level increments over an extended duration as well as “clearly unacceptable” noise levels means construction of the Midblock Bulk Alternative would result in a significant adverse noise impact at the northern façade of the commercial offices at 75 9th Avenue and the northern, eastern, and southern façades of the commercial offices at 437 W. 16th Street (see further discussion of the impact below under sub-section “Construction Noise” in **Section H**).

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the mid-70s dBA on these offices’ southern and western façades (i.e., receptors 430, 431, and 434 facing away from construction), in the “marginally unacceptable” range, and would result in noise level increments up to approximately 12 dBA. At these facades, noise level increments exceeding 10 dBA would occur for up to approximately 10 consecutive months The moderate intensity and limited duration of predicted noise level increments as well as “marginally unacceptable” noise levels means noise associated with construction of the Midblock Bulk Alternative would not rise to the level of a significant adverse impacts at the western façade of the commercial offices at 75 9th Avenue nor the western and southern façades of the commercial offices at 437 W. 16th Street.

Residences at 450 W. 17th Street – Receptors 436 through 442

At the existing residential receptors on Block 722 located along the eastern side of 10th Avenue between W. 16th and W. 17th Streets, i.e., receptors 436 through 442, existing weekday noise levels are in the low 70s dBA.

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the mid-80s dBA at the northern, eastern, and courtyard northern façades (i.e., receptors 437, 441, and 442 facing construction), in the “clearly unacceptable” range, and result in noise level increments up to approximately 20 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 26 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Midblock Bulk Alternative would result in a significant adverse noise impact at the northern, eastern, and courtyard northern façades of the residences at 450 W. 17th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the mid-70s dBA on the building's other façades (i.e., receptors 436, and 438 through 440) facing away from construction) in the "marginally unacceptable" range, and result in noise level increments up to approximately 12 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 10 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Midblock Bulk Alternative would not rise to the level of a significant adverse impacts at western, southern, and courtyard eastern and southern façades of the residences at 450 W. 17th Street.

Commercial Offices at 453 W. 17th Street – Receptors 444 through 446

At the existing commercial office receptors along W. 17th Street between Ninth and 10th Avenues, i.e., receptors 429 through 434, existing weekday noise levels are in the high-60s dBA.

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the high-70s dBA at the eastern façade of this building (i.e., receptor 445 facing construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 14 dBA. At this façade, noise level increments exceeding 10 dBA would occur for up to approximately 26 consecutive months. Based on field observations, the windows on the eastern façade of 453 W. 17th Street appear to consist of insulated glass and make up only a small portion of the building façade surface area, with the remaining façade consisting of brick/masonry construction. Consequently, the building façade would be expected to provide approximately 25 dBA window/wall attenuation, resulting in interior noise levels throughout construction of 53 dBA. This maximum predicted level is typical for commercial office use and no more than 3 dBA greater than 50 dBA (i.e., the threshold considered acceptable for commercial office use according to *CTM* noise exposure criteria). Consequently, based on the very limited area of effect and duration of noise predicted to result from construction of the Midblock Bulk Alternative, it would not rise to the level of a significant impact at these façades.

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the mid-70s dBA on these offices' western and southern façades (i.e., receptors 444 and 446 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments of approximately 11 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 10 consecutive months. Additionally, with 25 dBA window/wall attenuation, interior noise levels would be in the high 40s dBA, which would be considered acceptable for commercial office use according to *CTM* noise exposure criteria. Based on the moderate intensity and limited duration of predicted noise level increments as well as acceptable interior noise levels, noise associated with construction of the Midblock Bulk Alternative would not rise to the level of a significant adverse impacts at the western and southern façades of the commercial offices at 453 W. 17th Street.

Residences at 428 to 444 W. 19th Street and 425 to 447 W. 18th Street – Receptors 449 through 458 and 463 through 468

At the existing mid-block residential receptors on Block 716, i.e., receptors 449 through 459 and 463 through 468, existing weekday noise levels are in the mid- to high 60s dBA.

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the mid-80s dBA at the northern, southern, and eastern façades of these buildings (receptors 449 through 451, 457, and 463 through 467 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 21 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 33 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Midblock Bulk Alternative would result in a significant adverse noise impact at the northern, southern, and eastern façades of the residences at 428 to 444 W. 19th Street and 447 W. 18th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the high 70s dBA on these residences' western façades (i.e., receptors 452 through 456, 458, and 468 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 12 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 10 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Midblock Bulk Alternative would not rise to the level of a significant adverse impacts at the western façades of the residences at 428 to 444 W. 19th Street and 447 W. 18th Street.

Residences at 435 W. 19th Street, 159 9th Avenue, and 412 to 420 W. 20th Street – Receptors 469 through 476, 479 and 480, and 485 through 490

At the existing residential receptors on Block 717 surrounding the Future Fulton Residential Building 1 site, i.e., receptors 469 through 476, 479, 480, and 485 through 490, existing weekday noise levels are in the mid-60s to low 70s dBA.

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the mid-80s dBA at the façades of these buildings facing construction (i.e., receptors 469, 470, 473 through 475, 479, and 485 through 487), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 23 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 28 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Midblock Bulk Alternative would result in a significant adverse noise impact at the construction-facing façades of the residences at 435 W. 19th Street, 159 9th Avenue, and 412 to 420 W. 20th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the low 80s dBA on these residences' other façades (i.e., receptors 471, 472, 476, 480, and 488 through

490 facing away from construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 11 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 4 consecutive months. Based on the limited duration of predicted noise level increments as well as "clearly unacceptable" noise levels, noise associated with construction of the Midblock Bulk Alternative would not rise to the level of a significant adverse impacts at the other façades of the residences at 435 W. 19th Street, 159 9th Avenue, and 412 to 420 W. 20th Street.

Google Offices at 111 8th Avenue – Receptors 517 through 520

At the Google office receptors at 111 8th Avenue, i.e., receptors 517 through 520, existing weekday noise levels are in the low 70s dBA.

Construction under the Midblock Bulk Alternative is predicted to produce noise levels up to the high 70s dBA at the northern façade of this building (i.e., receptor 519 facing construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 13 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 18 consecutive months. Construction under the Midblock Bulk Alternative is predicted to produce noise levels up to the mid-70s dBA on the office's eastern, southern, and western façades (i.e., receptors 517, 518, and 520 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 12 dBA. At these facades, noise level increments exceeding 10 BA would occur for up to approximately 10 consecutive months. Based on field observations, the windows on the northern and western façades of 111 8th Avenue appear to consist of brick masonry exterior wall with non-operable insulated glass punch windows, and aerial imagery shows multiple air handling units on its roof, providing alternative means of ventilation and allowing for a closed window condition. Consequently, the building façade would be expected to provide approximately 28 dBA window/wall attenuation, resulting in interior noise levels throughout construction of less than 50 dBA (i.e., the threshold considered acceptable for commercial office use according to *CTM* noise exposure criteria). Consequently, based on the limited area of effect and duration of noise due to construction under the Midblock Bulk Alternative, it would not rise to the level of a significant impact at the offices at 111 8th Avenue.

Hotels at 363 and 355 W. 16th Street – Receptors 521 through 524 and 528 to 532

At the hotel guestroom receptors at 363 and 355 W. 16th Street, i.e., receptors 521 through 524 and 528 to 532, existing weekday noise levels are in the mid-60s dBA.

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the high 70s dBA at the northern and western façades of these buildings (i.e., receptors 522, 523, and 529 facing construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 15 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 26 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction noise under the Midblock Bulk Alternative would result in a significant adverse noise impact at the northern and western façades of the hotels at 363 and 355 W. 16th

Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the mid-70s dBA on these hotel guestrooms' southern and eastern façades (i.e., receptors 521, 524, and 528 through 532 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 12 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 10 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Midblock Bulk Alternative would not rise to the level of a significant adverse impacts at the southern and eastern façades of the hotels at 363 and 355 W. 16th Street.

Residences at 108 and 136 9th Avenue– Receptors 533, 534, 559, and 560

At the existing residential receptors on Blocks 741 and 742 located along the eastern side of 9th Avenue between W. 17th and W. 19th Streets, i.e., receptors 533, 534, 559 and 560, existing weekday noise levels are in the mid-60s to low 70s dBA.

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the low-80s dBA at the western façades (i.e., receptors 534 and 559 facing construction), in the "clearly unacceptable" range, and would result in noise level increments up to approximately 12 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 20 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Midblock Bulk Alternative would result in a significant adverse noise impact at the western façades of the residences at 108 and 136 9th Avenue (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the high-70s dBA on these residences' other façades (i.e., receptors 533 and 560 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 11 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 4 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Midblock Bulk Alternative would not rise to the level of a significant adverse impacts at the other façades of the residences at 108 and 136 9th Avenue.

James Baldwin School at 335 W. 18th Street – Receptors 549, 550, 552, and 554

At the existing James Baldwin School located between W. 18th and W. 19th Streets and on the eastern side of 9th Avenue, i.e., receptors 549, 550, 552, and 554, existing weekday noise levels are in the low to high 60s dBA.

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the mid-70s dBA at the façades in the school's western courtyard (i.e., receptor 552), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 11 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 20 consecutive months. Based on field observations, the windows at James Baldwin School appear to consist of insulated glass and make up only a small portion of the building façade surface area, with the remaining façade consisting of brick/masonry construction. The school also appears to have through-window air conditioners. Consequently, the building façade would be expected to provide approximately 25 dBA window/wall attenuation, making interior noise levels during the most noise-intensive construction activities no greater than the mid-50s dBA—comparable to typical noise levels in a commercial office setting. The prediction of "objectionable" noise level increments over an extended duration, "clearly unacceptable" noise levels, and maximum interior levels greater than the recommended threshold for classroom use means construction of the Midblock Bulk Alternative would result in a significant adverse noise impact at the western courtyard façades of the school at 335 W. 18th Street (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the high 70s dBA on the school's other façades (i.e., receptors 549, 550 and 554 facing away from construction), in the "marginally unacceptable" range, and would result in noise level increments up to approximately 12 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 10 consecutive months. Based on the limited duration of predicted noise level increments as well as "marginally unacceptable" noise levels, noise associated with construction of the Midblock Bulk Alternative would not rise to the level of a significant adverse impacts at the other façades of the James Baldwin School at 335 W. 18th Street.

Existing Fulton Residential Buildings – Receptors 604 through 620, 625 through 635, and 640 through 651

At the existing Fulton residential buildings on Blocks 714, 715, and 716, including Fulton Buildings 2, 3, 4, 6, 7, 9, and 10, i.e., receptors 604 through 620, 625 through 635, and 640 through 651, existing weekday noise levels are in the mid-60s to low 70s dBA.

Since the construction of the Midblock Bulk Alternative would proceed on a staged schedule, some buildings would remain occupied while construction begins at other adjacent sites. As such, construction is predicted to produce noise levels up to the mid-80s dBA at these buildings while they remain occupied, in the "clearly unacceptable" range, and would result in noise level increments up to approximately 23 dBA. At these façades, noise level increments exceeding 10 dBA would occur for up to approximately 39 consecutive months. The prediction of potentially disruptive noise level increments over an extended duration as well as "clearly unacceptable" noise levels means construction of the Midblock Bulk Alternative would result in a significant adverse noise impact at the existing residential buildings at Fulton Buildings 2, 3, 4, 6, 7, 9, and 10 while they remain occupied (see further discussion of the impact below under sub-section "Construction Noise" in **Section H**).

Future Fulton Residential Buildings 1, 2, 3, 4, 5, and 6 – Receptors 801 through 818 and 823 through 836

Based on the conceptual construction schedule, it is assumed that Future Fulton Buildings 1 through 6 would be completed and occupied prior to the completion of construction of the Midblock Bulk Alternative. Construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the mid-80s dBA, in the “clearly unacceptable” range, and would result in noise level increments up to approximately 16 dBA. At these receptors, noise level increments exceeding 10 dBA would occur for up to approximately 32 consecutive months. As described in **Chapter 05.16,** residential development at these sites would be required to provide at least 28 dBA and up to 31 dBA window/wall attenuation and an alternate means of ventilation. Consequently, interior noise levels during the most noise-intensive construction activities would be no greater than the high-50s dBA. The prediction of potentially disruptive noise level increments over an extended duration as well as “clearly unacceptable” noise levels means construction noise associated with the Midblock Bulk Alternative would rise to the level of a significant adverse impact at the newly introduced residences at Future Fulton Buildings 1 through 6 (see further discussion of the impact below under sub-section “Construction Noise” in **Section H**).

Other Receptors Where Noticeable Construction Noise Would Occur for Less Than One Year

At receptors 481, 543 through 546, 578 through 580, and 837 through 840 representing residential and commercial office uses within one block of the construction work areas, construction of the Midblock Bulk Alternative is predicted to produce noise levels up to the mid-80s dBA, in the “clearly unacceptable” according to the *CTM* noise exposure criteria, and would result in noise level increments between approximately 10 and 15 dBA. Noise level increments of this magnitude would be noticeable and have the potential to be disruptive at times but would be comparable to noise levels adjacent to typical construction sites in New York City. Total exterior noise levels up to approximately 80 dBA, when reduced by a minimum typical level of window/wall attenuation (i.e., 25 dBA), would result in interior noise levels up to approximately the mid-50s dBA, which would be comparable to typical commercial office setting. Further, noise levels in this range would occur for no more than approximately 10 consecutive months, and construction noise would generally not occur during nighttime hours when residents would be most sensitive to noise. Additionally, the predicted noise level increments would occur only at limited façades and floors of each affected building. Based on the limited magnitude, duration, and area of effect, construction noise associated with the Rezoning Alternative would not rise to the level of a significant adverse impact at these receptors.

Other Receptors

At the remaining receptors, including 401 through 428, 435, 443, 447, 448, 459 through 462, 477, 478, 482 through 484, 491 through 516, 525 through 527, 535 through 542, 547, 548, 555 through 558, 561 through 577, 581 through 603, 621 through 624, and 636 through 639, construction of the Midblock Bulk Alternative is predicted to result in noise level increases that would be no greater than 10 dBA, but would exceed the *CTM* construction noise screening thresholds for some portion of the construction period. While such increases in noise may be noticeable at times, predicted noise level increments would be moderate and would occur over a very limited duration.

Noise levels at these receptors would generally be in the "marginally acceptable" or "marginally unacceptable" range throughout construction (as are existing noise levels). Consequently, construction noise associated with the Midblock Bulk Alternative would not rise to the level of a significant adverse impact at these receptors.

Midblock Bulk Alternative Construction Noise Analysis Conclusion

As discussed above, construction of the Midblock Bulk Alternative is predicted to result in elevated noise levels at several of the analyzed receptors, which represent the residences, hotels, commercial offices, public institutions, and publicly accessible open spaces. At some receptors, construction of the Midblock Bulk Alternative would result in noise level increments that would be noticeable and potentially intrusive over an extended duration with interior noise levels exceeding the acceptable threshold, which would be considered significant adverse impacts. Significant adverse impacts related to construction noise would occur at the locations indicated in **Figures 05.19-10a** through **05.19-11b** and **Table 05.19-55**. See further discussion of these impacts below under sub-section "Construction Noise" in **Section H**.

Table 05.19-55: Adverse Significant Construction Noise Impact Locations – Midblock Bulk Alternative

Receptors	Address	Land Use	Façade(s)
17, 18	Avenues the World School – 259 Tenth Avenue	School	E
54	London Terrace Gardens Apartments – 460 W. 24th Street	Residential	N
85	246 through 258 Tenth Avenue	Residential	N
78	229 through 241 Ninth Avenue	Residential with Commercial Below	N
80, 81, 83, 88-90	406 to 420 and 446 to 462 W. 25th Street	Residential	N, E, W
92, 95, 96	263 Ninth Avenue and 401 W. 25th Street	Residential	W
100-103, 107, 108	P.S. 33 Chelsea Prep – 281 Ninth Avenue	School	N, W
111, 112	303 Ninth Avenue	Medical Clinic	W, S
429, 432, 433	75 Ninth Avenue and 437 W. 16th Street	Commercial and Office Buildings	75 Ninth Avenue: N 437 W. 16th Street: N, E, S
437, 441, 442	450 W. 17th Street	Residential with Commercial Below	N, E, Courtyard N
449-451, 454, 456, 457, 463-467	428 to 444 W. 19th Street and 447 W. 18th Street	Residential	N, E, S
469, 470	435 W. 19th Street	Residential	S, E
473-475	159 Ninth Avenue	Residential	W, S
479, 485-487	412 to 420 W. 20th Street	Residential	S, E (construction-facing)
522, 523, 529, 530	363 and 355 W. 16th Street	Hotel	N (construction-facing), W
534, 559	108 and 136 Ninth Avenue	Residential with Commercial Below	W
552	James Baldwin School – 335 W. 18th Street	School	Courtyard W
148, 149, 151, 152	Elliott Building 2	Residential	E
156-162, 164, 166	Elliott Building 3	Residential	All
167-172	Chelsea Building 1	Residential	All
178-182	Elliott Building 1	Residential	E, S
185-189, 191-194	Elliott Building 4	Residential	N, W, S

Table 05.19-55 (continued): Adverse Significant Construction Noise Impact Locations – Midblock Bulk Alternative

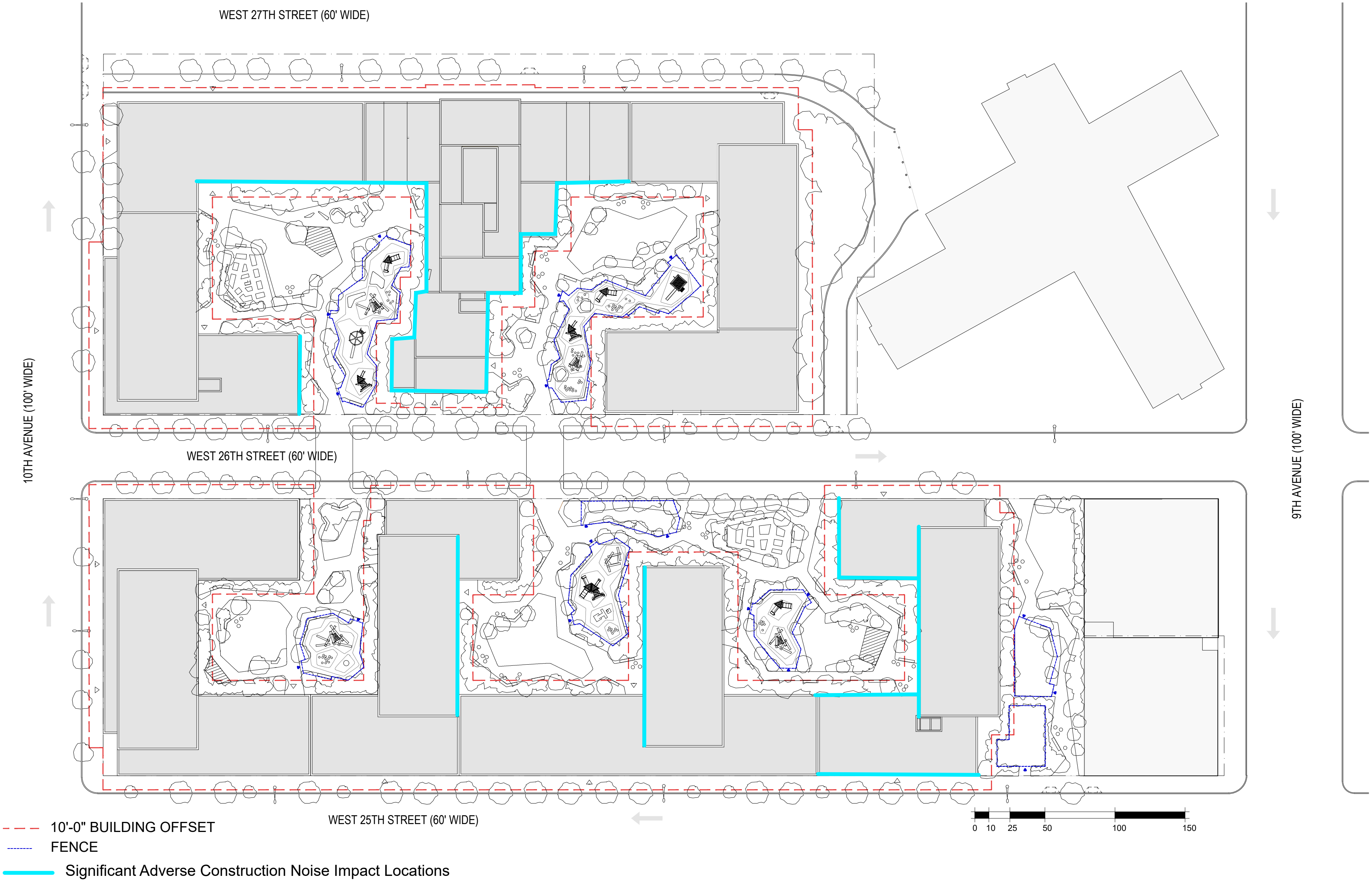
Receptors	Address	Land Use	Façade(s)
301, 302, 303, 306, 307, 309	Future Elliott Chelsea Building 1	Residential	E, W, S
311, 313	Future Elliott Chelsea Building 2	Residential	Courtyard S, E
316, 317, 320-322	Future Elliott Chelsea Building 3	Residential	Courtyard N, W, S
330	Future Elliott Chelsea Building 5	Residential	E
334	Future Elliott Chelsea Building 6	Residential	W
604-606	Fulton Building 2	Residential	N, E, W
610, 611	Fulton Building 3	Residential	N, W
615-619	Fulton Building 4	Residential	All
625-630	Fulton Building 6	Residential	All
631, 632, 635	Fulton Building 7	Residential	N, W
641-645	Fulton Building 9	Residential	All
646-648	Fulton Building 10	Residential	N, W
802-804	Future Fulton Building 1	Residential	S
806, 809	Future Fulton Building 2	Residential	W, S
815, 816, 818	Future Fulton Building 3	Residential	N, E, S
810, 814	Future Fulton Building 4	Residential	W
823, 827-830	Future Fulton Building 5	Residential	Righthand N, Courtyard N, W, Courtyard W
833, 835, 836	Future Fulton Building 6	Residential	N, E

Mobile Construction Noise Sources

Throughout the construction period, vehicles including construction-related trucks and personal vehicles would be driven by construction workers traveling to and from the proposed construction work areas. Most of these vehicles would be expected to use 9th Avenue and 10th Avenue to access the Project Sites. These large roadways are already heavily trafficked, so construction traffic would not be expected to substantially increase the total volume of traffic along these roadways, and therefore not result in substantial noise level increases. Farther away from the Project Sites, the vehicles would be distributed among different routes, and the amount of construction traffic would be low compared with the existing traffic levels on these streets.

A Noise PCE screening (see **Chapter 5.16,** for description of Noise PCE screening methodology) was used to determine the potential increase in noise levels due to total construction-generated trips during the peak period of construction traffic generation at streets immediately adjacent to the proposed construction work areas. The 6 AM to 7 AM hour was selected as the analysis hour because this would be the hour when the highest number of worker vehicle and construction truck trips to and from the construction site would occur. Construction truck trips that would occur during the construction work day (i.e., after 7 AM) are included in the modeling of construction noise as discussed below. The predicted noise level increases due to construction vehicle trips would be in the range of 0 to 4 dBA over existing condition noise levels throughout the Project Sites. While noise level increments in this range may be noticeable, they would occur for a limited period of time during the day and during the construction period. Based on the moderate magnitude and the limited duration of the predicted noise level increases, noise associated with construction

Fulton Houses Project Site NYCHA Significant Impacts - Midblock Bulk Alternative



Fulton and Elliott-Chelsea Houses Redevelopment Project

Figure 05.19-10b
Elliott-Chelsea Houses Project Site NYCHA Significant Impacts - Midblock Bulk Alternative

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Significant Adverse Construction Noise Impact Locations

Fulton and Elliott-Chelsea Houses Redevelopment Project

Figure 05.19-11a
Fulton Houses Project Site Non-NYCHA Significant Impacts - Midblock Bulk Alternative

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Significant Adverse Construction Noise Impact Locations

Fulton and Elliott-Chelsea Houses Redevelopment Project

Figure 05.19-11b

Elliott-Chelsea Houses Project Site Non-NYCHA Significant Impacts - Midblock Bulk Alternative

traffic would not have the potential to result in significant adverse impacts. Consequently, noise associated with any on-site construction activity and truck movements immediately surrounding each construction work area would have the greatest potential to result in significant adverse noise impacts; noise associated with construction traffic would not have the potential to result in significant adverse impacts at receptors farther from the Project Sites.

Other Technical Areas

Vibration

Construction activities have the potential to result in vibration levels that may cause structural or architectural damage, and/or annoyance or interference with vibration-sensitive activities. Vibratory levels at a receiver are a function of the source strength (which is dependent upon the construction equipment and methods utilized), the distance between the equipment and the receiver, the characteristics of the transmitting medium, and the receiver building construction. Construction equipment operation causes ground vibrations which spread and decrease in strength with distance. Vehicular traffic, even in locations close to major roadways, typically does not result in perceptible vibration levels unless there are discontinuities in the roadway surface. With the exception of the case of fragile and possibly historically significant structures or buildings, construction activities generally do not reach the levels that can cause architectural or structural damage but can achieve levels that may be perceptible and annoying in buildings very close to a construction site. An assessment has been prepared to quantify potential vibration impacts of construction activities on structures and residences near the Project Sites.

Construction Vibration Criteria

For purposes of assessing potential structural or architectural damage, the determination of a significant impact was based on the vibration impact criterion used by the New York City Landmarks Preservation Commission (LPC) of a peak particle velocity (PPV) of 0.50 inches/second as specified in the New York City Department of Buildings (DOB) *Technical Policy and Procedures Notice (TPPN) #10/88*. For non-fragile buildings, vibration levels between 0.5 inches/second and 2.0 inches/second would typically not be expected to result in any structural or architectural damage.

For purposes of evaluating potential annoyance or interference with vibration-sensitive activities, vibration levels greater than 65 vibration decibels (VdB) would have the potential to result in significant adverse impacts if they occurred for a prolonged period of time.

Analysis Methodology

For purposes of assessing potential structural or architectural damage, the following formula was used:

$$PPV_{equip} = PPV_{ref} \text{ x } (25/D)^{1.5}$$

where: PPV_{equip} is the peak particle velocity in in/sec of the equipment at the receiver location;
PPV_{ref} is the reference vibration level in in/sec at 25 feet; and
D is the distance from the equipment to the received location in feet.

For purposes of assessing potential annoyance or interference with vibration sensitive activities, the following formula was used:

$$L_v(D) = L_v(ref) - 30\log(D/25)$$

where: $L_v(D)$ is the vibration level in VdB of the equipment at the receiver location;
Lv(ref) is the reference vibration level in VdB at 25 feet; and
D is the distance from the equipment to the receiver location in feet.

Table 05.19-56 shows vibration source levels for typical construction equipment.

Table 05.19-56: Vibration Source Levels for Construction Equipment

Equipment	PPV_{ref} (in/sec)	Approximate L_v (ref) (VdB)
Vibratory Roller	0.21	94
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79

Source: Federal Transit Administration Transit Noise and Vibration Impact Assessment (September 2018)

The source vibration levels shown in **Table 05.19-56** were projected to nearby receptors to estimate the levels of construction vibration that would occur near the Project Sites.

Construction Vibration Analysis Results

Qualitatively, the effects of the Proposed Project under the Rezoning Alternative, Non-Rezoning, Alternative, and Midblock Bulk Alternative would be essentially the same. Therefore, the effects are assessed collectively.

The buildings of most concern with regard to the potential for structural or architectural damage due to vibration are the existing buildings and structures immediately adjacent to the construction work areas. Vibration levels within 15 feet may result in PPV levels between 0.50 and 2.0 in/sec, which is generally considered acceptable for a non-historic building or structure, including during sitework activities involving the use of a vibratory roller, which would be the most vibration-intensive activity associated with the three alternatives. Additional receptors farther away from the Project Sites would experience less vibration than those mentioned above and would not be expected to cause structural or architectural damage.

To avoid the potential for vibration-induced damage on historic structures (i.e., NYC Landmarks, National Register-listed property, or contributing buildings within NYC Historic Districts) located immediately adjacent to project construction (i.e., within 90 feet), the Proposed Project would develop and implement a monitoring plan consistent with NYCDOB's *TPPN #10/88* (see **Chapter**

05.06, "Historic and Cultural Resources," for discussion of historic resources proximate to Project Sites and "Historic and Cultural Resources" section below for discussion of construction protections for such resources). The plan would require monitoring of vibration levels at any listed or designated historic structure within 90 feet of active subsurface construction, as well as a prohibition on vibration exceeding the acceptable threshold (i.e., PPV of 0.5 in/sec). If construction were to result in vibration exceeding this threshold, the plan would require construction means and methods to be altered to avoid producing such exceedances.

In terms of potential vibration levels that would be perceptible and annoying, the vibratory roller is likewise in this case the equipment that would have the most potential for producing levels that exceed the 65 VdB limit. It would have the potential to produce perceptible vibration levels (i.e., vibration levels exceeding 65 VdB) at receptor locations within approximately 235 feet depending on soil conditions. However, operation of the vibratory roller would only occur for limited periods of time at a particular location and therefore would not result in any significant adverse impacts.

Consequently, significant adverse vibration impacts would not result from construction of the Rezoning Alternative, Non-Rezoning Alternative, or Midblock Bulk Alternative.

Land Use and Neighborhood Character

According to the *CTM*, a construction impact analysis for land use and neighborhood character is typically needed if construction would require continuous use of property for an extended duration, thereby having the potential to affect the nature of the land use and character of the neighborhood.

Land Use

Construction activities under any of the Proposed Project's alternatives would affect land use on the Project Sites, but would not affect land use conditions and patterns outside of these areas. As is typical with construction projects, during periods of peak activity there would be some disruption to the nearby area. There would be construction trucks and construction workers coming to the area, as well as trucks and other vehicles backing up, loading, and unloading. These disruptions would be most pronounced in areas within and immediately adjacent to the Project Sites but would have limited effects on land uses in the larger neighborhood because most construction activities would take place within each of the building sites, or within portions of sidewalks, curbs, and travel lands of public streets immediately adjacent to the sites. The construction effects of the Proposed Project would of primary concern would be those related to air quality and noise, as outlined in the detailed analyses provided above. Measures would be implemented to control noise, vibration, emissions, and dust on construction sites; refer to discussion of "Noise Reduction Measures" below in **Section H**. Overall, the temporary and localized nature of construction would not result in any significant adverse impacts on local land use patterns of the nearby area.

Neighborhood Character

Under any of the Proposed Project's alternatives, construction activities would adhere to the provisions of the New York City Building Code and other applicable regulations. In addition, throughout the construction period, measures would be implemented to control noise, vibration, and air emissions including dust. Fencing would be erected to reduce potentially undesirable views of construction areas, to buffer noise emitted from construction activities, and to protect the safety of pedestrians during construction. Access to surrounding residences, businesses, and institutions would be maintained throughout the duration of the construction period. Overall, construction under the Proposed Project is not expected to result in significant adverse neighborhood character impacts in the neighborhood surrounding the Project Sites.

However, temporary adverse effects relating to increased traffic, noise, and views of construction activity would occur on and in the immediate vicinity of the Project Sites. During construction, the Project Sites and the immediately surrounding area would be subject to added traffic from construction trucks and worker vehicles. In addition, staging activities, temporary sidewalks, construction fencing, and construction equipment and building superstructure would be visible to pedestrians within and in the immediate vicinity of the Project Sites. The effects would be localized, confined largely to streets surrounding the Project Sites. No immediate area would experience the effects of the 12-acre Proposed Sites' construction activities for the full project construction duration. This would be, due in part to the Project Sites covering portions of four blocks at the Fulton Houses Project Site and portions of two blocks at the Elliott-Chelsea Houses Project Site and the distance of approximately a ¼-mile between the two parts of the Project Sites. In terms of transportation effects, MPT plans would be developed in coordination with DOT. In addition, measures to control noise, vibration, and dust would be implemented on construction sites, including the erection of construction fencing which would reduce views of construction sites and buffer noise emitted from construction activities. Therefore, although there is the potential for adverse neighborhood character effects during construction, these effects would be temporary and localized and would not result in significant impacts to neighborhood character.

Socioeconomic Conditions

According to the *CTM*, construction impacts to socioeconomic conditions are possible if the Proposed Project would entail construction of a long duration that could affect the access to and therefore viability of a number of businesses, and if the failure of those businesses has the potential to affect neighborhood character.

Construction of the Proposed Project would not block or restrict access to any businesses in the area, affect the operations of any nearby businesses, or obstruct major thoroughfares used by customers or businesses.

As discussed in **Chapter 05.02, "Socioeconomic Conditions,"** under the Proposed Project's alternatives analyzed herein, prior to construction of the first two replacement buildings, up to approximately 6 percent or 120 households (with an estimated population of approximately 224 residents) from two of the existing eighteen building. In addition, the John Lovejoy Elliott Center, aka Hudson Guild Elliott Center, would need to be relocated temporarily and the buildings housing them vacated prior to construction of the replacement buildings.

Relocation Plans for the approximately 120 affected households and the Hudson Guild Elliott Center will adhere to requirements of applicable statutes and regulations, including but not limited to the Uniform Relocation and Real Property Acquisition Policies Act of 1970, as amended (URA) and implementing regulations at 49 CFR 24, Notice H 2016-17; PIH 2016-17, as may be amended from time to time ("RAD Fair Housing, Civil Rights, and Relocation Notice"), Section 18 of the Housing Act of 1937, as amended and implementing regulation, 24 CFR part 970 and all applicable state and local regulations. The first stage replacement buildings, once constructed, would be able to accommodate all affected households as well as all programming originally housed within the Hudson Guild Elliott Center. With these measures in place, the Proposed Project would not result in significant adverse direct residential or institutional displacement.

Therefore, construction activities associated with the Proposed Project would not result in any significant adverse impacts on socioeconomic conditions.

Community Facilities and Services

As discussed in **Chapter 05.03, "Community Facilities and Services,"** as a result of the Proposed Project under any of the alternatives analyzed herein the Hudson Guild John Lovejoy Elliott Center, which offers a variety of services and programming including a publicly funded child care program, would be temporary relocated to a nearby location before it is subsequently provided with a permanent new location on the Project Sites. This would be due to the replacement of the facility's existing building in the first stage of construction to implement the Proposed Project. In addition, two other existing community facilities on the Project Sites, the Hudson Guild Children's Center (a publicly funded childcare facility) and the Hudson Guild Fulton Community Center (a neighborhood center focused on senior citizens), would be relocated from their existing locations to permanent new locations on the Project Sites during project construction. Although these relocations could result in short-term disruptions to services, the PACT Partner is obligated to work with Hudson Guild, NYCHA, and other stakeholders to minimize the effects of these relocations on service delivery. Construction workers would not place any burden on public schools and would have minimal, if any, demands on libraries, childcare facilities, and health care facilities. New York City Police Department (NYPD) and FDNY emergency services and response times would not be materially affected by construction. Accordingly, the Proposed Project's direct effects on existing community facilities during project construction, which would facilitate the long-term expansion and improvement of community facilities on the Project Sites, would not result in significant adverse direct community facilities impacts.

The effects of project-generated noise on three area schools, Avenues the World School, PS 33, Chelsea Prep, and the James Baldwin School, are addressed above in the Noise analysis. As detailed therein, the Rezoning Alternative would result in a significant adverse noise impact at the following locations: the eastern façade of Avenues the World School, the northern and western façades of the PS 33, and at the western courtyard façades and westernmost window column on the southern façade of the James Baldwin School. The Non-Rezoning Alternative would result in a significant adverse noise impact at the following locations: the northern and western façades of the PS 33 and at the western courtyard façades of the James Baldwin School. The Midblock Bulk Alternative would result in a significant adverse impact at the following locations: the eastern façade of Avenues the World School, the northern and western façades of the PS 33, and at the western courtyard façades of the James Baldwin School.

Potential mitigation measures for temporary construction noise impacts on these schools are discussed below under **Section H.**

Open Space

Construction on the Project Sites under any of the Proposed Project's alternatives analyzed herein would not displace any existing publicly accessible open spaces, and no publicly accessible open space resources would be used for staging or other construction activities. As detailed above, the Proposed Project's alternatives analyzed herein would not result in significant adverse construction impacts on any public open spaces due to air quality or noise effects. The Project Sites contain private, accessory public spaces used by existing residents of the Project Sites and as the stages of project construction are implemented, some of these accessory open spaces would be temporarily closed prior to the staged opening of new accessory open spaces or accessory open spaces that remain open would be subject to temporary noise effects as project implementation advances. These temporary closures would not constitute significant adverse impacts.

Historic and Cultural Resources

Architectural

The assessment of construction impacts on historic and cultural resources considers the possibility of physical damage to any architectural or archaeological resources identified in the project's historic and cultural resources assessment. According to the *CTM*, if a project's construction activities are located within 400 feet of a historic or cultural resource, potential hazards should be assessed, such as whether certain character-defining elements of a structure, including but not limited to rooftops or stained-glass windows, could be impacted by falling objects from an adjacent construction site.

There are also regulatory mechanisms that address many of the concerns regarding vibrations associated with construction. If the project is located within 90 feet of a New York City Landmark, a National Register-listed property, or within a New York City Historic District, the potential for physical disturbance should be disclosed and the project is required to comply with DOB's *TPPN #10/88*. *TPPN #10/88* supplements the standard building protections afforded by Building Code C26-112.4 by requiring a monitoring program to reduce the likelihood of construction damage to adjacent New York City Landmarks and National Register-listed properties and to detect at an early stage the beginnings of damage so that construction procedures may be changed.

As discussed in more detail in **Chapter 05.06,** there are historic architectural resources located within 90 feet of the Project Sites. As all of these historic resources are S/NR-listed or LPC-designated, construction under either the Rezoning Alternative, the Non-Rezoning Alternative, or the Midblock Bulk Alternative would be subject to DOB's *TPPN #10/88*. Under the TPPN, a construction protection plan would be provided to LPC for review and approval prior to any work on the Project Sites. The construction protection plan would take into account the guidance provided in *CTM*, Chapter 9, Section 522, "Construction Protection Plan." As such, no construction-related impacts on historic resources would occur as a result of the Proposed Project under any of the alternatives analyzed herein.[7]

Archaeological

As discussed in **Chapter 05.06,** the Project Sites have been determined to not have potential sensitivity for archaeological resources and therefore Proposed Project construction under any of the alternatives analyzed herein would not result in any significant adverse archaeological impacts.

Hazardous Materials

A detailed assessment of the potential risks related to the construction with respect to hazardous materials under the Proposed Project is provided in **Chapter 05.09.**

The procedures to avoid or minimize hazardous materials exposure of construction workers and existing and future occupants at all Project Sites' tax lots detailed in **Chapter 05.09** is summarized below:

- Prior to construction, investigation is performed at each development location. This starts with preparation of a Phase I Environmental Site Assessment (ESA) in accordance with American Society of Testing Materials (ASTM) Standard E1527-13, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Practice*. Phase I ESAs for the Project Sites were completed in 2022. DEP reviewed and found these reports acceptable. The Phase I ESA findings are used to prepare a subsurface investigation protocol for agency review, referred to a Phase II Work Plan, which includes a Health and Safey Plan (HASP). Upon approval of the protocol, the investigation (typically including laboratory analysis of soil, groundwater, and soil vapor samples from one or more lots) are implemented and a report of the findings submitted to the reviewing agency along with any proposed remediation plan (i.e., measures to be implemented prior to or as part of construction to avoid impacts to the health and safety of workers, the community, and future occupants), which would include a CHASP to protect workers and the surrounding community during development activities. As discussed in **Chapter 05.09**, in consultation with DEP, a Phase II Work Plan was prepared for the two first-stage development sites (which are the same for the Rezoning Alternative, Non-Rezoning Alternative, and Midblock Bulk Alternative) in 2023 and were reviewed and found acceptable by DEP. Subsequently, the site investigation work was implemented and a Remedial Investigation Report (Phase II), aka, Site Investigation Report, and RAP with CHASP were prepared for the first-stage sites. DEP reviewed these and found them acceptable in March 2024. Following implementation of the RAP, a Closure Report is completed and is also subject

[7] As discussed in **Chapter 05.06**, the demolition of the S/NR eligible Elliott-Chelsea Houses has been determined to be a direct significant adverse historic and cultural resources impact of the Proposed Project. This impact is considered an unavoidable adverse impact of the Proposed Project as there are no measures that could avoid or fully mitigate this impact and meet the purpose and need for the Proposed Project (see **Chapter 01.0**). This is not considered a construction impact as it not a consequence of the effects of construction, such as due to the potential effects of construction vibrations on a historic resource or due to the effects of excavation on an area sensitive for the presence of archaeological resources. Rather, this would be a consequence of the Proposed Project development program, which includes replacement of all of the existing Project Sites buildings.

to DEP review and acceptance. The same procedure for the later stage development sites will be followed at a later date prior to any construction activities at those locations and also will be subject to DEP review and acceptance. Refer to **Tables 02.0-1a/b and 02.0-3a/b** in **Chapter 02.0** which identify the locations of the first-stage sites and are also identified above in **Section C, "Construction Schedule."**

Measures followed during project construction to ensure that the remedial action, if warranted, is achieved and that significant adverse hazardous materials include the following procedures:

- Any renovation or demolition activities with the potential to disturb LBP is performed in accordance with the applicable Occupational Safety and Health Administration regulation (OSHA 29 CFR 1926.62—*Lead Exposure in Construction*).
- Prior to any renovation or demolition activities with the potential to disturb suspect asbestos containing materials (ACM), an asbestos survey is conducted to determine whether these materials are ACM. If these materials prove to contain asbestos, they are properly removed and disposed of in accordance with all state and federal regulations.
- Unless there is labeling or test data that indicated that florescent lights, other electrical equipment, and hydraulic fluid are not mercury- and/or PCB-containing, if disposal is required, it is performed in accordance with applicable federal, state, and local regulations and guidelines.
- All excavated soil requiring off-site disposal is managed in accordance with applicable regulatory requirements. All soil and any other materials intended for off-site disposal is tested in accordance with the requirements of the intended receiving facility. Transportation of material leaving the site for off-site disposal is conducted in accordance with federal, state, and local requirements covering licensing of haulers and trucks, placarding, truck routes, manifesting, etc. All on-site petroleum storage tanks (and any unforeseen tanks encountered during redevelopment) are properly closed and removed in accordance with applicable requirements.
- If dewatering is required for construction, testing is performed to ensure compliance with DEP sewer discharge permit/approval requirements and, if necessary, pre-treatment is conducted prior to discharge to the sewer.

For the Proposed Project under any of the alternatives, the process will be memorialized in a legally binding document between NYCHA and the PACT Partner. This requires, prior to change of use or redevelopment requiring ground disturbance, that all of the building sites on the Project Sites will be subject to site investigation, testing, remediation (as warranted), and site closure report requirements, subject to DEP review and acceptance/approvals. DOB permits associated with such actions cannot be issued without DEP approval. The review would ensure protection of human health and the environment from known or suspected hazardous materials. With the above measures in place, the Proposed Project under any alternative would avoid the potential for significant adverse impacts related to hazardous materials during and after project construction.

Natural Resources

As discussed in **Chapter 05.08, "Natural Resources,"** the Proposed Project would not result in significant adverse natural resources impacts. As noted in that chapter, there is one candidate endangered/threatened species identified as occurring in or near both of the Project Sites and one endangered species identified as occurring in or near the Fulton Houses Project Site. As the Project Sites do not provide critical habitat for either of these species, the Proposed Project would not jeopardize listed species or adversely modify critical habitat.

Additionally, portions of the Project Sites are located within the designated 500-year flood zone and in the future there is potential for all or parts of the Project Sites to be in the 100-year flood zone, as discussed in **Chapter 05.01, "Land Use, Zoning, and Public Policy,"** and in particular the assessment of consistency with Policy 6.2 of the Waterfront Revitalization Program (WRP). The design and construction of the Proposed Project would comply with the current and any future changes in the New York City Building Code requirements, any future changes in the floodplain zones designated by FEMA, the flood resilience zoning text (approved in 2021) for the applicable building category (if applicable), and all other applicable City and State flooding and erosion regulations, including New York City Administrative Code, Title 28, Section 104.9 ("Coastal Zones and Water-Sensitive Inland Zones"). Therefore, the Proposed Project would minimize the potential for public and private losses due to flood damage and reduce the exposure of public utilities to flood hazards. Therefore, the Proposed Project would not result in any significant adverse impacts related to floodplains.

H. CONSTRUCTION MITIGATION

Construction Transportation

Alternative 2 – Rezoning Alternative

Traffic

As discussed above, in the first quarter of the 2034 peak construction period, construction traffic in combination with operational traffic from completed development on projected development sites under the Rezoning Alternative would result in significant adverse traffic impacts at six study area intersections during one or both analyzed construction peak hours; specifically, one lane group at one intersection in the AM construction peak hour, and five lane groups at five intersections in the PM construction 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. The types of mitigation measures proposed herein are standard measures that are routinely identified by the City and considered feasible for implementation. **Table 05.19-57** summarizes the recommended mitigation measures for each of the intersections with significant adverse traffic impacts during the AM and PM construction peak hours. Implementation of the recommended traffic engineering improvements is subject to final review and approval by NYCDOT. If, prior to implementation, NYCDOT determines that an identified mitigation measure is infeasible, an alternative mitigation measure will be identified, if possible. In the absence of the application of mitigation measures, the impacts would remain unmitigated.

Table 05.19-58 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 Alternative and Rezoning Alternative for the AM and PM construction peak hours during the first quarter of the 2034 construction peak period. According to CTM criteria, an impact is considered fully mitigated when the resulting LOS degradation under the Action-with-Mitigation Condition compared with the No-Action Alternative is no longer deemed significant following the impact criteria described above. **Table 05.19-58** shows that significant adverse impacts would be fully mitigated during all analyzed peak hours with the exception of one lane group at one intersection in the PM construction peak hour. Consequently, this impact would constitute unavoidable significant adverse traffic impacts as a result of the Rezoning Alternative (see also **Chapter 07.0**).

Table 05.19-57: 2034 (Q1) Rezoning Alternative Proposed Construction Traffic Mitigation Measures

Intersection	Signal Phase	No-Action Alternative Signal Timing (Seconds) (1)		Proposed Signal Timing (Seconds) (1)		Recommended Mitigation
		AM	PM	AM	PM	
W.29th St (WB) & 10th Ave (NB)	WB	36	36	36	39	- Transfer 3s of green time from NB to WB in PM.
	PED	7	7	7	7	
	NB	30	30	30	27	
	NB/NBL	17	17	17	17	
W.25th St (WB) & 10th Ave (NB)	WB	36	36	36	38	- Transfer 2s of green time from NB to WB in PM.
	PED	10	10	10	10	
	NB	44	44	44	42	
W.17th St (WB) & 10th Ave (NB)	WB	36	36	36	40	- Transfer 4s of green time from NB to WB in PM.
	PED	10	10	10	10	
	NB	44	44	44	40	
W.29th St (WB) & 9th Ave (SB)	WB	38	38	38	38	- Unmitigated.
	PED	7	7	7	7	
	SB	45	45	45	45	
W.23rd St (EB-WB) & 9th Ave (SB)	EB/WB	31	31	30	31	- Transfer 1s of green time from EB/WB to SB/SBL in AM.
	PED	7	7	7	7	
	SB	32	32	32	32	
	SB/SBL	20	20	21	20	
W.17th St (WB) & 9th Ave (SB)	WB	33	33	33	36	- Transfer 3s of green time from SB to WB in PM.
	PED	7	7	7	7	
	SB	50	50	50	47	

Notes :
(1) Signal timings shown indicate green plus yellow (including all red) for each phase.
All proposed signal timing mitigations reflect adjustments to the walk timings.

Table 05.19-58: 2034 (Q1) Rezoning Alternative Action-With-Mitigation Conditions at Impacted Lane Groups During the Construction Peak Hours

			2034 No-Action Alternative AM			2034 Rezoning Alternative AM			2034 Rezoning Alternative With Mitigation AM			2034 No-Action Alternative PM			2034 Rezoning Alternative PM			2034 Rezoning Alternative With Mitigation PM		
Intersection	Approach	Lane Group	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS
W.29th St (WB) & 10th Ave (NB)	WB	T	0.47	26.2	C	0.47	25.6	C	0.47	25.6	C	0.73	36.5	D	0.83	39.3	D	0.76	35.6	D
	WB	R	0.39	24.8	C	0.39	24.2	C	0.39	24.2	C	1.00	54.7	D	1.10	90.8	F *	0.99	51.1	D
	NB	L	0.36	25.2	C	0.36	23.9	C	0.36	23.9	C	0.39	20.8	C	0.39	20.3	C	0.39	21.4	C
	NB	T	0.33	2.9	A	0.36	2.7	A	0.36	2.7	A	0.60	3.0	A	0.63	3.0	A	0.67	5.5	A
W.25th St (WB) & 10th Ave (NB)	WB	TR	0.43	18.2	B	0.52	17.0	B	0.52	17.0	B	1.13	97.7	F	1.18	115.3	F *	1.10	82.0	F
	NB	LT	0.40	2.0	A	0.47	2.1	A	0.47	2.1	A	0.72	4.9	A	0.75	5.1	A	0.79	5.9	A
W.17th St (WB) & 10th Ave (NB)	WB	TR	0.34	16.1	B	0.52	17.7	B	0.52	17.7	B	0.95	55.1	E	1.14	108.7	F *	1.00	55.3	E
	NB	LT	0.36	17.7	B	0.38	18.0	B	0.38	18.0	B	0.69	22.8	C	0.72	23.5	C	0.80	28.7	C
W.29th St (WB) & 9th Ave (SB)	WB	L	0.38	23.2	C	0.38	23.3	C	0.38	23.3	C	0.74	34.9	C	0.75	35.6	D	0.75	35.6	D
	WB	T	0.44	24.4	C	0.44	24.4	C	0.44	24.4	C	1.20	138.6	F	1.38	213.9	F *	1.38	213.9	F *
	SB	TR	0.76	14.6	B	0.83	18.4	B	0.83	18.4	B	0.70	17.4	B	0.72	18.2	B	0.72	18.2	B
W.23rd St (E-W) & 9th Ave (SB)	EB	T	0.43	28.0	C	0.46	28.0	C	0.48	29.3	C	0.82	29.2	C	0.82	29.5	C	0.82	29.5	C
	EB	R	0.11	22.4	C	0.15	22.8	C	0.16	23.7	C	0.48	24.9	C	0.48	25.1	C	0.48	25.1	C
	WB	T	0.22	25.8	C	0.30	26.7	C	0.31	27.7	C	0.65	33.4	C	0.65	33.4	C	0.65	33.4	C
	SB	L	1.04	112.6	F	1.08	122.9	F *	1.01	101.7	F	0.70	53.8	D	0.70	53.8	D	0.70	53.8	D
	SB	TR	0.47	14.5	B	0.52	15.2	B	0.50	14.5	B	0.61	16.4	B	0.62	16.8	B	0.62	16.8	B
W.17th St (WB) & 9th Ave (SB)	WB	LT	0.18	23.7	C	0.38	27.3	C	0.38	27.3	C	0.91	57.0	E	1.03	83.6	F *	0.93	56.5	E
	SB	TR	0.42	5.4	A	0.54	8.7	A	0.54	8.7	A	0.70	8.7	A	0.77	11.1	B	0.83	14.3	B

Notes:
EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L - left, T - through, R - right, DefL - Analysis considers a defacto left-turn lane on this approach
V/C ratio - volume-to-capacity ratio
Sec/veh - seconds per vehicle
LOS - level of service
* - Denotes a impacted movement
Analysis is based on the 2000 Highway Capacity Manual methodology (Synchro 11)

Effect 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 on Traffic Mitigation Measures

Subject to the approval of NYCDOT, the mitigation measures summarized in **Table 05.19-57** would be implemented to mitigate the significant adverse traffic impacts resulting from the peak construction period of the Rezoning Alternative in the first quarter of 2034. As discussed in **Section C**, construction of the Rezoning Alternative would occur in five stages over 16 years, with an anticipated start date in the third quarter of 2025. As the peak construction period of the Rezoning Alternative would be expected to occur within the 16-year period, it is possible that some of the significant adverse traffic impacts could occur between 2025 and the peak construction period in 2034. The actual implementation of the proposed mitigation measures will be determined by NYCDOT upon field survey of the build conditions.

Pedestrians

As discussed above, in the first quarter of the 2034 peak construction period, the Rezoning Alternative would result in significant adverse pedestrian impacts at three sidewalks and one crosswalk in one or both of the construction peak hours.

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 potential mitigation measures to address the Rezoning Alternative's significant adverse pedestrian impacts under the peak construction period.

Sidewalks

Of the six sidewalks analyzed, three are expected to be significantly adversely impacted by incremental demand from the Rezoning Alternative during the peak construction period. **Table 05.19-59** shows the recommended mitigation measures to address these impacts and their effectiveness. As shown in **Table 05.19-59** and discussed below, with implementation of the proposed mitigation measures, in the peak construction period, the Rezoning Alternative's significant adverse impacts to one sidewalk would be mitigated during the AM construction peak hour. Practicable mitigation measures could not be identified for significant adverse impacts at one and three sidewalks during the same peak hours, and these impacts would therefore remain unmitigated.

With the relocation of a traffic sign located on the western half of the north sidewalk along W. 17th Street between 9th and 10th Avenues, the significant adverse impact would be fully mitigated during the analyzed construction AM peak hour. The Rezoning Alternative would result in an unmitigated significant adverse impact at this sidewalk during the construction AM peak hour if the proposed mitigation measure is deemed infeasible and no alternate mitigation measure is identified.

Table 05.19-59: 2034 (Q1) Rezoning Alternative Action-With-Mitigation Sidewalk Conditions

Sidewalk	No-Action Alternative			Rezoning Alternative			Rezoning Alternative Action-with-Mitigation			
	Effective Width (ft)	Average Pedestrian Space (ft^2/ped)	LOS	Effective Width (ft)	Average Pedestrian Space (ft^2/ped)	LOS	Effective Width (ft)	Average Pedestrian Space (ft^2/ped)	LOS	Mitigation Measures
Construction AM Peak Hour										
North sidewalk along W 17 St btw 9 Ave & 10 Ave	1.5	81.9	C	1.5	15.3	E *	3.0	33.2	D	- Relocation of one traffic sign.
North sidewalk along W 16 St btw 8 Ave & 9 Ave	1.0	42.6	C	1.0	17.3	E *	1.0	17.3	E *	- Unmitigatable.
Construction PM Peak Hour										
North sidewalk along W 25 St btw 8 Ave & 9 Ave	5.0	46.5	C	5.0	31.4	D *	5.0	31.4	D *	- Unmitigatable.
North sidewalk along W 17 St btw 9 Ave & 10 Ave	1.5	22.9	E	1.5	7.7	F *	3.0	19.7	E *	- Relocation of one traffic sign.
North sidewalk along W 16 St btw 8 Ave & 9 Ave	1.0	13.1	E	1.0	6.7	F *	1.0	6.7	F *	- Unmitigatable.

Note:
* Denotes a significant adverse impact based on *CTM* criteria.

Crosswalks

Out of the two crosswalks analyzed, one is expected to be significantly adversely impacted by incremental demand from the Rezoning Alternative in the PM construction peak hour during the peak construction period. Based on NYCDOT's guidance, widening the north crosswalk at 8th Avenue and W. 25th Street is not feasible as there is only approximately eight feet of space on the pedestrian island between the travel lanes and bike lanes. Therefore, significant adverse impacts at one crosswalk would remain unmitigated in the PM construction peak hour as shown in **Table 05.19-60**.

Table 05.19-60: 2034 (Q1) Rezoning Alternative Action-With-Mitigation Crosswalk Conditions

Intersection	Crosswalk	No-Action Alternative			Rezoning Alternative			Rezoning Alternative Action-with-Mitigation			
		Width (ft)	Average Pedestrian Space (ft^2/ped)	LOS	Width (ft)	Average Pedestrian Space (ft^2/ped)	LOS	Width (ft)	Average Pedestrian Space (ft^2/ped)	LOS	Mitigation Measures
Construction PM Peak Hour											
8 Ave & W 25 St	North	12.0	24.9	C	12.0	18.6	D *	12.0	18.6	D *	- Unmitigated.

Note:
* Denotes a significant adverse impact based on *CTM* criteria.

Effect of Traffic Mitigation on Pedestrian Conditions

Proposed traffic mitigation measures would not affect pedestrian conditions at any analyzed pedestrian elements during the construction peak period in the AM and PM construction peak hours.

Proposed Schedule on Pedestrian Mitigation Measures

Subject to the approval of NYCDOT, the pedestrian mitigation measures described above would be implemented to mitigate the significant adverse sidewalk impacts resulting from the peak construction period of the Rezoning Alternative in the first quarter of 2034. As discussed in **Section C**, construction of the Rezoning Alternative would occur in five stages over 16 years, with an anticipated start date in the third quarter of 2025. As the peak construction period of the Rezoning Alternative would be expected to occur within the 16-year period, it is possible that some of the significant adverse traffic impacts could occur between 2025 and the peak construction period in 2034. The actual implementation of the proposed mitigation measures will be determined by NYCDOT upon field survey of the build conditions. Alternative 3 – Non-Rezoning Alternative

Traffic

As discussed above, in the second quarter of the 2037 peak construction period, construction traffic in combination with operational traffic from completed development on projected development sites under the Non-Rezoning Alternative would result in significant adverse traffic impacts at eight study area intersections during one or both analyzed construction peak hours; specifically, one lane group at one intersection in the AM construction peak hour, and eight lane groups at seven intersections in the PM construction peak hour.

As demonstrated below, all of these impacts could be mitigated through the implementation of traffic engineering improvements, including modification of existing traffic signal phasing and/or timing. The types of mitigation measures proposed herein are standard measures that are routinely identified by the City and considered feasible for implementation. **Table 05.19-61** summarizes the recommended mitigation measures for each of the intersections with significant adverse traffic impacts during the AM and PM construction peak hours. Implementation of the recommended traffic engineering improvements is subject to final review and approval by NYCDOT. If, prior to implementation, NYCDOT determines that an identified mitigation measure is infeasible, an alternative mitigation measure will be identified, if possible. In the absence of the application of mitigation measures, the impacts would remain unmitigated.

Table 05.19-62 shows 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 Alternative and Non-Rezoning Alternative for the AM and PM construction peak hours during the second quarter of the 2037 construction peak period. According to *CTM* criteria, an impact is considered fully mitigated when the resulting LOS degradation under the Action-with-Mitigation Condition compared with the No-Action Alternative is no longer deemed significant following the impact criteria described above. **Table 05.19-62** shows that significant adverse impacts would be fully mitigated during all analyzed peak hours.

Effect 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 on Traffic Mitigation Measures

Subject to the approval of NYCDOT, the mitigation measures summarized in **Table 05.19-61** would be implemented to mitigate the significant adverse traffic impacts resulting from the peak construction period of the Non-Rezoning Alternative in the second quarter of 2037. As discussed in **Section C**, construction of the Non-Rezoning Alternative would occur in five stages over 16 years, with an anticipated start date in the third quarter of 2025. As the peak construction period of the Non-Rezoning Alternative would be expected to occur within the 16-year period, it is possible that some of the significant adverse traffic impacts could occur between 2025 and the peak construction period in 2037. The actual implementation of the proposed mitigation measures will be determined by NYCDOT upon field survey of the build conditions.

Table 05.19-61: 2037 (Q2) Non-Rezoning Alternative Proposed Construction Traffic Mitigation Measures

Intersection	Signal Phase	No-Action Alternative Signal Timing (Seconds) (1)		Proposed Signal Timing (Seconds) (1)		Recommended Mitigation
		AM	PM	AM	PM	
W.29th St (WB) & 10th Ave (NB)	WB	36	36	36	37	- Transfer 1s of green time from NB to WB in PM.
	PED	7	7	7	7	
	NB	30	30	30	29	
	NB/NBL	17	17	17	17	
W.25th St (WB) & 10th Ave (NB)	WB	36	36	36	37	- Transfer 1s of green time from NB to WB in PM.
	PED	10	10	10	10	
	NB	44	44	44	43	
W.23th St (E-W) & 10th Ave (NB)	EB/WB	30	30	30	31	- Transfer 1s of green time from NB to EB/WB in PM.
	EB/EB-L	11	11	11	11	
	PED	7	7	7	7	
	NB	42	42	42	41	
W.19th St (WB) & 10th Ave (NB) See note (2)	EB	21	21	21	21	- Transfer 1s of green time from NB to WB in PM.
	WB	23	23	23	24	
	NB	39	39	39	38	
	Ped	7	7	7	7	
W.17th St (WB) & 10th Ave (NB)	WB	36	36	36	38	- Transfer 2s of green time from NB to WB in PM.
	PED	10	10	10	10	
	NB	44	44	44	42	
W.29th St (WB) & 9th Ave (SB)	WB	38	38	38	40	- Transfer 2s of green time from NB to WB in PM.
	PED	7	7	7	7	
	SB	45	45	45	43	
W.23rd St (EB-WB) & 9th Ave (SB)	EB/WB	31	31	30	31	- Transfer 1s of green time from EB/WB to SB/SBL in AM.
	PED	7	7	7	7	
	SB	32	32	32	32	
	SB/SBL	20	20	21	20	
W.19th St (WB) & 9th Ave (SB)	WB	33	33	33	36	- Transfer 3s of green time from SB to WB in PM.
	PED	7	7	7	7	
	NB	50	50	50	47	
W.17th St (WB) & 9th Ave (SB)	WB	33	33	33	34	- Transfer 1s of green time from SB to WB in PM.
	PED	7	7	7	7	
	SB	50	50	50	49	

Notes :
(1) Signal timings shown indicate green plus yellow (including all red) for each phase.
(2) An impact at W. 19th St/10th Ave was created by the mitigation measures for W. 19th St/9th Ave. Therefore, mitigation measures are proposed for W. 19th St/10th Ave.
All proposed signal timing mitigations reflect adjustments to the walk timings.

Table 05.19-62: 2037 (Q2) Non-Rezoning Alternative Action-With-Mitigation Conditions at Impacted Lane Groups During the Construction Peak Hours

Intersection	Approach	Lane Group	2037 No-Action Alternative AM			2037 Non-Rezoning Alternative AM			2037 Non-Rezoning Alternative With Mitigation AM			2037 No-Action Alternative PM			2037 Non-Rezoning Alternative PM			2037 Non-Rezoning Alternative With Mitigation PM		
			V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS	V/C Ratio	Delay (sec/veh)	LOS
W.29th St (WB) & 10th Ave (NB)	WB	T	0.47	26.3	C	0.47	25.5	C	0.47	25.5	C	0.73	36.6	D	0.77	37.6	D	0.74	37.2	D
	WB	R	0.39	24.9	C	0.40	24.3	C	0.40	24.3	C	1.00	54.6	D	1.04	66.1	E *	1.00	55.0	E
	NB	L	0.36	25.2	C	0.36	24.5	C	0.36	24.5	C	0.39	20.8	C	0.39	20.4	C	0.39	20.4	C
	NB	T	0.33	2.9	A	0.34	2.8	A	0.34	2.8	A	0.60	2.9	A	0.62	3.0	A	0.64	3.6	A
W.25th St (WB) & 10th Ave (NB)	WB	TR	0.43	18.1	B	0.49	17.4	B	0.49	17.4	B	1.13	98.5	F	1.16	110.1	F *	1.12	93.0	F
	NB	LT	0.40	2.0	A	0.44	2.1	A	0.44	2.1	A	0.72	5.0	A	0.75	5.1	A	0.77	5.4	A
W.23rd St (E-W) & 10th Ave (NB)	EB	LT	0.41	21.7	C	0.44	22.4	C	0.44	22.4	C	1.59	311.4	F	1.63	327.2	F *	1.52	278.7	F
	WB	T	0.54	25.2	C	0.64	28.3	C	0.64	27.6	C	1.35	186.4	F	1.37	195.3	F *	1.32	169.5	F
	NB	LTR	0.47	1.8	A	0.51	2.0	A	0.51	2.0	A	0.92	45.8	D	0.96	48.6	D	0.99	53.2	D
W.19th St & 10th Ave (NB) (See note (2) in Table 05.19-61)	EB	L	0.09	31.5	C	0.09	31.5	C	0.09	31.5	C	0.12	32.0	C	0.12	32.1	C	0.12	32.1	C
	WB	R	0.25	47.4	D	0.25	46.7	D	0.25	46.7	D	0.89	40.7	D	1.01	54.6	D	0.95	46.8	D
	NB	T	0.41	5.3	A	0.45	5.2	A	0.45	5.2	A	0.88	10.4	B	0.89	10.8	B	0.91	12.9	B
W.17th St (WB) & 10th Ave (NB)	WB	TR	0.34	16.2	B	0.45	17.4	B	0.45	17.4	B	0.96	55.6	E	1.00	64.8	E *	0.94	48.5	D
	NB	LT	0.36	17.7	B	0.37	17.9	B	0.37	17.9	B	0.69	22.8	C	0.69	23.0	C	0.73	25.2	C
W.29th St (WB) & 9th Ave (SB)	WB	L	0.38	23.2	C	0.38	23.3	C	0.38	23.3	C	0.74	34.9	C	0.74	35.4	D	0.69	30.8	C
	WB	T	0.44	24.4	C	0.45	24.6	C	0.45	24.6	C	1.21	139.5	F	1.28	167.9	F *	1.20	135.9	F
	SB	TR	0.76	14.7	B	0.82	17.7	B	0.82	17.7	B	0.70	17.4	B	0.71	17.6	B	0.75	19.1	B
W.23rd St (E-W) & 9th Ave (SB)	EB	T	0.43	27.9	C	0.47	27.9	C	0.49	29.2	C	0.82	29.2	C	0.82	29.3	C	0.82	29.9	C
	EB	R	0.12	22.4	C	0.15	22.5	C	0.16	23.4	C	0.48	24.9	C	0.49	25.0	C	0.49	25.5	C
	WB	T	0.23	25.8	C	0.27	26.4	C	0.28	27.3	C	0.65	33.4	C	0.66	33.7	C	0.66	33.7	C
	SB	L	1.05	114.0	F	1.07	121.4	F *	1.01	100.5	F	0.70	53.8	D	0.70	53.8	D	0.70	53.8	D
	SB	TR	0.47	14.6	B	0.51	15.2	B	0.50	14.5	B	0.61	16.5	B	0.62	16.6	B	0.62	16.6	B
W.19th St (WB) & 9th Ave (SB)	WB	LT	0.23	24.4	C	0.38	26.9	C	0.38	26.9	C	0.90	54.1	D	1.02	79.1	E *	0.91	53.2	D
	SB	TR	0.40	15.3	B	0.45	15.9	B	0.45	15.9	B	0.61	18.3	B	0.62	18.5	B	0.67	21.2	C
W.17th St (WB) & 9th Ave (SB)	WB	LT	0.18	23.7	C	0.23	24.3	C	0.23	24.3	C	0.92	57.8	E	0.97	68.9	E *	0.93	60.2	E
	SB	TR	0.42	5.4	A	0.55	8.1	A	0.55	8.1	A	0.70	8.7	A	0.73	9.6	A	0.75	10.1	B

Notes:
EB - eastbound, WB - westbound, NB - northbound, SB - southbound
L - left, T - through, R - right, DefL - Analysis considers a defacto left-turn lane on this approach
V/C ratio - volume-to-capacity ratio
Sec/veh - seconds per vehicle
LOS - level of service
* - Denotes a impacted movement
Analysis is based on the 2000 Highway Capacity Manual methodology (Synchro 11)

Pedestrians

As discussed above, in the second quarter of the 2037 peak construction period, the Non-Rezoning Alternative would result in significant adverse pedestrian impacts at three sidewalks in one or both of the construction peak hours.

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 relocating or removing street furniture or other impediments to pedestrian flow and sidewalk widening. Discussed below are potential mitigation measures to address the Non-Rezoning Alternative's significant adverse pedestrian impacts under the peak construction period.

Sidewalks

Of the six sidewalks analyzed, two are expected to be significantly adversely impacted by incremental demand from the Non-Rezoning Alternative during the peak construction period. **Table 05.19-63** shows the recommended mitigation measures to address these impacts and their effectiveness. As shown in **Table 05.19-63** and discussed below, with implementation of the proposed mitigation measures, in the peak construction period, the Non-Rezoning Alternative's significant adverse impacts to one sidewalk would be mitigated during both the AM and PM construction peak hours. Practicable mitigation measures could not be identified for significant adverse impacts at one and two sidewalks during the same peak hours, and these impacts would therefore remain unmitigated.

With the relocation of a trash bin and traffic sign located on the western half of the north sidewalk along W. 17th Street between 9th and 10th Avenues, the significant adverse impact would be fully mitigated during all analyzed peak hours. The Non-Rezoning Alternative would result in an unmitigated significant adverse impact at this sidewalk if the proposed mitigation measure is deemed infeasible and no alternate mitigation measure is identified.

Table 05.19-63: 2037 (Q2) Non-Rezoning Alternative Action-With-Mitigation Sidewalk Conditions

Sidewalk	No-Action Alternative			Non-Rezoning Alternative			Non-Rezoning Alternative Action-with-Mitigation			
	Effective Width (ft)	Average Pedestrian Space (ft^2/ped)	LOS	Effective Width (ft)	Average Pedestrian Space (ft^2/ped)	LOS	Effective Width (ft)	Average Pedestrian Space (ft^2/ped)	LOS	Mitigation Measures
Construction AM Peak Hour										
North sidewalk along W 17 St btw 9 Ave & 10 Ave	1.5	81.9	C	1.5	18.1	E *	3.0	38.5	D	- Relocation of one traffic sign.
North sidewalk along W 16 St btw 8 Ave & 9 Ave	1.0	42.6	C	1.0	20.2	E *	1.0	20.2	E *	- Unmitigatable.
Construction PM Peak Hour										
North sidewalk along W 17 St btw 9 Ave & 10 Ave	1.5	22.9	E	1.5	10.9	F *	3.0	25.3	D	- Relocation of one traffic sign.
North sidewalk along W 16 St btw 8 Ave & 9 Ave	1.0	13.0	E	1.0	7.9	F *	1.0	7.9	F *	- Unmitigatable.

Note:
* Denotes a significant adverse impact based on *CTM* criteria.

Effect of Traffic Mitigation on Pedestrian Conditions

Proposed traffic mitigation measures would not affect pedestrian conditions at any analyzed pedestrian elements during the construction peak period in the AM and PM construction peak hours.

Proposed Schedule on Pedestrian Mitigation Measures

Subject to the approval of NYCDOT, the pedestrian mitigation measures described above would be implemented to mitigate the significant adverse sidewalk impacts resulting from the peak construction period of the Non-Rezoning Alternative in the second quarter of 2037. As discussed in **Section C**, construction of the Non-Rezoning Alternative would occur in five stages over 16 years, with an anticipated start date in the third quarter of 2025. As the peak construction period of the Non-Rezoning Alternative would be expected to occur within the 16-year period, it is possible that some of the significant adverse traffic impacts could occur between 2025 and the peak construction period in 2037. The actual implementation of the proposed mitigation measures will be determined by NYCDOT upon field survey of the build conditions.

Alternative 4 – Midblock Bulk Alternative

Traffic

The Rezoning Alternative would result in significant adverse impacts to six intersections in one or both of the analyzed peak hours during the peak construction period. As the Midblock Bulk Alternative would generate fewer vehicle trips in each of the construction peak hours than the Rezoning Alternative, it is anticipated that it would not result in any new significant adverse traffic impacts compared to the Rezoning Alternative. As discussed above in **Section F,** the rearrangement of bulk between the Midblock Bulk Alternative and Rezoning Alternative may result in small changes in the directional distribution of action-generated trips at some intersections. The measures proposed for the Rezoning Alternative's significant adverse traffic impacts would improve the traffic conditions of the impacted locations under the Midblock Bulk Alternative. Similar to the Rezoning Alternative, it is expected that incremental vehicle trips associated with traffic generated by the Midblock Bulk Alternative would likely result in significant adverse impacts during the construction of the first stage. As such, implementation of some or all of the mitigation measures developed for peak construction period for the Rezoning Alternative would be considered at impacted intersections in proximity to the Project Site at an earlier point in time (e.g. during the first stage).

Pedestrians

The Rezoning Alternative would result in significant adverse impacts to three sidewalks and one crosswalk in one or both of the analyzed construction peak hours during the peak construction period. As the Midblock Bulk Alternative would generate fewer pedestrian trips in each of the construction peak hour peak hour than the Rezoning Alternative, it is expected that it would not result in any new significant adverse pedestrian impacts compared to the Rezoning Alternative. The measures proposed for the Rezoning Alternative's significant adverse pedestrian impacts would improve the sidewalk and crosswalk conditions of the impacted pedestrian locations under the Midblock Bulk Alternative.

Construction Noise

As discussed above, construction under the Rezoning Alternative, the Non-Rezoning Alternative, and the Midblock Bulk Alternative would result in significant adverse construction noise impacts at various receptors within and adjacent to the Project Sites. Significant adverse impacts that cannot be fully mitigated through reasonably practicable measures are also identified and discussed in **Chapter 7.0.**

At several receptors for the Rezoning Alternative, the Non-Rezoning Alternative, and under the Midblock Bulk Alternative would result in noise level increments that would exceed the *CTM* construction noise screening thresholds. The potential for significant adverse impacts at these receptors was determined by evaluating the magnitude and duration of these increments. Significant adverse impacts related to construction noise for the Rezoning Alternative would occur at sensitive locations as indicated in **Figures 05.19-6a through 05.19-7b** and **Table 05.19-51**. Significant adverse impacts related to construction noise under the Non-Rezoning Alternative would occur at sensitive locations as indicated in **Figures 05.19-8a through 05.19-9b** and **Table 05.19-53.** Significant adverse impacts related to construction noise under the Midblock Bulk Alternative would occur at sensitive locations as indicated in **Figures 05.19-10a through 05.19-11b** and **Table 05.19-55.**

This analysis was based on a conceptual site plan and construction schedule. The conceptual construction schedule conservatively accounts for overlapping construction activities at multiple building 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 building sites. Because the analysis is based on construction stages, 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 stages, while the construction noise analysis is based on the worst-case time periods only, which is conservative.

For the Rezoning Alternative, Non-Rezoning Alternative, and the Midblock Bulk Alternative, of the residential buildings to be constructed at the Project Sites these buildings, Elliott Buildings 1 through 4, Chelsea Building 1, and Fulton Buildings 2 through 6, 9, and 10 are predicted to experience significant adverse construction noise impacts. As described in **Chapter 05.16,** these residential buildings would provide 28 to 33 dBA window/wall attenuation and would feature modern façade construction, including insulated glass windows and an alternative means of ventilation that would allow for the maintenance of a closed-window condition. With these measures, interior noise levels at these buildings would be substantially reduced during the times that they would experience noise from construction of other elements of the Proposed Project. However, even with a minimum of 28 dBA window/wall attenuation and alternative means of ventilation, interior noise levels resulting from construction of the Proposed Project would still exceed the 45 dBA threshold considered acceptable for residential use according to *CTM* noise exposure guidelines by up to approximately 14 dBA. Consequently, the predicted construction noise impacts at these buildings would be only partially mitigated.

Many of the existing buildings at which construction noise impacts were predicted to occur, including Avenues the World School at 259 10th Avenue and PS 33 Chelsea Prep at 281 9th Avenue, include insulated glass windows and alternate means of ventilation, which would provide at least 25 dBA window/wall attenuation. With these measures, interior noise levels at these buildings would be substantially reduced during the times that they would experience noise from construction activities. However, even with a minimum of 25 dBA window/wall attenuation, interior noise levels resulting from construction of the Proposed Project would still exceed the 45 dBA threshold considered acceptable for residential or community facility use according to *CTM* noise exposure guidelines by up to approximately 18 dBA. Consequently, the predicted construction noise impacts at these buildings would be only partially mitigated.

Noise Reduction Measures

Construction activities for the Rezoning Alternative, the Non-Rezoning Alternative, or under the Midblock Bulk Alternative 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.

In addition, the source and path control measures listed below would be implemented as PCREs during construction of the Proposed Project beyond New York City regulations to minimize noise emissions to the maximum extent practicable:

- Certain equipment such as compressors, generators, and cranes, would be required to meet the mandated noise levels to be used for construction of the Proposed Project (lower levels than those specified in the NYC Construction Noise Code)
- In lieu of a generator, power would be drawn from the existing Con Edison grid, subject to Con Edison approval and power availability
- Noise barriers would be 12 feet tall and cantilevered towards the work area instead of the 8 feet tall required by code
- Throughout the construction period, concrete operations would be located within the construction barrier (i.e., A structure enclosed on three sides and with a roof constructed) while pouring or being washed out
- The construction barrier would be attenuated using sound blankets
- Where logistics allow, noisy equipment, such as cranes, concrete pumps, concrete trucks, and delivery trucks, would be located away from and shielded from sensitive receptor locations

The above-described robust noise control program and measures will be implemented during construction of the Proposed Project to minimize noise emissions to the maximum extent practicable. In addition to these source and path-control measures, the feasibility and practicability of receptor control measures and/or other potential noise control measures and mitigation for construction noise impacts on nearby buildings will be evaluated further between Draft and Final EIS. For the Proposed Project under any of the alternatives, the process will be memorialized in a legally binding document between NYCHA and the PACT Partner.

It should be noted that even with the above-described noise reduction measures, interior noise levels during construction would still exceed the acceptable thresholds for residential or community facility uses under the Rezoning Alternative, the Non-Rezoning Alternative, or the Midblock Bulk Alternative. Therefore, construction of the Proposed Project under any of these alternatives would result in an unavoidable significant adverse noise impact.