

Appendix N **Indirect and Cumulative Effects**

Appendix N: Indirect, Cumulative, and Other Impacts

N.1 INTRODUCTION

This appendix provides additional detail on the methodology and assumptions FRA used to prepare the Indirect and Cumulative Impacts analysis of the Western Rail Yard Infrastructure Project (see Chapter 20, “Indirect, Cumulative, and Other Impacts”). This appendix also contains details of the updated analysis for resource categories that warranted additional analysis.

N.2 AFFECTED ENVIRONMENT

As discussed in Chapter 4, “Analysis Framework,” the Study Area includes numerous planned and ongoing development and transportation projects. In addition, as discussed in Chapter 1, “Introduction,” the Platform would enable the construction of the as-of-right development of the Overbuild, which is an indirect effect of the Preferred Alternative. The following section describes the indirect effects of the Preferred Alternative.

N.3 INDIRECT OPERATIONAL IMPACTS OF THE PREFERRED ALTERNATIVE

Throughout this section, references to the Overbuild are included in the context of that development being a previously approved project (as analyzed in the 2009 SEQRA/CEQR FEIS) that would be an indirect consequence of the Preferred Alternative, with associated indirect effects.

N.3.1.1 *LAND USE, LAND PLANNING, AND PROPERTY*

N.3.1.1.1 *Local and Regional Plans and Policies*

Table N-1 provides a discussion of the consistency of the indirect effects of the Preferred Alternative with relevant local and regional plans and policies.

Table N-1
Local and Regional Plans and Policies- Indirect Effects

Local and Regional Plans and Policies	Description
New York City Waterfront Revitalization Program (LWRP)	The indirect impacts of the Preferred Alternative would be consistent with the LWRP by supporting policies related to encouraging commercial and residential development in appropriate Coastal Zones.
ONENYC	The indirect impacts of the Preferred Alternative would be consistent with OneNYC. In the future, the Project Site would be a mixed-use development that generates revenue for the MTA. The Overbuild Developer, the successful bidder of a competitive bid issued by MTA for the long-term ground leases with option to purchase severed fee parcels (for the development air rights over the Hudson Yards from MTA) would construct the Overbuild and would generate revenue for the MTA. This promotes OneNYC 2050's initiative to modernize New York City's mass transit network by helping fund the MTA capital plan.
Vision 2020	The indirect impacts of the Preferred Alternative would be consistent with the goals of Vision 2020 of improving the New York City waterfront. Although not constructed directly on the waterfront, the Project Site is close to the waterfront and thus supports ongoing initiatives to redevelop waterfront areas with active uses.
Master Plan Caemmerer West Side Yard	The indirect impacts of the Preferred Alternative would be consistent with the 1989 MTA Master Plan. The construction of the Overbuild accomplishes the goal of the 1989 Master Plan to have development (Overbuild) constructed above the active rail yard.
Northeast Corridor Infrastructure Master Plan	There are no indirect impacts from the Preferred Alternative that relates to this plan. Therefore, this plan is not applicable.
Amtrak's Northeast Corridor Gateway Program	There are no indirect impacts from the Preferred Alternative that relates to this plan. Therefore, this plan is not applicable.
NYMTC's Regional Transportation Plan 2045	The indirect impacts of the Preferred Alternative includes building a transit oriented development above a functioning rail yard. NYMTC's Regional Transportation Plan 2045 includes an initiative to plan for sustainability. A key component to achieving this initiative includes transit oriented development projects. The Overbuild can be categorized as a transit oriented development as it is a compact, mixed-use development near transit facilities and located within a high-quality walking environment. Therefore, the indirect impacts of the Preferred Alternative is consistent with NYMTC's Regional Transportation Plan.
FRA'S NEC FUTURE	There are no indirect impacts from the Preferred Alternative that relates to this plan. Therefore, this plan is not applicable.

N.3.1.2 *TRANSPORTATION*

N.3.1.2.1 *Traffic*

The indirect effects of the Preferred Alternative would include increasing vehicular traffic demand in the Study Area. FRA considered the three development scenarios examined in the 2009 SEQRA/CEQR FEIS, as defining the Reasonable Worst-Case Development Scenario (RWCDs), including: the Maximum Residential Scenario, the Maximum Commercial Scenario (only for the weekday analyses) and the Maximum Residential Scenario-Hotel Option (only for the Saturday analysis). In addition, the Overbuild project proposed two changes to the roadway network: a northern upland connection from Eleventh Avenue that would align approximately with West 32nd Street and southern upland connection accessible from Eleventh Avenue that aligns approximately with West 31st Street. This remains the standing site plan.

Total vehicle trips generated by each development scenario can be found in the 2009 SEQRA/CEQR FEIS and remain applicable.

The 2009 SEQRA/CEQR FEIS identified measures to mitigate, either in part or in whole, the adverse traffic impacts of the Overbuild. Overall, the Overbuild would be included in the monitoring and mitigation program established by New York City to manage the larger area-wide Hudson Yards initiative (assessed in a 2004 FGEIS). With the Overbuild, it is expected that City's monitoring program would be expanded to include traffic generated by the development such that mitigation could be adjusted, and area-wide measures expanded, as necessary, in order to minimize congestion in the Study Area.

Overall, these area-wide and project-specific mitigation measures would include:

- Elimination of on-street parking within 150 feet of intersections to add a limited travel lane, known as "daylighting";
- Enforcement of existing parking restrictions to ensure that traffic lanes are available to moving traffic;
- Channelization and lane designation changes to make more efficient use of available street widths; and
- Installation of traffic signals at unsignalized intersections if warranted.

The environmental findings for the 2009 SEQRA/CEQR FEIS approved project identified that of the 64 intersections with impacts in AM peak hour, there would be 10 unmitigated impacts; in the Midday peak hour there would be 3 unmitigated impacts out of 60 intersections; 13 unmitigated impacts out of 75 intersections in the PM peak hour; and, 5 unmitigated impacts of 48 intersections during the Saturday peak hour. These effects have been disclosed and acknowledged as part of the completed City approval process for the Overbuild and would continue to be reasonable assessment of the potential indirect effect of the Preferred Alternative.

N.3.1.2.2 *Parking*

The indirect effects to parking of the Preferred Alternative, resulting from the Overbuild were identified in the findings adopted by the City as part of the 2009 SEQRA/CEQR FEIS, which indicated that the Overbuild would further exacerbate the weekday midday off-street parking shortfall in the parking Study Area, but not substantially. It is expected that the available off-street parking supply would be able to accommodate the increase in overnight demand generated by the Overbuild. While the midday shortfall was estimated to be as high as 460 parking spaces, the 2009 SEQRA/CEQR FEIS noted that City policy establishes that for projects within the Manhattan Business District (defined as the area south of 61st Street), the inability of a proposed action or the surrounding area to accommodate projected future parking demands would be considered a parking shortfall, but is not deemed to be an adverse impact. The unsatisfied demand for parking spaces during the midday peak utilization period would result in vehicles parking outside of the parking Study Area and motorists walking greater distances to their destinations. As parking shortfalls do not constitute adverse impacts under the *CEQR Technical Manual* guidance, no mitigation was required in 2009 SEQRA/CEQR FEIS and there has been no change in City policy. As a result, the Overbuild would not result in any indirect parking effects of the Preferred Alternative.

N.3.1.2.3 *Traffic Safety*

The Preferred Alternative would indirectly increase pedestrian volumes given the features and function of the Overbuild. The transformation of the Hudson Yards is resulting in substantially more residents, workers, and visitors all translating into more traffic, more pedestrians, and more bicyclists. This increase in demand has been accompanied by improvements including the exclusive bus lanes on 34th Street which limit turns onto north-south avenues, a Class 1 Bicycle Path (separated on-street path) on Ninth Avenue from south of the Study Area to West 33rd Street and a Class 2 Bicycle Lane (on-street striped route) on Seventh and Eighth Avenues, signal timing and phasing modifications to include bicyclist priority, as well as other pedestrian safety programs including lead the Safe Streets for Seniors program. In addition, based on the large increase in pedestrian volumes generated by the Overbuild, the 2009 SEQRA/CEQR FEIS committed to a range of pedestrian circulation improvements including 15 new bulb outs and 17 crosswalk widenings.

The measures that have been implemented by NYCDOT, in combination with the indirect benefits associated with the Overbuild improvements, indicates that there would be no additional indirect effects of the Preferred Alternative on traffic safety.

N.3.1.2.4 *Transit*

The 2009 SEQRA/CEQR FEIS analyzed the potential indirect effects on transit for the immediately adjacent No. 7 Subway line and its Hudson Yards station. The analysis in the 2009 SEQRA/CEQR FEIS also examined the potential additional demand at the 34th Street stations for both the Eighth and Seventh Avenue subway lines. The analysis indicated that the Maximum Commercial Scenario would generate the highest level of subway trips for all weekday peak periods. Among the three scenarios, there could be additional demand of peak hour subway trips of approximately 3,410, 1,420, 4,150 total trips during the weekday AM, midday and PM peak hours, and 1,900 total trips in the Saturday peak hour (from the Maximum Residential scenario).

Because the identified mitigation measure identified in the 2009 SEQRA/CEQR FEIS has already been constructed (the staircase reconstruction was completed as part of the Phase I Moynihan Station Improvements, in combination with MTA's Rapid Renewal Program), no additional indirect effects from the Preferred Alternative on subway station elements at these locations would be expected.

N.3.1.2.5 *Bus Routes*

The indirect effects of the Preferred Alternative are generated by the previously approved Overbuild, which would add considerable demand for bus ridership. The 2009 SEQRA/CEQR FEIS noted that the Maximum Commercial Scenario would generate the highest level of bus trips for all weekday peak periods, as well as midday. Both the Maximum Commercial Scenario and the Maximum Residential with Office Scenario would generate the highest level of bus trips on Saturdays. Among the three scenarios, there could be additional demand of peak hour bus trips of approximately 1,110, 810, 1,290 total trips during the weekday AM, midday and PM peak hours, and 490 total trips in the Saturday peak hour.

The 2009 SEQRA/CEQR FEIS impact assessment looked at potential changes in bus service from this new demand for the following bus routes: M10, M11, M16, M20, M23, M34, and M42. The incremental demand from the Overbuild was estimated to result in adverse impacts on the M10/M20, M11, and M34 bus service and the 2009 SEQRA/CEQR FEIS identified the additional buses that would be necessary to mitigate the change. The 2009 SEQRA/CEQR FEIS also noted that New York City Transit's general policy is to provide additional bus service where demand warrants taking into consideration financial and operational constraints.

It is noted that the implementation of the 34th Street SBS was implemented by the City and the MTA and SBS began operations in late 2011. It was not considered a No Action project in the 2009 SEQRA/CEQR FEIS but was in its initial planning and, in part, was implemented based on the growth of transportation demand generated by the overall growth of Hudson Yards district (including the Western Rail Yard). The limits on turns, the provision of dedicated bus lanes and the increase in frequency in both articulated and regular buses has expanded the frequency of service in keeping with the 2009 SEQRA/CEQR FEIS findings, although bus headways have not yet reached the specific peak hour optimal headway conditions set forth in the 2009 SEQRA/CEQR FEIS.

N.3.1.2.6 *Pedestrians*

The indirect effects of the Preferred Alternative are generated by the previously approved Overbuild and include the substantial increase in pedestrian activities on the Study Area sidewalks and crosswalks. As estimated in the 2009 SEQRA/CEQR FEIS, the Maximum Residential with Hotel scenario would generate the highest number of trips made solely by walking in the AM and PM peak periods. The Maximum Commercial Scenario would generate the highest number of made solely by walking in the midday peak as well as the Saturday peak. Among the three scenarios, there could be additional demand of peak hour pedestrian trips of approximately 3,790, 8,750, 4,620 total trips during the weekday AM, midday and PM peak hours, and 5,160 total trips in the Saturday peak hour.

Mitigation requirements established in the 2009 SEQRA/CEQR FEIS and carried into the findings and conditions for the approved project include improvements to sidewalks, street corners and crosswalks, including relocating planters or street vendors, creating corner bulb outs on the avenue side of key intersections, and widening crosswalks at impacted crosswalk locations.

These mitigation measures remain applicable for the assumed 2030 completion of the Overbuild and would resolve most of the impacts identified in the 2009 SEQRA/CEQR FEIS. The 2009 SEQRA/CEQR FEIS noted that certain pedestrian adverse impacts could not be mitigated without causing adverse impacts on traffic conditions beyond those identified in the traffic analysis. As part of the overall Hudson Yards traffic monitoring program, the City would continue, as appropriate, to identify potential improvement measures.

N.3.1.3 *AIR QUALITY, GREENHOUSE GAS EMISSIONS, AND RESILIENCE*

The previously approved Overbuild would proceed as the Preferred Alternative is built. As a result, FRA considers the potential increased pollutant emissions within the Study Area associated with the additional vehicular traffic, and building emissions of the Overbuild to be an indirect effect of the Preferred Alternative. FRA has summarized the anticipated indirect effects of the completed Overbuild primarily based on the completed 2009 SEQRA/CEQR FEIS air quality analysis, where applicable.

N.3.1.3.1 *Mobile Source Analysis*

The 2009 SEQRA/CEQR FEIS air quality analysis considered the potential air quality effects of the RWCDs of the Overbuild. The increases in vehicular traffic associated with the Overbuild would remain within the framework of the already approved project; therefore, projections of pollutant concentrations provide a conservative representation of indirect air quality effects of the Preferred Alternative.

Development of the Overbuild would result in an increase of vehicular traffic volumes and consequently, increased pollutant concentrations in the Study Area. FRA considered the effects in the 2009 SEQRA/CEQR FEIS, finding that emissions from increased traffic or changed traffic patterns as an indirect effect of the Preferred Alternative would not cause or exacerbate a violation of NAAQS or cause an exceedance of NYSDEC/NYCDEP significant threshold values (STVs) for $PM_{2.5}$ or of the DEP *de minimis* criteria for CO, and thus would not have a significant adverse air quality impact.

N.3.1.3.2 *Stationary Source Analysis*

FRA considered the effects associated with the emissions from the HVAC systems of the RWCDs of the Overbuild as discussed in the 2009 SEQRA/CEQR FEIS air quality analysis. The analysis concluded the indirect effects of the Preferred Alternative would not cause a violation of the NAAQS or an exceedance of the STVs—either from the impacts of the HVAC emissions of the buildings comprising the Overbuild on receptors at these buildings (project-on-project impacts) or on receptors at existing and future developments. In addition, the HVAC emissions of existing and future developments, as well as “major” existing emission sources, would not significantly affect the Preferred Alternative’s buildings. Therefore, the proposed HVAC systems would not result in an adverse air quality impact.

The Overbuild would introduce new receptor locations within the Study Area of the air quality analysis performed to determine the air quality impact associated with the ventilation of dual-mode locomotive engine exhaust (see Chapter 7, “Air Quality, Greenhouse Gas Emissions, and Resiliency”). Therefore, FRA conducted an analysis to determine the potential air quality impacts at these receptors.

As shown in **Table N-2**, the maximum predicted total concentrations are below the applicable NAAQS. $PM_{2.5}$ and CO incremental concentrations are below the City’s *de minimis* criteria for these pollutants. Therefore, FRA has predicted that the indirect effects of the Preferred Alternative would not result in any adverse air quality impacts. **Table N-2** shows the maximum indirect pollutant concentrations from the tunnel ventilation systems.

**Table N-2
Maximum Indirect Pollutant Concentrations from Tunnel Ventilation Systems**

Pollutant	Averaging Period	Units	Maximum Modeled Impact ⁽¹⁾	Background Concentration ⁽²⁾	Total Concentration	NAAQS
NO ₂	1-hour	µg/m ³	N/A ⁽³⁾	N/A ⁽³⁾	176.9	188
	Annual	µg/m ³	1.9	37.9	39.8	100
CO	1-hour	ppm	0.6	2.5	3.1	35 ⁽⁴⁾
	8-hour	ppm	0.1	1.2	1.3	9 ⁽⁴⁾
PM ₁₀	24-hour	µg/m ³	3.1	38	41.1	150
PM _{2.5}	24-hour	µg/m ³	3.1	19.7	22.8	35 ⁽⁵⁾
	Annual	µg/m ³	0.07	9.0	9.07	15 ⁽⁵⁾

Notes:

N/A—Not Applicable

⁽¹⁾ Modeled impacts represent projected concentrations at facades of the buildings comprising the Overbuild and newly introduced open space locations.

⁽²⁾ The background levels are based on the most representative concentrations monitored at NYSDEC ambient air monitoring stations. Due to the statistical form of the associated NAAQS background concentrations may differ from existing concentrations in Table 7-2.

⁽³⁾ The 1-hour average NO₂ concentration represents the maximum of the total 98th percentile 1-hour concentration predicted at any receptor using seasonal-hourly background concentrations. Modeling impacts are added to background concentrations for each hour within the AERMOD model. Therefore, the maximum modeled impact and background concentration are not applicable.

⁽⁴⁾ While the Preferred Alternative is not required to utilize impact criteria from the *CEQR Technical Manual*, the 8-hour average CO *de minimis* incremental concentration threshold of 4.7 ppm is considered as one factor in determining whether the Preferred Alternative may result in significant environmental impacts.

⁽⁵⁾ While the Preferred Alternative is not required to utilize impact criteria from the *CEQR Technical Manual*, the 24-hour and annual average PM_{2.5} *de minimis* incremental concentration thresholds of 7.7 µg/m³ and 0.3 µg/m³, respectively, are considered as one factor in determining whether the Preferred Alternative may result in significant environmental impacts.

N.3.1.4 NOISE AND VIBRATION

The previously approved Overbuild would proceed as the Preferred Alternative is built. As a result, FRA considers the additional vehicular traffic and associated potential for noise level increases in the Study Area to be indirect effect of the Preferred Alternative. This section summarizes the anticipated effects of the completed Overbuild primarily based on the completed 2009 SEQRA/CEQR FEIS noise analysis. The 2009 SEQRA/CEQR FEIS noise analysis considered the potential noise effects of the RWCDs on the proposed Platform, and its noise level projections provide a conservative representation of indirect noise effects of the Preferred Alternative because the program of the Preferred Alternative and its associated increases in vehicular traffic would remain within the framework of the already approved project.

The indirect impacts of the Preferred Alternative would include increases in vehicular traffic volumes and consequently increasing noise levels in the project Study Area as a result of the Overbuild. FRA considered the indirect effects in the 2009 SEQRA/CEQR FEIS, finding that resulting noise level increases would be imperceptible to barely noticeable and would not be considered significant according to CEQR Technical Manual noise impact criteria. The expected increases in vehicular traffic volumes in the future with the Preferred Alternative would be comparable to or lower than those studied in the 2009 SEQRA/CEQR FEIS and would result in comparable or smaller noise level increases. Consequently, the indirect effects on noise levels due to vehicular traffic associated with the Preferred Alternative would also not rise to the level of a significant impact.

N.3.1.5 *CULTURAL RESOURCES*

The findings adopted by New York City as part of the 2009 SEQRA/CEQR FEIS project approvals indicate that the Overbuild would result in significant adverse impacts to cultural resources. The effects disclosed and acknowledged in the 2009 SEQRA/CEQR FEIS continue to be a reasonable assessment of the potential indirect effect of the Preferred Alternative on cultural resources for this EIS.

The Overbuild would directly affect the High Line—a resource previously determined eligible for the State and National Registers of Historic Places by NYSHPO, with a section located on the Project Site. This section of the High Line would be integrated into the overall site plan for the Overbuild as a passive open space resource and pedestrian pathway that would connect with the portion of the High Line on the Eastern Rail Yard and the 1.5 mile High Line Park to the south. In order to fully integrate the High Line with the planned open space network on the Project Site, some features—such as railings—of the High Line’s Twelfth Avenue section would be removed. This action is associated with the Overbuild and is not part of the Preferred Alternative, and would be conducted by the Overbuild Developer, a private developer, as part of a privately funded project. Since the final design of the Overbuild had not been determined at the time of the 2009 SEQRA/CEQR FEIS, a LOR was executed among NYSHPO, the MTA, the New York City Planning Commission, and the Overbuild Developer, in compliance with Section 14.09 of the New York State Historic Preservation Act of 1980, requiring the Overbuild Developer to submit the relevant portions of the preliminary and pre-final design plans for the Overbuild that affect the High Line to NYSHPO for review and comment. The LOR and the RD for the previously approved project also require that a CEPP be developed in coordination with NYSHPO and LPC to protect the High Line from any potential construction-related adverse physical impacts, such as ground-borne construction-period vibrations, falling debris, and damage from heavy machinery.

The City’s findings as part of the 2009 SEQRA/CEQR FEIS also note that the anticipated site plan for the Overbuild would result in several buildings located immediately adjacent to the High Line; therefore, in order to preserve the integrity of this architectural resource, a five-foot-wide set back would be located between the High Line and buildings fronting on the High Line.

The Overbuild as currently contemplated is consistent with the massing envelope assumptions analyzed in the 2009 SEQRA/CEQR FEIS. The Overbuild is not expected to have any adverse effects on the context or setting of nearby historic properties. The Hudson Yards neighborhood is experiencing a wave of development of new tall and modern skyscraper buildings, and the historic properties in the APE already exist in a mixed built context of smaller, older and masonry clad buildings and these taller buildings of recent construction with metal and glass curtain walls. Specifically, the W & J Sloane Warehouse and Garage is flanked by new 31-, 33-, and 34-story developments directly to the north and south, and the West Chelsea Historic District buildings within the APE are across Eleventh Avenue and West 28th Street from the same 34-story development. Twelfth Avenue and the Hudson River Greenway provide visual separation between the Hudson River Bulkhead and the Project Site and surrounding new development. Therefore, the Overbuild would have no direct or indirect, physical, auditory, or visual effect on the W & J Sloane Warehouse and Garage, Hudson River Bulkhead, and the West Chelsea Historic District. The New York Improvements and Tunnel Extension of the Pennsylvania Railroad, as a subsurface feature, would have no visual relationship with the Overbuild, and FRA has concluded that the Overbuild would have no direct or indirect, physical, auditory, or visual effect on the Tunnel.

The portion of the High Line on the Project Site would be directly adjacent to the multi-building, high-rise Overbuild; however, the resulting visual context would be consistent with portions of the High Line within the APE that are directly adjacent to the new high-rise buildings on the Eastern Rail Yard (including 10 Hudson Yards and 12 Hudson Yards) and at 500 West 30th Street (Abington House).

FRA has concluded that the potential effects of the Overbuild are possible inadvertent effects to the High Line during construction of the Overbuild, and possible indirect physical and/or visual effects to the High Line related to construction and operation of the Overbuild.

To ensure that the potential effects of the Overbuild are not adverse, as a condition of the ROD FRA would require the Project Sponsor (which includes the Overbuild Developer, a signatory to the LOR) to meet all of the conditions of the LOR, which as noted above includes review of Overbuild design by NYSHPO and New York City Landmarks Preservation Commission, as well as development of a CPP as a component of an overarching CEPP (see Chapter 22, "Mitigation Measures and Project Commitments") to protect the High Line during construction of the Overbuild.

N.3.1.6 *PARKS AND RECREATION*

FRA finds that the Preferred Alternative would have no indirect effects on parks and recreation areas. The adopted findings by New York City as part of the 2009 SEQRA/CEQR FEIS project approvals are that the Overbuild would result in adverse impacts on parks and recreation areas. The impact would be due to anticipated decreases in the active and total open space ratios (the amount of active or total open space per 1,000 persons) in the surrounding area from the introduction of new workers and residents. Changes in open space ratios are not an impact threshold in this NEPA analysis.

The creation of approximately 5.45 acres of new open space on the Project Site as part of the Overbuild would provide a considerable open space amenity for residents and workers and would serve as a link in the open space network that is being developed throughout the Hudson Yards area. In addition, the Interim Walkway portion of the High Line between West 30th and 34th Streets would be renovated as part of the Overbuild, to incorporate it into the overall High Line design. These elements associated with the Overbuild would be beneficial indirect effects of the Preferred Alternative. As detailed above, a CPP would be developed and implemented to protect the High Line open space during construction of the Overbuild.

In New York State, temporary or long-term use of publicly owned parkland under the jurisdiction of a municipality (i.e., city, county, town, or village) for non-park purposes constitutes alienation, and requires the approval of the New York State Legislature. Parkland "alienation" occurs when a municipality wishes to sell, lease, or discontinue municipal parkland, including subsurface easements beneath parkland. The Overbuild would not require any use of publicly owned parkland under the jurisdiction of the local municipality (i.e., parkland controlled by the City of New York) that would constitute parkland alienation.

N.3.1.7 *AESTHETICS AND VISUAL QUALITY*

The Overbuild, which is an indirect consequence of the Preferred Alternative, was comprehensively analyzed in the 2009 SEQRA/CEQR FEIS and subsequently approved by New York City; the findings adopted by the City indicated that the Overbuild would not result in any significant adverse impacts on urban design and visual resources (i.e., aesthetics and visual quality). These effects have been disclosed and acknowledged as part of the completed City approval process for the Overbuild and would continue to be a reasonable assessment of the potential indirect effect of the previously approved project for this EIS.

The Overbuild would have a beneficial effect on the Project Site. It would consist of up to eight mixed-use towers and a varied 5.45-acre open space network on the Project Site. The Overbuild would enliven the Project Site, its street frontages, and the surrounding area with active ground-floor retail and school uses, anticipated widened sidewalks, and a street-tree program for the interior of the site and the sidewalks that border the perimeter of the site. The Overbuild would provide access to the currently inaccessible site through the creation of two roadways roughly aligned with the formerly mapped West 31st and West 32nd Streets. A large open space network with a variety of elements would provide landscaped areas, including vantage points from which users could enjoy unobstructed views of the Hudson River.

The Overbuild as currently contemplated is consistent with the massing envelope assumptions analyzed in the 2009 SEQRA/CEQR FEIS, and in terms of building uses, bulk, height, density, and setback, it would be similar in scale and design to Hudson Yards. While viewer groups in the AVE would be sensitive to effects from the Overbuild, it would have a neutral effect on the visual quality of the AVE as it would be in keeping with the ongoing trend of development of new tall and modern skyscraper buildings in the AVE.

The Overbuild would have a neutral effect on the two visual resources in the AVE. It would not block views to the Hudson River along West 30th and West 33rd Streets or from the High Line, and new views of the Hudson River, Hudson River Park, and the New Jersey skyline would be created across the Project Site from Eleventh Avenue along the two roadways aligned with the formerly mapped West 31st and West 32nd Streets. Currently, the concrete wall bordering the site on Eleventh Avenue obstructs views through the site from the avenue west to the Hudson River. In addition, the landscaped areas on the Project Site would provide new unobstructed views of the Hudson River, Hudson River Park, and the New Jersey skyline. While the Overbuild would block some views east of the Vessel from Twelfth Avenue and Hudson River Park, the Vessel would be visible along the new view corridors across the Project Site and from the new landscaped areas on the Project Site. The Vessel would also continue to be visible from Eleventh Avenue and from Bella Abzug Park.

The High Line and the Hudson Yards plaza would provide views of the Overbuild, and users of those spaces would be sensitive to changes in visual quality from the Overbuild. While users of the High Line would have views of the Overbuild, their views of the Hudson River would not be affected, and users' views of the Overbuild would be similar to views of Hudson Yards from the High Line. From the elevated plaza in Hudson Yards, viewers would clearly see the Overbuild, as would visitors to the Vessel. While the Overbuild would obstruct some views of the Hudson River and the Hudson River vista, the two roadways aligned with the formerly mapped West 31st and West 32nd Streets would provide views across the Project Site to the Hudson River.

N.3.1.8 UTILITIES AND ENERGY

This section presents an assessment of the potential indirect effects of the Preferred Alternative on utility infrastructure and services. Specifically, the assessment compares the projected demand of the Overbuild on utility services to the development analyzed in the 2009 SEQRA/CEQR FEIS, and determines whether the current development would result in significant additional demand that would have the potential to result in adverse impacts. The assessment uses the methodology and demand rates of the *CEQR Technical Manual*.

N.3.1.8.1 Water Supply

As discussed in Chapter 14 of the 2009 SEQRA/CEQR FEIS, "Infrastructure," the Overbuild buildings would be supplied by NYCDEP mains located within West 30th and West 33rd Streets. **Table N-3** presents the estimated water demand of the Overbuild. The 2009 SEQRA/CEQR FEIS estimated that the Overbuild would consume approximately 2 million gpd, including approximately 1,025,000 gpd for domestic uses and approximately 989,400 gpd for air conditioning.

Table N-3
Overbuild Water Consumption and Sanitary Sewage

Use	Size/Population	Rate ¹	Consumption (gpd)
Residential—Domestic	4,000 DU (6,800 residents ²)	0.10 gpd/sf	680,000
Residential—Air Conditioning	3,300,000 sf	0.17 gpd/sf	561,000
Hotel—Domestic	470 rooms	120 gpd/person/room ³	112,800
Hotel—Air Conditioning	250,000 sf	0.17 gpd/sf	42,500
Commercial Office—Domestic	2,075,000 sf	0.10 gpd/sf	207,500
Commercial Office—Air Conditioning	2,075,000 sf	0.17 gpd/sf	352,750
Retail—Domestic	75,000 sf	0.24 gpd/sf	18,000
Retail—Air Conditioning	75,000 sf	0.17 gpd/sf	12,750
School—Domestic	750 seats	10 gpd/seat	7,500
School—Air Conditioning	120,000 sf	0.17 gpd/sf	20,400
Total Water Supply Demand			2,015,200
Total Sewage Generation			1,025,800

Notes:

¹ Rates are from the *CEQR Technical Manual* Table 13-2

² The Project Sponsor has estimated a lesser number of residential units, with a mix of rental and condominium units. FRA has estimated 4,000 residential units based on an average unit size of 825 square feet, to present a conservative analysis that accounts for possible future changes to market conditions and resulting unit sizes.

³ Residential population estimate based on average household size of 1.7 persons per DU for Manhattan Community District 4 (2014–2018 ACS 5-Year Survey).

⁴ Hotel domestic consumption estimate assumes two guests per room.

As shown in **Table N-3**, the water demand FRA calculated for the Overbuild (approximately 1.015 mgd) is larger than the demand presented in the 2009 SEQRA/CEQR FEIS (approximately 1.5 million gpd) and would be a substantial addition to water demand on the Project Site. However, the additional demand of the Overbuild represents a minor increase in demand (0.15 percent) on the City's daily water supply of approximately one billion gpd. In addition, following the publication of the 2009 SEQRA/CEQR FEIS, NYCDEP has made improvements to the local water supply infrastructure in the area of the Project Site. In particular, the City has constructed Water Tunnel No. 3 and the portion of Water Tunnel No. 3 serving Midtown Manhattan, including the Project Site and the surrounding area, was completed and activated in 2013. Additional improvements have been made in the area in accordance with the NYCDEP Manhattan Trunk Main Master Plan (the "Trunk Plan"), which outlined water supply improvements necessitated by the Hudson Yards area, including connections to Water Tunnel No. 3. NYCDEP intended for the construction of the tunnel and related improvements to the water supply system to provide additional supply and enhance system pressure stability to the local area. In consideration of the recent system improvements, it is anticipated that NYCDEP can adequately provide for the increased demand required by the Overbuild. Therefore, the Overbuild would not result in adverse impacts on the City's water supply system as an indirect result of the Preferred Alternative.

N.3.1.8.2 *Wastewater*

Sanitary sewage generated by the Overbuild is expected to discharge to the NYCDEP sewer system in the surrounding streets. NYCDEP developed an Amended Drainage Plan (ADP) as part of the approvals for the Overbuild, which identifies improvements to the existing storm and combined sewer system infrastructure that are necessary to accommodate the full build out of the Hudson Yards area. The improvements identified by the ADP include the replacement of the existing combined sewer in West 33rd Street, on the north side of the Project Site, with a separate storm sewer and sanitary sewer. Independent of the Preferred Alternative, the City is undertaking a project to reconstruct the West 33rd Street viaduct; this reconstruction project would include upgrading the utilities in the street, including constructing the new separated sanitary and stormwater sewers proposed by the ADP. In addition, there is a NYCDEP combined sewer in West 30th Street, on the south side of the Project Site, which is available to convey sanitary sewage from the Overbuild on the southern half of the Project Site. Both the West 33rd Street and West 30th Street sewers connect to the interceptor sewer in Twelfth Avenue, which conveys flow to the North River Wastewater Treatment Plant (WWTP).

As shown in **Table N-3**, the Overbuild is estimated to generate approximately 1 million gpd of daily sanitary sewage, which would be a substantial increase in sanitary sewage generation beyond the sewage generated by the LIRR facilities that would be constructed with the Preferred Alternative (discussed in Chapter 13, “Utilities and Energy”). This estimate is comparable to the estimated sanitary sewage generation from the Overbuild presented in the 2009 SEQRA/CEQR FEIS (approximately 1.24 million gpd). The additional sanitary sewage generation of the Overbuild represents an increase in sewage generation to the North River WWTP of less than 1 percent (in comparison to the WWTP’s average monthly flow of 110 mgd), and this increase would not result in an exceedance of the WWTP’s permitted capacity of 170 mgd. As noted above, improvements to the sanitary sewage system in the area of the Project Site are expected to be constructed in accordance with the ADP, which are designed to provide capacity for the increased demand of the full Hudson Yards project; with the system improvements, it is anticipated that NYCDEP can adequately provide for the increased demand resulting from the Overbuild. In addition, in accordance with the New York City Plumbing Code (Local Law 33 of 2007), the Overbuild buildings would be required to utilize low-flow plumbing fixtures, which would reduce sanitary flows to the sewer system and the WWTP. Therefore, the Overbuild would not result in an adverse impact to the City’s sanitary sewage conveyance and treatment system as an indirect result of the Preferred Alternative.

N.3.1.8.3 *Stormwater*

The Overbuild buildings would share a stormwater management system with the Platform (discussed in Chapter 13, “Utilities and Energy”); specifically, stormwater collected on the Platform once the Overbuild is operational would primarily be detained on-site for reuse by the Overbuild developer as irrigation for the landscaping and open space areas to be created on the Platform. Any overflow of stormwater collected on the Platform would be conveyed to the sewer infrastructure in West 33rd Street, north of the Project Site, which includes a new storm sewer that is expected to be constructed by the City independent of the Preferred Alternative, in accordance with the ADP. Therefore, stormwater from the Overbuild would enter the NYCDEP combined sewer system, for treatment at the North River WWTP.

However, as discussed in the 2009 SEQRA/CEQR FEIS, the total sanitary flows into the combined sewer system would increase due to the Overbuild compared to existing combined flows from onsite sanitary sewage and stormwater runoff. This incremental increase, depending upon downstream and upstream conditions within the combined sewer system, could displace wastewater volumes from other sources and result in a greater volume of CSO discharge during rainfall events. Modeling of the incremental flows from the Overbuild was previously prepared in connection with the 2009 SEQRA/CEQR FEIS to determine the potential impact of the Overbuild on CSO discharges from the outfalls which serve the area of the Project Site. This modeling found that the Overbuild would have a minor impact on projected future CSO volumes and number of CSO events at several outfalls, and that water conservation measures expected to be implemented in the Overbuild and would result in reductions of CSO volumes (see Chapter 14 of the 2009 SEQRA/CEQR FEIS, "Infrastructure"). Therefore, in consideration of the stormwater management improvements that are expected to be made in the area of the Project Site as well as the stormwater management system expected to be constructed for the Platform and the Overbuild, the indirect impacts of the Preferred Alternative would not result in an adverse impact on the City's stormwater management infrastructure.

N.3.1.8.4 Solid Waste and Sanitation Services

Table N-4 presents the estimated indirect solid waste generation of the Preferred Alternative from the Overbuild, utilizing the generation rates provided in the *CEQR Technical Manual*. As discussed in Chapter 13, "Utilities and Energy," DSNY is the agency responsible for the collection and disposal of residential and institutional solid waste in New York City, while private carters collect solid waste from commercial and manufacturing uses. **Table N-4** also provides subtotals for solid waste that would be collected by DSNY and that which would be collected by private carters. DSNY would collect residential and public school generated waste, while private carters would be responsible for collecting waste generated by office, retail, and hotel uses.

**Table N-4
Overbuild Solid Waste Generation**

Use	Floor Area (sf)	Population/Units	Solid Waste Generation Rate (lbs/wk)	Solid Waste Generation (lbs/wk)
Residential	3,300,000	4,000 households (DUs)	41 per household	164,000
Office	2,075,000	8,300 employees	13 per employee	107,900
Hotel	250,000	470 rooms / 157 employees	75 per employee	11,775
Retail	75,000	225 employees	79 per employee	17,775
School	120,000	750 seats	4 per seat	3,000
Total Solid Waste Generation				304,450
Solid Waste Handled by DSNY (residential and school uses)				167,000
Solid Waste Handled by Private Carters (commercial uses)				137,450
Notes: Solid waste generation is based on Citywide average waste generation rates presented in Table 14-1 of the <i>CEQR Technical Manual</i> , and estimates of workers by use, as follows: Residential use: 41 lbs/wk per DU. Office: 13 lbs/wk per employee; assumes 1 employee per 250 sf. Retail: 79 lbs/wk per employee; assume 3 employees per 1,000 sf. Hotel: 75 lbs/wk per employee; assumes 1 employee per 3 rooms. School: 4 lbs/wk per seat.				

As shown in **Table N-4**, the total solid waste generation of the Overbuild would be approximately 304,450 pounds (approximately 152 tons) per week, which is slightly more than the estimated solid waste generation presented in the 2009 SEQRA/CEQR FEIS (Chapter 15, “Solid Waste and Sanitation Services”) of up to approximately 295,000 pounds per week. The commercial uses (office, hotel, and retail) would generate approximately 137,450 pounds (68.7 tons) of solid waste per week. Private commercial carters would collect solid waste generated by commercial and industrial uses, and the commercial buildings would be subject to mandatory recycling requirements for paper, metals, construction waste, aluminum foil, as well as metal, glass and plastic containers. The 68.7 ton increase in weekly solid waste handled by private carters would represent approximately 0.09 percent of the City’s anticipated future commercial waste generation, as it is estimated that private carters will carry 74,000 tons of solid waste per week by 2025, as projected in the 2006 Solid Waste Management Plan (SWMP). Based on the typical commercial carter capacity of between 12 and 15 tons of waste material per truck, the Overbuild would require approximately 5 or 6 additional collection trucks per week. There are more than 2,000 private carting businesses authorized to serve New York City, and it is expected that their collection fleets would be sufficiently flexible to accommodate this increased demand for solid waste collection.

Residential and school uses would generate approximately 167,000 pounds (83.5 tons) of solid waste per week, which would be collected by DSNY trucks and would be served by existing DSNY collection routes. As a general practice, DSNY adjusts its operations to service the community. Residents will be required to participate in the City’s recycling program for paper, metals, and certain types of plastics and glass. The additional solid waste generation by residential and school uses in the Overbuild would represent approximately 0.07 percent of the City’s anticipated waste generation handled by DSNY (it is estimated that DSNY will manage 115,830 tons of solid waste for export, recycling compost, and refuse per week by 2025), as projected in the SWMP.¹ Based on the typical DSNY collection truck capacity of approximately 12.5 tons, the new residential and school uses would be expected to generate solid waste equivalent to approximately 7 truckloads per week. This increase is not expected to overburden the DSNY’s solid waste handling services.

Overall, the Overbuild would not conflict with the SWMP, or have a direct effect on a solid waste management facility. The incremental solid waste generated by the Overbuild would not overburden the City’s solid waste handling systems, and therefore the indirect impacts of the Preferred Alternative would not have an adverse impact on the City’s solid waste and sanitation services.

¹ Comprehensive Solid Waste Management Plan, September 2006; Attachment II, Table IV 2-2, p. 4.

N.3.1.8.5 Energy

As shown in **Table N-5**, the estimated total indirect energy consumption of the Preferred Alternative from the Overbuild would be approximately 967,314 million BTUs per year, which is comparable to the estimated energy consumption presented in the 2009 SEQRA/CEQR FEIS. Compared with the approximately 388 trillion BTUs of energy consumed annually within Con Edison’s New York City and Westchester County service area, this incremental increase would be considered a negligible change. Therefore, the indirect impact of the Preferred Alternative would not have any adverse impacts on energy. Furthermore, the Overbuild would be consistent New York’s local energy laws. In 2005, New York City adopted Local Law 86 of 2005 (LL86), one of the nation’s first green building laws. LL86 requires new buildings, additions, and substantial building reconstruction work in capital projects that receive city funds to be built in accordance with the standards of the Leadership in Energy and Environmental Design (LEED) green building rating systems developed by the U.S. Green Building Council (USGBC). It also requires that most of this work, as well as larger lighting, boiler, HVAC controls, and plumbing upgrade work, be designed to reduce the use of both energy and potable water well beyond that required by the current NYC building code.² Since then, the City has adopted Local Laws 84, 85, 87, 88, and most recently in 2019, Local Law 97. These laws regulate energy consumption and LL97 requires planned reductions in carbon emissions through 2050. Through auditing and mandated energy reports, building owners are required to demonstrate that new buildings and substantial building additions contribute to a decrease in energy consumption.³

**Table N-5
Overbuild Annual Energy Consumption**

Use	Size (sf)	Average Annual Energy Rate (Thousand BTUs/sf)	Energy Consumption (Million BTUs/Year)
Residential	3,300,000	126.7	418,110
Office	2,075,000	216.3	448,823
Hotel	250,000	216.3	54,075
Retail	75,000	216.3	16,223
School	120,000	250.7	30,084
Total Energy Consumption			967,314
Notes: sf = square feet. Totals may not sum due to rounding. Source: 2014 <i>CEQR Technical Manual</i> , Table 15-1, “Average Annual Whole-Building Energy Use in New York City.”			

N.3.1.9 SOCIOECONOMICS

The previously approved Overbuild would proceed as the Preferred Alternative gets underway. As a result, the Overbuild’s socioeconomic effects in the Study Area are considered an indirect effect of the Preferred Alternative.

² <https://www1.nyc.gov/site/oec/green-building/green-building.page>

³ <https://www1.nyc.gov/html/gbee/html/plan/ll88.shtml>

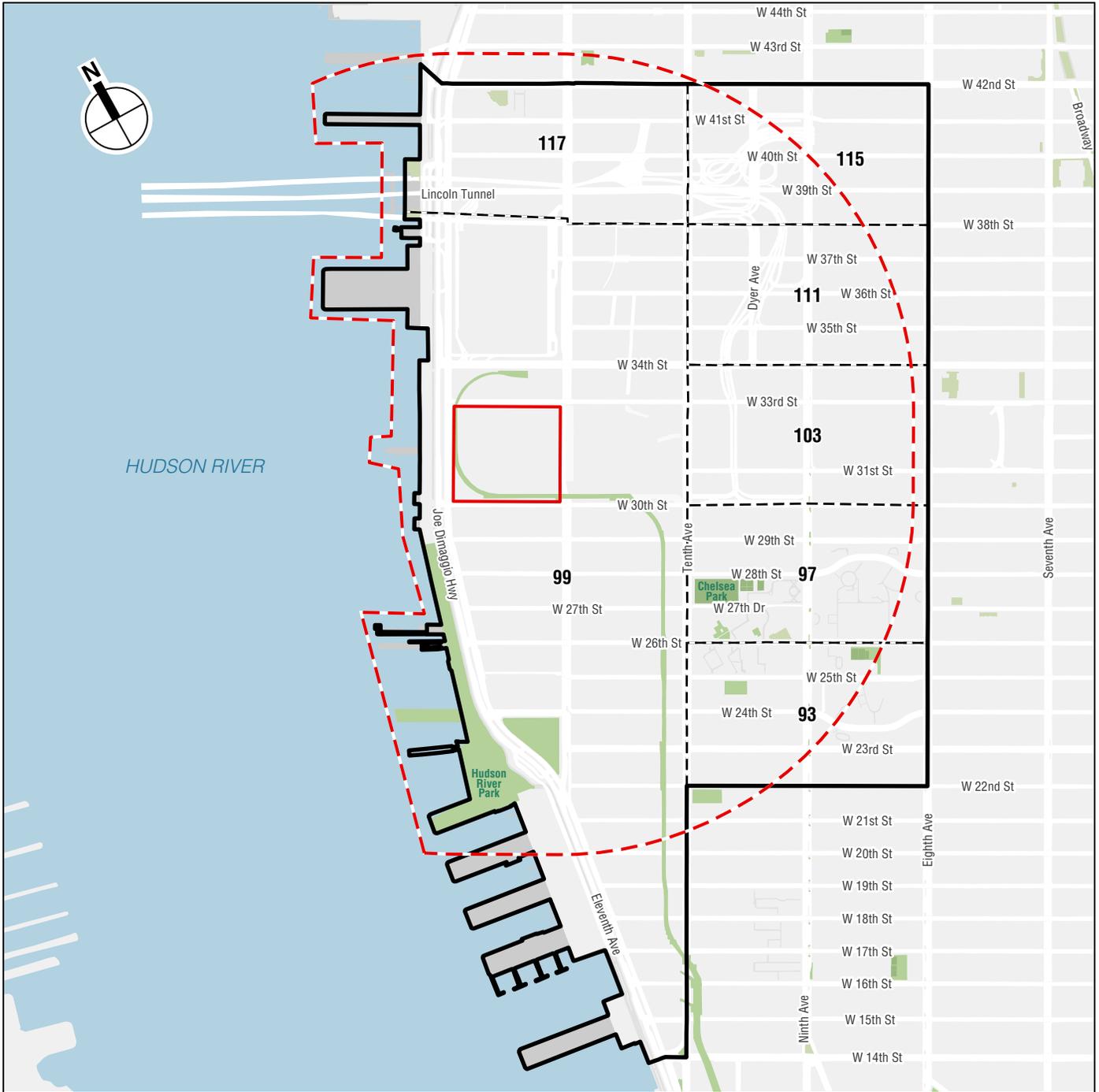
This analysis considers the anticipated indirect effects of the completed Overbuild based on the completed 2009 SEQRA/CEQR FEIS socioeconomic conditions and community facilities and services assessments, as the program and population demand would remain within the framework of the already approved project. The Overbuild Developer is currently proposing 890 condominium units and 1,900 rental units, including 324 permanent affordable housing units. FRA has used a conservative estimate of 4,000 units based on the total square footage The Overbuild Developer is dedicating to residential space, and applying an average unit size of 825 square feet per unit, so the analyses represent conservative demand estimates from residential uses. The analyses incorporate updated demographic, socioeconomic, and community facilities data, as well as the methodologies of the *CEQR Technical Manual*.

N.3.1.9.1 *Indirect Residential Displacement*

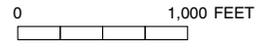
Indirect (or secondary) residential displacement is the involuntary displacement of residents that may result from a change in socioeconomic conditions created by a project. As described in the *CEQR Technical Manual*, indirect residential displacement usually results from substantial new development that is markedly different from existing uses and activity in an area, which can lead to increased property values in the area. Increased property values can lead to increased rents, which can make it difficult for some existing residents to remain in their homes. The objective of this indirect residential displacement assessment is to determine whether the Overbuild would either introduce a trend or accelerate a trend of changing socioeconomic conditions that may potentially displace a vulnerable population to the extent that the socioeconomic character of the area would change. According to the *CEQR Technical Manual*, an adverse impact due to indirect residential displacement may occur if the study area contains a vulnerable population potentially subject to indirect displacement that exceeds five percent of the study area or relevant sub-areas and this population would not be similarly displaced under the no action alternative.

According to the *CEQR Technical Manual* guidance (see Chapter 5, 332.1), an assessment of indirect residential displacement should be conducted for actions that result in the incremental development of more than 200 residential dwelling units. The Overbuild would introduce approximately 4,000 incremental residential dwelling units, warranting analysis of potential indirect effects. Generally, an indirect residential displacement analysis is conducted only in cases in which the potential impact may be experienced by renters living in privately held units unprotected by rent control, rent stabilization, or other government regulations restricting rents, and whose incomes or poverty status indicate that they may not support substantial rent increases. Residents who are homeowners or who are renters living in rent-restricted units would not be vulnerable to rent pressures.

The study area is the area within which a proposed action has the greatest potential to indirectly affect population, housing, and economic activities. A study area typically encompasses a project area and adjacent areas within approximately 400 feet, quarter-mile, or half-mile, depending upon the project size and area characteristics. According to the *CEQR Technical Manual*, the larger half-mile study area is appropriate for projects that would potentially increase the quarter-mile area population by more than five percent. The incremental population introduced by the Overbuild would represent more than a five percent increase within a quarter-mile radius of the Project Site, warranting a half-mile study area. Because socioeconomic analyses depend on demographic data, it is appropriate to adjust the study area boundary to conform to the census tract delineation that most closely approximates the desired radius (in this case, a half-mile radius surrounding the Project Site). For this analysis, the census tracts that comprise the Study Area are shown in **Figure N-1**. The Study Area includes Census Tracts 93, 97, 99, 103, 111, 115, and 117, and is roughly bounded by West 43rd Street to the North, Eighth Avenue to the east, West 20th Street to the south, and the Hudson River to the west. For comparison purposes, the analysis also presents data for Manhattan (New York County) and New York City.



- Project Site (Western Rail Yard)
- Half-mile Radius Surrounding Project Site
- Socioeconomics Study Area
- 99 Census Tract



Socioeconomics Study Area
Figure N-1

Information used in the analysis of indirect residential displacement—including population, housing, rents, and incomes—were gathered from the U.S. Census Bureau’s 2006–2010 and 2014–2018 American Community Survey (ACS) using Social Explorer and the NYCDP Population FactFinder. Social Explorer is a demographic data visualization and research website that agglomerates a variety of data including data from the U.S. Census and ACS. FRA used the NYCDP Population FactFinder online mapping tool to provide comparative census data between geographies and to determine the margin of error (MOE) for single variable ACS estimates presented for the Study Area.⁴ Study Area market-rate asking rents were researched using online real estate listing sites, including StreetEasy. StreetEasy is a searchable online database that uses web data extraction to compile an aggregated list of residential property listings from most of New York City’s largest brokerage firm and hundreds of small-scale brokers. FRA calculated data on the percentage of low-income renter households in the subareas using Public Use Microdata Sample (PUMS) files from the U.S. Census Bureau 2014–2018 ACS. PUMS provides a sample of untabulated housing unit- and population unit-level responses from the ACS, which can be used to create custom tables that are not available in ACS summary data. Estimates of protected rental units were determined using data from New York University (NYU) Furman Center CoreData, New York City Housing Preservation and Development (NYCHPD) Housing New York by Project file, and New York State Homes and Community Renewal (HCR) Rent Stabilized Buildings List.

Following the *CEQR Technical Manual* guidelines, the analysis begins with a multi-step preliminary assessment. Preliminary assessments are conducted to learn enough about the potential effects of a proposed action to either rule out the possibility of adverse impacts or determine that a more detailed analysis is required to fully determine the extent of the impacts. The preliminary assessment works to determine if a proposed action would introduce a population with a higher average income than that of the study area population. If the new population is projected to have an average household income that is higher than that of the study area population, the assessment then considers whether the new population would result in an increase in population large enough to substantively affect the demographics of the study area. Based on the *CEQR Technical Manual* guidelines, if the population increase is less than 5 percent, no further analysis is warranted. If the population increase is more than 5 percent but less than 10 percent, the assessment considers rent trends in the study area to determine if the study area is already experiencing a trend toward increasing rents. If the population increase is more than 10 percent of the study area population, a detailed analysis of indirect residential displacement is conducted. The detailed analysis works to determine whether there is a low income population in the study area living within units not protected by rent stabilization, rent control, or other form of government regulations restricting rent, that may be at risk of indirect displacement by a proposed action, and the potential effects of a proposed action on any identified vulnerable population.

N.3.1.9.2 *Preliminary Assessment*

The *CEQR Technical Manual’s* step-by-step guide for a preliminary assessment of indirect residential displacement is presented in bold italics below.

Step 1. Determine if the proposed action would add new population with higher average incomes compared with the average incomes of the existing populations and any new population expected to reside in the study area without the proposed action.

⁴ MOEs describe the precision of an estimate within a 90-percent confidence interval and provide an idea of how much variability (i.e., sampling error) is associated with the estimate. The larger the MOE relative to the size of the estimate, the greater potential for variability within the data. The MOE is partially dependent on the sample size, because larger sample sizes result in a greater amount of information that more closely approximates the population.

Household income characteristics for the Study Area population are described using the average and median household incomes. The average household income is calculated by dividing the aggregate income by the total number of households in the Study Area. The presence of high-income households raises the average income, sometimes substantially higher than the median household incomes in an area. The median household income represents an estimate of the mid-point of all household incomes in the Study Area.

As shown in **Table N-6**, in 2018 the estimated average household income in the Study Area was \$155,324, which is slightly lower than that of Manhattan overall (\$157,467), and over \$50,000 higher than that of New York City overall (\$101,158). Average income in the Study Area has increased since 2010, as has the average household incomes in Manhattan (by 7.4 percent) and New York City (by 8.6 percent).

The estimated median household income in the Study Area (\$97,502) is over \$10,000 greater than that of Manhattan (\$85,424) and over \$30,000 greater than that of New York City (\$62,947). Median household incomes in the Study Area and comparison geographies follow similar trends as average household incomes.

Table N-6
Household Income Characteristics

	Average Household Income			Median Household Income		
	2006–2010 ACS ¹	2014–2018 ACS ¹	Change or Direction of Change % ²	2006–2010 ACS ¹	2014–2018 ACS ¹	Change or Direction of Change % ²
Study Area	\$132,734	\$155,324	Increase	\$81,699	\$97,502	Increase
Manhattan	\$146,613	\$157,467	+7.4	\$77,684	\$85,424	+10.0
New York City	\$93,139	\$101,158	+8.6	\$60,125	\$62,947	+4.7

Notes:
¹ All dollar figures have been adjusted to 2020 dollars based on the U.S. Department of Labor Consumer Price Index for all urban consumers in the New York-Newark-Jersey City, NY-NJ-PA region.
² If the margin of error (MOE) of the difference between 2006–2010 and 2014–2018 ACS data is greater than the difference, a change cannot be reported with confidence; if the MOE of the difference is greater than one third of the difference, a change cannot be estimated with confidence and only the direction of the change can be reported (i.e., Increase/Decrease).
Sources:
 U.S. Census Bureau, 2006–2010 and 2014–2018 American Community Survey (ACS) 5-Year Estimates.

In 2018, the Study Area's average and median gross rents were both substantially higher than those for Manhattan and New York City (see **Table N-7**). Unlike Manhattan and New York City as a whole, the Study Area's average gross rent was lower than the median gross rent, a change since 2010 and suggesting that a relatively large proportion of market rate units with higher rents have been added to the Study Area inventory since 2010. Both the average and median gross rents in the Study Area have increased since 2010. Although the sample size in the Study Area is not large enough to report the percentage increases with statistical confidence, both the average and median gross rents appear to have increased at a faster rate than in Manhattan and New York City.

Table N-7
Average and Median Gross Rents

Area	2006–2010 ACS		2014–2018 ACS		Change or Percent Change	
	Average ¹	Median ¹	Average ¹	Median ¹	Average ³	Median ³
Study Area	\$1,904	\$1,753	\$2,357	\$2,576	Increase	Increase
Manhattan	\$1,700	\$1,475	\$1,869	\$1,742	+9.9	+18.1
New York City	\$1,368	\$1,280	\$1,523	\$1,446	+11.3	+13.0

Notes:
¹ All dollar figures have been adjusted to 2020 dollars based on the U.S. Department of Labor Consumer Price Index for all urban consumers in the New York-Newark-Jersey City, NY-NJ-PA region.
² If the MOE of the difference between 2006–2010 and 2014–2018 ACS data is greater than the difference, a change cannot be reported with confidence; if the MOE of the difference is greater than one third of the difference, a change cannot be estimated with confidence and only the direction of the change can be reported (i.e., Increase/Decrease).
Sources: U.S. Census Bureau, 2006–2010 and 2014–2018 ACS 5-Year Estimates.

U.S. Census and ACS data do not provide specific rent information according to regulation status or unit size, but instead can paint a general picture about the rate at which housing costs are changing in a neighborhood. Markets comparable were therefore used (below) to provide a fuller understanding of where the market is today. **Table N-8** summarizes online listings for apartments for the Study Area. The average rents presented in the table were calculated based on market rate rental units, and in general are higher than the data presented by the 2014–2018 ACS, for which estimates are based on both market rate and rent protected Study Area units.

Table N-8
Asking Rents in the Study Area

	Average	Median
Studio	\$2,504	\$2,500
1 Bedroom	\$3,387	\$3,290
2 Bedrooms	\$5,629	\$4,964
3+ Bedrooms	\$10,131	\$5,875

Source: StreetEasy (<http://streeteasy.com>) accessed in November 2020.

A number of planned projects in the Study Area would introduce a variety of land uses including residential, retail, hotel, public facility and institution, and office space. In total, these projects would construct an estimated 5,254 residential dwelling units by the 2030 analysis year, which represents a 23.4 percent increase in the number of housing units compared to the Study Area housing stock in 2018 (22,497 units). Of the 5,254 planned residential units, an estimated 403 are expected to be designated as affordable.

As identified in **Table N-6**, there is an existing trend of increasing average and median household incomes in the Study Area. As shown in **Table N-7**, there is a concurrent existing trend in the Study Area of increasing average and median gross rents. It is anticipated that the creation of 403 affordable dwelling units (DUs) in the Study Area would slow these trends to a degree. However, this represents a small portion of the total development anticipated in the Study Area by 2030. Therefore, it is expected that existing trends would continue into the future, leading to even higher incomes and rents by 2030 as compared with existing conditions.

The Overbuild would introduce approximately 4,000 DUs. Of the units, approximately 324 would be permanently affordable rental apartments. As the Overbuild would introduce a combination of market rate and affordable residential units, in order to estimate the new population’s average household income, it is necessary to estimate incomes for the new residents of both the market rate and affordable housing.

N.3.1.9.2.1 *Incomes of Market-Rate Unit Households*

As a new housing product, the Overbuild’s market rate DUs would be expected to rent on the higher end of the range of market rate asking rents in the Study Area. For purposes of analysis, the upper quartile of asking rents from StreetEasy listings were utilized to estimate market rate renters’ incomes, and it was assumed that households would pay 30 percent of their income toward rent.⁵ The resulting projected household incomes, shown in **Table N-9**, range from nearly \$113,000 for households residing in studio units to nearly \$500,000 for households in three-or-more-bedroom units.

The overall average income for market-rate households would depend on the unit mixes on the Project Site, which is not currently known. For purposes of analysis a weighted average was calculated based on the proportional unit mix found within the Study Area, resulting in an average household income of \$182,415 for households in market rate units, which is higher than the Study Area’s average household income in 2018 (\$155,324).

Table N-9
Annual Household Income Projections for the Overbuild’s Market-Rate Residential Dwelling Units

Unit Type	Projected Monthly Rent	Projected Annual Household Income
Studio	\$2,820	\$112,800
One Bedroom	\$3,790	\$151,600
Two Bedroom	\$6,235	\$249,400
Three bedroom+	\$11,798	\$471,920
Weighted Average Total¹	\$4,560	\$182,415

Note:
¹ Total average monthly rent is a weighted total based on the proportional unit mix in the Study Area.
Sources:
 AKRF, Inc. based calculations on rental data collected from StreetEasy.com, accessed in November 2020, and U.S. Census 2014–2018 American Community Survey (ACS) for distribution of unit types.

N.3.1.9.2.2 *Incomes for Permanently Affordable Unit Households*

For purposes of analysis, it is assumed that the households occupying the Overbuild’s affordable units would have household incomes that on average are 80 percent of the New York City Area Median Income (AMI). New York City AMIs and affordable monthly rents by AMI are shown in **Tables N-10 and N-11**. AMIs are calculated yearly by the U.S Department of Housing and Urban Development (HUD).

⁵ Based on U.S. Housing and Urban Development (HUD) affordability guidance where rent is estimated to be approximately 30 percent of total income.

Table N-10
2020 New York City Area Median Income (AMI)

Family Size	30% of AMI	40% of AMI	50% of AMI	60% of AMI	80% of AMI	100% of AMI	120% of AMI	130% of AMI	165% of AMI
1	\$23,880	\$31,840	\$39,800	\$47,760	\$63,680	\$79,600	\$95,520	\$103,480	\$131,340
2	\$27,300	\$36,400	\$45,500	\$54,600	\$72,800	\$91,000	\$109,200	\$118,300	\$150,150
3	\$30,720	\$40,960	\$51,200	\$61,440	\$81,920	\$102,400	\$122,880	\$133,120	\$168,960
4	\$34,110	\$45,480	\$56,850	\$68,220	\$90,960	\$113,700	\$136,440	\$147,810	\$187,605
5	\$36,840	\$49,120	\$61,400	\$73,680	\$98,240	\$122,800	\$147,360	\$159,640	\$202,620

Source: U.S. Department of Housing and Urban Development (HUD)

Table N-11
2020 New York City Affordable Monthly Rents by Area Median Income (AMI)

Unit Size	30% of AMI	40% of AMI	50% of AMI	60% of AMI	80% of AMI	100% of AMI	120% of AMI	130% of AMI	165% of AMI
Studio	\$397	\$567	\$738	\$909	\$1,250	\$1,643	\$1,985	\$2,155	\$2,753
1 BR	\$503	\$717	\$930	\$1,143	\$1,570	\$2,060	\$2,487	\$2,700	\$3,446
2 BR	\$598	\$854	\$1,110	\$1,366	\$1,878	\$2,467	\$2,979	\$3,235	\$4,131
3 BR	\$683	\$978	\$1,274	\$1,570	\$2,161	\$2,841	\$3,432	\$3,728	\$4,762

Notes: Assumes tenant pays electricity. Rents are approximate and have been calculated at 30 percent of annual gross income of the target AMI. For low-income bands, rents are based on 30 percent of 27 percent, 37 percent, 47 percent, 57 percent, and 77 percent of AMI. Studio rents are based on a household factor of 0.6.

Source: HUD

N.3.1.9.2.3 Average Household Income for All Overbuild Units

As stated, at least 324 of the Overbuild's 4,000 units (at least 8.1 percent) would be affordable at 80 percent AMI (\$72,800 for a family of 2). **Table N-12** shows the average household income of both the affordable and market rate units. The average income of market rate units was multiplied by the total number of market rate units, and the average income of affordable units was multiplied by the total number of affordable units. These two numbers were added together to determine the aggregate income for all the units. This aggregate income was divided by the total number of units to determine the average income for all units of \$173,536.

Table N-12
Weighted Average Income of Total With the Overbuild Population

	Income	Units	Aggregate Income (Income x Units)
Market Rate	\$182,415	3,676	\$670,557,540
Affordable ¹	\$72,800 ¹	324	\$23,587,200
Total		4,000	\$694,144,740
Weighted Average Income With Overbuild Population (Aggregate Income ÷ Total Units)			\$173,536

Note:
¹ Affordable income is based on 80 percent AMI for a family of two (see **Table N-10**).

With the Overbuild, the projected household income of the new population (\$173,536) would be greater than the average household income of the existing population in the Study Area (\$155,324). As the percentage of affordable units introduced in the Study Area by 2030 is similar to the percentage that would be introduced in the Overbuild, the new population expected to reside in the Study Area without the Overbuild would have similar incomes to those introduced by the Overbuild. However, since the Overbuild’s incremental population would have an average income projected to exceed the existing Study Area population, in accordance with the *CEQR Technical Manual*, Step 2 of the preliminary indirect residential displacement assessment is warranted.

Step 2. Determine if the proposed action’s increase in population is large enough relative to the size of the population expected to reside in the study area without the proposed action to affect real estate market conditions in the study area.

According to the *CEQR Technical Manual* analysis thresholds, if the population increase is greater than five percent of a study area population, the incremental population may be large enough to affect real estate market conditions, and Step 3 of the preliminary assessment would be warranted. If the population increase is more than 10 percent of a study area population, a detailed analysis is warranted.

Based on U.S. Census ACS estimates, in 2018 the Study Area was home to 34,833 residents. As shown in **Table N-13**, between 2010 and 2018 the Study Area population grew by 38.9 percent. Anticipated growth by 2030 from planned projects would increase the Study Area population by an estimated 8,932 residents, an approximate 26 percent increase.

Table N-13
Study Area Population Estimates and Projections
Existing Conditions and Future Without the Overbuild

	2006–2010 ACS	2014–2018 ACS	Percent Change 2010–2018	2030 Population Projections	Percent Change 2018–2030
Study Area	25,078	34,833	+38.9	43,765	+25.6

Source: U.S. Census Bureau 2006–2010, 2014–2018 ACS, Year 2030 population projection based on No Build Development Projects and the average household size of 1.7 persons per household for Community Districts 4 and 5.

With the Overbuild, the Study Area would experience substantial population growth compared with the No Action Alternative (see **Table N-14**). The Overbuild would introduce an estimated 6,800 residents, representing an estimated 15.6 percent over the No Action Alternative. As population growth with the Overbuild would exceed 10 percent, detailed analysis of indirect residential displacement is warranted (see Section N.3.1.9.3, below).

Table N-14
With Overbuild Population

	2030 Population Projection	Number of Incremental Dwelling Units	Projected Population Increase With Overbuild Dwelling Units	Percent Change from With Overbuild Condition
Study Area	43,765	4,000	6,800	15.5

Sources: U.S. Census Bureau 2014–2018 ACS. Year 2030 population projections based on No Build Development Projects, anticipated Overbuild program, and the estimated average household size of 1.7 persons per household for Community Districts 4 and 5.

N.3.1.9.3 Detailed Analysis

Following the *CEQR Technical Manual* guidelines, this analysis describes existing and anticipated future conditions to a level necessary to understand the relationship of the Preferred Alternative to such conditions. The analysis assesses the change that the Overbuild would have on these conditions and identifies any changes that could be significant and potentially adverse. The analysis begins with a presentation of existing conditions and trends in the Study Area, and then works to identify whether there is an existing population potentially vulnerable to indirect residential displacement. The analysis then considers future trends without and with the Preferred Alternative to determine whether the Preferred Alternative could lead to the displacement of any identified vulnerable population, and if so, whether the displacement would be large enough to substantively alter the Study Area’s neighborhood character.

N.3.1.9.3.1 Existing Conditions and Trends

As shown in **Table N-15**, in 2018 the Study Area’s average household income was an estimated \$155,324 (in year 2020 dollars). This was comparable to the 2018 average household income for Manhattan (\$157,467) and over \$50,000 greater than the average household income for New York City households (\$101,158). The Study Area’s average household income has increased (in constant 2020 dollars) since 2010. While the percent change over time in Study Area average household income cannot be reported with statistical confidence, it is likely to have increased at a faster rate than in Manhattan and the City as a whole.

**Table N-15
Average Household Income (2010–2018)**

	2010	2018	Change 2010–2018 %
Study Area	\$132,734	\$155,324	Increase ¹
Manhattan	\$146,613	\$157,467	+7.4
New York City	\$93,139	\$101,158	+8.6

Notes:
All dollar figures have been adjusted to 2020 dollars based on the U.S. Department of Labor Consumer Price Index for all urban consumers in the New York-Newark-Jersey City, NY-NJ-PA region.
¹ The margin of error (MOE) of the difference is greater than one third of the difference, and therefore a change cannot be estimated with confidence and only the direction of the change can be reported (i.e., Increase/Decrease).

Sources: U.S. Census Bureau, American Community Survey (ACS) 2006–2010 and 2014–2018 5-Year Estimates.

The Study Area’s median household income in 2018 was an estimated \$97,502 (in 2020 dollars), higher than the median household incomes for Manhattan and New York City (see **Table N-16**).

Table N-16
Median Household Income (2010–2018)

	2010	2018	Change 2010–2018 %
Study Area	\$81,699	\$97,502	Increase ¹
Manhattan	\$77,684	\$85,424	+10.0
New York City	\$60,125	\$62,947	+4.7

Notes:
All dollar figures have been adjusted to 2020 dollars based on the U.S. Department of Labor Consumer Price Index for all urban consumers in the New York-Newark-Jersey City, NY-NJ-PA region.
¹ The margin of error (MOE) of the difference is greater than one third of the difference, and therefore a change cannot be estimated with confidence and only the direction of the change can be reported (i.e., Increase/Decrease).
Sources: U.S. Census Bureau, American Community Survey (ACS) 2006–2010 and 2014–2018 5-Year Estimates.

Figure N-2 illustrates the Study Area’s household income distribution as compared to Manhattan and New York City. In 2018 nearly one in four Study Area households earned \$200,000 or more, a larger proportion than in Manhattan (21.3 percent) and New York City (10.2 percent). Conversely, the Study Area had a lower proportion of Study Area households in the lowest income brackets (below \$35,000).

The relatively low proportion of Study Area households with very low incomes is due to the relatively few numbers of New York City Housing Authority (NYCHA) public housing complexes. As shown in **Table N-17**, there are only nine NYCHA public housing buildings in the Study Area, all of which are concentrated in a two-block area between West 25th and West 27th Streets and Ninth and Tenth Avenues. Collectively, the Chelsea-Elliott Houses have 1,129 units and an estimated 2,434 residents, who represented approximately seven percent of the 2018 Study Area population (34,833 residents).

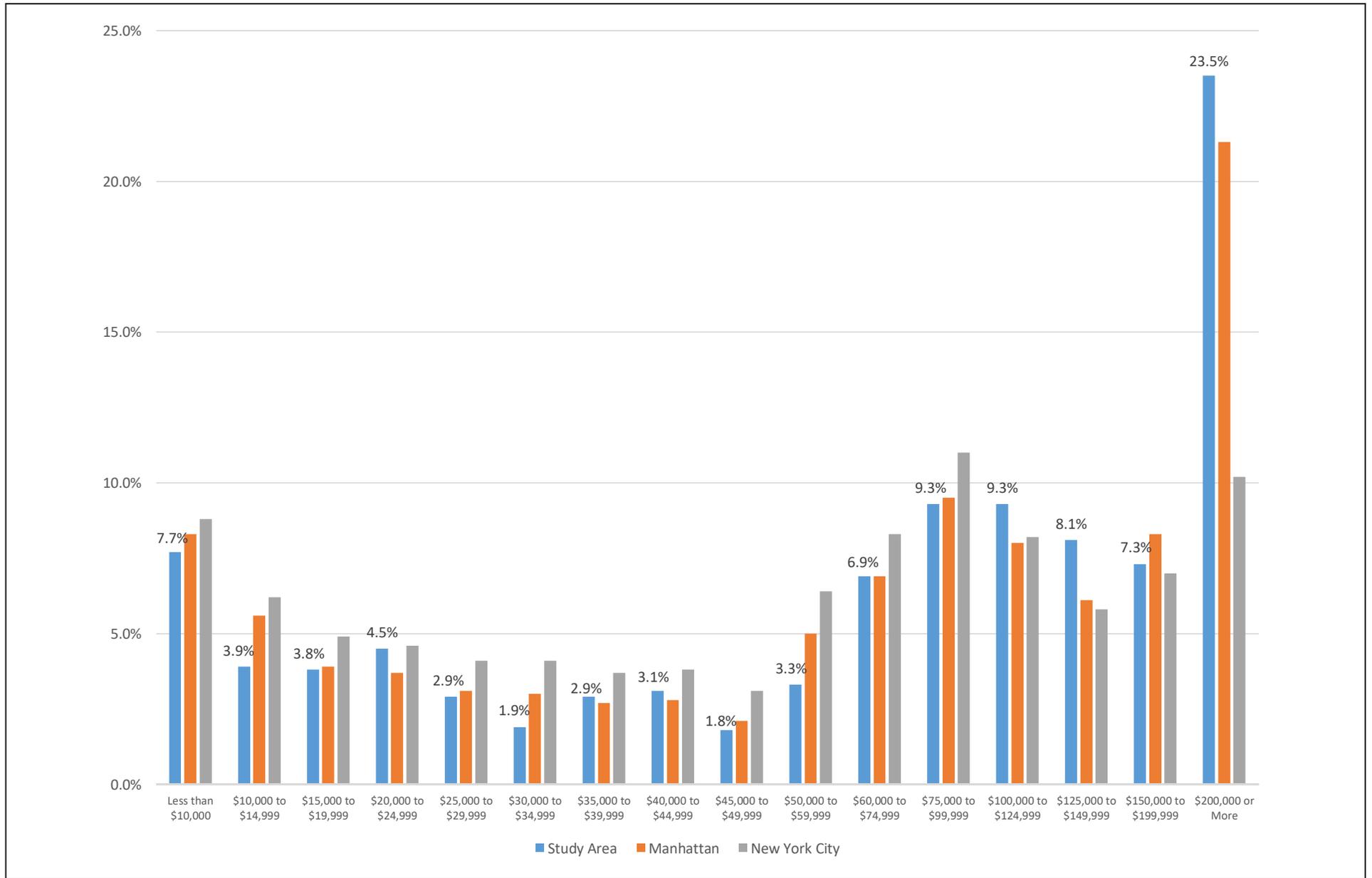
Table N-17
NYCHA Developments in the Study Area

Development	No. of Buildings	Units	Total Population
Elliot	4	608	1,393
Chelsea	4	425	927
Chelsea Addition	1	96	114
Total	9	1,129	2,434

Source: <http://nycha.maps.arcgis.com>.

Immediately east of the Chelsea-Elliott Houses, between Eighth and Ninth Avenues from 23rd to 29th Streets, is Penn South, a limited equity affordable cooperative maintained under the supervision of the NYCHPD. Penn South receives a substantial tax abatement in exchange for providing affordable apartments for moderate-income residents. According to the Penn South web site, there are 2,820 units in the complex, and close to 5,000 residents.⁶

⁶ <https://www.pennsouth.coop/faq---general-information-about-penn-south.html>



As detailed in **Table N-18**, in 2018 approximately 13.0 percent of the Study Area residential population was living in poverty, which was lower than the percentage for Manhattan (16.6 percent) and New York City (18.9 percent). The percentage of Study Area families living in poverty (7.2 percent) also was lower than the rates for Manhattan and New York City. The population under 18 years of age who were living in poverty (12.5 percent) was notably lower than the rates for Manhattan (22.3 percent) and New York City (26.8 percent).

**Table N-18
Poverty Status in 2018**

	Study Area		Manhattan		New York City	
	Number	Percent	Number	Percent	Number	Percent
Population Living in Poverty	4,534	13.0	263,413	16.6	1,570,754	18.9
Families Living in Poverty	442	7.2	40,922	12.7	294,980	15.6
Population Under 18 Years Living in Poverty	351	12.5	51,805	22.3	465,069	26.8
Population Age 18 to 64 Living in Poverty	3,555	13.2	167,246	15.2	893,833	16.5
Population Age 65 and Over Living in Poverty	628	12.5	44,362	17.6	211,852	18.3

Source: U.S. Census Bureau, American Community Survey (ACS) 2014–2018 5-Year Estimates.

Although the percent change over time for those Study Area residents living in poverty cannot be reported with statistical confidence, it appears to have decreased since 2010 (see **Table N-19**).

**Table N-19
Study Area Poverty Status Trends (2010–2018)**

	2010		2018	
	Number	Percent	Number	Percent
Population Living in Poverty	4,193	17.0	4,534	13.0
Families Living in Poverty	367	10.4	442	7.2
Population Under 18 Years Living in Poverty	624	28.5	351	12.5
Population Age 18 to 64 Living in Poverty	3,041	16.2	3,555	13.2
Population Age 65 and Over Living in Poverty	528	14.3	628	12.5

Sources:
U.S. Census Bureau, American Community Survey (ACS) 2006–2010 and 2014–2018 5-Year Estimates.

As shown in **Table N-20**, in 2018 there were 22,497 housing units in the Study Area, of which approximately 88.1 percent were occupied. There were approximately 15,331 housing units in the Study Area in 2010, of which approximately 86.3 percent were occupied. The Study Area’s occupancy rate (88.1 percent) and rate of renter-occupied units (75.6 percent) are similar to rates in Manhattan overall.

Table N-20
Housing Units, Vacancy, and Tenure

	Total Housing Units		Percent Occupied		Percent Renter-Occupied Units	
	2010	2018	2010	2018	2010	2018
Study Area	15,331	22,497	86.3	88.1	69.4	75.6
Manhattan	839,013	874,237	87.3	86.7	77.2	75.9
New York City	3,343,424	3,472,354	91.1	90.8	67.0	67.4
Sources: U.S. Census Bureau, American Community Survey (ACS) 2006–2010 and 2014–2018 5-Year Estimates.						

In 2018, over 40 percent of the Study Area’s housing units were in structures built in 2000 or later (see **Table N-21**). This is a substantially higher percentage than in Manhattan (9.2 percent) and New York City (7.9 percent). To put this recent growth rate in context, over one of every 10 DUs built in Manhattan since 2000 are located in the Study Area. According to MapPLUTO data, over 6,000 dwelling units were built in the Study Area in just a five-year period between 2013 and 2017. In terms of older housing stock, just over one-quarter of the Study Area’s housing units are in buildings built before 1950, compared to over half of the units in Manhattan and New York City.

Table N-21
2018 Housing Units by Year Structure Built

	Study Area		Manhattan		New York City	
	Number	Percent	Number	Percent	Number	Percent
Total Housing Units:	22,497	100.0	874,237	100	3,472,354	100.0
Built 2000 or Later	9,591	42.7	80,541	9.2	275,466	7.9
Built 1950 to 1999	6,714	29.8	355,093	40.6	1,428,593	41.2
Built 1949 or Earlier	6,192	27.6	438,603	50.2	1,768,295	50.9
Source: U.S. Census Bureau, American Community Survey (ACS) 2014–2018 5-Year Estimates.						

As shown in **Table N-22**, in 2018 in the Study Area, more than three out of four housing units (75.8 percent) were in structures with 50 or more units. This is a greater proportion than in Manhattan (55.9 percent) and New York City (31.8 percent). Conversely, there were very few units in small buildings; only 6.3 percent of Study Area units were in buildings with less than 10 dwelling units.

Table N-22
2018 Units in Structure

Units in Structure	Study Area		Manhattan		New York City	
	Number	Percent	Number	Percent	Number	Percent
1 to 2	605	2.7	26,012	3.0	1,017,510	29.3
3 to 4	173	0.8	18,994	2.2	333,505	9.6
5 to 9	628	2.8	46,573	5.3	228,415	6.6
10 to 49	4,047	18.0	293,367	33.5	780,781	22.5
50 or more	17,044	75.8	488,398	55.9	1,105,727	31.8
Total	22,497	100	874,237	100	3,472,354	100
Source: U.S. Census Bureau, American Community Survey (ACS) 2014–2018 5-Year Estimates.						

Table N-23 shows gross rent as a percentage of household income for renter-occupied units. If a household is paying more than 30 percent of gross income toward rent, that household is considered rent-burdened. If the household is paying over 50 percent of gross income toward rent, the household is considered severely rent-burdened.

In the Study Area, in 2018 approximately 42.7 percent of households were rent-burdened, of which nearly half were severely rent-burdened (19.5 percent). Manhattan and New York City had higher proportions of rent-burdened and severely rent-burdened households.

Table N-23
Renter-Occupied Housing Units by Gross Rent as Percentage of Household Income

	29 or less (Not Rent-Burdened)		30 or more (Rent-Burdened)		50 or more (Severely Rent-Burdened)	
	2006–2010	2014–2018	2006–2010	2014–2018	2006–2010	2014–2018
Study Area	55.2	57.3	44.8	42.7	22.0	19.5
Manhattan	55.0	54.3	45.0	45.7	22.7	22.4
New York City	48.7	46.5	51.3	53.5	27.7	29.0

Sources: U.S. Census Bureau 2014–2018 ACS

As discussed above, gross rents reported by ACS are often lower than advertised market-rate rents. **Table N-24** shows average market rents by number of bedrooms, gathered from online rental listings. Average market rents in the Study Area range from \$2,504 for a studio to over \$10,000 for units with three or more bedrooms. The median rents are slightly lower, ranging from \$2,500 for a studio to \$5,875 for a unit with three or more bedrooms.

Table N-24
Asking Rents in the Study Area

	Average	Median
Studio	\$2,504	\$2,500
1 Bedroom	\$3,387	\$3,290
2 Bedrooms	\$5,629	\$4,964
3+ Bedrooms	\$10,131	\$5,875

Source: StreetEasy (<http://streeteasy.com>) accessed in November 2020.

N.3.1.9.3.2 Estimates of Potentially Vulnerable Population in Unprotected Units

A key objective of the detailed indirect residential displacement analysis is to characterize existing conditions of residents and housing in order to identify populations that may be vulnerable to displacement. Vulnerable populations are defined as people living in privately held units that are unprotected by rent regulations, whose incomes or poverty status indicates that they could not pay substantial rent increases. The following analysis estimates the percentage of low-income renters and the protected and unprotected housing stock in the Study Area.

Low-income households are defined as those households making 80 percent AMI or less. AMI is set by HUD and is based on the median income of the New York City region and household size (see **Table N-25**). Data on household income by subarea and by tenure can only be tabulated using PUMS data for Public Use Microdata Area (PUMA) geographies. The Study Area falls within the Chelsea, Clinton & Midtown Business District PUMA (PUMA 3807). The boundaries of PUMA 3807 closely align with the combined area of Community Districts 4 and 5. As shown in **Table N-25**, approximately 37.3 percent of renter households in the PUMA 3807 have household incomes at or below 80 percent AMI.

Table N-25
Low-Income Renters, PUMA 3807

Household Size	HUD 80% AMI Income Limit	Renter Occupied Households at or Below 80% AMI
1	\$63,680	18,254
2	\$72,800	4,535
3	\$81,920	1,051
4	\$90,960	811
5	\$98,240	261
6	\$105,520	120
7	\$112,800	35
8+	\$120,080	-
Total Low-Income Renter-Occupied Households		25,067
Total Renter-Occupied Households		67,223
Percent Low-Income Renters		37.3

Sources: 2014–2018 Public Use Microdata Sample; U.S. Department of Housing and Urban Development 2020; U.S. Census Bureau 2014–2018 ACS

The 2018 ACS estimates that 19,829 occupied housing units were in the Study Area, of which 14,989 (75.6 percent) were renter-occupied. Applying the percentage of low-income renter households in the PUMA to the Study Area results in an estimated 5,591 low-income renter households in the Study Area. Based on data from the NYU Furman Center, the HCR Rent Stabilized Buildings List, and the NYCHPD Housing New York by Project file, there is an estimated total of 6,098 protected rental units in the Study Area (see **Table N-26**).

The majority of the Study Area’s rent-protected units are income-restricted, including over 1,000 units within the combined Chelsea-Elliott NYCHA development projects.⁷ Nearly 800 more income-restricted units are located in 100 percent affordable buildings that were developed or operate under various federal housing programs. The French Apartments, at 324 West 39th Street, is the largest building in this category with 174 rental units. Almost all of the additional income-restricted rental units in the Study Area were developed with 421-a tax incentives along with market rate housing.⁸ In total, there are 3,966 income-restricted protected rental units in the Study Area.

Other rent-protected units are non-income-restricted, such as units stabilized under the Emergency Tenant Protection Act (EPTA, 1974), meaning that residents do not have to be low income to live in the units. According to HCR data, the majority of this type of unit is distributed among approximately 100 pre-war buildings, concentrated between Eighth and Tenth Avenues, that each have one or more stabilized units.⁹ MapPLUTO data indicate 2,132 residential units are within buildings in this category.

⁷ The Chelsea-Elliott developments include the Chelsea, Chelsea Addition, and Elliott housing projects.

⁸ When not available from Furman NYC CoreData, the number of income-restricted units in 421-a developments was estimated to be 20 percent of the total residential units indicated in mapPLUTO, 20v6.

⁹ HCR data indicates that additional stabilized units are within cooperative-owned buildings that have converted from rentals. It is assumed that these units account for a small proportion of the total Study Area protected units, and are conservatively excluded in the analysis.

To estimate how many low-income renters in the Study Area reside in units without rent protection, the following methodology was employed: Income-restricted protected units are assumed to be occupied by low-income households. The remaining low-income renter households are proportionally allocated between non-income-restricted protected units and unprotected units based on the ratio of non-income restricted units to unprotected units. As shown in **Table N-26**, in the Study Area there are an estimated 3,966 protected rental units that are income-restricted. The analysis assumes that those units are occupied by low-income households, accounting for over half of the 5,591 low-income renter households in the Study Area. The remaining 1,625 low-income renter households live in non-income-restricted rent stabilized units or in unprotected units. This analysis conservatively assumes that approximately 19 percent (314 households) live in non-income-restricted rent-protected units, leaving 1,311 low-income households renting unprotected units. Assuming an average household size of 1.75 persons per unit (the average for renter-occupied housing in the Study Area), there are an estimated 2,294 residents that are low-income and that live in unprotected rental units, and who would be potentially vulnerable to indirect residential displacement if their rents were to increase. In 2018, the Study Area had a total population of 34,833 residents; therefore, the potentially vulnerable population would be approximately 6.6 percent of the existing Study Area population.

Although the analysis estimates that over 5 percent of the population may be vulnerable to indirect residential displacement, the population of low-income renter households in unprotected rental units is very likely smaller than estimated using the above-described methodology. The methodology assumes that only 15 percent of non-income-restricted rent-stabilized units are occupied by low-income households. According to a Furman Center fact brief, *Profile of Rent Stabilized Units and Tenants in New York City* (2014), Citywide, approximately 66 percent of tenants living in units protected by EPTA are low-income (less than 80 percent AMI in 2011). In Manhattan alone, 52 percent are low income.¹⁰ In addition, market rate rents in the Study Area are well in excess of what is affordable to low-income households. Therefore, it is expected that a vast majority of low-income renter households in the Study Area reside in rent-protected units.

**Table N-26
Allocation of Low-Income Households**

Renter-Occupied Housing Units		Low-Income Renter Households	
Total Protected	6,098	Total	5,591
Income-Restricted	3,966	in Income-Restricted Protected Units	3,966
Non-Income-Restricted	2,132	in Non-Income-Restricted Protected Units	314
Unprotected	8,891	in Unprotected Units	1,311
Total Potentially Vulnerable Population in Unprotected Units (HH Size 1.75)			2,294
Total Potentially Vulnerable Population in Unprotected Units as Percentage of Total Population			6.6
Sources: NYU Furman Center, CoreData, June 30, 2020; New York State Homes and Community Renewal (HCR) Rent Stabilized Buildings List, Manhattan 2018; NYCHA Development Data Base, January 2020; U.S. Census Bureau, American Community Survey (ACS) 2018 1-Year Estimates; AKRF, Inc.			

¹⁰ If the 52 percent estimate from Furman Center data were applied to this methodology, rather than 15 percent, an estimated 2.6 percent of the population would be vulnerable to displacement.

N.3.1.9.3.3 Future Conditions in the Study Area

As shown in **Table N-27**, there are 21 planned projects that include a residential component and that will be developed by the 2030 analysis year irrespective of the Preferred Alternative. These projects would result in an estimated 4,851 new market rate dwelling units and 403 affordable dwelling units. A vast majority of the projects introducing residential DUs are mixed-use projects with ground-floor retail.

Table N-27
Development Projects Expected by 2030 Build Year
(Projects with Residential Development Indicated in Bold)

Address/Name	Block	Lot	Program	Build Year ¹
220 Eleventh Avenue	697	1	170,311 gsf office	2021
400 Eleventh Avenue	706	1	520,740 gsf office	2021
509 West 34th Street	706	17	2.55 million gsf office	2022
432 West 31st Street	728	55	220 hotel rooms	2030
431 West 33rd Street	731	22	24 DU, 6,280 gsf retail	2030
542 West 22nd Street	693	56	36,783 gsf office	2030
545 West 37th Street	709	14	131 DU, 258 hotel rooms, 82 parking spaces	2030
500 West 22nd Street	693	37	10 DU, 4,278 gsf retail, 25,307 gsf community facility	2030
430 West 37th Street	734	16	304 DU, 14,580 gsf retail	2030
517 West 29th Street	701	24	60 DU, 10 parking spaces	2030
495 Eleventh Avenue	685	38	275 DU, 16,879 gsf retail, 755 hotel rooms, 49,748 gsf community facility, 25,168 gsf office, 55 parking spaces	2024
Hudson Yards Site 7	707	20, 26, 45, 41, 31 and 39	255 DU, 22,011 gsf retail, 1.66 million gsf office	2025
99 Hudson Boulevard	708	1, 62	1,495,000 gsf office	2030
162 Eleventh Avenue	694	1	13 DU, 242 gsf retail	2030
319 West 35th Street	759	29	166 DU, 3,909 gsf retail	2030
550 West 41st Street	1069	1	499 DU, 72,552 gsf retail	2030
Moynihan Station Development Project	755	40	123,000 gsf retail, 228,242 gsf community facility, 672,524 gsf office	2030
349-355 West 37th Street	761	5,7	136 DU, 11,355 gsf retail	2030
351 West 38th Street	762	6	490 hotel rooms	2025
338 West 39th Street	762	61	177 hotel rooms	2030
355 West 39th Street	763	7501	25 DU, 1,843 gsf retail, 723 gsf community facility	2030
460 West 41st Street	1050	1	60 DU, 62,607 gsf community facility	2030
555 West 38th Street	710	1	591 DU, 1,886 gsf retail	2030
450 11th Avenue	708	65	379 hotel rooms	2030
Hudson Yards Site 24	735	25, 27, 30, 31, and 35	448 DU, 8,579 gsf community facility, 170 parking spaces	2030
415 Tenth Avenue	705	39	2,581,748 gsf office	2030
610 West 30th Street	675	39	277 DU, 160,906 gsf retail, 61 parking spaces	2030
601 West 29th Street	675	12	931 DU, 10,920 gsf retail, 186 parking spaces	2030
442 West 33rd Street	729	61	164 hotel rooms	2030
401 West 31st Street	729	51	790 DU, 4,053,312 gsf office	2030
300 West 30th Street	753	42	80 DU, 5,750 gsf retail	2030
555 West 22nd Street	694	5	145 DU, 49,160 gsf retail	2030
540 West 21st Street	692	53	34 DU, 50,041 gsf retail	2030
260 Eleventh Avenue	698	1,6	23,236 gsf retail, 314,606 gsf office	2030

Notes:

Some program data was updated in July 2020, based on updated project information from NYCDCP.

DU= Dwelling Units

UC = Under Construction

¹ Projects for which an expected date of completion is not available are assumed to be complete by 2030.

² Gross square footage (gsf) was calculated off of the zoning square footage by using a factor of 1.15.

Sources: New York City Department of City Planning, Department of Buildings; AKRF, Inc. research; media coverage.

N.3.1.9.3.4 *Future with the Preferred Alternative*

The Preferred Alternative would allow for the development of housing, commercial, community facility, and open space upon the Platform over the Project Site. By 2030, the Overbuild would be constructed with up to 4,000 residential DUs, of which at least 324 would be permanently affordable. The market rate units would be offered at rents and sales prices comparable to other modern, newly constructed market rate units in the surrounding area, and comparable to the high rents and sales prices for market rate units expected to be development in the future without the Preferred Alternative.

Assuming an average household size of 1.7 persons per household, the 4,000 residential units would introduce an estimated 6,800 residents to the Study Area by 2030 (conservatively assuming 100 percent occupancy). The 6,800 residents introduced to the Study Area would represent about 13.4 percent of the 2030 Study Area population in the future with the Preferred Alternative; the total Study Area residential population with the Preferred Alternative would be 50,565.

According to the *CEQR Technical Manual*, if a proposed action increases the population in a study area by less than five percent, it would not be large enough to affect socioeconomic trends significantly. While the indirect effect of the Preferred Alternative, the Overbuild, would add a substantial new population, increasing the Study Area population by approximately 15.5 percent, the demographic characteristics of the resulting residential population would not differ substantially from that of Study Area population in the future without the Preferred Alternative. By 2030, housing prices and rents are expected to continue to rise in the in the Study Area with or without the Preferred Alternative. As shown in **Table N-24**, current rents for available new or renovated apartments in the area are higher than the median affordable rents of current residents. Monthly rents for units in new, highly amenitized buildings are even higher; for example, monthly asking rents for 1-bedroom units at 15 Hudson Yards range from \$5,995 to \$8,200; 2-bedroom units range from \$9,000 to \$16,000; while listed 3-bedroom units over \$20,000 per month.¹¹

Any demographic changes resulting from the indirect effect of the Preferred Alternative would mirror socioeconomic trends (population growth and increasing affluence) that have taken hold in the area; the Preferred Alternative would not alter or substantially accelerate these trends. Between 2000 and 2018, the Study Area experienced growth of over 9,500 housing units. Between 2020 and 2030, another 5,254 units will be constructed in the Study Area, resulting in a substantial population gain in the absence of the Preferred Alternative.

As explained above, a large percentage of the Study Area's rental housing stock is covered by rent control or rent stabilization, which affords a high degree of protection against market-driven displacement pressures. Economic trends have already placed unregulated rents out of reach of low- and moderate-income households; those low- to moderate-income households that remain in the Study Area owe their continued tenure to rent regulation and participation in other government programs that limit rents and tenant incomes. The population potentially vulnerable to indirect residential displacement within the Study Area is limited, and would likely experience increased rent pressures in the future without the Overbuild. The indirect effect of the Preferred Alternative would not significantly alter or substantially accelerate the Study Area's long-term trend of increasing residential development, affluence, and residential desirability. Through the provision of housing, the Overbuild would add to the Study Area's housing supply and may serve to keep prices from rising as quickly as they would absent of the Overbuild. Furthermore, the addition of at least 324 new, permanently affordable housing units would potentially slow this trend and could serve to maintain a wider range of household incomes within the Study Area over the long term as compared to conditions in the future without the Overbuild.

¹¹ Asking rents from StreetEasy accessed in November 2020.

In summary, due to the substantial amount of market rate housing that has recently been built and that is planned, irrespective of the Preferred Alternative and Overbuild, the Study Area is expected to maintain its long-term trends toward increasing residential population, household incomes, residential property values, and rents. The Overbuild would reflect, rather than alter, these residential trends. Therefore, no adverse impact from indirect residential displacement would be expected to result from the Preferred Alternative.

N.3.1.9.4 *Indirect Business Displacement*

Similar to indirect residential displacement, the concern with respect to indirect business displacement is whether a project could lead to increases in property values, and thus rents, making it difficult for some businesses to afford their rent. In most cases, indirect displacement of businesses occurs when a project would markedly increase property values and rents throughout a study area, making it difficult for some categories of businesses to remain in the area. An example would be industrial businesses in an area where land use change is occurring, and the introduction of a new population would result in new commercial or retail services that would increase demand for services and cause rents to rise. Additionally, indirect displacement of businesses may occur if a project directly displaces any type of use that either directly supports businesses in the area or brings a customer base to the area for local businesses, or if it directly or indirectly displaces residents or workers who form the customer base of existing businesses in the area.

The Study Area is the area within which the Preferred Alternative has the greatest potential to indirectly affect population, housing, and economic activities. As with the analysis of indirect residential displacement, the Study Area is an approximate half-mile area surrounding the Project Site. Because socioeconomic analyses depend on demographic data, it is appropriate to adjust the Study Area boundary to conform to the census tract delineation that most closely approximates the desired radius (in this case, a half-mile radius surrounding the Project Site). For this analysis, the census tracts that comprise the Study Area are shown in **Figure N-1**. The Study Area includes Census Tracts 93, 97, 99, 103, 111, 115, and 117, and is roughly bounded by West 43rd Street to the North, Eighth Avenue to the east, West 20th Street to the south, and the Hudson River to the west. For comparison purposes, the analysis also presents data for Manhattan (New York County) and New York City.

According to the *CEQR Technical Manual*, an adverse impacts due to indirect business displacement may occur if a proposed action would create a trend that would result in the displacement of businesses that provide products or services essential to the local economy that would no longer be available in its “trade area” to local residents or businesses due to the difficulty of either relocating the business or establishing new, comparable businesses. Impacts may also be identified in a proposed action could displace businesses that are the subject of regulations or publicly adopted plans to preserve, enhance, or otherwise protect them, and if a proposed action would add retail uses that draw substantial sales from existing businesses.

N.3.1.9.4.1 *Preliminary Assessment*

The analysis of indirect business displacement begins with a preliminary assessment that describes and characterizes conditions and trends in employment and businesses within a study area, using the most recent available data from such sources as the U.S. Census Bureau, as well as private sources such as Esri Business Analyst and real estate brokerage firms, as necessary. This information is used to consider:

- whether a proposed action would introduce enough of a new economic activity to alter existing economic patterns;
- whether a proposed action would add to the concentration of a particular sector of the local economy enough to alter or accelerate existing economic patterns; and

- whether a proposed action would directly displace any type of use that either directly supports businesses in the area or brings a customer base to the area for local businesses, or if it indirectly displaces residents, workers, or visitors who form the customer base of existing businesses in the area.

A preliminary assessment for the indirect effect of the Overbuild was sufficient to rule out the potential for adverse impacts due to indirect business displacement as an indirect effect of the Preferred Alternative.

N.3.1.9.4.2 *Conditions and Trends in Study Area Employment and Businesses*

The Study Area is located on the Far West Side of Midtown Manhattan and extends into the area known as Midtown South. Midtown Manhattan is the core of the New York region's economic strength and is renowned for its supply of high-quality office space. At the end of 2019 there was approximately 286 million square feet of office space in Midtown, with approximately 9.7 million square feet under construction in the Hudson Yards/Manhattan West submarket.¹² The majority of that inventory is located in Class A office buildings, typically in demand by prestigious national and international firms, particularly in the business, legal, and professional services and the Finance, Insurance, and Real Estate (FIRE) sectors and more recently in the Information (or "Tech") sector. Midtown South has another approximately 79 million square feet of office space.¹³

The Study Area has experienced tremendous recent growth in the number of jobs and businesses—particularly in office-based industry sectors—facilitated by development resulting from the Hudson Yards Rezoning. In 2019, there were an estimated 4,272 businesses located in the Study Area, collectively employing an estimated 71,535 workers (see **Table N-28**). According to U.S. Census OnTheMap data, the number of primary jobs held within the Study Area grew by approximately 41.8 percent between 2010 and 2017, far outpacing job growth in Manhattan (16.4 percent) and New York City (16.7 percent) over the same period.

As shown in **Table N-28**, apart from businesses in unclassified industry sectors, the largest proportions of Study Area businesses were in the Professional, Scientific and Technical Services industry sectors (646 businesses, representing 15.1 percent of all Study Area businesses), followed closely by establishments in the Retail Trade sector (639 businesses, representing 15.0 percent of total businesses). These sectors also had the highest numbers of workers—an estimated 14,103 in Retail Trade (19.7 percent of all jobs) and 9,824 jobs in Professional, Scientific and Technical Services industries (13.7 percent of all jobs).

Industrial-based sectors (Construction, Manufacturing, Transportation and Warehousing, and Wholesale Trade) represent about 10.3 percent (7,386 jobs) of the total employment in the Study Area, which is a substantial decline in both the total amount and proportion since 2000, when these sectors represented 35.8 percent of Study Area employment and employed an estimated 17,340 workers. The trend toward losses in manufacturing employment was not isolated to the Study Area; in Manhattan as a whole, the share of jobs in industrial-based sectors has dropped from 15.7 percent of all jobs in 2000 to 7.7 percent of jobs in 2017.

¹² Avison Young Fourth Quarter 2019 Office Leasing Report. The Hudson Yards/Manhattan West submarket is defined by Avison Young as West 36th Street to the north, the Hudson River on the west, West 12th Street on the south and Fifth Avenue on the east.

¹³ *Ibid.*

Table N-28
Study Area Business and Jobs by Industry Sector (2019)

	Businesses		Jobs	
	Number	Percent	Number	Percent
Total	4,272	100.0	71,535	100.0
Agriculture, Forestry, Fishing and Hunting	3	0.1	8	0.0
Mining	1	0.0	10	0.0
Utilities	1	0.0	2	0.0
Construction	149	3.5	3,071	4.3
Manufacturing	137	3.2	1,407	2.0
Wholesale Trade	100	2.3	1,187	1.7
Retail Trade	639	15.0	14,103	19.7
Transportation and Warehousing	66	1.5	1,721	2.4
Information	212	5.0	6,831	9.5
Finance and Insurance	117	2.7	4,635	6.5
Real Estate, Rental and Leasing	204	4.8	1,959	2.7
Professional, Scientific and Technical Services	646	15.1	9,824	13.7
Management of Companies and Enterprises	13	0.3	160	0.2
Administrative and Support and Waste Management Services	182	4.3	1,853	2.6
Educational Services	71	1.7	845	1.2
Health Care and Social Assistance	159	3.7	5,944	8.3
Arts, Entertainment, and Recreation	187	4.4	2,628	3.7
Accommodation and Food Services	309	7.2	5,726	8.0
Other Services, Except Public Administration	366	8.6	8,123	11.4
Public Administration	16	0.4	1,128	0.2
Unclassified Establishments	694	16.2	370	1.6

Source: Esri Business Analyst.

As shown in **Table N-28**, in 2019 the Study Area had a disproportionately large percentage of jobs in the Retail Trade sector (19.7 percent) as compared to Manhattan (9.1 percent) and New York City (10.1 percent). This is due to its location within the Midtown Manhattan Central Business District, where ground-floor retail uses dominate, as well as the concentration of major retail destinations including the recently opened Shops and Restaurants at Hudson Yards. The proportion of Study Area jobs in the Information sector (9.5 percent) is also higher than in Manhattan (7.4 percent) and New York City as a whole (5.1 percent). The growth in Information sector jobs in the Study Area is due in part to large tech companies—including Amazon, Apple, Facebook, and Google—seeking to occupy space along the Hudson River, including within the Study Area.¹⁴

¹⁴ New York Times, January 5, 2020. Website link: <https://www.nytimes.com/2020/01/05/nyregion/nyc-tech-facebook-amazon-google.html> (accessed, November 5, 2020)

The 2019 employment estimates presented in **Tables N-28 and N-29** do not fully capture the Study Area business and employment growth resulting from the first phase of Hudson Yards, which opened in March 2019. The development over the Eastern Rail Yard is comprised of six buildings offering a combined total of over 10.6 million gsf, including approximately 8.9 million gsf of office space. The complex also features a 1 million gsf retail mall, a six-acre park, a 200,000-gsf cultural venue known as The Shed, and the Vessel. Late in 2019, Facebook finalized a lease agreement to occupy over 1.5 million square feet of office space in Hudson Yards—including about 1.2 million square feet at 50 Hudson Yards, 265,000 square feet at 30 Hudson Yards, and 57,000 square feet at 55 Hudson Yards.¹⁵

**Table N-29
Jobs by Industry Sector
Study Area, Manhattan, and New York City (2019)**

	Study Area		Manhattan		New York City	
	Number	Percent	Number	Percent	Number	Percent
Total	71,535	100.0	2,069,586	100.0	3,570,213	100.0
Agriculture, Forestry, Fishing and Hunting	8	0.0	386	0.0	1,239	0.0
Mining	10	0.0	311	0.0	682	0.0
Utilities	2	0.0	5,746	0.3	8,656	0.2
Construction	3,071	4.3	37,548	1.8	111,102	3.1
Manufacturing	1,407	2.0	51,499	2.5	108,312	3.0
Wholesale Trade	1,187	1.7	36,206	1.7	83,825	2.3
Retail Trade	14,103	19.7	188,530	9.1	359,283	10.1
Transportation and Warehousing	1,721	2.4	30,586	1.5	91,171	2.6
Information	6,831	9.5	152,161	7.4	180,962	5.1
Finance and Insurance	4,635	6.5	289,907	14.0	323,744	9.1
Real Estate, Rental and Leasing	1,959	2.7	102,459	5.0	167,176	4.6
Professional, Scientific and Technical Services	9,824	13.7	330,468	16.0	405,950	11.4
Management of Companies and Enterprises	160	0.2	22,963	1.1	25,008	0.7
Administrative and Support and Waste Management Services	1,853	2.6	77,550	3.7	116,822	3.3
Educational Services	845	1.2	89,009	4.3	255,295	7.2
Health Care and Social Assistance	5,944	8.3	223,147	10.8	579,904	16.2
Arts, Entertainment, and Recreation	2,628	3.7	64,585	3.1	96,071	2.7
Accommodation and Food Services	5,726	8.0	183,623	8.9	298,292	8.4
Other Services, Except Public Administration	8,123	11.4	117,253	5.7	226,193	6.3
Public Administration	1,128	0.2	54,350	2.6	114,949	3.2
Unclassified Establishments	370	1.6	11,299	0.5	19,577	0.5

Source: Esri Business Analyst.

¹⁵ <https://therealdeal.com/2019/11/14/its-official-facebook-is-taking-1-5m-sf-in-hudson-yards>

N.3.1.9.4.3 *Trends in Real Estate Values and Rents*

Due to the ongoing coronavirus disease 2019 (COVID-19) public health emergency and associated economic recession, real estate values and rents in New York City are experiencing a downturn. In fourth quarter 2019, prior to the onset of COVID-19, overall vacancy in the Midtown South office market was approximately 8.3 percent, with average asking rent for Class A space exceeding \$100 per square foot. As of the third quarter 2020, vacancy in Midtown South has increased to approximately 12.8 percent.¹⁶

Manhattan has repeatedly overcome record vacancies following economic recessions. The overall office vacancy rate in Manhattan hit a record low of 3.5 percent in third quarter 2000, just before the recession that began after the September 11, 2001 terrorist attacks. In Midtown, the vacancy rate was even lower, down to 3.2 percent in third quarter 2000, leaving a relatively small amount of space available for lease. In third quarter 2003, office vacancy in Manhattan was about 12.5 percent, with Midtown faring better at 11.9 percent. Office vacancies in Midtown South and Lower Manhattan were slightly higher at 13.7 and 13.0 percent, respectively. Traditionally, office vacancy rates between 7 and 9 percent indicate that the market is in equilibrium, providing space for expansion without extraordinary increases in rents.

N.3.1.9.4.4 *CEQR Assessment Criteria*

This section follows the methodology of the *CEQR Technical Manual* in analyzing the criteria indicated in bold italics, below.

Would the proposed action introduce enough of a new economic activity to alter existing economic patterns?

The Preferred Alternative would enable the Overbuild to introduce approximately 3.3 million gsf of residential use (up to 4,000 units); up to 3.5 million gsf of commercial office and hotel; 75,000 gsf of retail; a 120,000-gsf public school; 5.45 acres of open space; and 1,600 parking spaces. As detailed below, none of these uses would be new activities within the Study Area:

- ***Residential*** - In 2018, the Study Area had an estimated 22,497 residential DUs, and there are 5,254 residential units expected to be built in the future without the Overbuild by 2030.
- ***Commercial Office*** – Based on MapPLUTO data, currently there is approximately 42 million gsf of commercial office space in the Study Area, and an additional 14 million gsf of office space that is expected to be built in the Study Area by 2030 the future without the Overbuild.
- ***Retail*** – The Study Area currently has approximately 4.1 million gsf of retail space, and over 575,000 gsf of retail that is expected to be built in the future without the Overbuild by 2030.
- ***Hotel*** – There are numerous hotels in the Study Area, including the Equinox Hotel New York at 33 Hudson Yards, Courtyard by Marriott at 461 34th Street, Best Western Convention Center Hotel at 522 West 38th Street, and the Clarion Collection Hotel-GEM Hotel on 449 West 36th Street. In addition, approximately 2,280 hotel rooms will be added to the Study Area in the future without the Overbuild by 2030.
- ***Public Schools*** – There is one public school within a ½-mile radius of the Project Site (P.S. 33 Chelsea Prep).
- ***Open Space*** – There are approximately 38.5 acres of publicly accessible open space in the Study Area, including an approximately 6-acre park at Hudson Yards.
- ***Parking*** – Based on MapPLUTO data there is approximately 745,000 sf of off-street parking in the Study Area.

¹⁶ 4Q2019 reporting from ABS Partners Real Estate; 3Q2020 reporting from Newmark Knight Frank.

Would the proposed action add to the concentration of a particular sector of the local economy enough to alter or accelerate an ongoing trend to alter existing economic patterns?

The Preferred Alternative would enable the Overbuild, a substantial mixed-use development at the Project Site with a wide range of allowable uses that already are well-established in the Study Area. As discussed above, the Study Area already includes the uses that would be added by the Overbuild. Independent of the Overbuild, the Study Area has a significant amount of planned projects that will add the same mix of uses as the Overbuild. Given the trend toward the development of mixed-use projects within the Study Area, the Preferred Alternative would not indirectly change economic patterns. The Overbuild mirrors the long-term trend toward a greater mix of uses in the Study Area, which would continue irrespective of the Overbuild.

The approximately 75,000 gsf of retail space that would be introduced by the Overbuild would not be an amount that could result in indirect business displacement due to retail market saturation. As noted in the *CEQR Technical Manual*, projects resulting in less than 200,000 square feet of retail on a single development site would not typically result in socioeconomic impacts.

Would the proposed action directly displace uses of any type that directly support businesses in the area or bring people to the area that form a customer base for local businesses?

As detailed in Chapter 17, "Socioeconomics," the Preferred Alternative would not directly displace any business that support businesses in the area or bring people to the area that form a customer base for local businesses. Rather, the uses developed on the Project Site would be expected to attract new visitors to the Study Area, some of whom would form a customer base for local businesses.

Would the proposed action directly or indirectly displace residents, workers, or visitors who form the customer base of existing businesses in the study area?

As detailed in Chapter 17, "Socioeconomics," the Preferred Alternative would not directly displace residents or workers. The detailed analysis of indirect residential displacement finds that the Preferred Alternative would not result in significant indirect residential displacement, and the Overbuild would introduce substantial new residential, worker, and visitor populations who would add to the area's existing customer base. Therefore, the Preferred Alternative would not directly or indirectly displace residents, workers, or visitors who form the customer base of existing businesses in the area.

Would the proposed action introduce a land use that could have a similar indirect effect, through the lowering of property values if it is large enough or prominent enough or combines with other like uses to create a critical mass large enough to offset positive trends in the study area, to impede efforts to attract investment to the area, or to create a climate for disinvestment?

The Overbuild would not offset positive trends in the Study Area, impede efforts to attract investments to the area, or create a climate for disinvestment. The Overbuild would advance long-standing policy goals of both the City of New York and MTA to encourage the development of new residential, commercial, community facility, and open space uses within the largely underutilized Far West Side of Midtown Manhattan. The Overbuild is intended to enhance the vitality of the Hudson Yards area, build the City's tax base, and help create a new 24-hour neighborhood that complements the emerging developments in the Special Hudson Yards District and the Special West Chelsea District, as well as areas of Midtown and Chelsea more broadly.

Overall, this preliminary assessment finds that the Preferred Alternative would not result in an adverse impact due to indirect business displacement within the Study Area. Therefore, no further analysis of this issue is required.

N.3.1.10 *ADVERSE EFFECTS ON A SPECIFIC INDUSTRY*

An adverse impact may occur if an action would measurably diminish the viability of a specific industry that has substantial economic value to the City's economy. An example as cited in the *CEQR Technical Manual* would be new regulations that prohibit or restrict the use of certain processes that are critical to certain industries. As set forth under the *CEQR Technical Manual* guidelines, the preliminary assessment of a proposed actions' potential to affect the operation and viability of specific industries (not necessarily tied to a study area) is not based on set criteria or the identification of specific economic variables. The *CEQR Technical Manual* indicates that a more detailed examination is appropriate if the following questions cannot be answered with a clear "no."

Would the proposed action significantly affect business conditions in any industry of any category of business within or outside the study area?

The Overbuild would not introduce any regulations or policies that would restrict any business or process from continuing to function within or outside the Study Area. Nor would the Overbuild result in an adverse impact from the direct displacement of uses on the Project Site. Therefore, the Overbuild would not have any direct effects on business conditions in any industry or category of business within the Study Area or New York City more broadly. The potential indirect effects of the Preferred Alternative on business conditions are addressed in the question below.

Would the proposed action indirectly substantially reduce employment or impair the economic viability in the industry or category of businesses?

As described in the analysis of indirect business displacement, the Preferred Alternative would not result in an adverse impact due to indirect business displacement, and would not indirectly displace a substantial amount of employment or impair the economic viability in any one industry sector or category of businesses. The Study Area includes a mix of commercial office, retail, residential, industrial, and transportation uses. According to data from the U.S. Census Bureau, there is not a substantial concentration of any one category of business or industry within the Study Area. Therefore, any potential indirect business displacement resulting from the Preferred Alternative would not have the potential to impair the economic viability of any industry or category of business.

A small portion of the Special Garment Center District (about a quarter of the blocks bounded by West 35th and West 37th Streets between Eighth and Ninth Avenues) is located in the Study Area. The District was created in 1987 to protect and enhance the apparel industry's employment base in apparel manufacturing as well as wholesaling, design and showrooms, retail, and related businesses that support the industry. While remaining the vital center of New York's apparel industry, the Garment Center has been significantly changing over the past decades. Its traditional base in manufacturing employment has been dramatically reduced, and the current employment base is a broader mix of commercial, wholesaling, and related uses. Citywide apparel manufacturing has been on the decline for over 30 years, and there is a prevailing and ongoing trend in the Special Garment Center District and Citywide toward the conversion of apparel manufacturing space to showrooms and other non-apparel-related uses.

In recognition of this long-term trend, the Hudson Yards FGEIS included a rezoning of the P-2 Preservation Area of the Special Garment Center District (generally between West 35th and 39th Streets from Eighth to Ninth Avenues from M1-5 and M1-6 to C6-4M), allowing for new construction of residential, commercial, or community facility uses, as well as as-of-right conversions to residential, commercial, or community facility uses if the building is less than 70,000 sf of floor area. This zoning change, enacted in 2005, has led to number of new developments and planned developments in the area, including hotels and residential conversions. For instance, a 24-story apartment building is being constructed on West 38th Street between Eighth and Ninth Avenues on a site that was formerly a parking facility.

Overall, the preliminary assessment finds that there would be no adverse impact on specific industries as an indirect result of the Preferred Alternative. In the future, the apparel industry is likely to continue its current pattern of consolidation towards the showroom, design, wholesale, and retail focus, while apparel manufacturing is expected to continue to diminish throughout the City, including activities within the Garment Center and in the Study Area. These trends are expected to continue with or without the Preferred Alternative; the Preferred Alternative would not indirectly affect these trends. No further analysis of this issue is required.

N.3.1.11 COMMUNITY FACILITIES AND SERVICES

This section assesses the potential for the Preferred Alternative to indirectly effect community facilities and services, which are defined in the *CEQR Technical Manual* as public or publicly funded schools, child care centers, libraries, health care facilities, and fire and police protection services. Indirect effects can result from increased demand for community facilities and services generated by new users, such as the new population that would result from the Overbuild in the future with the Preferred Alternative.

Pursuant to the *CEQR Technical Manual* guidelines, the analysis begins with a preliminary screening is to determine whether a community facilities assessment is warranted. Depending on the size, income characteristics, and age distribution of the new population, there may be effects on public schools, libraries, or child care centers. The *CEQR Technical Manual* provides thresholds for guidance in making a determination of whether a detailed analysis is necessary to determine potential indirect impacts (see **Table N-30**). If a project exceeds the threshold for a specific facility type, a more detailed analysis is warranted.

Applying the average household size of 1.7 persons per household (the average household size for Manhattan Community Districts 4 and 5 according to 2014–2018 ACS Data) to the number of incremental DUs, the Overbuild would introduce an estimated 6,800 new residents to the Study Area.

Based on the screening criteria in **Table N-30**, detailed analyses of potential indirect impacts on public schools (elementary and intermediate schools), public libraries, and publicly funded child care centers were conducted. Qualitative lists of health care facilities, and fire and police protection services were also prepared. Following *CEQR Technical Manual* guidelines, the study areas for analysis are different for each type of facility and are described in the sections below (see also *CEQR Technical Manual*, Chapter 6, Sections 311-316).

Table N-30

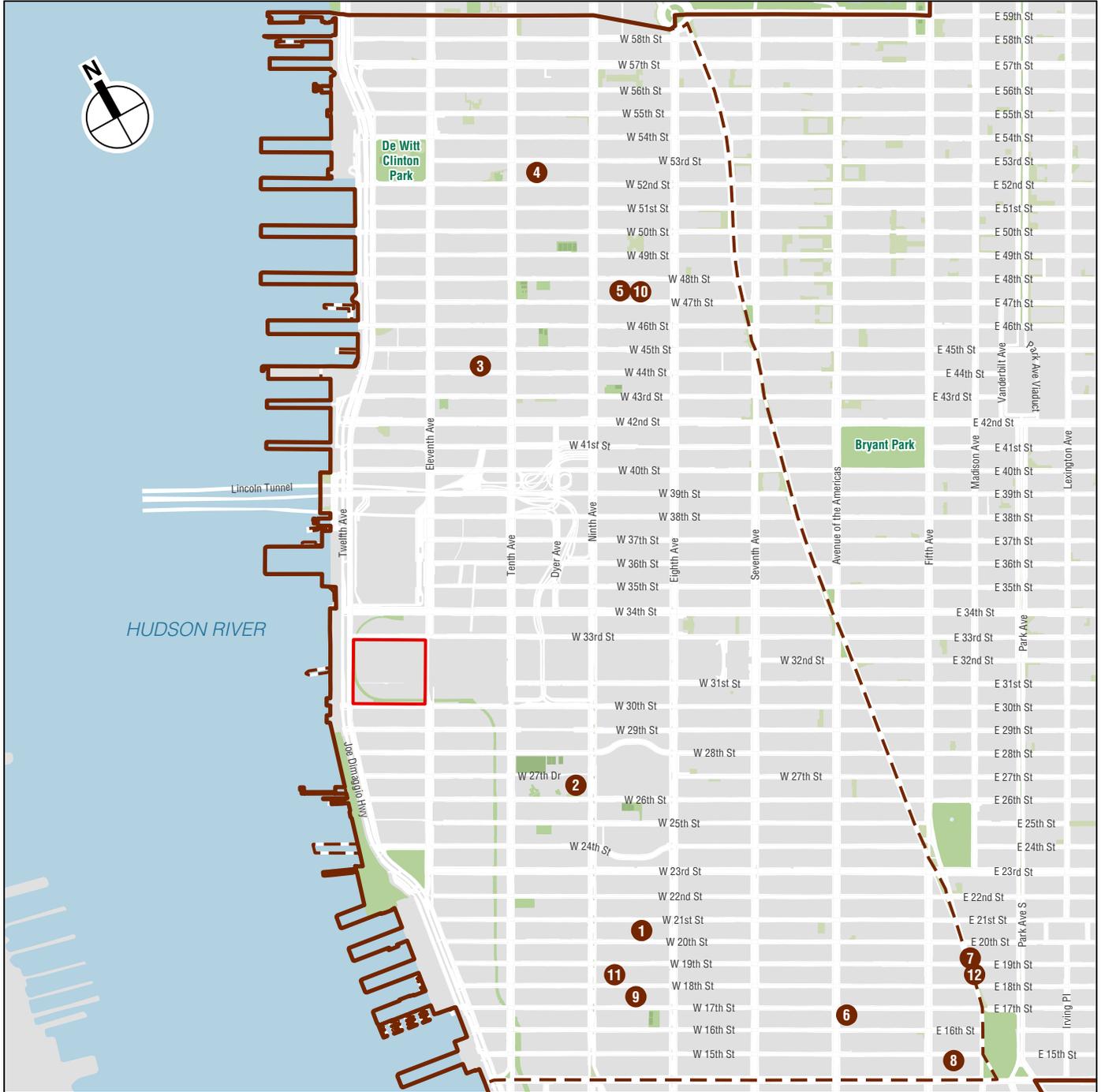
Preliminary Screening Analysis Criteria: Manhattan

Community Facility	Threshold For Detailed Analysis
Public schools	More than 50 elementary/intermediate school or 150 high school students. The minimum number of DUs that trigger a detailed analysis is 1,049 and 7,500 for elementary/intermediate schools and high schools, respectively in Manhattan CSD 2.
Libraries	Greater than 5 percent increase in ratio of DUs to libraries in borough. The minimum number of DUs that trigger a detailed analysis is 901.
Health care facilities (outpatient)	Introduction of sizeable new neighborhood where none existed before ¹
Child care centers (publicly funded)	More than 20 eligible children based on number of low- and low/moderate-income DUs by borough. The minimum number of affordable DUs that trigger a detailed analysis is 170.
Fire protection	Introduction of sizeable new neighborhood where none existed before. ¹
Police protection	Introduction of sizeable new neighborhood where none existed before. ¹
<p>Note: ¹ The <i>CEQR Technical Manual</i> cites the Hunter’s Point South project as an example of a project that would introduce a sizeable new neighborhood where none existed before. The Hunter’s Point South project would introduce approximately 5,000 new DUs to the Hunter’s Point South waterfront in Long Island City, Queens.</p> <p>Source: <i>CEQR Technical Manual</i> Chapter 6, Table 6-1.</p>	

N.3.1.11.1 Potential Indirect Effects on Public Elementary and Intermediate Schools

Following the methodologies in the *CEQR Technical Manual*, the School District Study Area for the analysis of elementary and intermediate schools is the school districts’ “subdistrict” (also known as a “region” or “school planning zone”) in which the Project Site is located; the subdistricts are used for capital planning purposes and do not necessarily reflect individual school zones; therefore students are not limited to attending schools based on their subdistrict. The Overbuild would be located in Subdistrict 3 of Community School District (CSD) 2 (see **Figure N-3**).

In accordance with the *CEQR Technical Manual*, this schools analysis uses the most recent New York City Department of Education (NYCDOE) data on school capacity, enrollment, and utilization rates for elementary and intermediate schools in the subdistrict Study Area. Specifically, the existing conditions analysis uses data provided in the NYCDOE’s *Utilization Profiles: Enrollment/Capacity/Utilization, 2018–2019* edition. Future conditions are then predicted based on Statistical Forecasting’s enrollment projections and data obtained from New York City School Construction Authority’s (SCA’s) Capital Planning Division on the number of new DUs and students expected at the subdistrict level. The future utilization rate for school facilities is calculated by adding the estimated enrollment from proposed residential projects in the schools’ Study Area to Statistical Forecasting’s projected enrollment, and then comparing that number with projected school capacity. Charter school enrollment is not included in enrollment projections. Statistical Forecasting’s enrollment projections for years 2018 through 2028, the most recent data currently available, were provided by NYCDOP. These enrollment projections are based on broad demographic trends and do not explicitly account for discrete new residential projects planned for the Study Area. The estimated student population from the other new projects expected to be completed within the Study Area has been obtained from SCA’s Capital Planning Division and are added to the projected enrollment to ensure a more conservative prediction of future enrollment and utilization. In addition, new capacity from any new school projects identified in the NYCDOE Five-Year Capital Plan are included if construction has begun or if deemed appropriate to include in the analysis by the lead agency and the SCA.



- Project Site (Western Rail Yard)
- School District 2 Boundary
- School Subdistrict 3 Boundary
- Public School in the Study Area

0 2,000 FEET

Public Schools in the Study Area
Figure N-3

The effect of the new students introduced by the Overbuild on the capacity of schools within the Study Area is then evaluated. According to the *CEQR Technical Manual*, an adverse impact may occur if the Overbuild would result in both of the following conditions:

1. A utilization rate of the elementary and/or intermediate schools in the subdistrict Study Area that is equal to or greater than 100 percent in the With Action scenario; and
2. An increase of 5 percentage points or more in the collective utilization rate between the No Action and With Action scenarios.

It should be noted that the 2009 SEQRA/CEQR FEIS identified mitigation (i.e., proposed school on-site) for the Overbuild's impact to elementary schools. The Restrictive Declaration (RD) included provisions for the Overbuild Developer to work with the SCA upon completion of a threshold number of residential units in order to pursue action on the new school in the early phase of build-out of the Overbuild.

N.3.1.11.1.1 *Existing Conditions*

As shown in **Table N-31**, seven elementary schools serve Subdistrict 3/CSD 2. According to NYCDOE's 2018–2019 school year enrollment figures, elementary schools in the subdistrict have a total enrollment of 3,190 students and are currently operating at 95 percent utilization, with a surplus of 183 seats.

As shown in **Table N-31**, five intermediate schools serve Subdistrict 3/CSD 30. Total enrollment at these intermediate schools is 1,216 students, or 92 percent of capacity, with a surplus of 102 seats.

Table N-31
Public Schools Serving the Study Area
Enrollment and Capacity Data, 2018–2019 School Year

Map No.	Name	Address	Enrollment	Capacity	Available Seats	Utilization %
Elementary Schools						
Subdistrict 3 of CSD 2						
1	P.S. 011 William T. Harris	320 West 21st Street	888	801	-87	111
2	P.S. 033 Chelsea Prep	281 Ninth Avenue	632	576	-56	110
3	P.S. 051 Elias Howe	525 West 44th Street	481	501	20	96
4	P.S. 111 Adolph S. Ochs	440 West 53rd Street	413	718	305	57
5	P.S. 212 / I.S. 17 Midtown West	328 West 48th Street	363	314	-49	116
6	Sixth Avenue Elementary School	64 West 17th Street	339	387	48	88
7	Ballet Tech, NYC Public School for Dance	890 Broadway	74	76	2	97
Subdistrict 3 of CSD 30 Total			3,190	3,373	183	95
Intermediate Schools						
Subdistrict 3 of CSD 2						
8	The Clinton School	10 East 15th Street	294	293	-1	100
9	I.S. 70 – New York City Lab Middle School for Collaborative Studies	333 West 17th Street	563	635	72	89
10	I.S. 17 / Professional Performing Arts High School	328 West 48th Street	123	118	-5	104
11	Quest to Learn – Bayard Rustin Educational Comp.	351 West 18th Street	167	207	40	81
12	Ballet Tech, NYC Public School for Dance	890 Broadway	69	70	1	99
Subdistrict 3 of CSD 30 Total			1,216	1,323	107	92
Note: See Figure N-3.						
Source: NYCDOE <i>Enrollment/Capacity/Utilization for the 2018–2019 School Year.</i>						

N.3.1.11.1.2 *Future without the Overbuild*

The latest available enrollment projections for Subdistrict 3/CSD 2 were used to form the baseline enrollment, shown in **Table N-32** in the column titled “Projected Enrollment.” This data projects elementary and intermediate enrollment through 2028. Since the Preferred Alternative’s analysis year (2030) is beyond 2028, the 2028 projections are used as a baseline. The students projected to be introduced by planned projects are added to this baseline projected enrollment using SCA student numbers for Subdistrict 3/CSD 2 (derived from the SCA’s *Projected New Housing Starts*), as shown in the column titled “Students Introduced by Planned Residential Development” in **Table N-32**.

Table N-32
Utilization in CSD 2/Subdistrict 3

Study Area	Projected Enrollment ¹	Students Introduced by Planned Residential Development	Total Future Enrollment	Capacity ²	Available Seats	Utilization %
Elementary Schools						
Subdistrict 3 of CSD 2	3,650	370	4,020	3,373	-647	119
Intermediate Schools						
Subdistrict 3 of CSD 2	945	30	975	1,323	348	74
Notes:						
¹ 2028 enrollment projections were used, the latest year available. Elementary and intermediate school enrollment in each subdistrict Study Area was calculated by applying SCA supplied percentages for each subdistrict to the relevant district enrollment projections.						
Sources:						
<i>Enrollment Projections 2018 to 2028 New York City Public Schools by Statistical Forecasting; NYCDOE, Utilization Profiles: Enrollment/Capacity/Utilization 2018–2019 School Year; NYCDOE 2020–2024 Proposed Five-Year Capital Plan; SCA.</i>						

Table N-32 shows that the total future Study Area enrollment is projected to be 4,020 elementary students and 975 intermediate students.

According to the *CEQR Technical Manual* methodologies, new capacity from new school projects identified in the NYCDOE Five-Year Capital Plan are included if construction has begun or if deemed appropriate to include in the analysis by the lead agency and the SCA. According to NYCDOE's *2020–2024 Proposed Five-Year Capital Plan*, there is one change that will add new school capacity anticipated for Subdistrict 3/CSD 30. A new school is proposed for the Western Rail Yard Site that would add 420 elementary and 330 intermediate school seats. However, this school is contingent on the Overbuild being constructed, and is therefore analyzed as an indirect effect of the Preferred Alternative.

In addition, according to NYCDOE's Panel for Educational Policy, there are no planned changes in utilization in existing schools, aside from the proposed re-siting and temporary co-location of City Knoll Middle School (02M933) with P.S. 111 Adolph S. Ochs (02M111) in Building M111 for three years beginning in the 2019–2020 school year.

As shown in **Table N-32**, elementary schools in the subdistrict Study Area would operate over capacity (119 percent utilization) with a deficit of 647 seats in the No Action Alternative. As shown in **Table N-32**, intermediate schools in the subdistrict would operate well under capacity (74 percent utilization) with a surplus of 348 seats.

N.3.1.11.1.3 *Future with the Overbuild*

According to the multipliers contained in the *CEQR Technical Manual*, with an incremental increase in DUs of 4,000, the Overbuild would introduce approximately 150 elementary students and 42 intermediate students to Subdistrict 3/CSD 2 (see **Table N-33**).

As noted above, an adverse impact may occur if a project would result in both of the following conditions: (1) a utilization rate of the elementary or intermediate schools in the subdistrict Study Area that is equal to or greater than 100 percent in the With Action scenario; and (2) an increase of 5 percentage points or more in the collective utilization rate between the No Action and the With Action conditions.

Table N-33
With Overbuild Condition—Utilization in CSD 2/Subdistrict 3
(With Proposed School)

Study Area	Enrollment	Students Introduced by the Overbuild	Total with Overbuild Enrollment	Capacity	Available Seats	Utilization %	Percentage Point Change in Utilization
Elementary Schools							
Subdistrict 3 of CSD 2	4,020	150	4,170	3,793	-377	110	-9.24
Intermediate Schools							
Subdistrict 3 of CSD 2	975	42	1,017	1,653	636	62	-12.18
Sources: <i>Enrollment Projections 2018 to 2028 New York City Public Schools by Statistical Forecasting; NYCDOE, Utilization Profiles: Enrollment/Capacity/Utilization 2018–2019 School Year; NYCDOE 2020–2024 Proposed Five-Year Capital Plan; SCA.</i>							

With the Overbuild, the total elementary school enrollment of Subdistrict 3/CSD 2 would increase to 4,170; accounting for the proposed new school that is part of the Overbuild’s program, capacity would increase to 3,793 seats. Therefore, elementary schools would operate at 110 percent utilization with a deficit of 377 seats (see **Table N-33**). Elementary school utilization would decrease by 9.24 percentage points with the Overbuild. Since this would be below the 5-percentage point increase threshold used in the *CEQR Technical Manual* to determine an adverse impact, the Overbuild would not result in an adverse impact on elementary schools in the Study Area and therefore would not result in an indirect adverse impact of the Preferred Alternative.

With the Overbuild, the total intermediate school enrollment of Subdistrict 3/CSD 2 would increase to 1,017; accounting for the proposed new school, capacity would increase to 1,653 seats. Therefore, elementary schools would operate at 62 percent utilization with a surplus of 636 seats (see **Table N-33**). With the Overbuild, intermediate school utilization would decrease by 12.18 percentage points. Since this would be below the 5-percentage point increase threshold used in the *CEQR Technical Manual* to determine an adverse impact, the Overbuild would not result in an adverse impact on intermediate schools in the Study Area and therefore would not result in an indirect adverse impact of the Preferred Alternative.

N.3.1.11.2 *Potential Indirect Effects on Public Libraries*

According to the *CEQR Technical Manual*, a libraries analysis should focus on branch libraries and not on the major research or specialty libraries that may fall within a study area. Service areas for neighborhood branch libraries are based on the distance that residents would travel to use library services, typically not more than ¾-mile (the library’s catchment area). This libraries analysis compares the population generated by the Overbuild with the catchment area population of libraries available within an approximately ¾-mile area around the Muhlenberg Library, which is the closest branch library to the Project Site.

To determine the existing population of the library’s catchment area, 2014–2018 ACS 5-Year Estimates data were assembled for all census tracts that fall primarily within ¾-mile of the library. The catchment area population was estimated by multiplying the number of new DUs in projects located within the ¾-mile catchment area that are expected to be complete by 2030 by an average household size of 1.7 persons (the average household size for Manhattan Community Districts 4 and 5 according to 2014–2018 ACS data). The catchment area population with the Overbuild was estimated by adding the anticipated population that would result from the Overbuild.

New population without and with the Overbuild were added to the existing catchment area population. According to the *CEQR Technical Manual*, if a project would increase the library's catchment area population by 5 percent or more, and this increase would impair the delivery of library services in a study area, a significant impact could occur.

L.1.1.1.1 *Existing Conditions*

The Study Area is served by the Manhattan Library (ML) system, also known as the New York Public Library (NYPL). Libraries within the NYPL system provide free and open access to books, periodicals, electronic resources, and non-print materials as well as reference, career services, Internet access, and educational, cultural and recreational programming for adults, young adults, and children.

The Overbuild falls within the area of one library location (see **Figure N-4**). The Muhlenberg Library branch is located at 209 West 23rd Street. The Muhlenberg Library branch features computers, workstations with free internet access, printers, children's areas, and a meeting room for programs and community events. The branch serves a catchment area population of 114,522 with approximately 69,673 holdings, resulting in a ratio of 0.61 holdings per person as shown in **Table N-34**. Users of the Muhlenberg Library branch can request a volume from any of the other libraries in the NYPL system through inter-library loan.

**Table N-34
Public Libraries Serving the Overbuild**

Library Name ¹	Address	Holdings ²	Catchment Area Population ³	Holdings per Resident
Muhlenberg Library	209 West 23rd Street	69,673	114,522	0.61

Notes:
¹ See **Figure N-4**.
² Holdings include books, CD-ROMs, DVDs, and videotapes.
³ 2014–2018 American Community Survey 5-Year Estimates for census tracts primarily within the library's ¼-mile catchment area (Census Tracts 99, 50, 63, 111, 71, 68, 74, 77, 52, 109, 101, 56, 95, 81, 54, 83, 76, 97, 103, 58, 87, 89, 93, and 91)
Sources:
 NYPL (2014); 2014–2018 American Community Survey 5-Year Estimates; NYCDPC Selected Facilities and Program Sites.

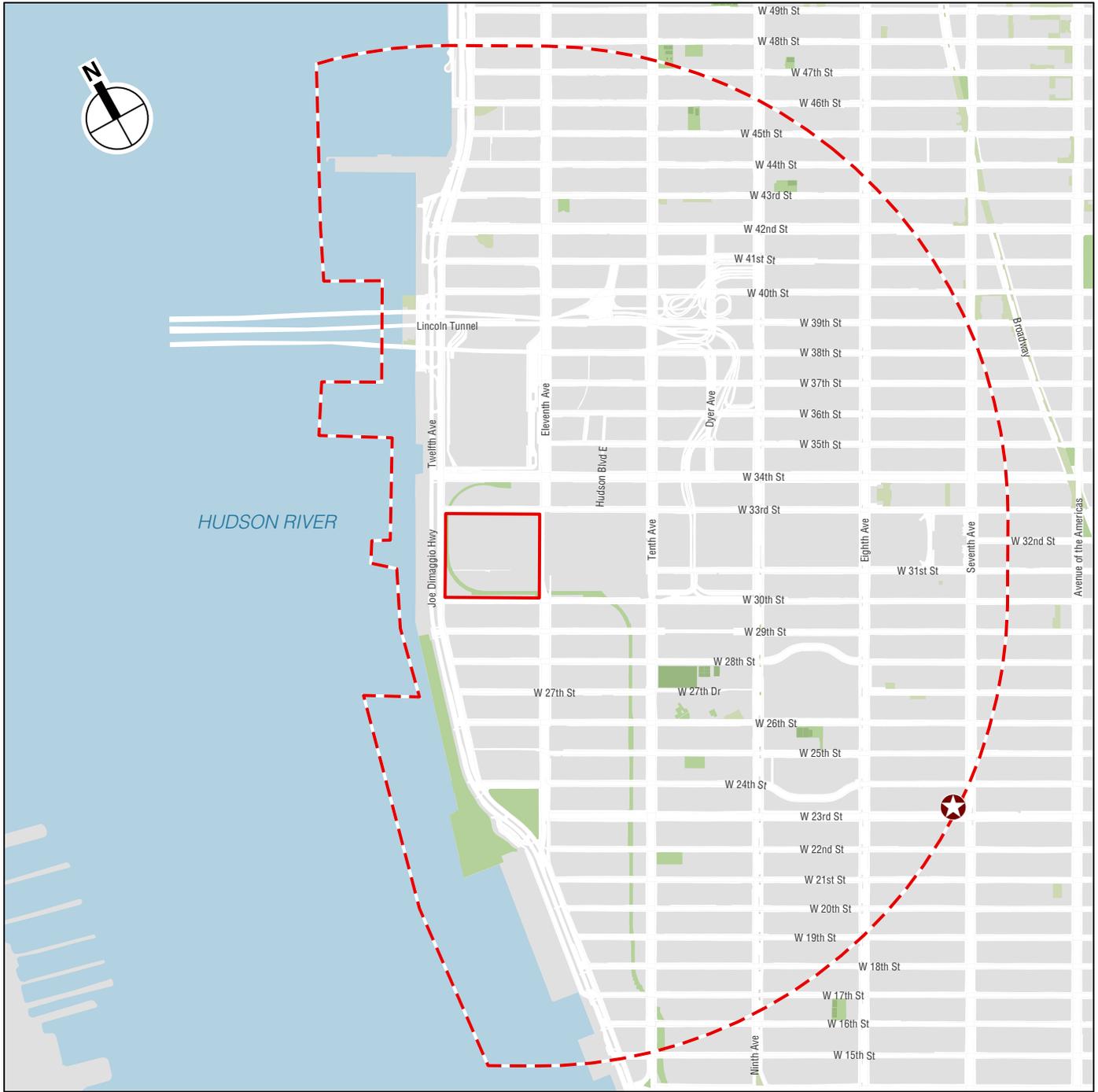
N.3.1.11.2.1 *Future Conditions*

By 2030, the catchment area population of the library will increase as a result of new development projects completed by 2030. Approximately 7,030 new residents will be added to the Muhlenberg Library branch catchment area, increasing its catchment area population to 121,552. The holdings-per-resident ratio will decrease to 0.57 in the branch catchment area (see **Table N-35**).

**Table N-35
Catchment Area Population in 2030**

Library Name	Existing Catchment Area Population	New Residents ¹	New Catchment Area Population	Holdings Total	New Holdings per Resident
Muhlenberg Library	114,522	7,030	121,552	69,673	0.57

Note:
¹ This number was calculated by multiplying the number of planned No Action developments (4,135 DUs) by the Average Household Size (1.7) for Manhattan Community Districts 4 and 5 according to 2014–2018 ACS Data.
Sources:
 NYPL (2014); 2014–2018 American Community Survey (ACS) 5-year Estimates; NYCDPC Selected Facilities and Program Sites.



-  Project Site (Western Rail Yard)
-  Study Area (3/4-mile perimeter)
-  Muhlenberg Library

0 2,000 FEET



N.3.1.11.2.2 *Future with the Overbuild*

According to the *CEQR Technical Manual*, if a project increases a study area population by 5 percent or more as compared to without a proposed action, this increase may impair the delivery of library services in a study area, and an adverse impact could occur.

The Overbuild would result in an increment of approximately 4,000 DUs compared to a scenario without the Overbuild. Using an average household size of 1.7 persons, the Overbuild would result in an increment of approximately 6,800 residents.

With this additional population, the Muhlenberg Library branch would serve 128,352 residents, which represents a population increase of 5.59 percent. The holdings-per-resident ratio for the Muhlenberg Library branch would decrease from 0.57 to 0.54 with the Overbuild (see **Table N-36**).

Table N-36
With Overbuild Scenario: Catchment Area Population

Library Name	Catchment Area Population Without the Overbuild	Population Increase due to the Overbuild	New Catchment Area Population With the Overbuild Scenario	Population Increase %	New Holdings per Resident
Muhlenberg Library	121,552	6,800	128,352	5.59	0.54

Sources:
NYPL (2014); 2014–2018 American Community Survey 5-Year Estimates; NYCDPC Selected Facilities and Program Sites.

Although this is greater than the five-percent change threshold, this change would not impair the delivery of library services within the Study Area. Residents of the Muhlenberg Library branch catchment area would have access to the entire NYPL through the inter-library loan system and could have volumes delivered directly to their nearest library branch. Residents would also have access to libraries near their place of work. Therefore, there would not be an adverse impact on library services in the Study Area as a result of the Overbuild and therefore would not result in an indirect adverse impact of the Preferred Alternative.

N.3.1.11.3 *Potential Indirect Effects on Publicly Funded Child Care Centers*

The New York City Administration for Children’s Services (NYCACS) provides subsidized child care in center-based group child care, family-based child care, informal child care, and Head Start programs. Publicly funded child care services are available for income-eligible children through the age of 12. In order for a family to receive subsidized child care services, the family must meet specific financial and social eligibility criteria that are determined by federal, state, and local regulations. In general, children in families that have incomes at or below 200 percent of the Federal Poverty Level (FPL), depending on family size, are financially eligible, although in some cases eligibility can go up to 275 percent FPL. NYCACS has also noted that 60 percent of the population utilizing subsidized child care services are in receipt of Cash Assistance and have incomes below 100 percent FPL. To receive subsidized child care services, a family also must have an approved “reason for care,” such as involvement in a child welfare case or participation in a “welfare-to-work” program. Head Start is a federally funded child care program that provides children with half-day or full-day early childhood education. Program eligibility is limited to families with incomes at 130 percent or less of the FPL.

As described in the *CEQR Technical Manual*, the City’s affordable housing market is fixed to the AMI rather than FPL. Since family incomes at or below 200 percent FPL fall under 80 percent AMI, for the purposes of a CEQR analysis, the number of DUs expected to be subsidized and targeted for incomes of 80 percent AMI or below provides a conservative estimate of the number of DUs with children that are eligible for publicly funded child care services.

Most children are served through enrollment in contracted Early Learn programs or by vouchers for private and non-profit organizations that operate child care programs throughout the City. Registered or licensed providers can offer family-based child care in their homes. Informal child care can be provided by a relative or neighbor for no more than two children. Children aged 6 weeks through 13 years old can be cared for either in group child care centers licensed by the New York City Department of Health and Mental Hygiene (DOHMH) or in homes of registered child care providers. NYCACS also issues vouchers to eligible families, which may be used by parents to pay for child care from any legal child care provider in the City.

Consistent with the methodologies of the *CEQR Technical Manual*, this analysis of child care centers focuses on services for children under age 6, as older eligible children are expected to be in school for most of the day. Publicly funded child care centers, under the auspices of the Early Care and Education (ECE) within NYCACS, provide care for the children of income-eligible households. Space for one child in such child care centers is termed a “slot.” These slots may be in group child care or Head Start centers, or they may be in the form of family-based child care in which up to 16 children are placed under the care of a licensed provider and an assistant in a home setting.

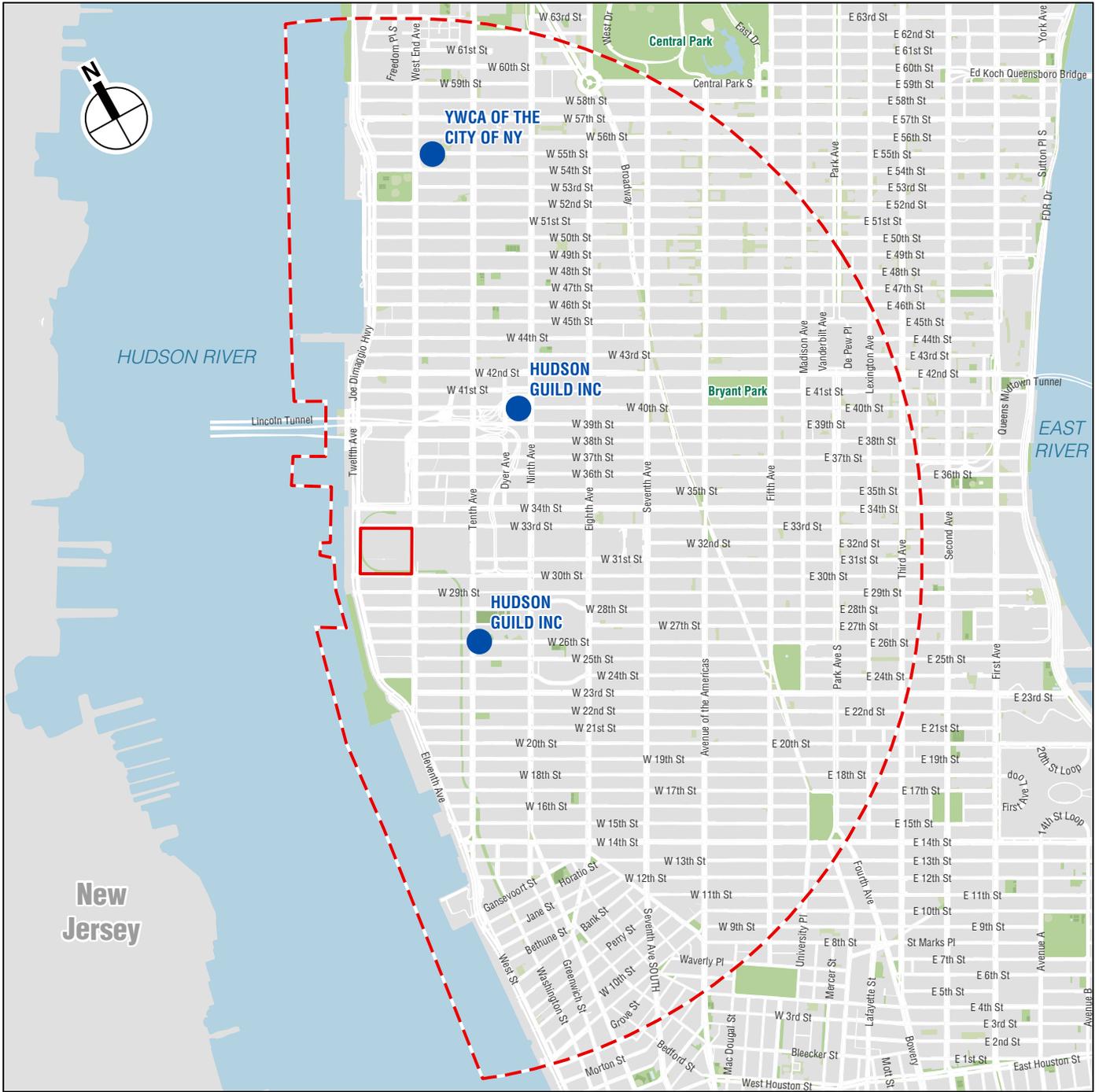
Since there are no locational requirements for enrollment in child care facilities, and some parents or guardians choose a child care center close to their employment rather than their residence, the service areas of these facilities can be quite large and not subject to strict delineation to identify a Child Care Study Area. However, according to the *CEQR Technical Manual* methodology for child care analyses, the locations of publicly funded group child care facilities within approximately 1.5 miles of a project site should be shown, reflecting the fact that the facilities closest to a project site are more likely to be subject to increased demand from new residents introduced by an action. Therefore, the Child Care Study Area for the analysis of child care centers is the area within 1.5 miles of the Project Site. As shown on **Figure N-5**, the 1.5-mile Child Care Study Area covers Manhattan. Current enrollment data for the child care and Head Start facilities closest to the Project Site were gathered from NYCACS.

Child care enrollment was estimated by multiplying the number of new low- and low/moderate-income (i.e., affordable, non-senior) DUs expected in the 1.5-mile study area by the CEQR multipliers for estimating the number of children under age 6 eligible for publicly funded child care services. For Manhattan, the multiplier estimates 0.115 public child care-eligible children under age 6 per low- and low/moderate-income DUs. As noted above, the CEQR analysis focuses on services for children under age 6 because eligible children aged 6 to 12 are expected to be in school for most of the day.

The child care-eligible population introduced by the Overbuild was also estimated using the *CEQR Technical Manual* child care multipliers. The population of public child care-eligible children under age 6 was then added to the child care enrollment calculation. According to the *CEQR Technical Manual*, an adverse impact on publicly funded child care may result if there would be a demand for slots greater than the remaining capacity of child care facilities (i.e., more than 100 percent utilization), and if a proposed action would generate demand constituting an increase of 5 percentage points or more of the collective capacity of the child care facilities serving a study area.

N.3.1.11.3.1 *Existing Conditions*

There are three publicly funded child care facilities within the 1.5-mile Study Area, all in Manhattan (see **Figure N-5**). As shown in **Table N-37**, these child care centers have a total capacity of 110 slots and an enrollment of 135 children with 25 available slots (81.5 percent utilization).



- Project Site (Western Rail Yard)
- Study Area (1.5-mile perimeter)
- Child Care Facility

0 3,000 FEET

Child Care Facilities in the Study Area
Figure N-5

Table N-37
Publicly Funded Child Care Facilities Serving the Study Area

Map No.	Contractor Name	Address	Enrollment	Capacity	Available Slots	Utilization Rate %
1	Hudson Guild Inc.	459 West 26th Street	56	73	17	76.7
2	Hudson Guild Inc.	410 West 40th Street	11	12	1	91.7
3	YWCA of the City of NY	538 West 55th Street	43	50	7	86.0
Total			110	135	25	81.5

Note: See Figure N-5.
Source: NYCACS, October 2020.

N.3.1.11.3.2 *Future without the Overbuild*

FRA identified planned or proposed development projects in the child care study area (1.5 miles from the Project Site) that will include affordable DUs utilizing data provided by the NYCHPD. These projects are summarized on **Table N-38**.

As shown on **Table N-38**, these projects will introduce approximately 746 new affordable DUs by the 2030 build year. Based on the *CEQR Technical Manual* generation rates for estimating the number of children eligible for publicly funded day care, this amount of development would introduce approximately 86 new children under the age of 6 who would be eligible for publicly funded child care programs.

Based on the projected increase in demand for child care facilities, the number of available slots would markedly decrease. As described above, there are currently 25 available slots and a utilization rate of 81.5 percent. When the estimated 86 children under age 6 introduced by planned development projects are added to this total, assuming no addition of capacity to accommodate the additional eligible children, child care facilities in the Study Area would operate with a deficit of 61 slots (a 145.2 percent utilization rate).

Table N-38
Affordable Housing Projects in the Study Area

Project Name/Address	Project Description/Program	Affordable Dwelling Units ¹
400 West 61st Street	All Residential	156
675 West 59th Street		64
663 West 59th Street		49
211 West 28th Street		37
225 West 28th Street		35
39 West 23rd Street		2
601 West 29th Street		234
371 Ninth Avenue		169
Total		746

Notes:
¹ Number of affordable dwelling units identified on NYCHPD Housing New York map.
Source:
NYCHPD Housing New York Map

N.3.1.11.3.3 *Future with the Overbuild*

The Overbuild currently assumes 324 affordable units would be available to households with incomes at or below 80 percent AMI. Based on the *CEQR Technical Manual* child care multipliers, the development of 324 affordable units would result in approximately 37 children under the age of 6 who would be eligible for publicly funded child care programs.

With the addition of these children, enrollment at child care facilities in the Study Area would increase to 233 children, compared to a capacity of 135 slots with a deficit of 98 slots (see **Table N-39**). This demand would represent 172.6 percent of the existing facilities' capacity, which represents an increase in the utilization rate of 27.4 percentage points.

Table N-39
Estimated Child Care Facility Enrollment, Capacity, and Utilization

	Enrollment	Capacity	Available Slots	Utilization Rate %	Percentage Point Change in Utilization
Without the Overbuild	196	135	-61	145.2	N/A
With the Overbuild	233	135	-98	172.6	27.4

Sources:
NYCACS, October 2020; NYCHPD

As noted above, the *CEQR Technical Manual* guidelines indicate an adverse impact on publicly funded child care services could result when both of the following criteria are met: (1) a demand for slots greater than the remaining capacity of child care facilities; and (2) an increase in demand of 5 percentage points of the study area capacity. With the Overbuild, child care facilities in the Study Area would operate over capacity and the increase of 27.4 percentage points in the utilization rate (demand to existing capacity ratio) would exceed 5 percentage points. Therefore, the Overbuild would result in an adverse child care impact. To increase this ratio by less than 5 percentage points, the number of affordable DUs introduced by the Overbuild would need to be reduced to 56, which would generate 6 children eligible for public child care services. With the assumption of 324 affordable units, the Overbuild would generate 37 eligible children, a difference of 31 child care slots above the number of slots associated with an increase in utilization in the Study Area of less than five percent.

This expected increase in demand could be offset by a number of factors. Private child care facilities and child care centers outside of the Study Area are not included in this analysis. Some of the increased child care demand would likely be offset by parents who choose to take their children to child care centers outside of the Study Area (e.g., closer to work). Some of the Family Day Care Networks serve children residing in the Study Area and could potentially absorb some of the demand. This new demand may also be considered in future Request for Proposal planning for contracted services.

As indicated in the 2009 SEQRA/CEQR FEIS, new capacity could potentially be developed as part of NYCACS' public-private partnership initiatives. As partial mitigation for this impact, NYCACS will monitor the demand and need for additional capacity and implement change to the extent practicable. The RD will require the Overbuild Developer to offer NYCACS 10,000 square feet of space for use as a day care facility, at a rate affordable to NYCACS providers, in the event that NYCACS determines that development of the Overbuild would result in a need for additional day care capacity. In the event NYCACS declines the offer of space, NYCACS may request implementation of alternative measures to make program or physical improvements that would support additional day care capacity. The Overbuild Developer would consider such alternative measures, when identified. With the above measures in place, the Preferred Alternative would not indirectly result in an adverse impact to child care services.

N.3.1.11.4 Police Services

The *CEQR Technical Manual* threshold for an analysis of police services is if a proposed action would affect the physical operation of, or access to and from, a facility or where a proposed action would create a sizeable new neighborhood where none existed before. As detailed in Chapter 17, “Socioeconomics,” the Preferred Alternative would not directly displace any police facilities and, therefore, would not adversely affect the physical operation of, or access to and from, such facilities. With respect to potential indirect effects, the Preferred Alternative would not create a sizeable new neighborhood as defined by the *CEQR Technical Manual*. Therefore, there would be no adverse indirect impact on police services. Following *CEQR Technical Manual* guidelines, this section identifies and describes health care facilities within approximately ½-mile of the Project Site.

As shown on **Figure N-6** and in **Table N-40**, the Project Site is officially served by the 10th Precinct of the New York City Police Department (NYPD), which is located at 230 West 20th Street. The 10th Precinct serves an area of approximately 0.93 square miles generally bounded by West 43rd Street on the north, Ninth and Seventh Avenues on the east, West 14th Street on the south, and the Hudson River on the west. It serves the Chelsea residential neighborhood; the Hudson Yards district; notable large attractions, such as Chelsea Piers and the Jacob K. Javits Convention Center; and major transportation routes, such as the Lincoln Tunnel and West Side Highway.

Table N-40
Police Facility Serving the Project Site

Map No.	Police Facility	Address
P1	10th Precinct	230 West 20th Street

Note: See **Figure N-6**.

N.3.1.11.5 Fire Protection and Emergency Services

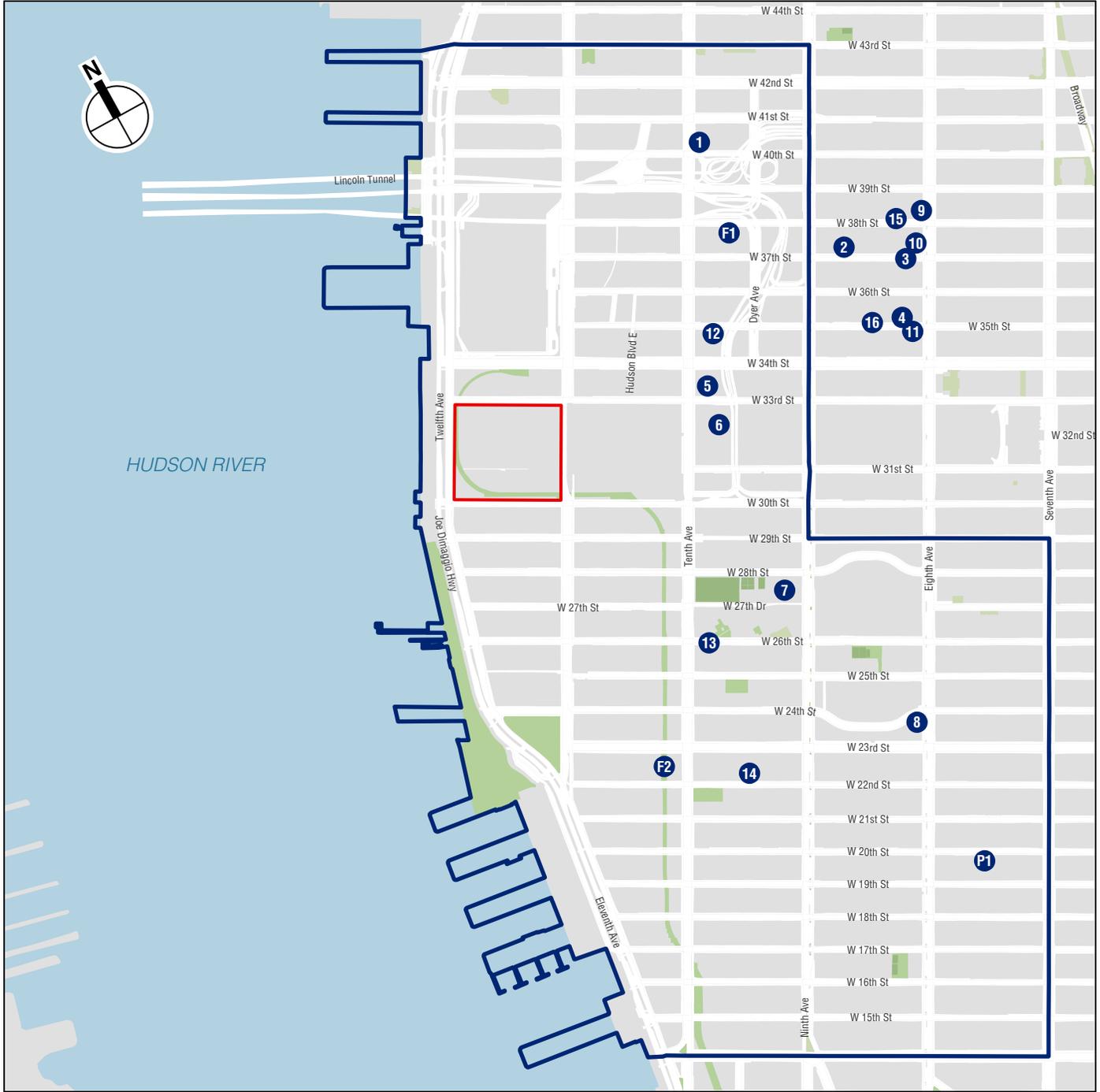
The *CEQR Technical Manual* threshold for an analysis of fire protection and emergency services is if a proposed action would affect the physical operation of, or access to and from, a facility or where a proposed project would create a sizeable new neighborhood where none existed before. As detailed in Chapter 17, “Socioeconomics,” the Preferred Alternative would not directly displace any fire protection and emergency service facilities and, therefore, would not adversely affect the physical operation of, or access to and from, such facilities. With respect to potential indirect effects, the Preferred Alternative would not create a sizeable new neighborhood as defined by the *CEQR Technical Manual*. Therefore, there would be no adverse indirect impact on fire protection and emergency services. Following the *CEQR Technical Manual* guidelines, this section identifies and describes health care facilities within approximately ½-mile of the Project Site.

Citywide, New York City Fire Department (FDNY) engine companies carry hoses; ladder companies provide search, rescue, and building ventilation functions; and rescue companies respond to fires or emergencies. In addition, FDNY operates the City’s Emergency Medical Services (EMS) system. As shown on **Figure N-6** and in **Table N-41**, the Project Site is served by Engine 34/Ladder 21, located at 440 West 38th Street and The High Line/EMS Station 7, located at 512 West 23rd Street.

Table N-41
Fire and EMS Facilities Serving the Project Site

Map No.	Fire/EMS Facility	Address
F1	Engine 34/Ladder 21	440 West 38th Street
F2	The High Line/EMS Station 7	512 West 23rd Street

Note: See **Figure N-6**.



- Project Site (Western Rail Yard)
- New York Police Department 10th Precinct
- 1 Police, Fire, EMS, and Health Care Facility in the Study Area

Police, Fire, EMS, and Health Care Facilities in the Study Area

Units responding to a fire are not limited to ones closest to it. Typically, a total of three engine companies and two ladder companies respond to each call. Each FDNY squad is capable of operating as an engine, ladder, or rescue company, making them versatile for incident commanders. Each squad is also part of the FDNY HazMat Response Group and has a HazMat Tech Unit within each company. FDNY can call on units in other parts of the City as needed.

There are two types of ambulances in the City—911 providers and those providing inter-facility transport. Municipal FDNY and hospital-based ambulances are the sole providers of 911 service and operate on that system via contract with EMS (inter-facility transports are carried out by private contractors and do not participate in the 911 system). All hospital-based ambulances that operate in the 911 system do so by contractual agreement with the EMS. All ambulances in the 911 system are dispatched by FDNY under the same computer-based system, regardless of hospital affiliation. The dispatch system divides the City into geographic areas, based loosely on NYPD precinct sectors, with a number of areas located within each precinct, and assigns the nearest unit to an emergency call based on its current location. All units are assigned a permanent cross-street location where they await a service call; units return to this location once service is complete. These locations are determined by FDNY based on historical call volumes by location and time of day.

N.3.1.11.6 *Health Care Facilities*

The *CEQR Technical Manual* threshold for an analysis of outpatient health care facilities is if a proposed action would affect the physical operation of, or access to and from, a facility or where a proposed action would create a sizeable new neighborhood where none existed before. As detailed in Chapter 17, “Socioeconomics,” the Preferred Alternative would not directly displace any outpatient health care facilities and, therefore, would not adversely affect the physical operation of, or access to and from, such facilities. With respect to potential indirect effects, the Preferred Alternative would not create a sizeable new neighborhood as defined by the *CEQR Technical Manual*. Therefore, there would be no adverse indirect impact on health care facilities. Following *CEQR Technical Manual* guidelines, this section identifies and describes health care facilities within approximately ½-mile of the Project Site.

Table N-42 includes an inventory of approximately 16 health care facilities located within the ½-mile Study Area, as inventoried in NYCDCP’s *Selected Facilities and Program Sites in New York City, 2020 Edition* (see **Figure N-6**). These health care facilities offer general medical care, mental health services, and treatment centers.

Table N-42
Other Health Care Facilities Serving the Project Site

Map No.	Facility Name	Address	Facility Type
1	Covenant House	460 West 41st Street	Diagnostic and Treatment Center
2	Sidney R. Baer, Jr. Health Center	347 West 37th Street	Diagnostic and Treatment Center
3	Housing Works Inc. HIV Testing Services	301 West 37th Street	Diagnostic and Treatment Center
4	West Midtown Medical Group	311 West 35th Street	Diagnostic and Treatment Center
5	Premier Healthcare D & T Center	460 West 34th Street	Diagnostic and Treatment Center
6	Gay Men's Health Crisis Inc. HIV Testing Services	446 West 33rd Street	Diagnostic and Treatment Center
7	Lower Manhattan Health District	303 Ninth Avenue	Diagnostic and Treatment Center
8	BIMC Geriatrics Senior Health Center	275 Eighth Avenue	Hospital Extension Clinic
9	Urban Pathways Inc.	575 Eighth Avenue	Mental Health Treatment
10	ACMH – HH Nonmed CM	545 Eighth Avenue	Mental Health Treatment
11	National Alliance for the Mentally Ill of New York City Inc.	505 Eighth Avenue	Mental Health Treatment
12	On-Site Rehabilitation	454 West 35th Street	Mental Health Treatment
13	Hudson Guild Paula B. Balsler Counseling Service	441 West 26th Street	Mental Health Treatment
14	WSFHH NYC DMH NY/NY I-Fleming	443 West 22nd Street	Mental Health Treatment
15	GMHC OP	307 West 38th Street	Chemical Dependency Outpatient Clinic
16	West Midtown Management Group OTP 1	331 West 35th Street	Chemical Dependency Outpatient Clinic

Note: See Figure N-6.

Source: NYCDCP, *Selected Facilities and Program Sites, 2020 Edition*

N.3.1.12 ELDERLY AND PERSONS WITH DISABILITIES

The Overbuild, which is an indirect consequence of the Preferred Alternative, would introduce an incremental population that would include elderly individuals as well as persons with disabilities. It would be speculative to project the proportion of the incremental population that would fall within one or both of these categories. However, as detailed in Chapter 17, "Socioeconomics," the Study Area does not contain a disproportionately large number of elderly or persons with disabilities, and the Preferred Alternative would not directly displace any facilities that serve these populations. The addition of elderly and persons with disabilities with the Overbuild is not expected to substantively affect the demographic composition of the Study Area, or adversely affect the mobility or availability of services for these populations. Therefore, the Preferred Alternative is not expected to substantively affect the demographic composition of the Study Area indirectly, or adversely affect the mobility or availability of services for these populations.

N.4 INDIRECT CONSTRUCTION IMPACTS OF THE PREFERRED ALTERNATIVE

Throughout this section, references to the construction of the Overbuild are included in the context of that development being a previously approved project (as analyzed in the 2009 SEQRA/CEQR FEIS) that would be an indirect consequence of the Preferred Alternative, with associated indirect construction effects.

N.4.1.1 *TRANSPORTATION*

The indirect construction effects of the Preferred Alternative would be related to the construction of the Overbuild. As established by the current construction phasing and sequencing plan for the Platform and Overbuild provided by the Project Sponsor, the peak indirect construction activities generated by the approved Overbuild occur in late 2025 into early 2026, about five years into the overall 10 year construction effort (see Section 20.2 for a more complete description of the construction and phasing plan). The MPT Plan to be implemented in coordination with NYCDOT during the construction period as described in Chapter 6, "Transportation," and would continue throughout the construction for the Overbuild.

The levels of daily construction workers and truck trips generated by construction activity anticipated during this peak construction period reach an estimated 1,207 daily construction works over two shifts and about 2010 daily truck trips. There would be an estimated 254 auto trips generated by construction workers. Using the same trip construction activity trip generation characteristics as with the proposed Platform construction (see Chapter 6, "Transportation"), this would yield peak 6 to 7 AM traffic demand of about 102 arriving auto trips and 53 truck arrivals and 53 truck departures. There would be no auto trips and about 11 trucks arriving and departing during the peak analysis morning, midday, and evening peak periods.

This is consistent with, but somewhat lower peak hour trip generation than, estimates were determined for the approved 2009 SEQRA/CEQR FEIS project. As established in the 2009 SEQRA/CEQR FEIS, there could be adverse impacts during the Overbuild's temporary construction period, and the approved Overbuild project includes mitigation commitments that the Overbuild Developer would carry forward and implement during the peak construction period. These measures would also be considered in the City's overall monitoring and mitigation program. These improvements would be similar to those described for the permanent operations condition of the approved Overbuild project, including signal timing modifications and lane channelization. The 2009 SEQRA/CEQR FEIS identified six intersection movements in the AM and Midday peak hours and seven movements in the PM peak hour that would remain unmitigated during the Overbuild construction period. These findings remain applicable to the 2030 completion of the Overbuild and reflect the indirect construction effects of the Preferred Alternative.

N.4.1.2 *AIR QUALITY, GREENHOUSE GAS EMISSIONS, AND RESILIENCE*

The indirect construction impacts of the Preferred Alternative would not have an adverse impact on air quality. The current construction duration, logistics, and activities for each of the Overbuild buildings are anticipated to be similar to those analyzed in the 2009 SEQRA/CEQR FEIS. In addition, consistent with the 2009 SEQRA/CEQR FEIS, the Overbuild Developer is expected to implement an emissions reduction program to minimize the air quality effects from construction of the Overbuild. These measures would include clean fuel, diesel equipment reduction, dust control measures, idling restriction, engine retrofits, and utilization of newer equipment that meets specific USEPA standards.

As discussed, the Overbuild Developer expects construction of Overbuild Sites 1 and 2 to overlap with the construction activities for the Preferred Alternative. Therefore, in order to determine if the current construction program would have the potential to cause significant adverse air quality impacts not identified in the 2009 SEQRA/CEQR FEIS, construction-related PM_{2.5} emissions were calculated for each calendar year when construction of the Preferred Alternative would overlap with the construction activities for the Overbuild. PM_{2.5} is 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. Based on this calculation, the Preferred Alternative would result in a maximum annual average emission rate of 0.2 tons of PM_{2.5} per year for the calendar year 2025, compared to 0.8 tons of PM_{2.5} for the peak construction year analyzed in the 2009 SEQRA/CEQR FEIS. Accordingly, since the 2009 SEQRA/CEQR FEIS concluded that no significant adverse air quality impacts would be expected at any sensitive receptor locations from the proposed construction activities of the Overbuild, it is not expected that the current construction program would result in any significant adverse air quality impacts from construction. Therefore, the indirect construction impacts of the Preferred Alternative would not have an adverse impact on air quality.

N.4.1.3 NOISE AND VIBRATION

The indirect construction impacts of the Preferred Alternative would not result in adverse impacts related to noise and vibration. Construction-related noise impacts can result from noise generated on the Overbuild by construction equipment operation, and from construction vehicles and delivery vehicles traveling to and from the site. The current construction duration, logistics, and activities for each of the Overbuild buildings are anticipated to be similar to those analyzed in the 2009 SEQRA/CEQR FEIS. Therefore, the results of the 2009 SEQRA/CEQR FEIS evaluation of potential worst-case construction noise conditions for the Overbuild are expected to represent expected impacts from construction of the Overbuild that would now occur later in time than the timeframe examined in the 2009 SEQRA/CEQR FEIS. The 2009 SEQRA/CEQR FEIS concluded that no significant adverse noise impacts would occur at any analysis location because of the construction of the Overbuild. This is because predicted noise levels would be below acceptable CEQR impact criteria. Construction operations and noise levels are also expected to comply with the New York City Construction Noise Regulations with respect to equipment noise emission levels.

A construction vibration assessment was performed in the 2009 SEQRA/CEQR FEIS for the existing elevated High Line historic rail structure. It was determined that the use of certain high-vibration-producing equipment within one foot of the High Line should be limited in order to minimize the potential of damage to the structure. Therefore, the Overbuild Developer would establish a CEPP, as is stipulated in the LOR executed among the coleads for the 2009 SEQRA/CEQR FEIS (MTA and CPC), the OPRHP, and the Overbuild Developer. The CEPP would meet the guidelines set forth in the NYCDOB's *TPPN #10/88*, concerning procedures for the avoidance of damage to adjacent historic structures from nearby construction, the *Protection Programs for Landmarked Buildings* guidance document of the LPC, and the National Park Service's *Preservation Tech Notes, Temporary Protection #3: Protecting a Historic Structure during Adjacent Construction*. As described in the 2009 SEQRA/CEQR FEIS, the CEPP would specify measures and construction procedures, such as vibration limits and monitoring that the Overbuild Developer would implement during construction. With these measures, the 2009 SEQRA/CEQR FEIS concluded that there would not be a significant adverse impact to the High Line because of construction of the Overbuild. Therefore, the indirect construction impacts of the Preferred Alternative would not have an adverse impact on the High Line.

N.4.1.4 CULTURAL RESOURCES

The NRT and the High Line, both of which were previously determined eligible for listing on the State and National Register of Historic Places, are located within 90 feet of Overbuild construction. To avoid the potential for damage to the NRT from vibration produced by caisson drilling, the caissons will be located outside of Amtrak's influence line exclusion zone, and as part of the permitting process, the foundation drawings would be submitted to Amtrak for review and confirmation of no potential impact from construction vibration. As part of the 2009 SEQRA/CEQR FEIS, a construction vibration assessment was performed for the historic High Line rail structure. As discussed in Section 20.3.2.4, it was determined that the use of certain high-vibration-producing equipment within one foot of the High Line should be limited in order to minimize the potential of damage to the structure. As described above, the LOR and the RD for the previously approved project require that a CEPP be developed in coordination with NYSHPO and LPC to protect the High Line from any potential construction-related adverse physical impacts, such as ground-borne construction-period vibrations, falling debris, and damage from heavy machinery. The CEPP would meet the guidelines set forth in the NYCDOB's *TPPN #10/88*, concerning procedures for the avoidance of damage to adjacent historic structures from nearby construction, the *Protection Programs for Landmarked Buildings* guidance document of the LPC, and the National Park Service's *Preservation Tech Notes, Temporary Protection #3: Protecting a Historic Structure during Adjacent Construction*. The CEPP would specify measures and construction procedures, such as vibration limits and monitoring that would be implemented during construction of the Overbuild. Construction procedures to protect the High Line would be developed and monitored by structural and foundation engineers. The CEPP also would empower the structural and foundation engineers to issue stop work orders to prevent damage to the High Line. With these measures, there would not be a significant adverse impact on the High Line due to construction of the Overbuild. No other historic properties are located within 90 feet of Overbuild construction. FRA has concluded that the potential construction and operational effects of the Preferred Alternative are: inadvertent effects to the NRT and High Line during construction of the Platform and Tunnel Encasement. FRA would include conditions as part of its environmental decision regarding the Preferred Alternative, i.e., in the ROD for the EIS in accordance with NEPA, and in any loan agreement to be negotiated between the Bureau and the Project Sponsor, to ensure that these potential effects to historic properties are not adverse. These conditions include requiring the Project Sponsor to develop a CEPP for the construction of the Platform and Tunnel Encasement in order to protect the NRT and High Line.

Therefore, the indirect construction impacts of the Preferred Alternative would not have an adverse impact on cultural resources.

N.4.1.5 PARKS AND RECREATION

The adopted findings by New York City as part of the 2009 SEQRA/CEQR FEIS project approvals are that construction of the Overbuild would not result in significant adverse impacts to parks and recreation areas. Portions of the open space associated with the Overbuild would be completed in advance of the full build-out of the Overbuild. This open space would be developed in areas surrounding completed buildings that are no longer needed for construction materials laydown or other construction purposes, and where the welfare of users of the open space would not be compromised by nearby construction activity. No lanes or sidewalks are expected to be closed in order to construct the open space associated with the Overbuild.

Temporary construction activities for the Overbuild would occur in proximity to the High Line and Hudson River Park, as well as the Hudson Yards Public Square and Garden and Bella Abzug Park and could be visible from these open spaces; however, the Overbuild construction would not be staged from or result in physical alterations to or occupation of any park or recreation area. Construction activities for the Overbuild would be noticeable to people on nearby portions of these parks—in particular the portion of the High Line located on the Project Site—and could be temporarily disruptive; however, in the future, in the same period while the Overbuild is under construction, extensive construction would also be occurring in the surrounding area for other projects.

These parks and recreation areas would likely experience increased levels of noise, and under dry and windy conditions during the early stages of construction, dust from demolition and excavation activities associated with construction of the Overbuild. These conditions would be temporary, and with implementation of noise and air quality control measures, are not anticipated to be significant and adverse. Any noise increases from Overbuild construction activities would affect only a small portion of the 1.5-mile-long High Line or the 4-mile long Hudson River Park at any one time, leaving the rest of these linear parks available for recreation without increased noise. In addition, the High Line and Hudson River Park both have active recreational uses that are not noise-sensitive, and therefore any increases in noise would not substantially affect the use of the park for active recreation during the period when the increased noise from construction would occur. These resources also are located in close proximity to the West 30th Street Heliport, which contributes to existing noise levels in the surrounding area. Construction of the Overbuild also would normally not occur on weekends, which is the time when the High Line and Hudson River Park have the greatest demand.

The existing concrete wall surrounding the Project Site along Twelfth Avenue would remain in the future with the Preferred Alternative; this wall, as well as the traffic and trees in the landscaped median along the avenue, would limit views from Hudson River Park to Overbuild construction activities within the Project Site. Other parks and recreation areas located farther from the Project Site would not be affected by visual changes or increases in noise or dust during construction of the Overbuild. It is possible that during the construction period for the Overbuild, construction workers may choose to use the parks and recreational areas in close proximity to the Project Site.

The LOR and the RD for the previously approved project require that a CEPP be developed in coordination with NYSHPO and LPC to protect the High Line from any potential construction-related adverse physical impacts, such as ground-borne construction-period vibrations, falling debris, and damage from heavy machinery.

Therefore, construction of the Overbuild would not have an adverse impact on parks and recreational areas as an indirect result of the Preferred Alternative.

N.4.1.6 *SOCIOECONOMICS*

The following section describes the indirect construction impacts of the Preferred Alternative on Socioeconomics.

N.4.1.6.1 *Indirect Residential Displacement*

As is typical with large construction projects, construction of the Overbuild would result in temporary disruptions in the surrounding area. However, such disruptions would not adversely affect the desirability of the Study Area as a residential neighborhood. The construction analysis in the 2009 SEQRA/CEQR FEIS found that construction activities associated with the Overbuild would not have any adverse impacts to socioeconomic conditions or neighborhood character within the Study Area. As the Overbuild program would remain within the framework of the already approved project, indirect construction impacts of the Preferred Alternative would not result in indirect residential displacement.

N.4.1.6.2 *Indirect Business Displacement*

As compared to other large construction sites in the Midtown Central Business District, there are relatively few businesses within immediate vicinity of the Project Site; they include paid parking facilities, the Jacob K. Javits Convention Center, and businesses and storefronts east of Eleventh Avenue that are part of Hudson Yards. Although sidewalk and lane closures are anticipated adjacent to the Project Site, at no time during the construction period would sidewalk or lanes be closed in front of any business. The construction activities associated with the Overbuild would not inhibit access to or affect the viability of businesses located in the vicinity of the Project Site, and therefore, indirect construction impacts of the Preferred Alternative are not expected to have any adverse impacts on these businesses. Positive effects are expected as construction of the Overbuild would bring construction workers to the areas surrounding the Project Site, workers who would patronize local eating and drinking establishments, convenience stores, neighborhood services, and other local businesses. Therefore, indirect beneficial construction impacts of the Preferred Alternative are expected.

N.4.1.6.3 *Adverse Effects on a Specific Industry*

Indirect construction impacts of the Preferred Alternative would not directly or indirectly displace businesses or businesses uses outside of the Project Site. Therefore, indirect construction impacts of the Preferred Alternative would not adversely affect any industries within or outside of the Study Area.

N.4.1.6.4 *Community Facilities and Services*

There are no community facilities within immediate proximity of the Project Site. Therefore, sidewalks and lane closures surrounding the Project Site would not impede access to community facilities. While construction activities would result in significant traffic impacts during the peak construction year, mitigation measures were identified that would mitigate, either in part or in whole, the adverse impacts. Therefore, access to and from community facilities, and the provision of police, fire, and emergency services, would not be significantly affected. In addition, emergency service vehicles can maneuver around and through congested areas because they are not bound by standard traffic controls. Therefore, indirect construction impacts of the Preferred Alternative would not have an adverse impact on community facilities and services.

N.4.1.6.5 *Elderly and Persons with Disabilities*

Construction activities would comply with all code requirements necessary to ensure a safe construction zone for workers and surrounding pedestrians, including elderly and persons with disabilities. In areas where temporary sidewalk closure is required, the sidewalk would be relocated to the curb lane and a barrier would be erected to separate motor vehicle traffic from pedestrian traffic. In areas where access to bordering lots is not needed—along segments of the streets and avenues bordering the Project Site—the sidewalk and/or curb lane may be closed. In such instances, pedestrians would be routed to the opposite side of the street at the nearest crosswalk. Sidewalk modification may include the construction of a protective shed over segments of sidewalk bordering construction sites. The width of any relocated or modified sidewalks would be at least five feet. Maintenance and Protection of Traffic (MPT) plans would be developed and submitted to NYCDOT. Such plan would provide diagrams of proposed temporary lane and sidewalk alterations, including the duration, and the width and length of affected segments. Provisions of the plans may include requirements for the stationing of flagmen, and may limit the hours of the day and/or days of the week when changes can be implemented. After NYCDOT has approved the MPT plans, the Overbuild Developer contractors would be responsible for maintaining the provisions of the plans. With such measures in place, the construction of the Overbuild would not result in adverse effects to the elderly or persons with disabilities as an indirect result of the Preferred Alternative.

N.5 CUMULATIVE IMPACTS OF THE PREFERRED ALTERNATIVE

No additional information related to FRA's analysis of the cumulative effects of the Preferred Alternative is contained in this appendix. All of the analysis of cumulative effects of the Preferred Alternative and the corresponding analysis results and conclusions is presented in Chapter 20, "Indirect and Cumulative Impacts." *