Chapter 20: Indirect, Cumulative, and Other Impacts

20.1 INTRODUCTION

This chapter presents the analysis the FRA conducted of the potential indirect effects and cumulative impacts of the Preferred Alternative. Indirect effects are commonly referred to as "induced growth" effects and are those that are "caused by an action and are later in time or farther removed in distance, but are still reasonably foreseeable" (40 CFR § 1508.8). For the Preferred Alternative, this includes the construction and operation of an as-of-right mixed-use development above the Platform and Tunnel Encasement (Overbuild). The 2009 SEQRA/CEQR FEIS comprehensively analyzed the Overbuild, which New York City subsequently approved. In this chapter, FRA summarizes and describes the program as set forth in the 2009 approvals and the environmental findings from the 2009 SEQR/CEQR FEIS. Similarly, this chapter looked at the findings of the 2013 FRA EA/FONSI and the 2014 SEA/FONSI for the Concrete Casing in the Hudson Yards to determine indirect and cumulative effects associated with the Tunnel Encasement component of the Preferred Alternative.

Cumulative impacts result from the incremental consequences of an action when added to other past and reasonably foreseeable future actions (40 CFR § 1508.7). The direct effects of an individual action may be negligible, but may contribute to a measurable environmental impact when considered cumulatively with other past and/or future projects. This chapter will identify and evaluate the potential for the Preferred Alternative to add to cumulative impacts on resources. Following the methodologies set forth in Chapter 18, "Indirect Effects and Cumulative Impacts," in **Appendix B**, "Methodology Report," FRA has analyzed the indirect effect and cumulative impacts of the Preferred Alternative for both construction and operation.

Section 20.3 provides a summary of the reasoning FRA used for the determination of identifying adverse or beneficial indirect impacts of the Preferred Alternative. **Appendix N** provides the documentation to support to the analyses of indirect impacts conducted resulting in the findings of this chapter. Section 20.4 provides a summary of the reasoning FRA used for the determination of identifying adverse or beneficial cumulative impacts of the Preferred Alternative.

An adverse impact can be defined as a negative impact on the resource category being analyzed. If measures to mitigate or reduce an impact have been committed to in the 2009 SEQRA/CEQR FEIS, 2013 FRA EA/FONSI and/or 2014 SEA/FONSI, they are noted in this chapter. A beneficial impact can be defined as a positive impact on the resource category being analyzed; these are also noted in the chapter.

In accordance with NEPA and the CEQ implementing regulations, this chapter of the EIS also includes FRA's analysis and description of any irreversible or irretrievable commitment of resources that would occur if the Preferred Alternative were to be constructed, and of the relationship between short-term uses of the environment and the maintenance and enhancement of long-term productivity.

20.2 AFFECTED ENVIRONMENT

As discussed in Chapter 4, "Analysis Framework," there are numerous planned and ongoing development and transportation projects in the Study Area. 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.

20.2.1 OVERBUILD CONSTRUCTION METHODS AND ACTIVITIES1

20.2.1.1 CONSTRUCTION SEQUENCING

With the Platform in place, some additional foundation forms would be installed and reinforced with steel, and concrete poured. Structural steel and concrete would then be erected forming the skeletal framework for the floors and walls. As the structural skeleton of each building rises, the tower crane and material/personnel hoists would be erected, with additional support sections installed for the crane and hoists. The tower crane would be used to lift the structural steel and other heavy building elements to the top of each rising building, while hoists are used to deliver workers, tools and supplies, and other lighter building elements.

As each building advances upwards, there would be simultaneous construction work several levels below consisting of the installation of mechanical, electrical, and plumbing systems. Furthermore, several levels below those systems, each building exterior would be attached to the skeleton. Once the exterior walls are installed and each building is watertight, the interior finishes are installed, including interior walls, plumbing and electrical fixtures, flooring, woodwork, and painting.

Construction activities for the Overbuild would typically occur between 7 AM and 3:30 PM, five days a week on weekdays. However, in order to complete certain critical tasks (e.g., finishing a concrete pour), the workday may occasionally be extended beyond normal work hours with added night shifts. Any such work that falls outside the construction timeframes allowed under the NYCNCC would require permits from the NYCDOB. Overbuild work would occur over approximately six years, with the construction of Site 1 and Site 2 (on the northernmost portion of the Project Site) expected to overlap with the construction activities for the Preferred Alternative. The anticipated completion date for each of the Overbuild is as follows:

- Site 1: 2025
- Site 2: 2027
- Site 3: 2028
- Site 4: 2026
- Site 5: 2029
- Site 6: 2027

[1] All information provided in this section is based on conceptual construction information developed by the Project Sponsor and incorporating the findings and commitments in the 2009 SEQRA/CEQR FEIS.

During construction, approximately 150 to 700 workers would be on site at a time for each of the Overbuild buildings, depending on the activities occurring. In addition, there would be up to approximately 20 to 90 trucks distributed over the workdays. The number of workers and truck trips would typically be in the lower range during the beginning stages of construction for any given building and would steadily increase as construction progresses.

20.3 INDIRECT IMPACTS OF THE PREFERRED ALTERNATIVE

Indirect effects may occur if a project changes the extent, pace, and/or location of development and if this change in turn affects environmental resources. In order to identify the indirect effects of the Preferred Alternative, FRA first reviewed the past environmental review documents relevant to the Project Site, including the 2009 SEQRA/CEQR FEIS, the 2013 FRA EA/FONSI, and the 2014 SEA/FONSI to see if the previous analysis was still applicable. This included review of the methodologies for each resource category discussed in this EIS, details related to previously analyzed program of the Overbuild, as well as the reported baseline conditions in the previous environmental review documents. If the previous environmental review documents were found to use outdated methodologies, cite considerably different baseline conditions, or considered different assumptions regarding the construction or operation of the Overbuild, FRA prepared updated impact evaluations for those resource categories, which include the following:

- Land Use, Land Planning, and Property
- Air Quality, Greenhouse Gas Emissions, and Resilience (Stationary)
- Utilities and Energy
- Socioeconomics

For all other resource categories, FRA re-evaluated the impact analyses and associated commitments from previous environmental review documents to still be applicable; therefore, updated impact evaluations were not prepared for the following resource categories:

- Transportation
- Air Quality, Greenhouse Gas Emissions, and Resilience (Mobile)
- Noise and Vibration
- Cultural Resources
- Parks and Recreation
- Aesthetics and Visual Contaminated Materials
- Soils and Geology
- Water and Natural Resources
- Coastal Zone Consistency
- Public Health
- Environmental Justice

20.3.1 INDIRECT OPERATIONAL IMPACTS OF THE PREFERRED ALTERNATIVE

The following section describes the indirect operational impacts of the Preferred Alternative for the resource categories discussed in this EIS. 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.

20.3.1.1 LAND USE, LAND PLANNING, AND PROPERTY

The indirect effects of the Preferred Alternative would be consistent with land planning, zoning, and local and regional plans and policies. Similarly, the Preferred Alternative would have no adverse impact to property ownership. Although most of the land use, land planning, and property analysis from the 2009 SEQRA/CEQR FEIS is still applicable to the current proposed Overbuild program, additional analysis was warranted as a number of plans and policies that have been published since the 2009 SEQRA/CEQR FEIS needed to be analyzed. FRA considered these newer plans and policies in this section. **Appendix N**, Section N.3.1.1, contains details of the analysis.

20.3.1.1.1 Land Planning and Zoning

The indirect impacts of the Preferred Alternative would result in a mixed-use Overbuild at the Project Site, including multiple multistory structures similar to the development on the Eastern Rail Yard. The Overbuild would be comprised of four residential buildings. Two residential buildings would be about 60 stories tall; one residential building would be 80 stories tall, and one residential building would be about 30 stories tall. The Overbuild would also include an office building that would be about 60 stories tall. The Overbuild includes a 30-story hotel, an approximately 40-story mixed-use building, a public school, and public open space, which would also be built on the Project Site. The Overbuild would have a beneficial effect on the Project Site as it would introduce multiple mixed-use towers and open space on an otherwise vacant site. The development would also be consistent with the previous rezoning that was approved as part of the 2005 Hudson Yards rezoning and 2009 SEQR/CEQR FEIS. Therefore, the indirect effect of the Preferred Alternative would be consistent with the Hudson Yards Special District and would be consistent with surrounding land uses.

20.3.1.1.2 Local and Regional Plans and Policies

FRA reviewed the indirect effects of the Preferred Alternative against the applicable local and regional plans and policies. The analysis indicated the indirect effects of the Preferred Alternative would be consistent or not applicable with all local and regional plans and policies. The local and regional plans and policies reviewed include New York City Waterfront Revitalization Program, *OneNYC*, Vision 2020, Master Plan Caemmerer West Side Yard, Northeast Corridor Infrastructure Master Plan, Amtrak's Northeast Corridor Gateway Program, NYMTC's Regional Transportation Plan 2045, and FRA'S NEC FUTURE. **Appendix N**, Section N.3.1.1, provides a discussion of the consistency of the Preferred Alternative's indirect effects with relevant local and regional plans and policies.

20.3.1.1.3 Property

The indirect impacts of the Preferred Alternative would not require any property acquisition or displacements. Therefore, the indirect impacts of the Preferred Alternative would not result in any adverse impacts to property ownership.

20.3.1.2 TRANSPORTATION

This section of the EIS summarizes the indirect impacts of the Preferred Alternative on transportation. The information is primarily based on the 2009 SEQRA/CEQR FEIS transportation impact assessment as the program and transportation demand would remain within the framework of the approved project. The transportation commitments identified in the 2009 SEQRA/CEQR FEIS related to the indirect operational effects of the Preferred Alternative are summarized in the following sections.

20.3.1.2.1 Traffic

The indirect effects of the Preferred Alternative would include increasing vehicular traffic demand in the Study Area. Total vehicle trips generated by each development scenario analyzed for the Overbuild in the 2009 SEQRA/CEQR FEIS remain applicable. As described in the 2009 SEQRA/CEQR FEIS, the City is carrying out an ongoing traffic monitoring program throughout the Hudson Yards area, as a result of the substantial new development taking place in that area since 2009. As part of that monitoring program, the City will determine when it is appropriate to implement measures to alleviate traffic congestion at study area intersections. Additionally, as with any construction of a large-scale infrastructure project, implementation of an MPT plan is required. The 2009 SEQRA/CEQR FEIS identified measures to mitigate, either in part or in whole, the adverse traffic impacts identified. 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. Overall, these area-wide and project-specific commitments include the following:

- 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.

Additional details concerning the analysis of this resource category is provided in **Appendix N**, Section N.3.1.2.

20.3.1.2.2 Parking

The findings adopted by the City as part of the 2009 SEQRA/CEQR FEIS project approvals indicate that the indirect effects of the Preferred Alternative, from the Overbuild, would further exacerbate the weekday midday off-street parking shortfall in the parking Study Area, but not substantially. As parking shortfalls do not constitute adverse impacts under the *CEQR Technical Manual*, no mitigation was required in 2009 SEQRA/CEQR FEIS which is still applicable. As a result, the Preferred Alternative would not result in any adverse indirect parking effects requiring mitigation. Additional details concerning the analysis of this resource category is provided in **Appendix N**, Section N.3.1.2.

20.3.1.2.3 Traffic Safety

The Preferred Alternative would indirectly increase pedestrian volumes given the features and function of the Overbuild. The 2009 SEQRA/CEQR FEIS committed to a range of pedestrian circulation improvements including 15 new bulb outs and 17 crosswalk widenings. NYCDOT has also implemented improvements in the Study Area. The remaining commitments made in the 2009 SEQRA/CEQR FEIS would still apply. 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 from the Preferred Alternative on traffic safety. Additional details concerning the analysis of this resource category is provided in **Appendix N**, Section N.3.1.2.

20.3.1.2.4 Transit

The 2009 SEQRA/CEQR FEIS analysis indicated that there could be additional demand of peak hour subway trips from the Overbuild, an indirect effect of the Preferred Alternative. Because mitigation measures identified in the 2009 SEQRA/CEQR FEIS have already been constructed or implemented, in combination with additional transit-related improvements that have been completed, no additional indirect effects from the Preferred Alternative on subway station elements in the Study Area are anticipated. Additional details concerning the analysis of this resource category is provided in **Appendix N**, Section N.3.1.2.

20.3.1.2.5 Bus Routes

The impacts resulting from the Overbuild would constitute indirect effects of the Preferred Alternative, which would add considerable demand for bus ridership. The 2009 SEQRA/CEQR FEIS noted the incremental demand from the Overbuild was estimated to result in adverse impacts on certain bus service routes and identified the additional buses that would be necessary to mitigate the change. NYCT has made system improvements based on the growth of transportation demand generated by the overall growth of Hudson Yards district (including projected growth from the Western Rail Yard Overbuild). These improvements have resulted in more bus service but have not yet reached the specific optimal headway conditions set forth in the 2009 SEQRA/CEQR FEIS. Section N.3.1.2 of **Appendix N** provides additional details of how FRA made this determination.

The 2009 SEQRA/CEQR FEIS noted that the Preferred Alternative's incremental indirect demand from the Overbuild was estimated to result in adverse impacts on the M10/M20, M11, and M34 bus service, and the FEIS identified the additional buses that would be needed to mitigate the change (although the 2009 SEQRA/CEQR FEIS also notes that NYCT general policy is to provide additional bus service where demand warrants taking into consideration financial and operational constraints). The commitments made in the 2009 SEQRA/CEQR FEIS that relate to pedestrians would still apply, and include the following:

- M10/M20 – Two additional regular or articulated buses would be needed to meet the projected demand during both peak hours.
- M11 – Three additional regular buses or two articulated buses would be needed to meet the projected demand during the AM peak hour. Four additional regular buses or three articulated buses would be needed during the PM peak hour.
- M34 – Thirteen additional regular buses or 10 articulated buses would be needed to meet the projected demand during the AM peak hour. A total of 15 additional regular buses or 11 articulated buses would be needed during the PM peak hour.

New York City and MTA implemented the 34th Street SBS in late 2011, and was in part, 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.

20.3.1.2.6 Pedestrians

The Overbuild would constitute indirect effects of the Preferred Alternative, including a substantial increase in pedestrian activities on Study Area sidewalks and crosswalks. Mitigation requirements established in the 2009 SEQRA/CEQR FEIS and carried into the findings and conditions for the approved project remain applicable for the 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. The commitments made in the 2009 SEQRA/CEQR FEIS that relate to pedestrians would still apply, and include the following:

- Relocate planters or street vendors at two sidewalk locations on West 33rd Street;
- Create corner bulb outs on the avenue side of five intersections: the southwest corner at the Eight Avenue and West 33rd Street intersection, the southeast and southwest corners at the Ninth Avenue and West 33rd Street intersection, and at all four corners of the Ninth Avenue and West 31st Street intersection, Tenth Avenue and West 33rd Street intersection, and Eleventh Avenue and West 33rd Street intersection; and widen the crosswalks at 17 impacted crosswalk locations (primarily at intersections along West 31st and West 33rd Streets).

Section N.3.1.2 of **Appendix N** provides additional details of this analysis.

20.3.1.3 AIR QUALITY, GREENHOUSE GAS EMISSIONS, AND RESILIENCE

This section of the EIS summarizes the air quality, greenhouse gas emissions and resiliency consequences as anticipated indirect effects of the Preferred Alternative. FRA has summarized the anticipated indirect effects of the Preferred Alternative primarily based on the completed 2009 SEQRA/CEQR FEIS air quality analysis for the Overbuild, where applicable. The RD resulting from the 2009 SEQRA/CEQR FEIS is still applicable, and details the following commitments by the Overbuild Developer relating to air quality, greenhouse gas emissions, and resiliency:

- Operational Air Emissions Controls, including approval from NYCDCP prior to a New Building Permit;
- Energy Efficiency Measures with respect to fuel consumption and energy use; and
- Buildings designed to achieve Leadership in Energy and Environmental Design (LEED) Silver Certification.

20.3.1.3.1 Mobile Source Analysis

The 2009 SEQRA/CEQR FEIS air quality analysis considered the potential air quality effects of the Overbuild, which represent the anticipated indirect effects of the Preferred Alternative. The increases in vehicular traffic associated with 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.

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 NYCDEP *de minimis* criteria for CO, and thus would not have an adverse air quality impact. More details concerning the analysis of this resource category are provided in **Appendix N** (see Section N.3.1.3).

20.3.1.3.2 Stationary Source Analysis

FRA considered the effects associated with the emissions from the HVAC systems of the Overbuild as analyzed on the 2009 SEQRA/CEQR FEIS air quality analysis as an indirect effect of the Preferred Alternative. The indirect effect 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. Therefore, the proposed HVAC systems would not result in an adverse air quality impact.

FRA conducted an analysis to determine the potential air quality impacts associated with the ventilation of dual-mode locomotive engine exhaust at the receptors proposed as part of the Overbuild. Based on the analysis results, indirect effects of the Preferred Alternative would not result in any adverse air quality impacts. Section N.3.1.3 of **Appendix N** provides additional details of how FRA came to this conclusion.

20.3.1.3.3 Greenhouse Gas Emissions and Resilience

FRA considered the indirect effects of the Preferred Alternative on GHG emissions associated with the Overbuild as part of the 2009 SEQRA/CEQR FEIS air quality analysis. The site selection, the dense and mixed-use design, the sustainability commitments to achieve significant reductions in energy use for all buildings, and other measures incorporated in the Overbuild, would result in lower GHG emissions than would otherwise be achieved by similar residential and commercial uses, and, thus, would advance New York City's GHG reduction goals.

As discussed in Chapter 7**,** "Air Quality, Greenhouse Gas Emissions, and Resilience," the Project Sponsor would construct the Platform at DBE of approximately +33 feet NAVD88 and would remain above the 1 percent annual chance BFE over the entire lifespan of the Preferred Alternative under all sea level rise projections. Therefore, additional protection for the Preferred Alternative resulting from the indirect effect of the Overbuild is not anticipated to be needed.

20.3.1.4 NOISE AND VIBRATION

The Preferred Alternative would not result in an indirect impact to noise. FRA considered the additional vehicular traffic and associated potential for noise level increases in the Study Area from the Overbuild to be an indirect effect of the Preferred Alternative. The analysis in the 2009 SEQRA/CEQR FEIS found that resulting noise level increases would be imperceptible to barely noticeable and would not be considered adverse according to *CEQR Technical Manual* noise impact criteria. This finding is still applicable as 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. 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. Section N.3.1.4 of **Appendix N** provides additional details of this analysis.

The 2009 SEQRA/CEQR FEIS found that the cumulative noise exposure at the buildings included in the Overbuild would necessitate appropriate window/wall attenuation on all proposed building façades within the Overbuild to ensure acceptable interior noise levels according to *CEQR Technical Manual* noise exposure guidelines. The minimum window/wall attenuation requirements were included in the RD for the Overbuild. By adhering to these minimum attenuation requirements, the Overbuild Developer would ensure acceptable interior noise levels at each building; therefore, there would be no indirect adverse noise impacts of the Preferred Alternative.

20.3.1.5 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 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 potential indirect effects of the Preferred Alternative resulting from the Overbuild are physical effects to the High Line related to operation of the Overbuild which includes connecting this portion of the High Line to other new open spaces and the renovation of the Interim Walkway portion of the High Line.

The Overbuild would 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. 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 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 NYCLPC, as well as development of an overarching CEPP, which would include a CPP as a component (see Chapter 22, "Mitigation Measures and Project Commitments") to protect the High Line during construction of the Overbuild. These conditions would ensure that the effects to the High Line that are an indirect effect of the Preferred Alternative are not adverse. More details concerning the analysis of this resource category are provided in **Appendix N** in Section N.3.1.5.

20.3.1.6 PARKS AND RECREATION

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 due to the anticipated decreases in the active and total open space ratios, which is a criterion under the *CEQR Technical Manual*. However, changes in open space ratios are not an impact threshold in this NEPA analysis.

Under NEPA, there is a beneficial indirect effect resulting from the Preferred Alternative. 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. As detailed above, a CEPP would be developed and implemented to protect the High Line open space during construction of the Overbuild. More details concerning the analysis of this resource category are provided in **Appendix N**, Section N.3.1.6.

20.3.1.7 AESTHETICS AND VISUAL QUALITY

The Preferred Alternative would not have an indirect adverse impact on urban design and visual resources (i.e., aesthetics and visual quality), but would result in beneficial effects. The beneficial effects of the Preferred Alternative from the Overbuild include enlivening the Project Site and surrounding area and improving the streetscape with active ground-floor retail and school uses, anticipated widened sidewalks, a public open space, and a street-tree program, which were disclosed and acknowledged as part of the 2009 SEQRA/CEQR FEIS. The current plans for the Overbuild are 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 be would be similar in scale and design to Hudson Yards and continue to be a reasonable assessment of the potential indirect effect of the Preferred Alternative. More details concerning the analysis of this resource category are provided in **Appendix N**, Section N.2.1.7.

20.3.1.8 CONTAMINATED MATERIALS

The anticipated indirect contaminated materials effects of the Preferred Alternative are primarily based on the 2009 SEQRA/CEQR FEIS analyses. The indirect effects of the Preferred Alternative from operation of the Overbuild are not expected to result in additional ground disturbance at the Project Site; therefore, no additional contaminated materials impacts are anticipated. The indirect effects of the Preferred Alternative from the potential disturbance of contaminated materials from the Overbuild would occur during construction, which would involve only minimal additional ground disturbance at the Project Site. Furthermore, with the implementation of remediation and protective measures during construction similar to those listed in Chapter 12, “Contaminated Materials,” no additional indirect adverse contaminated materials impacts of the Preferred Alternative are anticipated from the Overbuild.

20.3.1.9 UTILITIES AND ENERGY

The Overbuild, an indirect consequence of the Preferred Alternative, would result in increased demands on New York City’s water supply and sanitary sewage treatment systems, which are beyond the negligible additional demand generated by the operation of the Preferred Alternative alone. Consequently, FRA performed an assessment comparing the indirect projected demand on utility services of the Preferred Alternative from the current proposal for the Overbuild, against the Overbuild analyzed in the 2009 SEQRA/CEQR FEIS, to identify whether the current proposed development would result in additional demand that would have the potential to result in indirect adverse impacts. The assessment used the methodology and demand rates of the 2014 *CEQR Technical Manual* whereas the 2009 SEQRA/CEQR FEIS used methodology and demand rates from a previous edition of the *CEQR Technical Manual.* Because the Overbuild program and associated assumptions have changed slightly; an updated evaluation was required for utilities and energy. The 2009 SEQRA/CEQR FEIS committed the Overbuild Developer to develop a SWPPP for post-construction stormwater management and prepare a NYCDEP-approved Drainage Plan to address stormwater management. As discussed in Chapter 13, “Utilities and Energy,” the ADP has been completed. Additionally, the 2009 SEQRA/CEQR FEIS committed the Overbuild buildings be designed to achieve LEED Silver Certification. With these measures from the 2009 SEQRA/CEQR FEIS in place, the additional indirect operational demand for utility infrastructure and services of the Preferred Alternative from the Overbuild would be negligible and would not result in adverse impacts to these systems. The analysis to support this conclusion is included in **Appendix N**, Section N.3.1.8.

20.3.1.9.1 Water Supply

The Preferred Alternative would not result in indirect, adverse impacts on the City's water supply system. The estimated indirect water demand of the Preferred Alternative resulting from the current Overbuild program 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, this additional indirect Overbuild demand represents a minor increase in demand (0.15 percent) on the City's daily water supply of approximately one billion gpd. Following the publication of the 2009 SEQRA/CEQR FEIS, NYCDEP made improvements to the local water supply infrastructure in the area of the Project Site. In consideration of the recent system improvements the analysis indicates that NYCDEP can adequately provide for the increased demand required by the Overbuild. Therefore, the indirect effect of the Preferred Alternative would not result in adverse impacts on the City's water supply system. More details concerning the analysis of this resource category are provided in **Appendix N**, Section N.3.1.8.

20.3.1.9.2 Wastewater

The Preferred Alternative would not result in an indirect adverse impact to the City's sanitary sewage conveyance and treatment system. The additional indirect sanitary sewage generation of the current 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. Additionally, 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 development resulting from the full build-out of the Hudson Yards rezoning; with the system improvements, the analysis indicates that NYCDEP can adequately provide for the increased demand resulting from the Overbuild. More details concerning the analysis of this resource category are provided in **Appendix N**, Section N.3.1.8.

20.3.1.9.3 Stormwater

The Preferred Alternative would not result in an indirect adverse impact to the City's stormwater management infrastructure. Modeling of the incremental flows from the Overbuild was completed for the 2009 SEQRA/CEQR FEIS and 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. More details concerning the analysis of this resource category are provided in **Appendix N**, Section N.3.1.8.

20.3.1.9.4 Solid Waste and Sanitation Services

The Preferred Alternative would not have an indirect impact on the City's solid waste and sanitation services. The incremental solid waste generated by the Overbuild, an indirect consequence of the Preferred Alternative, would not overburden the City's solid waste handling systems. The solid waste generation was calculated based on the current assumptions of the Overbuild program; DSNY and private haulers would be able to accommodate this incremental increase in demand for solid waste collection. More details concerning the analysis of this resource category are provided in **Appendix N**, Section N.3.1.8.

20.3.1.9.5 Energy

The Preferred Alternative would not have an indirect adverse impact on energy. FRA estimated total energy consumption of the current Overbuild program and the incremental increase would be considered a negligible change on Con Edison's service. Additionally, the Overbuild would be consistent New York's local energy laws and regulate energy consumption. More details concerning the analysis of this resource category are provided in **Appendix N**, Section N.3.1.8.

20.3.1.10 SOILS AND GEOLOGY

The indirect effects of the Preferred Alternative are primarily based on the analysis presented in Chapter 14, "Soils and Geology," which found the Preferred Alternative would have no adverse effects on this resource category. Furthermore, the indirect effect of the Preferred Alternative, the Overbuild would result in minimal additional disturbance to soils at the Project Site and would not alter the geological character or integrity of the Project Site. Therefore, the indirect effect of the Preferred Alternative would not result in an adverse impact on soils and geology.

20.3.1.11 WATER AND NATURAL RESOURCES

The indirect effects of the Preferred Alternative are primarily based on the 2009 SEQRA/CEQR FEIS analyses of the Overbuild. The following section summarizes these impacts.

20.3.1.11.1 Floodplains

The indirect effects of the Preferred Alternative would not adversely affect flooding of areas adjacent to the Project Site. As discussed in Chapter 15, "Water and Natural Resource," and Chapter 11, "Natural Resources," of the 2009 SEQRA/CEQR FEIS most of the Project Site is located within the 100-year floodplain. Commitments established in the 2009 SEQRA/CEQR FEIS and carried into the findings and conditions for the approved project remain applicable. A majority of the Overbuild would be constructed above the 100-year floodplain on the Platform and the remaining Overbuild components would be developed with the elevation of the lowest floor set forth in the RD for the Overbuild site. Therefore, the indirect effect of the Preferred Alternative would not have an adverse impact on floodplains to the one percent or 0.2 percent annual chance floodplains.

20.3.1.11.2 Wetlands

The indirect effects of the Preferred Alternative would not result in adverse impacts on designated NYSDEC littoral zone tidal wetlands in the Hudson River. The 2009 SEQRA/CEQR FEIS committed the Overbuild Developer to develop a SWPPP for post-construction stormwater management and would decrease the rate and quantity and improve the quality of stormwater discharged from the Project and conveyed to the Hudson River. Commitments established in the 2009 SEQRA/CEQR FEIS and carried into the findings and conditions for the approved project remain applicable. Therefore, the indirect effect of the Preferred Alternative would not result in an adverse impact on wetlands.

20.3.1.11.3 Groundwater

The indirect effects of the Preferred Alternative would not result in adverse impacts on groundwater. The adopted findings by the City as part of the 2009 SEQRA/CEQR FEIS project approvals indicated no adverse impacts on groundwater and would remain within the framework of the already approved project. Groundwater is not used as potable water in Manhattan and the indirect effects of the Preferred Alternative would not affect drinking water supplies. Therefore, the indirect effect of the Preferred Alternative would not result in an adverse impact on groundwater.

20.3.1.11.4 Terrestrial Resources

The indirect effects of the Preferred Alternative would not result in an adverse impact to terrestrial resources. The adopted findings by the City as part of the 2009 SEQRA/CEQR FEIS project approvals indicated no adverse impacts on terrestrial resources and would remain applicable. The loss of the existing vegetation and wildlife at the Project Site are primarily composed of common species tolerant of urban ecosystems. This includes native species such as the Eastern gray squirrel and non-native species European starling. The loss of existing vegetation and wildlife would not result in a significant adverse impact on terrestrial resources to the region. The Overbuild would result in the creation of 5.45 acres of open space with a variety of plantings anticipated to result in habitat enhancement of the Project Site. Therefore, the indirect effect of the Preferred Alternative would not result in an adverse impact on terrestrial resources.

20.3.1.11.5 Threatened and Endangered Species

The indirect effects of the Preferred Alternative would not result in an adverse impact to threaten and endangered species. The adopted findings by the City as part of the 2009 SEQRA/CEQR FEIS project approvals indicated no adverse impacts on threatened and endangered species and would remain applicable. As discussed in Chapter 15, the USFWS IPaC system (2020) did not identify any federally listed species with the potential to occur within the Study Area. Species identified were limited to aquatic species that are likely transient and water quality is not anticipated to be impacted by the Overbuild. Based on the analysis, the indirect effect of the Preferred Alternative would have no effect on federally listed species or critical habitat.

20.3.1.11.6 Aquatic Resources

The indirect effects of the Preferred Alternative would not result in an adverse impact to aquatic resources. The adopted findings by the City as part of the 2009 SEQRA/CEQR FEIS project approvals indicated the additional discharge of sanitary sewage would not exceed the North River WWTP's permitted capacity. This conclusion is still applicable. As stated in Section 20.3.1.9.2, the additional sanitary sewage generation anticipated from the updated Overbuild program would still not exceed the North River WWTP's permitted capacity and is not anticipated to impact water quality and the discharge of stormwater from the Project Site. The discharge of sanitary sewage resulting from the Overbuild would be handled by the City's infrastructure. Therefore, the indirect effect of the Preferred Alternative would not result in adverse impacts to aquatic resources.

20.3.1.12 COASTAL ZONE CONSISTENCY

The indirect effects of the Preferred Alternative would be consistent with the LWRP by supporting policies related to encouraging commercial and residential development in appropriate coastal zones; reducing damage from flooding and other water-related disasters; protecting water quality, sensitive habitats, and the aquatic ecosystem; and promoting development with appropriate land uses. The indirect effects of the Preferred Alternative are primarily based on the 2009 SEQRA/CEQR FEIS analyses of the Overbuild and remain applicable as the concept of the Overbuild has not changed. The Overbuild would still be a mixed-use development located on the Project Site, near the Hudson River.

20.3.1.13 SOCIOECONOMICS

The previously approved Overbuild will 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. The Overbuild Developer is currently proposing 890 condominium units and 1,900 rental units, including 324 permanent affordable housing units. This section of the EIS summarizes the anticipated indirect effects of the Overbuild based on the 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 approved project., In addition to reviewing the 2009 SEQRA/CEQR FEIS, 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 updated socioeconomic analyses of the indirect effects of the Preferred Alternative form the Overbuild performed for this EIS incorporates updated demographic, socioeconomic, and community facilities data, as well as the updated methodologies of the *CEQR Technical Manual*. The Study Area for the socioeconomic analysis is the shown in Figure 17-1. Full socioeconomic and community facility assessments are presented in **Appendix N**, Section N.3.1.9.

20.3.1.13.1 Indirect Residential Displacement

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 indirect residential displacement assessment presented in **Appendix N** considers 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.

The assessment finds that the indirect effects of the Preferred Alternative, the Overbuild, would not result in adverse impacts due to indirect residential displacement. A substantial amount of market rate housing has recently been built and planned within the Study Area. Irrespective of the Preferred Alternative and Overbuild, the area is expected to maintain its long-term trends toward increasing residential population, household incomes, residential property values, and rents. 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 Overbuild 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 the Preferred Alternative and 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.

20.3.1.13.2 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. The indirect effect of the Preferred Alternative, the Overbuild, would introduce 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. Independent of the Overbuild, the Study Area has a significant number 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 will continue irrespective of the Overbuild. Overall, the Preferred Alternative would not result in an adverse indirect impact due to indirect business displacement within the Study Area, and would not adversely affect any specific industries.

20.3.1.14 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 of the Preferred Alternative 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.

Based on *CEQR Technical Manual* screening criteria, detailed analyses of potential indirect impacts on public schools (elementary and intermediate schools), public libraries, and publicly funded child care centers were conducted. The full analyses are presented in **Appendix N**. **Appendix N** also identifies Study Area health care facilities, and fire and police protection services. These analyses find that the new population that would indirectly result from the Preferred Alternative would not adversely affect public schools, public libraries, police, fire, EMS, or health care facility services in the Study Area. The projected increase in demand for publicly funded child care services associated with the Overbuild could adversely affect services, but would be mitigated through the RD that would require the Overbuild Developer provide additional capacity, or provide program or physical improvements to existing facilities. With this measure in place, the Preferred Alternative would not result in an indirect adverse impact to child care services.

20.3.1.15 PUBLIC HEALTH

The indirect effects of the Preferred Alternative are not anticipated to result in any adverse effects to air quality, noise, contaminated materials, or water quality, and as a result would not result in any indirect adverse public health impacts. This conclusion is based on the 2009 SEQRA/CEQR FEIS and the analysis completed for this EIS. The 2009 SEQRA/CEQR FEIS findings are still applicable as the current Overbuild still fits within the framework of the already approved project. As discussed in Section 20.3.1.3.2, additional stationary source analysis was completed and determined the indirect effects of the Preferred Alternative would not result in any adverse air quality impacts; therefore, the indirect effect of the Preferred Alternative would not result in adverse public health impacts. Implementation of commitments described above for noise, air quality, and contaminated materials would mitigate, either in part or in whole, the adverse impacts identified.

20.3.1.16 ENVIRONMENTAL JUSTICE

The indirect effect of the Preferred Alternative would not result in disproportionately high and adverse effects on environmental justice populations. The 2009 SEQRA/CEQR FEIS concluded that the Overbuild could result in potential significant adverse impacts under CEQR and SEQRA impact criteria with respect to:

- **Child care**, due to increased demand and limited capacity of facilities in the Study Area, which could be mitigated through parents choosing to use child care outside of the Study Area or through New York City Administration for Children's Services' (NYCACS) initiatives to expand capacity;
- **Open space**, due to increased residential population relative to the amount of open space acreage in the Study Area and shadows from the new buildings[2], which could be mitigated through additional open space programming in the Overbuild and partially mitigated through establishment of an Open Space Fund, with contributions from the Developer to be used by New York City for open space programs or improvements;
- **Traffic**, due to poor level of service (LOS) at many Study Area intersections, most of which (but not all) could be mitigated through modifications to traffic signals and street designs;
- **Transit**, due to increase in demand on bus services, which would likely be addressed as part of NYCT's ongoing operations planning; and
- **Pedestrians**, due to increased crowding of sidewalks and crosswalks, which could be mitigated with improvements such as removal or relocation of obstacles (e.g., planters), bulb outs at affected intersections, and crosswalk widening.

These conclusions from the 2009 SEQRA/CEQR FEIS would remain applicable as the program and transportation demand would remain within the framework of the approved project. The Preferred Alternative would also result in substantial indirect benefits to the Study Area from the Overbuild. The new residential, commercial, and office development would increase the economic activity of this area and would be consistent with local plans and development trends. Additionally, as described in Section 20.3.1.13, the Overbuild would be consistent with long-term trends and not result in adverse impacts with respect to indirect residential or business displacement.

As shown in Figure 19-1, minority and low-income populations (collectively referred to as environmental justice populations) are located in the eastern portion of the Study Area. The adverse impacts described above would affect environmental justice populations but would also affect non-environmental justice populations. Additionally, environmental justice populations would benefit from the Preferred Alternative's indirect increased economic activity associated with the Overbuild. The Overbuild also incorporates at least 324 units of affordable housing, which would serve low-income populations. Therefore, the indirect effect of the Preferred Alternative would not result in disproportionately high and adverse effects on environmental justice populations.

[2] Changes in open space ratios are not considered under NEPA, they represent an impact threshold considered under the *CEQR Technical Manual* analysis guidelines; changes in open space ratios are not considered in this analysis for purposes of identifying impacts under NEPA.

20.3.2 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.

20.3.2.1 LAND USE, LAND PLANNING, AND PROPERTY

The construction of the Preferred Alternative would have no indirect effects on land use, land planning, and property. The 2009 SEQRA/CEQR FEIS analyses determined that construction of the Overbuild would not displace any land uses and the LIRR. This still remains to be the case as throughout construction of the Overbuild, the LIRR rail yard would be operational. All construction activities would be confined on the Project Site and within portions of the sidewalk and adjacent streets. Therefore, the indirect construction effects of the Preferred Alternative would not have an adverse impact on land use.

20.3.2.2 TRANSPORTATION

There would be indirect construction effects to transportation systems of the Preferred Alternative related to the construction of the Overbuild. 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. The findings from the 2009 SEQRA/CEQR FEIS remain applicable to the 2030 completion of the Overbuild and reflect the indirect construction effects of the Preferred Alternative as 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. The approved 2009 SEQRA/CEQR FEIS project had a higher peak hour trip generation than the estimates from the Overbuild Developer for the 2030 completion of the Overbuild. As described in the 2009 SEQRA/CEQR FEIS, the City is carrying out an ongoing traffic monitoring program throughout the Hudson Yards area, as a result of the substantial new development taking place in that area since 2009. As part of that monitoring program, the City will determine when it is appropriate to implement measures to alleviate traffic congestion at study area intersections. More details concerning the analysis of this resource category are provided in **Appendix N** (see Section N.4.1.1).

As with any construction of a large-scale infrastructure project, development and implementation of an MPT plan is required by NYCDOT's OCMC. The 2009 SEQRA/CEQR FEIS and the associated resulting RD requires MPT plans to be developed and submitted to NYCDOT by the Overbuild Developer for review and approval. Such plans would provide diagrams of proposed temporary lane and sidewalk alterations, including the width and length of affected sidewalk and lane segments, and the duration of Overbuild construction affecting these locations. 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. Review of the plans and implementation of the best practices highlighted in the MPT would be coordinated with NYCDOT's OCMC. After NYCDOT has approved the MPT plans, the Project Sponsor and its contractors would be responsible for maintaining the provisions of the plans. The MPT Plans to be implemented for the Preferred Alternative during the construction period as described in Chapter 6, "Transportation," would continue throughout the construction for the Overbuild, with modifications as necessary to reflect construction conditions at any given time.

20.3.2.3 AIR QUALITY, GREENHOUSE GAS EMISSIONS, AND RESILIENCE

The indirect construction impacts of the Preferred Alternative would not have an adverse impact on air quality. Construction of Overbuild Sites 1 and 2 is anticipated to overlap with the construction activities for the Preferred Alternative, so additional analysis was completed to determine if the current construction program would have the potential to cause adverse air quality impacts not identified in the 2009 SEQRA/CEQR FEIS. The analysis indicated a lower maximum annual average emission rate than what was reported in the 2009 SEQRA/CEQR FEIS. Therefore, the indirect construction impacts of the Preferred Alternative would not have an adverse impact on air quality. More details concerning the analysis of this resource category are provided in **Appendix N**, Section N.4.1.2. Mitigation measures associated with the Overbuild ensure that construction would implement a state-of-the-art emissions reduction program for construction activities resulting in the lowest practicable diesel PM emissions.

20.3.2.4 NOISE AND VIBRATION

The indirect construction impacts of the Preferred Alternative would not result in adverse impacts related to noise and vibration. A review of the current construction duration, logistics, and activities for each of the Overbuild buildings remain similar to those analyzed in the 2009 SEQRA/CEQR FEIS. The analysis of the Overbuild construction included in the 2009 FEIS predicted worst-case noise levels at nearby receptors between 56 and 74 dB(A). At each receptor, construction was predicted to result in noise level increases not greater than 3 dB(A). Since the construction of the Overbuild would not be substantially different from what was analyzed in the 2009 FEIS, and baseline noise levels are comparable or greater now than those used in the 2009 FEIS analysis, these values are expected to be representative of those resulting from construction of the Overbuild as an indirect result of the Preferred Alternative. These construction noise levels and associated noise level increases would not exceed the FTA construction noise impact criteria nor the *CEQR Technical Manual* noise impact criteria. Consequently, the Preferred Alternative would not have indirect adverse noise impacts from the Overbuild construction.

A construction vibration assessment was performed in the 2009 SEQRA/CEQR FEIS for the existing elevated High Line historic rail structure (other vibration-sensitive structures further away from the construction work areas would not have the potential to experience significant adverse effects from construction vibration). The analysis determined that by avoiding the use of high vibration-producing equipment (i.e., hoe rams and pile drivers) within critical distances of the High Line structure, vibration levels at the High Line would not exceed the acceptable 0.5 inches/second peak particle velocity threshold for a historic structure as set forth in *TPPN #10/88*. Mitigation measures and construction procedures, such a vibration limits and monitoring, are required as result of the 2009 SEQRA/CEQR FEIS to ensure construction of the Overbuild would not result in adverse impacts. The CEPP would meet the guidelines set forth in *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 NYCLPC, 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. A Noise Mitigation Plan would require compliance with the City's Local Law 113, and with Chapter 28 of the NYCNCC. With these measures, the 2009 SEQRA/CEQR FEIS concluded that there would not be an adverse impact to the High Line because of construction of the Overbuild. Therefore, the Preferred Alternative would not have indirect adverse construction impacts on the High Line from construction of the Overbuild. More details concerning the analysis of this resource category are provided in **Appendix N**, Section N.4.1.3.

20.3.2.5 CULTURAL RESOURCES

The findings adopted by New York City as part of the 2009 SEQRA/CEQR FEIS project approvals indicate that the construction of the Overbuild, which is an indirect consequence of the Preferred Alternative, would result in 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 construction effect of the Preferred Alternative on cultural resources for this EIS. The potential effects of the construction of the Overbuild are possible inadvertent effects to the High Line during construction. As a condition of the ROD FRA would require the Project Sponsor to meet all of the conditions of the LOR, which as noted above includes review of Overbuild design by NYSHPO and NYCLPC, as well as development of a CEPP to protect the High Line during construction of the Overbuild. These conditions would ensure that the effects to the High Line, which are an indirect construction effects of the Preferred Alternative, are not adverse. More details concerning the analysis of this resource category are provided in **Appendix N**, Section N.4.1.4.

20.3.2.6 PARKS AND RECREATION

The indirect construction impacts of the Preferred Alternative would not have an adverse impact on parks and recreation with the implementation of mitigation measures required as a result of the 2009 SEQRA/CEQR FEIS. The CEPP would specify measures and construction procedures, such as noise mitigation, vibration limits and monitoring that would be implemented during construction of the Overbuild. As stated, 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. Nearby 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 adverse. Mitigation measures would be in place 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. More details concerning the analysis of this resource category are provided in **Appendix N**, Section N.4.1.5.

20.3.2.7 AESTHETICS AND VISUAL QUALITY

The indirect construction impacts of the Preferred Alternative would have a neutral effect on visual quality in the AVE. All construction staging and activities for the Overbuild would occur within the Project Site and within portions of the sidewalk and adjacent streets. Construction activities and equipment for the Overbuild would result in temporary visual obstructions; however, there are multiple construction projects currently underway within the AVE, and thus construction activities and equipment associated with the Overbuild would be difficult to distinguish from these other activities and would be in keeping with the ongoing trend of tower construction in the AVE. Therefore, the indirect construction impacts of the Preferred Alternative from Overbuild construction would not result in any adverse indirect impacts to aesthetics and visual quality.

20.3.2.8 CONTAMINATED MATERIALS

The indirect construction impacts of the Preferred Alternative would not have an adverse impact on contaminated materials with the implementation of appropriate health and safety precautionary and remedial measures. The indirect effects of the Preferred Alternative from construction of the Overbuild would result in only minimal additional ground disturbance at the Project Site; therefore, no additional impact to hazardous materials is anticipated. Further, Chapter 21, "Construction Impacts," of the 2009 SEQRA/CEQR FEIS found that construction of the Overbuild, which is an indirect consequence of the Preferred Alternative, would not have an adverse impact on contaminated materials with the implementation of appropriate health and safety precautionary and remedial measures. The health and safety precautionary and remedial measures are outlined in Chapter 12 in detail and include the implementation of a site-specific RAP and CHASP in accordance with the RD with NYCOER approvals, as required.

20.3.2.9 UTILITIES AND ENERGY

The indirect construction impacts of the Preferred Alternative are not anticipated to impact provision of utility services to the Project Site, including water supply, wastewater, and stormwater services; solid waste and sanitation services; and energy. The 2009 SEQRA/CEQR FEIS came to the same conclusions which are still applicable for the current Overbuild assumptions and construction practices. All of the utility and energy services, including the discharge of stormwater from the Overbuild site would be provided by or handled by the City's existing infrastructure systems. Private carters would remove construction debris from the Project Site during construction.

20.3.2.10 SOILS AND GEOLOGY

The indirect construction impacts of the Preferred Alternative would have no adverse effects on soils and geology. This finding is primarily based on the analysis presented in Chapter 14, which found the construction of the Preferred Alternative would have no adverse effects on soils and geology. The Overbuild would result in minimal additional disturbance to soils at the Project Site and would not alter the geological character or integrity of the Project Site. Therefore, the Preferred Alternative would not result in indirect adverse impacts on soils and geology.

20.3.2.11 WATER AND NATURAL RESOURCES

This section of the EIS summarizes the anticipated indirect construction effects of the Preferred Alternative using the analysis Chapter 11, "Natural Resources," of the 2009 SEQRA/CEQR FEIS. Based on the findings of the 2009 SEQRA/CEQR FEIS, construction of the Overbuild, which is an indirect consequence of the Preferred Alternative, is not anticipated to result in an adverse impact to natural resources, and no additional indirect effects are anticipated. Therefore, the indirect construction impacts of the Preferred Alternative would not result in an adverse impact on natural ecological resources and water quality.

20.3.2.11.1 Wetlands

The indirect construction impacts of the Preferred Alternative would not result in adverse impacts on designated DEC littoral zone tidal wetlands in the Hudson River. The 2009 SEQRA/CEQR FEIS analysis came to the same conclusion which is still applicable as the Overbuild program and activities for each of the Overbuild buildings are anticipated to be similar to those analyzed in the 2009 SEQRA/CEQR FEIS. Construction of the Overbuild would not result in in-water activities and construction activities would follow a NYSDEC approved SWPPP as indicated in the 2009 SEQRA/CEQR FEIS. The 2009 SEQRA/CEQR FEIS also committed the Overbuild Developer to develop a dewatering plan as part of the CEPP which would require testing of groundwater recovered during dewatering and proper disposal in compliance with applicable NYCDEP and NYSDEC discharge requirements. Therefore, the indirect construction impacts of the Preferred Alternative would not result in an adverse impact on wetlands.

20.3.2.11.2 Groundwater

The indirect construction impacts of the Preferred Alternative are not anticipated have an adverse impact on groundwater as groundwater is not used as potable water in Manhattan and the construction of the Overbuild would not affect drinking water supplies. The 2009 SEQRA/CEQR FEIS came to this conclusion which is still applicable for the current Overbuild program. Therefore, the indirect construction impacts of the Preferred Alternative would not result in an adverse impact on groundwater.

20.3.2.11.3 Terrestrial Resources

The indirect construction impacts of the Preferred Alternative would not result in an adverse impact to terrestrial resources. The adopted findings by the City as part of the 2009 SEQRA/CEQR FEIS project approvals indicated no adverse impacts on terrestrial resources and would remain applicable. As discussed above in Section 20.3.1.11.4, construction on the Project Site would result in the loss of the existing vegetation and wildlife at the Project Site primarily composed of common species tolerant of urban ecosystems. This includes native species such as the Eastern gray squirrel and non-native species European starling. The loss of existing vegetation and wildlife would not result in a significant adverse impact on terrestrial resources to the region. The Overbuild would result in the creation of 5.45 acres of open space with a variety of plantings anticipated to result in habitat enhancement of the Project Site. Therefore, the indirect construction impacts of the Preferred Alternative would not result in any adverse impacts to terrestrial resources.

20.3.2.11.4 Threatened and Endangered Species

The indirect construction impacts of the Preferred Alternative would not result in an adverse impact to threaten and endangered species. The adopted findings by the City as part of the 2009 SEQRA/CEQR FEIS project approvals indicated no adverse impacts on threatened and endangered species and would remain applicable. As discussed in Chapter 15, the USFWS IPaC system (2020) did not identify any federally listed species with the potential to occur within the Study Area. Species identified were limited to aquatic species that are likely transient and water quality is not anticipated to be impacted by construction of the Overbuild. Additionally, construction of the Overbuild would not require in-water work. Based on the analysis, the indirect effect of the Preferred Alternative would have no effect on federally listed species or critical habitat.

20.3.2.11.5 Aquatic Resources

The indirect construction effects of the Preferred Alternative would not result in an adverse impact to aquatic resources. The adopted findings by the City as part of the 2009 SEQRA/CEQR FEIS project approvals would still be applicable. Construction of the Overbuild would not result in in-water activities and construction activities would follow a NYSDEC approved SWPPP as indicated in the 2009 SEQRA/CEQR FEIS. Therefore, the indirect construction effects of the Preferred Alternative would not result in adverse impacts to aquatic resources.

20.3.2.12 COASTAL ZONE CONSISTENCY

The indirect construction effects of the Preferred Alternative would be consistent with the LWRP by supporting policies related to encouraging commercial and residential development in appropriate coastal zones; reducing damage from flooding and other water-related disasters; protecting water quality, sensitive habitats, and the aquatic ecosystem; and promoting development with appropriate land uses. The indirect construction effects of the Preferred Alternative are primarily based on the 2009 SEQRA/CEQR FEIS analyses of the Overbuild and remain applicable as the concept of the Overbuild's construction has not changed. The Overbuild would still be a mixed-use development located on the Project Site, near the Hudson River. As discussed in previous section in this chapter, the 2009 SEQRA/CEQR FEIS resulting in a variety of commitments related to construction practices. During construction, the Overbuild Developer would implement erosion and sediment control measures listed in the SWPPP which was prepared in accordance with a SPDES permit. As stated above, construction of the Overbuild would not have an adverse impact on contaminated materials with the implementation of appropriate health and safety precautionary and remedial measures. With implementation of these commitments, the indirect construction effects of the Preferred Alternative would be consistent with the LWRP.

20.3.2.13 SOCIOECONOMICS

The indirect construction effects of the Preferred Alternative would result in temporary disruptions in the surrounding area. However, such disruptions would not adversely affect socioeconomic conditions. No indirect residential displacement is anticipated. Additionally, impacts to community facilities and services from traffic changes due to the Overbuild would be mitigated and construction activities related to the Overbuild would comply with federal, state, and local requirements necessary to ensure a safe construction zone for workers and pedestrians including the elderly and persons with disabilities. Indirect beneficial construction impacts of the Preferred Alternative are expected on local businesses. Therefore, the indirect construction effects of the Preferred Alternative would not result in adverse impacts to socioeconomic resources. Details concerning the analysis of this resource category are provided in **Appendix N**, Section N.4.1.6.

20.3.2.14 PUBLIC HEALTH

The indirect construction effects of the Preferred Alternative would not result in adverse public health impacts. The 2009 SEQRA/CEQR FEIS indicated such findings and would still be applicable as 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. During construction, the Overbuild Developer has committed to implementing a state-of-the-art emissions reduction program for all construction activities to ensure that the construction of the Project Site would result in the lowest practicable diesel PM emissions. Although the 2009 SEQRA/CEQR FEIS concluded that the construction of the Overbuild could result in increased noise levels from construction related activities, the Reasonable Worst-Case Development Scenario (RWCDS) analyzed predicted noise levels to not exceed the CEQR impact criteria, and therefore did not result in an adverse noise impact. The 2009 SEQRA/CEQR FEIS concluded that construction of the Overbuild would not have an adverse impact on contaminated materials with the implementation of appropriate health and safety precautionary and remedial measures and therefore, would not have an adverse impact on hazardous materials. Therefore, the construction Preferred Alternative would not result in adverse indirect impacts to public health with implementation of the previously indicated commitments.

20.3.2.15 ENVIRONMENTAL JUSTICE

The indirect construction effects of the Preferred Alternative could result in potential adverse impacts with respect to:

- **Construction-related traffic**, due to temporary increases in construction vehicles, which could be mitigated at most (but not all) intersections with measures such as signal timing modifications and lane channelization.

The 2009 SEQRA/CEQR FEIS indicated the same conclusion and would remain applicable to the 2030 completion of the Overbuild and reflect the indirect construction effects of the Preferred Alternative as 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.

The adverse impacts described above would affect environmental justice populations but would also equally affect non-environmental justice populations. Therefore, the construction of the Overbuild, which is an indirect effect of the Preferred Alternative, would not have a disproportionate adverse impact on environmental justice populations.

20.4 CUMULATIVE IMPACTS OF THE PREFERRED ALTERNATIVE

Cumulative impacts result from the incremental consequences of an action when added to other past, present, and reasonably foreseeable future actions. Past actions provide a baseline of existing conditions. In New York City, many resource areas (e.g., transportation, air quality, noise) have been affected by past actions with the result that the baseline for these resources represent conditions that would be considered diminished or deteriorated beyond what would be expected in less densely populated areas of the country and region. These diminished baseline conditions have resulted in extensive planning and regulations to help avoid exacerbating these conditions, and preserve baseline conditions and existing quality of life, as new development continues to advance in the area. One readily seen example of this phenomenon is the nearly universal traffic congestion that can be found in most parts of Manhattan before, during, and after work hours. As a result of the unique environment found in the densely developed midtown Manhattan environment, more stringent environmental impact analyses and impact criteria, like those found in the *CEQR Technical Manual*, have been developed and implemented to add an extra level of protection for resources in the urban environment. Some of the relevant guidelines and protections developed for the New York City urban environment are discussed briefly below.

In New York City, sensitive receptors that are anticipated to experience interior noise levels of 45 dB(A) or greater are required to receive appropriate window/wall attenuation according to the *CEQR Technical Manual* noise exposure guidelines. Developers have been required to upgrade windows in existing buildings as well as construct buildings with double pane windows to reduce interior noise levels.

Additionally, many local governments worldwide, including New York City, are participating in the Cities for Climate Protection™ campaign, and have committed to adopting policies and implementing quantifiable measures to reduce local GHG emissions, improve air quality, and enhance urban livability and sustainability. New York City's long-term comprehensive plan for a sustainable and resilient New York City, which began as *PlaNYC 2030* in 2007, and continues to evolve today as *OneNYC 2050*, includes GHG emissions reduction goals, many specific initiatives that can result in emission reductions, and initiatives aimed at adapting to future climate change impacts. The goal to reduce citywide GHG emissions to 30 percent below 2005 levels by 2030 ("30 by 30") was codified by Local Law 22 of 2008, known as the New York City Climate Protection Act (the "GHG reduction goal").[3] The City has also announced a longer-term goal of reducing emissions to 80 percent below 2005 levels by 2050 ("80 by 50"), which was codified by Local Law 66 of 2014, and has published a study evaluating the potential for achieving that goal. More recently, as part of *OneNYC 2050*, the City has announced a more aggressive goal for reducing emissions from building energy down to 30 percent below 2005 levels by 2025. In May 2019, the New York City Council enacted Local Law 97 of 2019—the Climate Mobilization Act. For most buildings that exceed 25,000 gsf (excluding electricity/steam generation facilities, rent-regulated accommodations, places of public worship, and city-owned properties), the City has established annual building emission limits beginning in 2024 and would require the owner of a covered building to submit annual reports demonstrating the building is in compliance with the current GHG emission limits. For buildings not covered under the GHG emissions limits, owners may either demonstrate compliance with the current limits or implement specified energy conservation measures where applicable.

[3] Administrative Code of the City of New York, §24-803.

In general, while the direct effects of an individual action may be negligible, they could contribute to a measurable environmental impact when considered cumulatively with other past and/or future projects. The analysis follows the methodology outlined in detail in **Appendix B**.

Construction of the Preferred Alternative would overlap with other construction projects within the Study Area. FRA looked at the construction analysis completed for the Preferred Alternative and analyzed if there would be any cumulative impacts resulting from simultaneous construction of other projects in the Study Area. Cumulative impacts from past, present, and reasonably foreseeable projects are described below for Transportation, Noise, and Air Quality. Other resource areas are not anticipated to result in contributions to cumulative effects.

Based on the analysis performed in the previous chapters of this EIS, the Preferred Alternative would not have a direct construction effect on the following resource categories, and thus, a cumulative analysis would not be appropriate for the construction of the Preferred Alternative.

- Land Use, Land Planning, and Property
- Aesthetics and Visual Quality
- Contaminated Materials
- Utilities and Energy
- Soils and Geology
- Water and Natural Resources
- Coastal Zone Consistency
- Socioeconomics
- Environmental Justice
- Public Health

The potential construction effects of the Preferred Alternative, along with other projects being constructed within, near, or that could affect the Study Area using overlapping construction timeframes, has been cumulatively assessed for resource categories that were studied.

The projects included in the cumulative analysis are listed on **Table 20-1** and on **Figure 20-1**. This section identifies and evaluates the potential for cumulative impacts on any given resource category analyzed in this EIS.

The Preferred Alternative and the transportation and development projects listed in **Table 20-1** and **Figure 20-1** would help achieve New York City's goal of increasing development on the Far West Side of Manhattan. As discussed in previous chapters, the area near the Project Site has been the subject of various planning, rezoning, and redevelopment efforts by the City, MTA, and other entities. The City and MTA rezoned the Eastern and Western Rail Yard to accommodate high density, mixed-use development as part of the 2005 Hudson Yards rezoning project. The 2005 Hudson Yards rezoning project instituted a major rezoning of the entire Hudson Yards area, including the Eastern and Western Rail Yards, to accommodate a mix of uses and increased densities throughout the Far West Side. MTA most recently extended the No. 7 subway line to 34th Street making it easier to get passengers to and from this area of the City. The City and MTA have planned for this additional capacity in the Study Area. Additionally, as described in the 2009 SEQRA/CEQR FEIS, the City is carrying out an ongoing traffic monitoring program throughout the Hudson Yards area, as a result of the substantial new development planned and taking place in that area since 2009. As part of that monitoring program, the City will determine when it is appropriate to implement measures to alleviate traffic congestion at study area intersections.

Ongoing Projects Included in the Cumulative Assessment

WESTERN RAIL YARD INFRASTRUCTURE PROJECT

Figure 20-1

Table 20-1
Projects Included in the Cumulative Assessment

Map ID No.*	Address/Name	Block	Lot	Program	Build Year[1]
1	High Line—Tenth Avenue Spur	N/A	N/A	Completion of repurposed High Line with open space amenities	2030
2	Hudson River Park	N/A	N/A	Park improvements, 29th-34th Streets	2030
3	New York Penn Station Infrastructure Renewal Project	781	1	Accelerated maintenance and repairs to existing tracks and systems to strengthen and improve operations and reliability at New York Penn Station	2030
4	Penn Station Access	N/A	N/A	Rerouting certain Metro-North Railroad New Haven Line commuter trains to Penn Station	2030
5	Empire Station Complex	780	All	Multiple transit improvements to Penn Station	2032/2042
6	432 West 31st Street	728	55	220 hotel rooms	2027
7	542 West 22nd Street	693	56	36,783 gsf office	2027
8	545 West 37th Street	709	14	131 DU, 258 hotel rooms, 82 parking spaces	2027
9	99 Hudson Boulevard	708	1, 62	1,495,000 gsf office	2027
10	349-355 West 37th Street	761	5,7	136 DU, 11,355 gsf retail	2027
11	Hudson Yards Site 24	735	25,27,30, 31,35	448 DU, 8,579 gsf community facility, 170 parking spaces	2027
12	260 Eleventh Avenue	698	1,6	23,236 gsf retail, 314,606 gsf office	2027
13	Western Rail Yard Overbuild	676	1,5	4,000 DU, 470 hotel rooms, 2,075,000 sf office, 75,000 sf retail, 750-seat school	2030
14	Hudson Tunnel Project	N/A	N/A	New rail tunnel, associated ventilation infrastructure, and full rehabilitation of the NRT	2030/2032

Notes:
Some program data was updated in July 2020, based on updated project information from NYCDCP.
DU= Dwelling Units
* See **Figure 20-1**
[1] Projects for which an expected date of completion is not available are assumed to be complete by 2030.
[2] Gsf was calculated off of the zoning square footage by using a factor of 1.15.
Sources: NYCDCP, NYCDOB; AKRF research; and media coverage.

The incremental impacts of the Preferred Alternative as well as the projects listed in **Table 20-1** are anticipated to exacerbate the non-attainment status of the New York New Jersey Long Island Area. However, New York State has a SIP that was developed to improve air quality and move toward reducing air pollutants and complying with the NAAQS. The Preferred Alternative as well as projects in **Table 20-1** may introduce stationary sources of noise in the form of mechanical equipment; however, each would be required to comply with the restrictions of the NYCNCC, which would ensure that they do not produce noise levels exceeding applicable noise impact thresholds. Noise associated with traffic traveling to and from these projects would also not exceed applicable impact thresholds, since the surrounding roadways are already heavily trafficked and would not have the potential to experience a doubling of traffic, which would be necessary to result in a perceptible increase in noise levels. Consequently, the combined effects of the Preferred Alternative and the projects listed in **Table 20-1** would not have the potential to result in a noticeable increase in noise levels at any noise-sensitive receptors within the Study Area.

20.4.1 CUMULATIVE OPERATIONAL IMPACTS OF THE PREFERRED ALTERNATIVE

This EIS concluded that the operation of the Preferred Alternative would not result in adverse impacts on any resource categories (see detailed descriptions of analyses in Chapters 5 through 19). Therefore, the Preferred Alternative would not contribute to the incremental effects with other present, or reasonably foreseeable projects in the study area.

20.4.2 CUMULATIVE CONSTRUCTION IMPACTS OF THE PREFERRED ALTERNATIVE

20.4.2.1 TRANSPORTATION

As discussed in Chapter 6, the Preferred Alternative would not have adverse construction impacts on transportation infrastructure based on *CEQR Technical Manual* guidance. However, the Preferred Alternative is in an area with baseline congestion, and with several new projects under construction or expected to be operational in the 2023 Peak Construction Year, and would contribute to localized traffic congestion in the Study Area during construction, particularly during construction shift changes. Therefore, construction of the Preferred Alternative would be expected to temporarily exacerbate traffic congestion in the area. It can be assumed that the projects listed in **Table 20-1** would result in construction worker and construction vehicle trips. As described in the 2009 SEQRA/CEQR FEIS, the City is carrying out an ongoing traffic monitoring program throughout the Hudson Yards area, as a result of the substantial new development taking place in that area since 2009, and the anticipated additional congestion that would result from construction activities and operation of these developments. The intent of the traffic monitoring plan is to identify new or worsening areas of congestion in the area, and to determine the appropriate measures to implement to address congestion and endeavor to optimize traffic flow. As part of that monitoring program, the City will determine when it is appropriate to implement measures to alleviate traffic congestion at study area intersections. Additionally, as with any large-scale construction project fronting New York City public rights-of-way, implementation of an MPT plan is typically required and implements Best Management Practices. In this instance, the MPT is also part of the RD and CEPP for both Platform and subsequent Overbuild construction (see Section 20.3 above). The developers for all the projects listed in **Table 20-1** would develop MPT plans for submission to NYCDOT for review and approval. MPT plans would provide diagrams of proposed temporary lane and sidewalk alterations, including the duration, and the width and length of affected segments, as well as safety signs and the locations of safety barriers and construction fencing. Provisions of the MPT plans may also 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's OCMC has approved the MPT plans, the developers and their contractors would be responsible for maintaining the provisions of the plans. It can be assumed that with the implementation of MPT plans for all the planned construction projects listed on **Table 20-1** adverse traffic impacts would be mitigated.

20.4.2.2 AIR QUALITY, GREENHOUSE GAS EMISSIONS, AND RESILIENCE

Construction of the Preferred Alternative as well as the projects in **Table 20-1** would result in increased regional emissions of criteria pollutants within the New York New Jersey Long Island Non-Attainment Area. New York State has a SIP that was developed to improve air quality and move toward reducing air pollutants and complying with NAAQS and considers anticipated growth in both construction activities as well as operational emissions. Projects subject to conformity are assessed on an individual basis to determine if an action would result in emissions that would not conform to the SIP emissions accounting. As discussed in Chapter 7, construction of the Preferred Alternative would result in annual pollutant emissions below the federal *de minimis* thresholds. Therefore, the Preferred Alternative is assumed to conform with New York State's SIP and would not impact the State's plan to achieve attainment of the NAAQS. Both New York City and New York State requires identification of measures to reduce both criteria pollutant and GHG emissions during construction in accordance with all applicable laws, regulations, and building code to minimize the air quality effects from construction. This is the main goal of the SIP, which was developed by New York State, to improve air quality and move toward reducing air pollutants and complying with NAAQS in this non-attainment area.

20.4.2.3 NOISE AND VIBRATION

Construction of the Preferred Alternative would not exceed FTA construction noise impact thresholds; however, the construction noise levels would be audible outside the project site and would be heard by passersby. It is anticipated that similar nuisance noise from other projects listed in **Table 20-1** would result in similar nuisance noise in the immediate areas during construction. Construction operations for all the projects on **Table 20-1** are anticipated to comply with the NYCNCC construction noise regulations with respect to equipment noise emission levels, but are still anticipated to cumulatively result in a noticeable noise increases for the general public.

20.5 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

An irreversible or irretrievable commitment of resources results from the use of a resource that cannot be replaced or recovered, and results in the permanent loss of the resource for any future or alternate use.

Construction of the Preferred Alternative would require the irreversible and irretrievable commitment of building materials, including construction materials such as concrete, steel, and aggregate. The Preferred Alternative would also consume energy in the form of fossil fuels and electricity during the construction and operation of the Platform, its associated infrastructure, and Tunnel Encasement. These materials are available and their use for the Preferred Alternative would not have adverse impacts on their continued availability for other purposes. In addition to materials, funding and human labor would be required to design and build the Preferred Alternative.

The previous chapters of this EIS describe the measures to be implemented to avoid, minimize, and mitigate adverse impacts to resources. As discussed in Chapter 7, this includes the use of sustainable approaches to conserve and reuse resources whenever possible.

20.6 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Short-term effects on the environment typically result from construction impacts. Long-term effects relate to the maintenance and enhancement of long-term productivity, including consistency of a project with local and regional economic, social, planning, and sustainability objectives. This section compares the short-term uses of the environment with the Preferred Alternative's long-term productivity.

20.6.1 SHORT-TERM USES

Construction of the Preferred Alternative would have greater short-term effects on the environment than the No Action Alternative; however, these effects would be temporary, and any construction-related environmental impacts would be avoided, minimized, and mitigated wherever practicable.

20.6.2 LONG-TERM PRODUCTIVITY

The No Action Alternative would likely result in negative effects to long-term productivity as it would not support the creation of additional new capacity for real estate development, nor would it preserve the right-of-way through the Western Rail Yard to support the future construction of a trans-Hudson passenger connection into New York Penn Station. In contrast, the Preferred Alternative would support the provision of developable land area that would generate revenue and modernize state-of-the-art life safety systems for the entire Western Rail Yard, in addition to preserving the right-of-way. Therefore, the Preferred Alternative would result in benefits to long-term productivity.

20.6.3 SHORT-TERM USES VERSUS LONG-TERM PRODUCTIVITY

Based on the information presented above, the localized short-term impacts that would result from construction of the Preferred Alternative would be temporary during the construction period. The long-term benefits to productivity of the Preferred Alternative are greater than the short-term effects on the environment. ✷