

4.1 INTRODUCTION

Construction of the Hudson Tunnel Project (the Project) is expected to involve the use of Federal funding administered through the U.S. Department of Transportation (USDOT). The Project Sponsor that will advance the Project through final design and construction, including compliance with mitigation measures, has not yet been identified. The Project Sponsor may include one or more of the Port Authority of New York & New Jersey (PANYNJ), the National Railroad Passenger Corporation (Amtrak), New Jersey Transit Corporation (NJ TRANSIT), and/or another entity that has not yet been determined. Nevertheless, the Project Sponsor is expected to pursue Federal financial assistance from USDOT, including through the Federal Railroad Administration (FRA) or the Federal Transit Administration (FTA).

Prior to issuing permits or approvals for a project, including approval of funding, Federal agencies must consider the environmental effects of their actions in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 USC § 4321 et seq.). Accordingly, FRA and NJ TRANSIT prepared this Draft Environmental Impact Statement (DEIS) to comply with the requirements of the Council on Environmental Quality's (CEQ) regulations implementing NEPA (40 CFR Parts 1500-1508) and the FRA *Procedures for Considering Environmental Impacts* (FRA's Environmental Procedures, 64 Federal Register [FR] 28545, May 26, 1999, as updated in 78 FR 2713, January 14, 2013), and the Federal Highway Administration (FHWA) and FTA *Environmental Impact and Related Procedures* (23 CFR Part 771). This DEIS also documents compliance with other applicable Federal, New Jersey and New York State, and local environmental laws and regulations, including Section 106 of the National Historic Preservation Act; the Conformity requirements of the Clean Air Act; the Clean Water Act; the Rivers and Harbors Act of 1899; Section 4(f) of the Department of Transportation Act of 1966 (Section 4(f)); the Endangered Species Act; Executive Order 11988 and USDOT Order 5650.2 on Floodplain Management; Executive Order 11990 on Protection of Wetlands; the Magnuson-Stevens Act related to Essential Fish Habitat; the Coastal Zone Management Act; Executive Order 12898 on Environmental Justice; and the *Environmental Justice Policy Guidance for Federal Transit Administration Recipients*, FTA C 4703.1. Where relevant, the analysis also meets the NEPA procedures of the two Cooperating Agencies for the Project—the FTA and the U.S. Army Corps of Engineers (USACE)—as well as the requirements of other agencies from which permits or approvals will be sought.

CEQ's NEPA regulations require Federal agencies to consider the direct and indirect environmental effects and cumulative impacts of their actions. Consistent with those regulations, this DEIS identifies reasonable and feasible alternatives to the Proposed Action; the likely impacts the Project would have on social, economic, and environmental conditions; and measures to avoid, minimize, or mitigate impacts.

This chapter of the Environmental Impact Statement (EIS) describes the framework for the analysis, including the alternatives that are evaluated, the specific Project site considered, the study areas used, and the analysis years considered. The format of the EIS is then briefly outlined.



This chapter contains the following sections:

- 4.1 Introduction
- 4.2 Hudson Tunnel Project for Analysis
 - 4.2.1 Alternatives for Analysis
 - 4.2.2 Project Setting
 - 4.2.3 Project Site
- 4.3 Approach for Analysis
 - 4.3.1 Conditions Analyzed
 - 4.3.2 Study Areas
 - 4.3.3 Affected Environment in the Future
 - 4.3.4 Analysis Methodology
- 4.4 Format of this EIS

4.2 HUDSON TUNNEL PROJECT FOR ANALYSIS

4.2.1 ALTERNATIVES FOR ANALYSIS

CEQ's NEPA regulations (40 CFR Parts 1500-1508) state that Federal agencies should "Use the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment" (§ 1502.2). This DEIS considers the impacts of the No Action Alternative and one Build Alternative, the Preferred Alternative.

The No Action Alternative represents the conditions that would exist in the analysis year without implementation of the Preferred Alternative. The purpose of the No Action Alternative is to provide a basis against which the effects of the Preferred Alternative can be compared. As described in Chapter 2, "Project Alternatives and Description of the Preferred Alternative," the No Action Alternative assumes that the existing maintenance regimen in the North River Tunnel will continue, and no new passenger rail tunnel under the Hudson River would be constructed. It should be noted that despite the ongoing maintenance that is assumed to continue in the No Action Alternative, damage to the North River Tunnel caused by Superstorm Sandy will continue to degrade systems in the tunnel. This deterioration combined with the North River Tunnel's age and intensity of use will likely lead to increasing instability of rail operations in the tunnel, and may lead to its eventual closure. However, for purposes of analysis in this EIS, FRA has made the assumption that the North River Tunnel will remain functional and in operation at least through the analysis year.

The Preferred Alternative is described in Chapter 2, "Project Alternatives and Description of the Preferred Alternative," and Chapter 3, "Construction Methods and Activities." As detailed there, the Preferred Alternative includes two new tracks extending from the NEC in New Jersey, continuing in a tunnel beneath the Palisades and the Hudson River to connect to the existing approach tracks that lead into Penn Station New York (PSNY). While the Project addresses maintenance and resilience of the NEC Hudson River crossing, it would not increase rail capacity, which would remain constrained at PSNY. Ultimately, an increase in service between Newark Penn Station and PSNY cannot be realized until other substantial infrastructure capacity improvements are built, such as an expansion at PSNY and a new bridge over the Hackensack River to add capacity to the NEC at that pinch point, known as the Portal South Bridge project. Therefore, this EIS assumes that upon completion of the Preferred Alternative, Amtrak and NJ TRANSIT would operate the same number of trains using the four tracks beneath the Hudson River as in the No Action Alternative, in which only two tracks would be available.

4.2.2 PROJECT SETTING

The Preferred Alternative would be approximately 4.5 miles long, extending from Secaucus, New Jersey to Manhattan. Along that route, the Preferred Alternative would pass through several different topographies, including the following:

- The Meadowlands: a large system of wetlands in northeastern New Jersey, along the lower reaches of the Hackensack and Passaic Rivers just north of those rivers' termini at Newark Bay. While wetlands still predominate in this area, large swaths of the Meadowlands in the vicinity of the Preferred Alternative's alignment have been drained and converted to industrial use in the municipalities of Secaucus and North Bergen.
- The Palisades: A steep ridge with cliffs along both sides, running north-south along the western side of the lower Hudson River in New Jersey and New York. In the vicinity of the Preferred Alternative's alignment, where the Palisades ridge reaches a height of approximately 300 feet above sea level, the crest of the ridge is densely developed with mixed commercial and residential neighborhoods in the municipalities of North Bergen, Union City, and Weehawken.
- New Jersey Hudson River waterfront: Low-lying waterfront area to the east of the Palisades in the towns of Hoboken and Weehawken. This area was constructed predominantly on fill material and is developed with a mix of residential, commercial, and industrial areas.
- Hudson River: A major river that forms a portion of the border between New Jersey and New York that is heavily used for waterborne commerce and recreational maritime activities. The river is approximately one mile in width at the point where the alignment of the Preferred Alternative crosses beneath it.
- West Midtown, Manhattan: Low-lying waterfront area on the eastern shore of the Hudson River in New York City. Closest to the river, this area was constructed predominantly on fill material and is developed with a mix of commercial, industrial, and residential uses.

4.2.3 PROJECT SITE

The Project site analyzed in the chapters that follow consists of all areas where the Preferred Alternative would have construction activities or permanent Project features. The Project site is depicted in **Figures 4-1, 4-2, and 4-3**. The Project site consists of the following components:

- The *surface alignment*, the proposed new tracks at and along the NEC tracks from approximately County Road to the tunnel portal east of Tonnelle Avenue. The surface alignment also includes new access roadways along the south side of the alignment to allow construction and maintenance access to the alignment. Today, this section of the alignment is largely within the Amtrak right-of-way and also contains portions of parking areas for the industrial uses situated along the southern side of the NEC tracks. The surface alignment would need to cross over Secaucus Road; freight rail tracks operated by Conrail and the New York, Susquehanna & Western Railway (NYSW); and beneath a Public Service Electric and Gas (PSE&G) utility easement. It would pass beneath Tonnelle Avenue (U.S. Route 1 and 9).
- The *Tonnelle Avenue staging site*, consisting collectively of several staging areas on both sides of Tonnelle Avenue at and south of the existing NEC. Today, one of these sites is used as a bus storage facility and the other is a vacant lot; both are owned by NJ TRANSIT.
- The *Palisades tunnel*, extending from the portal at Tonnelle Avenue to the Hoboken staging and fan plant site. This section of the new Hudson River Tunnel alignment runs beneath the Palisades through hard rock approximately 80 to 270 feet beneath the mixed-use neighborhoods atop the Palisades.

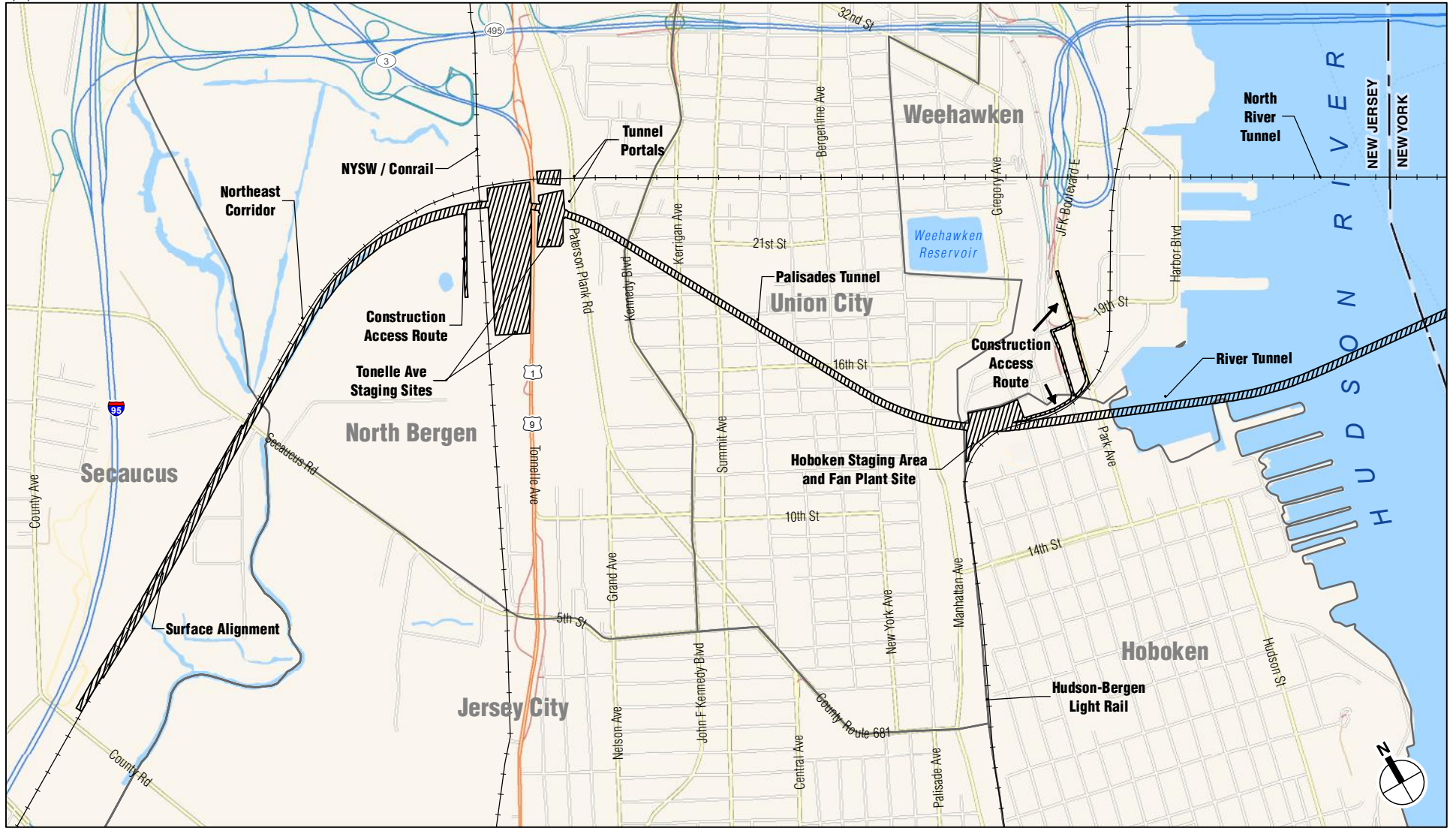


 Project Site

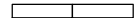
 Existing Northeast Corridor



Project Site Overview
Figure 4-1



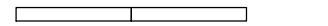
 Project Site
 Municipal Boundaries

0 1,000 FEET






 Project Site

0 500 FEET


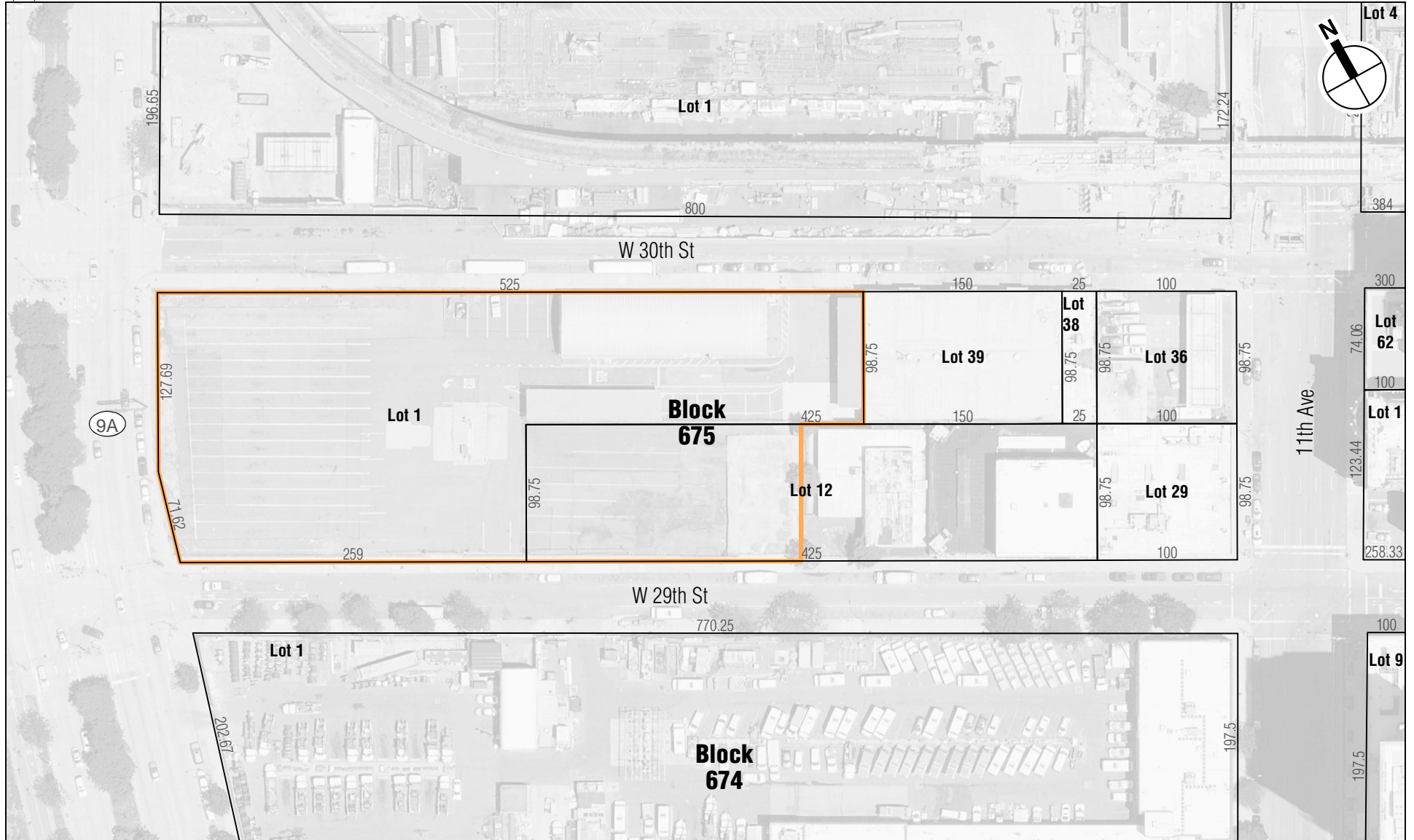
- The *Hoboken staging and fan plant site* on West 18th Street in Hoboken, which also includes the portion of construction truck routes that would use local, non-arterial streets. Today, the main staging and fan plant site is a vacant lot owned by NJ TRANSIT. The construction truck route would run along the Hudson-Bergen Light Rail (HBLR) right-of-way as well existing built streets.
- The *river tunnel*, the section of the Hudson River Tunnel extending from the Hoboken staging and fan plant site, beneath the Hudson River, to the Twelfth Avenue staging and fan plant site in Manhattan. In New Jersey, the river tunnel would pass beneath the HBLR right-of-way and buildings, streets, and parks in the New Jersey waterfront area. Beneath the Hudson River, the river tunnel would pass beneath the Federal navigation channel within the river. In New York, the river tunnel would pass through the Manhattan Hudson River bulkhead and beneath Hudson River Park, the West 30th Street Heliport, and Twelfth Avenue (New York State Route 9A).
- The *low-cover area* in the Hudson River, above the tunnel near the eastern edge of the main navigation channel, where in-water ground improvement work would be conducted for the tunnel alignment.
- The *Twelfth Avenue staging and fan plant site* on the west end of the block between West 29th and West 30th Streets, Twelfth Avenue and Eleventh Avenue (Manhattan Block 675). Today, this site contains all or part of two privately owned lots. **Figure 4-4** shows the Twelfth Avenue staging site and the lots on Block 675.
- The *Manhattan tunnel*, extending from the Twelfth Avenue staging and fan plant site to the PSNY approach tracks at approximately Ninth Avenue, and including areas in West 30th Street and Tenth Avenue as well as the concrete tunnel box constructed as part of the Hudson Yards Right-of-Way Preservation Project (see Section 4.3.3 below).
- The *Tenth Avenue fan plant*, to be constructed in the vicinity of Tenth Avenue between West 31st and West 33rd Streets.
- The *North River Tunnel*, from its portal east of Tonnel Avenue in North Bergen to its portal at Tenth Avenue, west of PSNY.

4.3 APPROACH FOR ANALYSIS

4.3.1 CONDITIONS ANALYZED

This EIS analyzes the direct and indirect effects of the Preferred Alternative on its environmental setting both during construction and once completed. Since construction and operation of the Preferred Alternative would take place in the future, its environmental setting is not the current environment, but instead the future environment as it would exist during Project construction and at Project completion. The technical analyses in this EIS therefore consider the following:

- **Affected Environment:**
 - **Affected Environment: Existing Conditions:** This section of each analysis describes existing conditions today, as of the date when this DEIS was completed.
 - **Affected Environment: Future Conditions:** This section of each analysis describes the affected environment as it will be in the future, independent of the No Action or Preferred Alternative (sometimes referred to as the “No Action condition” or the “future affected environment”). This section of the evaluation considers the other initiatives and projects reasonably anticipated to occur in the Project study areas as well as the changes likely to occur because of growth in population and traffic or other ongoing trends. Section 4.3.3 below outlines the changes this EIS incorporates as part of the analysis of the future affected environment.



Data source: Digital Tax Map, NYC Dept. of Finance 2017-04-14



- **Impacts of the Project Alternatives:**
 - **Impacts of No Action Alternative:** This section of each analysis describes impacts of the No Action Alternative, which is the alternative in which the Preferred Alternative is not implemented. The No Action Alternative serves as a baseline against which the effects of the Preferred Alternative can be measured.
 - **Construction Impacts of the Preferred Alternative:** This section considers the direct and indirect temporary impacts of the Preferred Alternative during construction, based on conceptual design (10 percent design). As described in Chapter 3, “Construction Methods and Activities,” construction activities for the Preferred Alternative, including construction of the new Hudson River Tunnel and rehabilitation of the existing North River Tunnel, would occur over an approximately 11-year period. For most analyses, that construction period in its entirety is discussed. For certain quantified analyses, such as traffic and noise, the impacts of construction activities are considered for a specific time period, selected because it represents a period of peak construction activity, or worst-case conditions during construction. That peak would generally occur in 2021 or 2022, and is specified in the relevant chapters.
 - **Permanent Impacts of the Preferred Alternative:** This section considers the direct and indirect impacts of the Preferred Alternative once it is complete and both the North River Tunnel and the new tunnel are in operation. This analysis considers conditions in the year 2030, the year when the Preferred Alternative would be complete based on the current Project schedule.
- **Measures to Avoid, Minimize, or Mitigate Impacts:**
 - This section of each analysis identifies measures that will be undertaken by the Project Sponsor to minimize, avoid, or mitigate adverse the temporary construction impacts or permanent operational impacts of the Preferred Alternative. FRA and NJ TRANSIT identified such measures for adverse impacts wherever practicable.

4.3.2 STUDY AREAS

Each technical analysis conducted for the EIS considered the Project site outlined above and a study area representing the area where the Preferred Alternative has the potential for community or environmental effects during construction or operation. The study areas differ for different resource and analysis areas because the type and range of potential impacts varies. For example, the study area for visual and aesthetic considerations encompasses areas from which the construction activities or permanent elements of the Preferred Alternative may be visible, while the study area for traffic consists of nearby intersections where traffic related to the Preferred Alternative’s construction may adversely affect local traffic conditions. Each chapter of this EIS describes the study area used for the specific analysis discussed in that chapter.

For most analyses, no study area was included for the rehabilitation work that would occur within the North River Tunnel, since this would occur well below the surface within an existing tunnel and does not have the potential to adversely affect surface uses above. The rehabilitation activities that would occur deep within the rock of the Palisades in the existing tunnel would not cause noticeable vibration at the top of the Palisades because they do not include major vibration-producing equipment such as pile drivers, blasting, or hoe rams (see Chapter 12, “Noise and Vibration,” Section 12.6.2.2.5). Rehabilitation work that occurs at the surface, such as at the Tonnelle Avenue staging site, is analyzed. Similarly, most analyses do not have a study area for the operation of the rehabilitated North River Tunnel, since conditions would be similar to existing conditions with respect to rail operations.

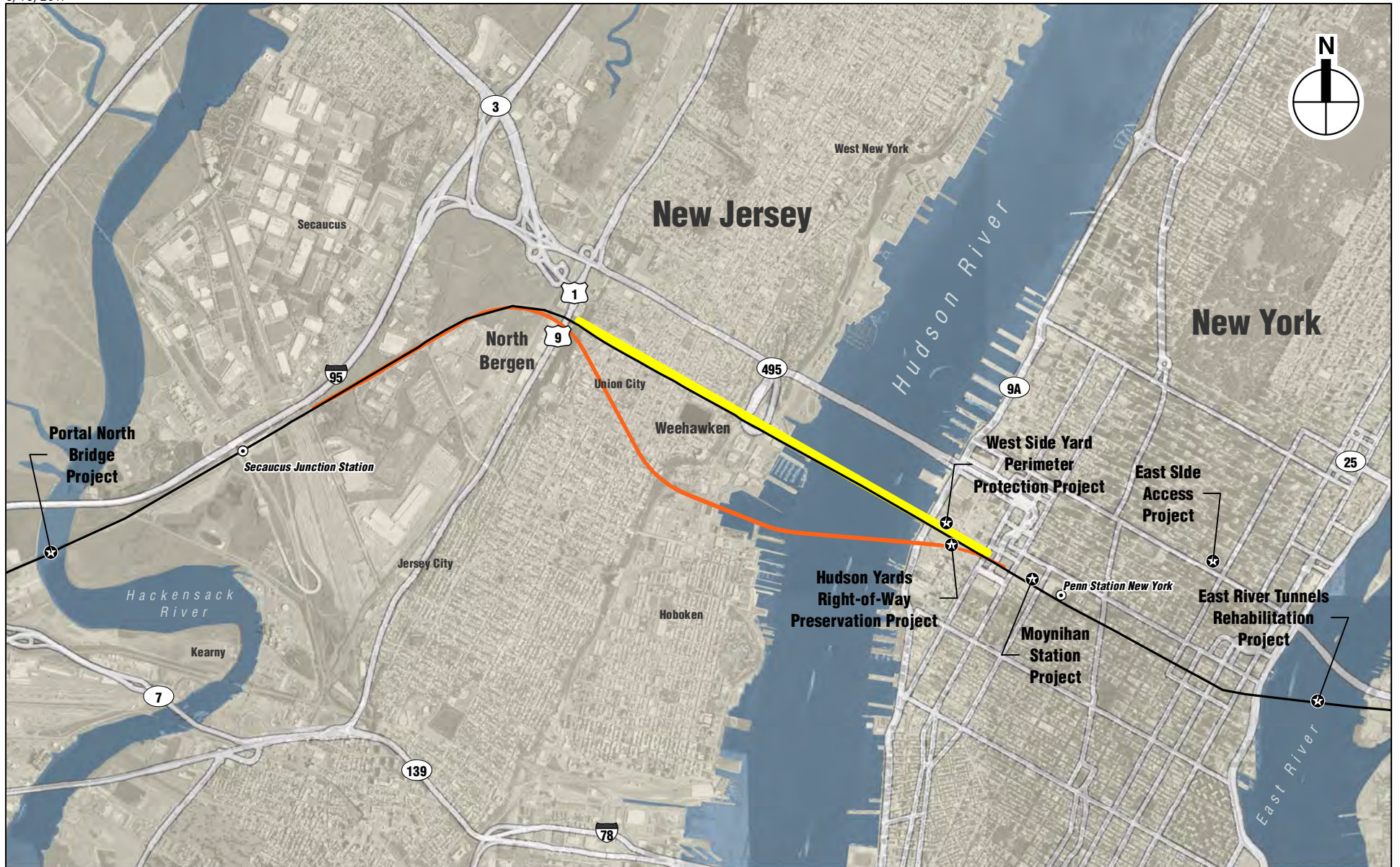
4.3.3 AFFECTED ENVIRONMENT IN THE FUTURE

As noted above, this EIS evaluates the affected environment as it will be in the future, independent of the No Action or Preferred Alternative (sometimes referred to as the “No Action condition,” or the “future affected environment”). This section of the evaluation considers the other initiatives and projects reasonably anticipated to occur in the Project study area. They include the following projects:

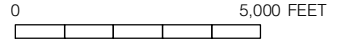
4.3.3.1 TRANSPORTATION PROJECTS

A number of future projects are currently being implemented or planned that will affect the PSNY rail complex and rail operations through PSNY. These projects will occur independently of the Hudson Tunnel Project and therefore can be assumed to be implemented with the No Action Alternative (as well as with the Preferred Alternative for the Project) prior to the analysis year of 2030. They include the following (see **Figure 4-5**):

- **Hudson Yards Right-of-Way Preservation Project:** Amtrak is currently constructing a concrete tunnel box along the south side of the Metropolitan Transportation Authority (MTA) Long Island Rail Road’s (LIRR) John D. Caemmerer West Side Yard, extending from the north side of 30th Street near Twelfth Avenue eastward beneath Eleventh Avenue to Tenth Avenue. This structure is intended to preserve a future location for rail operations since a large-scale redevelopment, known as Hudson Yards, is being developed on a platform above the West Side Yard. Construction has been substantially completed on an 825-foot-long section of the concrete casing between Tenth and Eleventh Avenues, as well as an extension to the concrete casing, a 105-foot-long portion beneath the viaduct that carries Eleventh Avenue over the railyard. The final section, 500 feet long, will extend from Eleventh Avenue to 30th Street close to Twelfth Avenue.
- **West Side Yard Perimeter Protection:** During Superstorm Sandy, flood waters entered the West Side Yard from the Hudson River, damaging critical infrastructure there including trackbeds, switches, and signals, and entering the North River Tunnel’s two tubes from their Manhattan portal at Tenth Avenue and their ventilation shaft at Eleventh Avenue. To protect this infrastructure from future flooding, the LIRR is planning a flood protection project that will include perimeter protection and drainage improvements around the West Side Yard, which also encompasses the North River Tunnel’s vent shaft and portal. For perimeter protection, a new, permanent wall is proposed, with additional deployable barriers to be implemented across driveways and access points in advance of storm events. This project will protect not only the West Side Yard, but also the other existing railroad infrastructure connected to the yard, including the portal and ventilation shaft for the North River Tunnel, the smaller rail storage yards east of Tenth Avenue, and the tracks and platforms at PSNY. The new perimeter wall will also protect the new portal for the Hudson River Tunnel and the Tenth Avenue fan plant, which would be located above the A Yard tracks.
- **East River Tunnels Rehabilitation:** Two of the four tubes of the East River Tunnels were flooded during Superstorm Sandy, with water reaching the tunnel roofs (i.e., crowns) at mid-river. This caused extensive damage within the tunnels. While the tunnels were repaired and brought back to service quickly after the storm, like the North River Tunnel, these tunnels require complete rehabilitation. Amtrak is planning this rehabilitation, which may begin as early as 2020. The rehabilitation will occur one tube at a time to minimize disruption to rail service, but closure of one tube will nonetheless require services changes for Amtrak, LIRR, and NJ TRANSIT. Amtrak is not planning to rehabilitate the East River Tunnels at the same time as rehabilitation of the North River Tunnel.
- **Moynihan Station Project:** The Moynihan Station Project will create a new passenger rail station within the historic James A. Farley Post Office Building (Farley Building), which is



- Existing North River Tunnel
- Other Future Projects
- Hudson Tunnel Project Alignment
- Existing Northeast Corridor



Key Future Transportation Improvements
Figure 4-5

across Eighth Avenue from PSNY and was designed by the same architecture firm as the original Penn Station building. Like the existing PSNY station facilities, the Farley Building is above the tracks and platforms of PSNY. The project will create a new grand train hall for passengers and improved passenger amenities. The project is advancing in phases, and the first phase is now substantially complete. Phase 1 includes the West End Concourse Expansion to create access to PSNY's tracks and platforms through the Farley Building, expand and rehabilitate the underground connecting corridor between the new West End Concourse and existing PSNY, and new and reconfigured entrances for the Eighth Avenue subway lines (A/C/E) at PSNY. The next phase, now in construction, will include a new train hall, internal pedestrian circulation space, and commercial development in the Farley Building, including transit-oriented and destination retail as well as other commercial uses.

- **East Side Access Project:** MTA is currently constructing the East Side Access project, which will allow LIRR trains to travel to Grand Central Terminal in addition to PSNY. The project includes a new lower-level LIRR terminal beneath the existing terminal at Grand Central, a new tunnel from Queens to Grand Central, and many other improvements. The project is planned for completion by the end of 2022. Once complete, LIRR is anticipating a substantial increase in service with trains serving both Manhattan terminals. At PSNY, LIRR plans to run the same number of trains as today, but initially with shorter train lengths.
- **Portal North Bridge (Portal Bridge Replacement):** The existing Portal Bridge is a two-track movable bridge that carries the NEC across the Hackensack River between Newark Penn Station and the Frank R. Lautenberg Secaucus Junction Station. This bridge is more than 100 years old and has reached the end of its useful life; malfunctions in the mechanical components of the bridge can cause extensive delays on the NEC. The bridge will be replaced by a new high-level, fixed-span bridge with two tracks parallel to, and north of, the existing bridge. Final design and permitting for this bridge replacement project, known as Portal North Bridge, are complete.

4.3.3.2 DEVELOPMENT PROJECTS

The Project area both in New Jersey and near PSNY in New York is undergoing redevelopment with new buildings. These are described in more detail in Chapter 6A, "Land Use, Zoning, and Public Policy," in Section 6A.4, "Affected Environment: Future Conditions."

4.3.3.2.1 New Jersey

In Weehawken, large-scale waterfront redevelopment is ongoing. In the Lincoln Harbor Redevelopment Area, vacant parcels will be redeveloped with a mix of retail, office, and residential uses similar to the other new waterfront properties in Weehawken.

In Hoboken, the New Jersey Department of Environmental Protection (NJDEP) is proposing the Rebuild By Design Project, an initiative to reduce frequent flooding in Hoboken due to major storm surges, high tides, and heavy rainfall events. That project proposes numerous green infrastructure elements, such as landscaped berms and levees and bioretention basins, to resist and delay flooding.

4.3.3.2.2 New York

In New York, extensive development is occurring in West Midtown in the Project study area as a result of recent public policy initiatives in the area, and many sites are currently under construction with high-density developments. North of West 30th Street, three major redevelopment projects, Western Rail Yard, Eastern Rail Yard, and Manhattan West, will result in a new high-rise neighborhood built on platforms above the West Side Yard and other subsurface tracks west of PSNY. These projects are collectively referred to as Hudson Yards. The Western Rail Yard component, between Eleventh and Twelfth Avenues, will include eight



towers and open space, with a total of approximately 6.2 million square feet of residential, office, retail, and school space to be completed by 2024. The Eastern Rail Yard component, between Tenth and Eleventh Avenues, will include six towers, retail space, and open space, totaling approximately 11.7 million square feet of new residential, office, retail, and hotel space to be completed by 2019. In addition, east of Tenth Avenue, a third project being built on a platform spanning the subsurface railyard below, Manhattan West, will include four towers with approximately 4.7 million square feet of office, residential, and retail space to be completed by 2024. Around the Hudson Yards redevelopment, many other sites are currently under construction or proposed for future construction with residential, retail, or commercial (i.e., office) space.

In addition, as described in Chapter 6A, “Land Use, Zoning, and Public Policy,” the New York City Department of City Planning (NYCDCP) is currently evaluating a proposed rezoning for eastern end of the block between West 29th and West 30th Streets and Twelfth and Eleventh Avenues (Block 675) that would facilitate redevelopment on that block with two high-rise residential developments.

At the New York waterfront, Hudson River Park will continue to be improved in the future. This park is being gradually developed as funding becomes available. Developers proposing to build on the block between West 29th and West 30th Streets are seeking transfer of development rights from the park, in exchange for payments to the park. The anticipated funding will allow the Hudson River Park Trust (HRPT) to undertake improvements on the segment of the park from 29th to 34th Streets. Park improvements in this area will require relocation of the West 30th Street Heliport to another suitable location.

4.3.4 ANALYSIS METHODOLOGY

In preparing the analyses presented in this DEIS, FRA and NJ TRANSIT followed FRA’s *Procedures for Considering Environmental Impacts*¹ as well as other applicable guidance and regulations. Each chapter of the DEIS outlines the regulations that apply to the analysis and the methodologies used for the assessment. In accordance with CEQ’s NEPA implementing regulations (40 CFR § 1508.27), impacts were identified based on their significance with respect to context and intensity.

Whenever applicable and practicable, FRA and NJ TRANSIT conducted the analyses in accordance with local environmental review policies and guidance. In this way, DEIS will fulfill any applicable state and local environmental review requirements to support review of the document by state and local agencies from which permits or approvals are required for the Project. The analysis of Project components and elements located in New York City complies with the guidance of the 2014 *City Environmental Quality Review (CEQR) Technical Manual*. The *CEQR Technical Manual* was developed by the City of New York specifically for evaluation of the environmental impacts of projects proposed in New York, based on local conditions and issues. These criteria for adverse impacts are well suited for evaluation of effects in New York City and were therefore also used for purposes of NEPA, unless specific, more stringent NEPA criteria exist.

Appendix 4 includes information on where the analyses normally provided in a CEQR analysis can be found in this NEPA DEIS.

¹ 64 Federal Register 28545, May 26, 1999.

4.4 FORMAT OF THIS EIS

Each subsequent chapter of this DEIS evaluates a different technical area. For each technical area, the DEIS describes the methodology used to conduct the relevant technical analysis and discusses the affected environment in the existing conditions, the affected environment as it will be in the future analysis year for the Preferred Alternative, the effects of the No Action Alternative, the temporary construction impacts of the Preferred Alternative, and the operational, permanent impacts of the Preferred Alternative. These include the following chapters:

- Chapter 5A: Traffic and Pedestrians
- Chapter 5B: Transportation Services
- Chapter 6A: Land Use, Zoning, and Public Policy
- Chapter 6B: Property Acquisition
- Chapter 7: Socioeconomic Conditions
- Chapter 8: Open Space and Recreational Facilities
- Chapter 9: Historic and Archaeological Resources
- Chapter 10: Visual and Aesthetic Resources
- Chapter 11: Natural Resources
- Chapter 12: Noise and Vibration
- Chapter 13: Air Quality
- Chapter 14: Greenhouse Gas Emissions and Resilience
- Chapter 15: Soils and Geology
- Chapter 16: Contaminated Materials
- Chapter 17: Utilities and Energy
- Chapter 18: Safety and Security
- Chapter 19: Public Health and Electromagnetic Fields (EMFs)

Following those chapters, this DEIS also includes the following additional chapters:

- Chapter 20: Indirect and Cumulative Effects
- Chapter 21: Coastal Zone Consistency
- Chapter 22: Environmental Justice
- Chapter 23: Commitment of Resources
- Chapter 24: Draft Section 4(f) Evaluation
- Chapter 25: Process, Agency Coordination, and Public Involvement
- Chapter 26: List of Preparers
- Chapter 27: Distribution of DEIS
- Glossary

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