HUDSON TUNNEL PROJECT

NEPA RE-EVALUATION #3

PROPOSED HUDSON RIVER OBSTRUCTION REMOVAL ACTIVITIES WEST OF THE NEW YORK PIERHEAD LINE

May 6, 2025

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1 INTRODUCTION

This National Environmental Policy Act ("NEPA") re-evaluation assesses proposed limited modifications to the Hudson Tunnel Project ("HTP" or "the Project") in the Hudson River following the issuance of the Project's Combined Final Environmental Impact Statement ("FEIS") and Record of Decision ("ROD") on May 28, 2021. This re-evaluation focuses on proposed refinements to construction activities in the Hudson River, particularly the removal of obstructions within an approximately 70,000-square-foot (1.6-acre) area in the river to the west of the New York City (Manhattan) pierhead line in the vicinity of the Hudson River Ground Stabilization ("HRGS") activities (the "Proposed Project Modification"). The removal of obstructions in this area would reduce risk associated with HTP activities, including HRGS and Hudson River Tunnel activities, by supporting the effective operation of ground improvement and tunneling equipment.

The HRGS would strengthen the riverbed soil in an area above the tunnel alignment where the tunnel would be relatively close to the bottom of the river. As originally described in the FEIS/ROD, the HRGS work includes the installation of a temporary cofferdam to facilitate the ground improvement. The Proposed Project Modification considered in this re-evaluation would allow for the removal of obstructions adjacent to and along the perimeter of the cofferdam footprint, and within the cofferdam itself, prior to cofferdam installation, soil improvement activities, and tunneling through this area, rather than during tunnel boring machine ("TBM") operations. This earlier removal of obstructions is designed to avoid environmental impacts to the Hudson River as well as material and unacceptable delays to the overall Project schedule. These obstruction removal activities are critical to facilitate the construction of the HRGS cofferdam and Hudson River Tunnel and are expected to occur between July 1, 2025, and January 20, 2026, and, if needed due to unforeseen circumstances, between July 1, 2026, and January 20, 2027.

Given that permanent operational conditions were analyzed in the FEIS/ROD, and that removal of in-water obstructions in the vicinity of the HRGS activities would not change operational conditions, this re-evaluation focuses on construction-period effects and mitigation.

As described in the FEIS/ROD, the HTP is intended to preserve the current functionality of the Northeast Corridor's ("NEC") Hudson River passenger rail crossing between New Jersey and New York and to strengthen the NEC's resilience. The Federal Railroad Administration ("FRA") was the lead Federal agency for the HTP's environmental review, in accordance with NEPA. The Federal Transit Administration ("FTA") was a Cooperating Agency for the FEIS/ROD and, as such, FTA issued the ROD jointly with FRA. The Port Authority of New York and New Jersey ("PANYNJ") was the Project Sponsor at the time that the FEIS/ROD was issued. On October 21, 2022, PANYNJ and the Gateway Development Commission ("GDC") formally notified FRA and FTA that GDC was assuming the role of NEPA Project Sponsor.

2 CONDITIONS INCLUDED AS PART OF THE PUBLISHED FEIS/ROD

As described in the FEIS/ROD (Section 3.3.5), the HRGS work includes ground improvement to strengthen the soil of the riverbed through a portion of the tunnel alignment referred to as the "low cover area" to allow safe passage of the TBM.[1] This portion of the alignment is referred to as the "low cover area"

[1] The FEIS/ROD refers to this area as the "low-cover area." However, as part of the Project's procurement and contracting processes, the low-cover area is also referred to as the "Hudson River Ground Stabilization area."

because of the relatively small amount of soil ("cover") above the tunnel in comparison to the rest of the alignment. The area of ground improvement work activities would be enclosed by a cofferdam to provide a barrier between the ground improvement inside the cofferdam and the surrounding waterbody (the Hudson River). The ground improvement work inside the cofferdam involves deep soil mixing ("DSM") to harden the native soil with cement or cement grout, creating columns of moderate strength referred to as "soilcrete," which provide protection above and to the tunnel.

The FEIS/ROD identified the potential for obstructions beneath the riverbed during the tunnel boring process. Such obstructions may include former waterfront structures close to the Manhattan shoreline, such as former Piers 68 and 69. The FEIS/ROD (Section 3.3.4.5) assumed that, if the TBM were to encounter timber piles where these former piers were once located, the piles would be manually removed from the face of the TBM, either with compressed air pumped to maintain tunnel face stability or by applying ground treatment in advance so the work can be conducted under normal atmospheric pressure.

3 CHANGES SINCE PUBLICATION OF FEIS/ROD – NEED FOR OBSTRUCTION REMOVAL WEST OF THE NEW YORK PIERHEAD LINE IN ADVANCE OF COFFERDAM CONSTRUCTION TO SUPPORT HTP AND HRGS ACTIVITIES

Subsequent to the FEIS/ROD, a marine geophysical survey provided more information about abandoned waterfront structures in the vicinity of the HRGS area and tunnel alignment. These structures include abandoned timber piles associated with former Piers 68 and 69 as well as other non-pile obstructions such as potential ferrous and non-ferrous objects. There may be other obstructions including, but not limited to, wood, concrete, or other unknown materials in the water near these waterfront structures.

The abandoned pier piles and other obstructions associated with former Pier 68 may be present within a portion of the HRGS area in the Hudson River, where the temporary cofferdam and associated ground improvement activities would be performed prior to TBM operations, and adjacent to the HRGS area, west of the New York pierhead line. These obstructions, if extensive enough to make removal by the TBM (as described in the FEIS/ROD) infeasible, would pose risks to TBM operations. For example, the TBM could become immobilized and require extraction from the Hudson riverbed, which would result in additional impacts to the Hudson River as well as unacceptable delays to the overall Project schedule.

Further, additional surveys have been conducted in the eastern portion of the HRGS area and show evidence of obstructions within and along the footprint of the proposed cofferdam both on the river bottom and below the mudline. Obstructions within the footprint of the cofferdam must be removed in advance of DSM to prevent soil mixing equipment from encountering obstructions and to ensure that the substrate is free of obstructions to facilitate proper soil mixing. Removal of obstructions following cofferdam installation, as was assumed in the FEIS/ROD, would be anticipated to cause delays in advancing DSM and other construction activities.

Therefore, the Proposed Project Modification would involve removal of obstructions adjacent to and along the perimeter of the cofferdam footprint, and within the cofferdam itself, *prior to* cofferdam installation, soil improvement activities, and tunneling through this area.

3.1 Construction Activities (Potential Obstruction Removal Techniques)

Obstructions, including abandoned pier piles (i.e., those above the riverbed mudline), could be removed by several extraction techniques including vibratory hammer, direct pull, or clamshell or mechanical bucket extraction. Prior to commencement of the obstruction removal, the contractor would assess the condition of the obstruction and identify the appropriate extraction technique for its removal. Several methods are available to remove obstructions from beneath the mudline. The appropriate method to move sediment away from any given obstruction would depend on the ability of equipment to sufficiently access the obstruction to allow for its extraction.

For example, clamshell extraction may be considered to remove obstructions below the riverbed mudline with little or no stub accessible above the mudline. Excavation or vacuum suction dredging of sediment around the base of an obstruction may be needed to gain access to portions of the obstruction that are sound, and to allow for extraction using a clamshell. Suction dredging would involve lowering a suction hose to the river bottom, and creating a vacuum, either via a pump or a compressor located on a barge. Assisted by divers, the hose would be swept across the area of concern to remove overburden silt material. Outlet hoses would deposit accumulated river bottom material and water into hopper barges. Barges would be positioned around the work site to allow settlement of material within the initial discharge barge, accelerated when needed by use of eco-friendly flocculants. Excess accumulated water would be tested and treated, if necessary, before discharge. Materials would be dewatered prior to transport to an approved discharge location. Prior to the start of suction dredging operations, *in situ* material tests would be performed to analyze and determine required handling, treatment, and disposal measures. The dredging, dewatering, and disposal activities described above would be undertaken in accordance with applicable law.

3.2 Construction Equipment and Staging

Typical construction equipment for obstruction removal activities would include a combination of clamshell or mechanical buckets and vibratory hammers, cranes, excavators, and support equipment such as lighting, pumps, generators, and compressors.

The obstruction removal equipment would be transported to the construction area on barges, and all work associated with the obstruction removal activities in support of the HRGS work would be conducted from approximately three to four barges, depending on the debris field of obstructions that would need to be removed, stationed to the west of the pierhead line (i.e., outside the boundaries of the Hudson River Park ("HRP")). The equipment would be hoisted from either a stationary barge crane or a mobile crane on a deck barge. Hoisted obstruction removal equipment would be positioned over the obstruction and attached to it; the equipment would then remove the obstruction by crane. Upon removal of an obstruction from the substrate and water column, the obstruction would be moved into the containment area for processing and disposal at an approved facility.

It is anticipated that the barges would be approximately 30 feet wide and approximately 145 feet long. Workers would travel to the barges from existing Hudson River shoreline piers via small boats as needed throughout each work day; materials would similarly be delivered using these small boats. Tugboats would be used to position the barges, after which they would depart from the construction area. Barges in the construction area would be temporarily moored in place until obstruction removal activities are complete.

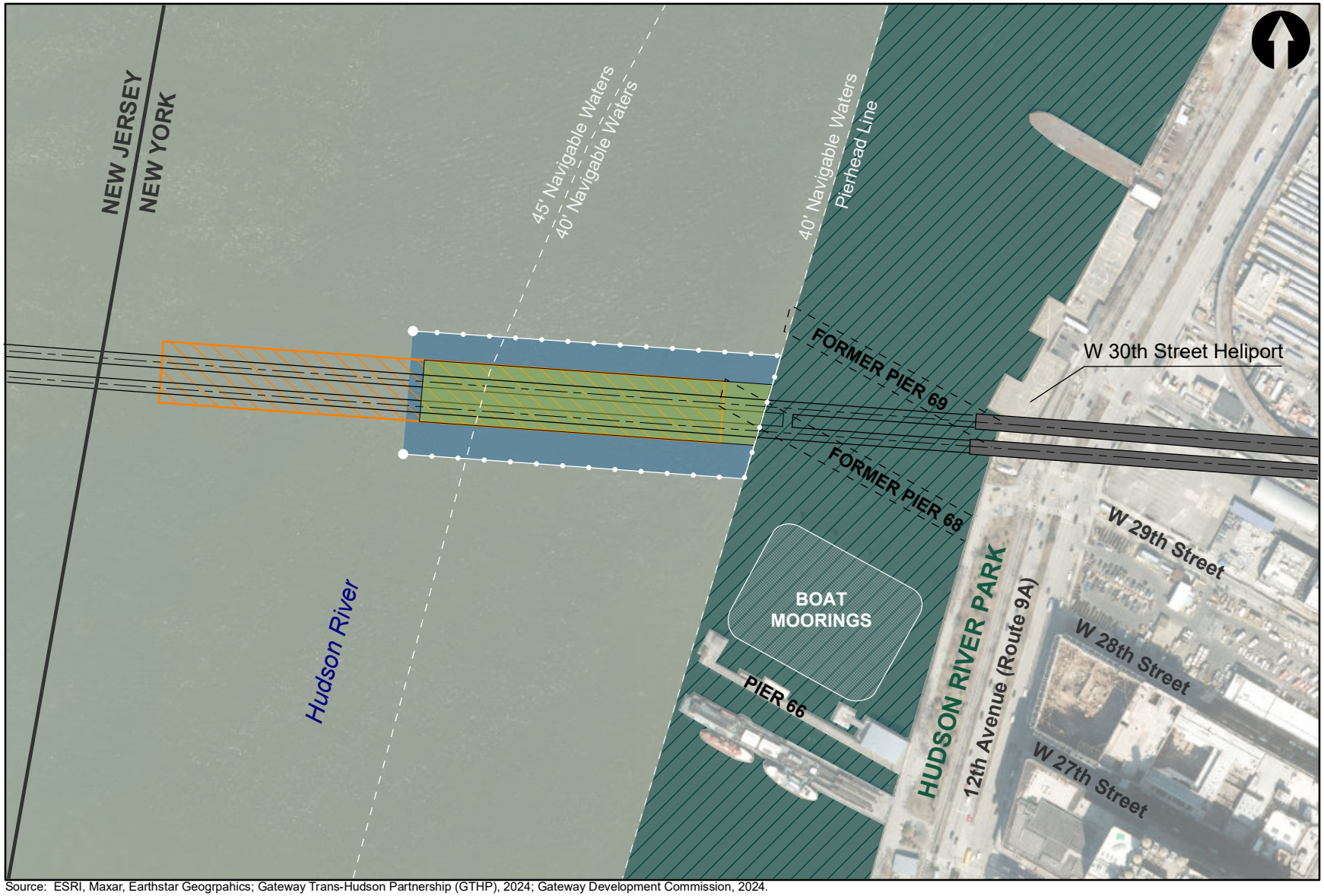
Work activities for the Proposed Project Modification would be undertaken within an area extending approximately 700 feet west of the pierhead line into the 45-foot-deep navigation channel of the Hudson River (see **Figure 1, "Staging Plan – Obstruction Removal Activities West of the New York Pierhead Line"**).

3.3 Schedule

GDC proposes that the obstruction removal activities be performed throughout a single period extending from July 1, 2025, through January 20, 2026, based on current surveys of the area. However, unforeseen conditions encountered during this work may require additional work during the period from July 1, 2026 through January 20, 2027.

Since issuance of the FEIS/ROD and United States Army Corps of Engineers ("USACE") and New York State Department of Environmental Conservation ("NYSDEC") permits,[2] NYSDEC conducted additional sturgeon studies within the Hudson River. Based on acoustic tracking data, NYSDEC determined that sturgeon likely forage in shallow waters in the Hudson River portion of the HTP study area during the months of July and September. As a result, NYSDEC modified the in-water timing restriction for sturgeon within the Hudson River to include the months of July and September. However, because the extended timing restriction would pose a hardship for construction activities as it would reduce in-water work to approximately four nonsequential months, GDC submitted a request for a hardship waiver on August 16, 2024; NYSDEC approved GDC's hardship waiver request on September 5, 2024 (see **Appendix A, "NYSDEC Hardship Waiver"**). The waiver authorizes modified timing restrictions to coincide with the period previously established (i.e., January 21 through June 30).

[2] Work activities associated with the low-cover area described in the FEIS/ROD are permitted through a United States Army Corps of Engineers ("USACE") Section 10/404 permit (November 15, 2021). The New York State Department of Environmental Conservation ("NYSDEC") issued a permit for these activities under the Tidal Wetlands and Protection of Waters programs, as well as a Water Quality Certification under the Clean Water Act, on October 1, 2021.



Source: ESRI, Maxar, Earthstar Geogrpahics; Gateway Trans-Hudson Partnership (GTHP), 2024; Gateway Development Commission, 2024.

- Hudson River Ground Stabilization Area (HRGS)
- Active Work Area
- Obstruction Removal Area*
- Former Pier Outline
- Buoy Marker
- Hudson Tunnel
- Hudson Tunnel - Landside Mined Tunnel
- HRPT Jurisdictional Waters

150 300 600 Feet

Staging Plan - Obstruction Removal Activities
West of the New York Pierhead Line

Figure 1

4 AFFECTED ENVIRONMENT: "NO ACTION" CONDITIONS

As described in the FEIS/ROD, the area in the vicinity of the Proposed Project Modification is currently undergoing extensive redevelopment as a result of recent development and infrastructure initiatives; many sites have recently been developed and others are currently under construction with high-density developments.

Table 1, "No Action Projects in the Vicinity of the Proposed Project Modification," provides a summary of No Action projects in the vicinity of the Proposed Project Modification; that is, projects that would occur whether the HTP is implemented or not (see **Figure 2, "No Action Projects in the Vicinity of the Proposed Project Modification"**). The list provides information on projects that were described in the FEIS/ROD, as well as additional projects and other updates identified during the re-evaluation process. The Project Sponsor (GDC) will coordinate project activities, particularly those that may occur simultaneously with the Hudson River Park Trust's ("HRPT")[3] repair activities at Pier 66, to minimize disruptions and cumulative adverse construction effects wherever practicable.

Table 1: No Action Projects in the Vicinity of the Proposed Project Modification

ID*	Project Name/Address	Project Description/Program	Completion Year
1	Hudson Yards Right-of-Way Preservation Project	Concrete casing preserving rail right-of-way underneath Western and Eastern Rail Yards	Under Construction
2	Hudson River Park	Park improvements, 29th-34th streets	Under Construction
3	Western Rail Yard Infrastructure Project	Section of Hudson Yards Right-of-Way Preservation Project with platform above the concrete casing and rail yard to support Hudson Yards development above	2026
4	Hudson Yards – Western Rail Yard	Mixed-Use: eight towers (approximately 30 to 75 stories), 6.2 million sf of residential, office, retail, and school space with public open space	2030
5	Twelfth Avenue between West 29th and West 30th streets (Block 675, Lot 1)**	Approximately 941,000 sf of hotel and/or commercial space**	Unknown**
6	West Side Yard Perimeter Protection Project	Resiliency project to construct protection for the West Side Yard	Unknown
7	West 33rd Street Viaduct	Regrading of West 33rd Street between Eleventh and Twelfth avenues to correspond with new construction over Hudson Yards.	Unknown
8	Western Rail Yard Modifications***	Mixed-Use: three towers (approximately 74 to 80 stories) and gaming/resort facility podium, 6.2 million sf of residential, office, retail, cultural, school, and day care space with public open space; elimination of vehicular access from West 33rd Street to Twelfth Avenue	2031
9	Pier 66 Repairs***	Repair activities (including rehabilitation of piles, pier decks, bulkheads, relieving platforms, etc.) would be	2025-2026

[3] The Hudson River Park Trust is the public benefit corporation that maintains HRP.

		staged from barges and would rely on barge-mounted cranes	

Notes:

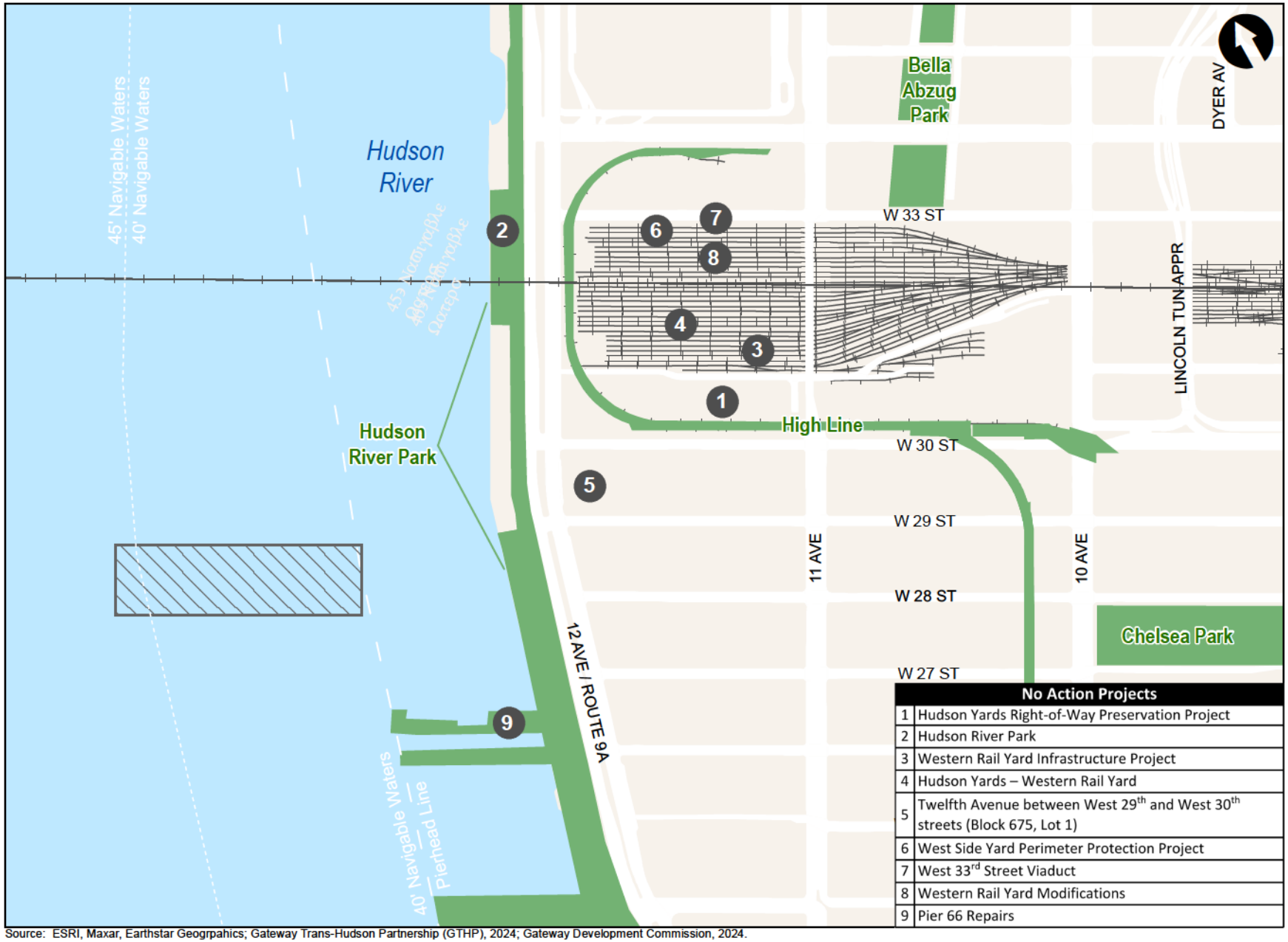
** ID corresponds to the No Action projects shown on Figure 2, "No Action Projects in the Vicinity of the Proposed Project Modification."*

*** Since the FEIS/ROD, Amtrak acquired Block 675, Lot 1; no further development projects are currently planned for this property.*

**** The Western Rail Yard Modifications project and Pier 66 Repairs were identified following publication of the FEIS/ROD.*

Completed since the FEIS/ROD: 601 West 29th Street, 606 West 30th Street, and 517 West 29th Street

Source: Gateway Trans-Hudson Partnership ("GTHP"), 2025.



No Action Projects	
1	Hudson Yards Right-of-Way Preservation Project
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3	Western Rail Yard Infrastructure Project
4	Hudson Yards – Western Rail Yard
5	Twelfth Avenue between West 29th and West 30th streets (Block 675, Lot 1)
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7	West 33rd Street Viaduct
8	Western Rail Yard Modifications
9	Pier 66 Repairs

Source: ESRI, Maxar, Earthstar Geogrpahics; Gateway Trans-Hudson Partnership (GTHP), 2024; Gateway Development Commission, 2024.

Area of Proposed Project Modifications

Existing Northeast Corridor

1 No Action Project

0 250 500 1,000 Feet

No Action Projects in the Vicinity of the Proposed Project Modification

Figure 2

5 CONSTRUCTION-RELATED IMPACTS

The FEIS/ROD considered 23 technical areas for both final operational conditions and temporary construction-period conditions. The permanent operational conditions and mitigation described in the FEIS/ROD would not change with the Proposed Project Modification described herein; as such, this re-evaluation focuses on construction-period effects and mitigation. A re-analysis of these 23 technical areas to identify any new or additional construction-period impacts and required mitigation not previously documented in the FEIS/ROD is provided below.

GDC anticipates that the Proposed Project Modification would not change the following FEIS/ROD technical areas, and that therefore re-analyses are not required:

- Traffic and Pedestrians;
- Zoning and Public Policy;
- Property Acquisition;
- Geology;
- Utilities and Energy;
- Electromagnetic Fields;
- Indirect and Cumulative Effects; and
- Commitment of Resources.

Given that the obstruction removal activities would support of the already-approved HRGS work and are simply a refinement of the construction activities described in the FEIS/ROD, these activities would not warrant any new Section 4(f) coordination. Although the proposed obstruction removal activities would occur west of the pierhead line and entirely outside the boundaries of HRP, and therefore are not expected to directly impact HRP, as described below in Section 7, "Public and Stakeholder Outreach," GDC has begun and will continue coordination with HRPT and its tenants (including recreational boating organizations) to provide for the safe and continued use of the Hudson River throughout the HRGS construction period.

5.1 Transportation Services (FEIS Chapter 5B)

As described in the FEIS/ROD, the Project would require in-water construction activities in the Hudson River to strengthen the riverbed in a small area approximately 620 feet west of the Hudson River Bulkhead (70 feet west of the pierhead line). The in-water construction activities would comprise ground improvement in an area of the river bottom approximately 1,200 feet long and 110 feet wide. A temporary cofferdam (in-water containment structure) would be installed in this area. Barges and other equipment would be situated in a work zone approximately 100 feet wide on both long sides of the cofferdam. Workers would travel to the construction zone on small boats (i.e., tugboats or dinghies) from established piers on the Hudson River shoreline.

The obstruction removal activities would occur simultaneously with and in support of the in-water ground improvement work proposed in the FEIS/ROD (i.e., the HRGS activities). These ground improvement activities would fall entirely within the river's designated 40- to 45-foot-deep navigation channel (i.e., would not extend east of the New York pierhead line) and are currently progressing from west to east. Work activities for the removal of obstructions in support of the HRGS activities would be undertaken approximately 500 feet from the Hudson River Bulkhead at the closest point (i.e., abutting the pierhead

line) and would extend approximately 700 feet west of the pierhead line into the 45-foot-deep navigation channel of the Hudson River. Tugboats would be used to position approximately three to four barges, including barge-mounted cranes with boom heights of approximately 300 feet, around the obstruction removal area. The barges would be moored in place for the duration of construction. As with the in-water work described in the FEIS/ROD, workers would travel to and from the construction zone on small boats from established piers on the Hudson River shoreline.

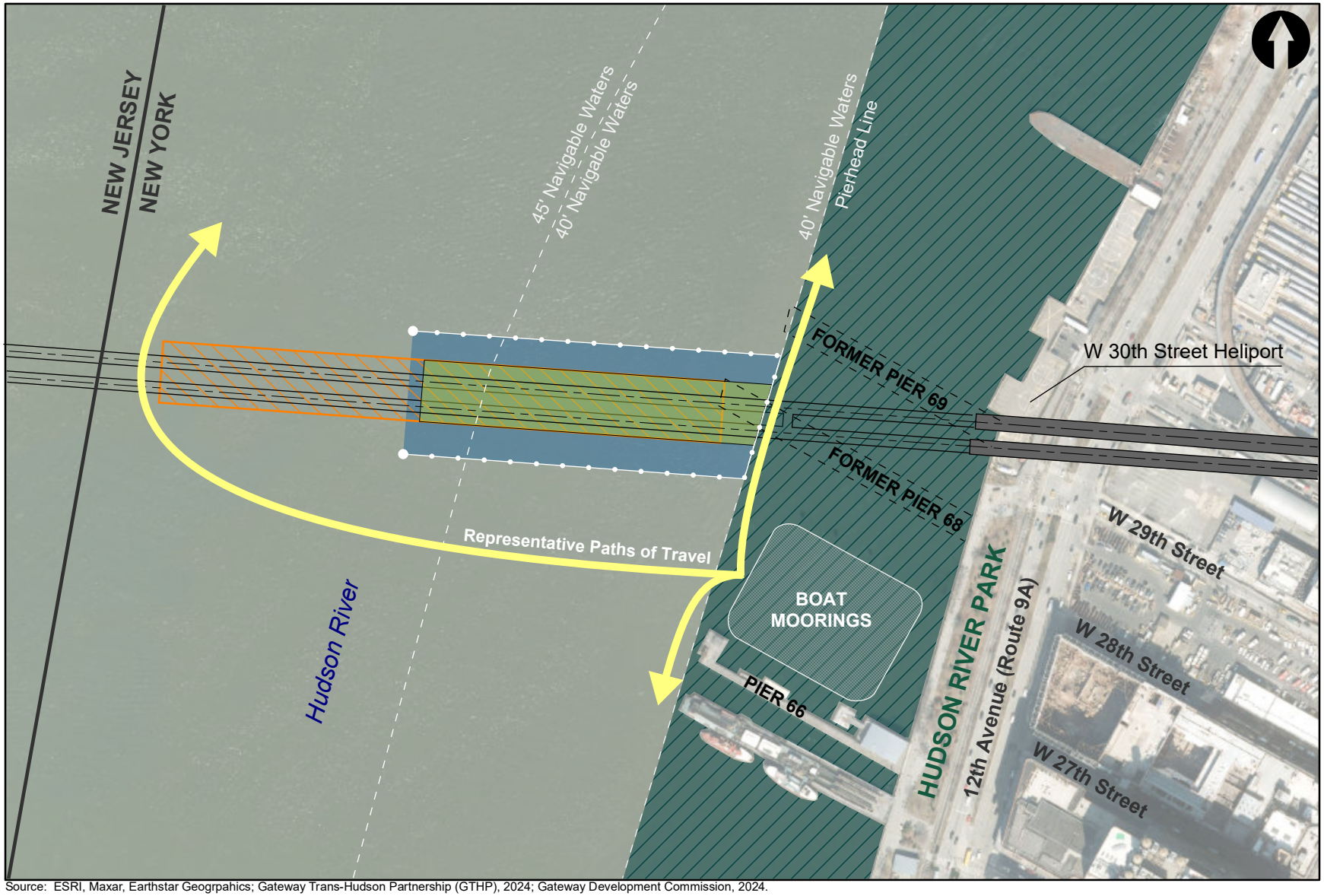
Maritime traffic on the Hudson River within the Project area includes passenger ferries operating to and from the Midtown West 39th Street ferry terminal, freight and barge traffic, cruise vessels, and other commercial and recreational boats. A boathouse in HRP, located at Pier 66 at West 26th Street, serves boaters in small unpowered watercraft, including sailboats, outrigger canoes, and kayaks.

The proposed obstruction removal activities would be undertaken approximately 200 feet northwest of the northernmost boat moorings. There would be no access restrictions for boaters traveling between the navigation channel and the Pier 66 boathouse and nearby moorings, nor would the obstruction removal activities affect boaters' ability to travel south along the pierhead line.

However, in order to travel north from the Pier 66 boathouse and moorings, boaters would need to avoid the construction work zone. Boaters would either travel along the pierhead line immediately east of the obstruction removal activities or, given the proximity of the ground improvement work, they would travel directly west into the 45-foot-deep navigation channel, moving around the western edge of the cofferdam and continuing north along the pierhead line (see **Figure 3, "Representative Paths of Travel"**). The Proposed Project Modification would not affect any other areas of the Hudson River or limit boating activities in any other portion of the river.

As described in the FEIS/ROD, safety measures would be required during construction activities to protect maritime commerce and recreational boating. Measures would include notification to mariners via the United States Coast Guard ("USCG") and, potentially, implementation of wake restrictions. Other safety measures would include lighting of barges, and the use of Automatic Identification System ("AIS") transponders affixed to barges to enable electronic locating and tracking of barges, as well as the use of marker buoys with solar lighting. These measures, which have been developed in coordination with USCG, would protect recreational boaters, including those using the sailboats, kayaks, and canoes from the Pier 66 boathouse. With these safety measures in place, the Proposed Project Modification would not result in adverse impacts to Hudson River maritime traffic.

GDC will continue to coordinate with the USCG, HRPT, and the Pier 66 recreational boating tenants regarding the proposed obstruction removal activities.



Source: ESRI, Maxar, Earthstar Geogrpahics; Gateway Trans-Hudson Partnership (GTHP), 2024; Gateway Development Commission, 2024.

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150 300 600 Feet

Representative Paths of Travel

Figure 3

5.2 Land Use (FEIS Chapter 6A)

As with the in-water construction activities described in the FEIS/ROD, Hudson River construction activities related to the Proposed Project Modification would not disrupt nearby onshore or in-water land uses, such as activities within the land and water areas of HRP, given their temporary duration and limited area of activity.

Similar to the in-water work described in the FEIS/ROD, construction activities would be visible from the New York shoreline and could result in increased noise and vibration levels as a result of the potential use of a vibratory hammer to facilitate extraction of resistant piles located below the mudline. As discussed in the FEIS/ROD, equipment for the in-water construction activities could require rerouting of helicopter traffic enroute to the West 30th Street Heliport to avoid conflicts between the aircraft and construction equipment such as cranes. While boaters would be required to avoid the construction work zone, which may be inconvenient, there would be no access restrictions for boaters traveling between the navigation channel and the Pier 66 boathouse and nearby moorings, nor would the obstruction removal activities affect boaters' ability to travel south along the pierhead line. Further, while educational programming is held in the Pier 66 boathouse during the winter months, construction activities associated with the Proposed Project Modification would occur only between July 1, 2025, and January 20, 2026, and, if needed, between July 1, 2026, and January 20, 2027, and therefore would be unlikely to result in noise-related disruptions.

GDC is coordinating with the helicopter businesses operating out of the West 30th Street Heliport, the Pier 66 boathouse tenants, and HRPT in order to minimize potential disruptions and/or modifications to their operations. Therefore, as with the in-water construction activities described in the FEIS/ROD, the Proposed Project Modification is not anticipated to result in significant adverse impacts to surrounding land uses, including activities at the West 30th Street Heliport and the land and water areas of HRP.

5.3 Socioeconomic Conditions (FEIS Chapter 7)

The area in which the proposed obstruction removal activities would be undertaken is directly northwest of the Pier 66 boathouse and moorings within HRP. Tenants using the boathouse include New York Outrigger, a non-profit organization dedicated to educating New Yorkers about outrigger canoe paddling, and Hudson River Community Sailing, a non-profit youth development and community sailing organization that provides programs including Sail Academy, Youth Racing, City Sail Camp, Adult Racing, Veterans Program, and Adaptive Sailing. Although the boaters would need to avoid the adjacent construction work zone, GDC, in cooperation with other project partners, is coordinating with HRPT and the boathouse tenants to minimize disruption to boating during the obstruction removal activities.

As described in the FEIS/ROD, it may be necessary to reroute helicopters headed to and from the West 30th Street Heliport to avoid conflicts between aircraft and tall construction equipment. Crane boom tips would be outfitted with an orange-and-white checkered air traffic warning flag, approved lighting/strobe, and any other requirements per Federal Aviation Administration ("FAA") guidelines. As described in the FEIS/ROD, the Project Sponsor (GDC) will obtain an FAA construction permit for in-water construction activities. Further, GDC, in cooperation with Amtrak, will coordinate with the heliport tenants (Air Pegasus and BLADE Urban Air Mobility ["BLADE"]) and HRPT to minimize disruption to heliport operations during the obstruction removal activities to the extent practicable.

The Proposed Project Modification would not directly or indirectly affect population or housing stock or result in substantial new development that is markedly different from existing uses, development, or activities within the area. It would not require acquisition of residential property or relocation of housing, nor would it result in indirect residential or business displacement, or adverse effects on a specific industry. Rather, construction would generate economic benefits for New York from the creation of construction jobs, wages and salaries paid to construction workers, and indirect economic activity from those expenditures throughout the regional economy (i.e., the multiplier effect). Therefore, the Proposed Project Modification would not result in adverse impacts to socioeconomic conditions.

5.4 Open Space and Recreational Resources (FEIS Chapter 8)

As described in the FEIS/ROD, the Project would include in-water construction activities associated with ground improvements. Barges supporting construction equipment would be moored around the cofferdam until in-water construction is complete. In total, the affected area would be 1,200 feet long and 110 feet wide, with a buffer zone of 100 feet around the area where barges would be stationed. At its closest point, the in-water construction zone for the ground improvements described in the FEIS/ROD would be 70 to 100 feet from the pierhead line, which is also the HRP boundary, and thus would not be within the park's water area.

Similarly, the area of proposed obstruction removal activities would be outside of the park's water area, though it would be adjacent to the HRP boundary, and boaters moving between the navigation channel and the Pier 66 boathouse and nearby moorings would need to avoid the construction zone. This may be inconvenient, but it would not limit boaters' access to and from the channel. The obstruction removal activities would not affect any other areas of the Hudson River or limit boating activities in any other portion of the river. Further, while educational programming is held during the winter months in the Pier 66 boathouse, obstruction removal activities in support of the HRGS work would occur between July 1, 2025, and January 20, 2026, and, if needed, between July 1, 2026, and January 20, 2027, and therefore would be unlikely to result in noise-related disruptions.

As with the in-water work described in the FEIS/ROD, construction equipment associated with the Proposed Project Modification would extend above the waterline and barges would be anchored around the work zone. However, this temporary construction activity would appear similar to other construction and maintenance that periodically occurs along the shoreline and would not notably affect views from HRP in Manhattan, given the large expanse of the Hudson River.

As described in the FEIS/ROD, measures would be implemented during construction to warn maritime traffic, including recreational boaters, of the in-water construction and to ensure the continued safety of boaters. These measures, which have been developed in coordination with USCG, include installation of lighting on barges to enable locating and tracking, and the use of marker buoys with solar lighting. Further, GDC, in cooperation with other Project Partners, is coordinating with HRPT and the boathouse tenants to minimize disruption to boating during the proposed obstruction removal activities. Therefore, as with the in-water work described in the FEIS/ROD, there would be only minimal, temporary effects on recreational activities on the Hudson River during construction, which would not adversely affect the river's availability or quality as a recreational resource. In addition, as part of mitigation for the Proposed Project Modification, GDC will provide HRPT with a monetary donation to be used for research related to HRP's estuarine sanctuary.

5.5 Historic and Archaeological Resources (FEIS Chapter 9)

Stipulation XIII of the Section 106 Programmatic Agreement ("PA") for the Project, formally executed on May 10, 2021, requires the Project Sponsor (GDC), in cooperation and coordination with Amtrak, to notify FRA, along with the New Jersey and New York State Historic Preservation Officer ("NJSHPO" and "NYSHPO"), Advisory Council on Historic Preservation, and the invited signatories and the other consulting parties to the PA, of any changes to the Project scope which could potentially result in adverse effects to historic properties.

The piles and other obstructions associated with former Piers 68 and 69 are partially located within the New York Area of Potential Effects ("APE") as identified in the FEIS/ROD, which comprises areas where there is the potential for the Proposed Project to cause both direct and indirect effects (and therefore encompasses the proposed locations of shallowly constructed portions of the Hudson River Tunnel in the vicinity of the Manhattan waterfront).

GDC, in coordination with Amtrak, first notified FRA of the proposed obstruction removal activities on January 3, 2024. This notice also included research, conducted by professionals who meet the Secretary of the Interior's Professional Qualifications Standards, to identify historic properties that may be affected by the Project changes, and recommendations regarding effects to historic properties. As described below, FRA then consulted with NYSHPO and other Section 106 PA signatories, consulting tribes, concurring parties, and consulting parties regarding these proposed Project changes.

5.5.1 Historic Architectural Resources

Preliminary background research indicated that former Piers 68 and 69, which were not identified in the FEIS/ROD as subject to Section 106 consultation, were constructed circa 1890. Pier 68 was demolished between 1967 and 1970, while Pier 69 was demolished in 1935, following a fire. The submerged timber piles embedded in the Hudson River bottom are the remnants of these former structures.

Because former Piers 68 and 69 are well-represented in the municipal records of the City of New York, contemporary newspaper accounts, and historical cartographic materials, and because the remaining structural components of the intentionally razed piers appear to consist solely of timber piles embedded in the bottom of the Hudson River, they do not retain sufficient integrity to be considered for inclusion on the National Register of Historic Places ("NRHP") as architectural resources.

Therefore, in accordance with 36 CFR Part 800.4(d)(1), FRA determined that the obstruction removal activities will have No Effect on Historic Properties. In a letter dated January 4, 2024, FRA notified NYSHPO and other Section 106 PA signatories, consulting tribes, concurring parties, and consulting parties of the obstruction removal activities and sought NYSHPO concurrence with FRA's findings. In a response letter dated January 11, 2024, NYSHPO provided concurrence with FRA's determination that the remnants of former Piers 68 and 69 are not eligible for NRHP listing and indicated that they have no concerns regarding the Project's effects on these resources (see **Appendix B, "Section 106"**).[4]

As such, no historic properties would be affected by the Proposed Project Modification, and no additional historic investigation is required.

[4] The other Section 106 PA signatories, consulting tribes, concurring parties, and consulting parties did not provide a response.

5.5.2 Archaeological Resources

Historians and archaeologists conducted preliminary background research on former Piers 68 and 69. It was subsequently determined in the aforementioned consultations that the submerged remnant timber piles themselves lack sufficient context or information potential to consider them potentially eligible for inclusion on the NRHP as archaeological resources. As such, no historic properties would be affected by the proposed obstruction removal activities, and no additional archaeological investigation is required.

5.6 Visual and Aesthetic Resources (FEIS Chapter 10)

The Proposed Project Modification would require a work zone within the Hudson River for two periods of about seven months each (July 1, 2025, to January 20, 2026, and, if needed, July 1, 2026, to January 20, 2027). At the closest point, the work zone would be approximately 500 feet from the Manhattan shoreline. As with the in-water work described in the FEIS/ROD, construction equipment associated with the Proposed Project Modification would extend above the waterline and barges would be anchored around the work zone. Viewed from the shoreline or from nearby boats, the barges in this work zone would appear similar to other equipment barges periodically moored along the Manhattan shoreline. Given the large expanse of the Hudson River and the distance of the work area from the shore, this temporary construction activity would not notably affect views from Manhattan.

5.7 Natural Resources (FEIS Chapter 11)

FRA requested Essential Fish Habitat ("EFH") and Endangered Species Act ("ESA") Section 7 consultation and concurrence from the National Oceanic and Atmospheric Administration ("NOAA") National Marine Fisheries Service ("NMFS") under the Magnuson-Stevens Fishery Conservation and Management Act, via letters dated May 11, 2017, and June 14, 2017, respectively, to address in-water construction activities associated with the Project (i.e., river-bottom stabilization and associated temporary cofferdam installation). Within the initial consultation request, NOAA NMFS indicated that the Hudson River is a migratory pathway for Atlantic and shortnose sturgeon.

In a letter dated March 15, 2024, FRA requested re-initiation of ESA Section 7 and EFH consultation with NOAA NMFS regarding the proposed obstruction removal activities. On April 1, 2024, NOAA NMFS provided FRA comments on the re-initiation request, which was submitted as part of the ESA Section 7 documentation. In a letter dated April 29, 2024, FRA submitted a revised request for re-initiation of ESA Section 7 consultation. On May 17, 2024, NOAA NMFS provided FRA correspondence in which they concurred that the adverse effects of the Project on EFH will not be substantial. On July 15, 2024, NOAA NMFS provided FRA correspondence that the obstruction removal activities contemplated in the Proposed Project Modification are not likely to adversely affect any NMFS ESA-listed species or designated critical habitat and noted that no further consultation pursuant to Section 7 of ESA is required. On December 19, 2024, FRA determined that the independent decision not to reinitiate for NEPA Re-Evaluation #3 with NOAA was consistent with 50 CFR 600.920(1) and 50 CFR 402.16(a).

Consistent with 50 CFR 402.16(a), the Proposed Project Modification does not require reinitiation of consultation under ESA because:

1. The amount or extent of "taking" specified in the incidental take statement is not exceeded;
2. No new information has revealed effects of the Proposed Project Modification that may affect listed species or critical habitat in a manner or to an extent not previously considered;

3. The Proposed Project Modification would not result in an effect to the listed species or critical habitat that was not considered in previous consultations; and
4. No new species is listed or critical habitat designated that may be affected by the Proposed Project Modification.

5.7.1 Aquatic Resources

Components of the Proposed Project Modification with the potential to result in impacts to aquatic resources include obstruction removal and increased vessel activity. Potential impacts would be associated with sediment resuspension and underwater noise, as described below.

5.7.1.1 Water Quality

The FEIS/ROD identified potential effects to water quality that may result with the installation and removal of the temporary cofferdam to facilitate ground improvement. Similarly, disturbance associated with suction dredging sediment and obstruction removal would be expected to result in minor, short-term increases in suspended sediment and re-deposition of sediments and associated contaminants. Minor loss of dredged material during removal may also result in short-term and temporary adverse surface water quality effects. However, the suspended sediment and contaminant concentrations generated by obstruction removal and suction dredging are expected to be below the levels of physiological impact,[5] and the affected areas are expected to quickly return to ambient conditions. Further, as described in Section 5.7.6, "Best Management Practices," mitigation measures would be implemented during obstruction removal and dredging whenever feasible. As such, water quality impacts with the Proposed Project Modification – both through increased suspended sediment and potential exposure to contaminants – are anticipated to be temporary and localized.

5.7.1.2 Sediment Quality

As in most urban watersheds, sediments in the Lower Hudson River, including in the vicinity of the obstruction removal activities, are contaminated (Class B or Class C based on NYSDEC Sediment Quality Thresholds)[6] due to historical industrial uses. Therefore, as with the in-water work described in the FEIS/ROD, the Proposed Project Modification may result in temporary increases in suspended sediment containing moderate to high levels of contamination. Any sediments and associated contaminants resuspended during obstruction removal would be expected to be localized and would dissipate quickly with tidal currents. Resuspended sediments would be expected to settle out over undisturbed sediment with similar levels of contamination, and thus would not result in adverse impacts to sediment quality. As described in Section 5.11, "Soils (FEIS Chapter 15) and Contaminated Materials (FEIS Chapter 16)," *in situ* sediment sampling will be performed to verify sediment quality prior to dredging operations.

[5] Concentrations of total suspended solids ("TSS") shown to have adverse effects on fish range from approximately 580 milligrams per liter (mg/L) for the most sensitive species, and up to approximately 1,000 mg/L for less sensitive species (Burton, 1993 as cited in NOAA Fisheries 2024a; Wilber and Clark, 2001) for durations of one or two days (USEPA, 1986).

[6] See NYSDEC's Technical & Operational Guidance Series ("TOGS") 5.1.9, *In-Water and Riparian Management of Sediment and Dredged Material*, Section III, "Evaluation of Results." The sediment classifications are Class A - No Appreciable Contamination (No Toxicity to aquatic life), Class B - Moderate Contamination (Chronic Toxicity to aquatic life), and Class C - High Contamination (Acute Toxicity to aquatic life).

5.7.1.3 Aquatic Biota

The in-water construction activities associated with the Proposed Project Modification would have the potential for temporary adverse impacts to fish and invertebrates in a localized area surrounding the construction as a result of suspended sediments in the water column due to obstruction removal and/or suction dredging. As with the in-water work described in the FEIS/ROD, shading impacts from the barges associated with this work would be minimal, as each barge would be moored in place at any given time and would be small (approximately 30 feet wide by 145 feet long) in comparison to the area of the river left unshaded.

5.7.1.4 Suspended Sediment

As described in the FEIS/ROD, life stages of estuarine and anadromous fish and macroinvertebrate species are generally tolerant of elevated suspended sediment concentrations and have evolved behavioral and physiological mechanisms for dealing with variable and potentially high concentrations of suspended sediment. Any sediment re-suspension that could occur during in-water work would be temporary, minimal, and localized, and would be well below physiological impact thresholds of larval and adult fish and invertebrates. Because fish are mobile and generally avoid unsuitable conditions such as high suspended sediment concentrations, the effects of habitat avoidance would not significantly affect their condition, fitness, or survival. Most shellfish are adapted to naturally turbid estuarine conditions and can tolerate short-term exposures by closing valves or reducing pumping activity.

While permanent and long-term adverse effects are not anticipated, the presence of suspended sediments in the water column due to obstruction removal and/or suction dredging may result in short-term and localized impacts to aquatic life, including fish and invertebrates that may be present in the vicinity of the turbidity plume. Impacts to EFH and ESA species due to sedimentation or resuspension of sediment, which would be partially controlled through implementation of Best Management Practices ("BMPs") noted in Section 5.7.6, "Best Management Practices," are expected to be minor to negligible and below any threshold that would warrant mitigation.

5.7.1.5 Underwater Noise

As with the in-water construction described in the FEIS/ROD, the Proposed Project Modification would result in temporary increases in underwater noise given that underwater noise would occur only during the two seven-month work periods. Vibratory pile hammering – the obstruction removal activity expected to produce the largest acoustic effect – would result in temporary increased underwater noise levels that would not be expected to exceed the threshold for physiological injury to fishes.

As described in detail in FRA's consultation with NOAA NMFS, underwater noise levels would be below levels that would cause behavioral effects at distances more than a maximum of 71 feet from each pile being removed. It is anticipated that any fish that enters the area within 71 feet of the pile being removed would detect the elevated noise levels and modify their behavior by moving away. It is unlikely that these movements would adversely affect fish spawning, foraging, resting, and migration, given that the Hudson River is sufficiently wide (approximately 4,500 feet) to allow fish to avoid the ensonified area while continuing to forage and migrate. Given the availability of alternate foraging areas and migration pathways, the temporary nature of obstruction removal activities, and the fish species' transient presence in the vicinity of the construction activities, the effects of underwater noise on aquatic biota would be insignificant.

For these reasons, the Proposed Project Modification is not anticipated to result in new significant adverse impacts to water quality, sediment quality, aquatic biota, suspended sediment, or underwater noise.

5.7.2 Essential Fish Habitat

For the reasons described above, the Proposed Project Modification would not result in adverse impacts to Hudson River water quality, aquatic habitat, or aquatic biota. Based on bathymetric and sonar survey data, it appears that most pier piles in this area are buried under the mudline and, therefore, do not provide potential aquatic habitat. Therefore, the habitat loss associated with removal of existing pier piles would be insignificant. Consultation with NOAA NMFS with respect to measures to minimize potential impacts to EFH and anadromous fish associated with obstruction removal activities during migration was completed on March 17, 2021, for the cofferdam installation and river bottom stabilization activities that included obstruction removal and on May 17, 2024 for the pile removal area (see **Appendix C, "Natural Resources" and Agency Consultation History**). Consistent with 50 CFR 600.920(1), the Proposed Project Modification does not require supplemental consultation under EFH because the change would not adversely affect EFH, and because no new information affects the basis for NMFS EFH Conservation Recommendations.

5.7.3 Wildlife

The temporary loss of open water habitat during the work period(s) for the obstruction removal activities in support of the HRGS work would not adversely affect waterbirds foraging within this portion of the Hudson River due to the availability of similar foraging habitat in the immediate vicinity of the construction area. As described in the FEIS/ROD, any individuals affected by any temporary increase in boat activity or other human activity would be expected to avoid the area and use suitable available habitat nearby. Therefore, the Proposed Project Modification would not result in adverse impacts to wildlife using the Hudson River.

5.7.4 Threatened, Endangered, or Special Concern Species

Review of the United States Fish and Wildlife Service ("USFWS") Information for Planning and Consultation ("IPaC") system completed on January 5, 2024, did not reveal the presence of species under USFWS jurisdiction within or downstream of the Project area. Updated consultation conducted on August 14, 2024, is consistent with former consultation, noting that there is no critical habitat within the Project area under the USFWS jurisdiction.

NYSDEC was contacted for information regarding any Federally listed or proposed species recorded in the vicinity of the proposed obstruction removal activities. Subsequently, a response was received on February 27, 2024, providing a review of records from the New York Natural Heritage Program ("NYNHP") database (see **Appendix C, "Natural Resources"**). The report confirmed the presence of Federally listed species in the vicinity of the Project area, including the shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (*Acipenser oxyrinchus*), both of which are endangered. Additionally, the following plants within the vicinity of the Project area were listed as threatened or endangered by New York State: orange fringed orchid (*Platanthera cilliaris*; endangered), northern bog aster (*Symphyotrichum boreale*; threatened), rose pink (*Sabatia angularis*; endangered), and white milkweed (*Ascelpias variegate*; endangered).

Given that the proposed obstruction removal activities would be limited to in-water work within the Hudson River, construction activities would not adversely affect existing plant communities. As described below, because any impacts to water or sediment quality associated with the Proposed Project Modification would be localized and temporary, the deep channel habitat typically used by shortnose and Atlantic sturgeon is unlikely to be adversely affected during construction.

5.7.4.1 Critical Habitat

As with the in-water construction described in the FEIS/ROD, Proposed Project Modification would be located within designated Atlantic sturgeon critical habitat. However, the obstruction removal activities would not occur in the vicinity of hard-bottom substrate in low-salinity waters and would not comprise the removal of any soft substrate used for juvenile foraging and physiological development of Atlantic sturgeon. Further, obstruction removal would not significantly alter river salinity. Although the Project area contains physical and biological features necessary to support the unimpeded movement of adults to and from spawning sites, seasonal movement of juveniles, and staging, resting, or holding of subadults or spawning-condition adults, Atlantic sturgeon are not expected to be found in significant numbers at this location. Transient subadults may be present as they move through shallower marine waters along the Atlantic coast, and adults may be present as seasonal migrants in the deeper waters of the river channel, adjacent to the construction zone. However, the Proposed Project Modification would not result in significant impacts to sturgeon movement. Because the obstruction removal activities, like the in-water construction described in the FEIS/ROD, would only produce minimal increases in suspended sediment, and the effects of sediment resuspension would be minimized through the use of BMPs noted in Section 5.7.6, "Best Management Practices,", the Proposed Project Modification would not result in significant impacts to water flow, dissolved oxygen, salinity, or water temperature.

5.7.5 Significant Coastal Fish and Wildlife Habitat

The Proposed Project Modification would result in the removal of obstructions from a small (approximately 1.5 acre) area of the river bottom within the Lower Hudson Reach. As described in the FEIS/ROD, this portion of the river is a designated Significant Coastal Fish and Wildlife Habitat, largely based on its provision of wintering habitat for young-of-the-year and yearling-or-older striped bass.

Given that striped bass spawning and larval habitat occur in freshwaters well upriver of the construction area, and that striped bass juveniles and adults are widely distributed throughout the estuary, these life stages would not be adversely affected by the proposed obstruction removal activities. Likewise, the proposed obstruction removal activities would not have adverse effects on aquatic habitat for other fish and invertebrate species, or on migratory birds that use the region. The Proposed Project Modification would have the potential to result in minor, short-term increases in suspended sediment and associated contaminants that would be localized and expected to dissipate quickly and would not result in adverse impacts to aquatic biota. Vibratory pile hammering would result in temporary increased underwater noise levels that would not be expected to exceed the threshold for physiological injury to fishes. Fish would likely avoid portions of the river near the pile removal activity. The proposed obstruction removal activities would be conducted between July 1, 2025, and January 20, 2026, and, if needed, between July 1, 2026, and January 20, 2027, which is in accordance with the moratorium on in-water construction activities from January 21 through June 30, thereby minimizing potential impacts to overwintering striped bass and the spring migration of striped bass and other anadromous species to upriver spawning grounds. The temporary loss of open-water habitat within the HRGS area and portions of the footprint of former

Pier 68, when compared to the amount of suitable habitat that would still be available within the Lower Hudson River, would not result in adverse impacts to striped bass or other aquatic biota.

Given the limited potential for in-water construction associated with the Proposed Project Modification to affect water quality, and the limited potential for vibratory hammering to result in adverse impacts to fish, the obstruction removal work would not result in adverse impacts to fish including the striped bass, and wildlife species, or adversely affect the designation of this portion of the Hudson River as a Significant Coastal Fish and Wildlife Habitat.

5.7.6 Best Management Practices

The method of removal required for pile extraction, and any associated sediment displacement, depends on factors such as the condition of the pile and its accessibility. A clamshell bucket would be used to remove obstruction prior to cofferdam installation. BMPs are intended to control turbidity and prevent sediments from re-entering the water column during pile and obstruction removal and dredging, as well as to prescribe appropriate methods for the capture and disposal of removed piles, obstructions, and debris. The following BMPs, which were not previously assumed in the FEIS/ROD, will be written into construction contractor requirements to minimize disturbance to water quality and habitat during obstruction removal activities:

- **BMP 1: Obstruction Removal:** For piles, strike or vibrate the pile prior to removal to break the bond between the sediment and pile and to minimize the pile breakage, if necessary. For obstructions, assessed the type of debris and fragment to be removed and position the clamshell close or near the obstruction to prepare removal. Crane operator shall be experienced in pile and obstruction removal. Remove piles and obstructions from the water column slowly to reduce sediment sloughing off into the water column. Crane operator shall be trained to remove pile and obstructions from sediment slowly. This will minimize turbidity in the water column as well as sediment disturbance. Removed piles and obstructions will be placed in a containment basin to capture any adhering sediment. This should be done immediately after the pile and obstruction is initially removed from the water. Piles and obstructions will be removed with the least energy necessary dependent upon site conditions as determined by the selected contractor.
- **BMP 2: Barge Operations, Work Surface, Containment:** Work surface on barge deck or pier, or upland staging area, shall include a containment basin for all treated materials and any sediment removed during pile and obstruction removal. Creosote, debris, and obstructions shall be prevented from re-entering the water.
- **BMP 3: Floating Boom with Absorbent Pads:** Install a floating boom with absorbent pads to capture floating surface debris and any creosote sheen, as needed. The boom shall stay in its original location until any sheen present from removed piling has been absorbed by the boom or removed utilizing absorbent material.
- **BMP 4: Disposal of Piling and Obstructions, Sediment and Construction Residue:** Piling, sediments, construction residue, debris, and obstructions shall be placed into containment area for disposal at an approved facility.
- **BMP 5: Monitoring for Resuspension, Turbidity, and Water Quality Parameters:** A Water Quality Monitoring Plan ("WQMP") will be prepared to detail procedures for sampling and analysis by parameter for both pre-dredging and during dredging work activities. Continuous *in-situ* water quality parameters at fixed monitoring locations when pile pulling, obstruction

removal, and dredging work is being performed will be monitored. Monitoring will provide timely and accurate water quality data to evaluate if dredging activities are impacting water quality. Results of the monitoring will determine if actions are needed to reduce below the action levels by optimizing dredging techniques and approaches to minimize water quality impacts during pile pulling, obstruction removal, and dredging, including additional BMPs.

Additional BMPs presented in NYSDEC's Technical & Operational Guidance Series ("TOGS") 5.1.9, *In-Water and Riparian Management of Sediment and Dredged Material*, Section IV, "General Guidelines for Dredging and In-Water and Riparian Management of Dredged Material," will be implemented for dredging, depending on the method selected to move sediment away from the pile to enable access to its sound portions and its subsequent extraction.[7]

5.8 Noise (FEIS Chapter 12A)

The duration of construction activities associated with the Proposed Project Modification would be up to approximately 14 months (occurring over two distinct periods), which is considered short-term according to the *CEQR Technical Manual*, so a detailed analysis of construction noise is not required, and no significant adverse impact would be expected. Similarly, because the proposed construction equipment associated with the Proposed Project Modification is expected to be similar to what was already evaluated in the FEIS/ROD, the FEIS/ROD impact assessment is applicable for the obstruction removal activities described herein. For example, as stated in the FEIS/ROD, projected construction noise levels would be below the FTA daytime construction noise impact criterion at locations more than 40 feet from the construction work area.

Noise from construction may be audible and potentially disruptive at HRP, represented by Receptor 10 in the FEIS/ROD (see FEIS Chapter 12A, "Noise"), but there are no areas of the park used for passive recreation within 40 feet of this construction area, which would be the area of impact most likely to be adversely affected by noise. The construction zone would be approximately 500 feet from the publicly accessible portion of landside HRP. Further, any disruption to park users as a result of construction activities associated with the Proposed Project Modification would occur in an area already subject to heavy auto and helicopter traffic due to the presence of Twelfth Avenue and the nearby West 30th Street Heliport within HRP, which themselves expose park users to substantial noise. While educational programming is held during the winter months in the Pier 66 boathouse, obstruction removal activities would occur between July 1, 2025, and January 20, 2026, and, if needed, between July 1, 2026, and January 20, 2027, and therefore would be unlikely to result in noise-related disruptions.

Mitigation measures (e.g., implementation of a noise monitoring plan at sensitive receptors nearest to the construction staging area, the use of construction equipment compliant with the noise emission standards of FTA and New York City where feasible and practicable, etc.) proposed in the FEIS/ROD would be implemented with the Proposed Project Modification, as applicable.

The temporary increase in underwater noise levels from vibratory pile hammering associated with the obstruction removal work could lead to habitat avoidance by fish and some macroinvertebrates in the immediate vicinity of the Project area. It is unlikely, however, that these movements would result in impacts to EFH, given that the Hudson River is sufficiently wide (approximately 4,500 feet) to allow fish to

[7] https://www.dec.ny.gov/permits/94755.html

avoid the ensonified area while continuing to forage and migrate. Given the availability of alternate foraging areas and migration pathways, the temporary duration of the active obstruction removal activities, and the fish species' transient presence in the vicinity of the construction activities associated with the Proposed Project Modification, the effects of underwater noise on EFH species would be insignificant.

5.9 Vibration (FEIS Chapter 12B)

As described in the FEIS/ROD, there are no vibration receptors within the Hudson River that would have the potential to experience adverse impacts as a result of the Project. The Proposed Project Modification would comprise the removal of accessible obstructions (i.e., those above the mudline) with a clamshell bucket and, if necessary to facilitate extraction of resistant piles, a vibratory hammer. The nearest vibration receptors to the area of proposed obstruction removal activities would be the Hudson River Bulkhead and the landside portion of HRP. At the closest point, work activities associated with the Proposed Project Modification would be approximately 500 feet from both the Hudson River Bulkhead and the publicly accessible landside portion of HRP.

As described in the FEIS/ROD, the Project construction equipment with the greatest potential to result in elevated vibration levels includes impact pile-drilling rigs and earth-moving equipment such as bulldozers. However, as noted in the FEIS/ROD, the Hudson River Bulkhead in HRP will be monitored for movement/tilt and settlement during construction activities, and a Bulkhead Protection Plan has been developed that sets forth procedures to protect the structure during construction activities. Therefore, impacts from ground-borne vibration are not expected to occur with the Proposed Project Modification.

5.10 Air Quality (FEIS Chapter 13)

As with the in-water construction activities described in the FEIS/ROD, the Proposed Project Modification would not result in an adverse construction air quality impact to nearby onshore land uses, such as HRP, given the short duration and limited area of in-water construction activity.

A detailed air quality analysis was performed for the Proposed Project Modification based on equipment inventories provided by the contractor and using the following assumptions:

- All equipment would operate at maximum capacity for a period of eight weeks (two months) in 2025;
- All equipment would operate continuously for two eight-hour shifts per day on weekdays (i.e., no weekend activities); and
- All equipment would meet the applicable emissions standards described as part of the FEIS/ROD mitigation commitments.

Equipment emission factors for the criteria pollutants were estimated using the U.S. Environmental Protection Agency's ("EPA") *Motor Vehicle Emission Simulator* (MOVES4).[8] The emission factors were then multiplied by each equipment's rated horsepower and default load factor to obtain hourly emission rates. For the equipment without a specified horsepower rating (e.g., clamshell engines), the average level for

[8] EPA, MOVES4, EPA-420-B-23-011, September 12, 2023.

similar equipment types was applied using the USACE construction equipment database.[9] The tugboat engine emission factors were obtained from the EPA Port Emissions Inventory Guidance.[10]

To estimate monthly emissions, the hourly emission rates were further multiplied by the equipment monthly usage of 320 hours. These monthly emissions were then multiplied by two months (eight weeks) for each equipment type to reflect the maximum estimated emissions that would result with the Proposed Project Modification.

The construction activities associated with the Proposed Project Modification may occur simultaneous with the construction activities described in the previously completed NEPA Re-Evaluation #8, "Hudson River Ground Stabilization Contract: Approval Request for Crane Barge Use of a Tier 0 Engine," and within close proximity to each other in the Hudson River. Therefore, the annual emissions for the Proposed Project Modification were analyzed cumulatively with those for the activities assessed in NEPA Re-Evaluation #8.

Given that this air quality analysis is a re-evaluation of the original analysis conducted as part of the FEIS/ROD, the same *de minimis* levels used in the FEIS/ROD applicable to New York County (where the Proposed Project Modification would occur) were applied. As shown in Table 2, "Summary of Emissions for the Proposed Project Modification and HRGS Crane Barge," the analysis determined that emissions for all the nonattainment or maintenance criteria pollutants, including nitrogen oxides ("NO_x"), volatile organic compounds ("VOC"), carbon dioxide ("CO_2"), and particulate matter ("$PM_{2.5}$" and "PM_{10}") would be well below their respective *de minimis* thresholds in General Conformity applicability from the original analysis in the FEIS/ROD. Therefore, a formal General Conformity determination is not required.

Table 2: Summary of Emissions for the Proposed Project Modification and HRGS Crane Barge

Construction Activity	Time Period		Pollutant Emissions (tons/year)				
	From	To	VOC	NOx	CO	$PM_{2.5}$	PM_{10}
RE-EVALUATION #3 Only			**2025**				
Obstruction Removal	11/01/25	12/31/25	0.132	2.363	1.151	0.077	0.080
de minimis Threshold			*50.000*	*50.000*	*100.000*	*100.000*	*100.000*
Exceeding *de minimis* Threshold			No	No	No	No	No
RE-EVALUATION #3 + RE-EVLUATION #8			**2025 Combined Effects**				
Obstruction Removal (RE#3)	11/01/25	12/31/25	0.132	2.363	1.151	0.077	0.080
HRGS Crane Barge (RE#8)	01/01/25	12/31/25[1]	1.019	13.414	4.404	0.650	0.666
Combined Emissions			1.151	15.777	5.555	0.727	0.746
de minimis Threshold			*50.000*	*50.000*	*100.000*	*100.000*	*100.000*
Exceeding *de minimis* Threshold			No	No	No	No	No

[1] The emissions from the cofferdam construction work during 2025 are shown in NEPA Re-Evaluation #8, "Hudson River Ground Stabilization Contract: Request for Crane Barge Use of Tier 0 Engines," dated January 28, 2025.

Source: GTHP, 2025.

[9] USACE, "Construction Equipment Ownership and Operating Expense Schedule," EP 1110-9, August 12, 2021.

[10] EPA, "Ports Emissions Inventory Guidance: Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions," EPA-420-B-22-011, April 2022.

The FEIS/ROD described mitigation measures to limit air pollutant emissions during the construction period, all of which would also apply to the barge-based equipment conducting the in-river work. Barges with emission sources moored near the construction site would be required to comply with the same standards as land-based equipment. These measures (e.g., use of clean fuel, employment of best available tailpipe emission reduction technologies, utilization of newer equipment, etc.) would be used during the obstruction removal work and are anticipated to be similarly effective.

5.11 Soils (FEIS Chapter 15) and Contaminated Materials (FEIS Chapter 16)

Since the Project is in navigational waters of the United States, NYSDEC requires sampling and analysis of proposed excavated sediment, as part of its 6 NYCRR Part 608: Protection of Waters permitting program. Characterization of the sediment would allow NYSDEC to determine management, upland disposal, and/or reuse options that could be employed, along with controls that might be required to minimize potential environmental impacts during excavation/dredging.

Prior to the start of dredging operations to facilitate obstruction removal activities, *in situ* sediment sampling and analysis will be performed to evaluate and recommend appropriate management, upland disposal, and/or reuse options, along with BMPs that might be required to minimize potential environmental impacts during excavation/dredging. Treatability testing will be performed to simulate dewatering of the sediment and generate representative filtrate water for chemical analyses and subsequent water treatment system design. Filtrate water will be collected and sent to the analytical laboratory for measurement of the same analyte list as the bulk sediment. A Sediment Sampling and Analysis Plan ("SSAP") has been prepared for both NYSDEC and New Jersey Department of Environmental Protection ("NJDEP") review and approval. NYSDEC approved the SSAP on January 16, 2025, concurring that the number of samples and analytical parameters are consistent with NYSDEC TOGS 5.1.9. NJDEP approved the SSAP on February 24, 2025, thereby allowing potential placement of excavated material in permitted facilities in New Jersey. An amendment to the approved SSAP was submitted to NYSDEC and NJDEP on March 3, 2025, to characterize the dredged material within the cofferdam area in support of the dredging that will be required from obstruction removal prior to cofferdam installation. NYSDEC approved the amended SSAP on March 24, 2025, concurring that the number of samples and analytical parameters are consistent with NYSDEC TOGS 5.1.9. NJDEP approved the SSAP on March 27, 2025, thereby allowing potential placement of excavated material in permitted facilities in New Jersey (see **Appendix C, "Natural Resources"**). The results of the SSAP will determine potential environmental impacts on natural resources and identify potential upland placement locations.

Sediments and water displaced by dredging associated with obstruction removal activities would be placed or discharged into hopper barges. The dredged material would be allowed to settle in the barges, assisted using flocculants where required. Excess water may need to be tested and treated, if necessary, before discharge. Materials would be dewatered prior to transport to an approved disposal location.

The Hudson River is a National Priorities List ("NPL") site (also known as a Superfund site) and sediment may have polychlorinated biphenyl ("PCB") contamination. Therefore, GDC will test material to be excavated in accordance with Federal, State, and local regulations before it is excavated to determine beneficial reuse or off-site disposal options. Results of the sediment sampling and analysis will determine appropriate management of dredged material. Analytical results will also determine whether dredged material can be considered for reuse. In New York, GDC will conduct any beneficial use determination ("BUD") of the excavated material in accordance with NYSDEC requirements in 6 NYCRR Part 360, which

sets out conditions under which excavated materials can be reused. In New Jersey, an Acceptable Use Determination ("AUD") will be sought from NJDEP Office of Dredging and Sediment Technology for the reuse of dredge material. Where material is surplus or not suitable for reuse in New York or New Jersey, the results of laboratory analysis of samples (collected either before or after excavation) will be used to determine appropriate disposal facilities.

Creosote piles would be removed prior to construction, as needed. These piles would be disposed of at a licensed and approved and permitted disposal facility. Existing obstructions containing creosote that are not removed for tunnel construction would remain in place. During obstruction removal activities, the Project contractor will implement control measures to avoid, minimize, or mitigate impacts related to soil conditions, consistent with measures described in the FEIS/ROD.

5.12 Safety and Security (FEIS Chapter 18)

Safety measures would be followed to protect maritime commerce during construction. Measures would include notification to mariners via USCG, installation of lighting on barges to enable their location and tracking, and the use of marker buoys with solar lighting. These measures, which have been developed in coordination with USCG, would protect recreational boaters, including those using sailboats, kayaks, and canoes from the HRP boathouse at Pier 66 at West 26th Street. Additionally, given the proximity of barge-mounted cranes to the West 30th Street Heliport, crane boom tips would be outfitted with an orange-and-white checkered air traffic warning flag, approved lighting/strobe, and any other requirements per FAA guidelines. With these measures in place, the Proposed Project Modification would not result in adverse safety and security impacts to Hudson River maritime traffic or to the West 30th Street Heliport operations.

5.13 Public Health (FEIS Chapter 19)

The Proposed Project Modification would not result in any new significant adverse impacts regarding water quality, noise, air quality, or contaminated materials. As such, the Proposed Project Modification would not result in any new impacts to public health.

5.14 Coastal Zone Consistency (FEIS Chapter 21)

As with the in-water construction activities and those in the Manhattan waterfront area analyzed in the FEIS/ROD, the proposed obstruction removal activities would be located within the coastal zone. The New York State Department of State ("NYSDOS") issued a determination, dated January 2, 2019, that the Project is consistent with the New York Coastal Management Program.

However, correspondence has been prepared identifying the proposed changes related to obstruction removal activities and their consistency with applicable policies in the NYSDOS Coastal Management Program Federal Consistency Assessment Form and NYCDCP Waterfront Revitalization Program Consistency Assessment Form. Following submission of letters requesting NYSDOS and NYCDCP concurrence on August 19, 2024, NYSDOS and NYCDCP provided comments on and/or suggested revisions to the forms on September 3, 2024, and August 29, 2024, respectively.

NYSDOS was provided a copy of the USACE and NYSDEC permit applications on January 27, 2025, as requested, to continue the coastal zone consistency review. NYCDCP was provided the revised coastal form on January 24, 2025, to facilitate NYCDCP review of the local waterfront regulatory program coastal

assessment. On February 25, 2025, NYCDCP provided a finding that the Proposed Project Modification would not substantially hinder the achievement of any WRP policy (see **Appendix D, "Coastal Consistency Assessment"**). On March 13, 2025, NYSDOS provided a general concurrence that the Proposed Project Modification meets NYSDOS general consistency concurrence criteria (see **Appendix D, "Coastal Consistency Assessment"**).

6 CHANGE IN PERMIT REQUIREMENTS

The Proposed Project Modification would require the following permits or approvals:

- USACE Nationwide Permit No. 6 – Survey Activities and Nationwide Permit No. 3 – Maintenance Activities
- NYSDEC Permit No. 2-6205-01829/00005 (Natural Resource Permit Condition #6) Authorization Request
- NYS Office of General Services ("NYSOGS") Use of Underwater Lands and Permit for Use of State-Owned Property
- NYSDOS Coastal Management Program Consistency Determination
- NYCDCP Waterfront Revitalization Program ("WRP") Consistency recommendation

7 PUBLIC AND STAKEHOLDER OUTREACH

GDC, Amtrak, PANYNJ, and the Gateway Trans-Hudson Partnership ("GTHP") have held numerous meetings with HRPT and its tenants (Hudson River Community Sailing, New York Outrigger, BLADE, and Air Pegasus), as well as Federal and State permitting agencies, regarding the proposed obstruction removal activities in the Hudson River.

Although the Proposed Project Modification would not result in the use of any Section 4(f) resources as all obstruction removal activities would occur outside the boundaries of HRP, GDC continues to coordinate with HRPT and its tenants to minimize disruption to boating during the construction period. Most recently with respect to HRP, a meeting was held on October 23, 2024, with GDC, Amtrak, PANYNJ, GTHP, and HRPT to discuss, among other topics, the refinements to construction activities in the Hudson River.

GDC also presented an update on the proposed construction activities in the Hudson River at the Manhattan Community Board 4 Waterfront, Parks & Environment Committee meeting on June 13, 2024. During HRPT's April 24, 2024, Hudson River Park Water Safety Meeting, GDC presented an overview of the HRGS work and schedule of activities to HRPT's water-related tenants and permittees. Another meeting was held on March 25, 2024 with HRPT and Hudson River Community Sailing to discuss the in-water construction work and obstruction removal activities associated with the HRGS cofferdam in relation to the Pier 66 boathouse operations. Additional meetings have been held with HRPT, USCG, BLADE, and Air Pegasus.

An interagency meeting was held on December 15, 2023, with GDC, Amtrak, FRA, FTA, USACE, USFWS, NOAA NMFS, and HRPT. Items for discussion included an overview of the need for obstruction removal, proposed construction methods and staging activities, measures to minimize harm, permitting, and next steps.

GDC, Amtrak, PANYNJ, and GTHP will continue coordination efforts with Federal and State permitting agencies, HRPT and its tenants, Manhattan Community Board 4, other community organizations, and members of the public prior to and during construction activities in the Hudson River.

8 MITIGATION AND COMMITMENTS

Table 3, "Mitigation Measures and Commitments" describes those commitments made to avoid potential environmental impacts, as well as any proposed mitigation measures to reduce adverse environmental impacts associated with the Proposed Project Modification. Unless stated otherwise, mitigation and avoidance measures identified within the HTP FEIS/ROD as well as previous NEPA re-evaluations remain valid; this table identifies only those measures specific to the proposed Project Modification and/or not previously disclosed in prior environmental documentation for the HTP.

Table 3: Mitigation Measures and Commitments

#	FEIS/ROD Subject Area	Mitigation or Commitment Description	Responsible Entity
1	Natural Resources	**Best Management Practices 1: Obstruction Removal:** For piles, strike or vibrate the pile prior to removal to break the bond between the sediment and pile and to minimize the pile breakage, if necessary. For obstructions, assessed the type of debris and fragment to be removed and position the clamshell close or near the obstruction to prepare removal. Crane operator shall be experienced in pile and obstruction removal. Remove piles and obstructions from the water column slowly to reduce sediment sloughing off into the water column. Crane operator shall be trained to remove pile and obstructions from sediment slowly. This will minimize turbidity in the water column as well as sediment disturbance. Removed piles and obstructions will be placed in a containment basin to capture any adhering sediment. This should be done immediately after the pile and obstruction is initially removed from the water. Piles and obstructions will be removed with the least energy necessary dependent upon site conditions as determined by the selected contractor.	Construction Contractor(s)
2	Natural Resources	**Best Management Practices 2: Barge Operations, Work Surface, Containment:** Work surface on barge deck or pier, or upland staging area, shall include a containment basin for all treated materials and any sediment removed during pile and obstruction removal. Creosote, debris, and obstructions shall be prevented from re-entering the water.	Construction Contractor(s)
3	Natural Resources	**Best Management Practices 3: Floating Boom with Absorbent Pads:** Install a floating boom with absorbent pads to capture floating surface debris and any creosote sheen, as needed. The boom shall stay in its original location until any sheen present from removed piling has been	Construction Contractor(s)

#	FEIS/ROD Subject Area	Mitigation or Commitment Description	Responsible Entity
		absorbed by the boom or removed utilizing absorbent material.	
4	Natural Resources	**Best Management Practices 4: Disposal of Piling and Obstructions, Sediment and Construction Residue:** Piling, sediments, construction residue, debris, and obstructions shall be placed into containment area for disposal at an approved facility.	Construction Contractor(s)
5	Natural Resources	**BMP 5: Monitoring for Resuspension, Turbidity, and Water Quality Parameters:** A Water Quality Monitoring Plan ("WQMP") will be prepared to detail procedures for sampling and analysis by parameter for both pre-dredging and during dredging work activities. Continuous in-situ water quality parameters at fixed monitoring locations when pile pulling, obstruction removal, and dredging work is being performed will be monitored. Monitoring will provide timely and accurate water quality data to evaluate if dredging activities are impacting water quality. Results of the monitoring will determine if actions are needed to reduce below the action levels by optimizing dredging techniques and approaches to minimize water quality impacts during pile pulling, obstruction removal, and dredging, including additional BMPs.	Construction Contractor(s
6	Natural Resources	Additional BMPs presented in NYSDEC's Technical & Operational Guidance Series ("TOGS") 5.1.9, *In-Water and Riparian Management of Sediment and Dredged Material*, Section IV, "General Guidelines for Dredging and In-Water and Riparian Management of Dredged Material," will be implemented for dredging, depending on the method selected to move sediment away from the pile to enable access to its sound portions and its subsequent extraction.[11]	Construction Contractor(s

[11] https://www.dec.ny.gov/permits/94755.html

9 CONCLUSION

Given the measures developed to ensure safe passage of recreational boaters and minimize disturbance to natural resources during obstruction removal activities, and the Project Sponsor's commitment to ongoing coordination with the helicopter businesses operating out of the West 30th Street Heliport, the boathouse tenants, and HRPT, the Proposed Project Modification described herein would not result in new significant adverse effects beyond those identified in the FEIS/ROD.

In conclusion, after comprehensive consideration of the Proposed Project Modification's impact on the affected environment, the original FEIS/ROD remains valid. Supplemental NEPA analysis is not required.