HUDSON TUNNEL PROJECT

NEPA RE-EVALUATION #6

PROPOSED MODIFICATIONS IN WORKDAYS AND WORK HOURS FOR THE HUDSON GROUND STABILIZATION WORK IN HUDSON RIVER

October 25, 2024

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1 INTRODUCTION

This National Environmental Policy Act ("NEPA") re-evaluation statement considers a proposed modification 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 (together, "FEIS/ROD"). This re-evaluation is particular to the Hudson River Gound Stabilization ("HRGS") work in the Hudson River portion of the HTP Study Area from what was originally included in the FEIS/Record of Decision (ROD)[1]. The Proposed Project Modifications described herein are intended to reduce project construction risk and promote cost and schedule certainty. The Proposed Project Modifications are specific for work during the approximately three-year HRGS construction period. These Proposed Project Modifications are particular to the HRGS work in the HTP Study Area reviewed in the FEIS/ROD and relate to:

- performing cofferdam installation in one (1) twelve-hour shift, from 7:00 AM to 7:00 PM, on weekends (Saturday only);
- advancing deep soil mixing ("DSM") operations 24 hours per day on weekdays during two (2) twelve-hour shifts, from 7:00 AM to 7:00 PM and 7:00 PM to 7:00 AM, weekdays with the weekday Friday shift ending on Saturday at 7:00 AM; and
- performing Test Coring 24 hours per day on weekdays in two (2) twelve-hour shifts, from 7:00 AM to 7:00 PM and 7:00 PM to 7:00 AM with the weekday Friday shift ending on Saturday at 7:00 AM.

Given that permanent operational conditions were analyzed in the FEIS/ROD, and the Proposed Project Modifications 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 existing NEC rail tunnel beneath the Hudson River is known as the North River Tunnel. This tunnel is used by the National Railroad Passenger Corporation ("Amtrak") for intercity passenger rail service and by the New Jersey Transit Corporation ("NJ TRANSIT") for commuter rail service. The Project's Selected Alternative includes construction of an additional passenger rail tunnel to the south of the North River Tunnel under the Hudson River, including railroad infrastructure in New Jersey and New York connecting the new rail tunnel to the existing NEC, and rehabilitation of the existing NEC tunnel.

The Federal Railroad Administration ("FRA") was the lead Federal agency for the HTP 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 the FEIS/ROD was issued on May 28, 2021. 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.

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

2 PROPOSED MODIFICATIONS

2.1 Conditions Included in FEIS/ROD

The FEIS/ROD described temporary construction activities associated with ground improvement operations within the Hudson River. 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 tunnel boring machine ("TBM"). This portion of the alignment is referred to as the "low cover 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 (Hudson River). The ground improvement work inside the cofferdam involves deep soil mixing ("DSM") to harden the soil with cement or cement grout with the native soil creating columns of moderate strength referred to as "soilcrete".

FEIS/ROD Section 3.3.5.7 explains installation and removal of cofferdams ("HRGS In-Water Work") would occur only within an authorized work window from July 1 to January 20. As such, HRGS in-water work including the installation and removal of the cofferdams is strictly prohibited between January 21 and June 30 of each calendar year.

The HRGS In-Water Work is strictly prohibited between January 21 and June 30 of each calendar year. Once the cofferdams are in place, DSM and other HRGS work activities are permissible within the cofferdam all year round, with no seasonal restrictions.

The FEIS/ROD, Section 3.3.5.7, "Schedule," identifies the workdays, and work hours, and schedule for the construction activities associated with the HRGS In-Water Work.

> *The in-water work, including the installation of sheeting to protect the portion of the river and the soil improvement for riverbed stabilization, and the subsequent removal of the sheet piles or cofferdam would be accomplished in two eight-hour shifts (7 AM-3 PM and 3 PM -11 PM) on weekdays.*
>
> *Construction activities associated with each 600-foot-long cofferdam would take approximately 13 months to complete, with the following activities occurring during that time:*
>
> - *Installation of cofferdam: 14 weeks (3.5 months)*
> - *Deep soil mixing within the cofferdam: 36 weeks (9 months)*
> - *Removal of the cofferdam: 4 weeks (1 month)*
>
> *Depending on how the work is sequenced, it could take up to 26 months to complete.*

The National Oceanic Atmospheric Administration ("NOAA") National Marine Fisheries Service ("NMFS") and New York State Department of Environmental Conservation ("NYSDEC") imposed these HRGS In-Water Work timing restrictions to protect over-wintering striped bass, winter flounder spawning, and Atlantic and short nose sturgeon during HRGS In-Water Work in the Hudson River. As contemplated in the FEIS/ROD, the HRGS In-Water Work was expected to be performed in approximately a 26-month period, or approximately three (3) seasons.

To adhere to the seasonal restrictions identified in the FEIS/ROD, HRGS In-Water work is planned to occur in three (3) seasons:

1. Season 1: July 1, 2024, to January 20, 2025
2. Season 2: July 1, 2025, to January 20, 2026
3. Season 3: July 1, 2026, to January 20, 2027

The Proposed Project Modifications are related to constructions activities in the Hudson River. The portion of this area within the Hudson River particular to the HRGS comprises the jurisdictional waters of the United States Army Corps of Engineers ("USACE") and NYSDEC. Work activities associated with HRGS, as described in the FEIS/ROD, are permitted through a USACE Section 10/404 permit (November 15, 2021). The NYSDEC authorized a permit for Tidal Wetlands and Protection of Waters and a Water Quality Certification on October 1, 2021. The following regulatory agency consults were completed as part of the USACE/NYSDEC permit applications, NOAA NMFS Biological Opinion, United States Fish and Wildlife Service ("USFWS") Consultations, U.S. Coast Guard ("USCG") Notice to Mariners, New York State Department of State ("NYSDOS") Coastal Zone Consistence Determination, New York City Department of City Planning ("NYCDCP") Local Waterfront Revitalization Program ("LWRP") Determination, New York State Office of General Services ("NYSOGS") Easement, and New York State Office of Parks and Historic Preservation Office ("NYSHPO").

The USACE/NYSDEC issued permits, and the outcome of agency consultations included the imposition of seasonal restrictions related to the HRGS In-River Work (installation and removal of the cofferdam). The permits and agency consultation did not specify allowable workdays nor work hours to employ the HRGS construction activities in the Hudson River.

2.2 Understanding of Changes Since Publication of FEIS/ROD

HRGS In-Water Work for Season 1 commenced on July 1, 2024, with anticipated completion on January 20, 2025. Cofferdam installation was initiated on August 12, 2024. In accordance with the FEIS/ROD, HRGS work is being performed in two (2) eight-hour shifts (7 AM – 3 PM and 3 PM – 11 PM) on weekdays. Confirming the proper mixing proportions and effectiveness of the DSM process through the test cofferdam section will be critical to the success of ground improvement activities in subsequent seasons and for future tunnelling activities for the HTP. Completing the required cofferdam installation is a critical work activity in HRGS In-River Work Season 1, which will allow for the DSM and associated testing to occur during In-River Work Season 1 and between Seasons 1 and 2.

After the issuance of the FEIS/ROD, a proposed change in workdays and work hours for this work has been requested by the HRGS contractor for the duration of the HRGS work, as described in the following sections.

2.2.1 Cofferdam Installation

Current: The cofferdam installation is currently being performed on weekdays in two (2) eight-hour work shifts, from 7:00 AM to 3:00 PM and 3:00 PM to 11:00 PM as per the FEIS/ROD.

Proposed Change*:* The HRGS contractor is proposing one (1) additional twelve-hour cofferdam installation shift from 7:00 AM to 7:00 PM on Saturdays. The contractor will continue working weekdays in two (2) eight-hour work shifts, from 7:00 AM to 3:00 PM and 3:00 PM to 11:00 PM.

Work Description: The proposed Saturday work would be similar to the cofferdam installation work currently being performed on weekdays, which consists of driving piles for the temporary containment structure. Cofferdam installation activities include picking the piles off the barge (tripping the pile from a horizontal storage position into a vertical orientation), setting the pile in the falsework template to ensure proper location and using a vibratory hammer to drive the piles into the riverbed to the proper depth/embedment. The falsework template is then advanced and supported from the previously driven pile so the cycle can be repeated. Ancillary operations and crane lifts are part of this work.

Justification: The HRGS contractor has determined that key elements of the cofferdam installation would benefit from additional time. The level of accuracy needed to position the cofferdam components into a vertical orientation are challenging in a marine environment and the HRGS contractor has identified that additional time is needed to carefully place into position prior to driving into the riverbed. Affording additional time on Saturdays will improve the cofferdam installation production schedule. Once the cofferdam is installed, the DSM inside the cofferdam can commence.

2.2.2 Deep Soil Mixing

Current: The DSM is currently being performed on weekdays in two (2) eight-hour work shifts, from 7:00 AM to 3:00 PM and 3:00 PM to 11:00 PM as per the FEIS/ROD.

Proposed Change: The HRGS contractor is proposing to advance DSM operations 24 hours per day on weekdays during two (2) twelve-hour shifts, from 7:00 AM to 7:00 PM and 7:00 PM to 7:00 AM, weekdays for the duration of the Project with the weekday Friday shift ending on Saturday at 7:00 AM. This represents an additional eight (8) hours of work each weekday.

Work Description: This would include DSM production work, equipment cleanup, and crew transport from the HRGS site back to piers along the Hudson River at the conclusion of the shift work. The DSM entails the drill rig advancing the mixing tool with grout slurry to create the ground stabilization elements. A crane would be utilized to support this work.

Justification: The HRGS contractor has determined that the DSM process would benefit from additional time. These additional hours for DSM will ensure that the contractor can meet the required schedule and project milestones. The DSM process is essential and needs to be administered carefully, therefore the additional eight (8) work hours period would help improve this process and reduce risk uncertainty.

2.2.3 Test Coring

Current: Test Coring is currently being performed on weekdays in two (2) eight-hour work shifts, from 7:00 AM to 3:00 PM and 3:00 PM to 11:00 PM as per the FEIS/ROD.

Proposed Change: The HRGS contractor is proposing to perform Test Coring 24 hours per day on weekdays in two (2) twelve-hour shifts, from 7:00 AM to 7:00 PM and 7:00 PM to 7:00 AM with the weekday Friday shift ending on Saturday at 7:00 AM. This represents an additional eight (8) hours of work each weekday.

Work Description: Test Coring entails the core drill rig advancing and retrieving sediment samples of the previously placed DSM columns to perform quality control testing. Success of the Test Coring program is extremely important to produce good samples. When coring, it is best to complete a core from start to finish to obtain the most complete results. Core samples ultimately dictate pass/failure of the DSM ground stabilization elements and because of the tight requirements for recovery, continuous core drilling is appropriate to ensure specification conformance and schedule for the test program.

Justification: The collection of a larger than planned quantity of test core samples within the limited work area available with the containment structure and time to review core testing to perform the required quality control of the DSM for the field demonstration test section is time consuming. A partially completed core location does not allow for quality sampling. Allowing the additional eight (8) hours can facilitate completion of complete coring without having a pause in the work. The additional hours will also support the overall quality control and schedule of the test program.

2.2.4 Analytical Framework for the Proposed Project Modification

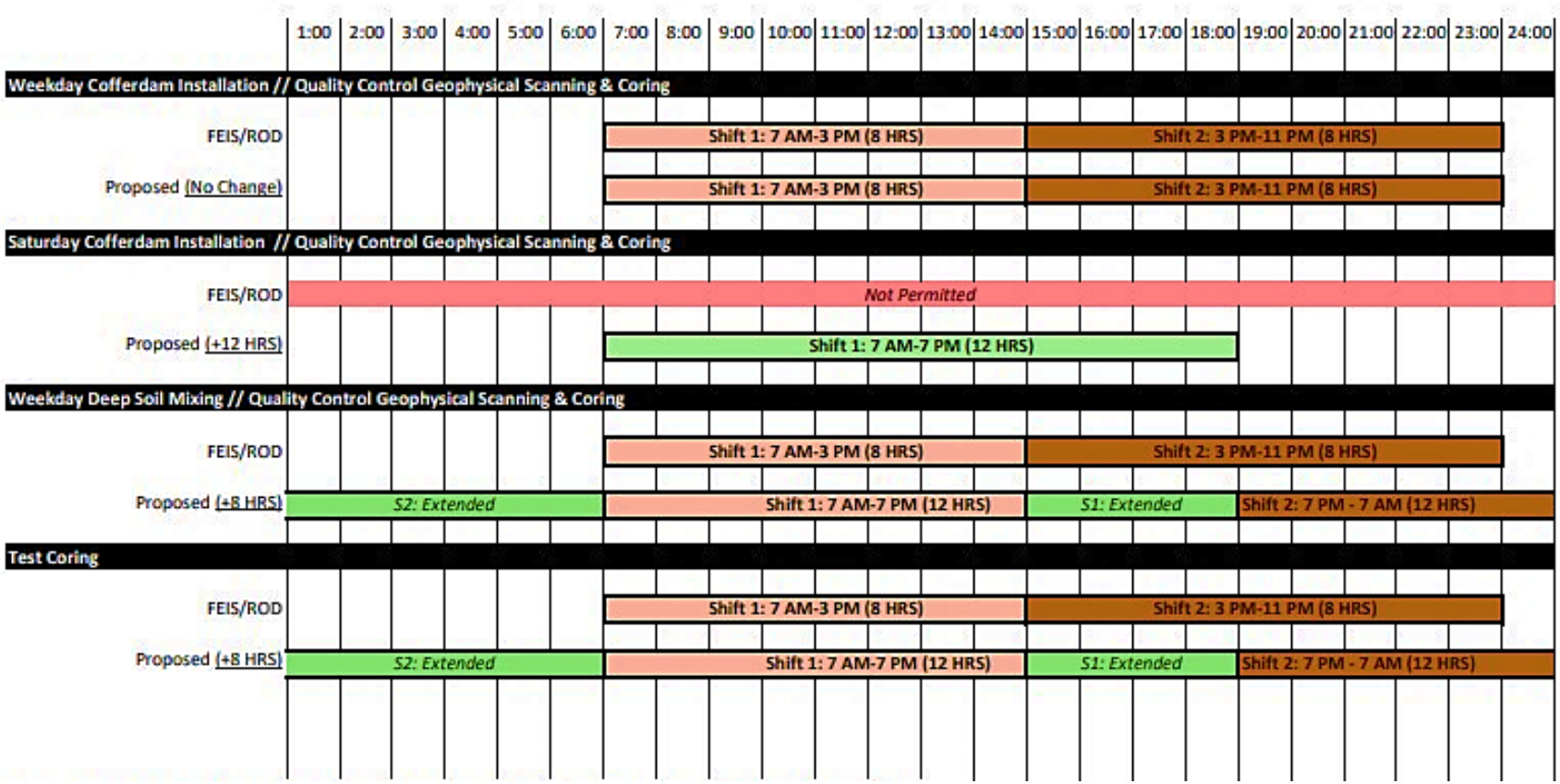
The Proposed Project Modification has the potential to change analyses and determinations of impact presented in the FEIS/ROD within in the Hudson River portion of the HTP Study Area in which the HRGS work is located.

The proposed change in workdays and work hours for this work is a project risk mitigation as it relates to cost and schedule. These proposed changes, if approved, will improve the HRGS contractor's production during this first season, and therefore will improve schedule certainty for the HRGS work and future tunneling activities. The cofferdam installation, DSM, and Test Coring are all critical to ensuring the performance specifications of the soil mixing ground stabilization for future successful advancement of the TBM.

The Proposed Project Modification would be in place during the approximately three-year HRGS construction period. Its implementation would not result in any physical changes to the Hudson River or to surrounding landside uses, beyond what is described in the FEIS/ROD. As such, there would be no permanent effects with the change in workdays and work hours for the HRGS work; analyses presented in this memorandum assess the potential for adverse effects only during the construction period.

Figure 1 provides a summary of each key HRGS work element, the current FEIS/ROD work hour and workdays, and the proposed work hours and workdays.

Figure 1: Proposed Change in Workdays and Work Hours for each HRGS Element



3 AFFECTED ENVIRONMENT: "NO ACTION" CONDITIONS

As described in the FEIS/ROD, the area in the vicinity of the Proposed Project Modifications is currently undergoing extensive redevelopment because of recent public policy initiatives in the area; 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 Modifications," provides a summary of No Action projects in the vicinity of the Proposed Project Modifications; that is, projects that would occur whether the HTP is implemented or not (see **Figure 2**). The list provides information on projects that were described in the FEIS/ROD, including updates identified during the re-evaluation process. As noted in the FEIS/ROD, the Project Sponsor (GDC) will coordinate project activities to minimize disruptions wherever possible.

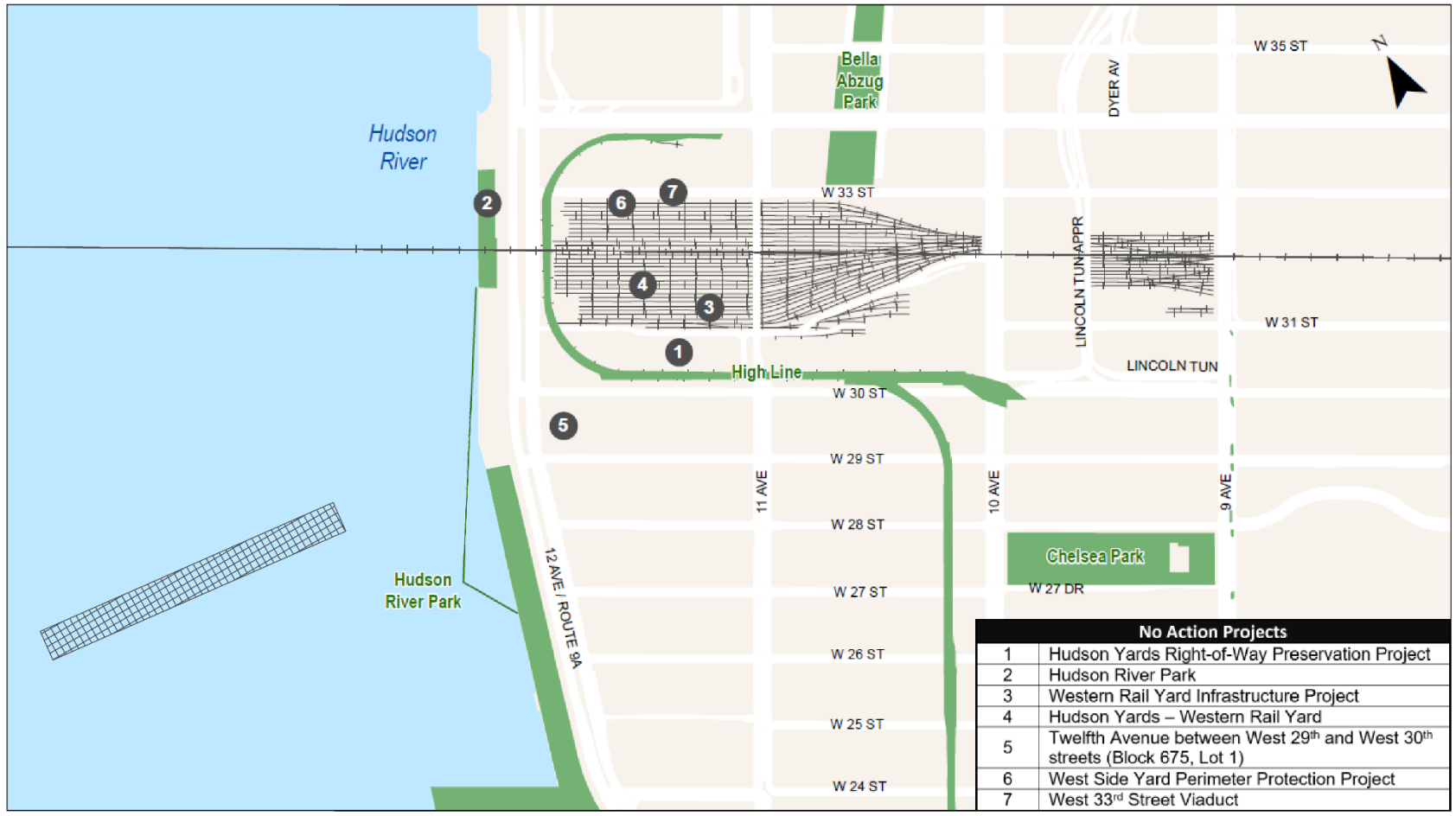
Since the publication of the FEIS/ROD, HRPT has indicated that repair activities (i.e., rehabilitation of piles, pier decks, bulkheads, relieving platforms, etc.) are tentatively planned at Pier 66 between 2025 and 2026. This repair work would be staged from barges and would rely on barge-mounted cranes. GDC will continue to work with HRPT to coordinate any Project construction activities that may occur simultaneously with repair activities at Pier 66 and to minimize the potential for cumulative adverse construction effects.

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

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

Notes:
** ID corresponds to the No Action projects shown on Figure2, "No Action Projects in the Vicinity of the Proposed Project Modifications."*
*** Since the FEIS/ROD, Amtrak acquired Block 675, Lot 1; no further development projects are currently planned for this property.*
Completed since the FEIS/ROD: 601 West 29th Street, 606 West 30th Street, and 517 West 29th Street

Figure 2: No Action Projects in the Vicinity of the Proposed Project Modifications



No Action Projects	
1	Hudson Yards Right-of-Way Preservation Project
2	Hudson River Park
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)
6	West Side Yard Perimeter Protection Project
7	West 33rd Street Viaduct

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 Modifications

Figure 2

4 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 mitigations would not change with the Proposed Project Modifications 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.

It is anticipated that the proposed change in workdays and work hours for the HRGS work in the Hudson River portion of the HTP would not result in any change to the following FEIS/ROD technical areas, and therefore, re-analyses will not be required:

- Traffic;
- Pedestrians;
- Transportation Services (Bus, Subway, and Commuter Train Service);
- Land Use, Zoning and Public Policy;
- Property Acquisition;
- Socioeconomic Conditions;
- Historic and Archaeological Resources;
- Vibration;
- Greenhouse Gas Emissions and Resilience;
- Geology and Soils;
- Contaminated Materials;
- Utilities and Energy;
- Public Health and Electromagnetic Fields;
- Indirect and Cumulative Effects;
- Coastal Zone Consistency;
- Environmental Justice;
- Commitment of Resources; and
- Final Section 4(f) Evaluation.

4.1 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 of an area of the river bottom approximately 1,200 feet long and 110 feet wide. In this area, temporary cofferdams (in-water containment structures) would be installed. Barges and other equipment would be situated in a work zone approximately 100 feet wide on both long sides of the cofferdams. Workers would travel to the construction zone on small boats (i.e., tugboats or dinghies) from established piers on the Hudson River shoreline.

Ground improvement activities would fall entirely within the river's designated navigation channel (i.e., would not extend past the New York pierhead line) and are currently expected to progress from west to east. With the implementation of the Proposed Project Modifications, work activities for the ground improvement would occur within the same construction zone footprint as described in the FEIS/ROD. Barges and equipment to support the current construction work are already 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 located at Pier 66 at West 26th Street in HRP serves boaters in small unpowered watercraft, including sailboats, outrigger canoes, and kayaks. The Proposed Project Modifications would be located with the current construction zone northwest of the boathouse and boat moorings. The Proposed Project Modifications would not result in any access restrictions for boaters traveling between the navigation channel and the Pier 66 boathouse and nearby moorings, nor would the Proposed Project Modifications affect boaters' ability to travel north or south along the pierhead line. The Proposed Project Modifications 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 with the extended workday and work hours would be required during construction activities to protect maritime commerce and recreational boating. Measures would include notification to mariners via the USCG, which could include potential implementation of wake restrictions. Other safety measures would include lighting of barges, and the use of Automatic Identification System ("AIG") 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 at West 26th Street in HRP. With these safety measures in place, the Proposed Project Modifications would not result in adverse impacts to Hudson River maritime traffic.

GDC will continue on-going coordination with the USCG and HRPT regarding the Proposed Project Modifications.

4.2 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 the construction in the river 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.

With the implementation of the Proposed Project Modifications, activities would occur within the same construction zone for the ground improvements described in the FEIS/ROD. Boaters moving between the navigation channel and the Pier 66 boathouse and nearby moorings would still need to continue to avoid the construction zone in-water construction activities, which may be inconvenient but would not limit boaters' access to and from the channel.

As described in **Section 4.1, "Transportation Services (FEIS Chapter 5B),"** given the proximity of the ground improvement work to the Proposed Project Modifications, to travel north from the Pier 66 boathouse and moorings, boaters would likely continue to first 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. The extended workdays and work hours would not change how the boaters operate because the current HRGS geographic footprint is unchanged.

The in-water construction activities associated with the Proposed Project Modifications would not affect any other areas of the Hudson River or limit boating activities in any other portion of the river. Further, as described in **Section 4.5, "Noise (FEIS Chapter 12A),"** the construction noise levels associated with construction activities would not be expected to result in disruption to educational programming held during winter months in the Pier 66 boathouse as work limited to Saturdays would be cofferdam installation from 7:00AM to 7:00PM.

As with the in-water work described in the FEIS/ROD, construction equipment would extend above the waterline and barges would be anchored around the work zone. However, as described in **Section 4.3, "Visual and Aesthetic Resources (FEIS Chapter 10),"** this temporary Proposed Project Modifications construction activity for DSM during 11PM-7AM, Testing Coring during 11PM-7AM (for approximately four (4) weeks), and cofferdam installation on Saturday 7AM-7PM would appear similar to ground improvement construction activity from 7AM-11PM and 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. There are no anticipated visual and aesthetic impacts as the current barges and equipment on the Hudson River would not change as a result from the extended workdays and work hours.

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 have been developed in coordination with USCG and include installation of lighting on barges to enable locating and tracking, and the use of marker buoys with solar lighting. Further, the GDC, is in coordination with HRPT to minimize disruption to boating during the construction 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.

4.3 Visual and Aesthetic Resources (FEIS Chapter 10)

The construction activities for DSM during 11PM-7AM, Testing Coring during 11PM-7AM (for four (4) weeks), and cofferdam installation on Saturday 7AM-7PM, would be within the confines of the HRGS construction zone.

As with the in-water work described in the FEIS/ROD, construction equipment 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 from the shore, this temporary construction activity would not notably affect views from Manhattan.

The construction activities associated with the ground improvements would be about 700 feet from the Manhattan shoreline, which would result in construction activities and in-water construction equipment visible from the shoreline, specifically from HRP, the added views would be cofferdam installation on Saturdays only from 7AM-7PM and Test Coring and DSM extending from 11PM-7AM.

As described in the FEIS/ROD, while construction sites can be visually unappealing to sensitive viewers, HRP is located within a larger industrial setting characterized by a rapidly developing mixed urban environment, with the heavily trafficked Twelfth Avenue directly adjacent to the east

and the West 30th Street Heliport just north, within the park. Overall, construction activities may not result in an adverse visual impact, from the extended workhours and workdays as the visual and aesthetic views currently consist of barges and equipment on the Hudson River.

4.4 Natural Resources (FEIS Chapter 11)

4.4.1 Aquatic Resources

Components of the construction activities previously described in the FEIS/ROD that have the potential to result in impacts to aquatic resources include cofferdam installation and deep soil mixing and increased vessel activity. These potential impacts would be associated with sediment resuspension and underwater noise, as described below.

Water Quality

As contemplated in the FEIS/ROD disturbance associated with these HRGS construction activities would be expected to result in minor, short-term increases in suspended sediment and re-deposition of sediments and associated contaminants, resulting in temporary adverse surface water quality impacts. A Water Quality Monitoring Plan ("WQMP") to comply with the NYSDEC Water Quality Certification Permit # 2-6205-01829/00005 was prepared by the HRGS contractor in July 2024 as required by the NYSDEC permit that outlines the methods for demonstrating compliance with water quality standards, specifying sample parameters, locations, and frequencies. Further, turbidity curtains and other mitigation measures currently being deployed would continue to be deployed during the extended workdays and workhours whenever feasible. No additional impacts from extended workdays or work hours are anticipated.

As such, water quality impacts with the Proposed Project Modifications – both through increased suspended sediment and potential exposure to contaminants – are anticipated to be temporary and localized.

Sediment Quality

As in most urban watersheds, sediments in the Lower Hudson River, including in the vicinity of the HRGS construction activities, are contaminated (Class B or Class C based on NYSDEC Sediment Quality Thresholds)[2] due to historical industrial uses. Therefore, as with the in-water work described in the FEIS/ROD, the construction activities may result in temporary increases in suspended sediment containing low to moderate levels of contamination. Any sediments and associated contaminants resuspended during HRGS construction activities 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. No additional impacts from extended workdays or work hours are anticipated.

Aquatic Biota

The in-water construction activities associated with the HRGS construction activities would have potential temporary adverse impacts to fish and invertebrates in a localized area surrounding the construction because of suspended sediments in the water column due to cofferdam installation.

[2] See NYSDEC's Technical & Operational Guidance Series (TOGS) 5.1.9, Section III. Evaluation of Results for Sediment Quality Thresholds for In-water/Riparian Placement. 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).

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. No additional impacts from extended workdays or work hours are anticipated.

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. Additionally, 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 cofferdam installation 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 from HRGS extended workdays and workhours, would be partially controlled with turbidity curtains, are expected to be minor to negligible and below any threshold that would warrant mitigation. No additional impacts from extended workdays or work hours are anticipated.

Underwater Noise

As with the in-water construction described in the FEIS/ROD, the construction activities would result in temporary increases in underwater noise. Elevated underwater noise would be temporary. The cofferdam installation is 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.

It is anticipated that any fish that enters the area would be expected to 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 certain HRGS activities, and the fish species' transient presence in the vicinity of the construction activities, the effects of underwater noise on aquatic biota during the extended workhours and workdays would be insignificant. No additional impacts from extended workdays or work hours are anticipated.

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

4.4.2 Essential Fish Habitat

An Essential Fish Habitat ("EFH") and Endangered Species Act ("ESA") Section 7 consultation and concurrence from NOAA Fisheries under the Magnuson-Stevens Fishery Conservation and Management Act was requested by FRA to address in-water construction activities associated with the Project (i.e., river-bottom stabilization and associated temporary cofferdam installation). In a letter dated March 17, 2021, NOAA Fisheries provided FRA correspondence on which they concurred that the adverse effects of the Project on EFH will not be substantial. On April 2, 2021, NOAA Fisheries provided FRA correspondence in which they concurred that the adverse effects of the Project on ESA will not be substantial.

On October 1, 2021, the NYSDEC authorized the work in the low cover area through the issuance of NYSDEC Permit No. 2-6205-01829/0000 requiring monitoring to assess the recovery of the HRGS construction area as fish foraging habitat. For comparison purposes, a pre-construction survey of the target and a control area is to be provided with the first post-construction survey. On November 15, 2021, the USACE authorized the work in the low cover area through the issuance of USACE Permit No. NAN-2020- 00835 and identified that the HRGS Project shall, monitor the river bottom to assess the on-going recovery as fish foraging habitat of the 3.1-acre ground treatment in the Hudson River.

GDC completed the pre-construction in-water survey monitoring and collected bathymetry, water quality, and sediment characteristics, benthic invertebrate, and fish in June 2024 to support the monitoring requirements as required to support EFH and NYSDEC permit.

Construction activities would not adversely affect EFH, given that the Proposed Project Modifications would adhere to the seasonal restrictions imposed by the respective agencies. No additional impacts from extended workdays or work hours are anticipated.

4.4.3 Wildlife

The temporary loss of open water habitat needed to conduct the HRGS construction activities 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 Modifications would not result in adverse impacts to wildlife using the Hudson River. No additional impacts from extended workdays or work hours are anticipated.

4.4.4 Threatened, Endangered or Special Concern Species

Given that the Proposed Project Modifications 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 construction activities would be localized and temporary, the deep channel habitat typically used by shortnose and Atlantic sturgeon is unlikely to be adversely affected during construction. Results of an updated United States Fish and Wildlife Service ("USFWS") consultation included in **Attachment A** determined that there are no additional threatened and endangered species in the proposed project location that were already determined by previous consultations. No additional impacts from extended workdays or work hours are anticipated.

Critical Habitat

As with the in-water construction described in the FEIS/ROD, the construction 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. 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 using a turbidity curtain. Therefore, the Proposed Project Modifications would not result in significant impacts to water flow, dissolved oxygen, salinity, or water temperature. No additional impacts from extended workdays or work hours are anticipated.

4.5 Noise (FEIS Chapter 12A)

Chapter 12A Noise, Section 12A.3.2 Hudson River of the FEIS/ROD determined there are no noise receptors located within the Hudson River that that would have the potential to experience adverse noise impacts. The nearest upland area or structure to the HRGS work area within the river would be the Hudson River Bulkhead along the west side of Manhattan, approximately 700 feet to the east. At this distance, noise produced by HRGS construction would not have the potential to appreciably increase noise levels.

There are no areas of the park used for passive recreation within 700 feet of this construction area, which would be the area of impact most likely to be adversely affected by noise. As such, construction noise levels associated with construction activities would not be expected to result in disruption to educational programming held during the winter months in the Pier 66 boathouse. Further, any disruption to park users as a result of construction activities 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 the park, which themselves expose park users to substantial noise. Additionally, mitigation measures (e.g., implementation of a noise monitoring plan to conduct noise monitoring at sensitive receptors nearest to the construction staging areas, compliance of construction equipment with the noise emission standards of FTA and New York City where feasible and practicable, etc.) proposed in the FEIS/ROD would still be required with the extended workdays or work hours, as applicable.

As described in **Section 5.9, "Natural Resources (FEIS Chapter 11),"** the temporary increase in underwater noise levels from construction activities could lead to habitat avoidance by fish and some macroinvertebrates in the immediate vicinity of the Project Site. 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 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 pile pulling activities, and the fish species' transient presence in the vicinity of the construction activities, the effects of underwater noise on EFH species would be insignificant.

4.6 Air Quality (FEIS Chapter 13)

The FEIS/ROD determined there was no adverse construction air quality impacts to nearby onshore land uses during in-water Hudson River construction activity. This was based upon the limited in-water construction activity and the work being considered short term in nature. The FEIS/ROD also referenced that barges with emission sources moored near the construction site would be required to comply with the same standards as land-based equipment, including EPA's

Tier 1 through 4 standards for nonroad diesel engines. Although there was no finding on air quality impacts during the short duration of in-water Hudson River construction activity, the FEIS/ROD stated that the barges with emission sources moored near the construction site would be required to comply with the same standards as land-based equipment.

Air emission estimates were calculated based on Tier 1 emission rates, although equipment would range from Tier 1-4 resulting in reduction of emission rates. Estimated air emissions were at/near de minimis criteria levels for Nitrogen Oxides (NOx) when compared to the 2024 emission rates predicted in the FEIS/ROD and below the de minimis criteria levels for the duration of the HRGS work as predicted in the FEIS/ROD. The Tier 4 standards would result in a NOx reduction from approximately 60-95% compared to Tier 1 standards.

The extended workdays and work hours are unlikely to cause any criteria pollutants to exceed de minimis rates as part of general conformity. There would be no change nor potential exceedance of the de minimis threshold in General Conformity applicability from the original analysis in the FEIS/ROD. This is an exempt project for Transportation Conformity and therefore does not require a Transportation Conformity Analysis. With this Proposed Project Modification, the original FEIS/ROD remains valid and a supplemental NEPA analysis is not required.

As with the in-water construction activities described in the FEIS/ROD, Hudson River construction activities related to the Proposed Project Modifications 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.

The FEIS/ROD described mitigation measures to limit air pollutant emissions during the construction period, all of which are currently being and will continue to be applied to barge-based non-road equipment conducting the in-river work for HRGS. Barges with emission sources moored near the construction site would be required to comply with the same standards as land-based equipment. These measures include use of clean fuel, employment of best available tailpipe emission reduction technologies, and utilization of newer equipment, etc.

4.7 Safety and Security (FEIS Chapter 18)

As noted in **Section 5.2, "Transportation Services (FEIS Chapter 5B),"** 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 boathouse at Pier 66 at West 26th Street in HRP. With these measures in place, the Proposed Project Modifications would not result in adverse safety and security impacts to Hudson River maritime traffic.

4.8 Public Health (FEIS Chapter 19)

As described in **Sections 5.9, "Natural Resources (FEIS Chapter 11)," 5.10, "Noise (FEIS Chapter 12A," 5.12, and "Air Quality (FEIS Chapter 12B)",** implementation of the Proposed Project Modifications would not result in any new significant adverse impacts regarding water quality, noise, or air quality. As such, the Proposed Project Modifications would not result in any new impacts to public health.

5 CHANGE IN PERMIT REQUIREMENTS

The Proposed Project Modifications would not require any permit modifications.

6 PUBLIC AND STAKEHOLDER OUTREACH

The GDC initiated coordination with USCG and HRPT to address the Proposed Project Modifications. **Attachment A** includes an email from USCG noting they have no concerns with the proposed changes in workdays and work hours. It also includes stipulations for which the HRGS contractor will be required to comply as part of the extended workdays and workhours during HRGS. Representatives from GDC and HRPT met on September 18, 2024, to discuss the Proposed Project Modifications and HRPT noted that it took no issue with the proposed changes.

7 CONCLUSION

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

8 MITIGATION AND COMMITMENTS

Based on the analysis and consultation described herein, there are no additional commitments or mitigation measures associated with the Proposed Project Modification. mitigation and avoidance measures identified within the HTP FEIS/ROD as well as previous NEPA re-evaluations remain valid.