CONTAINS REDACTED INFORMATION IN CASE 10-T-0139

Environmental Management and Construction Plan (EM&CP)

Hudson River Marine Segment Cable Installation ("Segment 19B")

Case Number 10-T-0139

City of Kingston, Towns of Esopus, Lloyd, Saugerties, and Ulster, Ulster County

City of Poughkeepsie, Towns of Rhinebeck, Poughkeepsie, Hyde Park, Red Hook, and Fishkill, Dutchess County

Towns of Newburgh, Highlands, and Cornwall, Orange County

Town of Philipstown, Putnam County

Towns of Stony Point and Clarkstown, Rockland County

City of Yonkers, Towns of Mount Pleasant, Greenburgh, and Ossining Westchester County

Town of Catskill, Greene County

Town of Clermont, Columbia County

City of New York, Borough of Manhattan, New York County and Borough of Bronx, Bronx County

Champlain Hudson Power Express

TRC Project Number: 490523.0006.0000

Prepared For:

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May 2024

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ACRONYM AND ABBREVIATION LIST

2012 BMP	Best Management Practices document dated February 10, 2012
ADZ	Allowed Deviation Zone
Application	Application for a Certificate of Environmental Compatibility and Public Need
ATON	Aids to Navigation
BMPs	Best Management Practices
CC	Certificate Condition
Certificate	Certificate of Environmental Compatibility and Public Need
Certificate Holders	CHPE, LLC and CHPE Properties, Inc.
Certificate Order	Order granting the Certificate of Environmental Compatibility and Public Need
CHPE	Champlain Hudson Power Express or CHPE, LLC and CHPE Properties, Inc.
CHPE Project	Champlain Hudson Power Express Project
CI	Co-located Infrastructure
CLV	Cable Laying Vessel
CNY	City of New York
Commission	New York State Public Service Commission
Con Edison	Consolidated Edison Company of New York, Inc.
Council	Advisory Council on Historic Preservation
CRMP	Cultural Resources Management Plan
CTV	Crew Transfer Vessel
DC	Direct current
DMM	Document Matter Master
DOE	U. S. Department of Energy
DoL	Depth of Lowering
DPS	New York State Department of Public Service
ECM	Environmental Compliance Manager
EI	Environmental Inspector
EHS	Environment, Health, and Safety
EM&CP	Environmental Management and Construction Plan
EM&CP Guidelines	Guidelines for Environmental Management and Construction Plan(s)
EPA	United States Environmental Protection Agency
ESA	Endangered Species Act
FO	Fiber Optic
HDD	Horizontal Directional Drill
HDPE	High-Density Polyethylene
HVAC	High Voltage Alternating Current
HVDC	High Voltage Direct Current
HWMP	Hazardous Waste Management Plan
ICPC	International Cable Protection Committee
LCMM	Lake Champlain Maritime Museum

LH-##	CHPE Reference Number for Co-Located Infrastructure assets located within or surrounding the Congers-Harlem Hudson Marine Segment
LNM	Local Notice to Mariners
MP	Mile Post
MSD	Marine Sanitation Devices
MW	megawatt
NERC	North American Reliability Corporation
NKT	NKT, Inc.
NMFS	National Marine Fisheries Service
NPCC	Northeast Power Coordinating Council
NYISO	New York Independent System Operator
NYNHP	New York Natural Heritage Program
NYPA	New York Power Authority
NYSDEC	New York State Department of Environmental Conservation
NYSDOS	New York State Department of State
NYSDOT	New York State Department of Transportation
NYSDPS	New York State Department of Public Service
NYSHPO	New York State Historic Preservation Office
NYSRC	New York State Reliability Council
OGS	Office of General Services
O&M	Operation and Maintenance
OPRHP	Office of Parks Recreation & Historic Preservation
OSRO	Oil Spill Removal Organization
OSRP	Oil Spill Contingency Plan
PCBs	Polychlorinated Biphenyls
PHASP	Program Health and Safety Plan
PLGR	Pre-Lay Grapnel Run
PM	Project Mile
PSC	New York State Public Service Commission
PSL	New York Public Service Law
PWS	Public Water Supply
RM	River Mile
ROW	Right of Way
ROV	Remotely Operated Vehicle
RTE	Rare, Threatened and Endangered
SCFWH	Significant Coastal Fish and Wildlife Habitats
Secretary	Secretary to the Commission
SHPO	State Historic Preservation Office
SOP	Standard Operating Procedure
SOPEP	Shipboard Oil Pollution Emergency Plan
SPCP	Spill Prevention Control Plan
SS	Site Superintendent
SSHASP	Site Specific Health and Safety Plan

TOY	Time of Year
TSS	Total Suspended Solids
UH-##	CHPE Reference Number for Co-Located Infrastructure assets located within or surrounding the Cementon-Stony Point Hudson Marine Segment
USACE	United States Army Corps of Engineers
USCG	United States Coast Guard
USFWS	United States Fish and Wildlife Service
VHF	Very High Frequency
VSQC	Very Small Quantity Generator
VTSNY	USCG Vessel Traffic Service New York
WQC	Water Quality Certification

1.0 Introduction

The Champlain Hudson Power Express (CHPE) project involves the construction of approximately 339 miles of high voltage direct current (HVDC) underground and underwater transmission cable from the US/Canadian Border to Queens, New York (the "CHPE Project" or "Project"). It will bring 1,250 megawatts (MW) of renewable energy into New York by Spring 2026 to replace the use of fossil fuels and reduce carbon emissions. The Project will provide enough power for more than 1 million homes, along with numerous environmental and economic benefits to millions of residents in New York State communities. The CHPE Project includes two, five-inch diameter cables to be installed underwater or underground along the approximately 339-mile-long route, with aboveground facilities to include a voltage source converter station located in Astoria, Queens, New York.

The CHPE Project began the permitting process on March 30, 2010, when Champlain Hudson Power Express, Inc. filed an Application for a Certificate of Environmental Compatibility and Public Need (the Application) with the New York State Public Service Commission (PSC or Commission) pursuant to Article VII of the New York Public Service Law (PSL) to construct and operate the electric transmission facility known as the Champlain Hudson Power Express Project (the CHPE Project) (PSC Case 10-T-0139).

An Order granting the Certificate of Environmental Compatibility and Public Need (Certificate Order) was issued by the Commission on April 18, 2013 (the Certificate). In August 2020, Champlain Hudson Power Express, Inc. converted from a corporation to a limited liability company and received the PSC's approval to transfer its interest in the Certificate to CHPE, LLC and CHPE Properties, Inc. (collectively "CHPE" and "Certificate Holders"). The Certificate was amended on March 20, 2020, August 13, 2020, September 21, 2020, January 26, 2021, May 14, 2021, February 17, 2022, March 16, 2022, December 15, 2022, and October 12, 2023[1] to reflect revisions in the alignment and other Certificate Conditions (CC). The Article VII review and certification process included the development of numerous documents which identified natural resources within the CHPE Project area and outlined best management practices (BMPs) to minimize impacts to those natural resources which might otherwise result from the construction or operation of the CHPE Project. An extensive regulatory record was also developed before federal permitting agencies, including the United States Department of Energy (DOE) and United

[1] Two additional amendments, one filed March 30, 2023 ("Catskill Reroute Amendment") and one filed February 9, 2024 ("Navigation Channel Amendment"), were pending as of the time of this submission. The requested Catskill Reroute Amendment pertains to overland routing and is not relevant to this EM&CP. The Navigation Channel Amendment seeks authorization from the Commission to utilize the separation distances determined by the United States Army Corps of Engineers (USACE) between the CHPE Facility and the Maintained Federal Navigation Channel (MFNC) to be appropriate for the Hudson River in CHPE's federal permits, thereby amending Condition 95(a)(i) to reflect those separation distances for the approximately four (4) percent of this Segment proposed within the MFNC due to other siting constraints. The remaining 96% of this Segment is unaffected by the requested USACE-Approved Navigation Channel Separation Petition. However, in the event that Petition is not granted, CHPE would need to submit a modification to this EM&CP.

States Army Corps of Engineers (USACE), in the years following the Commission's issuance of the Certificate.

1.1 Purpose and Intent

This EM&CP covers what is referred to as "Segment 19B" of the CHPE Project, which describes the installation and protection of underwater HVDC transmission cables in the Hudson River.

Segment 19B is divided into two geographic segments of submarine cable to be located in the Hudson River.

- The first segment, referred to herein as the "**Cementon-Stony Point Hudson Marine Segment**," is approximately 67.5-miles long and begins in the Hamlet of Cementon, Town of Catskill, Greene County, New York and ends in the Town of Stony Point, Rockland County, New York. This segment was previously referred to as the "Upper Hudson Marine Segment" in preceding EM&CPs. This Segment connects to a portion of Segment 17, the Cementon Transitional Horizontal Directional Drill (HDD) at its northern end, and Segment 16, the Stony Point Transitional HDD, at its southern end.

- The second submarine cable segment, referred to herein as the "**Congers-Harlem Hudson Marine Segment**," is approximately 21.6-miles long and begins in the Hamlet of Congers, Town of Clarkstown, Rockland County, New York and ends at the mouth of the Harlem River. This segment was previously referred to as the "Lower Hudson Marine Segment" in preceding CHPE EM&CPs. This Segment connects to a portion of Segment 17, the Congers Transitional HDD, at its northern end, and Segment 20B in the Harlem River.

A related EM&CP, Segment 19A, Hudson River Pre-Lay Mattressing, was filed and approved by the Commission on October 13, 2023. Segment 19A involved the installation of utility protections at locations where the CHPE Facility crosses other submarine utilities in the Hudson River, in preparation for installation of the cables under this EM&CP Segment 19B.

This EM&CP has been developed with the intent to provide the plans and specifications for environmental protections and construction of Segment 19B that demonstrate compliance with applicable laws and regulations, including the Certificate. The EM&CP provides appropriate maps, illustrations, and text associated with submarine cable installation-related activities in the Hudson River. Submission of this EM&CP does not serve as an opportunity to relitigate the Project approval, routing, the Certificate, or general installation methods, as applicable permits authorizing construction and operation of the Project have previously been obtained.

1.2 Distribution and Notification of the Filing of this EM&CP

Appendix 1-A, EM&CP Filing Notices, includes copies of the notices circulated to various stakeholders via mail, electronically, or through publication in local newspapers serving the areas where the EM&CP Segment 19B work areas are located, in accordance with the Certificate. Proofs of service outlining in detail the distribution of this EM&CP in hard copy and/or electronic file formats, in addition to affidavits of service and publication for notices, will be provided under separate cover as soon as they become available.

1.3 EM&CP Segmentation and Filing Schedule

Certificate Condition 6 permits the Certificate Holders to develop the CHPE Project facilities in segments to facilitate construction sequencing and scheduling. Each segment, or grouping of segments, may be the subject of an EM&CP filed with the Commission for review and approval independent of other EM&CPs. Within the EM&CP for the first segment, submitted April 15, 2022, the Certificate Holders identified the anticipated segmentation of the Project and included a schedule for their construction. Subsequent EM&CPs have included updates to the segment identification and construction schedule provided in the first segment EM&CP. Table 1.1 contains an updated version of the Certificate Holders' current segmentation of the CHPE Project including an anticipated schedule with respect to EM&CP submission, EM&CP approval, and construction commencement. On October 13, 2022, the Commission approved the first CHPE EM&CP for Segments 1 and 2 of Project construction; subsequent approvals have been issued since that time, as outlined in the below table.

This document, the Hudson River Marine Segment Cable Installation EM&CP (Segment 19B), is the sixth of eight planned marine EM&CPs (see Table 1.1) that will be submitted to the Commission related to the preparation for and installation of submarine cables required for the marine segments of the CHPE Facility.

The submarine cables in the Hudson River will link to the overland HVDC cables of the CHPE Facility via the Transitional Horizontal Directional Drills (HDDs), which were the subject of EM&CPs approved by the Commission on March 20, 2023 (Stony Point Transitional HDD, EM&CP Segment 16) and April 24, 2023 (Putnam Station, Cementon, and Congers Transitional HDDs, EM&CP Segment 17). The previously submitted EM&CP Segment 19A, approved by the Commission on October 13, 2023, detailed pre-lay concrete mattress installation for protection of co-located infrastructure (CI) crossings in the Hudson River.

The installation and protection of the HVDC cables in Lake Champlain were covered in CHPE's "Segment 18A" and "Segment 18B" EM&CPs.

The installation and protection of the HVDC cables in the Harlem River will be covered in CHPE's "Segment 20" EM&CPs. The installation of the conduit that will be used for the future tie-in of the transmission cable from the Harlem River to its overland connection will be covered in CHPE's "Segment 20B" EM&CP.

Table 1.1 – Overland and Marine Segments: CHPE Project Construction, Sequencing, and Scheduling

EM&CP Segment	Design Packages	Location Description	Approximate Segment Length (miles)	Anticipated *(Actual)* EM&CP Submittal	PSC Approval of EM&CP	Anticipated Construction Commencement
OVERLAND SEGMENTS (UPSTATE)						
1, 2	Packages 1A & 1B	Putnam to Dresden/Dresden to Whitehall	17.6	*4/15/2022*	10/13/2022	12/2022
3	Packages 1C & 2	Whitehall to Fort Ann/Fort Ann to Kingsbury	20.8	*12/23/2022*	5/18/2023	6/2023
4, 5	Package 3	Kingsbury to Milton	26.5	*4/24/2023*	8/18/2023	10/2023
6	Package 4A	Milton to Ballston	10.2	*8/4/2023*	9/14/2023	9/2023
7	Package 4B	Ballston to Schenectady/Rotterdam	9.6	*8/4/2023*	9/14/2023	9/2023
8	Package 5A	Rotterdam to Selkirk	16.99	*12/21/2022*	6/26/2023	9/2023
9	Package 5B	Selkirk Bypass	5.31	*12/21/2022*	6/26/2023	1/2024
10	Package 6	Ravena to Catskill	20.9	*10/2/2023*	12/18/2023	1/2024
11	Package 7A	Catskill to Germantown	8.6	*3/30/2023*	8/18/2023	9/2023
12	Package 7B	Stony Point to Haverstraw/Clarkstown	7.6	*4/28/2023*	8/18/2023	4/2024
13, 14, 15	Package 8	Bronx to Queens	2.13	*8/11/2023*	10/13/2023	1/2024
Laydown Yards	3, 5B, 6	Fort Edward, Bethlehem, Coxsackie	N/A	*11/11/2022*	2/21/2023	3/2023
MARINE SEGMENTS						
16	Package 9	Transitional HDD (Stony Point)	N/A	*9/29/2022*	*3/20/2023*	*6/2023*
17	Package 10	3 Transitional HDDs (Putnam Station, Cementon, Congers)	N/A	*12/14/2022*	*4/24/2023*	*6/2023*
18A	Package 11A	Lake Champlain (Pre-Lay Mattressing)	96	*4/4/2023*	7/20/2023	4/2024
18B	Package 11B	Lake Champlain (Cable Installation)	96	*1/29/2024*	4/18/2024	7/2024
19A	Package 12A	Hudson River (Pre-Lay Mattressing)	89.1	*8/4/2023*	10/13/2023	4/2024
19B	Package 12B	Hudson River (Cable Installation)	89.1	3/2024	TBD	7/2024
20A	Package 13A	Harlem River Bulkhead	N/A	4/2024	TBD	7/2024
20B	Package 13	Harlem River	~6.3	10/2024	TBD	3/2025

Table 1.1 – Overland and Marine Segments: CHPE Project Construction, Sequencing, and Scheduling

EM&CP Segment	Design Packages	Location Description	Approximate Segment Length (miles)	Anticipated *(Actual)* EM&CP Submittal	PSC Approval of EM&CP	Anticipated Construction Commencement
OVERLAND SEGMENTS (NEW YORK CITY)						
21	N/A	Astoria Annex/AC Interconnection	0.3	11/2024	TBD	4/2025
22	N/A	Converter Station, Astoria Complex (Queens)	N/A	*1/31/2023*	5/18/2023	6/2023
23	N/A	Astoria Rainey Cable HVAC System (Queens)	~3.5	*2/2024*	TBD	6/2024

1.4 Applicable Permits

Of all permits applicable to the CHPE Project, the following permits contain conditions relevant and/or applicable to submarine cable installation in the Hudson River:

- Presidential Permit No. PP-481-3, United States Department of Energy.
- Certificate of Environmental Compatibility and Public Need under Article VII of the Public Service Law, NYS PSC (issued in Case 10-T-0139).
- Water Quality Certification (WQC), NYS PSC (issued in Case 10-T-0139).
- Permit NAN-2009-01089-M10, US Army Corps of Engineers (USACE) New York District.

This EM&CP has been developed in accordance with the conditions adopted in the PSC's Certificate Order. Certificate Conditions approved in the Joint Proposal were attached to the Certificate Order as Appendix C and are presented as currently amended in Appendix 1-B. Certificate Conditions relate to, among other things, the preparation, content, filing, and review of an EM&CP; public health and safety; the handling of complaints; CHPE Project construction, operation, maintenance, and restoration; and environmental supervision.

This EM&CP has also been developed in accordance with the guidance document provided as Appendix E to the Joint Proposal titled Guidelines for Environmental Management and Construction Plan(s) (EM&CP Guidelines) and the document titled Best Management Practices dated February 10, 2012 (2012 BMP Document). Plan and Profile Drawings are provided as Appendix 3-A to this EM&CP and have been developed in accordance with Section A of the EM&CP Guidelines. This EM&CP narrative includes the information required in Section B of the EM&CP Guidelines.

1.5 Outreach and Stakeholder Consultations

The Certificate Holders have mobilized stakeholder involvement and consultations for over a decade since the beginning of the Project. Stakeholder considerations have been integrated into the design, siting, and development of the Project, and will continue to be assessed and implemented throughout the construction phase.

In this EM&CP, the following documents provide documentation of stakeholder consultation completed or provide procedures for future consultation:

- Appendix 1-A, EM&CP Filing Notices
- Appendix 1-C, Agency and Stakeholder Consultations
- Appendix 1-D, Public Involvement Plan
- Appendix 3-C, Co-located Infrastructure Documentation

- Appendix 3-D, Co-Located Infrastructure Crossing Packages
- Appendix 7-A, Compliance Assurance Plan
- Appendix 9-A, Bridge Plan and Profile Drawings
- Appendix 9-B, Hudson River Public Water Supply Protection and Contingency Plan

Appendix 1-D, Public Involvement Plan outlines outreach to be completed during the construction process. This plan will complement previous and ongoing outreach efforts by the Certificate Holders and includes a detailed community outreach schedule that continues throughout the progress of the Project.

2.0 EM&CP Segment 19B Overview

The following sections provide an overview of material provided in this Segment 19B EM&CP. Material not provided in this Segment 19B EM&CP, such as activities covered under previous EM&CP segments, are outlined for context.

2.1 Activities Covered in this EM&CP

As described in Section 1.1 above, this EM&CP Segment 19B describes the preparation, installation, and protection of submarine HVDC transmission cables in the Hudson River. Segment 19B includes two separate segments of submarine cable. The first segment, referred to as the "Cementon-Stony Point Hudson Marine Segment," is approximately 67.5-miles long and begins in the Hamlet of Cementon, Town of Catskill, Greene County, New York and ends in the Town of Stony Point, Rockland County, New York. The second segment, referred to as the "Congers-Harlem Hudson Marine Segment," is approximately 21.6-miles long and begins in the Hamlet of Congers, Town of Clarkstown, Rockland County, New York and ends at the mouth of the Harlem River. The cable bundle to be installed will consist of two HVDC transmission cables and one fiber optic cable. In areas where required burial depths cannot be met, such as CI crossings, or where additional cable protection is needed, post-lay concrete mattresses will be installed.

Section 2.2 and 2.3 below discuss related activities not covered in this EM&CP Segment 19B, such as pre-lay mattress and HDD installation covered by previously approved EM&CPs.

Activities covered by this EM&CP Segment 19B are outlined below.

2.1.1 Pre-Installation Activities

The following activities will be performed prior to cable installation, covered by this Segment 19B EM&CP:

- Pre-lay grapnel runs (PLGR) (Refer to Section 4.5.1); and
- Preparation of the pre-installed HDD conduits at Cementon, Stony Point, and Congers to accept the submarine cables immediately before use (Refer to Section 4.5.2).

No permanent facilities will be installed as a result of these activities.

2.1.2 Cable Installation Activities

The following activities will be performed during cable installation, covered by this Segment 19B EM&CP:

- Pulling the transmission cables to land through sets of pre-installed HDD conduits at both Cementon in the Cementon-Stony Point Hudson Marine Segment and Congers in the Congers-Hudson Marine Segment (Refer to Section 5.5.1);

- Installation of the HVDC transmission and fiber optic cables within the riverbed via burial (Refer to Section 5.5.2);
- Splicing, or jointing, of transmission cable segments (Refer to Section 5.5.3);
- Pulling the transmission cables to land through a set of pre-installed HDD conduits at Stony Point in the Cementon-Stony Point Hudson Marine Segment (Refer to Section 5.5.4); and
- Remedial burial actions in the event sufficient cable burial is not initially achieved (Refer to Section 5.5.5).

Permanent, underwater infrastructure will be installed as a result of these activities. Additional information on cable installation activities can be found in Appendix 5-A, Hudson River Cable Installation Methodology.

2.1.3 Post-Installation Activities

The following activities will be performed following the cable installation, covered by this Segment 19B EM&CP:

- Installation of post-lay concrete mattresses for remedial cable protection at CI crossings (Refer to Section 6.5.1);
- Installation of post-lay concrete mattresses for remedial cable protection in the event sufficient cable depth of lowering cannot be achieved with cable installation tools, such as CI crossing locations (Refer to Section 6.5.1);
- As-buried, post-lay survey (Refer to Section 6.5.2); and
- Mobilization of an Immediate Post-Installation Inspection Plan (Refer to Section 7.6.2).

Permanent, underwater infrastructure will be installed as a result of post-installation CI and cable protection activities. Additional information on post-installation activities can be found in Appendix 6-A, Methodology Statement for Post-Lay and Remedial Mattress Placement.

2.2 Activities Covered in Previous EM&CPs

As described above in Section 1.3, multiple EM&CPs have been submitted for the CHPE Project. Construction activities approved in previous EM&CPs will not be discussed in this EM&CP Segment 19B other than the descriptions of the relevant and related EM&CPs provided below for context.

2.2.1 Transitional HDDs – Segment 16 and Segment 17

The submarine cable in the Hudson River will link to the overland HVDC cables via conduits pre-installed at the transitional HDDs located in the Hamlet of Cementon, Town of Catskill, Greene County, New York; Town of Stony Point, Rockland County, New York; and Hamlet of Congers,

Town of Clarkstown, Rockland County, New York. Construction of the HDDs was covered by the Stony Point Transitional HDD, EM&CP Segment 16, approved by the Commission on March 20, 2023, and the Putnam Station, Cementon, and Congers Transitional HDD EM&CP Segment 17, approved by the Commission on April 24, 2023. As such, activities related to HDD construction at Cementon, Stony Point, and Congers are not described in this EM&CP Segment 19B. HDD and conduit installation operations will be completed separately from cable installation activities, under the Segment 17 EM&CP.

2.2.2 Pre-Lay Mattress Installation – Segment 19A

In specific locations where the submarine cable will cross certain existing CI, pre-lay concrete mattresses will be installed to provide utility protection. Installation of these pre-lay concrete mattresses in the Hudson River was covered by the Hudson River Marine Segments Pre-Lay Mattressing EM&CP (Segment 19A), approved by the Commission on October 13, 2023. As such, activities related to pre-lay mattress installation are not described in this EM&CP Segment 19B. Installation of pre-lay concrete mattresses will be completed at any CI crossing prior to cable installation activities.

2.3 Non-EM&CP Activities

Several activities related to the cable installation in the Hudson River are not required to be approved under an EM&CP as they are not Facility construction activities governed by Article VII , and thus are not addressed herein, or because they are addressed in another EM&CP (in the case of the final two bullets). These activities include, but are not limited to:

- Relocation of United States Coast Guard (USCG) Aids to Navigation (ATONs) (see also Section 3.3.4, and 4.7);
- The transportation of HVDC and fiber optic cables to and within New York State via vessel (cables will be transported into the Hudson River on a regular basis prior to and during installation activities);
- The manufacture/assembly of installation vessels and/or supporting equipment;
- Mobilization and demobilization of installation vessels and equipment;
- The manufacturing of post-lay concrete mattresses or other Facility components;
- The terrestrial splicing of the cables at Cementon, Stony Point, and Congers to splice the terrestrial and marine segments (activity covered by approved Transitional HDD EM&CPs for Segments 16 and 17); and
- The splicing of the cables in the Hudson River to connect with the submarine cables being installed in the Harlem River (activity covered by future Segment 20 EM&CPs).

2.4 Anticipated Schedule

Certain construction activities covered by the Segment 19B EM&CP are subject to work windows and time of year (TOY) restrictions as provided by the Certificate Order, WQC, and USACE permits. Under these permits, construction within navigable waters and pre-installation route clearing activities shall not occur within the Hudson River in the time frame of January 15 through June 30 of any calendar year. Table 2.1 below summarizes applicable TOY restrictions within the Hudson River.

Table 2.1 – Hudson River Underwater Construction Windows

Project Mile Post	Location	Construction Window
	*NYPSC (Certificate Conditions)**	
228 to 269	**Cementon to New Hamburg**	Aug. 1 - Oct. 15
269 to 296	**New Hamburg to Stony Point**	Sept. 15 - Nov. 30
303 to 324	**Rockland Lake State Park to Harlem River**	Jul. 1 - Oct. 31
	*USACE Permit (NAN-2009-001089-M10)***	
N/A	**Hudson River**	Jul. 1 - Jan. 14
228 to 245	**Cementon to Kingston**	
	HDD and Marine Mattress Installation	Sept. 1 - Mar. 15
	Cable Installation	Aug. 1 - Oct. 15
245 to 269	**Kingston to New Hamburg**	
	HDD and Marine Mattress Installation	Jan. 1 - Dec. 31
	Cable Installation	Sep.14 - Oct. 15
269 to 296	**New Hamburg to Stony Point**	
	HDD and Marine Mattress Installation	Jan. 1 - Dec. 31
	Cable Installation	Sep. 15 - Nov. 30
303 to 324	**Rockland Lake State Park to Harlem River**	
	HDD and Marine Mattress Installation	Jan. 1 - Dec. 31
	Cable Installation	Jul. 1 - Oct. 31

* In accordance with Certificate Condition 94 - Commencement of in-river work within one (1) mile south of the designated Significant Coastal Fish and Wildlife Habitats ("SCFWHs") at Haverstraw Bay shall occur during the high, or flood, tide condition in order to avoid and/or minimize impacts from resuspended sediments to the SCFWH habitat of Haverstraw Bay.
** Timeframes from federal permits are included here for reference but are subject to approval or modification by USACE; the USACE permit shall govern all applicable federal TOY restrictions.

Activities covered in this Segment 19B EM&CP are currently expected to be conducted in 2024 and 2025. The PLGR in-water work on the Cementon-Stony Point Hudson Marine Segment is anticipated to begin in August 2024 and be completed in September 2024. Cable installation in the Cementon-Stony Point Hudson Marine Segment is currently anticipated to commence in August 2024 with completion in September 2024.

The PLGR in-water work on the Congers-Harlem Hudson Marine Segment and cable installation in the Congers-Harlem Hudson Marine Segment will be scheduled in 2025. Refer to Sections 4.2, 5.2, and 6.2 for additional details regarding anticipated schedule.

This Segment will require that CHPE have the ability to work on State/Federal holidays, Sundays, and nights during the cable installation period.

This allowance includes, but is not limited to, the following Federal/State holidays:

- Wednesday, June 19, Juneteenth National Independence Day
- Thursday, July 04, Independence Day
- Monday, September 02, Labor Day
- Monday, October 14, Columbus Day
- Monday, November 11, Veterans Day

Operations on holidays, Sundays, and nights are necessary to ensure timely completion of the Project within the regulatory work windows. Where possible, steps will be taken to minimize impacts to the community from work during these periods to the maximum extent practicable (see Sections 9.4 and 9.5). However, timely completion of this Segment, especially given other seasonal time restrictions, is critical to ensuring the reliability of the New York State electric grid and necessitates allowing work on this Segment on a 24/7 basis.

2.5 Notification and Reporting

Several CCs impose timing requirements for Project notifications and reports. The below table summarizes these CCs based on whether the notification is required before, during, or after construction, or at any point during those periods. Not all notices are required, and some notices may be required after the entire Project has been constructed. Refer to Sections 4.1, 5.1, and 6.1 for information regarding communications prior to commencement of pre-installation, installation, and post-installation activities, respectively.

Table 2.2 – Reporting and Notification Requirements and Schedule

Description	Submitted to	Approximate Due Date
BEFORE OR CONCURRENT WITH EM&CP FILING		
The Certificate Holders will file copies of the segment EM&CP as directed by the Secretary to the Commission (Secretary) to relevant jurisdictional agencies as described in CC 151.	Relevant jurisdictional agencies.	Upon filing the applicable Segment EM&CP.
The Certificate Holders will provide newspaper notices and written notice(s) of the filing of the segment EM&CP on all parties such as relevant railroads, infrastructure owners whose facilities, properties, and/or structures within the geographic scope of the segment EM&CP may be impacted. The notice(s) will contain the information specified in CC 152.	Relevant parties specified in CC 152.	Upon filing the applicable Segment EM&CP.
The Certificate Holders will provide notice(s) of the filing of the segment EM&CP on all parties such as residents, businesses, and building, structure, and facility (including underground, aboveground and underwater facilities) owners and operators within 100 feet of any HDD staging area or trenching activity with an offer to inspect foundations before, during, and after construction. The notice(s) will contain the information specified in CC 154.	Relevant parties specified in CC 154.	Upon filing the applicable Segment EM&CP, if any.
The Certificate Holders will provide written notice(s) to any person with an interest in the property underlying the Certificate Holders' easements/leaseholds, including underlying landowners, other easement holders as specified in CC 143 upon filing the applicable segment EM&CP.	Relevant parties specified in CC 143.	Upon filing the applicable Segment EM&CP, if any.
The Certificate Holders will provide notice(s) to the owner(s) and operator(s) of all co-located infrastructure a proposal for the location and design of the Project. The submission will contain all the information and conditions outlined in CC 28d.	Owners and operators of all co-located infrastructure.	At least 180 days prior to the filing of the Segment EM&CP.
The Certificate Holders will provide notice(s) that the EM&CP is available for review to the operator(s) of all public water systems (PWS) located within one-mile of the in-water facility. The submission will contain all the information and conditions outlined in CC 103.	Operators of public water systems.	Concurrent with the filing of the Segment EM&CP.
The Certificate Holders will provide written notice and newspaper notices of the filing of the applicable Segment EM&CP (CC 152). The notice will contain the information outlined in CC 155a.	Local media within the vicinity of the segments to which the segment EM&CP relates.	Concurrent with the filing of the Segment EM&CP.

Description	Submitted to	Approximate Due Date
The Certificate Holders will notify that the EM&CP is available for review to the chief executive officer of each affected municipality and to residents, businesses, and building, structure, and facility owners and to the extent known, operators of the same when such land uses are located within 100 feet of the HDD staging areas, off-ROW construction access roads, and the overland components of the Project. The notice will meet the conditions outlined in CC 153. The Certificate Holders will also provide a hard copy synopsis of any approved Segment EM&CP for residents owning property located within 100 feet of the Construction Zone as delineated therein. The synopsis will meet the conditions outlined in CC 153. Proof of notice to residents, businesses, and building and structure owners will be provided to the Secretary.	Chief executive officer of each affected municipality. Residences, Businesses, and Building/structure/ facility owners/ operators.	Concurrent with the filing of the Segment EM&CP.
A certificate of service indicating upon whom all EM&CP notices and documents were served and a copy of the written notice will be filed by the Certificate Holders (CC 155b).	Secretary of the Commission.	Following each applicable Segment EM&CP filing.
BEFORE CONSTRUCTION		
All necessary permits and consents referred to in CC 16 that pertain to Segment 10 (CC 9).	Secretary of the Commission.	Before commencing site preparation and any construction activities.
The Certificate Holders shall not commence work on any Segment until they shall have obtained all required interests in real estate, including interests in real estate to be used for access roads (whether obtained through a conveyance, consent, permit, or other approval) as are necessary and applicable for such Segment. Evidence of the obtaining of such interests shall be provided to the Secretary prior to commencement of the work (CC 10).	Secretary of the Commission.	Before commencement of construction.
The Certificate Holders will inform the Secretary and NYSDEC at least five days before commencing site preparation for the Project (CC 46).	Secretary and NYSDEC.	At least 5 days before commencing site preparation.
The Certificate Holders will consult with each transportation department or agency having jurisdiction over any roads, related structures, and components that will be crossed by the Facility or used for direct access to the Construction Zone. If the access road takes direct access from, or lies within the limits of, such roads, the Certificate Holders will notify each relevant transportation department or agency of the approximate date when work will begin (CC 69a).	Transportation Department or Agency crossed by project.	When work begins.

Description	Submitted to	Approximate Due Date
The names and qualifications of the Environmental Inspector and Construction Inspector will be submitted to DPS Staff and NYSDEC (CC 53g).	DPS Staff and NYSDEC.	At least 2 weeks prior to the start of construction.
The Certificate Holders shall confine construction to the Construction Zone and approved additional work areas as detailed in the approved EM&CP. A detailed construction schedule and location timeline shall be provided to DPS Staff prior to construction (CC 59).	DPS Staff.	Prior to construction.
The Certificate Holders will keep required parties apprised of on-site chemicals and waste stored within one hundred (100) feet of their Co-Located Infrastructure (CI) or service area. In the case of CI located within the City of New York (CNY), the Certificate Holders will advise CI owners and operators of on-site chemicals and waste stored within 300 feet of such facilities (CC 34).	Local Fire Departments, Emergency Management Teams, Owners and Operators of Co-Located Infrastructure.	Prior to storage of chemicals.
The Certificate Holders will provide notice to local officials and emergency personnel in the area where they will be working on the Project. The notice will meet the conditions outlined in CC 42.	Local Officials and Emergency Personnel.	Two weeks prior to the commencement of site preparation in area of applicable jurisdiction.
The Certificate Holders will provide notice to local media for dissemination and display in public places (such as general stores, post offices, community centers, etc.). The notice will meet the conditions outlined in CC 42.	Media for public display.	Two weeks prior to the commencement of site preparation in area of applicable jurisdiction.
The Certificate Holders will notify the adjacent landowners and their tenants of construction work within 100 feet of their property at least two weeks prior to the commencement of construction in these areas and provide copies of all correspondence to the DPS Staff. The notice will meet the conditions outlined in CC 42 (CC 33, 42).	Adjacent landowners & Tenants with copies to DPS Staff, if applicable.	Two weeks prior to commencement of site preparation in area of landowner or tenant.
The Certificate Holders will provide notice(s) of any underwater work to the operator(s) of all public water systems (PWS) located within one-mile of the in-water facility. The submission will contain all the information and conditions outlined in CC 104.	Operators of public water systems.	At least 30 days prior to commencement of any underwater work within one mile of intake structures.
DURING CONSTRUCTION		
The Certificate Holders will make available to the public a toll-free or local phone number of an agent or employee who will receive complaints, if any, during the construction of the Project. In addition, the phone number of the Secretary and the phone number of the Commission's Environmental Compliance Section will be provided. A log	DPS Staff as needed.	Upon commencement of construction. See Appendix 1-D, Public Involvement Plan

Description	Submitted to	Approximate Due Date
will be maintained that lists at least the date of any complaint, identity and contact information for the complaining party, the date of the Certificate Holders' response, and a description of the outcome. Phone logs will be made available to DPS Staff upon request. The Certificate Holders will report to DPS Staff every complaint that cannot be resolved after reasonable attempts to do so. Any such report will be made within three business days after receipt of the complaint (CC 41).		
The Certificate Holders will provide status reports summarizing construction and indicating construction activities and locations scheduled for the next month (CC 47).	DPS Staff, NYSDOT, and NYSDEC.	Bi-weekly.
Should archaeological materials be encountered during construction, the Certificate Holders will notify and seek to consult with to determine the best course of action (CC 111).	DPS Staff and OPRHP Field Services Bureau.	Within 24-hours of discovery. See Appendix 8-E, Supplemental Cultural Resources Management Plan and Offshore Unanticipated Cultural Resource Discovery Plan.
The Certificate Holders will promptly notify if a New York State listed species of special concern is observed to be present in the Project Area (CC 51).	DPS Staff and NYSDEC.	As soon as possible upon discovery.
The Certificate Holders will promptly notify if any threatened or endangered wildlife species under 6 NYCRR Part 182 ("TE species") or any rare, threatened, or endangered plant species under 6 NYCRR Part 193 ("RTE plants") are observed to be present in the Facility area so as to determine the appropriate measures to be taken to avoid or minimize impacts to such species. If necessary to avoid or minimize impacts to such species or as directed by DPS Staff, the Certificate Holders will stabilize the area and cease construction or ground disturbing activities in the Facility area until DPS Staff have determined that appropriate protective measures have been implemented (CC 52).	DPS Staff, NYSDEC, USFWS, NMFS.	As soon as possible upon discovery.

Description	Submitted to	Approximate Due Date
Immediate notification of any petroleum product spills (CC 35).	DPS, NYSDEC, owners and operators of any CI within 100 feet (or 300 feet in CNY).	Immediately upon discovery of a spill of petroleum products. See Appendix 8-A, Spill Prevention and Control Plan.
POST-CONSTRUCTION		
Notification that all restoration has been completed in compliance with this Certificate and the Order(s) approving the EM&CP (CC 48).	Secretary of the Commission.	Within 10 days of the completion of final restoration activities.
Following final completion of construction of a particular Segment, the Certificate Holders shall prepare and provide to the DPS the as-built design drawings, which shall include a detailed map or maps containing all of the information specified in CC 139.	DPS Staff.	Within 90 days following the completion of construction.
The Certificate Holders shall provide a copy of their emergency procedures and contacts. If modifications are made an updated copy will be provided (CC 136).	Bulk Electric System Section of DPS Staff, Con Edison, and NYPA.	Upon commencement of operation.
The Certificate Holders shall notify NYSDOT, NYSDEC, and the Secretary of the date of commencement of commercial operation (CC 50).	NYSDOT, NYSDEC, and the Secretary.	No later than three days after commercial operation.
The Certificate Holders will promptly provide to DPS Staff, NYPA, and Con Edison copies of all notices, filings, and other substantive written communications with NYISO as to such reduction, any plans for making repairs to remedy the reduction, and a proposed schedule for any such repairs.	DPS Staff, NYPA, Con Edison.	Within 5 business days of any failure of equipment causing a reduction of more than 10 percent in the capacity of the Project.
The Certificate Holders will provide monthly reports to DPS Staff, Con Edison, and NYPA on the progress of any repairs until completed. The monthly reports will contain the information specified in CC 126.	DPS Staff, NYPA, Con Edison.	Monthly until repairs are completed.
The Certificate Holders will work cooperatively with NYPA, Con Edison, and NYISO to avoid any future occurrences. If such equipment failure is not completely repaired within nine months of its occurrence, the Certificate Holders will provide a detailed report to the Secretary. The report will contain the information specified in CC 126.	Secretary of the Commission.	Within 9 months and 2 weeks after equipment failure.

Description	Submitted to	Approximate Due Date
The Certificate Holders will report any failure of the Project's cables. The report will contain the information specified in CC 135.	Bulk Electric System Section of DPS Staff, Con Edison, and NYPA.	Within one day of determining the location of failure in one of the Project's cables.
The Certificate Holders will provide a copy of their emergency procedures and contacts. If modifications are made, an updated copy will be provided (CC 136).	Bulk Electric System Section of DPS Staff, Con Edison, and NYPA.	Upon commencement of operation.
The Certificate Holders will notify DPS Staff of any system trips incidents.	DPS Staff.	If the HVDC transmission system trips offline (other than as a result of any Operational Measures).
Following the incident, the Certificate Holders will provide notice of the cause of the trip and what actions, if any, the Certificate Holders are taking to rectify the cause (CC 134).	DPS Staff, NYPA, Con Edison.	
The Certificate Holders will call and report any transmission related incident that affects the operation of the Project. A subsequent report of the incident will be submitted. The report will contain the information specified in CC 134. The Certificate Holders will work cooperatively with Con Edison, NYPA, NYISO, NPCC, NYSRC, NERC, and DPS Staff to prevent any future occurrences (CC 134).	Call Bulk Electric System Section of DPS Staff. Submit report to Bulk Electric System Section of DPS Staff, Con Edison, and NYPA.	Call within 6 hours of any incident. Submission of report within seven days of the incident.
Within 60 days of completing construction of the HVDC Transmission System, the Certificate Holders shall consult with the New York State Office of General Services (OGS) Bureau of Land Management regarding specifications for providing as-built information and mapping of the submerged portions of the HVDC Transmission System in conformance with the requirements of the OGS Bureau and 9 NYCRR Part 271. Within 60 days of that consultation, the Certificate Holders shall provide to the OGS as-built information and mapping complying with its specifications (including shapefile information compatible with ArcView® GIS software) and shall file with the Secretary copies of the as-built information and mapping and proof of filing with the OGS (CC 49).	OGS.	Within 60 days of completing construction.

Description	Submitted to	Approximate Due Date
ANY PERIOD DURING PROJECT (PRIOR TO CONSTRUCTION, DURING CONSTRUCTION, POST-CONSTRUCTION)		
The Certificate Holders will provide copies of all necessary permits from applicable state agencies for the delivery of oversized construction materials and equipment (CC 40).	Secretary of the Commission.	As needed.
The Certificate Holders shall make modifications to the Project if it is found by the NYISO or the Commission to cause reliability problems to the New York State Transmission System. If NYPA, Con Edison, or the NYISO bring concerns to the Commission, the Certificate Holders shall be obligated to respond to those concerns. The Certificate Holders shall prepare a report within 45 days of notification by DPS Staff that DPS Staff has determined that a reliability problem exists (CC 131).	DPS Staff.	As needed within 45 days of notification by DPS Staff.
The Certificate Holders will report any theft of materials related to the Facility with a value in excess of $10,000 to the DPS Representative. The notice will contain the information specified in CC 137.	DPS Staff.	As needed within 1 business day of the time when the theft comes to the attention of the Certificate Holders.
All proposed modifications to any of the Segment EM&CPs and subsequent notices and filings will follow applicable procedures.	DPS Staff.	As needed.
The Certificate Holders will notify the owners or operators of co-located infrastructure that is impacted by the Project or has the potential to be impacted by the Project of any situation involving imminent risk to health, safety, property, or the environment that requires the Certificate Holders to cross any infrastructure or to use any associated property to address the emergency (CC 28g).	Owners and Operators of co-located infrastructure.	In the event of the emergency.
The Certificate Holders will advise the owners or operators of co-located infrastructure of all construction activities that take place within the vicinity of co-located infrastructure. The vicinity will be defined as described in CC 28e.	Owners and Operators of co-located infrastructure.	At least 30 days prior to commencing any construction activities.
The Certificate Holders will notify the owners or operators of co-located infrastructure if any damage to or adverse effects to the co-located infrastructure resulting from any studies, surveys, testing, sampling, preliminary engineering, pre-construction activities, and construction (CC 28f).	Owners and Operators of co-located infrastructure.	Immediately upon knowledge or discovery of damage.

Description	Submitted to	Approximate Due Date
The Certificate Holders shall coordinate with NYPA and Con Edison system planning and system protection engineers to evaluate the characteristics of the transmission system before purchasing any system protection and control equipment related to the electrical interconnection of the Project to NYPA's and Con Edison's transmission facilities. This discussion is designed to ensure that the equipment purchased will be able to withstand most system abnormalities (CC 128).	NYPA and Con Edison system planning and system protection engineers.	Before purchasing any system protection and control equipment related to the electrical interconnection of the Project to NYPA's and Con Edison's transmission facilities.
The Certificate Holders shall work with NYPA and Con Edison engineers and safety personnel on testing and energizing equipment and develop a start-up testing protocol providing a detailed description of the steps that they will take to limit system impacts prior to and during testing of the Project. Such protocol shall be provided to NYISO, Con Edison, and NYPA for review and comment and, following the review and comment phase, a copy of such protocol shall be provided to Staff of the Bulk Electric System Section of the DPS. The Certificate Holders shall comply with this protocol once established, unless NYISO provides written authorization to Certificate Holders to deviate from that protocol. The Certificate Holders shall make a good faith effort to notify DPS Staff of meetings related to the electrical interconnection of the Project to the NYPA's or Con Edison's transmission system, as applicable, and provide the opportunity for Staff to attend those meetings. The Certificate Holders shall provide a copy of the testing protocol to Staff of the Bulk Electric Systems Section of DPS (CC 130).	NYISO, Con Edison, NYPA, DPS Staff, Bulk Electric Systems Section of DPS.	During the testing and energizing phase of the Project.

3.0 EM&CP Segment 19B Route Description and Design Considerations

The following sections provide a description of the permanent facilities to be installed associated with this Segment 19B EM&CP. Plan and Profile Drawings are provided in Appendix 3-A.

3.1 Certificated Route

A Certificated Route for cable installation in the Hudson River, with an Allowed Deviation Zone (ADZ) set forth in CC 156, was approved by the PSC Order in April 2013. Based on recent surveys and further design considerations, the current route proposed to be installed varies from the Certificated Route and ADZ in select areas of the Hudson River, as more fully described and justified in Appendix 3-B, Justification for Centerline and Allowed Deviation Zone Excursions, which satisfies the requirements of CCs 156 and 157, allowing the Commission to approve requested deviations as presented in this EM&CP, and in concert with the EM&CP approval. The route to be installed is discussed below in Section 3.2.

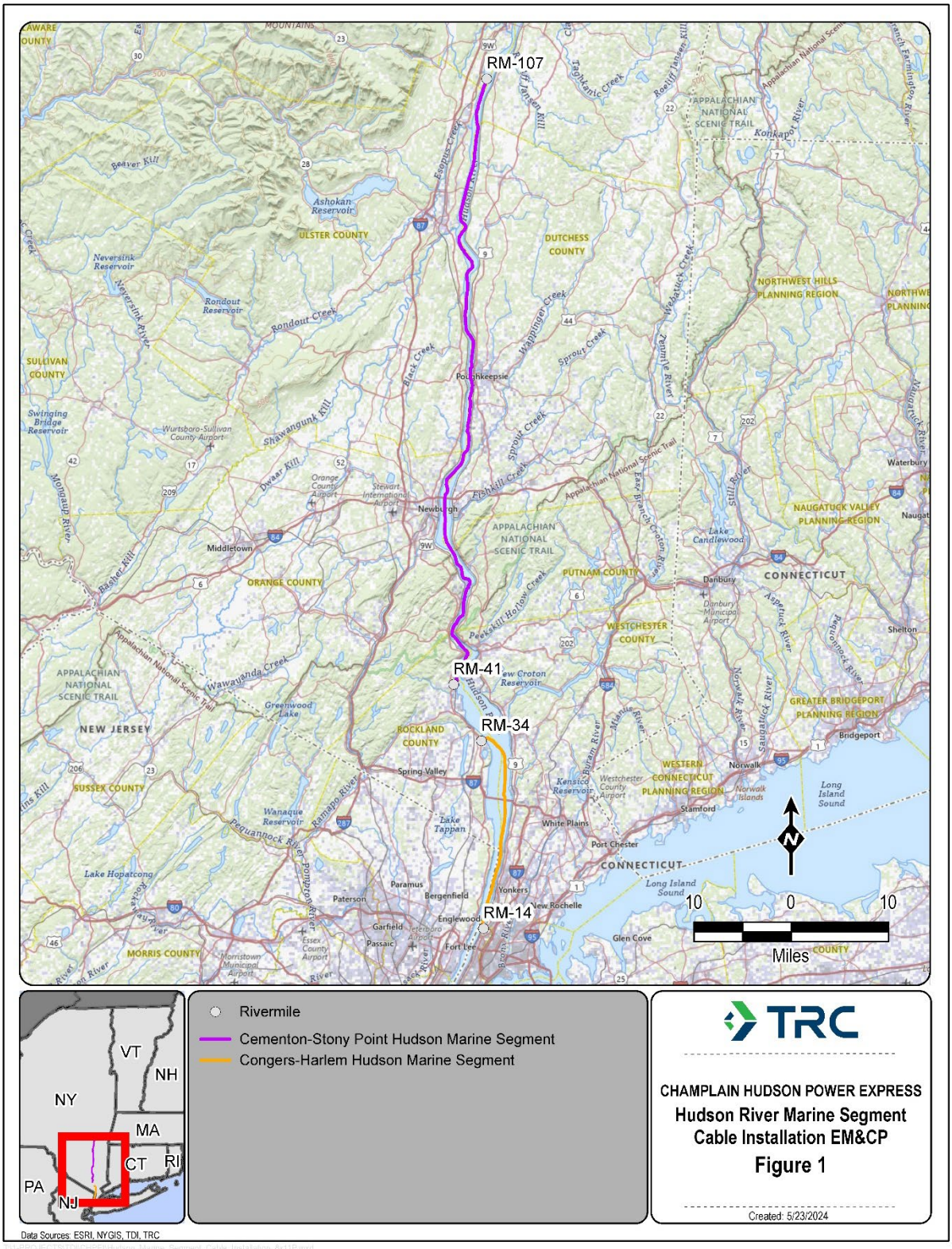
3.2 Route to be Installed

The route proposed for cable installation is shown in the Plan and Profile Drawings in Appendix 3-A, with an overview provided in Figure 1 below. Both the Cementon-Stony Point and Congers-Harlem Hudson Marine Segments are located entirely within waters of the State of New York.

The northern submarine cable route in the Hudson River, the Cementon-Stony Point Hudson Marine Segment, begins in the Hamlet of Cementon, Town of Catskill, Greene County, New York and ends in the Town of Stony Point, Rockland County, New York. The Cementon-Stony Point Hudson Marine Segment is located between River Mile (RM) 107 (Cementon) and RM 41 (Stony Point).

The southern submarine cable route in the Hudson River, the Congers-Harlem Hudson Marine Segment, begins in the Hamlet of Congers, Town of Clarkstown, Rockland County, New York and ends at the mouth of the Harlem River. The Congers-Harlem Hudson Marine Segment is located between RM 34 (Congers) and RM 14 (Harlem River confluence).

Figure 1. Hudson River Cable Route Overview.



3.3 Route Design Considerations

The proposed route has been designed to avoid or minimize adverse conditions and impacts to the maximum extent practicable, based on recent surveys and further design and installation considerations. For locations where the route to be installed deviates from the Certificated Route and requires approval or acknowledgement in accordance with the Certificate Conditions, a description is provided in the Justification for Centerline and Allowed Deviation Zone Excursions, attached as Appendix 3-B to this EM&CP.

The route has been designed to accommodate restrictions, resources, and considerations, including the following:

3.3.1 Submerged Cultural Resources

The cable route segments in the Hudson River have been micro-rerouted to avoid known submerged cultural resources. An overall evaluation of underwater cultural resources identified in the vicinity of the proposed cable route was performed by the Lake Champlain Maritime Museum (LCMM). The Final Report for the Underwater Cultural Resource Review of the Champlain Hudson Power Express, Hudson River Segment Investigations prepared by LCMM is provided as Appendix C to the Supplemental Cultural Resources Management Plan (Appendix 8-E). The report has been redacted to protect the locations of underwater cultural resources from public disclosure, as required by law. A complete version of the report has been provided with the Supplemental Cultural Resource Management Plan to the New York State Historic Preservation Office (NYSHPO). Cultural resource consultation with the NYSHPO is ongoing to ensure appropriate protection of cultural resources during construction.

For all instances where a deviation in the cable route in proximity to a known underwater cultural resource necessitates justification in the EM&CP, as required by CC 156, an evaluation is provided in Appendix 3-B, Justification for Centerline and Allowed Deviation Zone Excursions. Refer to Section 8.2 for additional detail regarding submerged cultural resource protection.

3.3.2 Sensitive Habitats

The cable route segments in the Hudson River have been micro-rerouted where feasible to avoid known sensitive habitats, such as Significant Coastal Fish and Wildlife Habitats (SCFWH) identified in the NYS Coastal Management Program and Exclusion Zones provided by the New York State Department of Environmental Conservation (NYSDEC) in this proceeding. For areas where the route deviates more than 150 feet from the Certificated Route to be located or relocated within known sensitive habitats, an evaluation is provided in Appendix 3-B, Justification for Centerline and Allowed Deviation Zone Excursions, as required by CCs 156 and 157.

3.3.3 Water Depth and Bottom Slope

The cable route segments in the Hudson River have been routed within the ADZ where feasible to avoid adverse bottom slope conditions and other obstacles. For areas where routing in the ADZ is not feasible because of existing water depth, bottom slope conditions, or other obstacles, a justification of such deviations is provided in Appendix 3-B, Justification for Centerline and Allowed Deviation Zone Excursions.

3.3.4 Navigation

The cable route segments in the Hudson River have been micro-rerouted where feasible to minimize adverse impacts to public navigation on the Hudson River, such as impacts to USCG aids to navigation.

The Certificate Holders actively worked with the USCG to determine which federal ATONs require relocation to accommodate installation activities and the timing and methods for the USCG to complete these relocations. In some instances, the need to avoid impacts to ATONs of concern to USCG has required relocation of the route in the Hudson River, necessitating deviations from the Certificated Route. See further discussion in Appendix 3-B, Justification for Centerline and Allowed Deviation Zone Excursions, for discussion of deviations caused by ATON avoidance.

Refer to Section 9.1 for detail regarding relocation of ATON and protection of navigation during construction.

3.3.5 Co-Located Infrastructure

CC 27 defines CI as “electric, gas, telecommunication, water, wastewater, sewer, and steam infrastructure and appurtenant facilities and associated equipment, whether above ground, below ground, or submerged” within the construction zone. The cable route segments in the Hudson River have been routed where feasible to avoid or otherwise minimize impacts to known CI assets. Where CI assets cannot be avoided, cable and CI protection measures are proposed. There are several utilities in these segments identified as CI; no public water intakes fall within the construction zone for these segments, therefore, they are not CI. Conditions particular to public water intakes are discussed below in Section 3.4.

In CHPE documentation discussing CI, assets located within or surrounding the Cementon-Stony Point Hudson Marine Segment in the Hudson River have been assigned a “CHPE Reference Number” with format “UH-##” for organizational purposes. CI assets located within or surrounding the Congers-Harlem Hudson Marine Segment have been assigned a “CHPE Reference Number” with format “LH-##” for organizational purposes.

3.3.5.1 Survey of Co-located Infrastructure

In accordance with CC 148, the Certificate Holders have performed surveys to identify CI assets along the proposed cable route and have engaged in communication with these CI owners, where owners could be identified. Appendix 3-C, Co-Located Infrastructure Documentation, contains a summary table of the identified and potential infrastructure along the Hudson River that may interact with the CHPE alignment, including a status of the location and crossing. The Certificate Holders have exhausted all commercially reasonable efforts to resolve cases where the owner or utility type involved in a crossing or potential interaction is unknown, and have submitted to the Commission plans to protect those assets despite being unable to identify their owners, consistent with the Unknown CI Owner Amendment to CC 162(i) approved by the Commission on October 12, 2023.

Refer to the approved Segment 19A EM&CP for additional CI survey information. The Segment 19A EM&CP also discusses consultation with CI owners for the Hudson River, correspondence with CI owners, and status of CI Owner Crossing Agreements which involve pre-lay protection.

As noted, Segment 19A addresses pre-lay utility protection work to be conducted prior to cable installation under this Segment 19B EM&CP. Co-Located Infrastructure Crossing Packages for the cable installation are included as Appendix 3-D to this Segment 19B EM&CP to show any measures proposed during cable installation activities or post-installation, such as the use of post-lay concrete mattresses. CHPE will provide any final CI agreements to the DPS prior to construction of any involved CI crossing, in accordance with established procedures.

3.3.5.2 Protection of Co-located Infrastructure

Utility and other infrastructure crossings will be completed consistent with site-specific design measures for each crossing. These site-specific design measures are indicated on the Plan and Profile Drawings in Appendix 3-A. Further details are or will be provided in the CI Crossing Packages.

For CI crossings, protection will consist of location-specific combinations of pre-lay concrete mattressing and post-lay concrete mattressing. Typical CI crossings involve three steps:

- First, pre-lay concrete mattressing will be installed on the riverbed over the existing CI (under Segment 19A),
- Then the CHPE cable bundle will be installed over the CI crossing,
- Then post-lay concrete mattresses will be placed on top of the CHPE cables to protect the CHPE Facility at that crossing.

A greater number of post-lay mattresses will be installed over the CHPE cables at crossing locations, as compared with the number of pre-lay mattresses installed over existing CI, to ensure proper protection of the CHPE Facility at these crossing locations. This is because, as the CHPE cables approach a CI crossing, the CHPE Facility's installation depth will get gradually shallower to allow for the transition to the CI crossing on the riverbed itself. After the CHPE cables are installed at a crossing, the CHPE cable burial will gradually transition back to the target depth once clear of the crossing location. Applicable permits require that, where a CI crossing or geologic or topographic feature prevents installation of the cables at the target depth, the CHPE cables will be covered with post-lay mattresses to ensure proper protection of the Facility once installed. Therefore, in the areas leading up to and away from CI crossings, where the CHPE cables are installed at shallower depths than required in applicable permits because of the need to gradually transition from the target depth to the riverbed in order to cross CI, CHPE will install additional post-lay mattresses for Facility protection.

Refer to the approved Segment 19A EM&CP for discussion of pre-lay mattressing, which is not covered by the scope of this Segment 19B EM&CP.

The Certificate Holders or their construction Contractor will coordinate with the underwater utility owner(s) prior to any construction work. The Certificate Holders will comply with procedures identified by the CI owners and representatives including but not limited to obtaining relevant rights and permissions where applicable. These matters are addressed in the CI Crossing Packages for Segments 19A and/or 19B, and in crossing agreements or equivalent.

3.3.5.3 Reimbursement of Costs to Co-located Infrastructure

Subject to the provisions of Certificate Conditions 29(b) and 29(c), the Certificate Holders will reimburse owners and/or operators of CI for the reasonable costs they incur in the following activities, and subject to the requirements for approval of costs set forth in the Certificate:

- Consulting with Certificate Holders as described in Certificate Conditions 28(a) and 28(b).
- Reviewing pre-construction activities, designs, construction methods, maintenance, and repair protocols, and means of gaining access to Potential CI or CI proposed by the Certificate Holders.
- Reviewing studies and design proposals described by Certificate Condition 28(d) and the EM&CP filings described in Certificate Condition 162.
- Conducting or preparing such additional studies and designs as may be agreed to by the Certificate Holders or approved by the Commission pursuant to Certificate Condition 29(a)(3).
- Coordinating with, and monitoring the activities of, the Certificate Holders during pre-construction activities, construction, maintenance, and repair of the CHPE Project.

- Conducting maintenance and repair work on CI property or facilities, but only to the extent of increases in such costs that result from the presence of the CHPE Project.
- Repairing damage to Potential CI or associated property caused by the Certificate Holders or their representatives in connection with any studies, surveys, testing, sampling, preliminary engineering, pre-construction activities, construction, operation, maintenance, or repair of the CHPE Project.
- Scheduling and implementing electric system outages required by any studies, surveys, testing, sampling, preliminary engineering, preconstruction activities, construction, operation, maintenance, or repair of the CHPE Project.

Disputes concerning the Certificate Holders' cost reimbursement responsibility will be brought to the PSC for resolution. The time required to resolve any dispute arising will not be counted in the calculation of any limitation on the time available for commencement or completion of construction of the CHPE Project.

3.4 Public Water Supply Intakes

The cable segments in the Hudson River have been designed to avoid and minimize impacts to public water supply (PWS) intakes. As originally permitted, the cables would have crossed over intake structures for the Port Ewen Water District and Poughkeepsie City/Town Treatment Plant, but the routing has been shifted so that there is now a separation distance of approximately 659 and 220 feet, respectively. Refer to Section 9.3 for details regarding protection of PWS intakes during construction.

3.5 Burial Depth /Depth of Lowering

Where the term “burial depth” is used, it is understood and taken to mean “depth of lowering” as shown in Figure 2.

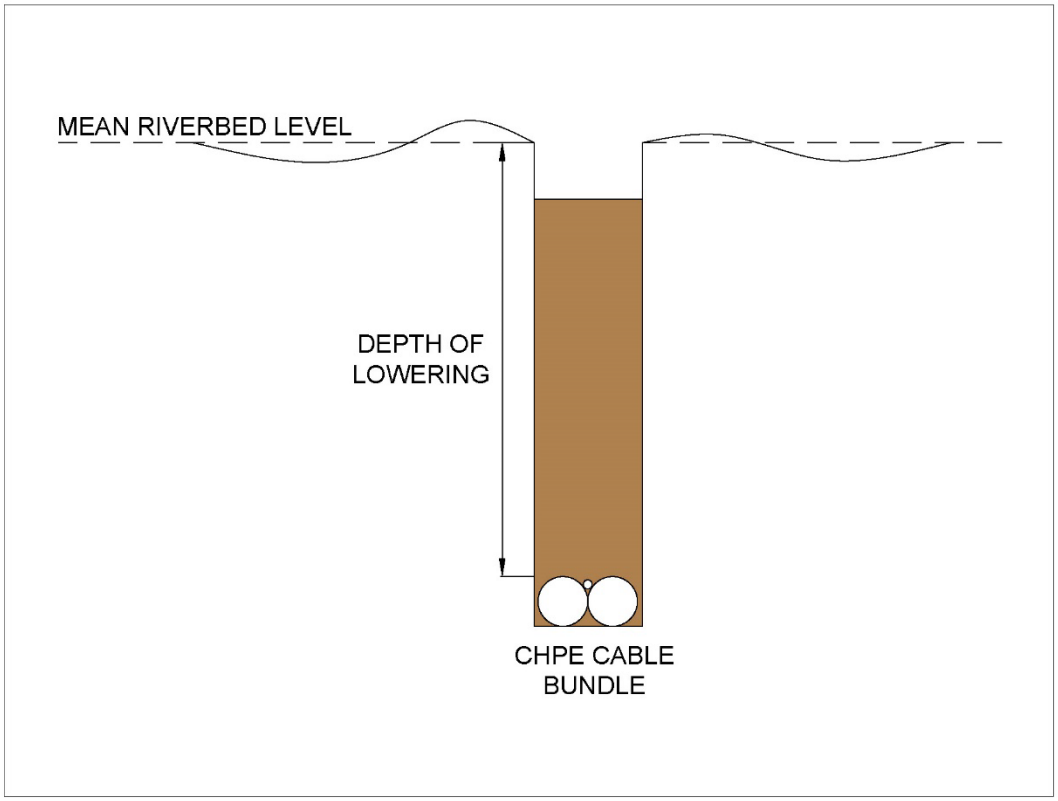


Figure 2. Definition of Depth of Lowering

The depth of lowering (DoL) is measured as the distance from the mean undisturbed riverbed level to the top of the buried cable, as shown in the above figure. In reference to compliance with the burial requirements, the DoL will be used as the value of assessment.

Target burial depth in the Hudson River is seven (7) feet below the existing bottom of the riverbed, with exceptions based on the presence of the maintained Federal Navigation Channel, in accordance with the USACE permit. On February 9, 2024, CHPE filed a Petition to Amend the Certificate seeking to align the Certificate with subsequently issued federal permits establishing nine (9) feet as the appropriate separation distance between the CHPE Facility and the bottom of the Maintained Federal Navigation Channel (MFNC)(see DMM Item 1546). The Petition seeks to modify CC 95(a)(i)’s listed separation requirements within the MFNC in the Hudson River to match those required by USACE in CHPE’s United States Army Corps Permit NAN-2009-01089-M10 issued under Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344).

Table 3.1 below provides an overview of where specific cable installation methods are proposed. Cable burial is currently proposed for the entire Cementon-Stony Point Hudson Marine Segment from north to south, and the Congers-Harlem Hudson Marine Segment from south to north.

Table 3.1 – Cable Lay and Burial

Location	Location (Project Mile, River Mile)	Vessel	Anticipated Cable Lay and Burial Method[2]
Cementon-Stony Point Hudson Marine Segment, Batch #1	PM 228 – PM 251 RM 107 – RM 85	CLV *Atalanti*	Cable landfall pull-in at Cementon. Simultaneous cable lay and burial operations, with remedial post-lay burial performed as required from the *Astrea*
Cementon-Stony Point Hudson Marine Segment, Batch #2	PM 251 – PM 273 RM 85 – RM 63	CLV *Ariadne*	Simultaneous cable lay and burial operations, with remedial post-lay burial performed as required from the *Astrea*
Cementon-Stony Point Hudson Marine Segment, Batch #3	PM 273 – PM 296 RM 63 – RM 41	CLV *Ariadne*	Simultaneous cable lay and burial operations, with remedial post-lay burial performed as required from the *Astrea*. Cable landfall pull-in at Stony Point.
Stony Point landfall	Second end pull-in	CLV *Ariadne*	Second end pull in and completion of Cementon-Stony Point Hudson Marine Segment cable installation.
Congers-Harlem Hudson Marine Segment	PM 303 – PM 324 RM 34 – RM 14	CLV *Ariadne*	Jointing operations between pre-deployed Harlem cable end and lower Hudson cable. Simultaneous cable lay and burial operations, with remedial post-lay burial performed afterwards as required from the *Ariadne* with remedial burial tool. Cable landfall pull-in at Congers.

[2] These burial methods are subject to change based on in-field conditions during construction. In the event installation encounters unexpected conditions which do not permit use of these methods, or if other circumstances require, alternative methods described in Appendix 5-A, Hudson River Cable Installation Methodology, will be used.

3.6 Submerged Lands Easements

The Certificate Holders have obtained a construction permit from the New York State Office of General Services (OGS), which enables work to be completed in the Hudson River. Once work is completed, the Certificate Holders will obtain a permanent easement from the OGS. The Certificate Holders are working to secure crossing agreements with the owners of CI that will be crossed by the Project, where such agreements are required, though those crossing agreements do not convey land rights (which are already obtained from OGS).

The Co-Located Infrastructure Crossing Packages for the cable installation are included as Appendix 3-D to this Segment 19B EM&CP.

4.0 Pre-Installation Activities

The following sections describe construction activities to be performed in preparation for cable installation in the Hudson River. Refer to Appendix 5-A, Hudson River Cable Installation Methodology, for additional information.

4.1 Communications and Notifications

Specific points of contact have been established for stakeholders and affected parties including, but not limited to:

- PWS intake owners;
- Private landowners;
- Mariners;
- Co-located utility owners;
- Private companies; and,
- Counties/towns/villages along the route.

Electronic notification will be made to designated contacts before crossing or passing an affected resource, on a schedule to be provided to stakeholders or as otherwise individually agreed with certain parties. For additional information regarding public communications, please see Appendix 1-D, Public Involvement Plan, and Appendix 9-B, Hudson River Public Water Supply Protection and Contingency Plan.

Local Notices to Mariners (LNM) will be submitted to the USCG for issuance a minimum of 30 days prior to the start of the marine field operations. Daily work location, minimum passing clearance request and other relevant information will be broadcast via marine very high frequency (VHF) radio when required by the USCG. Courtesy notifications will be provided to emergency services and law enforcement that are local to project operational sites (if any).

The work associated with the Project is located within the temporarily extended area of responsibility for the USCG's Vessel Traffic Service New York (VTSNY), which includes the waters of the Hudson River between The Battery (RM 0) and the Dunn Memorial Bridge in Rensselaer (approximately RM 144.5). Vessels subject to VTSNY required reporting will contact the VTSNY water supervisor at (718) 354-4088 prior to getting underway (USCG, 2023).

4.2 Schedule

In-water pre-installation activities are anticipated to begin in August 2024. The PLGR is currently anticipated to take place in August and September 2024 in the Cementon-Stony Point Hudson Marine Segment. Two PLGR events are planned in the Cementon-Stony Point Hudson Marine Segment, spanning approximately five days in August 2024 (Cementon landfall to RM 91/PM 245) and ten days in September 2024 (RM 91/PM 245 to Stony Point). One PLGR event is

planned in the Congers-Harlem Hudson Marine Segment, spanning approximately five days in September 2025. Please note that dates for pre-installation activities are subject to change.

The PLGR activities are proposed to take place on a 24-hour basis; however, this will be subject to the selection of the PLGR subcontractor and their shift patterns. Pre-construction notices will inform neighboring communities of anticipated construction start dates and timing, including the need for 24-hour work.

4.3 Temporary Facilities

To facilitate pre-installation activities, temporary facilities will be utilized as described below.

4.3.1 Material and Equipment Staging

A mobilization port will be used for assembling the equipment and personnel and mobilizing the vessels to transit to the worksite for the pre-installation activities. As of April 2024, the mobilization port location for the Hudson River cable installation has not been finalized. However, given that the ports within New York State that are large enough to accommodate the vessels of this size are limited to the Port of New York and the Port of Albany, it is anticipated one of these locations will be used as the mobilization port. The Port of Newark may be considered as an alternate location. All of these ports are suited for marine mobilization and no upgrades are required at these ports to accommodate this scope of work.

No land-based laydown yards will be required, and transportation of oversized loads via roadways is not anticipated for the delivery of oversized loads. Once vessels are mobilized, the necessary materials and equipment will be available on board, barring unexpected circumstances. If necessary, the vessel would return to port or other materials would be transported via other vessels.

4.3.2 Construction Access

Construction access will be provided via vessels. All personnel will be mobilized to vessels at the designated port. During construction and post-construction activities, crew will remain on the vessels. Should a crew change be required, crew will be transferred in accordance with personnel transfer procedures. As needed, arrangements will be made on a case-by-case basis to transport non-crew personnel to the vessel for inspections or similar purposes.

4.4 Vessels

The following vessels will be utilized to facilitate pre-installation activities in the Hudson River:

- One or more chartered Support Vessels (Jones & Dredging Act compliant) – the primary operational platform for PLGRs.
- Supporting vessels – to be available for general support of operations.

- Crew Boat(s) – for transit of personnel.

Refer to Appendix 5-A, Hudson River Cable Installation Methodology for additional detail regarding vessels.

4.5 Work to be Performed

Pre-installation activities are described below and build upon the activities outlined in the previous EM&CP Segments, notably Segment 19A.

4.5.1 Pre-Lay Grapnel Run

The purpose of the PLGR is to remove surficial and shallow buried debris (jetsam, etc.), which may impede the safe progress of the plow installation vehicle or pose a risk to the installed cable product. PLGR runs will be performed along the entire submarine cable route (approximately 89 miles), with the exception of the HDD conduits and in the immediate vicinity of existing co-located infrastructure or other sensitive resources such as PWS intakes.[3] The International Cable Protection Committee (ICPC) recommends that PLGR operations be performed just prior to cable installation operation as this timing minimizes the risk of further route contamination in the interim period between completion of PLGR and commencement of lay.

Grapnel components and rig/deploy 'grapnel trains' that best suit the prevailing water depth and anticipated local riverbed conditions will be utilized. The initial PLGR efforts will consist of one centerline pass and two wing line passes, each offset from the centerline. Additional PLGR passes will be performed as necessary based on conditions encountered. Any non-hazardous or insignificant debris recovered to the barge during PLGR operations will be disposed at an appropriate off-site waste management facility. Any discovery of petroleum or hazardous materials will be reported immediately as outlined in Section 8.1.7 Unanticipated Hazardous Material Discovery of this EM&CP and disposed of in accordance with applicable laws and regulations.

Refer to Section 7.1 of Appendix 5-A, Hudson River Cable Installation Methodology for additional detail regarding the PLGR.

4.5.2 Cable Landing Preparation

Cables will be landed at Cementon (RM 107), Stony Point (RM 41), and Congers (RM 34) via two high-density polyethylene (HDPE) conduits that will have been pre-installed in 2024 by means of HDD technology as approved in the Segment 16 and 17 EM&CPs.

[3] PLGR runs will not be performed within 0.25 miles of any active PWS intake.

There is a short distance between the end of the HDPE ducts and the transition vault which is referred to as the tie-in. When both the HDD and the vault are installed, but prior to the pull in of the cables, this section will be excavated down to required burial depth. A pair of HDPE pipes will be installed in a duct bank between the HDD and the vault after which backfilling and compaction will commence. Afterwards the ground at the site will be reinstated and be ready for the cable pull-in preparation. Figures 3 and 4 provide the Plan and Profile views of a representative tie-in at an HDD site.

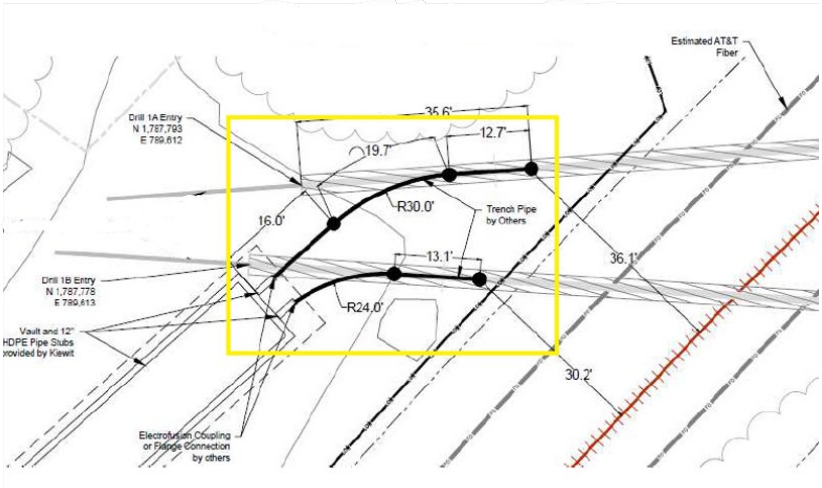


Figure 3. Representative Plan View of a Tie-in at an HDD Site (yellow box)

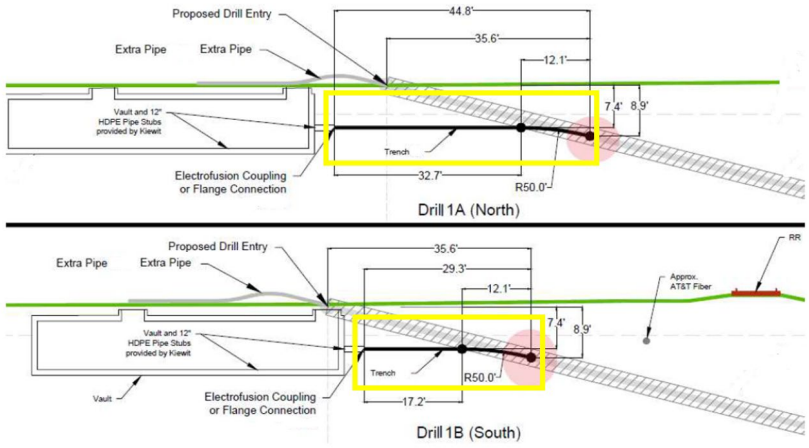


Figure 4. Representative Profile View of a Tie-in at an HDD Site (yellow box)

To prepare for cable installation, the integrity of the HDD conduits will be validated ahead of pull ins using methodology covered in Segment 16 and 17 EM&CP. confirmed prior to pull-ins.

Refer to Appendix 5-A, Hudson River Cable Installation Methodology for additional detail regarding cable landing preparation.

4.6 Environmental Monitoring

Environmental monitoring will be conducted during pre-installation activities, as outlined in Section 7.0 below.

4.7 Aids to Navigation

Installation of the submarine cables will require relocation of federally maintained ATON. All impacted ATON are federal aids, installed and maintained by the USCG. All relocation activities will be conducted solely by the USCG, in accordance with an agreement between USCG and Certificate Holders. See Section 9.1 for detail regarding relocation of ATON and protection of navigation during construction.

4.8 Maintenance Dredging

It is the Certificate Holders' understanding that maintenance dredging of Federally Maintained Navigational Channels in certain portions of the Hudson River is scheduled to occur in 2024. The Certificate Holders are coordinating with the USACE concerning planned dredging activities to avoid any conflicts in schedule or construction/dredging operations.

5.0 Cable Installation Activities

The following sections describe construction activities to be performed during cable installation in the Hudson River. Refer to Appendix 5-A, Hudson River Cable Installation Methodology, for additional information on installation methodology.

5.1 Communications and Notifications

Specific points of contact have been established for stakeholders and affected parties including, but not limited to:

- PWS intake owners;
- Private landowners;
- Mariners;
- Co-located utility owners;
- Private companies; and,
- Counties/towns/villages along the route.

Electronic notification will be made to designated contacts before crossing or passing an affected resource, on a schedule to be provided to stakeholders or as otherwise individually agreed with certain parties. For additional information regarding public communications, please see Appendix 1-D, Public Involvement Plan, and Appendix 9-B, Hudson River Public Water Supply Protection and Contingency Plan.

Required notification of the cable installation construction activities will be completed by the Certificate Holders prior to the commencement of construction. LNM will be submitted to the USCG for issuance minimum of 30 days prior to the start of the marine field operations. Daily work location, minimum passing clearance request and all other relevant information will be broadcast via marine VHF radio as required by the USCG. Courtesy notifications will be provided to emergency services and law enforcement that are local to project operational sites (if any).

The work associated with the Project is located within the temporarily extended area of responsibility for the USCG's VTSNY, which includes the waters of the Hudson River between The Battery (RM 0) and the Dunn Memorial Bridge in Rensselaer (approximately RM 144.5). Vessels subject to VTSNY required reporting will contact the VTSNY water supervisor at (718) 354-4088 prior to getting underway (USCG, 2023).

5.2 Schedule

Cable installation for the Cementon-Stony Point Hudson Marine Segment is currently anticipated to commence in August 2024 at Cementon with completion at Stony Point anticipated by November 2024. Installation in the Congers-Harlem Marine Segment is anticipated to take place from September 2025 to October 2025.

Both daytime and nighttime operations are currently proposed for this phase of construction to ensure the timely completion of cable installation within one season, and in adherence with applicable seasonal work windows. Cable splicing and cable installation will operate on a 24/7 schedule. Each cable splicing event is currently anticipated to last 7 days.

5.3 Temporary Facilities

To facilitate cable installation activities, temporary facilities will be utilized as described below.

5.3.1 Material and Equipment Staging

The cable will be loaded on the *Atalanti* and the *Ariadne* in Sweden for installation on the Cementon-Stony Point Hudson Marine Segment (Batch #1 and Batch #2). For Batch #3 and the Congers-Harlem Hudson Marine Segment, the cable will be transported by freighter and transpooled directly from one vessel to the other at the mobilization port.

A mobilization port will be used for assembling the equipment and personnel and mobilizing the vessels to transit to the worksite for the installation activities. As of April 2024, the mobilization port location for the Hudson River cable installation has not been finalized. However, given that the ports within New York State that are large enough to accommodate the vessels of this size are limited to the Port of New York and the Port of Albany, it is anticipated one of these locations will be used as the mobilization port. The Port of Newark may be considered as an alternate location. All of these ports are suited for marine mobilization and no upgrades are required at these ports to accommodate this scope of work.

Crew will reside on the vessels for the duration of the installation activities; it is not intended that crew changes will be performed during the course of the installation activities.

No land-based laydown yards will be required, and transportation of oversized loads via roadways is not anticipated for the delivery of oversized loads. Once vessels are mobilized, the necessary materials and equipment will be available on board, barring unexpected circumstances. If necessary, the vessel would return to port or other materials would be transported via other vessels.

5.3.2 Construction Access

Construction access will be provided via vessels. Most cable installation crews will remain onboard the installation vessels for the duration of the work. Should a crew change be required, crew will be transferred in accordance with personnel transfer procedure.

5.4 Vessels

Vessels to be used for cable installation in the Hudson River include the following:

- Cable Laying Vessels (3)
    - *Atalanti* – The primary vessel for the execution of the northern part of the Cementon-Stony Point Hudson Marine Segment including loading, transportation to worksite, pull-in onshore, and simultaneous lay and burial.
    - *Ariadne* – The primary vessel for the execution of the middle and southern part of the Cementon-Stony Point Hudson Marine Segment and the entirety of the Congers-Harlem Hudson Marine Segment, including loading, transportation to worksite, pull-in onshore, simultaneous lay and burial, and post-lay burial.
    - *Astrea* – The primary vessel for the post-lay burial of the Cementon-Stony Point Hudson Marine Segment.
- Safety Vessel(s) – to ensure unprotected laid sections of cable are not damaged prior to construction
- Survey Boat(s) – for environmental monitoring

Additional supporting vessel(s) may be used for general support of operations.

5.5 Work to be Performed

Construction activities included in this phase of work are described below.

5.5.1 First-End Cable Landing at Cementon and Congers

The "first end" is the first end of the cable to be installed into the HDD. At this point, all of the cable is onboard the vessel and the cable is initiated into the HDD from the vessel. For the Cementon-Stony Point Hudson Marine Segment, cable installation will begin with the pull-in and landing of cables at the Cementon landing site (RM107). The cables will be landed via the pre-installed land-to-water HDD conduits at Cementon. The landing will include the floated pull-in of the cables via the two HDPE conduits; the first conduit will receive a single HVDC cable, and the subsequent conduit will receive both the second HVDC cable as well as the fiber optic cable. The vessel then lays and installs the cable along the route until it comes to the second HDD. At this point, the majority of the cable is laid, with just a small amount for the second HDD remaining onboard. This cable is then taken off the vessel and pulled into the HDD as a "second end" thereby completing the installation.

The initial cable pull-ins will be performed from cable laying vessel (CLV) *Atalanti* at the Cementon landing site, while the final pull-in will be performed from CLV *Ariadne* at the Stony Point landing site (RM 41).

For the Congers-Harlem Hudson Marine Segment, cable installation will be initiated from the Hudson-Harlem splice location and be installed working northwards with the final pull-in and landing of cables at the Congers landing site (RM 34). The cables will be landed via the pre-installed land-to-water HDD conduits at Congers. The landing will include the floated pull-in of the cables via the two HDPE conduits; the first conduit will receive a single HVDC cable, and the subsequent conduit will receive both the second HVDC cable as well as the fiber optic cable.

Refer to Section 7.2 and 7.7 of Appendix 5-A, Hudson River Cable Installation Methodology for additional detail regarding cable landing procedures.

5.5.2 Cable Laying and Burial

The installation of the two power cables and one fiber optic cable of the Cementon-Stony Point Hudson Marine Segment will proceed (nominally) from north to south whilst the Congers-Harlem Hudson Marine Segment will proceed south to north. Currently, three cable installation methods are proposed at varying locations throughout the river in accordance with applicable permit conditions. Each installation method is outlined below.

5.5.2.1 Simultaneous Lay and Burial

Cable installation and burial via a towed jet plow burial tool, such as the HydroPlow, will be conducted in portions of the Cementon-Stony Point Hudson Marine Segment and all of the Congers-Harlem Hudson Marine Segment, and is the preferred method of cable lay and burial. Simultaneous cable lay and burial operations using the jet plow will consist of a single vessel both laying the bundled cable and pulling the plow to trench the cable to depth in accordance with environmental permitting restrictions. The jet plow will lower the cable to a minimum of seven (7) feet below the riverbed in a single trench. Refer to Section 7.3 of Appendix 5-A, Hudson River Cable Installation Methodology for additional detail regarding HydroPlow operations.

5.5.2.2 Cable Free Lay

Cable installation via surface-lay of the cable on the riverbed surface would only occur in association with the co-located infrastructure crossings as described in Section 3.3.5.2. Otherwise, no cable installation via surface-lay is currently proposed in the Hudson River.

5.5.2.3 Post-Lay Burial

Post-lay cable burial via a remotely operated remedial burial tool, such as the AssoTrencher V Mk3 or similar, will be conducted in portions of the Cementon-Stony Point Hudson Marine Segment and based on the data recorded during the burial survey operations. Any sections along the installed route that are not to the required burial depth will be a candidate for remedial burial operations. Once the location is assessed as being suitable, the remedial burial operation can be planned and undertaken. Refer to Section 7.10 of Appendix 5-A, Hudson River Cable Installation Methodology for additional detail regarding remedial burial operations.

5.5.3 Cable Splicing / Jointing

The Cementon-Stony Point Hudson Marine Segment will be installed in three segments, each approximately 22 miles long. This will require two in-water cable splicing events (two individual cable splices per event). The Congers-Harlem Hudson Marine Segment will be installed as a single segment. An in-water splicing event will take place near RM 14 when the Hudson River cable is joined or spliced to the Harlem River cable.

Additionally, should unforeseen circumstances necessitate departure of the Cable Laying Vessel from a worksite along the cable route (weather, mechanical breakdown, etc.), splicing of the fiber optic cable and additional splicing of the power cables may be necessary.

Cable splicing will occur on the Cable Laying Vessel with 24/7 operations lasting 7-10 days, during which time the Cable Laying Vessel needs to remain in the same location to complete the splice. Splicing operations are performed on the deck of the Cable Laying Vessel inside a splicing habitat which provides a protected and controlled environment to ensure the quality of the work performed on the splices.

When a full segment of cable has been installed in the river, the cable ends are positioned inside the splicing habitat. The cables for the next segment are brought to the Cable Lay Vessel with the help of Cable Transport Barges. The initial end of the cables for the next segment is routed to the splicing habitat and the splicing operation can commence. The splicing is performed by skilled and certified NKT personnel following the sequence below:

- Cut the cable ends to the correct length
- Prepare cable ends for splicing
- Install the splice
- Install outer casing and bending restrictors

Figure 5. Preparation of Cable Ends Prior to Installation of Splice in Progress

Following the completion of a splice, each separate splice joint is progressively deployed overboard with assistance from vessel cranes and monitored via a remotely operated vehicle to verify safe touchdown on the riverbed. Cable joints cannot pass through the jet plow and therefore will be buried with the jetting trencher tool to the required burial depth. Each cable splice will be tested prior to installing the next segment of cable.

Should unforeseen circumstances necessitate departure of the Cable Lay Vessel from a worksite along the cable route (weather, mechanical breakdown, etc.), the cables need to be cut and sealed and placed on the bottom of the riverbed until the Cable Lay Vessel can return to the site and perform an additional splice of the fiber optic cable and the power cables. Notifications would be made to the USCG, USACE, NYSDEC and DPS of such departures as soon as possible.

Refer to Section 7.8 of Appendix 5-A, Hudson River Cable Installation Methodology for additional detail regarding cable splicing.

5.5.4 Second-End Cable Landing at Stony Point

For the Cementon-Stony Point Hudson Marine Segment, once cable installation has progressed to the southernmost portion of the route, pull-in and landing of the cables at the Stony Point landing site (RM 41) will commence. The cables will be landed via the pre-installed land-to-water HDD conduits at Stony Point. The landing will include the floated pull-in of the cables via the two HDPE conduits; the first conduit will receive a single HVDC cable, and the subsequent conduit will receive both the second HVDC cable as well as the fiber optic cable.

Refer to Section 7.2 of Appendix 5-A, Hudson River Cable Installation Methodology for additional detail regarding cable landing procedures.

5.5.5 Remedial Burial Actions

Post-lay cable burial via a remotely operated remedial burial tool, such as the AssoTrencher V Mk3 or similar, will be conducted in portions of the Cementon-Stony Point Hudson Marine Segment and based on the data recorded during the burial survey operations. Where initial cable installation and burial techniques have not achieved required burial depths, additional remedial burial actions may be taken to adjust the depth of the cables. This may also include remedial burial of non-plowed areas, such as the cable splice locations and non-plowed cable landing transition. Once the location is assessed as being suitable, the remedial burial operation can be planned and undertaken. Refer to Section 7.5 of Appendix 5-A, Hudson River Cable Installation Methodology for additional detail regarding remedial burial operations.

5.6 Environmental Monitoring

Environment monitoring will be conducted during cable installation construction activities as outlined in Section 7.0 below. In addition to general environmental monitoring efforts, suspended sediment and water quality will be routinely monitored during cable installation in accordance with the Suspended Sediment/Water Quality Monitoring Plan attached as Appendix 7-B to this EM&CP. In accordance with the plan, a survey boat will be deployed during active cable installation to collect in-situ data and samples for laboratory analysis. Assessments of water quality and suspended sediment plumes will be conducted with real-time total suspended solids (TSS) monitoring and with twice-daily water sampling for laboratory analysis. Refer to Section 7.4.1 for additional detail regarding the Suspended Sediment/Water Quality Monitoring Plan.

6.0 Post-Installation Activities

The following sections describe construction activities to be performed following completion of cable installation in the Hudson River, which primarily consist of installation of post-lay protection. Refer to Appendix 6-A, Methodology Statement for Post-Lay and Remedial Mattress Placement, for additional information.

6.1 Communications and Notifications

Specific points of contact have been established for stakeholders and affected parties including, but not limited to:

- PWS intake owners;
- Private landowners;
- Mariners;
- Co-located utility owners;
- Private companies; and,
- Counties/towns/villages along the route.

Electronic notification will be made to designated contacts before crossing or passing an affected resource, on a schedule to be provided to stakeholders or as otherwise individually agreed with certain parties. For additional information regarding public communications, please see Appendix 1-D, Public Involvement Plan, and Appendix 9-B, Hudson River Public Water Supply Protection and Contingency Plan.

LNM will be submitted to the USCG for issuance a minimum of 30 days prior to the start of the marine field operations. Daily work location, minimum passing clearance request and all other relevant information will be broadcast via marine VHF radio as required by the USCG. Courtesy notifications will be provided to emergency services and law enforcement that are local to project operational sites (if any).

The work associated with the Project is located within the temporarily extended area of responsibility for the USCG's VTSNY, which includes the waters of the Hudson River between The Battery (RM 0) and the Dunn Memorial Bridge in Rensselaer (approximately RM 144.5). Vessels subject to VTSNY required reporting will contact the VTSNY water supervisor at 718-354-4088 prior to getting underway (USCG, 2023).

6.2 Schedule

Post-installation activities will commence on a rolling basis as the cable is installed. Post-lay mattress installation is currently anticipated to commence in September 2024 with completion in November 2024. There are no environmental TOY restrictions applicable to post-lay mattressing.

6.3 Temporary Facilities

To facilitate cable installation activities, temporary facilities will be utilized as described below.

6.3.1 Material and Equipment Staging

A mobilization port will be used for assembling the equipment and personnel and mobilizing the vessels to transit to the worksite for the post-installation activities. As of April 2024, the mobilization port location for the Hudson River cable installation has not been finalized. However, given that the ports within New York State that are large enough to accommodate the vessels of this size are limited to the Port of New York and the Port of Albany, it is anticipated one of these locations will be used as the mobilization port. The Port of Newark may be considered as an alternate location. All of these ports are suited for marine mobilization and no upgrades are required at these ports to accommodate this scope of work.

Crew will reside on the vessels for the duration of the post-installation activities; it is not intended that crew changes will be performed during the course of the post-installation activities.

No land-based laydown yards will be required, and transportation of oversized loads via roadways is not anticipated for the delivery of oversized loads. Once vessels are mobilized, the necessary materials and equipment will be available on board, barring unexpected circumstances. If necessary, the vessel would return to port or other materials would be transported via other vessels.

6.3.2 Construction Access

Construction access will be provided via vessels. Should a crew change be required, crew will be transferred in accordance with personnel transfer procedure.

6.4 Vessels

CHPE intends to utilize the HOS Bayou, HOS Mystique, or a vessel similar with installation capabilities. Post-lay and remedial procedures are the same as pre-lay installation activities.

6.5 Work to be Performed

Construction activities included in this phase of work are described below.

6.5.1 Post-Lay Mattress Installation for Remedial Cable Protection

Where cable installation and burial techniques have not achieved required burial depths, and where remedial burial actions are unfeasible or unsuccessful, remedial cable protection actions will be implemented. In areas where the cable has not been buried with the minimum burial depth as required by the permit, remedial post-lay concrete mattresses will be installed on the bottom surface of the river overlying the area of inadequate cable burial. This includes CI crossing

locations where required cable burial depths cannot be met. Installation of post-lay mattresses for remedial cable protection at CI crossings will be completed in accordance with Project permit and utility crossing agreement requirements.[4]

In order to perform the safe and effective installation of articulated mattresses, two methodologies can be considered. The first method is installation using a remotely operated vehicle (ROV) .The articulated mattresses will be installed in position using a specially designed and outfitted ROV integrated to a mattress deployment frame. With this technique, the ROV will be controlled by operators located onboard the deployment vessel, no divers will be required. The second method is diver assisted installation, where divers will be in the water to assist with deployment and positioning operations.

Additional information can be found in Appendix 6-A, Methodology Statement for Post-Lay and Remedial Mattress Placement.

6.5.2 As-Built Survey

An as-built survey will be conducted after cable installation. The survey will be used to document the installed cable location, depth, and to establish a baseline for monitoring, maintenance, and repair. A tone generator will be applied to the cables to enable identification of cable location.

The survey will be provided to the New York State Office of General Services (OGS) to change the construction permit into a permanent easement. As-built drawings will be provided to the National Oceanic and Atmospheric Administration (NOAA) for inclusion in nautical charts, as well as to other entities where required by the Certificate, applicable permits, and/or crossing agreements.

6.6 Environmental Monitoring

Environmental monitoring will be conducted during post-installation construction activities, as outlined in Section 7.0 below. Refer to Section 7.0 for information regarding environmental monitoring.

[4] CHPE will continue to work cooperatively with USCG to avoid or minimize impacts to ATON from post-lay mattressing through such means as not surface-laying mattresses within a minimum safe distance of any federal ATON.

7.0 Monitoring and Compliance

The following sections describe procedures for monitoring and compliance before, during, and following installation of the submarine cable in the Hudson River. Facility inspections and maintenance procedures are also discussed. Refer to the Compliance Assurance Plan in Appendix 7-A for additional information.

7.1 Environmental Supervision and Construction Oversight

During construction of the Project, the Certificate Holders will employ construction oversight staff as required by the Certificate and to ensure that all regulatory requirements, plans, and specifications are appropriately met. The construction oversight staff will perform a variety of functions. The duties of each are described below.

Inspector(s) and monitor(s) may perform multiple inspection roles if each is qualified to serve in them.

The Certificate Holders will submit the name and qualifications of the Construction Inspectors(s) and/or Environmental Inspector(s) to New York State DPS Staff at least two weeks before construction starts.

7.1.1 On-board Representatives

For offshore operations executed by a subcontractor, two NKT, Inc. (NKT) representatives will be present onboard to supervise the works. These personnel will usually be Site Managers or Project Engineers but may be other positions with suitable offshore experience.

The NKT representatives will perform the following tasks on board the vessels:

- Supervise the operation;
- Give instructions to the subcontractor;
- Work as the main contact for communication with the subcontractor's on-board personnel;
- Communicate with the on-board CHPE representatives;
- Ensure that the work is carried out in a safe manner;
- Write daily progress reports and communicate with the land-based Project organization;
- Ensure that Environment, Health, and Safety (EHS) standards and regulations are followed on the vessel; and
- Report incidents to the land-based Project organization and on-board CHPE representatives.

7.1.2 Site Manager

There will be a full-time Site Manager during cable installation; for other pre- and post-cable installation activities, the Site Manager will be full- or part-time as appropriate to the level of activity. The Site Manager will be responsible for managing the construction Contractor's performance for the successful completion of all construction activities. The Site Manager will provide proactive leadership and direction to the Contractors for safety, security, schedule, and environmental compliance; confirm that assigned personnel are properly directed, trained, licensed, and evaluated within the Certificate Holders' guidelines and procedures; and maintain a thorough understanding of emergency response procedures to help arrange and provide resource support as needed.

7.1.3 Construction Manager(s)

There will be full-time Construction Manager(s), who will report to the Site Manager, during cable installation; for other pre- and post-cable installation activities, the Construction Manager(s) will be full- or part-time as appropriate to the level of activity. The Construction Manager(s) will support the Site Manager by overseeing the Contractors' performance of construction work; reinforcing that contractors must maintain safety, security, schedule, and environmental compliance at all times; verifying that construction field work complies with the criteria per the Certificate Holders' construction specifications; writing and publishing reports detailing results of field construction audits; issuing and tracking non-conformances for items found not meeting the required specification; and requiring submission of corrective and preventive action for non-conformances found.

7.1.4 Environmental Compliance Manager

The Environmental Compliance Manager (ECM) will serve as the Certificate Holders' point of contact for information related to the environmental compliance status of the work. The ECM will be responsible for coordinating with the Site Manager, Construction Manager(s), the Certificate Holder's environmental staff, and the environmental inspecting team regarding compliance matters. This position will coordinate monitoring and staffing needs to ensure appropriate monitors are present during construction. The ECM, with assistance from the Environmental Inspector(s), will be responsible for environmental oversight throughout the construction, and restoration phases, and for monitoring compliance with environmental protection provisions of the Certificate and the EM&CP. Additionally, the ECM will be responsible for performing quality assurance/quality control of the daily reports and compiling a weekly summary report for the Certificate Holders. The ECM will provide guidance to the Environmental Inspector(s) (EI) on interpretation of requirements of the Certificate, EM&CP, and other permits and approvals.

7.1.5 Environmental Inspector(s)

The number of Environmental Inspector(s) will be commensurate with the level of project activity at any given time. The EI(s) will monitor environmental compliance with all requirements of the Project during construction activities by working directly with the construction crews daily to reinforce and encourage a team approach, and to develop a compliance culture that is understood and executed by all Contractor staff and personnel. EI(s) will meet the requirements of a "Qualified Inspector" as defined by GP-0-20-001. In addition, the EI(s) will be responsible for understanding the requirements of the Certificate, EM&CP, and other permits and approvals. They will assist and report to the ECM, complete daily site inspection reports, participate in pre-job briefings and tailboards as part of the construction team to help develop and maintain the project-wide culture of environmental compliance and to help contractors understand compliance requirements, and address potential areas of non-compliant conditions. Any items identified to be non-compliant or with the potential to be non-compliant if not addressed immediately will be communicated to the site superintendent or foreman prior to leaving the site. The EI(s) shall have stop work authority over aspects of the Project that could create an adverse impact to the environment. The EI(s) will be responsible for completing daily inspections and submitting weekly status reports; refer to Section 7.2 for a discussion of compliance reporting requirements.

7.1.5.1 Aquatic Inspector

An Aquatic Inspector will be responsible for supporting in-water construction activities. It is the Aquatic Inspector's job to monitor compliance with regulatory and permit requirements for the underwater portions of the cable installation. They will monitor construction activities on, above, or below the State's waters. If construction and installation appear to be in violation of the Certificate of Environmental Compatibility and Public Need, the Aquatic Inspector may direct the field crews to stop the specific potentially harmful activity immediately and attempt to assist in preventive or remedial action.

7.1.6 Safety Inspector

At least one Safety Inspector will be responsible for providing professional safety and health oversight, conducting work area inspections, and confirming compliance with the Certificate Holders' safety requirements. The Safety Inspector will be on site when any higher-risk activities are being conducted and will inspect construction activities for hazards that could be eliminated. Any incidents that may occur will be reported to and analyzed by the Safety Inspector. The Safety Inspector will conduct Project specific on-site safety training.

7.1.7 Quality Assurance Inspector

At least one Quality Assurance Inspector will perform quality audits on the Project facilities and components purchased for the Project to make sure the material is consistent with the specifications described in the EM&CP and Plan and Profile Drawings (Appendix 3-A). If materials fail to meet the criteria outlined in the Quality Control Plan, the Quality Assurance Inspector will

be responsible for issuing and tracking non-conformances for the Project facilities and components as well as requiring submission of corrective and preventive action for the identified non-conformances. The Quality Assurance Inspector will work closely with the Construction Manager(s) to verify Project personnel are adhering to the quality control procedures.

7.2 Reporting Requirements

The Certificate Holders will conduct the compliance inspections and reporting detailed below for the Project. In addition, the Certificate Holders will organize and conduct site-compliance audit inspections and reporting for DPS as needed, but not less frequently than once per month during the pre-installation, installation, and post-installation phases. Additionally, the Environmental Inspector(s) is responsible for completing daily inspections and submitting weekly status reports.

7.2.1 Monthly Status Reports

An EHS Report will be completed for each month the Project has active installation related activities in the Hudson River. The report will include a review of Project performance, safety performance, incident rate, lost time incident rate, safety inspections and action items completed, and safety training and meetings completed. The Certificate Holders will provide a written record of the results of the monthly review, including resolution of issues and additional measures to be taken, to all as part of its scheduled construction update reports. Scheduled construction activities and locations for the following month will be included in the status report.

7.2.2 Environmental Inspection Reports

Following each environmental inspection, an environmental inspection report will be completed by the EI performing the inspection, detailing compliance of the inspection location with all applicable environmental requirements. Deficiencies will be noted and reported to the Construction Manager(s) responsible for the noted Project location. Deficiencies should be corrected prior to the inspector leaving the site if feasible. Any deficiency not immediately corrected will be listed in an “Open Items” log and its status will be confirmed during the next site inspection. This process will be repeated until the deficiency is appropriately addressed. The Construction Manager(s) will be notified of deficiencies prior to the environmental compliance personnel leaving the site. The contractor must initiate correction of the deficiency within one business day and the correction must be completed in a reasonable and expeditious timeframe. The EI(s) will submit their reports to the ECM daily. The ECM will be responsible for reviewing and archiving the inspection reports.

7.3 Worksite Health and Safety

Measures will be taken by the Certificate Holders and Project personnel to protect the health and safety of all parties throughout the duration of the Project. Detailed worksite health and safety procedures are described in the sections below. A full-time Safety Inspector will be on site to provide safety and health oversight and confirm compliance with the Certificate Holders’ safety

requirements (Appendix 7-A, Compliance Assurance Plan) during cable installation; for other pre- and post-cable installation activities, the Safety Inspector may be full- or part-time as appropriate to the level of activity. Plans for health and safety during construction activities are provided in Appendix 8-C, Program Health and Safety Plan, and Appendix 8-D, Submarine Cables Installation & Burial Draft Health and Safety Plan.

7.3.1 Safety Training & Education

Training, instruction, and periodic briefings will be provided by the Certificate Holders and their contractors to all Project-related personnel, as appropriate, to verify that environmental, health, and safety precautions and measures are followed during construction. Training will be provided before employees or subcontractors are assigned to new or different work activities and periodically to reinforce their awareness. Where required, annual refresher training will also be provided. Each party's management is responsible for ensuring that safety training is made available to all employees or subcontractors as required by their specific work activities. The Site Superintendent (SS) will be responsible for ensuring that employees or subcontractors have the required training to perform their work safely. This training will include specific information on how work is conducted as well as the hazards the workers may be exposed to in relation to their own specific craft and work procedures. Daily tailboard meetings will be held at the start of each construction day to refresh awareness of general safety topics.

7.3.2 Stop Work Procedures

Any Project personnel can stop work for health and safety reasons by notifying the Project Superintendent or Captain of the Vessel. All Project personnel will be encouraged to notify either of these individuals if they observe conditions that could potentially be in non-compliance, so that appropriate corrective action(s) can be taken. Any stop work notice will be reported to the Site Manager who will report it to the Certificate Holders' management in a timely manner noting the incident specific information, such as time, date, location, details of the incident, person observing the incident, and response taken. DPS representatives may issue a stop-work order where permitted by the Certificate for any construction or maintenance activities that violate or may violate the terms of the Certificate or any other valid order.

7.4 Supporting Technical and Monitoring Studies

In accordance with CC 159(k), 159(ee), 159(ff), and 163, and conditions 12 and 14 of the WQC, several monitoring studies will be conducted before, during, and/or after installation of the cables in the Hudson River. These monitoring studies are outlined below, and related study plans are contained in Appendix 7-B, Suspended Sediment / Water Quality Monitoring Plan; 7-D, Bathymetry, Sediment Temperature, and Magnetic Field Standard Operating Procedure; 7-E, Atlantic Sturgeon Pre- and Post- Energizing Standard Operating Procedure; and 7-F, Benthic and Sediment Monitoring Pre- and Post- Energizing Standard Operating Procedure.

7.4.1 Suspended Sediment/Water Quality Sampling and Monitoring Study

A Suspended Sediment/Water Quality Monitoring Standard Operating Procedure was developed pursuant to CC 159 and the WQC. A draft Standard Operating Procedure (SOP) or study plan was submitted to the DPS Staff for review, comment, and approval in consultation with NYSDEC and the New York State Department of State (NYSDOS) (see Document Matter Master (DMM) Item 752, filed October 18, 2013). The final version is provided in Appendix 7-B (Suspended Sediment / Water Quality Monitoring Plan).

A pre-installation trial of the jet plow occurred along a 2,640-foot route in the Hudson River on September 9, 2022. The objectives of the TSS monitoring program were to assess the amount of sediment resuspension in the water column during operation of the jet plow relative to the requirements of the WQC, and to potentially make recommendations for modifications to the jet plow operation or monitoring procedures based on the results of the pre-installation trials. The pre-installation trial found that jet plow activities produced little to no observable plume or a small area of slightly elevated TSS levels within a cross-sectional transect that were well below the TSS standards identified in the WQC. The final report is provided as Appendix 7-C (Suspended Sediment Monitoring during Pre-Installation Trials for the Champlain Hudson Power Express Project, Hudson River Report).

A pre-installation trial of the remote submersible jetting trencher AssoTrencher V Mk3 was conducted in December 2023 with the same objectives and protocols as the trial completed for the jet plow in September 2022. This study occurred along a route that was offset slightly from the location of the pre-installation jet plow trial, to allow for comparison of the results. As with the jet plow trial, the trencher produced a small area of slightly elevated TSS levels within a cross-sectional transect that were well below the TSS standards identified in the WQC. The results of this study are also provided in Appendix 7-C.

7.4.2 Bathymetry, Sediment Temperature, and Magnetic Field Study

A pre- and- post-energizing bathymetry, sediment temperature, and magnetic field SOP or study plan was developed in accordance with CC 163 (see DMM Item 751, filed October 18, 2013). The final SOP is provided as Appendix 7-D (Bathymetry, Sediment Temperature, and Magnetic Field Standard Operating Procedure).

Pre-energizing bathymetry surveys have been conducted along the submarine cable installation route, and post-installation bathymetric surveys will be used to monitor recovery of the bottom substrate after cable installation. The bathymetry survey will be repeated 1 year after the cable installation and then 3 years after cable installation. Initially (year 1), the entire cable route will be surveyed to compare with the bottom elevations of the pre-installation survey. Where the substrate has returned to the pre-installation configuration, these segments will not be resurveyed during any subsequent survey. If a cable segment has not returned to pre-installation condition after 3 years, it will be resurveyed after 5 years (total of 8 years after cable installation).

Surveys of sediment temperature and thermal resistivity along the cable route will be conducted along the route at approximately five-mile intervals. As currently planned, the post-energizing survey will occur 3 years after completion of cable installation, assuming cable energizing, or when the transmission system is operating at 500 to 1,000 MW if it is not doing so 3 years after installation.

At selected locations along the cable route a magnetometer survey will be conducted. In selecting survey locations, a variety of substrate types will be included. In the Hudson River, sediment temperature and thermal resistivity data will be collected every five miles. Once the routing for a segment has been approved, the Certificate Holders will review existing data to determine survey locations. The final proposed locations will be provided to the NYSDEC, NYSDOS, and NYSDPS in tabular and map form for review. The Certificate Holders will survey approximately 30% of the total length of the in-water cable. The post-energizing survey will occur 3 years after installation, assuming cable energizing, or when the transmission system is operating at 500 to 1,000 MW if it is not doing so 3 years after installation. The post-installation survey will be conducted within the same season as the pre-installation survey.

7.4.3 Atlantic Sturgeon Pre- and Post-Energizing Study

A pre- and post-energizing hydrophone study Standard Operating Procedure was developed in accordance with CC 163, and was submitted to DPS Staff for review, comment, and approval in consultation with NYSDEC and the NYSDOS (See DMM item 751, filed October 18, 2003). The final version is provided in Appendix 7-E (Atlantic Sturgeon Pre- and Post-Energizing Standard Operating Procedure).

Pre- and post-energizing surveys will evaluate the movement patterns of spawning Atlantic sturgeon in the Hudson River Estuary, in an effort to assess the effect of the installation and operation of the cables on Atlantic Sturgeon behavior. The study will determine if the fish tend to avoid or are attracted to the areas where the cables are installed. As part of the requirements of CC 163, the pre-energizing monitoring event will occur no sooner than 3 years before the anticipated post-energizing monitoring.

To monitor the movements of the sturgeon, it is the Certificate Holders' expectation that the NYSDEC will tag up to 50 adult Atlantic sturgeon to provide the target fish for this study. Tagging will occur in the lower estuary or in the Hyde Park spawning area. The Certificate Holders, as part of the mitigation for habitat disturbance, will conduct a fine scale mapping of sturgeon use in the segments of the Hyde Park spawning area. The study area is approximately 8 miles in length and is bounded by Crum Elbow to the south and the confluence of the Hudson River and Roundout Creek to the north.

7.4.4 Benthic and Sediment Monitoring Study

A pre- and post-energizing benthic monitoring and sediment sampling SOP or study plan was developed in accordance with CC 163. The SOP as provided in Appendix 7-F (Benthic and Sediment Monitoring Pre- and Post-Energizing Standard Operating Procedure) was submitted to DPS Staff for review, comment, and approval in consultation with NYSDEC and the NYSDOS (see also DMM Item 751, filed October 18, 2013). In addition, the benthic study must be conducted in accordance with Special Conditions HH and II of the USACE permit (Permit Number NAN-2009-01089-M7).

Benthic sampling will occur in the Hudson River to characterize and compare pre- (i.e., existing) and post- installation abundance and distribution of macroinvertebrates occurring within the vicinity of the cable route. The benthic post-energizing surveys will be conducted at the following milestones: (a) 3 years after installation assuming cable energizing; and (b) when the transmission system is operating at 500 to 1,000 MW if it is not doing so 3 years after installation.

Sediment chemistry surveys will be conducted to characterize existing and post-energizing sediment conditions proximate to the cable in the Hudson, Harlem, and East Rivers. Sediment sampling in the Hudson River will be made at or within 30 feet of the benthic macroinvertebrate sampling stations as described above. Sediment post-energizing sampling will be conducted 3 years after installation during the same season as the first benthic sampling event.

7.4.5 Voluntary Pump and Sediment Study

A Voluntary Pump Study was developed to determine potential impacts of the Hudson River plow installation on the PWS intakes located within the Hudson River. The details of this study can be found in Appendix 7-G (Champlain Hudson Power Express Pilot Study Summary of Results [Voluntary Pump Study]). The pump study, as requested by the Hudson River Drinking Water Intermunicipal Council (known as the “Hudson 7”), involved the installation of a pump in the vicinity of the jet plow pre-installation trials to simulate the conditions public water supply intakes might experience during project construction. The values for turbidity, pH, total organic compounds, and volatile organics were below the threshold levels established by the Hudson 7 and New York State. Semi-volatile organics, metals, and polychlorinated biphenyls (PCBs) were also tested and found to be within acceptable ranges of values.

A Voluntary Sediment Study was additionally conducted in the Hudson River. Sediment data were collected near the public water systems to understand the potential contaminants that might be mobilized by the jet plow. Sediment core sampling was conducted near five drinking water intakes in the Hudson River from September 20 through September 28, 2022. The study found that there were no detectable concentrations of pesticides or volatiles in the samples collected. There also were no exceedances of the New York State reference values for metals, mercury, or semi-volatiles. The details of this study can be found in Appendix 7-H (Report on Sediment Sampling in the Hudson River for the Champlain Hudson Power Express Project Voluntary Sediment Study).

7.5 Existing Structure Inspections

If applicable, in areas where installation activity will occur within 100 feet of any building, facility, or structure foundation, the Certificate Holders will offer to inspect such foundation structure before, during, and after construction. This inspection will document conditions at each significant stage of construction, including measurements of foundation crack lengths, and will provide photographs of any existing and/or post-construction damage. A report detailing foundation condition findings will be provided to the building, facility, and/or structure owner/operator and to DPS Staff within 30 days of completion.

7.6 Cable Operation, Maintenance, and Inspection

As the owner, CHPE LLC will be responsible for ensuring the long-term successful operation of the Project over its design life. System performance will be continuously monitored from several locations by a dedicated Operation and Maintenance (O&M) Team to ensure proper operation of the system. This monitoring will allow for immediate fault detection and instantaneous feedback on any operational deviations which may prevent the system from functioning optimally.

The Astoria (NY) and Hertel (Quebec) Converter Stations will be continuously staffed by the O&M Team with notifications, monitoring, and control protocols established and integrated as part of the overall automated operation of the system.

The CHPE Project is projected to come online in Spring 2026.

The transmission line's facilities in Canada, including an HVDC converter station in Hertel, Quebec, will be constructed, operated, and maintained by Hydro Quebec and its affiliates. CHPE LLC will construct, operate, and maintain the U.S. facilities including marine and terrestrial cable sections, the Astoria Converter Station, and the Operations Control Center.

An overall Facility Operation and Maintenance Plan will be developed during construction and submitted to the relevant authorities prior to commencement of commercial operations.

7.6.1 Operations and Monitoring

A fiber-optic cable monitoring system is being integrated into the cable bundle to actively monitor the HVDC cables along the entire HVDC power cable route, both terrestrial and submarine. In addition to the main stations in Hertel and Astoria, there are 5 land-based monitoring stations linked to both.

HVDC-system-related control functions are coordinated by both converter stations (Hertel and Astoria), such as starting/stopping power transmission, power/current reference value setting, and controlling DC voltage.

7.6.2 Preliminary Maintenance and Emergency Action Plan

The Certificate requires CHPE to inspect the in-water portions of the Facility every five years to verify depth and location. During construction, verification and emergency action measures will be governed by this EM&CP, as discussed further in Section 7.6.2.1 below and in Appendix 7-I, Immediate Post-Installation Inspection Plan, Appendix 8-C, Program Health and Safety Plan, Appendix 8-D, Submarine Cables Installation & Burial Draft Health and Safety Plan, and Appendix 9-B, Hudson River Public Water Supply Protection and Contingency Plan.

One of CHPE's primary strategies in reducing the need for future maintenance of the Facility, including relocation, reburial, and/or added protection measures after installation has been to design a route which maximizes the likelihood of reaching target installation depths. In development of the final route and Preliminary Maintenance Plans, CHPE took significant steps to minimize the risk of damage to the cable and avoid obstacles or conditions which might inhibit achievement of target burial depths. Prior to installation operations, CHPE has completed extensive surveying and vibratory coring sample evaluations to understand the interactions with the Facility and river bottom during installation. Chirp sub-bottom profile records were reviewed along with historic vibratory cores within the route corridor. The sub-bottom profiler achieved varying depths of penetration to identify areas along the proposed route where coarse material and/or problematic obstructions may be encountered at the surface of shallow subsurface. Additionally, the route corridor was further evaluated for along-route and across-route side slopes, sand waves, and riverbed disturbances that would impact the jet-plow's ability to effectively install. These extensive evaluations resulted in multiple route revisions to optimize installation operations. In parallel, burial methodology assessments and tool selection was conducted to further optimize burial strategy and increase confidence levels that burial depth will be achieved and maintained, and to reduce the need for additional protection measures during installation or throughout the Facility's operational life.

As part of CHPE's Emergency Action Planning for construction, prior to the arrival of the cable installation vessels, Hazard Identification (HAZID) meetings will be held to identify potential risks and mitigations for operations proactively. These meetings involve systematically reviewing operational procedures and analyzing hazards early in the operational phase of a project.

The cable installation vessels have Dynamic Positioning capabilities with redundancy to further mitigate risks in the event of equipment failure on board the vessels. These assets are specially configured for cable laying and protection, as well as diving, remotely operated vehicle (ROV) deployment and operations, survey, and Inspection, Maintenance and Repair (IMR) work. Survey operations for depth of lowering verification will be performed with the use of the ROV rigged on the installation or trenching support vessel. The RBT can be also utilized if the available water depths are not sufficient for the ROV operation. The ROV will be fitted with a suitable cable tracker system, such as the TSS 350, or similar technology, and Multi-Beam Echo Sounder system (MBES), such as the Norbit, R2 Sonic or similar. The ROV will utilize the cable tracking and MBES systems to survey the cable as-laid position during the SLB operation, or independently and typically within a week of, cable lay operations. Timeframes between cable lowering and the as-

laid surveys are dependent upon site conditions that limit ROV use, such as the weather, current and the water depths. All operations will be planned using weather forecasts received every 6 hours from two independent forecasters to ensure that conditions are within allowable parameters for the operation to be undertaken. Emergency actions and considerations will further be evaluated on a case by case basis and, in the eventuality that difficulties are experienced, emergency procedures will be in place on all vessels to ensure the safety of crew, equipment, and environment. These procedures include, but are not limited to, an immediate stop work for safety. All operations are planned in detail with the inclusion of a risk assessment to ensure that all potential hazards are accounted for and mitigated as far as possible.

7.6.2.1 Post-Installation Cable Inspection and Maintenance, Short-term

In accordance with CC 161, the Certificate Holders have developed an Immediate Post Installation Inspection Plan, summarized below, which will be mobilized following cable installation. This plan includes the method for determining the actual cable location and actual burial depth of the cable upon completion of installation, standards to be used to determine what remedial actions are warranted consistent with Good Utility Practices (e.g., additional burial and/or protection efforts) in all locations where the cable burial depth is less than the applicable target burial depth, standards to be used to determine if any damage has been or will be caused to any pre-existing facility and/or infrastructure as a result of cable installation, operation, or maintenance, and remedial measures therefore, and the method and timing for undertaking such efforts. The Immediate Post Installation Inspection Plan is attached as Appendix 7-I.

An ROV mounted, turnkey multi-beam sonar system will be mobilized in order to provide high density sounding data within the Project area. It will provide plan level information on a 0.1 meter grid and will map the top layer of any aqueous sediment layer present.

Any sections along the installed route that are not to the required burial depth will be a candidate for remedial burial operations. Once the location is assessed as being suitable, the remedial burial operation can be planned, and operations will subsequently be conducted with the RBT based on the data recorded during the burial survey operations. A full survey will be completed following remedial jetting operations to verify that depth has been achieved utilizing a suitable cable tracker system, such as the TSS 350, or similar technology, and Multi-Beam Echo Sounder system (MBES), such as the Norbit, R2 Sonic or similar.. All burial depth surveys shall be performed in the same manner regardless of simultaneous lay and burial or remedial burial operations.

Any areas where burial depth is not achieved will be immediately reported to the Regulatory Branch of the USACE, and an initial report as to the cause of not achieving that depth will be submitted within 48 hours. In accordance with the Certificate and USACE Pemit, CHPE will work closely with NOAA for submission of depths and locations for each 15-mile segment completion for expeditious publishing of appropriate information to nautical charts in the interest of safety to Navigation. CHPE will also submit as-built information to the designated permit authorities within three (3) months of the completion for each 2-mile segment of cable installation.

7.6.2.2 Post-Installation Cable Inspection and Maintenance, Long-term

In accordance with CC 161,[5] and as noted in Section 7.6.2 above, the Certificate Holders have provided in this EM&CP a Maintenance and Emergency Action Plan to be implemented during cable installation and construction. A post-installation Maintenance and Emergency Action Plan for Facility operations and inspections long-term will be provided as a part of the overall Facility Operations and Maintenance Plan, to be provided prior to operation.

In accordance with CC 161 and USACE permit NAN-2009-01089-M8, the Certificate Holders will conduct inspections of the installed subaqueous cable at least once every five (5) years. Such inspections will verify the cable's location, depth of lowering, verify the horizontal and vertical location of identified non-burial cable locations, determine the durability of protective concrete mattresses, and determine whether maintenance of any kind would be required on any installed structures. The findings of the inspections will be provided in a report to the USCG and the USACE. The report will contain evaluations and supporting documents demonstrating that the cable, in its then-existing condition, is still protected by the minimum depth of lowering required by the USACE permit and/or that the authorized concrete mattress armament will continue to prevent anchor strikes from vessel traffic. Additionally, this report will specify the Project contact who will be responsible for verifying the cable location. Inspections performed as part of the Long-Term inspection plan shall utilize non-contact survey methodologies that do not disrupt the riverbed. Methodology shall be in line with post installation inspection program utilizing similar or equivalent hardware.

Post-installation, these inspections and any required maintenance, will be conducted in accordance with the final Operations and Maintenance Plan, to be provided prior to commercial operation.

7.6.3 Unscheduled Maintenance (Marine)

Prior to commercial operation, repair equipment storage facilities will be established to store and maintain an inventory of long lead items and equipment required for repairing possible cable faults. Storage facilities are not yet identified but will be included in the post-installation Operations and Maintenance Plan to be provided prior to commercial operation.

Repair scenarios in the vicinity of CI are or will be further described in Appendix 3-D, Co-Located Infrastructure Crossing Packages

Dedicated repair procedures and plans will be shared in the event of a required repair in proximity to facilities.

[5] The remaining sections of CC 161(b) refer to land-based requirements for a Maintenance and Emergency Action Plan, such as vegetation maintenance, and are therefore inapplicable to this Segment.

8.0 Environmental and Cultural Resource Protection

The following sections describe procedures for environmental and cultural resource protection to be implemented before, during, and following installation of the submarine cable in the Hudson River.

8.1 Pollution Prevention

The following plans discuss pollution prevention, spill response, waste management, and safety for EM&CP Segment 19B construction activities:

- Spill Prevention and Control Plan (SPCP), Appendix 8-A
- Oil Spill Contingency Plan (OSCP), Attachment A to Appendix 8-A
- Shipboard Oil Pollution Emergency Plan (SOPEP), Attachment B to Appendix 8-A
- Very Small Quantity Generator (VSQG) Hazardous Waste Management Plan (HWMP), Appendix 8-B
- Program Health and Safety Plan (PHASP), Appendix 8-C
- Submarine Cables Installation & Burial Draft Health and Safety Plan, Appendix 8-D

The procedures to be implemented to avoid the release of pollution during project construction are summarized in the sections below. For additional details regarding any specific prevention or response procedure, please refer to the appropriate plan listed above.

8.1.1 Potential Pollutant Sources

At the construction/installation sites along the Hudson River, potential pollution or hazardous material can be generated by worksite activities. Some of the common types include carbon monoxide from vehicle and generator exhaust, different types of fuels and lubricants, and miscellaneous hazardous materials.

The Certificate Holders will inform local fire department and emergency management teams of on-site chemicals and waste and will also advise owners and operators of CI as to on-site chemical and waste stored within one hundred (100) feet of their CI.

8.1.2 Material Handling, Storage, and Use

The following procedures provide a process for waste management planning and promote the development of more coherent and appropriate waste management. It is the responsibility of each individual on site to follow policies and procedures for managing waste.

- The Contractor will estimate the waste that will be generated prior to work being performed so that the need for containers and waste removal can be properly determined.

- Any waste materials will be properly stored and handled to minimize the potential for a spill or impact to the environment.
- The Contractor will properly segregate waste materials to ensure opportunities for reuse or recycling.
- All site personnel will be instructed on the proper disposal method for waste. This training will be conducted during the site orientation and conducted by the Site Manager, Construction Manager, or their designee.
- Waste management planning will be continuously reviewed and revised to ensure site safety and to meet regulatory requirements.

8.1.3 Waste Disposal

A Program HASP is provided in Appendix 8-C, and a Submarine Cables Installation and Burial Draft Health and Safety Plan is provided in Appendix 8-D. Waste handling and disposal procedures will be conducted in conformance with the Program HASP provided in Appendix 8-C and the Submarine Cables Installation and Burial Draft Health and Safety Plan provided in Appendix 8-D. Disposal of hazardous waste generated during splicing operations will be conducted in accordance with the VSQG HWMP provided in Appendix 8-B.

8.1.3.1 Sanitary Waste

Onboard sanitary facilities (Marine Sanitation Devices, MSDs) will be present on the Cable Laying Vessels. Sanitary waste from onboard sanitary facilities will be contained and removed from the vessel at appropriate facilities during berthing/ port call. Sanitary waste from portable sanitary facilities will be collected by a licensed sanitary waste management contractor, as required by NYSDEC regulations. To comply with NYS Navigation Law Section 33(e) all Contractor vessels operating on the Hudson River equipped with type I or II MSDs will disable the capability of the MSD to discharge overboard during operations.

8.1.3.2 Solid Waste

The Cable Laying Vessels will be equipped with temporary storage for waste materials. Scrap will be periodically offloaded to shore, for onward transportation to, and proper disposal at, an approved environmental waste handling facility. To further reduce environmental risks associated with construction materials, the following procedures will be implemented:

- Construction materials will be stored in a manner that minimizes exposure to precipitation and runoff.
- Construction materials will be stored in a neat, orderly manner in appropriate containers with appropriate labels.
- Construction waste material and rubbish from the work area will be removed and disposed of at properly licensed facilities.

8.1.3.3 Hazardous Waste

The Cable Laying Vessels will be equipped with temporary storage for any hazardous waste materials produced during cable installation. Small amounts of hazardous waste, including lead waste, are anticipated during cable splicing events and will be collected, labeled appropriately, stored and disposed of in accordance with all applicable regulations. Details regarding the type, anticipated quantities and disposal protocols for all hazardous wastes are included in the VSQG HWMP provided in Appendix 8-B.

To reduce the risks associated with generating hazardous wastes, contractors will be in conformance with the NYSDEC Hazardous Waste Rules and Regulations, and the following procedures will be followed:

- Train and instruct employees and other handlers of hazardous waste on the proper reporting, storage, inspection and handling requirements.
- Separate hazardous waste from normal waste through the segregation of storage areas and proper labeling of containers.
- Use appropriate storage and, when necessary, use New York State Department of Transportation (NYSDOT)-approved transportation containers, along with secondary containment measures.
- Prior to shipping hazardous wastes, verify that the hazardous waste transporters servicing the Project have required licenses, registrations and/or USEPA identification number that the waste is disposed at an approved/licensed facility.
- Transport hazardous waste under a properly completed manifest.
- Follow accurate record keeping requirements as to the quantity and nature of hazardous wastes generated onsite.

8.1.4 Petroleum Pollution Plan

To prevent potential releases of petroleum in the Hudson River or other inland waters, Certificate Holders and their contractors will adhere to a SPCP, provided as Appendix 8-A to this EM&CP, during construction to ensure that appropriate measures are taken to avoid such releases and to ensure that proper authorities are informed of any incident giving rise to pollution, or threat of pollution, of the aquatic environment, as well as the need for assistance and salvage measures, so that the appropriate action may be taken. Petroleum pollution prevention measures are also summarized in the OSCP, provided as Attachment A to Appendix 8-A, and the SOPEP, provided as Attachment B to Appendix 8-A. Petroleum pollution prevention measures implemented by the Contractor include, but are not limited to:

- Readily available emergency ‘spill kit(s)’ on the Cable Laying Vessels, crew boats, tug boats.
- Fuel stocks onboard will be kept to a practical minimum.

- Equipment and storage tanks will be designed to minimize discharge or release potential and will be equipped with secondary containment.
- Petroleum products and chemicals will be stored in original, properly labeled, containers.
- SDS for petroleum products and chemicals will be maintained on each vessel.
- Employees and other handlers of petroleum products and chemicals will be trained on proper reporting and handling requirements.
- Vessels will be monitored and maintained to reduce the risk of potential leakage.
- Any vessels that are leaking oil, fuel, or hydraulic fluids that cannot be immediately repaired will be taken out of service and repaired.
- Any equipment that is leaking pollutants will be isolated and repaired, or taken out of service if repair is not possible.
- Washing active vessels of any oils or chemicals into the surrounding waters will not be allowed.

As an emergency contingency measure, the Contractor will pre-arrange for a US based Oil Spill Removal Organization (OSRO) to be available on 'call-out' basis to provide professional clean up support.

8.1.5 Operational Spills

An "operational spill" is any potential spill of petroleum, hazardous material, or other reportable waste directly released by the Construction Contractor during construction activities. Immediately following an operational spill, the Site Manager and crew members will initiate action to protect the crew, secure the vessel, stop the flow, control, or contain the spill, and notify as per contact instructions. The Contractor's emergency response team will provide practical support required to assist the vessel team in dealing effectively with the incident. Emergency spill response is outlined in the SPCP (Appendix 8-A), OSCP (Attachment A to Appendix 8-A), and SOPEP (Attachment B to Appendix 8-A) and summarized in Section 8.1.6 below.

8.1.6 Spill Response and Cleanup Procedures

In the event of a spill release, the appropriate spill response and cleanup procedures should be followed in accordance with the Contractor's emergency response plans and policies. The NYSDEC Spill Hotline (1-800-457-7362), the Environmental Protection Agency (EPA) National Response Center (1-800-424-8802), and DPS Staff (Chase Chaskey; Chase.Chaskey@dps.ny.gov), as appropriate, will be called as soon as possible following identification of a spill. If the amount of spill discovered is greater than five gallons, the NYSDEC Spill Hotline must be called. In the event of a spill, the following general procedures shall be followed:

- Ensure safety;

- Stop the flow;
- Secure the area;
- Contain the spill;
- Notify and report;
- Clean-up.

Refer to the SPCP in Appendix 8-A for additional spill response procedures.

8.1.7 Unanticipated Hazardous Material Discovery

During construction activities, incidental discovery of hazardous material or reportable quantities of petroleum product not directly released by the Construction Contractor may occur. If evidence of unanticipated hazardous materials is found during construction, construction activities will be stopped immediately in that immediate area and containment measures will be deployed if safe and practicable to do so and the Environmental Inspector will be notified. The Environmental Inspector will report the unanticipated encounter of contaminants or reportable quantities of petroleum to CHPE personnel, who will notify the NYSDEC and NYSDPS staff, the landowner (if applicable) and the EPA National Response Center (1-800-424-8802), as appropriate. If the material discovered is greater than five gallons, the NYSDEC Spill Hotline (1-800-457-7362) must be called. Construction will not be resumed until the appropriate authorities have issued an approval to continue construction activities in the area. Any future construction activities at the referenced site will be conducted in accordance with conditions specified by NYSDEC.

8.1.8 Notification and Reporting

In the event of a spill, the appropriate Project contacts and regulatory agencies must be notified. Notification and reporting of the spill will be completed in accordance with the Contractor's emergency response plans and policies, as well as applicable laws and regulations and the Certificate.

8.2 Cultural Resource Impact Mitigation

The route has been designed to avoid submerged cultural resources to the extent possible, as previously described in Section 3.3.1. An overall evaluation of underwater cultural resources identified in the vicinity of the proposed cable route is provided in Appendix C (Final Report for the Underwater Cultural Resource Review of the Champlain Hudson Power Express, Hudson River Segment Investigations) to the Supplemental Cultural Resource Management Plan (SCRMP), included as Appendix 8-E of this EM&CP. Construction activities will follow the procedures outlined in the SCRMP, attached as Appendix 8-E to this EM&CP. Should an unanticipated cultural resource discovery be encountered during Project construction, the procedures outlined below will be implemented.

8.2.1 Unanticipated Cultural Resource Discovery

The Offshore Unanticipated Cultural Resource Discovery Plan, included as an attachment to the Cultural Resource Management Plan, which is Appendix D of the Supplemental Cultural Resource Management Plan (Appendix 8-E), outlines the procedures to be implemented during submarine cable installation in the Hudson River should potential cultural resources be incidentally discovered. The specific procedures for the unanticipated discovery of archaeological resources or human remains during the Project's construction were developed in accordance with federal and state guidelines, as outlined in the Offshore Unanticipated Cultural Resource Discovery Plan. The Certificate Holders will respond promptly to complaints of negative archaeological impacts during the Project's construction and will consult with the State Historic Preservation Office (SHPO), the Advisory Council on Historic Preservation (Council), Native nations, and other appropriate parties identified in the Offshore Unanticipated Cultural Resource Discovery Plan to resolve adverse effects on historic properties and determine the appropriate avoidance, treatment, or mitigation measure.

8.3 Invasive Species Management

Invasive aquatic plant and animal species have been observed within or in the vicinity of the proposed cable segments in the Hudson River. Invasive species that may be present within or surrounding the Cementon-Stony Point and Congers-Harlem Hudson Marine Segments are listed below.

Hudson River Invasive Species:

- Aquatic plant: Water chestnut (*Trapa natans*) and Eurasian water-milfoil (*Myriophylum spicatum*).
- Animal: Zebra mussel (*Dreissena polymorpha*), Spiny Water Flea (*Bythotrephes cederstroemi)*, Rusty Crawfish (*Faxonius rusticus)*, and Chinese mitten crab *(Eriocheir sinensis)*.
- Insect: Spotted lanternfly (*Lycorma delicatula*).

Numerous invasive aquatic plant and insect species may occur at installation sites on the Hudson River, beyond those listed above. The Certificate Holders have developed an Invasive Species Control Plan, included as Appendix 8-F of this EM&CP, which identifies invasive species monitoring and control measures to be implemented along marine portions of the CHPE Project.

Per Article VII BMP Section 21.4 in the Aquatic Invasive Species Management Plan, the Certificate Holders will ensure careful inspection and wash-down of construction equipment and vessels to prevent or control the transport of Zebra Mussels and Spiny Water Fleas. The Certificate Holders will also adhere to Article VII BMP Section 21.4 in the Aquatic Invasive Species Management Plan by avoiding submerged plant beds, as well as careful inspection and cleaning of vessels and submerged construction equipment to prevent or control the transport of water

chestnut and Eurasian water-milfoil. Refer to Appendix 8-F for additional invasive species management procedures.

8.4 Rare, Threatened, and Endangered Species Impact Mitigation

Previous consultations between the United States Department of Energy (DOE) and National Marine Fisheries Service (NMFS) conducted in 2014 and updated in 2021 concluded that the effects of the proposed Project will be insignificant or discountable and that the CHPE Project is not likely to adversely affect any Endangered Species Act (ESA)-listed species or critical habitat.

The potential presence of aquatic threatened or endangered species along the cable route was identified as part of the Article VII Application. For the Hudson River, the aquatic species identified as threatened by the State of New York include the Shortnose sturgeon (*Acipenser brevirostrum*) and the Atlantic sturgeon (*Acipenser oxyrinchus*). All appropriate avoidance and mitigation actions recommended by NYSDEC will be undertaken by the Certificate Holders to protect the identified species.

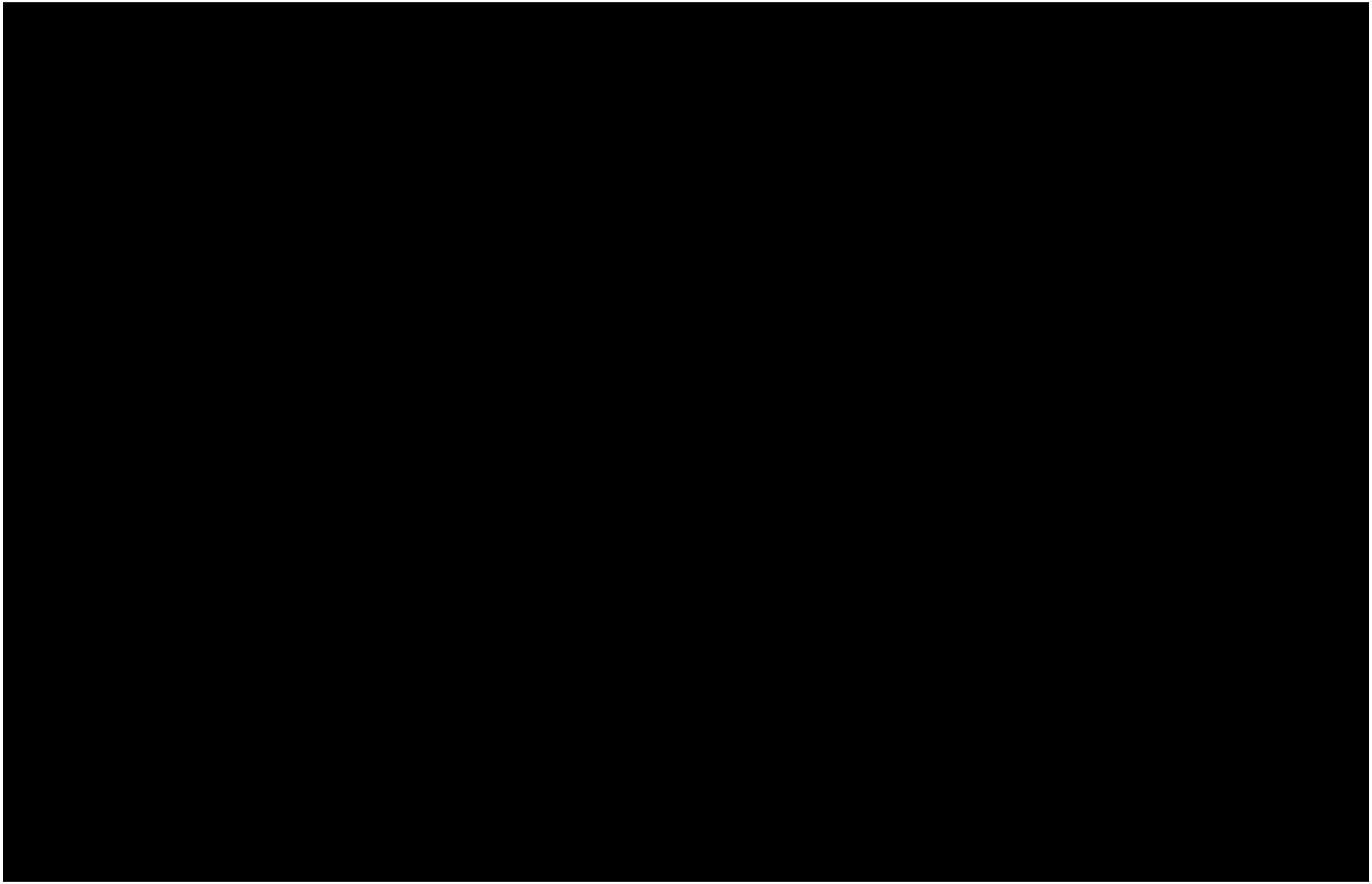
On November 13, 2023, the Certificate Holders submitted a Project screening request to the New York Natural Heritage Program (NYNHP) for information on State-listed rare, threatened, or endangered species that may occur along or near the Hudson River cable installation route. On February 13, 2024, a response from the NYNHP was received. The NYNHP provided a list of animals listed by NYS as endangered, threatened, or special concern, as well as rare and listed plants, significant natural communities, significant animal assemblages, and rare unlisted animals, that occur in proximity to the proposed cable route in the Hudson River. A total of 14 state-listed endangered, threatened, or special concern animal species were identified within 0.5 miles of the proposed cable route in the Hudson River. These species are presented in Table 8.1 below. A total of 148 rare or listed plants, significant natural communities, significant animal assemblages, or rare unlisted animals were identified within 0.5 miles of the proposed cable route. For brevity, only those species within 0.1 miles of the CHPE cable route are presented in Table 8.2 below. The NYNHP correspondence and complete list of identified species can be found in Appendix 1-C, Agency and Stakeholder Consultations.

Table 8.1 – State-listed Animal Species within 0.5 miles of the Cable Route in the Hudson River

[redacted]

Table 8.2 – Rare/Listed plants, Significant Animal Assemblages, and Significant Natural Communities within 0.1 miles of the Cable Route in the Hudson River

[redacted]



Based on the nature of cable installation activities, significant impacts to these Significant Natural Communities, rare species, and State-listed threatened and endangered species are not anticipated. Installation activities will take place within the Hudson River with little to no disturbance occurring above the water surface. Mattresses will be installed away from the river shore at significant depths. Should any concerns arise during project construction, appropriate avoidance and mitigation actions will be taken to protect these identified species as recommended by the NYSDEC.

Consistent with CC 52, the Certificate Holders will promptly notify DPS Staff, NYSDEC, and the United States Fish and Wildlife Service (USFWS) or NMFS, if applicable, if any threatened or endangered wildlife species under 6 N.Y.C.R.R. Part 182 or any rare, threatened or endangered plant species under 6 N.Y.C.R.R. Part 193 are observed to be present in the Facility. The agencies notified will determine the appropriate measures to be taken to avoid or minimize impacts to such species. If necessary to avoid or minimize impacts to such species, or as directed by DPS Staff, the Certificate Holders shall stabilize the area and cease construction or ground disturbing activities in the Facility area until DPS Staff have determined that appropriate protective measures have been implemented.

Further, the Certificate Holders will promptly notify DPS Staff and NYSDEC if a New York State listed species of special concern is observed to be present in the Facility area, in accordance with CC 51.

Protection measures, as generally described below, will be implemented to ensure minimization and mitigation of impacts to environmentally sensitive aquatic species and their habitats. These measures were taken from the 2013 BMP Document and Certificate Conditions.

- The Certificate Holders have worked closely with federal and state agencies to establish measures prior to construction to minimize impacts to aquatic species.
- All in-water work will be conducted within the applicable time windows (or as amended and approved by the applicable regulatory agencies, as noted above).
- Environmental training for contractors and construction crews will be required.
- Spill response and mitigation procedures will be implemented in the case of any accidental spills of chemical, fuel, or other toxic materials, as specified in the SPCP in Appendix 8-A.
- The Environmental/Aquatic Inspector will have the authority to modify or suspend construction if any threatened or endangered species are impacted in any way by construction activities.
- Construction machinery and equipment will be well maintained and checked daily for leaks.

Finally, in accordance with the Joint Proposal and Certificate, CHPE has established the "Hudson River and Lake Champlain Habitat Enhancement, Restoration, and Research/Habitat Improvement Project Trust ("the Trust") solely for the purposes of protecting, restoring, and improving aquatic habitats and fisheries resources in the Hudson River Estuary, the Harlem and East Rivers, Lake Champlain, and their tributaries, in order to minimize, mitigate, study, and/or compensate for the short-term adverse aquatic impacts and potential long-term aquatic impacts and risks to these water bodies from Facility construction and operation" (CC 165). This $117 million trust will provide significant environmental protection funding over a 35-year period to improve and enhance the Hudson River, among other water bodies. Thus, to the extent that construction associated with this Segment results in impacts to aquatic species or their habitat, those impacts have been mitigated as required by the Certificate.

9.0 Public Health and Safety

The following sections describe procedures for the protection of public health and safety to be implemented before, during, and following installation of the submarine cable in the Hudson River.

9.1 Protection of Navigation

Extensive study of potential impacts of the Facility's construction and operation on navigation was conducted in connection with federal permitting for the CHPE Project. This included preparation of a Navigation Risk Assessment (NRA) in 2016 for all water bodies, with which the USCG concurred and which was accepted by ACOE. An updated NRA specific to the Hudson River, incorporating more recent data and information in the intervening years since the original NRA was prepared, and assessing the specific route proposed in this Segment 19B, is attached hereto as Appendix 3-E, Navigation Risk Assessment. By means of independent analysis of the navigation conditions, present and future, the NRA authors, Intertek, have recommended a safe burial depth for each waterbody and section of the Considered Route. For the Hudson River Intertek concluded in the 2024 NRA that, at a general installation depth of seven (7) feet, "protective measures to be employed under the Certificate and the Corps Permit are sufficiently robust to ensure that the residual risk to navigation in these waterbodies is negligible."

Further, the Certificate Holders have actively worked with the USCG to determine which federal ATON require relocation to accommodate installation activities and the timing and methods for the USCG to complete these relocations. Table 9-1 identifies the Federal ATON that will need to be temporarily relocated to accommodate construction.

Table 9.1 – Temporary Relocation of Aids to Navigation

BUOY ID
Hudson River Lighted Buoy 3
Hudson River Lighted Buoy 11
Hudson River Lighted Buoy 13
Hudson River Lighted Buoy 27
Hudson River Lighted Buoy 33
Hudson River Lighted Buoy 60
Hudson River Lighted Buoy 67
Hudson River Lighted Buoy 76
Hudson River Lighted Buoy 78
Hudson River Lighted Buoy 80
Hudson River Lighted Buoy 82
Hudson River Lighted Buoy 82
Hudson River Lighted Buoy 87
Hudson River Lighted Buoy 94
Hudson River Lighted Buoy 98

Underwater activities will be undertaken in a manner that minimizes the potential for interference with navigation. To protect navigation on the Hudson River, the following measures will be implemented:

- A Local Notice to Mariners (LNM) will be submitted to the USCG for issuance minimum of 30 days prior to the start of the marine field operations.
- LNM will be published and publicly available on the USCG Deputy Commandant for Operations' website through USCG District 1.
- Daily work location, minimum passing clearance request, and all other relevant information will provided and made available to USCG Sector New York Vessel Traffic Service (VTSNY).
- Security calls issuing navigation warnings will be broadcast via marine VHF radio as required by the USCG.

- Courtesy notifications will be provided to emergency services and law enforcement that are local to Project operational sites (if any). Construction vessels will monitor VHF channels 13, 16, and the Project work channel during Project-related activities.
- Vessels will post standard day shapes and lighting in accordance with the International Regulations for Preventing Collisions at Sea (ColRegs) and U.S. Inland Navigation Rules (Rules of the Road).
- Update notifications will be made to VTSNY when required.
- Certificate Holders will coordinate with the USACE concerning planned USACE dredging activities in the Hudson River.
- Certificate Holders will comply with all requirements for provision of as-built data to appropriately chart obstructions.

The Certificate Holders will continue to work with the USCG to avoid and minimize potential impacts to navigation traffic, or risks among vessel traffic, during construction. Where appropriate, CHPE will utilize additional activities to mitigate navigation risk, such as: automatic identification system (AIS) on key vessels; a 2-week look ahead schedule with VTSNY; posting the construction schedule to a public website and additional communication (email) to affected mariners beyond that already required by CHPE's federal permits.

9.2 Bridge Crossings

The cable route to be installed in the Hudson River traverses beneath six (6) active bridges: the Kingston-Rhinecliff Bridge in the Town of Kingston, NY; the Walk-Way Over the Hudson (Bridge) in the Town of Poughkeepsie, NY; the Mid-Hudson Bridge in the Town of Poughkeepsie, NY; the Newburgh-Beacon Bridge in the Town of Newburgh, NY; the Purple Heart Veterans Memorial Bridge in the Town of Fort Clinton, NY; and the Gov. Mario M. Cuomo Bridge in the Town of Nyack, NY. Travel across each bridge will be maintained throughout the duration of construction. If necessary and as directed by bridge owners, inspection of bridge foundations will occur as described in Section 7.5 above. Where bridge owners, such as the New York State Thruway Authority, require ministerial permits for work conducted near or beneath a bridge, those permits will be obtained and filed with the Secretary. Construction of the Facility has been designed to avoid impacts to bridges or bridge foundations from vessels, cable installation activities, and pre- and post-lay activities. See also Appendix 9-A, Bridge Plan and Profile Drawings.

9.3 Public Water Supply Intakes

In accordance with CC 102 and 150, CHPE completed in-water surveys and consulted with the New York State Department of Health (NYSDOH) to identify PWS within the vicinity of the routing. Seven PWS facilities were identified as being within one mile of the CHPE alignment in the Hudson River. For six out of seven of the facilities, CHPE scheduled meetings with PWS intake owners which reviewed a variety of topics including but not limited to the location of intake structures(s), plant operations, raw water quality parameters of concern including turbidity, and

appropriate notification procedures. The seventh facility, Castle Point Veterans Administration Medical Center, did not respond to multiple requests for consultation. However, the NYSDOH has stated that although the Castle Point Veterans Administration Medical Center is still open, the water intake for the facility is no longer in use.

Based on this consultation, CHPE developed a PWS Protection and Contingency Plan, which is provided as Appendix 9-B of this submission. Key areas discussed in this Plan include:

- Notification measures
- Pre- and post-installation water quality assessment
- Communications planning
- Contingency planning
- Emergency response planning

In addition to this formal consultation, CHPE completed substantial consultation spanning several years with Hudson River Drinking Water Intermunicipal Council (Hudson 7), whose membership consists of the Town of Esopus, Town of Hyde Park, Town of Lloyd, City of Poughkeepsie, Town of Poughkeepsie, Town of Rhinebeck and Village of Rhinebeck. The previously discussed Voluntary Pump Study (Appendix 7-G) and Voluntary Sediment Study (Appendix 7-H) were developed by a working group comprised of CHPE and Hudson 7 technical staff. Additional information on consultations with the Hudson 7 is included in Appendix 1-D, Public Involvement Plan.

9.4 Noise

The Hudson River is a busy, marine thoroughfare that experiences ship traffic 24-hours a day, 365 days a year. Construction activities associated with cable installation in the Hudson River will not materially change the acoustic environment within or adjacent to the Hudson River.

Noise sensitive receptors that may be impacted by Hudson River cable installation activities are limited to those in occupied areas along the shoreline of the Hudson River, and primarily those located near splicing locations where vessels may be stationary for a period of 7-10 days. During construction, there may be a temporary increase in noise levels at nearby sensitive noise receptors; however, there will be no permanent increase to noise levels once construction is complete. Noise due to construction and installation of the submarine cable will be temporary in nature and primarily will occur on the Hudson River, which already hosts commercial and recreational shipping traffic which generate some noise to nearby receptors. Temporary noise impacts will vary due to the type of equipment in use at any given time, and due to the existing ambient noise at any given working hour and location. Table 9.2 summarizes the types of equipment to be used during construction and their standard noise level. Residents and businesses may be temporarily affected by noise from construction activities, but such impacts will be temporary, as installation vessels pass by each location, and minimized to the extent practicable for the type of work involved, as confirmed in the Article VII Certificate Order.

Table 9.2 – Noise Impact Summary

Type of Equipment	Equipment Noise Level at 50 feet, dBA
Crane	81
Compressor	67
Generator	78
Winch	78

All noise generated by the construction of the Project will be temporary and, therefore, impacts on any noise receptors will also be temporary.

During construction, vessels are only anticipated to be stationed in the same location occasionally (such as during splicing or mattressing). Installation vessels are equipped with numerous sound mitigation measures, as discussed below, as part of vessel design. Given these vessel characteristics, distances to receptors, and the mobile and temporary nature of most construction for this segment, elevated noise volumes generated by the Project are not expected.

The closest sensitive receptors to those locations in the Hudson River where vessels are anticipated to be stationed in the same location for more than a brief period are shown in Table 9.3 below.

Table 9.3 – Sensitive Receptors Near Splicing and Pull-In Locations

Location	Approx. MP(RM)	Approx. Time Present (days)	Latitude	Longitude	Approx. Distance to Closest Residence (ft)
Cementon (Pull-in)	0.0-1.2 (107)	4	42.140078	-73.909086	3,372
Splice 1 (Hudson River)	22.5 (85)	7	41.841186	-73.949005	1,949
Splice 2 (Hudson River)	46.2 (62)	7	41.518605	-73.996719	2,598
Stony Point (Tie-in)	66-67.1 (41)	6	41.247070	-73.975629	2,587
Congers (Pull-in)	0.0-1.2 (34)	6	41.161215	-73.919295	4,141
Splice 3 (Hudson-Harlem River)	21.1 (14)	7	40.87915	-73.927056	1,347

The following noise control measures are already present on the installation vessels and will be employed during construction to minimize noise related impacts to nearby noise sensitive receptors:

- The installation vessels are equipped with factory standard mufflers and/or best available technologies for noise-related purposes. In addition to factory standards, the following equipment have been optimized to reduce noise effects:
    - Generators with large mufflers and sound attenuated enclosures;
    - Engine and hydraulic power unit (HPU) for dynamic positioning (DP) thrusters employed with large mufflers and within enclosures;
    - Sound attenuated enclosure for water pumps; and
    - Cranes, winches on deck are hydraulic electric with low sound effect.

Furthermore, equipment such as generators, pumps and winches are located on the interior of the vessel spread(s), as feasible, which provides barriers and/or enclosures which dampen or block sound produced by that equipment. The surrounding perimeter of the vessel spread is generally occupied by offices, tool containers, and other pieces of equipment or structures that may act as a barrier to reduce the “direct line of sound” to receptors.

During the post-lay and remedial mattress installation campaign, the vessel(s) will be stationary at CI crossing locations for brief periods of time in order to install either post-lay or remedial mattresses. During this time, the vessel will be equipped with best available technologies for noise related purposes. The equipment onboard the mattress installation vessel includes the following equipment which are all hydraulically operated which reduces their overall noise impact:

- Knuckle boom crane 1 x McGregor knuckle boom
- Deck crane 1 x Appleton eb70-53-33
- ROV 2 x Schilling HD 150 hp work class

There are no deck-mounted generators onboard the vessel utilized for the post-lay and remedial mattress campaign, further reducing potential noise impact to surrounding receptors.

The Contractor(s) will be responsible for ensuring that all construction tools and equipment have been maintained such that they operate at normal manufacturer’s operating specifications, including at peak loading. The Contractor will also be responsible for identifying the schedule of activities that will take place during Project construction.

Installation operations will occur on a 24/7 schedule. Appropriate mitigation and noise suppression measures, as outlined above, will be employed to minimize impacts to nearby

sensitive receptors. This will include notification to DPS and local municipalities that work is anticipated during nighttime, weekend, and/or holidays in the Hudson River. While nighttime work may result in brief, temporary noise impacts to nearby sensitive receptors, the use of a 24/7 schedule for these tasks will enable the Certificate Holders to complete the work as expeditiously as possible, which will aid in limiting the duration of the disruption to the maximum extent practicable. Beyond that, the noise suppression and minimization measures outlined herein will further avoid and minimize noise-related impacts to sensitive receptors.

During review and approval of the CHPE Project, the PSC and the parties to the Joint Proposal acknowledged that construction of the Facility will result in temporary noise impacts, and that reasonable noise mitigation measures will be employed to minimize these impacts to the maximum extent practicable. Those minimization measures are reflected in this section of the EM&CP and are consistent with the BMPs developed for the Project during the Article VII process (see BMPs Section 25 and Joint Proposal Paragraph 89). Certificate Condition 159(ll)'s requirement of a noise mitigation plan refers to developing such a plan to address noise sensitive sites along the Facility Right of Way (ROW) to address noise impacts during clearing, construction, and operation. The Certificate Holders submit that the scope of this EM&CP—installation of HVDC cable in the Hudson River, work which is temporary and mobile—does not warrant further development of a noise mitigation plan beyond the measures already identified within the EM&CP (installing improved mufflers on equipment, utilizing low noise technologies as appropriate, providing advance notice to municipalities of upcoming nighttime work, etc.), and that the measures proposed are consistent with the Certificate, Joint Proposal, and BMPs as written.

9.5 Lighting

Construction operations are expected to be completed during both daylight and nighttime, as required by scheduling, safety, and/or operational purposes. The Certificate Holders and/or Contractor will inform the DPS and local municipalities in advance of nighttime operations. During nighttime operations, deck lighting will be used to illuminate the cable installation vessel only as necessary to ensure safety and security of the crew onboard the vessel. Appropriate mitigation measures will be employed to minimize impacts to abutters and nearby sensitive receptors, such as:

- Lighting will be positioned and oriented to avoid and minimize impacts to nearby sensitive receptors to the greatest extent feasible (e.g., light towers will be set up to illuminate the work area but not shine light directly in the direction of the sensitive receptors adjacent to the vessel).
- During nighttime construction activities, vessels would be outfitted with identification lights and working decks would be illuminated for safety.
- Lights would not be directed into surrounding waters, thereby reducing the potential for effects on benthic communities and fish.

9.6 Electromagnetic Fields (EMF)

The transmission facility in the Hudson River has been designed and will be constructed such that, to the extent applicable, operation of the facility will comply with the interim electrostatic field standard established by the Commission in Opinion No. 78-13 (issued on June 19, 1978 in Cases 26529 and 26559) and the limit for magnetic fields set in the Statement of Interim Policy on Magnetic Fields of Major Electric Transmission Facilities (issued on September 11, 1990 in Cases 26529 and 26559). . Required information concerning EMF calculations for the Project, were submitted in Exhibits B, C and D and Appendix A and B to the Certificate Holders' January 29, 2021, Petition for an Amendment to Certificate of Environmental Compatibility and Public Need (DMM Item 819).

10.0 Decommissioning

The permanent Project components involved in the Segment 19B EM&CP are all below-water infrastructure, including submarine cables and concrete mattresses. As such, the Certificate Holders will not remove these below-water components in the event that the Project is deenergized at some future date (CC 162k), particularly given that removal of these components may have a greater adverse impact on the environment than leaving these components in place. Given the size and scale of the proposed HVDC facility in the Hudson River, the continued presence of below-water infrastructure is not anticipated to pose a concern to the environment, future land use, and/or future utility uses following de-energizing of the Project. Therefore, the decommissioning plan for the HVDC facility in the Hudson River will be to leave all components in place (CC 162k).

11.0 References

Lake Champlain Maritime Museum. 2023. Final Report for the Underwater Cultural Resource Review of the Champlain Hudson Power Express, Hudson River Segment Investigations.

U.S. Coast Guard. 2023. Vessel Traffic Service New York User's Manual. Revised January 2023. https://homeport.uscg.mil/Lists/Content/Attachments/80389/VTS%20User's%20Manual%20Feb%202023%20Final.pdf. Accessed November 20, 2023.