Appendix 9-A: Lake Champlain Public Water Supply Protection and Contingency Plan

LAKE CHAMPLAIN PUBLIC WATER SUPPLY

PROTECTION AND CONTINGENCY PLAN

1.0 Introduction

1.1 Introduction

CHPE, LLC (CHPE) has prepared this Public Water Supply Protection and Contingency Plan (Plan) to ensure the protection of Public Water Systems (PWS) during the installation of the Champlain Hudson Power Express transmission system (Project) in Lake Champlain. It is designed to be compliant with certification conditions (CC) set forth by the New York State Public Service Commission (Commission), specifically conditions 102 to 106 and CC 150.

In accordance with CC 102 and 150, the New York State Department of Health (NYSDOH) was contacted to identify PWS within the vicinity of the Lake Champlain Marine Segment. Table 1 below shows the five water intakes identified within Lake Champlain by NYSDOH. Two PWS (Village of Rouses Point and Town of Essex) have been identified within one mile of the CHPE alignment in Lake Champlain and therefore consultation was completed pursuance to CC 150. Based on CC 150 as well as the pre-installation suspended sediment trial described in Section 2.2, consultation was not completed with the other three PWS facilities.

Table 1: Public Water Systems Drawing upon Lake Champlain

Water Department	Distance to CHPE Alignment	Notification Required
Rouses Point	0.42 miles	Yes
Port Kent	1.21 miles	No
Willsboro	Separate bay	No
Essex	0.99 miles	Yes
Crater Club	1.18 miles	No

1.2 Consultation

In accordance with CC 150, CHPE completed consultation with the Chief Plant Operator at Rouses Point on September 14, 2023 and the Water / Wastewater Operator at Essex on September 15, 2023 (collectively, PWS Operators). During these conversations, the Project's installation process was described as well as the geographic proximity of the installation route to the intake. The PWS Operators were specifically asked about:

- The location of intake structures(s),
- Plant operations,
- Raw water quality parameters of concern including turbidity, and
- Appropriate notification procedures

Other topics discussed included pre-construction and post-construction water testing as laid out in CC 106 and consultation as to what operational controls, if any, would be appropriate given the PWS facilities capabilities as required under CC 105.

The Plan as presented below incorporates the consultations with the PWS Operators in Lake Champlain. There will be a specific Hudson River PWS Protection and Contingency Plan which will reflect the concerns of those operators.

2.0 Pre-Construction Field Activities and Results

2.1 PWS Utility Location

In accordance with CC 102, CHPE reviewed nautical charts and multiple marine surveys conducted over the course of the Project's development to identify potential PWS structures in the vicinity of the transmission route. A marine route survey was performed by Ocean Surveys, Inc. in the Fall of 2012 along all submerged segments of the CHPE alignment, including Lake Champlain. The purpose of this study was to evaluate lake and river bottom conditions along the CHPE alignment and locate existing submarine utilities. Survey equipment used to locate utilities included multibeam and side scan sonar and magnetometer scans. Further surveys along the planned submarine cable route were performed during 2022 and 2023, which were supplemented as necessary by diving crews in an attempt to physically and visually locate existing utilities along the CHPE alignment.

CHPE also consulted with PWS operators to obtain the location of their intakes. Based on this prior work, CHPE is confident that the location of all PWS intakes which draw water from Lake Champlain have been located.

2.2 Suspended Sediment / Water Quality Pre-installation Trial

Pursuant to CC 159, CHPE completed suspended sediment monitoring to assess the levels of sediment resuspension from the jet and shear plow operations during the pre-installation trials in Lake Champlain. The intent of the TSS sampling during the trials was to monitor sediment plumes from the jet and shear plow operations for potential exceedance of total suspended solids (TSS) standards set forth in the Project's 401 Water Quality Certificate (WQC). A copy of the final report is provided in Appendix 7-C of this EM&CP.

The PWS facilities are located north of Crown Point, which is identified as the Upper Lake. The pre-installation jet plow trial occurred along a 1,000-foot route in Upper Lake on August 31, 2022. All TSS levels from samples collected at the Upper Lake site before, during, and after the trial (N = 39 samples) had TSS values below the detection limit ("BDL") of the laboratory analysis. The TSS levels for this trial were generally indistinguishable from ambient TSS levels (where detectable) and it appears likely that any sediments that are resuspended due to the plow operations either do not remain in suspension very long and/or do not form a "plume" because of the weak currents observed at the Upper Lake trial location. Similar results were reported for the Lower Lake, although neither of the two PWS within one mile of the transmission line are located in this portion of the lake.

2.3 Pump Test in the Hudson River

In early 2022, CHPE and the Hudson River Drinking Water Intermunicipal Council (Hudson 7) initiated a series of discussions related to the potential impact of the Project construction on the five drinking water plants which relied upon water from the Hudson River. The Hudson 7 requested that during the previously described suspended sediment study a pump be placed within proximity of the installation in order to simulate the operation of a PWS during the jet plow operation. After confirming a study site location, a pump was placed on a barge located 160 feet from the pre-installation trial, which represented the closest distance at that time between an intake and the cable route. Subsequently, CHPE has shifted the transmission cables so that the closest distance is 220 feet.

Sampling took place for approximately two (2) hours ahead of the trial start, then continued for two hours post-trial. Field testing for turbidity and pH was conducted every fifteen minutes at the pump and water samples to be submitted for laboratory analysis were collected every 30 minutes. In addition, samples were collected from five locations within the river at intervals of approximately one-quarter mile.

Based on the guidance thresholds recommended by the Hudson 7 prior to the initiation of the study, 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. The findings for semi-volatile organics, metals, and PCBs also fell within the acceptable range of values according to existing state guidance, including state water quality standards. Elevated values were shown to decrease to “non-detect” levels within 1.5 to two hours after the jet plow operation. While this study was not conducted in Lake Champlain, the results of this work combined with those of the previously discussed suspended sediment study, combined with the understanding that Lake Champlain does not have the same levels of sediment contaminants as found in the Hudson River, strongly suggest that the potential time period of concern in terms of water quality is less than one and a half hours.

2.4 EM&CP Notification

Pursuant to CC 103, the PWS facilities identified in Table 1 were provided with notice that the EM&CP associated with this Plan is available for review.

3.0 Protective Measures

3.1 Pre-Construction

The following protective measures will be completed prior to construction occurring within one mile of the PWS facilities.

3.1.1 Notification

In accordance with CC 104, the PWS Operators will be notified by CHPE at least thirty days prior to commencement of underwater cable installation operations (i.e., grapnel run and cable installation).

In addition, the PWS Operators asked to be notified of the location of the construction vessels one week, two days, and one day prior to the expected date of work within one mile of each PWS' intake. The PWS Operators requested that this notification be sent via email. See Section 4 below for the overall communication plan.

3.1.2 Background Water Quality Assessment

In accordance with CC 106(a), CHPE will contract with a third party to collect one (1) raw water sample no more than twelve (12) hours prior to in-water operations occurring in proximity to the intake structure. Samples collected shall be analyzed for total metal concentrations with United States Environmental Protection Agency (EPA) Method 200.8. The third-party contractor will coordinate access with the PWS Operators at least 15 days prior to the expected collection date.

3.2 Construction

The following protective measures will be completed while construction is occurring within one mile of the PWS facilities.

3.2.1 Water Quality Monitoring in Lake

During construction of the Project, CHPE will employ construction oversight staff as required by the Certificate and to ensure that all regulatory requirements, plans, and specifications are appropriately met. At least one Aquatic Inspector will be on the installation vessel or barge for underwater installation procedures. It is the Aquatic Inspectors' 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.

During jet plow and shear plow cable installation, CHPE will sample five hundred (500) feet up-current and five hundred (500) feet down-current of the installation vessel(s). Samples will be collected twice daily at near-surface, mid-depth, and near bottom at each sampling location. The ADCP, OBS, and CTD instruments will be calibrated to measure TSS concentrations through the quantitative relationships with turbidity established in the pre-installation trial described in Section 2.2 of this Plan.

If TSS concentrations monitored or measured at a down-current sampling location exceed TSS concentrations at an up-current background station by more than two hundred (200) mg/L, the Aquatic Inspector will be notified immediately and will also attempt to notify the New York State Department of Environmental Conservation (NYSDEC) and Department of Public Service (DPS) within twenty-four (24) hours of any such TSS exceedance. CHPE will employ one or more of the following measures: changing the rate of advancement of the jet plow, modifying hydraulic pressures (if in jetting mode), or implementing other reasonable operational controls to reduce suspended sediments. If CHPE proposes to employ any additional mitigation measures, they will first consult with the DPS, NYSDEC, and the Aquatic Inspector.

All actions will be consistent with the applicable Certificate Conditions as well as the Water Quality Certificate Condition 14.

3.2.2 Operational Measures

As a precautionary measure, the PWS Operators indicated that they intend to cease drawing water from the lake while the construction activities are within proximity to the intakes. The PWS have storage and/or alternative sources of water that would allow for the systems to shut down for at least a day. CHPE has no authority to compel the PWS Operators to take this action. The PWS Operators did not indicate that installation during nighttime would be a concern.

3.3 Post-Construction Activities

The following protective measures will be completed after cable installation has progressed more than one mile past the intake of each PWS facility.

3.3.1 Post-Construction Water Quality Assessment

In accordance with CC 106(b), CHPE will contract with a third party to collect one (1) raw water sample and one (1) finished sample when construction operations are in proximity to the PWS facility, as well as one (1) raw and (1) finished sample approximate twelve (12) hours after the conclusion of operations in proximity to the intake structure. As with pre-installation samples, the third-party contractor will coordinate access with the PWS Operators at least 15 days prior to the expected collection date.

In accordance with CC 106(c), raw water samples collected will be analyzed for total metal concentrations with EPA Method 200.8 and post-construction samples will be reported using a twenty-four hour turn around to the extent possible based on the timing of collection.

In accordance with CC 106(d), if DPS Staff in consultation with NYSDOH determine that the raw water sample results suggest significant water quality impacts associated with any pre-construction or construction operations, the finished water samples will be analyzed for total metal concentrations with EPA Method 200.8. These results will be reported using a twenty-four hour turnaround.

In accordance with CC 106(e), if the analysis of the finished water sample results indicates that there has been a maximum contaminant level (MCL) violation caused by the installation activities, the CHPE will employ the mitigation measures prescribed in Section 3.2.1 and Condition 14(c) of the WQC in all locations where cable installation operations are within one (1) mile of a water intake structure. Prior to employing any mitigation measures not otherwise provided for in accordance with Condition 14(c) of the WQC, CHPE will consult with the DPS Staff, NYSDEC, and the Aquatic Inspector. In the event that DPS Staff determines that the mitigation techniques are unable to mitigate the MCL violation(s), underwater cable installation shall be suspended, and the CHPE will consult with DPS Staff, NYSDOH, and NYSDEC regarding alternative cable installation techniques and propose such changes to the approved EM&CP in accordance with Condition 158 as may be necessary.

4.0 Communication Plan

Communication can be broken down into three categories: Scheduling Notification, Operational Notification, and Emergency Notification. Each of these communication provisions are provided below.

4.1 Scheduling Notification

The following are the anticipated notifications prior to commencing jet plow operations within one-half mile of the drinking water intakes.

- CHPE will notify operators via email at least thirty (30) days and one week prior to when cable installation is scheduled to be within one-mile of an intake. CHPE will request confirmation that the notification has been received.
- CHPE will notify operators two days prior to the expected date of work within one mile of each PWS intake via email. CHPE will confirm the proposed sampling schedule and, to the extent possible, provide the expected date and time of when construction work will be in proximity to the intake.
- CHPE will notify operators via email the day before the work will occur within one mile of the intake.

4.2 Operational Notification

The following are the anticipated notifications during background sample collection, at the start of jet plow operations, and during jet plow operations within one-half mile of the drinking water intakes:

- The third-party consultant collecting raw water samples will notify CHPE via email upon collection of the background samples.
- CHPE will notify the operators when the installation vessel is within one-half mile of the PWS intake and request that operators confirm that the PWS has been shut down as a precautionary measure.
- CHPE will notify the operators via email when the installation vessel is at least one-half mile away from the PWS intake. CHPE will request confirmation from the operators that notification has been received.

4.3 Emergency Notification

The following are the intended notifications during a threshold exceedance or emergency.

- CHPE will notify the PWS operators if the cable installation has stopped within one-half mile of intake for any reason and update operators when the cable installation operation has resumed.
- CHPE will notify the PWS operators if there has been exceedance of the thresholds established in the WQC. This statement will include a statement about how CHPE will alter their operations in accordance with their WQC and Certificate Conditions.

CHPE will also provide the PWS operators with the telephone number for a 24-hour contact to allow for communications in the event there is an issue related to the PWS operation. CHPE commits to working cooperatively with the PWS operators to resolve issues that may arise.

5.0 Contingency Plan

The installation activities for the Project have the potential to impact Lake Champlain and specifically the near-by PWS via two mechanisms:

- Major Line Break: impact to the intake and/or associated distribution piping to the PWS through anchor drop and/or cable installation.
- Source Contamination: disturbance of sediments may result in turbidity and/or contaminant level that exceed existing water quality criteria.

The proposed monitoring and remedial actions proposed are discussed below.

5.1 Major Line Break

Under this scenario, the installation vessel would either lay the cables or drop anchor on the intake or the distribution line that connects the intake to the plant. This scenario is considered to be highly unlikely as the installation vessels will operate continuously and will necessarily follow the transmission route, which is at least 2,200 feet from the intakes.

5.1.2 Monitoring

All vessels will monitor their position using highly accurate positioning systems that will allow operators to know their position within a matter of feet. All vessels will remain at least 250 feet from any intake and/or the associated distribution line that connects to the PWS facility.

5.1.3 Remedial Actions

In the extremely unlikely event that an installation vessel interacts with a PWS intake system, CHPE will work cooperatively with the PWS operator and Town officials to effect repairs on the distribution system. If the water system will be out of operation for more than a few hours, CHPE will contract with a bulk water hauler and arrange for water to be delivered to the plant, so that normal distribution can continue while repairs are completed.

5.2 Source Contamination

Under this scenario, the installation of the transmission cables would result in waters entering the plant where the suspended sediment and/or contaminant levels are above those normally experienced at the PWS. This scenario is also considered to be highly unlikely based on the pre-installation trials completed

in Lake Champlain and the operational controls (e.g., system shut down) that the PWS operators have proposed to enact while construction is occurring within close proximity to the intake.

5.2.1 Monitoring

During construction activities, turbidity and total suspended solid parameters will be continuously monitored. Turbidity is the measure of anything present in the water that impedes transmission of light through the water and is typically caused by suspended sediments in the water column. While Lake Champlain's background turbidity levels fluctuation through the normal current activity and the depositing of water from tributaries, increases in background levels of turbidity can be an indicator that sediment and potential contaminant materials adhered to the sediment material have been released. Therefore, a comparison of "upstream" with "downstream" turbidity levels serves as an indicator as to whether the construction activities could be having an impact on the PWS.

Laboratory samples will be collected twice per day during installation and at the PWS samples will be collected both before and after construction has occurred in proximity to the PWS. However, due to the processing times the laboratory results will not be available immediately.

5.1.3 Remedial Actions

In the extremely unlikely event that construction results in elevated turbidity levels in the vicinity of the PWS, CHPE inform the PWS operator and request that the PWS remain off-line. CHPE will also have a third-party contractor field sample turbidity and inform CHPE and the PWS operator when this parameter has returned to background levels. Based on existing studies and the known capacity of the two PWS facilities, it is not anticipated that bulk water supplies will be required.

5.3 Response Plan

In the event that either of the two above scenarios occur, CHPE will contact the following via email within one hour of being aware of the situation:

- Plant Operator
    - Rouses Point: Chief Water Plant Operator Bryon A. Gelineault
    - Essex: Water/Wastewater Operator Tina Gardner
- Town Official:
    - Rouses Point Mayor: John J. LaBonte
    - Essex Supervisor: Cheryl Sprang
- New York State Department of Public Service: Chase Chaskey
- New York State Department of Health: TBD