

Lake Encroachment

Individual Permit

Under 29 V.S.A. § 401 *et seq.*



VERMONT DEPARTMENT OF
ENVIRONMENTAL CONSERVATION
WATERSHED
MANAGEMENT DIVISION
LAKES & PONDS PROGRAM

Permittee(s): Champlain VT LLC,
d/b/a TDI-New England
Waterbody: Lake Champlain
Permit Number: 2015-030

Project Description: New England Clean Power Link
(NECPL); Construction, operation, and maintenance of
electric transmission line and fiber optic cable in Lake
Champlain from Alburgh, VT to Benson, VT

Project Location: Lake Champlain,
Alburgh, VT to Benson, VT

Based upon the findings contained in this permit, it is the decision of the Department of Environmental Conservation (the Department) that the project described herein, as set forth in the following findings and in the application on file with the Department, complies with the criteria of 29 V.S.A. § 405 and is consistent with the public trust doctrine, and is hereby approved under the following conditions and specifications.

a. Specific Conditions

1. The Project shall be constructed and operated in accordance with the application received by the Department on July 17, 2015 and in accordance with the additional information received from the Permittee on September 14, 2015 (the Approved Application); and the conditions and specifications of this permit.
 - A. Final Design Plans. At least 90 days prior to the commencement of construction, the Permittee shall submit draft final design plans to the Department for review and approval, and shall identify and assess all potential adverse impacts to natural resources and public trust uses that may be associated with the final design route changes. The Permittee shall submit as-built construction plans to the Department following construction.
 - B. Shoreline Stabilization and Re-vegetation Plan (Benson, Vermont). At least 90 days prior to the commencement of construction, the Permittee shall submit to the Department, for review and approval, plans to complete re-vegetation and stabilization of the severely eroded bank on Lake Champlain, on the property located at 148 Stoney Point Road, Benson, Vermont. The restoration and long-term maintenance plan shall be designed to prevent erosion, improve water quality, and restore shoreline habitat.
 - C. Equipment and Material Staging. Following the Permittee's selection of a marine contractor, and a minimum of 90 days prior to commencement of construction, the Permittee shall submit to the Department a report summarizing the approximate number and size of vessels necessary for Project construction, including the locations where vessels and other project equipment necessary for construction in Lake Champlain will be staged, docked, launched, maintained, and fueled, including an assessment of any additional anticipated impacts, or changes to anticipated impacts from those identified in the Approved Application, on the public good or public trust uses on Lake Champlain. The Permittee shall identify in the report how additional impacts, if any, are addressed, and shall modify the permit as necessary in accordance with Condition b.2. herein.

- D. Aquatic Invasive Species. Prior to placing any equipment (e.g., boat, trailer, vehicle, or gear) that has been in or on any other waterbody other than Lake Champlain into public waters for Project construction or related to Project operation, the Permittee shall inspect and decontaminate the equipment in accordance with the “Aquatic Invasive Species Management and Control Plan, for the New England Clean Power Link HVDC Transmission Project,” as included in the Approved Application.
- E. Water Quality Monitoring Program. The Permittee shall adhere to the “New England Clean Power Link, Lake Champlain Construction Phase Water Quality Monitoring Program,” as included in the Approved Application.
- F. HDD Turbidity Control. The Permittee shall install a coffer dam, receiver casing, or Department approved equivalent barrier, in the lake around the Horizontal Directional Drilling (HDD) in-water HDD entry points as specified in the Project plans, prior to commencement of HDD activity beyond the mean water level (MWL) of Lake Champlain (95.5 feet National Geodetic Vertical Datum 1929). The barrier shall extend above the Lake’s surface and be secured to the bottom of the Lake to contain turbidity during the Project to the immediate vicinity of the in-water HDD entry points. If turbidity is observed beyond the immediate vicinity of the in-water HDD entry point, work shall be stopped immediately and shall not recommence until the source of the turbidity is identified and corrected. The barrier shall not be installed in a way that blocks navigation in a channel, if applicable. The barrier shall remain in place and be maintained until HDD in the related location is complete and observations indicate turbidity within the barrier at the in-water HDD entry point has decreased to the level of turbidity outside the immediate vicinity of the barrier. Any HDD inadvertent returns that occur during Project construction shall be addressed in accordance with the “New England Clean Power Link Project, Horizontal Directional Drilling Inadvertent Return Contingency Plan,” as included in the Approved Application, and as supplemented with an “Area Specific Plan” and “Safety Data Sheets and product information for drilling fluids to be used in the Lake HDDs” as required by “Stipulation between Champlain VT, LLC, the Vermont Public Service Department, the Vermont Agency of Natural Resources, and the Vermont Division for Historic Preservation,” dated July 17, 2015 (“PSB Stipulation”), Attachment II – Environmental Conditions, paragraph 33.
- G. Intake and Utility Avoidance. The Permittee shall avoid all known water intake pipes, dry hydrants, and utilities.
- H. Route Clearing Debris Removal. Woody debris, trees, stumps, historical sawn logs, and rock and boulders encountered during route clearing activities or installation shall be left in Lake Champlain whenever feasible, but outside of the installation corridor and any sensitive habitats identified by the Agency of Natural Resources in advance of construction. Woody debris, trees, stumps, historical sawn logs, and rock and boulders encountered during installation that must be removed shall be returned to the lake as specified in the Agency -approved plan required by “Stipulation between Champlain VT, LLC, the Vermont Public Service Department, the Vermont Agency of Natural Resources, and the Vermont Division for Historic Preservation,” dated July 17, 2015 (“PSB Stipulation”), Attachment II – Environmental Conditions, paragraph 21. Any other material not specified in above, that is permanently removed from the Lake during pre-installation route clearing shall be transported to a dry upland site, non-wetland site, at least 100

feet from the MWL of Lake Champlain, and utilized or disposed of in accordance with applicable local, state, and federal regulations.

- I. Construction Work Windows. The Permittee shall conduct pre-installation route clearing activities and installation in Lake Champlain from MP 1 to MP 74 from June 1 to October 1. The Permittee shall conduct route clearing and installation activities in Lake Champlain between MP 74 and to MP 98 from June 1 to December 31. Route clearing and installation activities are prohibited outside of the foregoing identified dates in the respective Lake Champlain segments. The construction work windows noted within this condition do not apply to the land to Lake HDD activities, provided that the HDD activities are conducted in accordance with Specific Condition a.1.F. of this permit and provided that the in-water HDD activities do not occur before May 1 or after October 1 in the northern portion of Lake Champlain.
- J. Ed Weed Fish Culture Station. The Permittee shall comply with PSB Stipulation, Attachment II – Environmental Conditions, paragraphs 10-13.
- K. Thermal Monitoring Program. Following Project construction, and during operation of the NECPL project, the Permittee shall conduct thermal monitoring, in accordance with the “Conceptual Operational Monitoring Study of Temperature Changes Associated with the NECPL,” as included in the Approved Application.
- L. Lake Champlain Pollution Abatement and Restoration Fund. As specified in the Approved Application and the PSB Stipulation, the Permittee shall establish a “Lake Champlain Pollution Abatement and Restoration Fund,” which will commit \$2 million in annual funding for Lake Champlain phosphorus cleanup for 40 years, in addition to \$1 million that will be paid at financial close and \$1 million that will be paid at the start of operations. The funds established are limited to use in the Lake Champlain watershed. As stated in the PSB Stipulation, if the Permittee operates the Project beyond the 40 year period, the Permittee shall negotiate in good faith regarding whether any additional payments are appropriate, and if so in what amount, which may also be considered in reauthorization of the encroachment permitted herein.
- M. Lake Champlain Enhancement and Restoration Trust Fund. As specified in the Approved Application and the PSB Stipulation, the Permittee shall establish a “Lake Champlain Enhancement and Restoration Trust Fund,” one purpose of which is to promote research and development and habitat restoration programs and projects related to the Lake Champlain watershed. The fund will commit \$1.5 million in annual funding for 39 years, in addition to \$1 million that will be paid at financial close. As stated in the PSB Stipulation, if the Permittee operates the Project beyond the 40 year period, the Permittee shall negotiate in good faith regarding whether any additional payments are appropriate, and if so in what amount, which may also be considered in reauthorization of the encroachment permitted herein.
- N. Vermont Department of Fish and Wildlife (DFW) Access Area Improvement Fund. As specified in the Approved Application and the PSB Stipulation, the Permittee shall provide the DFW with \$350,000 for a new boat ramp at the DFW Korean War Veterans Access Area (KWVAA).

b. Standard Conditions

1. Completion of construction. The Project authorized by this permit must complete construction within 10 years of the effective date of this permit, or this permit shall expire.
2. Permit modification. All permit modifications, shall be treated as a new permit application.

3. Spill prevention. Fuel and lubricants from equipment shall not be discharged into the water. Any spills shall be managed in accordance with all applicable local, state, and federal regulations.
4. Waste management. Any pieces of construction debris, or other waste materials deposited into the lake during Project implementation/construction shall be removed from the lake and disposed of properly, in accordance with all applicable local, state, and federal regulations.
5. Compliance with other regulations. This permit does not relieve the Permittee from obtaining all other approvals and permits prior to commencement of activity or from the responsibility to comply with any other applicable federal, state, and local laws or regulations.
6. Transfer of permit. Prior to transferring ownership over the encroachment authorized by this permit or the portion of property associated with the encroachment authorized by this permit, the Permittee shall give the Department notice of the transfer. The notice shall include the name and contact information for the current Permittee and prospective Permittee, the proposed date of permit transfer, and a statement signed by the prospective Permittee stating that he/she has read and is familiar with this permit and agrees to comply with and be bound by its terms and conditions.
7. Access to property. The Permittee shall allow the Commissioner of the Department, or a duly authorized representative, at reasonable times and upon presentation of credentials, to enter upon Permittee's property, or to otherwise access the authorized encroachment, if necessary, to inspect the project to determine compliance with this permit.
8. Legal responsibilities for damages. The Department, by issuing this individual permit, accepts no legal responsibility for any damage direct or indirect of whatever nature and by whoever suffered arising out of the approved project.
9. Rights and Privileges. This permit does not authorize any damage to private property or invasion of private rights or the violation of federal, state, or local laws or regulations. In addition, this permit does not convey any title or interest to the lands lying under public waters or waters affected.
10. Duty to comply and enforcement. The Permittee shall comply with all terms and conditions of this permit. Any permit noncompliance shall constitute a violation of 29 V.S.A. Chapter 11 and may be cause for an enforcement action and revocation, modification, or suspension of this permit. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of this permit.
11. Reopener. If, after granting this permit, the Department determines that there is evidence indicating that an authorized activity does not comply with the requirements of 29 V.S.A. Chapter 11, the Department may reopen and modify this permit to include different limitations and requirements.
12. Revocation. This permit is subject to the conditions and specifications herein and may be suspended or revoked at any time for cause including: failure by the Permittee to disclose all relevant facts during the application process which were known at that time; misrepresentation of any relevant fact at any time; non-compliance with the conditions and specifications of the permit; or a change in the factors associated with the encroachment's effect on the public trust or public good so that on balance the Department finds that the encroachment adversely affects the public trust or public good.

13. Severance. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

14. Appeals.

- A. Renewable Energy Projects – Right to Appeal to Public Service Board. If this decision relates to a renewable energy plant for which a certificate of public good is required under 30 V.S.A. § 248, any appeal of this decision must be filed with the Vermont Public Service Board pursuant to 10 V.S.A. § 8506. This section does not apply to a facility that is subject to 10 V.S.A. § 1004 (dams before the Federal Energy Regulatory Commission), 10 V.S.A. § 1006 (certification of hydroelectric projects), or 10 V.S.A. Chapter 43 (dams). Any appeal under this section must be filed with the Clerk of the Public Service Board within 30 days of the date of this decision; the appellant must file with the Clerk an original and six copies of its appeal. The appellant shall provide notice of the filing of an appeal in accordance with 10 V.S.A. § 8504(c)(2), and shall also serve a copy of the Notice of Appeal on the Vermont Department of Public Service. For further information, see the Rules and General Orders of the Public Service Board, available online at www.psb.vermont.gov. The address for the Public Service Board is: 112 State Street, Montpelier, Vermont, 05620-2701; Telephone #: 802-828-2358.
- B. All Other Projects – Right to Appeal to Environmental Court. Pursuant to 10 V.S.A. Chapter 220, any appeal of this decision must be filed with the clerk of the Environmental Division of the Superior Court within 30 days of the date of the decision. The Notice of Appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or the appellant’s attorney. The appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal. The appellant must also serve a copy of the Notice of Appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings available at www.vermontjudiciary.org. The address for the Environmental Division is: 32 Cherry Street; 2nd Floor, Suite 303; Burlington, VT 05401 Telephone #: 802-951-1740.

c. Findings

- 1.** Jurisdiction - 29 V.S.A. § 403: Lake Champlain located in Alburgh, Isle la Motte, North Hero, Grand Isle, South Hero, Colchester, South Burlington, Shelburne, Charlotte, Ferrisburg, Panton, Addison, Bridport, Shoreham, Orwell, and Benson, is a public water of the State of Vermont. The project encroaches beyond the shoreline as delineated by the mean water level (MWL) of Lake Champlain, 95.5 feet National Geodetic Vertical Datum (NGVD) 1929. Therefore, the Department has jurisdiction under 29 V.S.A. Chapter 11.
- 2.** Application Receipt and Review - 29 V.S.A. § 404: On July 17, 2015, the Department received an application from Champlain VT LLC, d/b/a TDI-New England (Permittee), under the provisions of 29 V.S.A. Chapter 11, for authorization to construct, operate, and maintain an electric transmission line and fiber

optic cable that will run from Alburgh, Vermont to Benson, Vermont located within the public waters of Lake Champlain.

3. Public Notification - 29 V.S.A. § 405(a): The Department gave written notice of this application to the municipalities in which the proposed encroachment is located, abutting property owners, and others having an interest in this matter and provided an opportunity for interested persons to file written comments or request a public information meeting. The Department also noticed and conducted three public information meetings that provided the public and interested persons additional opportunities to provide verbal or written comments on the application. The public information meetings were held in Rutland, Vermont on November 2, 2015, South Burlington, Vermont on November 3, 2015, and St. Albans, Vermont on November 4, 2015. The notice period began on October 1, 2015 and closed at 4:30 P.M. on November 6, 2015. One public comment was received during the notice period, which was addressed by the Department through a response to the commenter.
4. Background; Lake Encroachment Permit History: NONE
5. Project Description: The New England Clean Power Link (NECPL) project (Project) consists of the construction, operation, and maintenance of a high voltage direct current (HVDC) electric transmission line and fiber optic cable that will run from the Canadian border in Alburgh, Vermont to Ludlow, Vermont along aquatic and underground routes. The transmission line will provide electricity generated by renewable energy sources in Canada to the New England electric grid, a portion of which may also be delivered within Vermont in the future. The nominal operating voltage of the line will be approximately 300 to 320 kV, and the system will be capable of delivering 1,000 megawatts (MW) of electricity. The aquatic portion of the Project will enter the Lake on property located at 55 Bay Road, Alburgh, Vermont, and will exit the Lake on property located at 148 Stoney Point Road, Benson, Vermont. The aquatic portion of the Project, approximately 97 miles in length, will be buried in the bed of Lake Champlain, except at water depths of greater than 150 feet where the cables will be placed on the bottom and are expected to self-bury. In locations where the cable is in water depths of less than 150 feet and is unable to be buried due to other existing transmission lines or bedrock, the cables will be overlaid with concrete mats to protect the cables and to separate the cables from other existing infrastructure.

The transmission line consists of two cables, each approximately 5 inches in diameter, each weighing approximately 25 pounds per foot in water, and each cable will be installed directly adjacent to the other. The NECPL will include a fiber optic system, which will consist of an industry standard fiber optic cable. This cable is approximately one inch in diameter and will be affixed to one of the two power cables in Lake Champlain and housed in an approximately two inch HDPE conduit installed in the same trench as the power cables, but adjacent to them on the overland portion of the route. The fiber optic cable is required to operate the Project and will facilitate HVDC control.

Where the cables enter the Lake in Alburgh, Vermont and emerge in Benson, Vermont, horizontal directional drilling (HDD) will be used to avoid shoreline disturbance at these locations. The overland (terrestrial) portions of the Project, approximately 57 miles in length, will be buried underground primarily within existing public road rights-of-way (ROWs) from Benson, Vermont to Ludlow, Vermont, and on private land held by the Permittee in Alburgh, Vermont, and Benson, Vermont. The overland transmission line route includes an HDD under the public waters of Lake Bomoseen, which is subject to

Lake Encroachment Permit 2015-011. The Lake Champlain aquatic portion of the cable route is the component of the project subject to the permit decision herein (Lake Encroachment Permit 2015-030).

The final aquatic route was selected by the Permittee to avoid water depths of less than 20 feet to the extent practical to allow for the typical draft of installation vessels; to avoid areas with known geological obstacles, such as bedrock outcrops; to avoid the Missisquoi National Wildlife Refuge; to avoid reefs and shoals where water depths ranged from 10 to 40 feet in order to reduce potential impacts to fish and wildlife habitat; to avoid “the Narrows” of Lake Champlain that exists in the southern part of the Lake; and to avoid known archeological resources within the Lake.

The proposed Lake entrance route involves an approximate 0.6-mile HDD from the launch site in a southwesterly direction where the boring will emerge on land in a receiving pit at the DFW KWVAA off of US Route 2 in Alburgh, Vermont. The Permittee has secured a license agreement with the DFW for use of this area. A manhole and fiber optic hand hole will be constructed on the KWVAA for cable splicing and future access. A second HDD will extend from the manhole area approximately 0.2 miles in a southwesterly direction to an exit point in the Lake where water is deep enough for alternative installation methods. A receiver casing or temporary cofferdam will be used at the HDD Lake entry point to receive the drilling fluid and serve as the point where the reamer and high-density polyethylene (HDPE) conduit are attached and pulled back through the borehole. The proposed Lake exit route involves an approximate 0.2-mile HDD from the HDD launch area on TDI-New England-owned land in Benson to a receiver casing or cofferdam located within the Lake. The HDD launch area is setback over 400 feet from the shoreline of the Lake.

While the entry and exit points to the Lake will remain fixed, the aquatic routing as shown in the Approved Application, represents a proposed general alignment of the Project, which may be adjusted in places following more detailed design work necessary for the final construction level plans. Construction level engineering will be completed after TDI-New England receives necessary state and federal approvals, to ensure any final site specific analysis completed will be in compliance with the regulatory requirements that come with applicable authorizations. The routing depicted in the Approved Application is for the purposes of understanding the potential impacts associated with the construction, operation, and maintenance of the Project. TDI-New England may adjust this route during final design pursuant to Condition a.1.A. of this permit. Prior to installing the aquatic transmission line, TDI-NE will conduct a debris-clearing run along NECPL’s aquatic route. Using a tug and barge equipped with a grapnel system and crane, and followed by support vessels to transport crew members and collected debris, the route will be cleared of objects along the lakebed that could obstruct the burial of the line during installation.

In addition to the use of HDD at the entrance and exit points of the Lake, the cables will be installed using one of four methods, depending on water depths and conditions: jet-plow trenching, shear-plow trenching, hand trenching assisted by divers (as necessary), and laid on the bottom (no trenching) where water depths are greater than 150 feet. The cables will be stacked vertically in plow trenches and strapped together for bottom laid burial. When buried, the aquatic transmission cables in Lake Champlain will be installed to a target depth of between 3 and 4 feet. The actual depth of burial that will

be achieved will depend on available aquatic construction equipment, soil types and depth to bedrock, and existing utilities. Cables that are laid on the lakebed are anticipated to settle an average of 1 foot below the surface over time. The Approved Application summarizes the proposed installation method by mile, and includes more specific descriptions of each installation method.

The cables will be transported from the manufacturer by a special cable transport vessel and transferred onto a cable installation vessel. The linear cable machines onboard the installation vessel will pull the cables from coils on the transport vessel onto the installation vessel and into prefabricated tubs. After cable transfer, the installation vessel will travel to the construction commencement location. It is anticipated that there will be a total of six barges and tugs performing round trips from the manufacturer and/or point of origin, to transport the cables to Lake Champlain. The approximate number of vessels for lake construction operations is as follows: *Lake Champlain Route Clearing*: Tug and barge.

Lake Champlain Cable Installation: 300 ft. by 90 ft. sectional lay barge (individual sections to transit the Champlain Canal and Lake and be assembled on site); support tugs (3); crew boats (3); small outboard powered craft (1); dive boat (1), crane barge (1).

6. Project Purpose: The purpose of the NECPL project is to deliver and sell clean, renewable power from Canada to the markets operated by the New England Independent System Operator (ISO-NE), which may include markets in the State of Vermont in the future.
7. Effect of Encroachment – Whether Excessive for Stated Purpose: The Project has been designed to accommodate for sufficient and reliable transmission of renewable power from Canada to the markets operated by ISO-NE. The Permittee’s business model is centered on the use of buried HVDC lines, which avoid aesthetic concerns and attendant impacts on communities, and also increases the electric grid’s safety and reliability because the underground/aquatic infrastructure is less susceptible to damage from natural disasters. The Project is not considered excessive for achieving the stated project purpose.
8. Effect of Encroachment – Less Intrusive Feasible Alternatives: The NECPL project has been designed using the least intrusive feasible alternative, in consultation with local, state, and federal officials. As identified in the Approved Application, the Permittee considered and designed the Project route in consideration of the overall environmental impact. A complete Alternatives Analysis was presented in the Permittee’s U.S. Army Corps of Engineers Section 404/Section 10 Permit Application, dated November 7, 2014, which demonstrated that the Lake route described herein is the least environmentally damaging practicable alternative. In consideration of environmental impacts, the Project route avoids the Missisquoi National Wildlife Refuge, rocky reefs and shoals, and “the Narrows” of Lake Champlain, and has considered and will implement construction methods and best management practices that will further limit impacts along the selected route.
9. Effect of Encroachment – Measures to Reduce Impacts on Public Resources:

Turbidity. Turbidity associated with the HDD activities will be contained at HDD in-water entry points by use of a coffer dam, receiver casing, or Department approved equivalent barrier. Additionally, the method of laying the cable in waters of greater than 150 feet will minimize bottom disturbance.

HDD. Any HDD inadvertent returns that occur during the Project construction will be addressed in accordance with the “New England Clean Power Link Project, Horizontal Directional Drilling Inadvertent Return Contingency Plan.”

Aquatic Invasives. To address the potential for impacts from the introduction or transport of aquatic invasive species from outside Lake Champlain, the Permittee has prepared and will follow the “Aquatic Invasive Species Management and Control Plan, for the New England Clean Power Link HVDC Transmission Project.”

Monitoring. During Project construction, which includes pre-installation route clearing, the Permittee will conduct suspended sediment monitoring and water quality sampling, in accordance with the “New England Clean Power Link, Lake Champlain Construction Phase Water Quality Monitoring Program,” to ensure Project construction complies with applicable Vermont Water Quality Standards (VWQS).

Following Project construction, and during operation of the NECPL project, the Permittee will conduct thermal monitoring, in accordance with the “Conceptual Operational Monitoring Study of Temperature Changes Associated with the NECPL,” to ensure Project operation will comply with applicable VWQS.

Fish and Wildlife Habitat. The project design and route selected by the Permittee will avoid important fish and wildlife habitat, including shoals and reefs in accordance with the PSB Stipulation. In addition, the Project construction schedule is restricted by geographic location to protect fish spawning habitat during certain months of the year.

10. Placement of Fill: The NECPL project will not involve the placement of fill within Lake Champlain. Project components, including the transmission line cables, fiber optic cable, and concrete mats proposed in certain locations that will provide cable protection (e.g. utility crossings) are not considered to be fill.
11. Effects on Water Quality - 29 V.S.A. § 405(b): The Permittee completed a water quality modeling assessment to predict and estimate the potential dispersion of sediment and other chemical constituents during Project construction. The water quality constituents considered in the model and identified in the resulting “Lake Champlain Water Quality Modeling Report, New England Clean Power Link,” included total suspended solids (TSS), total phosphorus (TP), dissolved phosphorus (DP), arsenic, cadmium, copper, lead, nickel, zinc, silver, and mercury. The modeling results demonstrate that the water quality impacts associated with Project construction are expected to be short-term and geographically limited to areas immediately adjacent to the construction location, and are not expected to have an adverse impact on water quality under the applicable criteria of the VWQS. During Project construction, the Permittee will adhere to the “New England Clean Power Link, Lake Champlain Construction Phase Water Quality Monitoring Program,” which includes monitoring, corrective action, and reporting requirements to ensure the Project construction will comply with applicable VWQS as predicted by the modeling prepared by the Permittee. Following completion of installation, the Department does not expect there to be additional water quality impacts from dispersion of sediment and other chemical constituents other than from short-term and geographically limited work areas that may result from subsequent ordinary repair and maintenance of the cable following installation.

The Permittee also modeled the thermal effects of the cables on Lake Champlain. The results of the modeling demonstrate that the thermal effects are not expected to have an adverse impact on water quality under the applicable criteria found in the VWQS. Following Project construction, and during operation of the NECPL project, the Permittee will conduct thermal monitoring, in accordance with the

“Conceptual Operational Monitoring Study of Temperature Changes Associated with the NECPL,” to ensure Project operation will comply with applicable VWQS.

As part of the NECPL Project, and as specified in the Approved Application and the PSB Stipulation, the Permittee will establish a “Lake Champlain Pollution Abatement and Restoration Fund,” which will commit \$2 million in annual funding for Lake Champlain phosphorus cleanup for 40 years, in addition to \$1 million that will be paid at financial close and \$1 million that will be paid at the start of operations. The funds established are limited to use in the Lake Champlain watershed. If the Permittee operates the Project beyond the 40 year period, and as identified in the PSB Stipulation, the Permittee will negotiate in good faith regarding whether any additional payments are appropriate, and if so in what amount, which may also be considered in reauthorization of the encroachment permitted herein.

Additionally, the Permittee has committed to complete re-vegetation and stabilization of a severely eroded bank on Lake Champlain, on the property located at 148 Stoney Point Road, Benson, Vermont near the lake-land transition, and will provide the specifics of the re-vegetation and stabilization plans to the Department for review and approval at a minimum 90 days prior to construction.

The water quality funding dedicated to the Lake Champlain watershed, in addition to the proposed shoreline restoration project are expected to result in a positive impact on water quality.

- 12.** Effects on Fish and Wildlife Habitat - 29 V.S.A. § 405(b): The Permittee evaluated potential impacts to Vermont rare, threatened, or endangered (RTE) fish and wildlife species in Lake Champlain, including surveys for mussel species. No live Vermont RTE mussel species were observed within the proposed Lake route as specified in the “NECPL, Lake Champlain Freshwater Mussel Survey Report.” No further studies were requested by DFW to evaluate potential impacts to RTE fish and wildlife in proximity to the Project route.

The Project design and route selected by the Permittee will avoid important fish and wildlife habitat, including shoals and reefs that were identified by DFW. Additionally, in response to DFW input, the project construction schedule is restricted by geographic location to protect fish spawning habitat during certain months of the year and as identified in the conditions contained herein.

To address the potential for impacts from the introduction or transport of aquatic invasive species from outside Lake Champlain, the Permittee has prepared and will follow the “Aquatic Invasive Species Management and Control Plan, for the New England Clean Power Link HVDC Transmission Project,” as included with the Approved Application.

During construction, impacts to fish and wildlife habitat are expected to be related to short-term turbidity, geographically limited to areas adjacent to the cable installation location during construction. Additionally, the Permittee proposes to use HDD methodology at the entry and exit points of the Lake to avoid impacts to shoreline vegetation and nearshore fish and wildlife habitat. After construction, the primary impacts of the project on fish and wildlife habitat are from the magnetic and thermal fields associated with the operation of the transmission line. However, thermal and magnetic modeling completed by the Permittee for the Project indicates that the operation of the transmission line is not expected to have an adverse impact to aquatic resources.

As part of the NECPL Project, and as specified in the Approved Application and the PSB Stipulation, the Permittee will establish a “Lake Champlain Enhancement and Restoration Trust Fund,” one purpose of

which is to promote research and development and habitat restoration programs and projects related to the Lake Champlain watershed. The fund will commit \$1.5 million in annual funding for 39 years, in addition to \$1 million that will be paid at financial close. As required by the PSB Stipulation, if the Permittee operates the Project beyond the 40 year period, the Permittee will negotiate in good faith regarding whether any additional payments are appropriate, and if so in what amount, which may also be considered in reauthorization of the encroachment permitted herein.

The water quality and habitat funding dedicated to the Lake Champlain watershed is expected to result in a positive impact on fish and wildlife habitat.

- 13.** Effects on Aquatic and Shoreline Vegetation - 29 V.S.A. § 405(b): Negative impacts to aquatic vegetation are expected to be short-term during Project construction and will be limited to the immediate project work area where aquatic vegetation may be present. Aquatic vegetation that is disturbed by Project construction is expected to recolonize once construction is completed.

In the “Lake Champlain Water Quality Modeling Report, New England Clean Power Link,” the permittee considered the potential for phosphorus impacts on algal growth, related to resuspension of phosphorus during Project construction. As noted in the report, short-term increases in Total Phosphorus (TP) levels in the Lake are not expected to significantly impact phosphorus and algal levels in the Lake.

To address the potential for impacts from the introduction or transport of aquatic invasive species from outside Lake Champlain, the Permittee has prepared and will follow the “Aquatic Invasive Species Management and Control Plan, for the New England Clean Power Link HVDC Transmission Project.”

As to shoreline vegetation, the Lake Champlain portion of the NECPL project will not result in the removal of shoreline vegetation. The Permittee proposes to use HDD methodology at the entry and exit points of the Lake to avoid impacts to shoreline vegetation. Additionally, the Permittee has committed to complete re-vegetation and stabilization of a severely eroded bank on Lake Champlain, on the property located at 148 Stoney Point Road, Benson, Vermont near the lake-land transition, and will provide the specifics of the re-vegetation and stabilization plans to the Department for review and approval at a minimum 90 days prior to construction. The re-vegetation and stabilization of the shoreline will improve fish and wildlife habitat.

Overall, the Project is not expected to result in adverse impacts to aquatic vegetation and will result in a positive impact on shoreline vegetation.

- 14.** Effects on Navigation and Other Recreational and Public Uses, Including Fishing and Swimming - 29 V.S.A. § 405(b): Recreational uses of waters affected by this Project include boating, fishing, hunting, swimming, wildlife observation, sea-plane use, and additional boating-related recreation, including scuba diving and water skiing. Impacts to recreational and other uses on and around Lake Champlain will be primarily associated with the Project’s construction phase, where in-lake construction activity along with equipment storage, staging, and transport may temporarily interfere physically with existing recreational and commercial uses such as use of the Korean War Veterans Vermont Department of Fish and Wildlife Access Area in Alburgh, Vermont, boating, fishing, swimming, sea-plane use, wildlife viewing, and other boating-related recreation, including scuba diving and water skiing. In addition, the Project’s construction phase, involving pre-installation route clearing and cable installation, may impact uses due

to temporary changes in water quality resulting from suspended sediment, which is expected to be of short duration and localized to shallow project work areas.

The proposed Lake entrance route involves an HDD receiving pit at the DFW KWVAA off of US Route 2 in Alburgh, Vermont. The Permittee has secured a license agreement with the DFW for use of this area. A manhole and fiber optic hand hole will be constructed on the KWVAA for cable splicing and future access. During construction, the access will be unavailable for public use for fishing, boating, and boating-related recreation. Other public access areas exist for this area of Lake Champlain and therefore the impacts of the closure on public uses are expected to be temporary and minimal. As part of the NECPL Project, and as specified in the Approved Application and the PSB Stipulation, the Permittee will provide the DFW with \$350,000 for a new boat ramp at the KWVAA, which will be a benefit that outweighs any temporary impacts on public uses resulting from the closure and long-term use of the location for access and maintenance of the NECPL transmission line in this location.

Another use of Lake Champlain is for the production of fish at the DFW Ed Weed Fish Culture Station in Grand Isle, Vermont. Sediment resuspension during cable installation could potentially cause increases in turbidity at the hatchery's deep water intake that is used for fish culture. Through consultation with DFW staff, the Permittee has agreed to remain at a specified distance from the intake and to implement practices, including monitoring, corrective action, and reporting requirements that will avoid and minimize impacts that could result from the resuspension of sediment and turbidity at the intake location, as specified in the PSB Stipulation, and as conditioned herein. Therefore, the Project is not expected to result in negative impacts to the DFW fish hatchery operations at the Ed Weed Fish Culture Station. The Project route was also designed in consideration of avoiding impacts to other existing water intakes and existing utilities located within the Lake.

Other construction phase impacts on navigation and other recreational and public uses will be temporary and geographically limited. Following the Permittee's selection of a marine contractor, and a minimum of 90 days prior to Project construction, the Permittee will prepare and submit to the Department a report summarizing the approximate number and size of vessels necessary for Project construction, including identification of the locations where vessels and other project equipment necessary for construction will be staged, docked, launched, maintained, and fueled, including an identification and assessment of anticipated impacts, or changes to anticipated impacts (if any) from those identified in the Approved Application, on public trust uses on Lake Champlain.

As part of the NECPL Project, and as specified in the Approved Application and the PSB Stipulation, the Permittee will establish a "Lake Champlain Enhancement and Restoration Trust Fund," the purpose of which is to promote recreational access to Lake Champlain; for acquisition and development of lands and facilities associated with municipal, state, and non-profit public recreation opportunities within the Lake Champlain watershed; and for recreational, cultural, historical, environmental, and educational activities, programs, and opportunities associated with the Lake Champlain watershed. The fund will commit \$1.5 million in annual funding for 39 years, in addition to \$1 million that will be paid at financial close. If the Permittee operates the Project beyond the 40-year period, and as identified in the PSB Stipulation, the Permittee will negotiate in good faith regarding whether any additional payments are appropriate, and if so in what amount, which may also be considered in reauthorization of the encroachment permitted herein.

Once operational, the cables will produce a magnetic field. The Permittee completed magnetic modeling for the Project to assess the potential impacts on compass navigation from the magnetic field produced by the cables. Overall, to the magnetic effects on compass navigation will be minimal and geographically limited to areas directly over the installed cable location, which will be further limited by water depth where the cable is located and cable burial depth or cable covering. Therefore, the Project is not expected to result in a negative impact on compass navigation. Other uses, including fishing, swimming, and boating-related recreation are not expected to be impacted by operation of the Project.

Overall, impacts on navigation and other recreational and public uses due to construction of the Project are expected to be temporary. Magnetic impacts on compass navigation are expected to be minimal. These impacts are outweighed by the long term public benefits associated with established funding specific to the promotion of recreational public uses in the Lake Champlain watershed and funding to improve an existing public access area.

- 15.** Consistency with the Natural Surroundings - 29 V.S.A. § 405(b): Once installed, the NECPL project will not be visible from above the Lake surface, and will not involve the removal of shoreline vegetation, and therefore will be consistent with the natural surroundings.
- 16.** Consistency with Municipal Shoreland Zoning Ordinances and Applicable State Plans - 29 V.S.A. § 405(b): Projects regulated under 30 V.S.A. § 248 are exempt from municipal regulation. This Project is regulated under 30 V.S.A. § 248 and therefore, there are no applicable municipal shoreland zoning ordinances. Additionally, there are no applicable state plans.
- 17.** Cumulative Impact - 29 V.S.A. § 405(b): The Project is expected to result in additional cumulative impact that is associated with installation and operation of a transmission line within Lake Champlain, where other utility lines exist and operate. The proposed line is the only transmission line of this type in Lake Champlain that will deliver and sell clean, renewable power from Canada to the markets operated by ISO-NE. The public benefits outweigh any impacts of the Project, which are expected to be short-term during construction, minimal, and/or otherwise limited to a relatively small geographical area within the Lake. The public benefits specifically include the positive impacts related to the "Lake Champlain Pollution Abatement and Restoration Fund," the "Lake Champlain Enhancement and Restoration Trust Fund," the funding for dedicated improvements to the DFW KWVAA in Alburgh, Vermont, and the shoreline re-vegetation and stabilization to be completed by the Permittee in Benson, Vermont. The cumulative effect of the Project is not expected to be adverse.
- 18.** Public Good Analysis Summary - 29 V.S.A. § 405(b): Based upon findings 11-17, the Project will not adversely affect the public good.
- 19.** Public Trust Analysis: The public trust doctrine requires the Department to determine what public trust uses are at issue, to determine if the proposal serves a public purpose, to determine the cumulative effects of the proposal on the public trust uses, and to balance the beneficial and detrimental effects of the proposal. The public trust uses of Lake Champlain include fishing, boating/kayaking, sea plane use, swimming, ice fishing, ice skating, ice-related recreation, boating-related recreation, commerce, environmental preservation, environmental research, domestic water supply, utility transmission, and fish culture. The impacts of the project on public trust uses include the temporary impacts discussed in the findings above related to Project construction, which are geographically limited to areas adjacent to the cable installation. Impacts on public trust uses following construction of the Project are not

expected. The NECPL project provides public benefits in the form of the “Lake Champlain Pollution Abatement and Restoration Fund,” the “Lake Champlain Enhancement and Restoration Trust Fund,” the funding for dedicated improvements to the DFW KWVAA in Alburgh, Vermont, and the shoreline re-vegetation and stabilization to be completed by the Permittee in Benson, Vermont. The identified public benefits are considered to outweigh the temporary and geographically limited negative impacts during Project construction. The Department has therefore determined that the project is consistent with the public trust doctrine.

d. Authorization

Based upon the foregoing findings, and in consideration of the Department’s Interim Procedures for the Issuance or Denial of Encroachment Permits, dated October 4, 1989, excluding Section 3, which was invalidated by Lamoille County Superior Court, Docket No. S96-91, 9/04/92, it is the decision of the Department that the project described herein, as set forth in the above findings and in the plans on file with the Department, complies with the criteria of 29 V.S.A. § 405, and is consistent with the public trust doctrine.

In accordance with 29 V.S.A. § 401 *et seq.*, the Department hereby issues this decision and permit to Champlain VT, LLC, d/b/a TDI-New England for the above named Project. The Department has approved the Project subject to the conditions contained herein.

This permit shall not be effective until 10 days after the Department’s notice of action and permit issuance in accordance with 29 V.S.A. § 405(c) and shall expire 15 years thereafter. **Prior to the expiration of this permit, the Permittee shall reapply for a lake encroachment permit, if the Permittee wishes to maintain the encroachment authorized by this permit.** If the Permittee wishes to modify the encroachment or conduct other jurisdictional activities not authorized by this permit, the Permittee must submit a new permit application.

Alyssa B. Schuren, Commissioner

Department of Environmental Conservation

By: _____

Perry Thomas, Program Manager

Lakes & Ponds Management and Protection Program