Vermont Wetland Permit Application/Determination Petition

QUESTION	INSTRUCTIONS AND APPLICANT ANSWER	STAFF NOTE
1. Applicant	If the applicant is someone other than the landowner, the landowner information must also be included below.	
1.1. Applicant Name	Champlain VT, LLC d/b/a TDI New England	
1.2. Applicant Address	Donald Jessome, P.O. Box 155, Charlotte, VT 05445	
1.3. Applicant Phone Number	(802) 477-3830, (802) 885-3890	
1.4. Applicant Email	donald.jessome@chvtllc.com or joshbagnato@chvtllc.com	
1.5. Applicant Signature (original signature required)	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. X _____ Date: July 29/2015	
2. Representative	Consultant, engineer, or other representative that is responsible for filling out this application, if other than the applicant or landowner	
2.1. Representative Name	Jeffrey Nelson on behalf of VHB	
2.2. Representative Address	40 IDX Drive, Building 100 Suite 200, South Burlington, VT, 05403	
2.3. Representative Phone Number	(802) 497-6100	
2.4. Applicant Email	jnelson@vhb.com	
2.5. Representative Signature (original signature required)	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. X _____ Date: 8/4/15	
3. Landowner	Landowner information if different from applicant. Use this space if landowner is different from the applicant	
3.1. Landowner Name	Not Applicable - See "Responsible Party Statement" in Attachment 1	
3.2. Landowner Address	Not Applicable	
3.3. Landowner Phone Number	Not Applicable	
3.4. Landowner Email	Not Applicable	
3.5. Landowner Easement	Attach copies of any easements, agreements or other documents conveying permission, and agreement with the landowner stating who will be responsible for meeting the terms and conditions of the permit. List the attachment for this information in this section. See "Responsible Party Statement" in Attachment 1	
3.6. Landowner Signature (original signature required)	By signing this application you are certifying that all the information contained within is true, accurate, and complete to the best of your knowledge. X _____ Date:	

4. Location of Wetland and Project	Location description should include the road the wetland is located on, the compass direction of the wetland in relation to the road, 911 street address if available, and any other distinguishing geographic features. Project Location: Stony Point Road, Benson, Vermont Latitude: 43 44' 01.05"/Longitude: 73 21' 48.55" The New England Clean Power Link project (NECPL or "Project") is a proposed high voltage direct current (HVDC) electric transmission line that traverses approximately 154 miles through Grand Isle, Chittenden, Addison, Rutland, and Windsor Counties, Vermont (VT) and consists of both aquatic and terrestrial segments. Specifically, the Project includes approximately 97 miles of in-water installation in Lake Champlain (referred to as the "Lake Route"), and approximately 57 miles of terrestrial installation located primarily along existing town and state roadways, railroads and associated rights-of-way (ROW) (referred to as the "Overland Route"). The Overland Route of the Project is located in 14 towns in Grand Isle, Rutland and Windsor Counties as depicted on the Project Overview Map (Figure 1) included in Attachment 2. Numerous state-significant Class II wetlands and regulated 50-foot buffer zones are located along the Overland Route. The Natural Resource Maps ("NR Maps") included in Attachment 2 portray the Overland Route alignment and the delineated and approximated Class II wetlands and buffer zones. Site-specific Impact Exhibits (map set) are included in Attachment 3 that portray the detailed locations of proposed Class II wetland and buffer zone impacts that will result from the Project. The locations and descriptions of Class II wetlands and buffers that will be impacted along the Overland Route are presented in tabular form as part of this application (see Tables 1 through 3, which address Sections 7, 8, 12 and 14 of the application). The transmission line will be installed according to the following route and approximate linear lengths:* 1. (0.5 miles) Overland Route from Canadian Border along Bay Road to 55 Bay Road, Alburgh; enter Lake Champlain to start Lake Cable Route; 2. (97.2 miles) Lake Cable Route within Lake Champlain; 3. (4.2 miles) Exit Lake Champlain to start Overland Route at 113 Stoney Point Road, Benson to Benson Town Road ROWs east to Vermont Route 22A; 4. (8.2 miles) Vermont Route 22A ROW south to U.S. Route 4 in Fair Haven; 5. (17.4 miles) U.S. Route 4 ROW east to U.S. Route 7 in Rutland; 6. (2.7 miles) U.S. Route 7 ROW south to Vermont Route 103 in Clarendon; 7. (3.9 miles) Vermont Route 103 south/southeast to Railroad Route in Shrewsbury; 8. (3.5 miles) Green Mountain Railroad Corp (GMRC) Railroad ROW in Shrewsbury south/southeast to Vermont Route 103 in Wallingford; 9. (10.6 miles) Vermont Route 103 ROW south/southeast to Vermont Route 100 in Ludlow; 10. (0.8 Miles) Vermont Route 100 ROW north to Town Roads in Ludlow; 11. (4.3 miles) Town Roads in Ludlow to Converter Station Site; 12. (0.6 miles) Proposed alternating current (AC) cable alignment from Converter Station Site in Ludlow to the existing Vermont Electric Power Company (VELCO) Coolidge Substation in Cavendish, VT along town roads; and 13. Several off-ROW laydown areas (which, as proposed, avoid all wetland and buffer zone resources). *The mileages listed have minor changes from the filing for a Petition for a Certificate of Public Good (Section 248) in December 2014 based on immaterial design alterations made since this filing.	

5. Site Visit Date and Attendees	Date of visit with District Wetlands Ecologist	List people present for site visits including Ecologist, landowner, and representatives.	
	July 11, 2014, August 27, 2014, and May 28, 2015	July 11, 2014: Laura LaPierre, ANR VT DEC Wetland Program Manager Billy Coster, ANR Jenna Calvi, ANR Josh Bagnato, TDI-NE Sean Murphy, HDR (TDI-NE Representative) Jeff Nelson, VHB (TDI-NE Representative) Galen Guerrero-Murphy, TRC (TDI-NE Representative) Adam Crary, VHB (TDI-NE Representative) August 27, 2014: Laura LaPierre Micheal Adams, US Army Corps of Engineers Alex Finamore, TRC (TDI-NE Representative) Patti B. Kallfelz-Werts, VHB (TDI-NE Representative) May 28, 2015: Laura LaPierre Michael Adams Angela Repella, US Army Corps of Engineers Chelsea Martin, VHB (TDI-NE Representative)	
6. Wetland Classification	The wetland is a Class II wetland because (Choose one):		
	This wetland meets the presumption of significance		
7. Description of Entire Wetland or Wetland Complex	Answer the following questions regarding the entire wetland or wetland complex. A wetland complex is generally defined as two or more wetland types that are contiguous and interrelated. Specific questions about the wetland in the project area will follow.		
7.1. Size of Wetland Complex in Acres	Can be obtained from the Environmental Interest Locator Map for mapped wetlands		
	Please refer to Table 1.		
7.2. Natural Community Types Present	List all wetland types in the wetland or wetland complex and their abundance or relative abundance. For example: 50 acres of softwood forested swamp; or 30% scrub swamp, 70% emergent wetland		
	Please refer to Table 1.		
7.3. Landscape Position	Where is the wetland located on the landscape? Examples: bottom of a basin, edge of a stream, shore of a lake, etc.		
	Please refer to Table 1.		
7.4. Wetland Hydrology	Describe the main source of wetland hydrology for the wetland complex. List any river, streams, lakes and ponds.		
	Please refer to Table 1. Include answers to the following where appropriate:		
7.4.1. Direction of flow	For example: stream flows from north to south through the wetland complex.		
	Please refer to Table 1.		
7.4.2. Influence of	For example: The river provides flood water to the wetland in the spring.		

hydrology on wetland complex	Please refer to Table 1.	
7.4.3. Relation to the project area	Distance between the project area and any nearby surface waters. Please refer to Table 1.	
7.4.4. Hydroperiod	Discuss frequency and duration of flooding, ponding, and/or soil saturation. Please refer to Table 1.	
7.5. Surrounding Landuse of the Wetland Complex	For example: rural residential and forested; agricultural and undeveloped, Please refer to Table 1.	
7.6. Relation to Other Nearby Wetlands	Provide any information on wetlands or wetland complexes that are close enough to contribute to the overall function of the wetland in question. Please refer to Table 1.	
7.7. Pre-project Cumulative Impacts to the Wetland	Identify any cumulative ongoing impacts outside of the project that may influence the wetland. Examples include but are not limited to wetland encroachments off the subject property, land management in or surrounding the wetland, or development that influences hydrology or water quality. Please refer to Table 1.	
8. Description of Subject Wetland	Subject Wetland is defined as the area of wetland in the project area, but not limited to the portion of the wetland to be directly impacted by the project. For the purposes of this application, the subject wetland should encompass any portion of the larger wetland or wetland complex that could be directly or indirectly impacted by the project, as defined by hydrology, vegetation and/or physical characteristics.	
8.1. Context of Subject Wetland	Describe where the subject wetland is in the context of the larger wetland or wetland complex described above. Please refer to Table 2.	
8.2. Wetland Landuse	For example: mowed lawn; old field; naturally vegetated. Describe any previous and ongoing disturbance in the subject wetland. Please refer to Table 2.	
8.3. Wetland Vegetation	List dominant wetland community type and associated dominant plant species. Please refer to Table 2.	
8.4. Wetland Soils	Use USDA NRCS information where possible and use the ACOE Delineation Manual soil description Please refer to Table 2.	
8.5. Wetland Hydrology	Use descriptions from the ACOE Delineation Manual. Please refer to Table 2.	
8.6. Buffer Zone	Describe the buffer zone of the subject wetland including:	
8.6.1. General landuse	For example: mowed road shoulder; forested; old field; paved road and residential lawns etc. Describe any previous and ongoing disturbance in the buffer zone. Please refer to Table 2.	
8.6.2. Buffer vegetation	List community type and dominant plant species Please refer to Table 2.	
8.6.3. Buffer soils	Use USDA NRCS information where possible, and the ACOE Delineation Manual soil description Please refer to Table 2.	

9. **Wetland Determination**	If the application involves a wetland determination please answer the following. **If not, skip to Section 10.**	
9.1. Reason for Petition	Please choose one from the dropdown menu: Add a Section 4.6 presumed wetland to the VSWI map	
9.2. Previous Decisions	Please list all determinations and decisions, if any, issued by the Secretary,	

	Panel or former Water Resources Board, pertaining to the wetland or buffer at issue: Not Applicable	
9.3. Narrative	Please provide any narrative to support the petition for a wetland determination here. This section is not required for petitions to add a Section 4.6 presumed wetland to the VSWI map, but is required for all other petitions. Not Applicable	
If the application is only for a Wetland Determination only, skip to Section 13		

10. Project Description		
10.1. Overall Project	Description of the project. For example: six-lot residential subdivision; expansion of an existing commercial building, access drive to a single family residence. Champlain VT, LLC, d/b/a TDI New England (TDI-NE) is proposing the NECPL Project. The NECPL is an HVDC electric transmission line that will provide electricity generated by renewable energy sources in Canada to the New England electric grid. The line will run from the Canadian border at Alburgh, VT to the location of a proposed new Converter Station in Ludlow, VT. The Project route (and approximate linear lengths) is described in Section 4 of this application form. The HVDC transmission line will be comprised of two approximately 5 inch diameter cables – one positively charged and the other negatively charged – and will be solid-state dielectric and thus contain no fluids or gases. The nominal operating voltage of the line will be approximately 300 to 320 kilovolts (kV), and the system will be capable of delivering 1,000 megawatts (MW) of electricity. A fiber optic cable will also be installed with the HVDC cables along the entire transmission line route (in the same trench), in order to provide a telecommunications link to operate the Project. The proposed transmission line Lake Route is approximately 97 miles in length and will be buried to a target depth of 3 to 4 feet 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 self-burial of the cables in sediment will occur. In areas where there are obstacles to burial (e.g. existing infrastructure, bedrock), protective coverings will be installed over the cables. There are no Class II wetlands or buffer zones encountered along the Lake Route, and thus, the Lake Route segment will not be subject to further description or evaluation in this application. The Overland Route is approximately 57 miles in length and is located within existing public (state and town) road and railroad ROWs and within three properties controlled by TDI-NE (specifically, at the Proposed Converter Station Site and at the Lake Champlain shoreline transitions in Alburgh and Benson). In Ludlow, the HVDC line will terminate at the proposed Converter Station that will convert the electrical power from direct current (DC) to alternating current (AC). An underground AC transmission line will then run to the existing 345 kV Coolidge Substation in Cavendish, VT located approximately 0.5 miles to the south that is owned and operated by the VELCO. Along the Overland Route, the transmission cables will be installed primarily underground by utilizing a combination of open trench excavation, horizontal directional drilling (HDD), and jack-and-bore construction techniques. The only potential areas where underground burial may not occur is at two stream/river crossings in Ludlow where the cables are proposed to be placed	

	in a conduit and attached to a bridge or culvert headwall. Along town roads (in Benson, Alburgh and Ludlow), the cables are proposed to be installed in the existing roadways. Along state-controlled (VTrans) roads and railroads, the transmission line will primarily be installed along the edge of the existing VTrans ROWs, with some limited in-road installation proposed. The EPSC Plans for the Overland Route are included in Attachment 2.	
10.2. Project Purpose	For example: To construct a residential subdivision, upgrade existing road to improve access, extend a trail system The NECPL Project's purpose is to deliver clean, renewable power from Canada into Vermont and the markets operated by the New England Independent System Operator (ISO-NE) through a new 1,000 MW HVDC underground/underwater merchant transmission line. The NECPL Project is needed to further the New England States' energy and environmental policy goals, diversify fuel supply in ISO-NE, lower energy prices for consumers, reduce carbon emissions in New England, improve the economic competitiveness of the New England States, and provide economic benefits to Vermont and other New England States.	
10.3. Acres Owned by Applicant	Acreage of subject property. 16.2 acres (includes Lake Champlain shoreline parcels in Alburgh and Benson and proposed Converter Site in Ludlow controlled by TDI-NE; no Class two wetland or buffer zone impacts will occur on these properties)	
10.4. Acres Involved in the Project	Acreage of area involved in the project. Approximately 286 acres.	
11. Project Details	Provide details regarding specific impacts to the wetland and buffer zone	
11.1. Specific Impacts to Wetland and Buffer Zone	List portions of the project that will specifically impact the wetland or buffer zone. The NECPL Project construction will result in direct temporary impacts to state-significant Class II wetlands and 50-foot buffer zones. No direct permanent impacts (i.e., permanent wetland fills) are proposed. Temporary and permanent clearing will also occur in Class II wetlands and buffer zones for construction and operation of the Project. All Class II wetlands and buffers proposed to be impacted or cleared by the Project occur adjacent to public road or railroad ROWs. As such, temporary workspace and clearing requirements in wetlands and buffers are minimized, and potential effects to wetland functions are limited. Temporary impacts and temporary and permanent clearing requirements for wetland and buffer zones are described below. Detailed descriptions of temporary impacts and clearing for each subject wetland and its associated buffer are described in detail in Sections 12.1 and 12.2 of this application and summarized in the corresponding impact table (Table 3). The Overland Route consists of a 12-foot-wide Permanent Project Corridor centered on the cable alignment. An approximate 4-foot-wide trench will be excavated over the proposed cable alignment to an approximate depth of 4 to 6 feet to install the HVDC cables. Where possible, temporary construction mats will be utilized in wetlands in the Permanent Project Corridor to minimize soil disturbance from equipment access and avoid temporary impacts. However, temporary impacts to wetlands and buffer zones in the Permanent	

Project Corridor will be required due to workspace and access constraints and to accommodate the trench and cable installation and restoration. Wetlands and buffer zones in the Permanent Project Corridor will be temporarily impacted (as described in Section 12.1 and 12.2) by the following activities: temporary topsoil removal and segregation (to occur in wetlands prior to any soil disturbance or excavation, such as trenching); temporary excavations for the trench, temporary splicing boxes, and drill pits; repair or replacement of existing culverts; temporary fills or soil stockpiles (to be placed on geotextile fabric or construction mats in wetlands); and temporary grading (cut and fill) where necessary to establish safe and suitable access areas.

As described in the NECPL Vegetation Management Plan (VMP) included in Attachment 6, the Permanent Project Corridor will be maintained throughout the life of the transmission line operation for low-growth herbaceous and shallow-rooted shrub species to ensure that deep-rooted trees do not establish and damage the installed cables. Thus, permanent clearing is required in palustrine forested (PFO) wetlands and forested buffer zones that overlap the Permanent Project Corridor. Permanent clearing in PFO wetlands will result in conversion of these wetlands to palustrine emergent (PEM) or palustrine scrub-shrub (PSS) wetlands.

Where HDD is used to install the underground cables in the Permanent Project Corridor, no vegetation clearing will be required, excluding limited areas where the HDD is less than 15 feet deep near the HDD entry and exit points. These areas have been captured in the permanent clearing calculations, conservatively, by extending the Permanent Project Corridor approximately 60 feet beyond the HDD alignment from the drill entry and exit points.

The Overland Route also consists of a proposed Temporary Workspace, which is located adjacent to the Permanent Project Corridor and will be utilized during construction for off-road equipment and vehicle access, setup areas for HDD or jack-and-bore, material laydown and staging. The Temporary Workspace varies in width between 20 and 50 feet and is typically proposed on one or both sides of the Permanent Project Corridor. Temporary Workspace is absent in some areas, such as where construction equipment will utilize existing roadways. Temporary Workspace for off-site Laydown Areas are additionally proposed; these areas have been sited to avoid wetland and buffer zone resources.

Within Temporary Workspaces, temporary clearing is proposed in PFO wetlands and forested buffer zones to allow for the installation of temporary construction mats and to establish the temporary construction workspace. Additionally, temporary damage or removal of woody vegetation in PSS wetlands, as may be required for temporary construction mat installation, is considered temporary clearing in this application based on consultation with the Vermont Agency of Natural Resources (ANR) Department of Environmental Conservation (VT DEC) Wetlands Program Manager. Wetland areas subject to temporary clearing in the Temporary Workspace will have construction matting installed to accommodate equipment access during construction. Following construction, mats will be removed and the buffer zones and wetlands will be restored if necessary and allowed to regenerate to pre-construction conditions.

Temporary impacts to wetlands and buffers in the Temporary Workspace will primarily be avoided, with the exception of several site-specific instances as described in Sections 12.1 and 12.2 of this application and included in the impact table (Table 3) and Impact Exhibits (Attachment 3). These temporary impacts will result from temporary grading (cut and/or fill) to establish safe and suitable equipment access, temporary excavation for culvert repair or replacement in two wetland areas, temporary excavation in buffer zones for

jack and bore pits, and implementation of EPSC measures (e.g., temporary stabilized construction entrances). As with work in the Permanent Project Corridor, topsoil will be segregated from wetland areas prior to any soil disturbance or excavation, and any temporary fills will be placed on geo-textile fabric or construction mats. Following construction, segregated wetland topsoil will be replaced, and buffer zones and wetlands will be seeded and temporarily stabilized and allowed to regenerate to pre-construction conditions.

The typical cable installation sequence in wetlands includes vegetation clearing, installation of erosion controls, matting, trenching, cable installation, backfilling and ground surface restoration. Mechanized and/or hand clearing will be implemented, and construction mats or the use of low pressure tracked equipment during suitably dry or frozen conditions will be utilized during any mechanized clearing activities as necessary to avoid temporary impact.

As previously indicated, no permanent wetland fill is proposed for the Project. In wetland areas subject to temporary impacts, native topsoil will be segregated and stockpiled on construction mats or geotextile fabric, and then returned to the original wetlands after construction in accordance with the "Typical Wetland Construction" detail included in Attachment 2. Temporary trench breakers will be installed in the open trench at wetland boundaries (in accordance with the "Typical Wetland Construction" and "Temporary Trench Breaker" details included in Attachment 2) as necessary to prevent the migration of ground and surface water during construction.

For trench backfill, in instances where native subsoils have low thermal resistivity (based on field testing), the cable trench will be backfilled with the native subsoils. If necessary, a thermal sand with the required low thermal resistivity will be imported and backfilled in the trench to cover the transmission cable a minimum of one foot, and then native subsoils will be backfilled to the approximate depth of the adjacent subsoil/topsoil horizon boundary. Prior to replacement of topsoil, the subsoils will be compacted to a density of 95-percent of the modified proctor theoretical maximum density, in accordance with ASTM Standard D155 (Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort). In wetland areas, the segregated native wetland topsoil will be returned to the excavated areas to restore these areas to original grade.

A Project-specific Erosion Prevention and Sediment Control Plan (EPSC Plan) has been included with the Project's application to the VT DEC for an Individual Construction Stormwater Discharge Permit. This plan specifies EPSC and restoration Best Management Practices (BMPs) to be implemented for temporary impact and clearing areas (see the EPSC Plan notes in Attachment 2). Impacted Class II wetlands and buffer zones will be restored following construction and allowed to regenerate to the approximate preconstruction condition, with the exception of those areas subject to permanent clearing in the Permanent Project Corridor, which will convert to low growing herbaceous and/or scrub-shrub communities. Disturbed soils will be seeded with wetland and upland seed mixes, in wetlands and buffer zones respectively, and stabilized with a weed-free straw mulch or other VT DEC-approved method.

The NECPL Project may result in the limited, temporary diminishment of existing wetland functions which may include water storage for flood water and storm runoff, surface and ground water protection, wildlife habitat, rare, threatened, and endangered (RTE) species habitat, and/or erosion control through binding and stabilizing the soil due to the temporary disturbance of soils and vegetation clearing. However, these temporary effects are not expected to be unduly adverse given the site context (i.e., Project has relatively limited effects in each wetland/buffer zone and is adjacent to

	existing roads and railroads where wetland functions are already diminished) and the substantial avoidance and minimization measures implemented by the Project as described in this application. Furthermore, no permanent undue adverse effects to wetland functions and values are anticipated. See Sections 14 and 16 through 25 for details. This application presents the permanent management actions by TDI-NE that would result in permanent wetland/buffer impacts (clearing); however, since the Project is located within existing ROWs, TDI-NE has no control over management actions that may be conducted by others within these ROWs that may impact wetlands or buffers.	
11.2.Dimension Details	Square footage of buildings, dimension of roads including fill footprint. The transmission line within the Overland Route will be buried underground beginning at the U.S. - Canada border in Alburgh and from Benson to the proposed Converter Station in Ludlow, VT. The only exception are in two locations where the Project crosses the Black River and a stream along East Lake Road in Ludlow, VT. At these locations the cables will likely be installed in conduits which will be attached to the bridge and culvert structures at these two locations. The remainder of the line will primarily be installed via open trenching techniques, with HDD and jack-and-bore installation being utilized in specific areas to avoid rivers and streams, wetlands, shorelines and existing infrastructure as depicted on the NR Maps included in Attachment 2. Along town roads in Alburgh, Benson and Ludlow, the cables will be installed within the existing roadways. Along the VTrans road and railroad ROWs, some limited in-road installation is proposed; however, the cable has typically been sited near the edge of the existing VTrans ROWs to limit encumbrances on VTrans operations and maintenance and possible future infrastructure upgrades. The 12-foot-wide Permanent Project Corridor is located entirely within public road and railroad ROWs, except where the cable will be installed on the parcels controlled by TDI-NE at the Lake Champlain shoreline transitions in Alburgh and Benson and at the new proposed Converter Station site in Ludlow. Temporary Workspaces will be confined to the public road and railroad ROW to the greatest extent practical, and all proposed wetland and buffer zone impact and clearing areas are located within the existing public ROWs. A typical Temporary Workspace for construction equipment in a roadway ROW will be approximately 20 to 50 feet wide along one side of the Permanent Project Corridor, although Temporary Workspace requirements and configuration vary considerably along the Overland Route as depicted in the Construction Methods in Attachment 2, and the associated Impact Exhibits included in Attachment 3. The Construction Methods and Typical Details included in Attachment 2 present typical dimensions and configurations of the cable installation and standard construction methods. The “Typical Trench Cross Section” detail portrays typical dimensions of the cable installation and backfilled trench. The two HVDC cables within the bipole system will typically be laid side-by-side (approximately 12 to 36 inches apart) in a trench approximately 4 to 6 feet deep to provide for at least 3.5 feet of cover over the cables. Deeper excavations may be required due to site-specific constraints (e.g., existing drainage culverts or utilities) and to provide appropriate clearance under streams and/or fluvial erosion hazard areas. A fiber optic cable will also be installed within the trench. The total excavated width of the trench will be approximately 4 feet. Subsequent to laying the cables in the open trench, native subsoils (or thermal sand if required to achieve the required low thermal resistivity immediately around the cables) will be added to the trench to provide at least	

	1 foot of coverage over the cables (this will depend on field testing of native soils around the trench) and compacted to a density of 95-percent of the modified proctor theoretical maximum density, in accordance with ASTM Standard D155 (Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort) in order to achieve the required thermal conductivity. Protective plates will be placed directly above the low thermal resistive backfill material. A marker tape will then be placed approximately 2 feet above the cables and then the remainder of the trench will be backfilled and brought to grade. In wetland areas, the segregated native wetland topsoil will be returned to the excavated areas to restore these areas to original grade. Along Route 100 and the segment of Nelson Road between the proposed Converter Site in Ludlow and the existing Coolidge Substation, the transmission line will be installed in the existing roadways in concrete-encased duct bank. There are no wetland or buffer zone impacts proposed in these areas.	
11.3. Bridges and Culverts	Culvert circumference, length, placement and shapes, or bridge details. Numerous existing road and railroad culverts encountered within Class II wetlands or buffer zone areas will be subject to splicing (i.e., partial reconstruction) following installation of the transmission line. Splicing locations are situated within existing roadways, railroads, or their associated embankments. Currently, only one culvert is proposed for replacement, located at milepost (MP) 100.7 along Old Lake Road in Benson (where the transmission line is proposed to be installed within the existing unpaved road). This culvert is associated with wetland V-BE-W14/AW14 (and buffer) and conveys flow for an unnamed perennial tributary, designated stream V-BE-S8. Temporary disturbance areas in wetlands or buffer zones associated with this single culvert replacement and for the numerous culvert splicing (partial reconstruction) locations have been included in Table 3 and the Impact Exhibits in Attachment 3. No permanent fill or permanent impacts are proposed in wetlands and buffer zones as part of culvert splicing, repair, or replacement, as it is assumed that these activities constitute an allowed use per the Vermont Wetland Rules, Section 6.12, which allows for the reconstruction of structures and facilities which do not involve substantial expansions or modifications in a wetland or buffer. Culvert and stream crossings will be described in detail in the Project's applications for a Stream Alteration Permit and 401 Water Quality Certification. Culvert crossing methods are depicted in the Construction Methods and Typical Details in the EPSC Plans in Attachment 2.	
11.4. Construction Sequence	Describe any details pertaining to the worked planned in the wetland and buffer in terms of sequence or phasing that is relevant The general installation sequence for the HVDC transmission cables along the road ROWs on the Overland Route is as follows: (1) Flagging of resource areas (e.g., wetlands, Rare Threatened and Endangered (RTE) plant species, per the Project's environmental permits; 2) Initial clearing operations (where necessary) and installation of erosion prevention and sediment control measures and temporary construction mats, mobilization of equipment and work spaces; (3) topsoil segregation and stockpiling and trench excavation; (4) cable installation and splicing; (5) backfilling; and (6) restoration and final stabilization.	
11.5. Stormwater Design	List any stormwater permits obtained or applied for. Describe any stormwater and/or erosion controls proposed to prevent discharges to the wetland and buffer zone. The NECPL Project will be constructed and operated in compliance with applicable state and federal regulations, guidelines, standards and the specific requirements and conditions of the applicable permits. The Overland Route will avoid undue effects of stormwater discharges on water quality and the natural environment in accordance with Section 248(b)(5) of Title 30,	

	Vermont Statutes Annotated. The Project will be seeking an Individual Construction Stormwater Dishcarge Permit from the VT DEC. The Project-specific EPSC Plan and typical details is included in Attachment 2. EPSC measures to be implemented as part of the EPSC Plan may include the following: • Workspace and sensitive resource flagging and demarcation (e.g., barrier tape, exclusion fence) • Vegetated buffers • Silt fence and reinforced silt fence • Staked hay bales • Staked fiber rolls • Water bars • Stone check dams • Diversions, berms, and earth dikes • Temporary or permanent swales • Rip rap slope protection • Stabilized construction entrance/exit • Inlet protection • Sediment traps • Dust control via water or calcium chloride application • Sediment basins • Temporary trench breakers • Rolled erosion control product (RECP) • Concrete washout area • Surface roughening • Topsoil segregation • Seed application • Mulch application • Construction mats In addition to the aforementioned structural EPSC measures, the following non-structural practices will be implemented: • Construction phasing • Winter construction methods • Dewatering practices • On-site Plan Coordinator (OSCP) responsibilities • EPSC Specialist oversight • Turbidity monitoring and reporting The EPSC Plan is prepared to adhere to the Vermont Standards and Specifications for Erosion Prevention and Sediment Control (2008) and elaborates on construction phase stormwater management, implementation of EPSC measures, and other BMPs associated with this Project. The Project EPSC plan is included in Attachment 2. An application for an operation-phase stormwater discharge permit (coverage under General Permit 3-9015) has been submitted to the VT DEC for the creation of greater than one acre of impervious area at the Proposed Converter Site. There are no impacts to Class II wetlands or buffer zones proposed at the Converter Site, and there will be no discrete discharges from the Converter Site to Class II wetlands or buffer zones.	
11.6. Permanent Demarcation of Limits of Impact	Describe any plantings, fencing, signage, or other memorialization that provides permanent on-the-ground boundaries for the limits of disturbance for ongoing uses. The NECPL transmission line will primarily be buried within existing town and/or state roadways/railroads or associated ROWs, which are subject to active management by VTrans and others. The 12-foot-wide Permanent Project Corridor will be established above the buried cables and will be maintained for shallow-rooted vegetation for the life of the transmission line	

by TDI-NE where existing vegetation management practices employed by others are insufficient to prevent hazard to operation of the Project. The Temporary Workspaces, which parallel the Permanent Project Corridor and vary in width from approximately 20 to 50 feet, will be restored after construction and all prior vegetation species will be permitted to regenerate naturally to pre-existing conditions. Temporary demarcation of the Project limits of disturbance during construction will be implemented in accordance with the Project EPSC Plan and Individual Construction Stormwater Discharge Permit.

A permanent utility warning tape will be placed in the trench above the protective cover of the buried cables prior to final backfill and topsoil replacement.

12. Wetland and Buffer Zone Impacts

12.1. Wetland Impacts

Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets.

Totals

Wetland Fill	0 s.f.
Temporary Wetland Impact	100,039 s.f.
Other Permanent Wetland Impact	26,314 s.f.

Describe in detail the proposed impact.

Temporary Clearing, Permanent Clearing and Temporary Impacts (square feet) in Class II wetlands are summarized in Table 3 and depicted on the Impact Exhibits included in Attachment 3. No permanent wetland fill is proposed to occur as a result of the Project.

Permanent clearing is proposed in PFO wetlands within the Permanent Project Corridor. As previously indicated, the Permanent Project Corridor will be managed for low-growing herbaceous and scrub-shrub vegetation during the operation of the Project to protect the buried cables from damage from deep-rooted trees, as described in the Vegetation Management Plan (included in Attachment 6). These areas in the Permanent Project Corridor will be permanently converted from PFO to PSS or PEM wetlands. These areas have been calculated and included as Permanent Clearing in Table 3 and in the Wetland and Buffer Impact Exhibits (Attachment 3).
Temporary impacts are proposed for PEM and PSS wetlands within the Permanent Project Corridor. Construction mats will be used where feasible to protect wetland resources in the Permanent Project Corridor; however, these wetlands will be temporarily impacted by the following activities: temporary topsoil removal and segregation (to occur in wetlands prior to any soil disturbance or excavation, such as trenching); temporary excavation for the trench, temporary splicing boxes, and drill pits; repair or replacement of existing culverts; temporary fills or soil stockpiles (to be placed on geotextile fabric or construction mats in wetlands); and temporary grading (cut and fill) where necessary to establish safe and suitable access areas. These areas have been calculated and included as Temporary Impact in Table 3 and in the Wetland and Buffer Impact Exhibits included (Attachment 3).

Temporary clearing is proposed in PFO and PSS wetlands within the Temporary Workspace. In temporary clearing areas, construction mats will be used to protect wetland resources from impacts associated with construction access and material staging, and any temporary soil stockpiling will be placed on geotextile fabric or construction mats. These areas have been calculated and included as Temporary Clearing Impact in Table 3 and

in the Wetland and Buffer Impact Exhibits (Attachment 3).

A limited number of wetlands in the Temporary Workspace will incur temporary impacts as follows: two wetlands along roads in Benson, designated V-BE-W-14 (MP 100.6) and V-BE-W-100 (MP 102.1), where repair or replacement of existing culverts will occur and which will require temporary excavation in wetland areas; one wetland in West Haven, designated V-WH-W-11 (MP 107.9), to facilitate a culvert splice and temporary construction access which may require temporary earth disturbance; one wetland in Shrewsbury, designated T-SH-W9 (MP 136.0) where limited temporary fill on geotextile fabric will be installed to establish a level workspace over the trench during construction adjacent to an existing railroad (see "Construction Method 5B" in Attachment 2); and one wetland in Shrewsbury, designated T-SH-W13 (MP 136.7), where temporary fill on geotextile fabric (including a temporary stabilized construction entrance) will be implemented to establish workspace and a temporary HDD setup area adjacent to an existing railroad. These areas have been calculated and included as Temporary Impact in Table 3 and in the Wetland and Buffer Impact Exhibits (Attachment 3).

Following construction in wetland areas, construction mats or temporary fills will be removed, previously segregated topsoil will be replaced to temporarily graded or excavated areas to return the ground surface to generally match surrounding elevations, and the area will be allowed to regenerate to preconstruction conditions (with the exception of forested wetlands in the Permanent Project Corridor which convert to scrub-shrub or emergent marsh communities). Wetland seed application and temporary soil stabilization will take place as necessary to restore disturbed wetland areas, in accordance with the Project EPSC Plan and Individual Construction Stormwater Discharge Permit included in Attachment 2.

12.2. Buffer Zone Impacts

Summarize the square footage of impact in the appropriate category. If more than one wetland is impacted, provide that information and use the supplemental wetland sheets.

Totals

Temporary Buffer Impact	429,537 s.f.
Permanent Buffer Impact	50,596 s.f.

Describe in detail the proposed impact.

Temporary Buffer Impacts and Permanent Buffer Impacts in Class II wetland buffers are summarized in Table 3 and depicted on the Impact Exhibits included in Attachment 3. The term Permanent Buffer Impact is used for impact calculation purposes and to remain consistent with the impact categories outlined in the Vermont Wetland Permit application form, but it refers to the same activity described elsewhere in the permit application as permanent clearing.

Permanent Buffer Impacts (clearing) are proposed in forested wetland buffer zones within the Permanent Project Corridor. In accordance with the Project Vegetation Management Plan (included in Attachment 6), these areas will be managed for low-growing herbaceous and scrub-shrub communities for the life of the Project to protect the underground cables from damage from deep-rooted trees. This will result in the conversion of forested buffer communities to scrub-shrub or herbaceous communities in the Permanent Project Corridor. These areas have been calculated and included as Permanent Buffer Impact in Table 3 and in the Wetland and Buffer Impact Exhibits (Attachment 3).

	Temporary Buffer Impacts are proposed in non-forested wetland buffer zones within the Permanent Project Corridor, where trenching and temporary grading (cut and fill) will take place to establish suitable construction access and accommodate installation of the transmission line. These areas have been calculated and included as Temporary Buffer Impact in Table 3 and in the Wetland and Buffer Impact Exhibits (Attachment 3). Temporary clearing is proposed in forested buffer zones within the Temporary Workspace and these areas have been calculated and included as Temporary Buffer Impact in Table 3 and in the Wetland and Buffer Impact Exhibits (Attachment 3). In some site-specific instances as described in the following paragraph, other temporary impacts such as temporary grading, will occur in buffer zones in the Temporary Workspace. Temporary impacts to non-forested buffers in the Temporary Workspace will primarily be avoided with the exception of several limited instances as described in the following paragraph. Select forested and non-forested buffer zones in the Temporary Workspace will be impacted for temporary grading or earth disturbance as follows: two buffer zones along town roads in Benson, associated with wetlands designated V-BE-W-14 (MP 100.6) and V-BE-AW-100 (MP 102.1), where repair or replacement of existing culverts will occur and which will require temporary excavation in buffer zone areas; a buffer zone in Rutland, associated with wetland T-RU-W4 (MP 127.1), and a buffer zone in Mount Holly, associated with wetland T-MH-W55/AW55 (MP 138.8), where jack-and-bore pits will extend slightly outside of the Permanent Project Corridor and into the Temporary Workspace; and buffer zones in West Haven, Fair Haven, Castleton, Clarendon, Shrewsbury, Mount Holly, and Ludlow, associated with wetlands V-WH-W-11 (MP 107.1), V-FH-W-20 (MP 109.6), V-FH-W-4 (MP 111.0), V-CN-W-104 (MP 113.8), V-CN-W-15 (MP 115.6), V-CN-W-18 (MP 116.2), V-CN-W-3/6 (MP 116.6), T-CL-W7 (MP 129.0), T-SH-W9 (MP 136.0), T-SH-W13 (MP 136.7), T-MH-W9 (MP 144.6), and T-LU-W13 (MP 147.9), where temporary grading (cut and/or fill) is required to provide level areas for construction access and staging, and to accommodate implementation of temporary EPSC measures, including stabilized construction entrances. These areas have been calculated and included as Temporary Buffer Impact in Table 3 and in the Wetland and Buffer Impact Exhibits (Attachment 3). Following construction in Buffer Zones, any temporary fills will be removed, temporary grading or excavations will be recontoured to approximate preconstruction contours, and the areas will be allowed to regenerate to preconstruction conditions (with the exception of forested Buffer Zones in the Permanent Project Corridor which will convert to scrub-shrub or herbaceous communities). Application of an upland seed mix and temporary stabilization will be completed in accordance with the Project EPSC Plan and Individual Construction Stormwater Discharge Permit. The EPSC Plan is included in Attachment 2.	
12.3.Cumulative Impacts	List any potential cumulative or ongoing, direct and indirect impacts on the functions of the wetland that could result from the proposed project. The Project Vegetation Management Plan (included in Attachment 6) describes management techniques for the operational phase of the Project. Operation-phase vegetation management activities will only take place within the 12-foot-wide Permanent Project Corridor. All Temporary Workspaces will be allowed to regenerate to preconstruction conditions following Project construction and restoration. Operation-phase vegetation management practices in the Permanent Project Corridor are the only source of potential cumulative direct and indirect impacts on wetland functions and values once the final stabilization and restoration of construction areas is complete.	

As desribed in the Vegetation Mangment Plan, efforts have been made to site the Project within areas of existing town road ROW, VTrans ROW, that are already actively maintained to be free of deep rooted vegetation, which are referred to in the plan as Clear Zones. As a result of this planning, a large portion of the Permanent Project Corridor is located within actively maintained road and railroad ROWs and, thus, relatively few areas will require additional ongoing vegetation management by TDI-NE.

As described in the Vegetation Management Plan where existing management practices employed by others are insufficient, the Permanent Project Corridor will be managed through a combination of mowing, brush-hogging, and selective clearing to limit vegetation to shallow-rooted growth so as not to compromise the cable operation. TDI-NE expects that it will conduct vegetation management activities throughout the operational life of the Project only in areas which do not overlap with pre-existing Clear Zones maintained by the Town, and VTrans.

The amount of vegetation management in wetlands and buffers beyond the existing regular ROW maintenance and Clear Zones is approximately 0.6 acres of permanent wetland convervsion and 1.16 acres of permanent buffer clearing. There is only one Class II wetland area within the Project corridor that is outside existing ROW or Clear Zone in Alburgh (Wetland V-AL-W-2) which is not a wetland conversion impact.

A list of wetlands/buffers that are subject to proposed existing covertype conversion are included in the impact exhibits in Attachment 3, and those that are located in the areas that will be maintained by TDI-NE outside of existing Clear Zones are specifically listed int the table below:

Wetland ID	Mile Post	Permanent Clearing Impacts (Sq Ft)	Permanent Buffer Conversion Impact
V-BE-W-14	100.6	0	323
V-WH-W-11	107.1	0	346
V-FH-W-21	109.4	947	720
V-FH-W-20	109.6	0	2,267
V-FH-W-3	110.8	0	137
V-FH-W-5	110.8	0	1,755
V-FH-W-4	111	707	2,842
V-FH-W-6	111.1	0	362
V-FH-W-9	111.6	0	397

V-CN-W-102	113.1	0	275
V-CN-W-104	113.8	0	1,017
V-CN-W-113	114.3	28	887
V-CN-W-11	115.2	0	87
V-CN-W-15	115.6	397	1,351
V-CN-W-16	115.9	0	320
V-CN-W-17	116	0	338
T-RU-W4	127.1	3,325	4,535
T-CL-W7	129	962	648
T-CL-W17	130.7	0	1
T-CL-W18	130.8	0	4,053
T-CL-W20	131.3	0	486
T-CL-W22	131.6	284	195
V-SH-W-7	133.9	1,108	1,626
V-SH-W-201	134.3	0	4,140
T-SH-AW8	135.8	0	1,421
T-SH-W9	136	3,648	3,224
T-SH-W10	136.1	2,050	1,487
T-SH-W13	136.7	4,292	677
T-WA-W3	137	1,097	1,699
T-WA-W4	137.3	4,752	2,070
T-WA-W9	137.5	409	768
T-WA-W10	137.5	247	1,009
V-WA-AW-106	137.9	0	219
V-WA-W-102	138.1	0	111
V-WA-AW-102	138.1	0	16
V-WA-W-101	138.5	953	4,352

T-MH-W55	138.8	222	883
T-MH-W50	139.4	148	3
T-MH-W38	140.6	597	925
T-MH-W37	140.7	0	67
T-MH-W33	141.1	0	7
T-MH-W20	142.8	141	230
T-MH-W9	144.6	0	1,973
T-MH-AW-9	144.6	0	64
T-LU-W13	147.9	0	283
	Total Wetland Conversion Impacts	**26,314**	**50,596**

The Vegetation Management Plan also addresses non-native invasive species (NNIS) throughout the Project. As described in the Vegetation Management Plan, NNIS monitoring and control in wetland and buffers will target species and populations which germinate outside the existing documented populations. TDI-NE will not assume responsibility for post-construction monitoring, control or management of areas along the Project route that have pre-existing, documented invasive infestations or for areas that overlap with the VTrans Clear Zone (it may be assumed that NNIS management will be precluded by routine mowing by VTrans in these areas).

Vegetation management will take place in accordance with BMPs (as defined in the Vegetation Management Plan) to protect wetland resources, including limiting mechanized work to dry or frozen conditions or using construction mats. Herbicides may be selectively applied at the Ludlow Converter Station yard (which is not located in the vicinity of Class II wetlands or buffer zones) or to control NNIS along the Overland Route. Applicable herbicide use regulations and permits will be adhered to (such as maintaining buffers from open water). Areas where the cable has been installed with HDD will not require vegetation management, except near the HDD entry and exit points where the cable is less than 15 feet below the surface (these areas are included in Permanent Clearing calculations).

Thus, the cumulative impacts to Class II wetlands over the life of the Project are limited to areas of continued vegetation management within the Permanent Project Corridor. These ongoing vegetation management activities will not contribute to undue, adverse effects on the wetland functions and values, as described in Sections 16 to 24, and will not result in cumulatively significant effects when considering the existing vegetation management practices conducted by VTrans and others along the Overland Route.

12.4. Avoidance and Minimization	Please refer to Section 9.5b of the rules on Mitigation Sequencing for this section.	
12.4.1. Avoidance	Can the proposed activity be practicably located outside the wetland/buffer zone, or on another site owned or controlled by the applicant or reasonably available to satisfy the basic project purpose? If not, indicate why. This answer should include any examination of alternatives that you have explored including using other properties, requesting easements, and altering the project design. Pursuant to the Guidelines implementing Section 404(b)(1) of the Clean Water Act (CWA), the U.S. Army Corps of Engineers (USACE) must determine whether a proposed project is the least environmentally damaging practicable alternative. To assist in the USACE's analysis, TDI-NE evaluated various alternatives and analyzed the resource impacts associated with each alternative. The Alternatives Analysis (Excerpt from USACE Application for Department of Army Permit) is included in Attachment 6. Based on the Alternatives Analysis, TDI-NE believes that the proposed alternative satisfies the requirements of Section 404(b)(1) of the CWA as the least environmentally damaging practicable alternative (LEDPA). This analysis demonstrates overall Project avoidance of significant wetland and buffers pursuant to the Vermont Wetland Rules. Additional site-specific avoidance measure are described as follows. As required by regulations and in support of a proactive wetland resource avoidance strategy, TRC and VHB conducted wetland delineations for the Overland Route study area in 2014 in accordance with the NECPL Field Protocols for Wetlands, Streams, Vernal Pools and Data Collection (April 2014). The study areas included the TDI-NE controlled parcels as well as the existing town and state road and railroad ROWs and several off-site laydown areas. These areas are inclusive of the Permanent Project Corridor and Temporary Workspace. Approximate wetland features were identified within 50 feet of the survey area where possible based on visual observation and desktop evaluations to identify where potential Class II wetland buffer zones may encroach the Project area. In consultation with the VT DEC Wetland Program Manager (see wetland classification correspondences in Attachment 5), wetlands were classified as either Class I, Class II or Class III based on the Vermont Wetland Rules (2010) definition for "significant wetlands," including consideration of the presumptions of significance, and State of Vermont functions and values for each wetland or wetland complex as identified by Vermont Wetland Evaluation Forms, (which are completed for each wetland and provided in Attachment 4). Utilizing the results of the wetland delineation and classification, TDI-NE undertook measures during planning, design, and federal/state agency outreach to avoid (where possible) and minimize impacts to jurisdictional wetlands and buffer zones. This included an iterative design process that involved routing of the Permanent Project Corridor within existing road and railroad ROWs around wetlands and buffer zones where practicable, in consideration of other constraints such as streams, RTE species or habitat, significant natural communities, terrain and topography, outcrops or bedrock, existing infrastructure, and other constructability considerations. Once the Permanent Project Corridor was established so as to avoid wetlands and buffer zones to the extent feasible while also considering and minimizing other environmental resource effects, Temporary Workspace was sited to avoid Class II wetlands and buffer zones to the extent practicable, except where necessary to support construction of the Project. HDDs were implemented in specific instances to avoid large rivers, streams,	

	waterbodies and infrastructure, and several will contribute to the avoidance of Class II wetlands, including: V-CN-W-104 (MP 113.8), V-FH-W-9 (MP 111.6), V-CN-W-113 (MP 114.3), T-RU-W7 (MP 126.5), T-MH-W4 (MP 145.4) and T-MH-W55 (MP 138.8). Where possible, HDD setup areas were set back from wetlands and buffer zones. However, temporary impacts resulting from HDD setup areas will be required in some Class II wetlands and buffer zones where HDD configurations were optimized based on length and other factors (i.e. forested areas, steep slopes, proximity to houses) and complete avoidance of wetlands or buffers was not practicable. As currently designed, the Project avoids any impacts resulting in permanent wetland fill. There are however, PFO wetlands and forested buffers that will be permanently converted to herbaceous or scrub-shrub communities within the Permanent Project Corridor. During the design process, these forested wetland and buffer areas were avoided to the extent practicable while still maintaining a viable project. This included routing the Project within existing cleared and maintained town and state road and railroad ROW areas to the extent allowed by the towns and VTrans and in consideration of other constructability and environmental resource constraints. The Project location within existing disturbed/managed ROWs minimizes the need for additional impacts to undisturbed wetlands and reduces temporary wetland and buffer impacts associated with accessing the work areas. The design has also sought to incorporate construction practices that will avoid and minimize wetland impacts, as described below and in Section 12.4.2 and 12.4.3. To avoid temporary impacts to wetlands within the Temporary Workspace and Permanent Project Corridor, construction mats will be placed over vegetation to avoid rutting or soil compaction from machinery and impacts from temporary soil stockpiling. After construction, construction mats will be removed and these areas will be allowed to regenerate to pre-existing conditions. With the exception of the few site-specific locations of temporary impacts to wetlands and buffer zones in the Temporary Workspace (Section 12.1 and 12.2), temporary impacts in the Temporary Workspace will be avoided with construction matting. To avoid and minimize potential adverse effects from proposed temporary impacts to wetlands and buffer zones, the Project will implement construction Best Management Practices and post-construction restoration measures as previously described in Sections 11, 12.1 and 12.2. As noted in Additional Environmental Notes Section (17) in the EPSC plans in Attachment 2, abandoned railroad ties encountered by the Project, which are located along the railroad section of the Project, will be collected and stockpiled at an approved upland area within the railroad property. The railroad ties will not be stockpiled in any wetlands or buffers. Following final site restoration and stabilization, activities associated with the operation of the Project will be restricted to the 12-foot-wide Permanent Project Corridor. Since a large portion of the Permanent Project Corridor is located within actively maintained road and railroad ROWs, and HDD areas will not require vegetation management since they are buried sufficiently deep, wetland and buffer impacts associated with ongoing vegetation management for the Project have been avoided to a large extent.	
12.4.2. Minimization	If the proposed activity cannot practicably be located outside the wetland/buffer zone, have all practicable measures have been taken to avoid adverse impacts on protected functions? Please include any information on on-site alternatives that have been examined; minimizing the size and scope of the project to avoid impacts; or relocating portions of the project to avoid impacts Based on the Alternatives Analysis (Excerpt from USACE Application for Department of Army Permit) included in Attachment 6, TDI-NE believes that the selected route minimizes wetland resource impacts and is the least	

	environmentally damaging practicable alternative (LEDPA). The Project has been designed to minimize wetland impacts to Class II wetlands and buffers by siting the Overland Route primarily within road and railroad ROWs so wetland encroachments are typically proposed at wetland edges, minimizing the overall wetland impact on its capacity to provide wetland functions. Many of the wetlands occur within or adjacent to mechanically-maintained transportation ROWs and/or have been disturbed or fragmented due to development of roadways, agriculture or commercial and residential uses. In this context, the Project will have a reduced impact on wetlands. In addition, the location of wetlands adjacent to roads minimizes the wetland impacts associated with accessing the Project. Where wetland or buffer zone avoidance is not possible, the Project has attempted to narrow and/or shift the Temporary Workspace, route the cable alignment around significant wetlands, confine temporary impacts to the 12-foot-wide Permanent Project Corridor, and utilize existing roads or railroads for construction access where possible. To further minimize impacts to water quality, the Project will obtain a Stream Alteration Permit, an Individual Stormwater Discharge Permit, and an Individual 401 Water Quality Certification from the ANR, which will provide specific conditions that will further minimize any potential impacts to wetlands or surface waters.	
12.4.3. Mitigation	If avoidance of adverse effects on protected functions cannot be practically achieved, has the proposed activity has been planned to minimize adverse impacts on the protected functions and a plan has been developed for the prompt restoration of any adverse impacts on protected functions? Include any information on best management practices to be used for the project both for the initial construction and ongoing use. Also include any proposed restoration of temporary impacts, previously disturbed wetland or buffer zones or proposed conservation that are being used to offset the proposed impacts. The Vegetation Management Plan (included in Attachment 6) and Project EPSC Plan include mitigation measures that will be applied during the construction and operation phase of the Project that will protect wetland resources from potential effects of soil erosion and sedimentation. EPSC measures such as silt fence or reinforced silt fence (reinforced with wire mesh, staked hay bales, staked fiber rolls, etc.) will be installed on the downslope side of impact areas and where soil erosion and sedimentation toward wetland areas is possible. Temporary stabilization will be completed following periods of inactivity in accordance with the Project's Individual Construction Stormwater Discharge Permit to limit exposed soil and erosion and sedimentation risk, and permanent restoration and stabilization measures will mitigate temporary impacts to wetlands. For Class II wetlands that are encountered in the Project area, potential impacts from equipment access will be mitigated by working under dry or frozen conditions or with the use of construction mats to the extent practicable. Specifically, construction matting will be installed for equipment access in wetland areas in the Temporary Workspaces and Permanent Project Corridor except where temporary impacts from temporary excavations, fill or stockpiling is required for access or construction (as discussed in Section 12.1). Temporary impacts in wetland areas will be mitigated with the following measures. Topsoil will be segregated from all proposed areas of temporary disturbance and will be stockpiled on geotextile fabric or construction mats. Topsoil will be returned to wetlands so as to preserve wetland biota and support rapid revegetation with native species (in concert with application of a wetland seed mix). Where limited areas of temporary fill is proposed in wetlands, geotextile fabric will be installed to support removal and restoration following construction. Trenches will be backfilled in reverse order of how they were excavated and the upper layer of topsoil will match the approximate depth of the surrounding wetland	

	topsoil. Temporary impact areas will be seeded with a wetland or upland seed mix and temporarily stabilized with a weed-free straw mulch or other VT DEC-approved practice, and wetlands will be allowed to regenerate to preconstruction conditions. Where permanent clearing is required in PFO wetlands in the Permanent Project Corridor, conversion to herbaceous or scrub-shrub communities will occur. To mitigate any potential effects on wetland hydrology during construction, a temporary trench breaker will be installed on either side of wetland crossings as necessary to inhibit migration of ground and surface water along the open trench. With regards to mitigation of any long-term effects on wetland hydrology, native subsoils will be utilized to backfill the cables and trench to the extent possible (where they meet the required low thermal resistivity standards, otherwise, a thermal sand will be installed around the cables) and a stringent compaction specification will be applied, which requires compaction to a density of 95-percent of the modified proctor theoretical maximum density, in accordance with ASTM Standard D155 (Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort). For several wetlands that support wetland-dependent RTE species, RTE Species Protection Plans have been developed to minimize and mitigate any temporary effects on RTE species during constructions, which are described in additional detail in Section 21.2 and the enclosed NECPL Report of Survey Results and Plan for Impact Aovidance and Minimization: Rare, Threatened, and Endangered Species, Necessary Wildlife Habitat, and Natural Communities (included in Attachment 6). To minimize the spread or addition of invasive species, a field-based inventory (including GIS mapping) of non-native invasive species (state-designated Class A and B noxious weeds) along the Overland Route was carried in out in 2014 to provide a baseline estimate of species locations and densities. The NNIS Management, Monitoring, and Control Plan included as part of the Vegetation Management Plan in Attachment 6 describes measures TDI-NE will employ to minimize the introduction of NNIS or spread of existing NNIS populations and to protect sensitive resources along the Overland Route, including post-construction monitoring and control measures. Sections 11, 12.1 and 12.2 further elaborate on measures that will mitigate temporary or permanent effects to wetlands that may arise from construction and operation of the Project.	
12.4.4. Compensation	Please refer to Section 9.5c of the rules for compensation, which is appropriate when the project will result in an undue adverse impact. If compensation is proposed please include a summary here.	
	Compensation is not applicable for this Project. There are no undue, adverse impacts to wetlands or buffer zones that will result from the Project.	
13. Supporting materials	Where appropriate list the accompanying material by title, author, date and last revision date. Submit these documents and plans with the application.	
13.1. Location map	Provide a project location map that is 8 ½" x 11" and reproducible in black and white. An Environmental Interest Locator Map is appropriate using the USGS topography map base layer, roads, and VSWI wetlands at minimum.	
	Please see Figure 1 "Project Overview Map" in Attachment 2.	
13.2. Site Plans	List by title, author, date and last revision date. Plans should include wetland delineation and buffer zones, limits of disturbance, erosion controls, building envelopes and permanent memorialization. Site Plans include: "NR Maps" in Attachment 2;	

	"EPSC Plans " in Attachment 2; and "Wetland and Buffer Impact Exhibits" in Attachment 3. See the Document Tracking Table for Author and Dates.	
13.3. ACOE Delineation Forms	List by author, location, and date. Required only for Individual Permits. Please see "NECPL Wetland and Waters Delineation" in Attachment 5.	
13.4. Other Supporting Documents	Provide any other documentation that supports the application. List photographs; easements; agreements; may include a GIS-compatible wetland submittal for determinations; etc. Other supporting documents include: Attachment 1: Responsible Party Statement; Attachment 4: Vermont Wetland Evaluation Forms; Attachment 5: Natural Resources Report; Photo Exhibit; Wetland Classificaiton Recommendations and Delineation Summary; Alternatives Analysis Attachment 6: NECPL Report of Survey Results and Plan for Impact Aovidance and Minimization: Rare, Threatened, and Endangered Species, Necessary Wildlife Habitat, and Natural Communities; Vegetation Management Plan; and Attachment 7: Adjoining Property Owners. A comprehensive List of Attachments is provided following the application form and associated tables.	
13.5. List of Abutters (Neighbors with land adjoining wetland or buffer zone)	Attach list of names and mailing addresses or submit as word mailing document. Please refer to "Adjoining Property Owners" Table in Attachment 7.	
13.5.1. Newspaper Notification	If choosing the option to fulfill the notice requirement with a newspaper notice, list the newspaper to be used here. A list of names and addresses for immediately adjacent landowners (500 foot radius) of the project area is required for the List of Abutters. *****NOTE: The applicant will be billed directly by the newspaper you list here. Use of newspaper notification may extend the notice period, depending on when the notice posts in the newspaper.** Rutland Herald Rutland Tribune Sam's Good News The Vermont Journal The Vermont Standard	
14. Check Which Functions are Present in the Subject Wetland and in the Wetland Complex.	**Wetland Function Summary:** (if more than one wetland use supplemental wetland sheets)	

Functions & Values	Subject Wetland	Wetland Complex	Functions & Values	Subject Wetland	Wetland Complex
Flood/Storm Storage	☐	☐	RTE Species	☐	☐
Surface & Groundwater Protection	☐	☐	Education & Research	☐	☐
Fish Habitat	☐	☐	Recreation/ Economic	☐	☐
Wildlife Habitat	☐	☐	Open Space/ Aesthetics	☐	☐
Exemplary Natural Community	☐	☐	Erosion Control	☐	☐

15. Coverage under Vermont General Wetland Permit	**If applying for an Individual Vermont Wetland Permit or Determination, please proceed to number 16 and answer the remaining application questions.**	

	If applying for Coverage under the Vermont General Wetland Permit, please complete question 15.1 prior to submitting application.	
15.1. VWP Vermont General Permit eligibility checklist	If applying for coverage under the Vermont General Wetland Permit, please verify the following to complete the application: ☐ The activity qualifies as an eligible activity for coverage under the Vermont General Wetland Permit ☐ The proposed project will meet the conditions applicable to the proposed project in the Vermont Wetland General Permit ☐ The activity does not qualify as an Allowed Use under Section 6 of the Vermont Wetland Rules. ☐ The activity will not result in an undue adverse impact on protected wetland functions and values, nor does it need additional conditions to protect functions and values. ☐ All impacts have been avoided and minimized to the greatest extent possible. ☐ The wetland complex is not significant for Function 5.5 Exemplary Wetland Natural Community or 5.6 Rare, Threatened and Endangered Species Habitat. ☐ The activity is not located in or adjacent to a vernal pool, fen, or bog. ☐ The wetland is not at or above 2,500' in elevation (headwaters wetland). ☐ The project is not located in a Class I wetland or associated buffer zone. ☐ The activity is not an as-built project that constitutes a violation of the Vermont Wetland Rules.	
Stop here if applying for Coverage under the Vermont General Wetland Permit		

Complete the following Functions and Values checklist if applying for an Individual Wetland Permit and/or a Wetland Determination		
Functions and Values	For each Function and Value, first evaluate the entire wetland or **wetland complex** and check all that apply. Secondly, evaluate how the wetland in the project area contributes to that function. Thirdly explain how the project will not result in adverse impacts to this function. Include any information on specific avoidance and minimization measures. If more than one wetland complex is involved, use the Supplemental Wetland Forms.	
16. Storage for Flood Water and Storm Runoff	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Constricted outlet or no outlet and an unconstricted inlet. ☐ Physical space for floodwater expansion and dense, persistent, emergent vegetation or dense woody vegetation that slows down flood waters or stormwater runoff during peak flows and facilitates water removal by evaporation and	

transpiration.

- ☐ If a stream is present, its course is sinuous and there is sufficient woody vegetation to intercept surface flows in the portion of the wetland that floods.
- ☐ Physical evidence of seasonal flooding or ponding such as water stained leaves, water marks on trees, drift rows, debris deposits, or standing water.
- ☐ Hydrologic or hydraulic study indicates wetland attenuates flooding.

If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.

☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level.

- ☐ Significant flood storage capacity upstream of the wetland, and the wetland in question provides this function at a negligible level in comparison to upstream storage (unless the upstream storage is temporary such as a beaver impoundment).
- ☐ Wetland is contiguous to a major lake or pond that provides storage benefits independently of the wetland.
- ☐ Wetland's storage capacity is created primarily by recent beaver dams or other temporary structures.
- ☐ Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively.

☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level.

- ☐ History of downstream flood damage to public or private property.
- ☐ Any of the following conditions present downstream of the wetland, but upstream of a major lake or pond, could be impacted by a loss or reduction of the water storage function.
  - ☐ 1. Developed public or private property.
  - ☐ 2. Stream banks susceptible to scouring and erosion.
  - ☐ 3. Important habitat for aquatic life.
- ☐ The wetland is large in size and naturally vegetated.
- ☐ Any of the following conditions present upstream of the wetland may indicate a large volume of runoff may reach the wetland.
  - ☐ 1. A large amount of impervious surface in urbanized areas.

	☐ 2. Relatively impervious soils. ☐ 3. Steep slopes in the adjacent areas.	
16.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above Table 2 provides the functions and values for subject wetlands and wetland complexes. For an evaluation of how the subject wetland contributes to the function/value, please refer to subject wetland "Vermont Wetland Evaluations Forms" in Attachment 4 and the following statement of no undue adverse impact.	
16.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. The Project has been designed to avoid and minimize adverse impacts to storage for floodwater and storm runoff by avoiding wetland impacts wherever possible. The site of the Overland Route, primarily within road and railroad ROWs means that most wetland encroachments occur at wetland edges, minimizing the overall impact to their capacity to provide this function. Class II wetland complexes (and their associated buffer zones) that have been determined to provide this function at significant levels occur in both the Permanent Project Corridor and within Temporary Workspaces where temporary and permanent clearing and/or temporary impacts are proposed, as indicated in Tables 2 and 3. Generally, the Project effects on the subject wetlands are localized to narrow areas within the Permanent Project Corridor and/or Temporary Workspaces alongside existing road and railroad ROWs where the subject wetland contributes minimally to the overall wetland complex function. All construction activities (including pre-/post-construction management) will take place in accordance with specifications outlined in this application form, the Overland Construction Methods and Typical Details (in Attachment 2), the NECPL Project Vegetation Management Plan (Attachment 6) and a Project-specific EPSC Plan. Adverse effects to this function may occur during construction activity as a result of vegetation clearing and temporary soil disturbances from topsoil segregation, trenching and construction access, and during the period of vegetation re-establishment. However, any such effects to storage for floodwater and storm runoff would be minimal and temporary. Following construction, areas of temporary impact and temporary clearing will be restored to pre-existing conditions in accordance with the restoration measures presented in this application and the Project EPSC Plan. Areas of permanent clearing in wetlands (0.54 acres in total) will be limited to forested areas in the 12-foot-wide Permanent Project Corridor alongside existing roads and railroads and these areas will be allowed to regenerate to emergent and scrub-shrub communities. Permanent effects as a result of this wetland conversion are not expected to be adverse. There are no significant forested floodplain wetland natural communities that will be affected. After the subject wetlands are restored following construction, they are expected to continue to provide pre-construction levels of this function. Thus, the Project will not have an undue, adverse impact to this function.	
17. Surface and Ground Water Protection	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Constricted or no outlets. ☐ Low water velocity through dense, persistent vegetation.	

☐ Hydroperiod permanently flooded or saturated.

☐ Wetlands in depositional environments with persistent vegetation wider than 20 feet.

☐ Wetlands with persistent vegetation comprising a defined delta, island, bar or peninsula.

☐ Presence of seeps or springs.

☐ Wetland contains a high amount of microtopography that helps slow and filter surface water.

☐ Position in the landscape indicates the wetland is a headwaters area.

☐ Wetland is adjacent to surface waters.

☐ Wetland recharges a drinking water source.

☐ Water sampling indicates removal of pollutants or nutrients.

☐ Water sampling indicates retention of sediments or organic matter.

☐ Fine mineral soils and alkalinity not low.

☐ The wetland provides an obvious filter between surface water or ground water and land uses that may contribute point or nonpoint sources of sediments, toxic substances or nutrients to the wetland, such as: steep erodible slopes; row crops; dumps; areas of pesticide, herbicide or fertilizer application; feed lots; parking lots or heavily traveled road; and septic systems.

If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.

☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level.

☐ Presence of dead forest or shrub areas in sufficient amounts to result in diminished nutrient uptake.

☐ Presence of ditches or channels that confine water and restrict contact of water with vegetation.

☐ Wetland is very small in size, not contiguous to a stream, and not part of a collection of small wetlands in the landscape that provide this function cumulatively.

☐ Current use in the wetland results in disturbance that compromises this function.

☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level.

☐ The wetland is adjacent to a well head or source protection area, and provides ground water recharge.

☐ The wetland provides flows to Class A surface waters.

	☐ The wetland contributes to the protection or improvement of water quality of any impaired waters. ☐ The wetland is large in size and naturally vegetated.	
17.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above Table 2 provides the functions and values for subject wetlands and wetland complexes. For an evaluation of how the subject wetland contributes to the function/value, please refer to subject wetland "Vermont Wetland Evaluations Forms" in Attachment 4 and the following statement of no undue adverse impact.	
17.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. The Project has been designed to avoid and minimize adverse impacts to surface and groundwater protection by avoiding wetland impacts wherever possible. The site of the Overland Route, primarily within road and railroad ROWs means that most wetland encroachments occur at wetland edges, minimizing the overall impact to their capacity to provide this function. Class II wetland complexes (and their associated buffer zones) which have been determined to provide this function at significant levels occur in both the Permanent Project Corridor and within Temporary Workspaces where temporary and permanent clearing and/or temporary impacts are proposed, as indicated in Tables 2 and 3. Generally, the Project effects on the subject wetlands are localized to narrow areas within the Permanent Project Corridor and/or Temporary Workspaces alongside existing road and railroad ROWs, where the subject wetland contributes minimally to the overall wetland complex function. Minimal temporary effects to subject wetland surface and groundwater protection functions may occur during construction as a result of vegetation clearing and temporary soil disturbances in the Permanent Project Corridor and Temporary Workspace. The Project will implement stringent erosion and sedimentation control measures in accordance with the Vermont Standards and Specifications for Erosion and Sediment Control, the Project EPSC Plan and an Individual Construction Stormwater Discharge Permit to ensure the function of the wetland complex is not unduly, adversely affected during construction (see select EPSC measure Typical Details in Attachment 2). This will include the implementation of sediment barriers (perimeter controls) to be installed on the downslope side of all areas of temporary disturbance where there is potential for sediment runoff or soil erosion, and specifies the use of reinforced sediment barriers within 50 feet of waters of the State. This EPSC Plan will also include a comprehensive dewatering plan and associated BMPs, and site restoration and stabilization procedures. The Project EPSC Plan and Individual Construction Stormwater Discharge Permit will ensure the protection of water quality in wetlands and streams during construction and restoration activities and will ensure that wetlands are appropriately restored and revegetated. Additionally, the Project Vegetation Management Plan (included in Attachment 6) specifies Best Management Practices to be implemented during the operation phase of vegetation management for the Permanent Project Corridor (where required, as most areas of the Permanent Project Corridor are subject to active management by VTrans and will not require additional management by TDI-NE). This shall include conducting any mechanical vegetation management in wetlands during dry or frozen conditions (alternatively, hand cutting methods will be used). Herbicide use may be implemented for post-construction NNIS management and control in accordance with the associated NNIS Management, Monitoring, and Control Plan (included as a section of the	

	Vegetation Management Plan, Attachment 6), which will comply with all applicable state and federal regulations and permit requirements for herbicide use, including setbacks from surface waters. Following construction, areas of temporary impact and temporary clearing will be restored to pre-existing conditions in accordance with the restoration measures presented in this application and the EPSC Plan (to include re-grading to approximate preconstruction contours, replacement of topsoil, application of wetland seed mix, and temporary stabilization of disturbed wetland areas). After the subject wetlands are restored following construction, they are expected to continue to provide pre-construction levels of this function. Thus, the Project will not have an undue, adverse impact to this function.	
18. Fish Habitat	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Contains woody vegetation that overhangs the banks of a stream or river and provides any of the following: shading that controls summer water temperature; cover including refuges created by overhanging branches or undercut banks; source of terrestrial insects as fish food; or streambank stability. ☐ Provides spawning, nursery, feeding or cover habitat for fish (documented or professionally judged). Common habitat includes deep marsh and shallow marsh associates with lakes and streams, and seasonally flooded wetlands associated with streams and rivers. ☐ Documented or professionally judged spawning habitat for northern pike. ☐ Provides cold spring discharge that lowers the temperature of receiving waters and creates summer habitat for salmonoid species. ☐ The wetland is located along a tributary that does not support fish, but contributes to a larger body of water that does support fish. The tributary supports downstream fish by providing cooler water, and food sources.	
18.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above Table 2 provides the functions and values for subject wetlands and wetland complexes. For an evaluation of how the subject wetland contributes to the function/value, please refer to subject wetland "Vermont Wetland Evaluations Forms" in Attachment 4 and the following statement of no undue adverse impact.	
18.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. The Project has been designed to avoid and minimize adverse impacts to fish habitat by avoiding wetlands and streams wherever possible. Class II wetland complexes (and their associated buffer zones) which have been determined to provide this function at significant levels occur in both the Permanent Project Corridor and within Temporary Workspaces where temporary and permanent clearing and/or temporary impacts are proposed, as indicated in Tables 2 and 3. Generally, the Project effects on the subject	

	wetlands are localized to narrow areas within the Permanent Project Corridor and/or Temporary Workspaces alongside existing road and railroad ROWs that are actively managed, where the subject wetland contributes minimally to the overall wetland complex function. Where impacts to riparian wetlands are proposed, the Project will implement bank restoration and stabilization measures to protect the wetlands' continued ability to provide fish habitat by reducing sedimentation and supporting woody species that shade streams. A "Stream Bank Restoration with RECP" Typical Detail is included in Attachment 2. The Project will also minimize impacts to fish habitat by ensuring that stream crossings and culvert replacements take place in accordance with the procedures outlined in the Overland Construction Method and Typical Details included in Attachment 2, the EPSC Plan and application for an Individual Construction Stormwater Discharge Permit, and the application for a Stream Alteration Permit (including adherence to the Vermont Equilibrium and Connectivity Standards). Ephemeral, intermittent, and small perennial streams will be crossed through open trench excavation (OTE) and mitigation measures will include working "in the dry" by diverting streamflow through a temporary flume or dam and pump structure, minimizing duration of stream crossing construction, installing temporary trench breakers, and restoring streambeds and riparian banks, as included in the Typical Details in Attachment 2. At perennial streams crossed by OTE, the cables will be embedded to a depth of at least 5 feet below the existing natural stream channel bottom for a distance of at least 15 feet beyond the edges of the ordinary high water in either direction of the crossing. In riparian buffers requiring OTE, any cut stumps near the stream shall remain in the ground for soil stabilization unless they are located directly over the trench or will interfere with the integrity of the transmission line. Larger perennial streams will be crossed using HDD at a depth of at least seven feet below the channel. Riparian wetlands bordering these streams/rivers and the associated bordering riparian wetlands will be spanned with the drill where practicable. Temporary equipment bridges will be utilized to span streams for construction access, where access along the existing roadways is not feasible. Any temporary changes in stream shading and water quality would be minimal. After wetlands are restored following construction they are expected to continue to provide pre-construction levels of fish habitat. By applying these measures in addition to obtaining a Stream Alteration Permit and an Individual Stormwater Discharge Permit from the ANR, the Project will not have an undue, adverse impact to this function.	
19. Wildlife Habitat	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Provides resting, feeding staging or roosting habitat to support waterfowl migration, and feeding habitat for wading birds. Good habitats for these species include open water wetlands. ☐ Habitat to support one or more breeding pairs or broods of waterfowl including all species of ducks, geese, and swans. Good habitats for these species include open water habitats adjacent shallow marsh, deep marsh, shrub wetland, forested wetland, or naturally vegetated buffer	

zone.

☐ Provides a nest site, a buffer for a nest site or feeding habitat for wading birds including but not limited to: great blue heron, black-crowned night heron, green-backed heron, cattle egret, or snowy egret. Good habitats for these species include open water or deep marsh adjacent to forested wetlands, or standing dead trees.

☐ Supports or has the habitat to support one or more breeding pairs of any migratory bird that requires wetland habitat for breeding, nesting, rearing of young, feeding, staging roosting, or migration, including: Virginia rail, common snipe, marsh wren, American bittern, northern water thrush, northern harrier, spruce grouse, Cerulean warbler, and common loon.

☐ Supports winter habitat for white-tailed deer. Good habitats for these species include softwood swamps. Evidence of use includes deer browsing, bark stripping, worn trails, or pellet piles.

☐ Provides important feeding habitat for black bear, bobcat, or moose based on an assessment of use. Good habitat for these types of species includes wetlands located in a forested mosaic.

☐ Has the habitat to support muskrat, otter or mink. Good habitats for these species include deep marshes, wetlands adjacent to bodies of water including lakes, ponds, rivers and streams.

☐ Supports an active beaver dam, one or more lodges, or evidence of use in two or more consecutive years by an adult beaver population.

☐ Provides the following habitats that support the reproduction of Uncommon Vermont amphibian species including:

- ☐ 1. Wood Frog, Jefferson Salamander, Blue-spotted Salamander, or Spotted Salamander. Breeding habitat for these species includes vernal pools and small ponds.
- ☐ 2. Northern Dusky Salamander and the Spring Salamander. Habitat for these species includes headwater seeps, springs, and streams.
- ☐ 3. The Four-toed salamander; Fowler's Toad; Western or Boreal Chorus frog, or other amphibians found in Vermont of similar significance.

☐ Supports or has the habitat to support significant populations of Vermont amphibian species including, but not limited to Pickerel Frog, Northern Leopard Frog, Mink Frog, and others found in Vermont of similar significance. Good habitat for these types of species includes large marsh systems with open water components.

☐ Supports or has the habitat to support populations of uncommon Vermont reptile species including: Wood Turtle,

Northern Map Turtle, Eastern Musk Turtle, Spotted Turtle, Spiny Softshell, Eastern Ribbonsnake, Northern Watersnake, and others found in Vermont of similar significance.

☐ Supports or has the habitat to support significant populations of Vermont reptile species, including Smooth Greensnake, DeKay's Brownsnake, or other more common wetland-associated species.

☐ Meets four or more of the following conditions indicative of wildlife habitat diversity:

☐ 1. Three or more wetland vegetation classes (greater than 1/2 acre) present including but not limited to: open water contiguous to, but not necessarily part of, the wetland, deep marsh, shallow marsh, shrub swamp, forested swamp, fen, or bog;

☐ 2. The dominant vegetation class is one of the following types: deep marsh, shallow marsh, shrub swamp or, forested swamp;

☐ 3. Located adjacent to a lake, pond, river or stream;

☐ 4. Fifty percent or more of surrounding habitat type is one or more of the following: forest, agricultural land, old field or open land;

☐ 5. Emergent or woody vegetation occupies 26 to 75 percent of wetland, the rest is open water;

☐ 6. One of the following:

☐ i. hydrologically connected to other wetlands of different dominant classes or open water within 1 mile;

☐ ii. hydrologically connected to other wetlands of same dominant class within 1/2 mile;

☐ iii. within 1/4 mile of other wetlands of different dominant classes or open water, but not hydrologically connected;

☐ Wetland or wetland complex is owned in whole or in part by state or federal government and managed for wildlife and habitat conservation; and

☐ Contains evidence that it is used by wetland dependent wildlife species.

If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level.

☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level.

☐ The wetland is small in size for its type and does not represent fugitive habitat in developed areas (vernal pools

	and seeps are generally small in size, so this does not apply). ☐ The surrounding land use is densely developed enough to limit use by wildlife species (with the exception of wetlands with open water habitat). Can be negated by evidence of use. ☐ The current use in the wetland results in frequent cutting, mowing or other disturbance. ☐ The wetland hydrology and character is at a drier end of the scale and does not support wetland dependent species. ☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level. ☐ The wetland complex is large in size and high in quality. ☐ The habitat has the potential to support several species based on the assessment above. ☐ Wetland is associated with an important wildlife corridor. ☐ The wetland has been identified as a locally important wildlife habitat by an ANR Wildlife Biologist.	
19.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above Table 2 provides the functions and values for subject wetlands and wetland complexes. For an evaluation of how the subject wetland contributes to the function/value, please refer to subject wetland "Vermont Wetland Evaluations Forms" in Attachment 4 and the following statement of no undue adverse impact.	
19.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. The NECPL Project has been designed to avoid and minimize adverse impacts to wildlife habitat by avoiding wetland impacts wherever possible. Most of the wetlands along the Overland Route have been previously disturbed and/or lack hydrologic continuity due to development of roadways, agriculture, residential homes and commercial uses. This limits high quality habitat for wetland-dependent species. Class II wetland complexes (and their associated buffer zones) which have been determined to provide this function at significant levels occur in both the Permanent Project Corridor and within Temporary Workspaces where temporary and permanent clearing and/or temporary impacts are proposed, as indicated in Tables 2 and 3. Generally, the Project effects on the subject wetlands are localized to narrow areas within the Permanent Project Corridor and/or Temporary Workspaces alongside existing road and railroad ROWs, where the subject wetland contributes minimally to the overall wetland complex function. During field surveys conducted in 2014, Vermont Wetland Evaluation Forms were completed for each wetland, identifying wetlands that provide significant levels of this function and identifying the specific habitat type that is provided. In addition, wetlands were evaluated for Necessary Wildlife Habitat, per Section 248(b)(5) of Title 30, Vermont Statutes Annotated, which provides that a generation or transmission facility should not have an undue adverse effect on the natural environment with due consideration having been given to specific environmental criteria. Surveys and desktop review concluded that no adverse impacts to necessary wildlife habitat would result from the Project, and no vernal pools were identified within the Overland	

	Route. Vernal pool surveys occurred on May 5 and May 6, 2014. Wildlife and animal RTE species avoidance and minimization measures are outlined in the NECPL Report of Survey Results and Plan for Impact Aovidance and Minimization: Rare, Threatened, and Endangered Species, Necessary Wildlife Habitat, and Natural Communities which is included in Attachment 6. This includes protective measures for Wood Turtle (Glyptemys insculpta), an uncommon species of Special Concern, to be implemented generally in areas of suitable habitat within 1,000 feet of rivers and streams and their adjacent wetlands. Additionally for the eastern ribbonsnake (Thamnopsis sauritus), protective measures have been developed to avoid impacts during construction in areas of suitable habitat within approximately 150 feet of wetlands and streams. Protective measures developed for both of these species are applicable for some of the affected Class II wetland and buffer zones. Temporary effects to the wildlife habitat function from temporary soil disturbance and/or temporary vegetative clearing in the Permanent Project Corridor and Temporary Workspace will be minimal based on the result of wildlife evaluations and the location of the proposed Project. The permanent tree removal in wetlands and buffer zones in the Permanent Project Corridor will be limited and these areas will convert to herbaceous and scrub-shrub habitats that will provide habitat for many species of wildlife. There is no permanent tree removal proposed in Class II wetlands in potential Deer Wintering Areas. In buffer zones, only 67 square feet of permanent tree removal is proposed in potential Deer Wintering Areas at MP 140.7, associated with Wetland T-MH-W37. No adverse effect on the Deer Wintering Area and wildlife function of the wetland will occur from this negligible tree removal, as concluded in the NECPL Report of Survey Results and Plan for Impact Aovidance and Minimization: Rare, Threatened, and Endangered Species, Necessary Wildlife Habitat, and Natural Communities in Attachment 6. The EPSC plans in Attachment 2 provides additional detail on the Rolled Erosion Control Product which will be comprised of natural fiber/mesh material as opposed to material that contains chemically bound joints in the supporting mesh that could be harmful to wildlife (e.g. birds and snakes). Once herbaceous and woody vegetation re-establishes, it is expected that the wetlands will continue to provide pre-construction levels of the wildlife function. Thus, the Project will not have and undue, adverse impact on this function.	
20. Exemplary Wetland Natural Community	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Wetlands that are identified as high quality examples of Vermont's natural community types recognized by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department, including rare types such as dwarf shrub bogs, rich fens, alpine peatlands, red maple-black gum swamps and the more common types including deep bulrush marshes, cattail marshes, northern white cedar swamps, spruce-fir-tamarack swamps, and red maple-black ash seepage swamps are automatically significant for this function. The wetland is also likely to be significant if any of the following conditions are met: ☐ Is an example of a wetland natural community type that has	

	been identified and mapped by, or meets the ranking and mapping standards of, the Natural Heritage Information Project of the Vermont Fish and Wildlife Department. ☐ Contains ecological features that contribute to Vermont's natural heritage, including, but not limited to: ☐ Deep peat accumulation reflecting a long history of wetland formation; ☐ Forested wetlands displaying very old trees and other old growth characteristics; ☐ A wetland natural community that is at the edge of the normal range for that type; ☐ A wetland mosaic containing examples of several to many wetland community types; or ☐ A large wetland complex containing examples of several wetland community types. List species or communities of concern:	
20.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above Table 2 provides the functions and values for subject wetlands and wetland complexes. For an evaluation of how the subject wetland contributes to the function/value, please refer to subject wetland "Vermont Wetland Evaluations Forms" in Attachment 4 and the following statement of no undue adverse impact.	
20.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. The Project has been designed to avoid impacts to exemplary wetland natural communities. The Overland Route was surveyed in 2014 for Significant Natural Communities and potential Rare and Irreplaceable Natural Areas, per Section 248(b)(5) of Title 30, Vermont Statutes Annotated, which provides that a generation or transmission facility should not have an undue adverse effect on the natural environment with due consideration having been given to specific environmental criteria. As described in the NECPL Report of Survey Results and Plan for Impact Aovidance and Minimization: Rare, Threatened, and Endangered Species, Necessary Wildlife Habitat, and Natural Communities, which is included in Attachment 6, only one significant wetland natural community was observed. This wetland, designated T-SH-W3 (located in the vicinity of MP 135.1), is comprised of a Sugar Maple-Ostrich Fern Floodplain Forest. This wetland and its buffer zone will be avoided entirely by the Project. Wetland Complex 21 (which contains subject wetlands V-CN-W-10 and V-CN-W-116 near MP 114.9) contains a state-mapped Red Maple-Black Ash Seepage Swamp Element Occurrence (EO 6802), which is an S4-ranked wetland natural community. However, based on our surveys and natural community assessment, the subject wetland V-CN-W-10 does not exhibit these natural community characteristics and thus does not contribute to the exemplary wetland natural community function. Wetland Complex 5 (contains wetland V-WH-W-6 MP 106.3) contains a state mapped Wet Clayplain Forest Occurrence (EO 4952), which is an S2-ranked wetland natural community. However based on the survey and natural community assessment, the Subject wetland V-WH-W-6 does not exhibit	

	these natural community characteristics and thus does not contribute to the exemplary wetland natural community function. No other subject wetlands or wetland complexes were determined to provide the exemplary wetland natural community function. Therefore, the Project will not have an undue, adverse impact on this function.	
21. Rare, Threatened, and Endangered Species Habitat	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Wetlands that contain one or more species on the federal or state threatened or endangered lists, as well as species that are rare in Vermont, are automatically significant for this function. The wetland is also likely to be significant if any of the following apply: ☐ There is creditable documentation that the wetland provides important habitat for any species on the federal or state threatened or endangered species lists; ☐ There is creditable documentation that threatened or endangered species have been present in past 10 years; ☐ There is creditable documentation that the wetland provides important habitat for any species listed as rare in Vermont (S1 or S2 ranks), state historic (SH rank), or rare to uncommon globally (G1, G2, or G3 ranks) by the Natural Heritage Information Project of the Vermont Fish and Wildlife Department; ☐ There is creditable documentation that the wetland provides habitat for multiple uncommon species of plants or animals (S3 rank). List name of species and ranking:	
21.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above Table 2 provides the functions and values for subject wetlands and wetland complexes. For an evaluation of how the subject wetland contributes to the function/value, please refer to subject wetland "Vermont Wetland Evaluations Forms" in Attachment 4 and the following statement of no undue adverse impact.	
21.2. Statement of no adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. The Project has been designed to avoid or minimize adverse impacts to RTE species and habitat. As described in the NECPL Report of Survey Results and Plan for Impact Aovidance and Minimization: Rare, Threatened, and Endangered Species, Necessary Wildlife Habitat, and Natural Communities included in Attachment 6, the Overland Route was surveyed in 2014 for RTE species and habitat. This included the evaluation of known RTE Species Element Occurrences documented by the Vermont Natural Heritage Inventory, and a comprehensive survey to identity new occurrences of RTE species or habitat. Several Class II wetland complexes were identified as having potential RTE	

species based on overlap with known Element Occurrence records, as depicted on the NR Maps (Attachment 2) and noted in the wetland complex function and values identified in Table 2. However, based on surveys, only a subset of the subject wetlands were documented to contain and provide habitat for RTE species as identified in Table 2 and depicted on the NR Maps in Attachment 2. No federally threatened or endangered animal species will be adversely affected by the Project, and no federally threatened or endangered plants are present in the study area. Furthermore, Project activities are not anticipated to adversely affect RTE habitat or species that may occur in the broader wetland complexes outside of the Project/survey area.

Following the completion of RTE surveys, the Overland Route was designed to avoid RTE species populations where practicable, and, where complete avoidance was not possible, minimize the extent of overlap of the Permanent Project Corridor and Temporary Workspace in RTE species population areas. All state and federally threatened and endangered plant species populations and potential habitat are avoided. This includes six threatened and three endangered plant species that were identified in the Project area; all have been avoided with the proposed implementation of HDD or route and workspace reconfiguration. Additionally, most state rare species have been avoided.

Several rare plant species populations will be subject to temporary impacts during construction, as described in Section 5.1 of the NECPL Report of Survey Results and Plan for Impact Aovidance and Minimization: Rare, Threatened, and Endangered Species, Necessary Wildlife Habitat, and Natural Communities (Attachment 6). Of these, only six are within Class two wetlands that will be affected by the Project.

Temporary impacts or temporary or permanent clearing are proposed in the following wetlands that were observed to contain RTE species populations:

V-CN-W-104 (MP 113.8): Virginia Chain-fern (Woodwardia virginica), an S1-ranked and state-threatened species, is avoided via HDD. Limited temporary impacts and clearing in the wetland near the eastern HDD setup area will not affect this species or habitat.

T-CL-W1 (MP 130.0): Two small populations of Whorled Mountain Mint (Pycnanthemum verticillatum), an S2S3-ranked uncommon to rare species, occur along the roadside within a maintained transmission corridor. This wetland and the associated RTE species will be avoided. Temporary impacts to the wetland buffer will not affect the RTE populations.

T-MH-W38 (MP 140.6): Smaller Forget-me-not (Myosotis laxa), an S2-ranked rare species, occurs in a roadside ditch and wetland lawn within the subject wetland. A portion of the population within the existing, cleared and maintained Route 103 ROW will be temporarily impacted during construction of the Project. Species-specific RTE protection measures are included in Section 5.1 of the NECPL Report of Survey Results and Plan for Impact Aovidance and Minimization: Rare, Threatened, and Endangered Species, Necessary Wildlife Habitat, and Natural Communities to mitigate any potential undue adverse effects to this species population.

T-MH-AW-24-South (MP 142.3): The Cape May Warbler (Setophaga tigrina), an S1B-ranked very rare breeding bird, has been documented in this area. No wetland impacts are proposed. Temporary buffer impacts will occur, but no tree clearing is proposed. Thus, impacts to this species' preferred nesting habitat in the wetland or buffer zone will not occur.

T-MH-W20 (MP 142.8): Smaller Forget-me-not (Myosotis laxa), an S2-ranked rare plant, occurs within a wetland ditch adjacent to the roadside.

	This wetland and population will be impacted during construction, but the species-specific RTE protection measures outlined in Section 5.1 of the NECPL Report of Survey Results and Plan for Impact Aovidance and Minimization: Rare, Threatened, and Endangered Species, Necessary Wildlife Habitat, and Natural Communities will be implemented to mitigate any potential undue adverse effects to this population. T-LU-W13 (MP 147.9): Two populations of Smaller Forget-me-not (Myosotis laxa), an S2-ranked rare species, occur in a roadside ditch and in a more natural area further from the road within the subject wetland. However, the populations will not be affected, as they occur on the opposite side of the road from where the cable, Permanent Project Corridor, Temporary Workspaces and associated impacts and clearing areas are proposed. Based on the implementation of robust avoidance and minimization of RTE Species impacts, along with the development of species-specific RTE protection measures for the two impacted RTE populations located in Class II wetlands (i.e., Smaller Forget-me-not in wetland T-MH-W38 and T-MH-W20) and development of specific protocols to protect RTE animals including the wood turtle and eastern ribbonsnake, the Project will not have an undue, adverse effect on RTE species, habitat or this protected wetland function.	
22. Education and Research in Natural Sciences	☐ Function is present and likely to be significant: Any of the following characteristics indicate the wetland provides this function. ☐ Owned by or leased to a public entity dedicated to education or research. ☐ History of use for education or research. ☐ Has one or more characteristics making it valuable for education or research.	
22.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above Table 2 provides the functions and values for subject wetlands and wetland complexes. For an evaluation of how the subject wetland contributes to the function/value, please refer to subject wetland "Vermont Wetland Evaluations Forms" in Attachment 4 and the following statement of no undue adverse impact.	
22.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. The Project has been designed to avoid and minimize adverse impacts to wetlands which may provide education and research opportunities in the natural sciences by avoiding wetland impacts wherever possible. While high quality examples of Class II wetlands occur within the Overland Route, most of the wetlands have been disturbed or fragmented due to development of roadways, agriculture or commercial and residential uses. Combined with poor access along some high-traffic roads, these wetlands are less desirable for educational purposes or research. None of the Class II wetland complexes or subject wetlands proposed for temporary impacts or vegetation clearing were determined to provide this function at a significant level. Therefore, the Project will not have an undue, adverse effect on this function.	
23. Recreational Value and Economic Benefits	☐ Function is present and likely to be significant: Any of the following characteristics indicate the wetland provides this function. ☐ Used for, or contributes to, recreational activities.	

	☐ Provides economic benefits. ☐ Provides important habitat for fish or wildlife which can be fished, hunted or trapped under applicable state law. ☐ Used for harvesting of wild foods. Comments:	
23.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above Table 2 provides the functions and values for subject wetlands and wetland complexes. For an evaluation of how the subject wetland contributes to the function/value, please refer to subject wetland "Vermont Wetland Evaluations Forms" in Attachment 4 and the following statement of no undue adverse impact.	
23.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. Wetlands support many types of direct recreation including hunting, trapping, fishing, wildlife watching, nature photography, berry picking, picnicking, hiking and boating. Although a wide range of wetland types can provide these functions and values to varying degrees, the location of the NECPL Project Overland Route primarily within road and railroad ROWs limits the number of wetlands that provide high levels of this function. None of the Class II wetland complexes or subject wetlands proposed for temporary impacts or vegetation clearing were determined to provide this function at a significant level. Therefore, the Project will not have an undue, adverse effect on this function.	
24. Open Space and Aesthetics	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Can be readily observed by the public; and ☐ Possesses special or unique aesthetic qualities; or ☐ Has prominence as a distinct feature in the surrounding landscape; ☐ Has been identified as important open space in a municipal, regional or state plan. Comments:	
24.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above Table 2 provides the functions and values for subject wetlands and wetland complexes. For an evaluation of how the subject wetland contributes to the function/value, please refer to subject wetland "Vermont Wetland Evaluations Forms" in Attachment 4 and the following statement of no undue adverse impact.	
24.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue, adverse impact to this function. Include any avoidance and minimization measures relevant to this function. The majority of the wetlands within the Overland Route of the NECPL Project are publicly visible since they almost exclusively occur in public road ROWs.	

	Class II wetland complexes (and their associated buffer zones) which have been determined to provide this function at significant levels occur in both the Permanent Project Corridor and within Temporary Workspaces where temporary and permanent clearing and/or temporary impacts are proposed, as indicated in Tables 2 and 3. The effects are localized in narrow areas within the Permanent Project Corridor and/or Temporary Workspaces alongside existing road and railroad ROWs, where the subject wetland contributes minimally to the overall wetland complex function. In addition, permanent clearing will not take place near these wetlands. After temporary wetland impacts and vegetation clearing have been restored to pre-construction conditions and the wetland vegetation re-establishes, pre-construction levels of this function are expected, therefore, no undue, adverse impact to this function is expected.	
25. Erosion Control through Binding and Stabilizing the Soil	☐ Function is present and likely to be significant: Any of the following physical and vegetative characteristics indicate the wetland provides this function. ☐ Erosive forces such as wave or current energy are present and any of the following are present as well: ☐ Dense, persistent vegetation along a shoreline or stream bank that reduces an adjacent erosive force. ☐ Good interspersion of persistent emergent vegetation and water along course of water flow. ☐ Studies show that wetlands of similar size, vegetation type, and hydrology are important for erosion control. What type of erosive forces are present: ☐ Lake fetch and waves ☐ High current velocities: ☐ Water level influenced by upstream impoundment If any of the above boxes are checked, the wetland provides this function. Complete the following to determine if the wetland provides this function above or below a moderate level. If none of the following apply, the wetland provides this function at a moderate level. ☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *lower* level. ☐ The stream is artificially channelized and/or lacks vegetation that contributes to controlling the erosive force. ☐ Check box if any of the following conditions apply that may indicate the wetland provides this function at a *higher* level. ☐ The stream contains high sinuosity. ☐ Has been identified through fluvial geomorphic assessment to be important in maintaining the natural condition of the stream or river corridor.	
25.1. Subject Wetland	Please explain how the subject wetland contributes to the function listed above Table 2 provides the functions and values for subject wetlands and wetland complexes. For an evaluation of how the subject wetland contributes to the function/value, please refer to subject wetland "Vermont Wetland Evaluations Forms" in Attachment 4 and the following statement of no undue adverse impact.	

25.2. Statement of no undue adverse impact	Please explain how the proposed project will not result in any undue adverse impact to this function. Include any avoidance and minimization measures relevant to this function. The Project has been designed to avoid and minimize adverse impacts to wetlands which may provide erosion control through binding and stabilizing the soil by avoiding and minimizing wetland impacts at stream banks and shorelines. Class II wetland complexes (and their associated buffer zones) which have been determined to provide this function at significant levels occur in both the Permanent Project Corridor and within Temporary Workspaces where temporary and permanent clearing and/or temporary impacts are proposed, as indicated in Tables 2 and 3. Generally, the Project effects on the subject wetlands are localized to narrow areas within the Permanent Project Corridor and/or Temporary Workspaces alongside existing road and railroad ROWs, where the subject wetland contributes minimally to the overall wetland complex function. Shoreline wetlands significant for this function observed at Lake Champlain and Lake Bomoseen will be avoided through the implementation of HDD crossings. Additionally, HDDs will be implemented at the crossings of larger rivers and streams with shoreline resources that are comprised of wetlands significant for this function, which avoid the applicable bordering wetlands (e.g., Hubbardton River at MP 104.7). In some instances where the cable alignment runs parallel to larger rivers and streams (e.g., Mill River along Route 103), temporary impacts or vegetation clearing in wetlands significant for this function will be minimized and mitigated with the implementation of stringent EPSC measures. At smaller perennial stream crossings where OTE is proposed, dry crossing methods and prompt restoration and stabilization measures will minimize any temporary effects on bordering wetland erosion control functions (see Typical Details in Attachment 2). These practices will be further described in the Project EPSC Plan and applications for 401 Water Quality Certification, Stream Alteration Permit and Individual Stormwater Construction Discharge Permit. Where impacts to the wetlands that provide this function are unavoidable, the Project will implement EPSC measures to provide temporary erosion control during construction and to protect the wetlands' continued ability to mitigate erosive forces following construction. All construction activities (including pre-/post-construction management) will take place in accordance with specifications outlined in the NECPL Project Vegetation Management Plan (Attachment 6), the Typical Details included in Attachment 2 (which includes stream crossing and restoration typical details), a Project EPSC Plan, and associated Project permits. EPSC measures will protect wetland and stream bank vegetation that provides slope stability and will protect banks along all surface waters including streams, rivers, ponds and lakes. Any temporary change in the ability of wetlands to provide erosion control during construction would be minimal and would be expected to return to pre-construction levels following post-construction restoration and temporary stabilization (seeding, mulching, and/or installation of rolled erosion control product), permanent stabilization (vegetation re-establishment) and installation of applicable permanent EPSC measures. Thus, the Project will not have an undue, adverse impact to this function.	

Vermont Wetland Section
Wetland Application Database Form
(AFFIX TO THE FRONT OF THE APPLICATION)

Applicant Name: Champlain VT, LLC, d/b/a TDI New England	**Representative Name: VHB (c/o Jeffrey Nelson)**
Town where project is located: Various	**County: Rutland**

Project Location Description: Stony Point Road Benson, Vermont
Latitude: 43 44' 01.05"/Longitude: 73 21' 48.55" (see application for additional details)
911 Street Address or direction from nearest intersection

Project Summary: New HVDC Electric Transmission Line (see application for additional details)

Permit Type Requested (check all that apply)

☐ Vermont General Permit Coverage ☒ Wetland Determination ☒ Vermont Wetland Permit

Impact Calculations: Total up proposed impacts from wetland tables listed below

Total Wetland Impact	33,338 square feet (s.f.)	Total Buffer Zone Impact	429,537 square feet (s.f.)
Total Wetland Clearing (qualified linear projects only)	93,015 square feet (s.f.)	Total Buffer Zone Clearing (qualified linear projects only)	50,596 square feet (s.f.)

Permit Fees: Make check payable to - *State of Vermont*

Wetland Impact Fee: ($0.75/sf)	$25,003.50	Administrative Fee: Permit Revision Fee:	$120 $100
Buffer Impact Fee: ($0.25/sf)	$107,384.25	Total Check Amount:	$168,510.50 (The Applicant has previously paid amount for $167,879.75. Fee check will be for $630.75)
Clearing Fee: ($0.25/sf)	$35,902.75		

Existing Land Use Type: (check all that apply)
☐ Forestry ☐ Residential (Subdivision) ☒ Industrial/ commercial
☒ Agriculture ☒ Transportation ☐ Parks/Rec/Trail ☒ Residential (Single Family) ☐ Institutional ☒ Undeveloped

Proposed Land Use Type: (check all that apply)
☐ Forestry ☐ Residential (Subdivision) ☐ Industrial/ commercial
☐ Agriculture ☐ Transportation ☐ Parks/Rec/Trail ☐ Residential (Single Family) ☐ Institutional ☒ No Change

Proposed Impact Type: (check all that apply)
☐ Buildings ☒ Utilities ☐ Parking ☐ Septic/Well ☐ Stormwater
☐ Driveway ☐ Road ☐ Parks/Path ☐ Agriculture ☐ Pond ☐ Lawn
☐ Dry Hydrant ☐ Beaver dam alteration ☐ Silviculture ☐ Aesthetics ☐ Other ☐ No Impact

Wetland 1: Project Totals Below. Location: **Project-wide**
See Table 3 for details. (Label using Wetland ID from application if applicable, use supplemental sheets if more than one wetland is being impacted)
Wetland Type: **PEM/PSS/PFO** WL Size Class : **<1 acre**

Proposed Alterations

Wetland Alteration:		**Buffer Zone Alteration:**		**Wetland Alteration Type (check all that apply)**	
Wetland Fill:	0 s.f.			☐Dredge	☐Drain
Temporary:	100,039s.f.	Temporary:	429,537 s.f	☒Cut Vegetation	☐Stormwater
Permanent: :	26,314 s.f.	Permanent: :	50,596 s.f	☒Trench/Fill	☐Other

Mitigation

Avoidance and Minimization (s.f. of wetland NOT impacted): Wetland: s.f. Buffer Zone s.f.

Wetland Mitigation: (s.f. Gained)				**Buffer Zone Mitigation (s.f. Gained):**			
Restoration	s.f.	Enhancement	s.f.	Restoration	s.f.	Enhancement	s.f
Creation	s.f.	Conservation	s.f..	Creation	s.f	Conservation	s.f

Reason for Mitigation: ☐ Correction of Violation ☐ Mitigation to offset permit impacts ☐ Voluntary

All Applications Should be Mailed To:

Vermont Wetlands Program
Watershed Management Division
One National Life Drive, Main 2
Montpelier, VT 05620-3522

Staff To Complete		
Wetland Project Number:		
Wetland Project Name:	**DEC ID#:**	
Date Application Received:		
Request for Information Date:	**Information Received Date:**	
Request for Information Date:	**Information Received Date:**	
Date Application Complete:	**Distribution Complete Date:**	
Notice Begin Date:	**Notice End Date:**	
Final Action Date:	**Public Meeting Date:**	
Check#	**Check Amount**	**Date Check Received**
Check#	**Check Amount**	**Date Check Received**