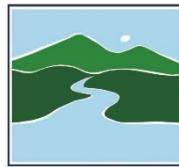


Water Quality Certification #2017-003
Under 33 U.S.C. § 1341
For North Hero-Grand Isle Drawbridge,
North Hero-Grand Isle
BHF-028-1(26)



VERMONT DEPARTMENT OF
ENVIRONMENTAL CONSERVATION

**WATERSHED
MANAGEMENT DIVISION**

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I. INTRODUCTION

Pursuant to Section 13.11 of the Vermont Water Pollution Control Permit Regulations (February 26, 1974) and the Agency of Natural Resources' Section 401 Water Quality Certification Practice (October 22, 2014), the Secretary (Secretary) of the Vermont Agency of Natural Resources (Agency) has reviewed a Water Quality Certification application submitted October 5, 2017 filed by EIV Technical Services on behalf of the Vermont Agency of Transportation (Applicant), for the North Hero-Grand Isle Drawbridge, BHF 028-1(26) (project). The application was supplemented with a copy of the federal Clean Water Act Section 404 Request for Permit Authorization filed with the U.S. Army Corps of Engineers (File #NAE-2016-00933). Collectively, these materials are referred to as the "application."

II. BACKGROUND AND FINDINGS

A. Project Summary and Resource Description

1. Project Summary

The proposed project involves the replacement of Bridge 8, a historic double leaf bascule bridge, that carries U.S. Route 2 over Lake Champlain beginning at a point in North Hero approximately 0.22 miles west of the North Hero-Grand Isle town line, and continuing easterly on US Route 2 for approximately 0.30 miles. The bridge is the only vehicular movable bridge (i.e. drawbridge) in the state of Vermont. The bridge will be replaced with a double leaf bascule bridge on a new foundation, with similar aesthetic and same draw width as the 1953 bridge it's replacing. The project's purpose is to ensure safe passage by providing a structurally stable roadway for the traveling public.

The project area is saddle shaped. US Route 2, Landing Lane, Drawbridge Lane, and two paved driveways are within the project site. There is a residence and a marina located on the south side of the project, and Knight Point State Park located at the northern limits. Lake Champlain is the only surface water on the project site. The vegetation surrounding the project area primarily consists of manicured lawns, some wooded terrain, and stone armament.

During the project development phase, design alternatives were evaluated. These alternatives included no build, rehabilitation of the existing structure, and a new movable structure on a new alignment. The project as proposed was found to be the most practical option, while meeting its purpose to enhance and maintain the mobility and safety of vehicle, bicycle, and pedestrian traffic traveling across the bridge structure, as well as vessel traffic. Alternatives considered were found to be deficient due to failure to meet the project purpose, concerns for long term reliability of the structure, construction costs associated with extensive design, and permitting time.

Specifically, the project involves the replacement of the existing bridge along with associated roadway improvements and incidental items. The existing twin leaf bascule bridge provides an 80+ feet navigation channel. Consistent with the existing bridge structure, the new bridge will provide an 80+ foot wide navigation channel with 10 feet of clearance in the closed position (ordinary high water) and unlimited vertical clearance when open. Therefore, it will not adversely affect/alter or make "useless" the 1888 adopted 10-foot deep channel which has not needed maintenance dredging. Due to the excessive traffic detour distance, it has been determined that a temporary bridge will be established during construction of the new bridge. The temporary bridge (single leaf bascule) will provide two lanes of vehicular traffic and will have a 40-foot wide navigation channel. In the closed position the under clearance will be 13 feet (ordinary high water). In the open position, there will be unlimited vertical clearance.

2. Wetland Resources

There are no wetland resources impacted by this project.

3. Stream Resources

There are no stream resources impacted by this project.

4. Lake Resources

Lake Champlain is approximately 120 miles long and 12 miles wide at its greatest width, and flows from Whitehall, New York north across the U.S.-Canadian border to the Richelieu River in Quebec, Canada. Lake Champlain covers an area of approximately 435 square miles, which includes surface area in Vermont, New York, and Quebec. Lake Champlain is approximately 400 feet in depth at its deepest point, located in the area between Charlotte, Vermont and Essex, New York.

Monitoring on Lake Champlain is done annually from April through October by the Agency. The monitoring is focused on water quality parameters and aquatic invasive species. Lake Champlain has been sampled annually by the Agency, in conjunction with the New York Department of Environmental Conservation since 1992. Currently, there are 15 open water stations monitored at approximately two-week intervals for multiple parameters, which include total phosphorus, dissolved phosphorous, total suspended solids (TSS), temperature, conductivity, dissolved oxygen, pH, and chlorophyll-a. In addition, the stations are monitored for aquatic species-both native and invasive. Monitoring staff also record sampled notable cyanobacteria blooms when present.

5. Physical, Chemical, and Biological Water Conditions

In accordance with 10 V.S.A. Chapter 47, through the Vermonts Water Quality Standards (VWQS) the Agency established classification of all Vermont waters, and those waters are managed by the Agency in order to obtain and maintain these classifications. The VWQS apply to all waters of the State, which include “waters of the United States” as defined in titles 33 and 40 of the Code of Federal Regulations. Lake Champlain is a Class B(2) water for all uses (VWQS Appendix F). Class B(2) waters are those waters that are suitable for swimming and other primary contact recreation; irrigation and agricultural uses; aquatic biota and aquatic habitat; good aesthetic value; boating, fishing, and other recreational uses and suitable for public water source with filtration and disinfection or other required treatment (10 V.S.A. § 1252).

Lake Champlain is impaired for phosphorus. On June 17, 2016, the Environmental Protection Agency (EPA) established new phosphorous Total Maximum Daily Loads (TMDLs) for the twelve Vermont segments of Lake Champlain. Lake Champlain is also impaired for mercury, and EPA approved a regional mercury TMDL for the Lake on December 20, 2007. Lake Champlain and the lower reaches of its larger tributaries are also listed as impaired on the state 303(d) list of impaired waters – Part A for fish consumption due to high levels of polychlorinated biphenyls (PCBs). Finally, sections of Lake Champlain are listed on the Part E list of Surface Waters Altered by Invasive Aquatic Species as infested by Eurasian Watermilfoil, zebra mussels, and water chestnuts. Lake Champlain’s macroinvertebrate community has also been sampled by the Agency, and although there are notable areas of considerable water quality stress and concern, the overall benthic fauna was found to be rich and diverse.

6. Fish, Aquatic Biota, and Wildlife

Lake Champlain has a diverse fish community, and many species can be found within the vicinity of the project area. Species found include largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), rock bass (*Ambloplites rupestris*), pumpkinseed sunfish (*Lepomis gibbosus*), bluegill (*Lepomis macrochirus*), yellow perch (*Perca flavescens*), northern pike (*Esox Lucius*), and chain pickerel (*Esox niger*).

The existing Route 2 crossing and structure occurs on a causeway built-up with man-made fill, and generally supports many types of resident and migratory waterfowl, birds of prey, freshwater fish, reptiles, and amphibians. All areas of the causeway support a mix of weedy roadside herbaceous plant species and native shoreline shrubs (*Salix* and *Cornus spp.*) and trees (*Populus deltoids*, *Acer saccharinum*, and *Ulmus Americana*) common of lakeshore habitats. The eastern side of the causeway is routinely cleared of woody vegetation due to overhead utility lines that are parallel to the roadway. The only mature over-story trees are found in the southwest quadrant of the project area.

The spiny softshell turtle is listed as a threatened species in Vermont and is known to occur in the northeast portion of Lake Champlain, specifically the lower reach and mouth of the Lamoille River and the greater Missisquoi Bay. Coordination between the Vermont Agency of Transportation Biologists and the Vermont Department of Fish and Wildlife (DFW) determined that the species did not occur in the project area, and that

a survey for the species would not be required. Three rare plant species, northern green rush (*Juncus alpinoarticulatus*), field sagewort (*Artemisia campestris*), and little green sedge (*Carex viridula var. viridula*), are known to occur in the area.

Lake Champlain provides habitat for the following threatened and/or endangered mussel species: Giant floater (*Pygandon grandis*), Pink heelsplitter (*Potamilus alatus*), Fragile papershell (*Leptodea fragilis*), pocketbook (*Lampsilis ovata*), Cylindrical papershell (*Anodontoides ferussacianus*), and the Black sandshell (*Ligumia recta*). The Giant Floater (*Pygandon grandis*) was the only rare, threatened, or endangered species found by a survey targeting five species of freshwater mussel.

7. Recreational and Land Uses

Recreational uses specific to Lake Champlain in the project area include boating, fishing, hunting, swimming, wildlife observation, sea-plane use, and additional boating related recreation, including scuba diving and water skiing.

Located to the north of the project area is Knight Point State Park, operated by the Vermont Department of Forest, Parks and Recreation. The 54-acre day use park is home to the Island Center for Arts and Recreation which is a community based non-profit group who promotes use of the natural setting for cultural and recreational programming. The walking trails around the park offer scenic lake and shore vistas, and nature and forest viewing. Other amenities of the park include a sandy swimming beach, boat rentals, fishing access, and a picnic pavilion.

An additional use specific to northern Lake Champlain is the production of fish species at the state of Vermont Ed Weed Fish Culture Station located in Grand Isle, Vermont operated by DFW for stocking fish in Lake Champlain for purposes of supporting recreational fishing in the Lake. Specifically, the Ed Weed Fish Culture Station pumps water from a deep-water intake located within the Lake for the use of fish hatchery operations. Species raised at the hatchery include brown trout, rainbow trout, steelhead rainbow trout, lake trout, landlocked Atlantic salmon, and walleye. The hatchery stocks over a million fish annually into Lake Champlain to restore fish populations and to maintain recreational angling opportunities. DFW invests approximately \$1,250,000 annually. The deep-water intake used by the Ed Weed Fish Culture Station is utilized by the Grand Isle Consolidated Water District, which also uses the raw water intake for a potable water supply for the residents of Grand Isle County, Vermont.

Additionally, property owners along Lake Champlain utilize individual water intakes for either potable water supply or for irrigation. Lake Champlain is used for commerce, including marina and recreational boating services, transportation (e.g. ferries), and other tourism related commercial enterprises. Lake Champlain also has several utility crossings that exist on the lake bottom.

Land uses within the greater Lake Champlain Northeast Arm watershed generally include agriculture, silviculture, commercial and residential development, and other land uses.

B. Regulatory Overview and Resource Impacts

1. Applicable State Permits

The Agency also considered information submitted by the Applicant as part of the following:

- a. Stormwater Construction General Permit Notice of Intent associated with construction activities on low risk sites (NOI) #7871-9020.A, issued on (Date Pending);
- b. 29 V.S.A. Chapter 11 Management of Lakes and Ponds, Lake Encroachment #2440 (LEP), issued on (12/11/2017); and,
- c. 10 V.S.A. § 5408 Endangered & Threatened Species Takings Permit EH-2017-24, issued on 9/13/2017

Pursuant to 10 V.S.A. § 1446(b)(8)(A), this project is not subject to regulation under the Shoreland Protection Act.

2. Impacts to Lake Resources

Impacts of the project on the waters of Lake Champlain include temporary impacts during construction, where sediments and constituents within the sediment will be temporarily disturbed and suspended in the water column. Additional impacts include the potential for inadvertent material spills during construction both on land and at staging areas near the Lake and on the Lake during construction. Other impacts to the Lake include the removal and replacement of 8,200 cubic yards of existing fill materials along the causeway and underwater material adjacent to the existing piers. Sheet pilings will be removed by vibration and pulled out, or cut at the lake bottom if removal is not possible. The project will also result in limited impacts to fish and wildlife habitat in locations around the pier excavation areas.

3. Impacts to Physical, Chemical, and Biological Water Conditions

Potential impacts to physical, chemical, and biological water conditions were evaluated by the Agency in detail under #2440 (LEP).

4. Impacts to Fish, Aquatic Biota, and Wildlife

The proposed project will result in impacts associated with the bridge replacement and temporary bridge construction, removal of existing bridge structure, and construction of a new bridge. The Giant Floater (*Pygandon grandis*) was found by a survey targeting five species of freshwater mussel. Impacts to the Giant Floater are further identified in the Endangered & Threatened Species Takings Permit EH-2017-24.

5. Impacts to Recreational and Land Uses

Recreational uses of the lands and waters affected by the project include boating, fishing, swimming, wildlife observation, hunting and other recreational uses.

Land uses within the watershed include agriculture, silviculture, commercial and residential development, and other land uses, none of which were determined to be significantly impacted.

C. Vermont Water Quality Standards (VWQS), including the Anti-Degradation Policy

1. VWQS Classifications

Under the Vermont Water Pollution Control Regulations (VWPCPR) § 13.11(g)(3), when issuing a Section 401 Water Quality Certification, the Secretary must find that there is “a reasonable assurance that the activity will be conducted in a manner which will not violate applicable water quality standards.” The water quality standards applicable to this permit are the Vermont Water Quality Standards (VWQS), Environmental Protection Rule Chapter 29(a) (effective January 15, 2017).

The VWQS § 29A-105 includes the State’s Anti-degradation Policy (Policy), and the Policy is implemented according to the Agency’s 2010 Interim Anti-Degradation Implementation Procedure (Procedure). Section X of the Procedure specifically applies to Section 401 Water Quality Certifications.

2. Anti-Degradation Policy and Procedure

Under the Procedure, “[w]aters whose existing ambient water quality exceeds (i.e. is better than) the applicable minimum water quality criteria and indices for the class to which the waterbody is assigned shall be considered high quality water” (Procedure § X(F)(1)(a)). The Secretary is to “presume that all waters are high quality for at least one criterion and/or index for some portion of the year” (Procedure § X(F)(1)(c)). High quality waters require review under Tier 2 of the Procedure (Procedure § X(F)). Tier 2 requires that high quality waters “shall be managed to maintain and protect the higher water quality and minimize risk to

existing and designated uses," and that "[i]n all cases, the level of water quality necessary to maintain and protect all existing uses as well as applicable water quality criteria shall be maintained" (VWQS § 29A-105(c)(1)). Under Tier 2 a limited reduction in the existing higher quality of high quality waters is only allowed if the project satisfies the socio-economic justification test (VWQS § 29A-105(c)(2); Procedure § X(F)(4)).

A Tier 2 review of this project is conducted below in Section III of this Certification.

As provided in the Procedure, in reviewing an application "the Secretary shall determine whether the proposed discharge will result in a limited reduction in water quality in a high-quality water by utilizing all credible and relevant information and the best professional judgment of Agency staff" (Procedure § X(F)(2)(b)).

This project does not affect any Outstanding Resource Waters and therefore, does not require review under Tier 3 of the Procedure for the protection of Outstanding Resource Waters (Procedure § X(E)).

A separate Tier 1 review is not required for this project because the maintenance and protection of existing uses and the level of water quality necessary to protect those existing uses is included in a Tier 2 review.

III. ANALYSIS

The Agency has conducted an anti-degradation review in accordance with the Procedure. The Agency has evaluated the nature of the activities and discharges and the resulting potential effects of the pollutants that could possibly be discharged and affect aquatic biota and habitat, wildlife and plant life, recreational uses, and the existing physical, chemical, and biological condition of the project's receiving waters. The land uses within the project area include commercial development, transportation infrastructure and roads, and natural areas. The predominant pollutants of concern across the watershed(s) include phosphorus, nutrients, sediment, hydrocarbons, chlorides, and *Escherichia coli*.

A. Presumptions

1. Automatic Satisfaction of Tier 2 Review

Under Section X(D)(1)(a-e) of the Procedure, certain permitted discharges and activities automatically satisfy a Tier 2 review, including:

- a. "Discharges that meet the requirements of a BMP or treatment and control manual that takes into consideration anti-degradation requirements during its adoption."
- b. "A discharge that is seeking authorization to operate under a general permit when the Tier 2 analysis is performed at the time of the development of the general permit."
- c. "Discharges that result in no measurable reduction in the physical, chemical or biological quality of a surface water."

2. Discharges

- a. The CGP NOI #7871-9020 is an authorization under a general permit and the discharges covered under CGP NOI #7871-9020 must comply with the requirements of the Vermont Standards and Specifications for Erosion Prevention and Sediment Control and therefore, satisfy the presumption in Section X(D)(1) of the Procedure.

B. Impacts

Notwithstanding the presumptions, the Agency has assessed the impacts of the Project. The impacts to water quality, fish and wildlife habitat, and aquatic biota, identified above and in the associated permits, are

expected to be temporary in nature, limited to the period of project construction, and limited to the immediate work areas, and the activities are not expected to cause any exceedances of the VWQS. Because of the nature of Lake Champlain, the temporary and limited nature of the project, and the project's compliance with the narrative and numeric criteria of the VWQS, the project will have no cumulative impact on water quality.

C. Limited Lowering of Water Quality

If the Applicant complies with LEP #2440, CGP NOI #7871-9020, the Endangered & Threatened Species Taking Permit EH-2017-24, and the requirements of this Certification, no change is expected in physical or chemical water quality that would result in a reduction in biological integrity in the Lake area affected by the project and existing uses, including use by state-listed threatened and endangered species, within the Lake will be protected and maintained. Therefore, the Secretary has determined that the project will not result in a limited reduction in water quality in a high quality water.

IV. CONDITIONS

The Secretary has examined the application, and this decision is based upon an evaluation of the information contained within the application and other pertinent information that is relevant to the Agency's responsibilities under Section 401 of the federal Clean Water Act. The Agency certifies that there is a reasonable assurance that construction and operation of the project proposed by the Applicant and in accordance with the following conditions will not cause a violation of the VWQS and will be in compliance with sections 301, 302, 303, 306, and 307 of the federal Clean Water Act, 33 U.S.C. § 1341, as amended, and other appropriate requirements of state law. This Certification is granted pursuant to the following conditions:

- A. The Applicant shall comply with all terms and conditions of this Certification.
- B. The reasonable assurances provided by this Certification are contingent upon compliance with the Construction General Permit Notice of Intent associated with construction activities on low risk sites (NOI) #7871-9020, Lake Encroachment Permit #2440 (LEP), Endangered & Threatened Species Taking Permit EH-2017-24, and all amendments and renewals thereto.
- C. The conditions of the following permits and stipulations are incorporated by reference as conditions of this Certification: Construction General Permit Notice of Intent associated with construction activities on low risk sites (NOI) #7871-9020, Lake Encroachment Permit (LEP) #2440, Endangered & Threatened Species Takings Permit EH-2017-24, and all amendments and renewals thereto.
- D. The Applicant shall give the Agency advanced notice of the date on which construction of the project will commence and the date on which construction of the project will be completed.
- E. The Applicant shall provide written notice to the Agency, including the Director of the Watershed Management Division, of any proposed change to the project that would have a significant or material effect on the findings, conclusions, or conditions of this Certification, including any changes to the construction, operation, or schedule of the project. The Applicant shall not make any such change without approval from the Agency.
- F. The Applicant shall prevent the discharge of petrochemicals, fluid concrete, effluent from portable toilets, and construction debris into state waters.
- G. The Applicant shall allow authorized Agency representatives, at reasonable times and upon presentation of credentials, to enter upon the project site for purposes of inspecting the project and determining compliance with this Certification.

- H. The Agency may reopen and alter or amend the conditions of this Certification over the life of the project when such action is necessary to assure compliance with the VWQS and to respond to any changes in the classification or management objectives for the affected waters. Any amendment that results in a change of conditions for the project shall be subject to VWPCPR § 13.11(c) (Public Notice) and VWPCRP §§ 13.11(d), (e), and (f) (Public Hearing).
- I. This Certification does not relieve the Applicant of the responsibility to comply with all other applicable federal, state, and local laws, regulations, and permits.

V. ENFORCEMENT

- A. Upon receipt of information that water quality standards are being violated as a consequence of the project's construction or operation or that one or more certification conditions has not been complied with, the Secretary, after consultation with the Applicant and notification of the appropriate federal permitting agency, may, after notice and opportunity for a public hearing, modify this Certification and provide a copy of such modification to the Applicant and the federal permitting agency.
- B. Certification conditions are subject to enforcement mechanisms available to the federal agency issuing the permit and to the State of Vermont. Other mechanisms under Vermont state law may also be used to correct or prevent adverse water quality impacts from construction or operation of activities for which certification has been issued.

VI. APPEALS

Pursuant to 10 V.S.A. Chapter 220, any appeal of this decision must be filed with the clerk of the Environmental Division of the Superior Court within 30 days of the date of the decision. The Notice of Appeal must specify the parties taking the appeal and the statutory provision under which each party claims party status; must designate the act or decision appealed from; must name the Environmental Division; and must be signed by the appellant or the appellant's attorney. In addition, the appeal must give the address or location and description of the property, project, or facility with which the appeal is concerned and the name of the applicant or any permit involved in the appeal. The appellant must also serve a copy of the Notice of Appeal in accordance with Rule 5(b)(4)(B) of the Vermont Rules for Environmental Court Proceedings. For further information, see the Vermont Rules for Environmental Court Proceedings, available on line at www.vermontjudiciary.org. The address for the Environmental Division is: 32 Cherry St.; 2nd Floor, Suite 303; Burlington, VT 05401; Telephone # 802-951-1740.

VII. EFFECTIVE DATE & EXPIRATION

By delegation from the Secretary to the Vermont Department of Environmental Conservation, this certification shall become effective on the date of signing, and the conditions of this Certification shall become conditions of the federal permit (33 U.S.C. § 1341(d)). If the federal authority denies a permit, this Certification shall become null and void. Otherwise it remains in effect for the term of the federal license or permit.

Dated this (day) of (month) 2017

Emily Boedecker, Commissioner
Department of Environmental Conservation

By _____
Pete LaFlamme, Director
Watershed Management Division