Water Quality Certification #2015-002

Under 33 U.S.C. § 1341 For US RT 2 Upgrade, Cabot-Danville Segment 2, FEGC F 028-3(26) C/2

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INTRODUCTION Ι.

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 March 6, 2015 filed by DuBois & King, Inc. on behalf of the Vermont Agency of Transportation (Applicant), for the US RT 2 Upgrade, Cabot-Danville, Segment 2, FEGC F 028-3(26) C/2 (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 on January 13, 2015 (File #NAE-2006-3923). Collectively, these materials are referred to as the "application."

A. Project Summary and Resource Description

1. Project Summary

This is a roadway reconstruction project of US Route 2 located in the Town of Cabot, involving a 1.492-mile section beginning 2.75 miles northeast of the Marshfield-Cabot town line, and ending short of Danville Hill Road. The project widens travel lanes to include paved shoulders, improves road geometry, constructs new bridges at Molly's Brook and Hooker Brook, and temporarily detours and installs a temporary bridge at Molly's Brook. The project purpose is to improve the safety and efficiency of the highway.

The project area is a rural, two-lane highway with an average width of approximately 30 feet. There are two local highways (Town Highways 45 and 49) and several private driveways that intersect with US Route 2 within the project limits. The area adjacent to the roadway is otherwise undeveloped woods, wetlands and pastures.

There are two existing bridges. The Molly's Brook crossing is a 24-foot span. The area adjacent to this bridge is relatively flat with mostly wet meadow and shrubs along Molly's Brook on the northern side of the road and some trees and shrubs in the southeast quadrant of the bridge. The current Hooker Brook crossing is a 14-foot span temporary bridge. The vegetation around the bridge is primarily agricultural pasture. Wetlands occur along both sides of the existing road throughout almost the entire project area, including wet meadows, scrub-shrub wetlands and forested wetlands. Common wetland species include balsam fir, northern white cedar, cottonwood, red maple, yellow birch larch, red-osier and silky dogwoods, steeplebush, alder, shrubby willows, sensitive fern, tall buttercup, ostrich fern, wrinkled, grass-leaved and giant goldenrods, tall manna grass and wool grass. The entire project area drains to the Winooski River drainage basin via Molly's Brook and Hooker Brook.

2. Wetland Resources

The Applicant identified one contiguous wetland in the project area approximately 172 acres in size. Under the Vermont Wetland Rules (VWR) the Agency determined this area to be a Class II wetland. It provides the following state protected functions and values: water storage for flood water and storm runoff (Vermont Wetland Rules (VWR) § 5.1), surface and groundwater protection (VWR § 5.2), fish habitat (VWR § 5.3), wildlife and migratory bird habitat (VWR § 5.4), exemplary wetland natural community (VWR § 5.5), education and research in natural science (VWR § 5.7), recreational value and economic benefits (VWR § 5.8), and erosion control through binding and stabilizing the soil (VWR § 5.10).

Wetla	nd ID	Size (acres)	Cowardin Type	Wetland Class	Functions Provided	Hydrology	Existing Management
1		172	Emergent Forested Scrub/shrub	Class II	§ 5.1, § 5.2, § 5.3, § 5.4, § 5.5, § 5.7, § 5.8, § 5.10	High water table and seasonal saturation	Mainly forested and agricultural

Table 1: Summary of Wetlands Identified

The Agency determined all other wetlands within the project area to be Class III wetlands. Pursuant to the Vermont Wetland Rules, Class III wetlands are those that do not provide the significant functions or values provided by Class I and Class II wetlands. As such, activities within Class III wetlands do not require a State Wetlands Permit.

3. <u>Stream Resources and Stormwater Discharge Points</u>

A total of seven discharge points have been defined for this project. Runoff to Serial Number (S/N) 001 drains directly to Molly's Brook, near the start of the project at its western terminus. S/N 002 is also located on Molly's Brook, though the flow path traverses overland prior to reaching this discharge point. Due to the several cross culverts and disconnected nature of the roadway's drainage, stormwater actually discharges to the stream in many different locations along these stream's length. Runoff to both S/N 003 and S/N 004 is directly discharged into Molly's Brook and Hooker Brook via tributaries at locations where US Route 2 crosses them. S/N 005 is the location where the largest section of roadway, after travelling overland, enters Molly's Brook. Runoff to both S/N 006 and S/N 007 is discharged directly to receiving waters at locations where US Route 2 crosses two different unnamed tributaries to Molly's Brook.

4. Physical, Chemical, and Biological Water Conditions

In accordance with 10 V.S.A. Chapter 47, through Vermont's 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 United States" as defined in 40 C.F.R. §122.2 (1995). The project will affect Class B waters (VWQS § 4). Class B waters must be managed to achieve and maintain a level of water quality that fully supports aquatic biota, wildlife, and aquatic habitat; aesthetics; public water supplies; irrigation of crops and other agricultural uses; swimming and other primary contact recreation; and boating, fishing, and other recreational uses (VWQS § 3-04). All streams that will be affected by the project are designated as cold water fish habitat for the protection and management of fisheries (VWQS § 3-05). All streams that drain the project are designated as cold water fish habitat for the protection and management of fisheries (VWQS § 3-05). The Agency is not aware of any data that has been collected from the receiving streams that drain the project. Consequently, none of these waters are listed as impaired waters and therefore, they are assumed to meet Class B Water Quality Standards.

5. Fish, Aquatic Biota, and Wildlife

There are no reported rare, threatened, or endangered (RTE) fish, aquatic biota, or wildlife species within the project boundaries.

6. <u>Recreational and Land Uses</u>

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(s) include agriculture, silviculture, commercial and residential development, and other land uses.

B. Regulatory Overview and Resource Impacts

1. State Jurisdiction Overview

The Agency also considered information submitted by the Applicant as part of permit applications required pursuant to the following regulations:

- a. 19 V.S.A Chapter 1, Section 10(12) State transportation infrastructure project authorization HD-4-0007, issued on December 10, 2015;
- b. Construction Stormwater Permit 4022-INDC.A, issued on March 2, 2015;
- c. Operational Stormwater Permit 4022-INDS.1, issued on October 17, 2013; and,
- d. Wetlands Permit 2015-025, issued on April 5, 2016.

2. Impacts to Wetland Resources

Proposed impacts to Class II wetlands and wetland buffers include wetland fill for the reconstruction of the highway, including travel lanes, shoulders, embankments, bridges, culverts and a temporary detour at Molly's Brook Bridge. Below is a summary Class II wetland impacts.

Table 2: Summary of Class II Wetland Impacts

Wetland Fill	Wetland Fill	Permanent	Permanent	Temporary	Temporary	Total	Total
(ft ²)	(acres)	(ft ²)	(Acres)	(ft ²)	(acres)	(ft ²)	(acres)
261,462	6	0	0	27,806	0.64	289,268	

Impacts to Class II wetlands are evaluated in greater detail within Vermont Wetland Permit 2015-025.

3. Impacts to Stream Resources

Proposed impacts to streams include the replacement of two crossings over two perennial streams within the Winooski River Basin, specifically crossings of Molly's Brook and Hooker Brook. Impacts on streams are expected to be only temporary. The impacts associated with excavation include streambank and streambed disturbance only during the construction phase. Impacts to streams are evaluated in greater detail under the Title 19 V.S.A. §10(12) State transportation infrastructure project authorization HD-4-0007.

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

Stormwater discharges from project related construction activity and from impervious surfaces have the potential to transport stormwater-related pollutants, such as sediment and nutrients, to receiving water. Potential impacts to physical, chemical, and biological water conditions are evaluated in detail under Stormwater Construction Permit 4022-INDC.A and Stormwater Operational Permit 4022-INDS.1.

5. Impacts to Fish, Aquatic Biota, and Wildlife

The proposed project will result in impacts associated with bridge construction and excavation within the stream channels, however these are expected to be temporary and limited to the immediate work area during construction. No wetlands were found to serve as critical breeding habitat for amphibians. There is no proposed tree clearing in wetlands that would impact deer wintering habitat. Wetland migratory bird habitat is present within the vicinity of the project but activities will be within existing road right of way already provide low-quality habitat for migratory birds. Impacts to significant wetland dependent wildlife habitat are further identified in Wetland Permit 2015-025. Impacts to fish are further identified within the Title 19 V.S.A. §10(12) State transportation infrastructure project authorization HD-4-0007.

6. 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. The wetland area provides recreational value, economic benefit, and education and research in natural sciences via fish habitat (VWR § 5.3), wildlife and migratory bird habitat (VWR § 5.4), exemplary wetland natural community (VWR § 5.5), and erosion control through binding and stabilizing the soil (VWR § 5.10). Given the ability of the Applicant to restore the temporarily impacted wetlands to their previous condition, and the relative proximity of new clearing to the roadway, there will be no undue adverse impacts to recreational uses

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

C. Avoidance and Minimization, and Mitigation

1. Avoidance and Minimization

The project was designed to avoid and minimize environmental impacts. The avoidance and minimization of these impacts through permits is described in greater detail below:

- a. The project was designed to avoid and minimize wetland impacts. The new roadway will utilize almost all of the old roadbed and shoulder, thereby minimizing wetland impacts. Slopes of the new roadway have been steepened in wetland areas to reduce impacts to the wetland. The temporary detour for the reconstruction of Molly's Brook Bridge will include a planting plan to facilitate restoration. Restoration is also planned for an abandoned portion of roadway from realignment at the Hooker Brook crossing. The avoidance and minimization of these wetland impacts is described in greater detail in Wetland Permit 2015-025.
- b. Unmanaged construction related stormwater discharges are known to contain increased levels of pollutants, including sediment and nutrients. The Erosion Prevention and Sediment Control (EPSC) plan approved under Construction Stormwater Discharge Permit 4022-INDC.A is designed to prevent or minimize the discharge of these pollutants to receiving waters.
- c. Post-construction stormwater discharges from impervious surfaces (the roadway) are known to contain increased levels of pollutants including sediment, nutrients, metals, and toxic substances. Best Management Practices (BMPs) and stormwater treatment practices approved within Operational Stormwater Discharge Permit 4022-INDS.1 are designed to prevent or minimize the discharge of these pollutants to receiving waters.
- d. Impacts from all in-stream or riparian corridor construction activity will be minimized by conditions within the approved the Title 19 V.S.A. §10(12) State transportation infrastructure project authorization HD-4-0007. These conditions include date restrictions and construction specifications to minimize impacts.

2. Mitigation

Additional required Wetland mitigation is to be accomplished through payment of an in-lieu fee.

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

1. VWQS Classifications

Under the Vermont Water Pollution Control Regulations (WPCPR) § 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 October 30, 2014).

The VWQS § 1-03 includes the State's Anti-degradation 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 § 1-03(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 § 1-03(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

A. Summary

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, residential development, transportation infrastructure and roads, agriculture, silviculture, natural areas, and wetlands. The predominant pollutants of concern across the watershed(s) include phosphorus, nutrients, sediment, hydrocarbons, chlorides, and *Escherichia coli*.

B. Presumptions

1. Automatic Satisfaction of Tier 2 Review

Under Section X(D)(1)(a-d) 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."
- d. "Stream alteration activities resulting in channel geometry and fluvial processes where bed and bank erosion are neither increased nor transferred to other stream locations, and where floodplain function is maintained or restored over time."

2. Discharges

a. The discharges covered under Operational Stormwater Permit 4022-INDS.1 must comply with the requirements of the 2002 Vermont Stormwater Management Manual and therefore, satisfy the presumption in Section X(D)(1)(a) of the Procedure.

b. The discharges covered under Construction Stormwater Permit 4022-INDC.A 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)(a) of the Procedure

3. Stream Alteration and Floodplains

The stream alteration and floodplain activities regulated under the 19 V.S.A. §10(12) State transportation infrastructure project authorization HD-4-0007 shall result in channel geometry and fluvial processes in which bed and bank erosion are neither increased nor transferred to other stream locations and shall maintain/restore floodplain function over time, and therefore satisfy the presumption in Section X(D)(1)(d) of the Procedure.

C. Limited Lowering of Water Quality

1. Streams

If the Applicant complies with the 19 V.S.A. §10(12) State transportation infrastructure project authorization HD-4-0007 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 streams affected by the project and existing uses within the streams should be protected and maintained.

2. Wetlands

Impacts to the wetland have been limited by road location and design. The new roadway will utilize almost all of the old roadbed and shoulder thereby minimize additional impacts. Slopes of the new roadway have been steepened in wetland areas which has reduced wetland impacts by 1.94 acres. The temporary detour for the reconstruction of Molly's Brook Bridge will include a planting plan to facilitate restoration. Restoration is also proposed where a section of road will be abandoned for realignment at the Hooker Brook crossing. If the Applicant complies with Wetlands Permit 2015-025 and the requirements of this Certification, the project will not result in an undue adverse impact on the significant functions and values of Class II wetlands and there is a reasonable assurance that the project will not violate applicable water quality standards.

3. Wildlife

If the Applicant complies with the requirements of this Certification, and the conditions of all other applicable state permits, state-listed threatened and endangered species are expected to be fully protected.

D. Cumulative Impacts

1. Water quality

The project will have no cumulative impact on water quality. The project is expected to have impacts on water quality and fish and wildlife habitat, however impacts are expected to be temporary, limited to project construction, and limited to immediate work areas, and are not expected to exceed VWQS.

2. Wetlands

The project has been designed to meet the Vermont Wetland Rules. Compliance with Wetlands Permit 2015-025 and this Certification will ensure that there will be no cumulative impacts on wetland resources.

3. Streams and Floodplains

If the conditions of the 19 V.S.A. §10(12) State transportation infrastructure project authorization HD-4-0007 and this Certification are complied with it is expected that stream equilibrium will be preserved within stable stream reaches, limiting cumulative impacts to disturbed areas associated with construction disturbance. A State Floodplain Permit is not required. Cumulative impacts on floodplains are not anticipated.

4. Aquatic biota and fisheries

In the immediate area of construction, there may be a temporary impact on water quality, aquatic biota, and fisheries; however, impacts are expected to be temporary, limited to project construction and immediate work areas, and are not expected to exceed VWQS. Therefore, no cumulative impacts to aquatic biota and fisheries are anticipated.

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 State transportation infrastructure project authorization HD-4-0007, Construction Stormwater Permit 4022-INDC.A, Operational Stormwater Permit 4022-INDS.1, Wetlands Permit 2015-025, and all amendments and renewals thereto.
- C. The conditions of the following permits and stipulations are incorporated by reference as conditions of this Certification: State transportation infrastructure project authorization HD-4-0007, Construction Stormwater Permit 4022-INDC.A, Operational Stormwater Permit 4022-INDS.1, Wetlands Permit 2015-025, and all amendments and renewals thereto.
- **D.** The Applicant shall give the Agency advance notice of the date on which construction of the project will commence, the date on which construction of the project will be completed, and the date operation of the project (if applicable) will commence.
- 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 ensure that every reasonable precaution is taken during construction to prevent the discharge of petrochemicals, wet concrete, and debris into state waters.
- **G.** The Applicant shall provide written notice to the Agency of any proposed change to the 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.
- **H.** 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.
- I. 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).

J. 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.

Alyssa B. Schuren, Commissioner Department of Environmental Conservation

By

Digitally signed by Peter LaFlamme DN: cn=Peter LaFlamme, o=VTDEC, ou=Watershed Management Division, email=pete.laflamme@vermont.gov, c=US Date: 2016.05.20 11:17:27 -04'00'

Pete LaFlamme, Director Watershed Management Division