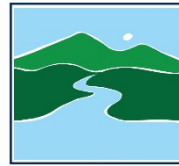


Lake Encroachment Individual Permit

Under 29 V.S.A. § 401 *et seq.*



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

<p>Permittee(s): Lake St. Catherine Conservation Fund Waterbody: Little Lake Permit Number: 2015-004</p>	<p>Project Description: Aeration System Expansion Project Location: Western Shoreline of Little Lake</p>
<p>Based upon the findings contained in this permit, it is the decision of the Department of Environmental Conservation (the Department) that the project described herein, as set forth in the following findings and in the application on file with the Department, complies with the criteria of 29 V.S.A. § 405 and is consistent with the public trust doctrine, and is hereby approved under the following conditions and specifications.</p>	
<p>a. Specific Conditions</p> <ol style="list-style-type: none"> 1. The project shall be carried out in accordance with the final application received by the Department on January 26, 2015 and in accordance with the additional information received from the applicant on October 8, 2015 (the Approved Application); and the conditions and specifications of this permit. 2. The aeration system expansion shall be completed in accordance with the Approved Application, the additional permit terms and conditions contained herein, and in accordance with the following special conditions: <ol style="list-style-type: none"> A. The permittee shall post a sign at the Lake St. Catherine Vermont Department of Fish and Wildlife Access area stating that the project area in Little Lake is part of an approved project, is not off limits, and is safe to boat through. Additionally, the permittee shall inform all residents of the Little Lake shoreline of this same information. The applicant's contact information and the Department's Lakes & Ponds Program, Lake Encroachment Permitting contact information shall be included on the posted sign and in the information mailed to residents. B. The permittee shall maintain records of any complaints received from lake users about the project or its operation during the years in which the aeration system is in operation, including any measures taken to address these complaints, if any. Records shall include the time period the aeration system was installed and additional seasons during operation of the aeration system. Records of complaints shall be reported to the Department within the year the complaint was received. C. The permittee is authorized to deploy and operate the aeration system expansion consisting of fourteen air diffusers, associated airlines, and related infrastructure, in Little Lake as shown on the Approved Application for a period not to exceed three full seasons from the date of installation. A full season is considered to be May through October of each year. D. The permittee shall be required to obtain a new permit through submittal of a new permit application before continued installation and operation of the permitted project beyond the duration of three seasons from the date of permit authorization or before increasing the number of or configuration of diffusers deployed in the lake. E. The permittee is required to implement the following Western Shoreline Lake Depth Measurement Plan: Pre-Operation Lake Depth Measurement The permittee shall take one (1) measurement of water depth at each of the following locations as identified in the Approved Application: the fourteen (14) diffuser locations, the two (2) depth sampling locations, and the one (1) control location. On the day that water depth is measured, a concurrent measurement of the water level at the outlet dam shall also be taken. All measurements shall be made +/- two (2) days of the aeration system beginning operation. Lake 	

depth measurements shall be reported to the Department on a form provided by the Department within fourteen (14) days of the measurements being taken.

Operational Lake Depth Measurement

The permittee shall take one (1) measurement of water depth at the same locations specified under Pre-Operation Lake Depth Measurement. On the day that water depth is measured, a concurrent measurement of the water level at the outlet dam shall also be taken. Operational Lake Depth Measurement shall occur once half way through an operational season (i.e., once during the last week of July +/- seven (7) days). Lake depth measurements shall be reported to the Department on a form provided by the Department within fourteen (14) days of the measurements being taken.

Post Operational Lake Depth Measurement

The permittee shall take one (1) measurement of water depth at the same locations specified under Pre-Operation Lake Depth Measurement. On the day that water depth is measured, a concurrent measurement of the water level at the outlet dam shall also be taken. Post Operational Lake Depth Measurement shall be made one month, +/- seven (7) days, of the aeration system ceasing operation. Lake depth measurements shall be reported to the Department on a form provided by the Department within fourteen (14) days of the measurements being taken.

b. Standard Conditions

1. Completion of construction. The project authorized by this permit must be completed within 5 years of the effective date of this permit.
2. Permit modification. All permit modifications, shall be treated as a new permit application.
3. Nuisance species spread prevention. Prior to placing any equipment (e.g., boat, trailer, vehicle, or gear) that has been in or on any other waterbody into public waters for project implementation/construction, the permittee shall decontaminate the equipment in compliance with the [Voluntary Guidelines to Prevent the Spread of Aquatic Invasive Species through Recreational Activities, Aquatic Nuisance Species Task Force, November 2013](#).
4. Erosion prevention and sediment control. Erosion prevention and sediment control best management practices shall be utilized and maintained to prevent erosion and control sediment to minimize and prevent adverse impacts to water quality during construction of the authorized project. In addition, the permittee shall comply with the following conditions:
 - A. Areas disturbed by the construction activities shall be protected from erosion through the application of seed and mulch upon completion of construction, and shall be temporarily mulched during construction in advance of precipitation events.
 - B. Work shall stop immediately if visible turbidity occurs in the lake as a result of construction activity and shall not recommence until the source of the turbidity is identified and corrected.
5. Heavy equipment operation. Heavy equipment shall work from shore, and shall not work lakeward of mean water level unless explicitly approved in writing by the Department, and/or specified in the Approved Application.
6. Spill prevention. Fuel and lubricants from equipment shall not be discharged into the water. Any spills shall be managed in accordance with all applicable local, state, and federal regulations.

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

17. Appeals.

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

c. Findings

1. Jurisdiction - 29 V.S.A. § 403: Little Lake in Wells is a public water of the state of Vermont. The project encroaches beyond the shoreline as delineated by the mean water level. Therefore, the Department has jurisdiction under 29 V.S.A. Chapter 11.
2. Application Receipt and Review - 29 V.S.A. § 404: On January 26, 2015, the Department received an application from the Lake St. Catherine Conservation Fund (permittee), under the provisions of 29 V.S.A. Chapter 11, for authorization to expand a previously permitted aeration system located within the public waters of Little Lake, Wells. This permit decision covers the expanded portion of the system along the western shoreline of Little Lake.
3. Public Notification - 29 V.S.A. § 405(a): The Department gave written notice of this application to the municipality in which the proposed encroachment is located, abutting property owners, and others having an interest in this matter and provided an opportunity for interested persons to file written comments or request a public information meeting. The notice period began on August 18, 2015 and closed at 4:30 PM on September 18, 2015. Public comments were received during this period, all of which were in support of the project. No request for a public informational meeting was received.

4. Background; Lake Encroachment Permit History: Lake Encroachment Individual Permit #2011-008, issued March 28, 2012 to the Lake St. Catherine Conservation Fund, authorized installation of an aeration system comprised of nine diffusers located along the eastern side of Little Lake. Subsequently, Lake Encroachment Individual Permit #2013-010, issued March 19, 2014 to the Lake St. Catherine Conservation Fund, superseded Lake Encroachment Individual Permit #2011-008 and authorized four additional diffusers to the original nine diffuser system along the eastern side of Little Lake. Each permit issued for the aeration system included required monitoring of the system for water quality impacts and to evaluate whether the system can achieve the stated project purpose.
5. Project Description: The aeration project proposes to reduce organic sediments via improved decomposition to increase water depth in areas of Little Lake where sediment accumulation has negatively impacted previously accustomed public uses.

The aeration system is composed of a compressor located on shore that will be linked to 14 air diffusers via airlines. The compressor will be located on shore on a developed parcel and be adequately enclosed by noise reduction panels. 14 airlines will be attached to the compressor and enter the lake via a 2-3 foot wide trench that will be buried. A silt fence and/or silt screen curtain will be required to be installed in the lake around the work area to contain turbidity during excavation of the trench and filling the trench in after placement of the additional airlines. The trench will extend approximately 10 feet into the lake and be backfilled with excavated material. Each airline is 5 cm in diameter with a 1.2 cm internal diameter. No new cleared area or adverse impacts to shoreline vegetation will occur as a result of the installation of the compressor or airlines. The airlines and diffusers are weighted and will rest on the bottom of the lake and not surface when filled with air. Each diffuser measures 12 inches by 12 inches by 2.5 inches thick.
6. Project Purpose: The purpose of the project is to reduce organic sediments via improved decomposition in order to increase water depth and reestablish previously accustomed public uses.
7. Effect of Encroachment – Whether Excessive for Stated Purpose: The installation of 14 diffusers with associated airline is not excessive for the stated purpose of the project. The diffusers have been located to maximize system efficacy for achieving the stated project purpose.
8. Effect of Encroachment – Less Intrusive Feasible Alternatives: No less intrusive feasible alternative was identified to achieve the stated purpose of the project. The removal of organic sediments via improved and accelerated decomposition that results in greater water depth is less intrusive than potential mechanical means of organic sediment removal. Mechanical means of removal, such as dredging, would have negative impacts to water quality, fish and wildlife habitat, and aquatic vegetation.
9. Effect of Encroachment – Measures to Reduce Impacts on Public Resources: A silt fence and/or silt screen curtain will be required to completely contain the shoreline work area during airline installation (and removal upon project completion) if earth disturbance is anticipated. All equipment to be installed and equipment used for the airline and diffuser installation (and removal) will be required to be inspected for nuisance species spread prevention measures. Based upon data obtained as a result of the Water Quality Monitoring Plan, established under Lake Encroachment Individual Permit #2013-010, the diffusers have not been shown to generate turbidity or cause adverse impacts to water quality. The diffusers result in areas of bubbles and/or upwelling of water that, while having a visual presence, have not shown thus far to interfere with public use of the lake for boating, fishing, and swimming. The air compressor housed on

shore will be adequately surrounded with sound reduction panels to ensure reasonable noise levels.

- 10.** Placement of Fill: The project does not involve the placement of fill in the lake. The diffusers are 12 inches by 12 inches by 2.5 inches thick and will rest on the lake bottom and connect to airlines laid similarly, and will be removed upon project completion.
- 11.** Effects on Water Quality - 29 V.S.A. § 405(b): Based upon data obtained as a result of the Water Quality Monitoring Plan, established under Lake Encroachment Individual Permit #2013-010, the diffusers pose no negative impact to water quality. The additional 14 diffusers are not expected to pose a negative impact to water quality given that the two systems are operating within similar open water environments of Little Lake. The expanded project authorized by this permit is of a similar scale, installation method, and operational timeframe to that of the project authorized under Lake Encroachment Individual Permit #2013-010 and therefore an additional Water Quality Monitoring Plan at this location was determined to be unnecessary. Diffusers will sit on top of the sediment and not below so that there will be no turbidity generated once the system is operational. The initial installation of the diffusers will involve excavation of a trench along the shoreline for airlines. The installation of a silt fence and/or silt screen curtain will be required to completely contain the shoreline work area. The project is not anticipated to adversely affect water quality.
- 12.** Effects on Fish and Wildlife Habitat - 29 V.S.A. § 405(b): There was no information received during the notice period to indicate that the project would have an adverse impact on fish and wildlife habitat beyond the temporary disturbance caused during installation of the diffusers and airlines. Under the monitoring regime established to monitor a comparable aeration system authorized by Lake Encroachment Individual Permit #2013-010, there have been no noted instances of the existing air diffusers adversely affecting fish and wildlife habitat. The project is not anticipated to adversely affect fish and wildlife habitat.
- 13.** Effects on Aquatic and Shoreline Vegetation - 29 V.S.A. § 405(b): Effects on aquatic and shoreline vegetation will be limited to the installation of the airlines. No aquatic or shoreline vegetation is required to be cleared to install the compressor linked to the airlines leading into the lake. The permit is conditioned to restore the project area to its preconstruction state upon completion of the project. It is not anticipated that the project will result in a measurable impact on aquatic and shoreline vegetation.
- 14.** Effects on Navigation and Other Recreational and Public Uses, Including Fishing and Swimming - 29 V.S.A. § 405(b): The project purpose is to have a positive impact on navigation, recreation, and other public uses by increasing water depth. The applicant states that boating is currently inhibited in many areas of the lake due to decreased water depth, and that motor boating frequently stirs up sediment. The diffusers and airlines will rest on or near the bottom and not physically interfere with navigation or recreational and public uses. Operation of the diffusers will result in a visible disturbance of the water surface that may cause the public to be concerned or avoid the area. A sign must be posted at the Vermont Department of Fish and Wildlife Access area stating that the area in Little Lake is part of an approved project, is not off limits, and is safe for boating and fishing. Additionally, the permittee is required to inform all residents on the Little Lake shoreline of this information. The permittee's contact information must be included along with information on how to obtain a copy of the authorized permit from the Department and contact information for the Department's Lakes & Ponds Program, Lake Encroachment Permitting. The permittee must maintain a record of complaints they receive from users of Little Lake regarding any detriment to public use and navigation. The project is anticipated to have a positive impact

on navigation and other recreational and public uses.

- 15.** Consistency with the Natural Surroundings - 29 V.S.A. § 405(b): The aeration system will be installed below the water, with a compressor located on shore. There will be bubbles and upwelling visible on the water surface in the location of each diffuser. The compressor on shore will be located on a developed parcel. The impact on the natural surroundings will be temporary in nature and occur only for the duration of the permitted project. The project will have a temporary impact on the existing natural surroundings. The temporary impact will be outweighed by improvements to preexisting public uses.
- 16.** Consistency with Municipal Shoreland Zoning Ordinances and Applicable State Plans - 29 V.S.A. § 405(b): No adverse comments were received during the investigation from local and state offices. Therefore the project is considered to be consistent with any applicable municipal shoreland zoning ordinances and any applicable state plans.
- 17.** Cumulative Impact - 29 V.S.A. § 405(b): There will be no anticipated negative impacts to water quality. There will be no impacts to aquatic or shoreline vegetation. This location will be in an area that is currently developed and as such the location of these components is not expected to result in a negative cumulative impact. The diffusers and airlines are located on the lake bottom and will be installed with weights to ensure the system remains in place and does not interfere with public uses. The visible bubbles and upwelling on the surface of the lake will also be limited to this portion of Little Lake directly over the aerators. The proposed project will not have an adverse cumulative impact when considered with other existing encroachments and other uses on Little Lake.
- 18.** Public Good Analysis Summary - 29 V.S.A. § 405(b): The project will have no anticipated negative impacts on water quality, fish and wildlife habitat, and aquatic and shoreline vegetation. The project will have an anticipated positive impact on navigation, recreation, and other public uses. The project will have temporary minimal impacts on the natural surroundings and will have no adverse cumulative impacts. Overall, the proposed project will not adversely affect the public good.
- 19.** Public Trust Analysis: The public trust doctrine requires the Department to determine what public trust uses are at issue, to determine if the proposal serves a public purpose, to determine the cumulative effects of the proposal on the public trust uses, and to balance the beneficial and detrimental effects of the proposal. The public trust uses relevant to this proposal are fishing, boating, swimming, navigation, and environmental research related to the use of aeration as a potential site specific lake management strategy to reduce accumulated sediment as a way to reestablish previously accustomed public trust uses. There is a potential that the project will negatively impact public trust uses in the project area due to the visual disturbance of the water surface, thereby causing the public to avoid the area. This potential should be lessened by the posting of an informational sign at the public boat launch and by providing residents and users of Little Lake information regarding the project. The project will provide useful information to the permittee and Department regarding the effectiveness of this management technique to increase the decomposition of organic sediment to increase water depth in select areas where use has been impeded by accelerated organic sediment accumulation. If the project is successful in achieving its purpose, there will be a positive impact to the public trust uses that are relevant. The Department has therefore determined that the project is consistent with the public trust doctrine.

d. Authorization

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

In accordance with 29 V.S.A. § 401 *et seq.*, the Department hereby issues this decision and permit to the Lake St. Catherine Conservation Fund for the above named project. The Department has approved the project subject to the conditions contained herein.

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

Alyssa B. Schuren, Commissioner
Department of Environmental Conservation

By: _____

Perry Thomas, Program Manager
Lakes & Ponds Management and Protection Program