

### Vermont Department of Environmental Conservation

Agency of Natural Resources

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TO:	Eric Blatt, P.E., Director I, Water Investment Division
FROM:	Celia Riechel, DWSRF Project Lead Water Investment Division
SUBJECT:	Champlain Water District Essex West Booster Pump Station & Transmission Main Project
DATE:	4/2/2021

## **Project Identification**

Project Name:	Champlain Water District Essex West Booster Pump Station & Transmission Main Project Drinking Water State Revolving Fund Loan RF3-410
Project Contact:	Nate Pion, Chief Engineer/Director of Projects & Programs Champlain Water District 403 Queen City Park Road South Burlington, VT 05403
Project Location:	Essex and South Burlington, Vermont

### **Summary of Environmental Review**

The Department of Environmental Conservation, Water Investment Division (Department), has reviewed this proposed project in accordance with the Department's *Environmental Review Procedures* for Projects Funded Through the Vermont/EPA Drinking Water State Revolving Fund Loan Program.

The Department has reviewed the following planning documents:

• Preliminary engineering report "CWD Essex West Pump Station Preliminary Engineering Study" excerpts: Section 4 "Pump Station Alternatives" and Section 5 "Transmission Main Alternatives" (pages 14-35), dated October 2018, by Aldrich + Elliott, PC.

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- Environmental Information Document titled "Environmental Report and Environmental Information Document," dated 4/2/2021, by Jason Booth, PE, Aldrich + Elliott, PC.
- Design drawings for permit review, "Essex west booster pump station and transmission main and Essex east booster pump station upgrades," dated December 2019, by Jason Booth, PE, Aldrich + Elliott, PC.
- Phase IB Archaeological Investigation End-of-Fieldwork Letter, Essex West Booster Pump Station, Route 15 and Turnberry Ridge, Town of Essex, Chittenden County, Vermont, dated 12/2/2019, by Elise Manning Sterling, Project Manager, Hartgen Archaeological Associates.
- §106 Project Review Form, Vermont Division for Historic Preservation, VDHP comment completed 9/2/2020 by Scott Dillon.
- Individual Wetland Permit and Determination, File #: 2019-680, DEC ID#: EJ19-0352, dated 1/4/2021.
- Approved Site Plan showing wetland impacts for Wetlands Permit, dated February 2020, by Aldrich + Elliott, PC, and approved by DEC Wetlands Program 1/4/2021.
- Vermont Wetlands Program Permit Application, dated 9/8/2020.
- §106 Project Review Form for off-site mitigation project, Vermont Division for Historic Preservation, VDHP comment completed 4/1/2021 by Scott Dillon.
- Wetland Buffer Enhancement Area Plan, Main Plant, South Burlington, dated 3/30/2021, by Fitzgerald Environmental Associates, LLC.

# **Project Description**

The Town of Essex and City of South Burlington are located in Chittenden County, Vermont. The proposed project consists of construction of new Essex West pump station with duplex pumping system, process piping, electrical, and generator, installation of approximately 1,850 linear feet of new 12" ductile iron transmission main from the pump station to the connection with the Essex Town distribution system, and upgrades to the Essex East pump station. Wetlands impacts will be mitigated off-site by planting wetland trees and shrubs with minimal disturbance in a buffer enhancement area at the CWD Main Plant in South Burlington.

The upgrades are proposed to create operational efficiencies, specifically to reach a target 25% water turnover, create redundancy in the transmission system serving the Essex Town East distribution system, and upgrade aging infrastructure. This will enable the system to improve performance and maintain regulatory compliance under the Vermont Water Supply Rule, specifically related to water age and turnover. The project will improve public health by improving flow and utilization between tanks and enabling needed repairs to be made to the Essex East pump station without interruption of service.

## Finding of No Significant Impact (FNSI) Required

The Department of Environmental Conservation, Water Investment Division has established the *Environmental Review Procedures for Projects Funded Through the Vermont/EPA Drinking Water State Revolving Fund Loan Program* in accordance with the National Environmental Policy Act (NEPA), for projects receiving drinking water revolving loan funds. Under these environmental review procedures, projects that are known or expected to directly or indirectly affect an environmentally important natural resource area are not eligible to receive categorical exclusion and are subject to more detailed environmental review requirements.

A Finding of No Significant Impact (FNSI) is the appropriate environmental review response for this project. This project is not eligible for categorical exclusion from detailed environmental review because the project is known or expected to directly or indirectly affect an environmentally important natural resource area, specifically, a wetland. The project's direct and indirect environmental effects do not meet criteria for issuance of an Environmental Impact Statement (EIS), as described in section XI of the Department's environmental review procedures.

## **Alternatives to the Project**

Eight primary alternatives were considered in the Preliminary Engineering Report, with the goal to provide redundancy to the Essex East Pump Station transmission main and operational efficiency when exercising the Essex West Tank. These alternatives are separated into those addressing tank location, tank function, and transmission main location. The primary alternatives are outlined below. Further design adjustment alternatives were considered in the wetlands permit application. Please refer to the PER and wetlands permit application for a full description of alternatives considered.

1. No action (maintain status quo).

This option is not acceptable as the current situation is operationally challenging to maintain compliance with the Water Supply Rule and does not allow for upgrading the Essex east pump station because there is no other facility that pumps water into the Essex Town High distribution system.

- Pump Station Alternative No. 1 Existing Tank Site. Locate the pump station on the approximately 3.0-acre property owned by CWD on which the Essex West tank is located. This alternative is not preferred because suction head on the pumps would be limited, compromising operations, and power would need to be upgraded to 3-phase and extended a significant distance, increasing costs.
- Pump Station Alternative No. 2 Route 15 (Preferred Alternative) Locate the pump station along Route 15, approximately 1,400 lf downhill of the tanks site. This is the preferred alternative because it would provide better suction head and require a shorter distance to install 3-phase power, resulting in lower costs and better operation.
- 4. Capacity Alternative No. 1 Primary Pump Station Under this alternative, the Essex West Pump Station would operate as the primary pump station to supply Essex Town East water distribution system and Jericho Village distribution system.

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The Essex East pump station would be designated as backup. This alternative is undesirable because additional equipment needed for a primary pump station would increase capital costs, create more operational scenarios to manage, and create more pumping capacity than is needed.

- 5. Capacity Alternative No. 2 Backup Pump Station (Preferred Alternative) Under this alternative, the Essex East pump station would continue to be the primary pump station serving the Essex Town East water distribution system, and the new Essex West pump station would be sized to operate as a backup pump station to supplement and provide operational efficiencies. This is the preferred alternative because it has lower capital costs, maintains the existing operating conditions, and achieves the goals of redundancy and operational efficiency.
- 6. Transmission Main Alternative No. 1 Cross Country This alternative runs cross country from the pump station site under Indian Brook to Route 15 and then reconnect to the existing waterline at Essex Way. This alternative is not feasible because it is the longest length of pipe, would likely adversely impact environmental resources from the stream crossing, adjacent identified wetland, and wetness-limited soils of statewide importance, has a high likelihood of encountering bedrock, would require acquisition of easements, and has the highest overall cost.
- 7. Transmission Main Alternative No. 2 Lang Farm (Preferred Alternative) Under this alternative, the transmission main would run through the McCuin or Atkins property toward Route 15, cross an existing box culvert protecting Indian Brook, and connect to the existing waterline at Lang Farm. Nearly all the work will take place within the State Right-of-Way, which would limit environmental impacts. This is the preferred alternative because it achieves the stated objectives with the shortest distance of pipe, fewest environmental concerns, fewest easements required, and at the lowest cost.
- 8. Transmission Main Alternatives No. 3A I-289 (Lang Farm Waterline) and 3B I-289 (Essex Way)

These alternatives follow a similar route as Alternative No. 2 but continue along Route 15 to connect to the existing waterline at I-289 (No. 3A) or Essex Way (No. 3B). These are not preferred because the length of pipe is greater than Alternative No. 2, they present a high likelihood of encountering bedrock, they require easements, and have significantly higher costs.

- Transmission Main Alternative No. 4 Kolvoord Under this alternative, the transmission main would connect to the Essex Junction Low distribution system near the Kolvoord property. This option is impractical due to the metering complexity and failure to achieve project goals.
- 10. Locating the project outside of the wetland area. This is not practical because the existing CWD easements all contain wetland. CWD does not have an easement that would enable a layout that entirely avoids the wetland.
- 11. Locating the project in such a way as to minimize wetland impacts and mitigating those that are unavoidable (preferred alternative).

This alternative is the only technically feasible and cost-effective way to achieve the project objective. On-site mitigation is not possible because the CWD easement is not large enough. Wetland impacts will be mitigated off-site at the CWD main plant in South Burlington, by planting of wetland trees and shrubs and the ending of mowing activities in a 10,000 sqft area identified as the "Wetland Buffer Enhancement Area," as approved by the DEC Wetlands Program in the Wetlands Permit. It is anticipated that the construction of these improvements will result in achievement of project objective.

# Direct and Indirect Environmental Effects of the Project

The direct environmental effects of construction and operation of this project are adequately addressed by the 4/2/2021 Environmental Information Document and the Wetlands permit. These documents provide a thorough assessment of the direct environmental impacts and conclude there are no significant environmental consequences resulting from the project. There are no significant environmental impacts on general land use, important farmland, or formally classified lands. There are no significant environmental impacts on floodplains or streams. Impacts to 4,824 sqft of Class II wetland and 9,797 sqft of wetland buffer zone will be mitigated so that the project will result in no undue adverse effects on the protected functions and values of the significant wetland and associated buffer zone. There are no significant environmental impacts on biological resources, including endangered species, or sensitive natural community types. Construction erosion and runoff control measures will be incorporated into the project. Due to the proposed project construction, there will be minor, temporary environmental impacts relating to air quality, transportation, noise, and vibration.

Regarding historic resources, an archeological study was conducted for the main project area and concluded that no further study is required. The State Historic Preservation Office reviewed the mitigation plans for the South Burlington site and identified potential archaeological sensitivity but has determined that these concerns will be adequately addressed by planting bare-root plants using a slittrench, and that the project as planned will not impact sensitive resources.

The indirect environmental effects of construction and operation of this project are expected to be minimal.

# Socio-Economic Effects of the Proposed Project

The proposed project will not have a negative effect on the quality of the human environment, require relocation of people, or otherwise cause significant changes to the socioeconomic makeup of the area. The proposed project is cost-effective. A general obligation bond in the amount of \$3,500,000 was approved by the Champlain Water District voters on 3/3/2020. It is anticipated that the total project cost will be funded through low interest loans provided through the Drinking Water State Revolving Fund. The current increase in the user rate to cover the new debt associated with the project is estimated to be \$1.23 per equivalent residential unit. As stated above, the selected alternative represents the most cost effective and technically feasible solution to achieving the objective.

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# **Mitigation of Adverse Impacts**

Impacts to wetlands will be mitigated so that the project will comply with 10 V.S.A. Chapter 37 and Vermont Wetlands Rule. The specific mitigation activity will be the planting of 90 bare root wetland trees and shrubs using the slit-trench method in a 10,000 sqft designated "Wetland Buffer Enhancement Area" located along Potash Brook at the CWD Main Plant located at 403 Queen City Park Road, South Burlington, as described in the plan prepared by Fitzgerald Environmental dated 3/31/2021.

The DEC Wetlands Program has determined that the project, including completion of the mitigation plan, if conducted in accordance with permit conditions will result in no undue adverse effects on the protected functions and values of the Class II wetland and associated buffer zone.

# List of Agencies and Groups Consulted

## State of Vermont:

- Department of Environmental Conservation, Wetlands Program
- Department of Environmental Conservation Drinking Water and Groundwater Protection Division, Engineering Section
- Agency of Commerce and Community Development State Historic Preservation Office

## Other:

• Hartgen Archaeological Associates

## **Summary of Public Involvement**

One public hearing is scheduled for Thursday, April 15 at 6:00pm. For public health reasons, the hearing will be conducted remotely. The notice for the meeting was included in the Notice of Intent to Issue a Finding of No Significant Impact for the Champlain Water District water system improvements project that is being published in the Burlington Free Press. The meeting notice will be posted on the Water Investment Division's website, the Department of Environmental Conservation electronic meeting calendar, and the Vermont Department of Libraries' electronic state public meeting calendar.