Burlington Department of Public Works
Water Resources Division
235 Penny Lane
Burlington, VT 05401
(802) 863-4501

To: Board of Finance and City Council

From: James Sherrard, Stormwater Program Coordinator

Date: 7/12/2021

Cc: Megan Moir, Division Head, Water Resources
Chapin Spencer, DPW Director

Re: Authorization to execute a construction contract and annual software licensing agreements for a for a Continuous Monitoring Adaptive Control (CMAC) Valve System with OptiRTC, Inc.

Request:

The Department of Public Works' (DPW) Water Resources Division seeks approval and authorization to execute a construction contract with OptiRTC, Inc. for the installation of a Continuous Monitoring Adaptive Control (CMAC) Valve System at the Englesby Brook Pond for smart control of stormwater flows and to execute a software contract associated with the valve for a period up to 5 years.

Introduction & Background

Englesby Brook, in the south end of Burlington, was designated as a stormwater-impaired watershed on the 2006 Vermont 303(d) list, due to multiple impacts associated with excess stormwater runoff related to the high imperviousness of its watershed. Englesby Brook drains an area of approximately 605 acres – 96% of which is developed land. The Vermont Department of Environmental Conservation (DEC) developed a Total Maximum Daily Load (TMDL) for Englesby Brook that was approved by the EPA in 2007. The TMDL mandates required changes in watershed hydrology – specifically a reduction in stormwater high flows and increases in baseflow – necessary to restore water quality in the Brook. In order to achieve the identified targets DEC required, and Burlington developed, a Flow Restoration Plan (FRP). The FRP identifies the scope and scale of the best management practices needed to meet the flow targets established in the TMDL, and ultimately attain compliance with the applicable Water Quality Standards.

The "Flow Restoration Scenario," included in the Englesby FRP includes a variety of retrofits necessary to sufficiently manage high flows to achieve the Englesby Brook TMDL flow targets. Retrofits are the enhancement of existing stormwater management practices or the installation of stormwater management practices where none currently exist. Among the retrofits identified, the restoration plan includes an enhancement to the existing "08 Pond" which is just to the east of the Champlain School. That upgrade, as originally considered, was to include the excavation of the pond to expand its capacity to hold additional storm flows. Due to the current liner in that pond, the estimated cost of that retrofit was estimated to be $400,000.

Another proposal considered as part of this retrofit in the Englesby FRP, was equipping the pond with a "smart valve." Smart valve technology, also known as "Continuous Monitoring and Adaptive Control" (CMAC), is a system installed within an existing outlet structure that adjusts the rate of discharge from the pond based on meteorological data it is constantly reading and analyzing. The purpose of the valve is to optimize adjustment of the water level in the pond, to provide maximum water quality and peak discharge capabilities.

Once the valve is properly calibrated, our current analyses show an average 48% reduction in peak flow from this pond during the 1-year, 24-hour storm event, which is the storm of focus for these stormwater impaired streams. Improved retention during and after storm events will maximize 'residence time' in the pond, leading to higher nutrient and pollutant removal. Controlled discharge of that water in advance of storm events will minimize high storm flows into Englesby Brook, which will reduce impacts such as excess stream bank erosion.

In early 2019, Burlington's Stormwater Program applied to DEC's Ecosystem Restoration Program (ERP) for grant funding to procure and install a CMAC Valve on the 08 Pond. The ERP grant required a 50% match and we had a preliminary cost estimate of $98,000 for a CMAC Valve. We were awarded $49,000 in late April of 2019, and the grant agreement was fully executed on February 14th, 2020.

The City posted an Invitation for Bids (IFB) on February 24th, 2020 seeking bids for the installation of a CMAC valve in the 08 Pond which resulted in a single bid/proposal received on March 10th, 2020 just before the pandemic shut down many municipal offices. The only proposal received, was from Opti RTC[1] (Opti) - a company that specializes in the design, installation, and monitoring of CMAC systems. Opti has both local and regional experience producing these meteorologically-connected valve systems. A similar system has been installed by Opti in South Burlington. The OptiRTC cost proposal is below:

One Year Software Subscription Term	
Greater Burlington YMCA	$5,700
Englesby "08" Pond	$7,500

Turnkey CMAC Retrofit Installation	
Englesby "08" Pond	$97,975

Due to the budgetary uncertainty created by the pandemic, the Stormwater Program paused the award of the project. In early 2021, Staff obtained a grant extension from the State and received an updated submission from Opti on April 22nd confirming the pricing above. Upon receiving this updated submission and given the duration of time which had passed since the original IFB and proposal submission, the Stormwater Program sought and obtained permission from Katherine Schad, the City's

[1] https://optirtc.com/

Chief Administrative Officer in April to move forward with the Notice of Award to Opti, pending the approval of the Board of Finance and City Council.

Budget & Timeline

This grant agreement requires a minimum of 50% matching dollars from the grantee. The FY22 Stormwater Program budget has accounted for up to a $49,000 contribution from the City for this work in its Capital budget (245-19-000.9500_110), which will satisfy the match requirement.

The grant is reimbursement-based, and costs will be reimbursed by the State of Vermont as invoices are submitted throughout the project period. Work must be completed, and final invoices submitted by November 2022.

Funds for the annual software license costs were approved as part of the FY22 budget and are available in 245-19-000.6800_125 (Fees for Services Fees & Permits).

Motion for Board of Finance:

1. To approve and recommend the City Council authorize Chapin Spencer, the Director of Public Works, to execute a construction contract with OptiRTC, Inc. for the installation of a valve at Englesby Brook Pond, in an amount up to $98,0000, subject to the prior review and approval of the City Attorney's Office.
2. To approve and recommend the City Council authorize Chapin Spencer, the Director of Public Works, to execute a software licensing agreement with OptiRTC, Inc. to support the installation and operation of the valve at Englesby Brook Pond for up to five years, in an amount up to a total of $66,000 over five years, at $13,200 per year, subject to the prior review and approval of the City Attorney's Office.

Motion for City Council:

1. To authorize Chapin Spencer, the Director of Public Works, to execute a construction contract with OptiRTC, Inc. for the installation of a valve at Englesby Brook Pond, in an amount up to $98,0000, subject to the prior review and approval of the City Attorney's Office.
2. To authorize Chapin Spencer, the Director of Public Works, to execute a software licensing agreement with OptiRTC, Inc. to support the installation and operation of the valve at Englesby Brook Pond for up to five years, in an amount up to a total of $66,000 over five years, at $13,200 per year, subject to the prior review and approval of the City Attorney's Office.