



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
 REGION 1
 1 CONGRESS STREET, SUITE 1100
 BOSTON, MASSACHUSETTS 02114-2023

August 20, 2009

David P. Breau
 Division of Water Quality Management
 Department of Environmental Protection
 17 State House Station
 Augusta, ME 04333

Dear Mr. McLaughlin:

I am pleased to inform you that EPA has reviewed and approved the revised business case provided by Olver Associates and the City of Belfast, Maine. This approval increases the amount of green project reserve for Belfast from \$70,000 to \$100,000. Below is the revised breakout for the Maine Clean Water State Revolving Fund ARRA Green Project Reserve List.

At this time EPA is approving the following projects and funding towards the green project reserve:

Bangor	NPS – Birch St Stormwater Mgmt	\$1,690,000
Bangor	NPS – St sweeper & in-stream monitor equip	\$270,000
Bangor	NPS – Penjajawoc Stream Stormwater Mgmt	\$877,000
Belfast	CSO Influent Pump Replace & Disinfection inc	\$100,000
Cumberland	NPS – Long Creek NPS	\$2,095,000
Limestone	Facility – WWTF Upgrade	\$1,500,000
Machias	Facility – WWTP Upgrade	\$50,000
TOTAL		\$6,582,000

The total green project reserve of \$6,582,000 that is being approved accounts for 21.7% of the State of Maine's ARRA CWSRF Capitalization grant exceeding the 20% requirement set forth in the March 2, 2009 ARRA Guidance. If a project from the GPR drops off the list or if one or more projects come in underbid and the GPR drops below the 20% requirement, EPA reserves the right to re-evaluate this approval at that time.

We appreciate the great working relationship demonstrated by the State during this process. Should you have any questions regarding this approval please contact me at (617) 918-1658.

Sincerely,

Katie Connors, Environmental Engineer
 Municipal Assistance Unit



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAVID P. LITTELL
COMMISSIONER

July 31, 2009

Katie Connors
USEPA Region 1
CMU
1 Congress St. Suite 1100
Boston MA 02114-2023

Subject: Green Reserve: Belfast Peak Flow Upgrade Project

Dear Ms. Connors:

On April 8, 2009, the DEP submitted business cases for green reserve justifications for a number of projects, including Belfast. EPA approved Belfast's green component of \$70,000. The City's engineer, Olver Associates, is currently designing the project. On July 22, 2009, William Olver sent a letter to the Department stating that he needed to modify the design of the pump system based on closer examination of design curves and flow requirements.

Enclosed is his justification for the new design, which still allows for significant energy savings. In fact, this business case justifies \$100,000 as a green component. This meets the criteria in the latest guidance for green reserve and the DEP agrees with Olver's justification.

The DEP seeks EPA's concurrence of this green business case for \$100,000 for Belfast.

Sincerely,

Stephen A. McLaughlin, P.E., Engineering Manager
Clean Water State Revolving Fund

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 760-3143

OLVER ASSOCIATES INC.

ENVIRONMENTAL ENGINEERS

July 22, 2009

*Steve/Brady
Here's the revised
business plan for Olver
on Belfast pumps - Green AREA.
Let me know if okay.
JD*

Mr. David Breau, P.E.
Bureau of Land and Water Quality
Maine Department of Environmental Protection
17 State House Station
Augusta, Maine 04333

Dear Dave:

We are writing as a follow-up to our recent telephone discussion in which you asked that we update the business case basis for the inclusion of the Belfast Peak Flow Upgrade project as a Green Project based upon EPA guidelines. We presented our initial business case to DEP in our letter of April 1, 2009 prior to the design of the project. With the completion of our final design, we can now modify the assumptions that were made in our preliminary conceptual assessment.

Our previous correspondence referenced present 15 HP motors on the three influent pumps. That information was based upon the original plant specifications that were referred to in our conceptual design report. As we began our detailed design work with on-site reviews and developed system head curves for the existing pumps, we noted that the pump motors had been upgraded once since their initial 1968 installation. The upgrade included larger impellers and an increase in motor size from 15 HP to 20 HP. The existing pumps were originally staged and sequenced off an old Flowmatcher system to operate either fully on or fully off. Based upon this data and the operating assumptions defined in our April 1 letter, the annual power cost to operate the old system was estimated at about \$24,000 per year.

The three proposed new pumps will be rated at 20 HP in order to meet peak flow conditions, but are expected to operate at an efficiency range that is twenty-five percent greater than the operating efficiency of the old pumps in their present condition. With the VFD drive system, they will only draw 17 HP at peak flow and about 10 HP as they ramp up at lower flows. In addition, the force main capacity is being increased to reduce the system head and resultant power costs. We estimate the power requirements of the new system will be about \$13,000 per year. This results in an annual electrical savings of \$11,000. As discussed in our April 1 letter, the added CSO flow being conveyed through the plant will increase treatment costs by just under \$3,000. Therefore, the net savings from this project will be about \$8,000 per year in reduced power costs. The estimated construction cost for the three proposed pumps is about \$80,000. Therefore, the project will result in a ten-year payback to the City. This suggests that

OLVER ASSOCIATES INC.

Mr. David Breau, P.E.

July 22, 2009

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the final two-thirds of the pump's useful life will generate operating savings beyond the initial capital cost of their installation.

The project also includes an alternate bid item to add a VFD drive to an existing 75 HP aeration blower. The blower presently operates in an on/off mode without a VFD. We estimate the cost of the added VFD to be about \$20,000. The aeration blowers at the plant must operate continuously around the clock. With a VFD drive, this blower will operate one-third of the time or about 2,900 hours per year. At its present sixty percent efficiency, the power cost to operate this blower would be about \$40,000 per year. With the VFD drive, the blower will draw only the HP that is needed to maintain dissolved oxygen in the system. We estimate that this will reduce the blower's electrical demand by as much as fifty percent which would result in a power savings of about \$20,000 per year. As is typical with this type of aeration system upgrade, the payback to add a VFD drive will be only one year.

We hope that this information is useful to you as you update your files for this project. If you have any questions or need additional information, please call.

Very truly yours,

OLVER ASSOCIATES INC.



William M. Olver P.E., President

WMO/lp

0109/135

CC: Mr. Jon Carman, Superintendent