
HALDIMAND COUNTY

Report WWE-03-2022 Budget Reallocation – Port Maitland Low Lift Pumping Station



For Consideration by Council in Committee on August 23, 2022

OBJECTIVE:

To obtain approval for a budget reallocation to the funding of a capital project associated with upgrades to the Port Maitland raw water Low Lift Pump Facility.

RECOMMENDATIONS:

1. THAT Report WWE-03-2022 Budget Reallocation – Port Maitland Low Lift Pumping Station be received;
2. AND THAT the revised budget as outlined in Report WWE-03-2022 be approved.

Prepared by: Warren Wight, Project Manager, Water and Wastewater Engineering

Reviewed by: Phil Wilson, Manager, Water and Wastewater Engineering

Respectfully submitted: Tyson Haedrich, M. Eng., P. Eng., General Manager of Engineering & Capital Works

Approved: Craig Manley, MCIP, RPP, Chief Administrative Officer

EXECUTIVE SUMMARY:

Construction of necessary raw water pumping upgrades at the Port Maitland Low Lift Pump Facility (LLPF) were completed in February 2022. These pumping upgrades are associated with infrastructure dedicated to the supply of raw water to the County's Dunnville Water Treatment Plant (WTP) and two industries; Innophos Canada, Inc. (Innophos) and Mosaic Esterhazy Holdings Inc. (Mosaic), and as such all three are funding the project costs. A Hydro One grant fund rebate of \$27,160 also funded the project.

A budget reallocation totaling an additional \$360,000, as detailed within this report, is required in order to complete and close this project. This additional cost will be off-set from savings from project C.476025 for the Dunnville Water Treatment Plant upgrades and a small increase in the shared cost funded from the industry.

BACKGROUND:

The Port Maitland LLPF is located southwest of Dunnville along the shores of Lake Erie. The facility supplies raw water from the lake to the Dunnville WTP, Innophos and Mosaic. The purpose of the upgrade was to replace aging infrastructure and enhance the pumping system by providing dedicated pumps designed to meet the specific raw water supply demands of the County and the two industries. The new dedicated County pumps and the industry dedicated booster skid pump package will achieve energy efficiencies during normal flow demands. There are currently three new pumps dedicated to

supply raw water to the WTP, a new booster skid pump package and a new industrial high flow pump (fire pump) dedicated to the two industries.

The scope of work completed, includes:

- Demolition of the old micro strainer building;
- Decommissioning and removal of existing hydro transformer;
- Supply and installation of new hydro transformer and switchgear;
- Electrical room addition to pump house building;
- Remove four existing shared pumps, motors and all appurtenances;
- Install three new County pumps, one new booster skid pump package and a new industrial high flow pump for industry;
- Mechanical and electrical upgrades;
- Supply and install a new diesel backup generator; and,
- Relocate driveway access, yard work and landscaping.

ANALYSIS:

In November 2018, the Port Maitland LLPF Upgrades project was awarded to North American Construction Ltd. in the amount of \$2,153,241 including applicable tax.

A summary of the change orders incurred with the project that contributed to the budget overage of \$360,000, are as follows:

- Replace all overhead hydro service with underground service
- Modifications to original design of transformer and switchgear due to new underground hydro service
- Unforeseen underground void in electrical addition footing location. Restoration included engineered non-shrink fill to meet structural loading of footing
- Concrete valve chamber structural repairs discovered once excavated
- Pump and booster skip pump package structural pad modifications
- Additional materials for driveway relocation, yard piping modifications and property security fencing
- Unforeseen conditions with micro strainer building demolition; asbestos, underground water storage chamber and piping
- Additional engineering design and construction inspection

A major contributor to the additional project cost was the unforeseen complications of the existing buried infrastructure that had not been completely or properly removed, nor accurately documented when taken out of service years before. These types of costs are typically seen when older infrastructure is modernized and once the work is completed the new as-constructed plans and documentation significantly reduce this risk in the future.

Another contributing factor to the increased cost of the project was a result of misinterpretation of ownership of the overhead hydro service from Sandy Bay Road into the Port Maitland LLPF. At the start-up of construction, it was learned that the County was considered the owner of the overhead hydro service that extends 125 metres from the road to the transformer for the facility. Additional time and materials were incurred for removal of the overhead service and poles, installation of the new underground service, design and equipment changes necessary for the new transformer and switchgear to meet the underground service and proper removal and disposal of the PCB's from the old transformer.

FINANCIAL/LEGAL IMPLICATIONS:

The following table shows the current approved project budgets as well as the proposed revised budget amounts for the Port Maitland Low Lift Pumping Station project.

Projects	Current Approved Budget	Funding Revision	Proposed Revised Budget
Capital Expenditures:			
C.476006 Pt. Maitland LLPF Upgrades	\$2,194,630	\$362,280	\$2,556,910
C.476025 Dunnville WTP Upgrades	\$5,005,000	(\$352,404)	\$4,652,596
Total Capital Expenditures	\$7,199,630		\$7,209,506
Capital Financing:			
Port Maitland LLPF Upgrades CRRF	\$883,430	352,404	\$1,235,834
Micro strainer Reserve Fund (Industry Funded)	\$294,040	\$9,876	\$303,916
Federal Gas Tax Reserve Fund	\$990,000	\$0	\$990,000
Hydro One Energy Grant Funding	\$27,160	\$0	\$27,160
Total Project Financing	\$2,194,630	\$362,280	\$2,556,910
Dunnville WTP Upgrades CRRF	\$5,005,000	(\$352,404)	\$4,652,596
Total Financing	\$7,199,630	\$9,876	\$7,209,506

The additional \$352,404 to be added to the CRRF Water expenditure will be offset from project C.476025 for the Dunnville Water Treatment Plant upgrades.

Allocation of project costs to Innophos and Mosaic are contractually stipulated and are calculated based on their respective water usage, averaged over a three year period. The \$9,876 to be added to the Micro Strainer Reserve Fund represents industries percentage of the additional and applicable project costs and will be recovered from Innophos (\$8,820) and Mosaic (\$1,056).

A Hydro One Energy rebate of \$27,160 was also received as a result of the energy efficiencies of the new equipment. Additionally, the monthly hydro consumption by the facility has decreased as result of the pumping system improvements, representing a monthly hydro savings of \$1,200 (\$14,400 per year).

The total budget of \$2,556,910 (including applicable taxes) for the Port Maitland LLPF Upgrades project includes engineering and legal fees of \$324,370 and construction costs of \$2,232,540.

Based on the budget revisions as shown in the above table, there are no impacts to the rates as established in the 2022 Water and Wastewater Rate Support Budget.

STAKEHOLDER IMPACTS:

The reliable provision of raw water to the County, Innophos and Mosaic from the Port Maitland Low Lift Pumping Facility is vital for operations. This upgrade project was necessary to decommission infrastructure no longer required and that had reached the end of its service life, replace aging infrastructure and enhance operational efficiency through an improved design. The completed project

will ensure the County and industries continue to receive raw water to meet daily demands for many years to come.

REPORT IMPACTS:

Agreement: Yes

By-law: No

Budget Amendment: Yes

Policy: No

REFERENCES:

None.

ATTACHMENTS:

None.