

**Subject:** Gross Budget Increase for Niagara Falls WTP Intake Relocation (20000464) Property Purchase

**Report to:** Public Works Committee

**Report date:** Tuesday, May 7, 2024

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## Recommendations

1. That the gross capital budget for the Niagara Falls Water Treatment Plant Intake Relocation **BE INCREASED** by \$2,071,000 and that the increase **BE FUNDED** from the Capital Variance Project - Water.
2. That the acquisition of two (2) properties legally described as Blocks E and F, Plan 260 subject to an easement in favour of the Bell Telephone Company of Canada as in RO96648, being all of PIN 64379-0049 (LT) and all of PIN 64379-0050 (LT), in the City of Niagara Falls, Regional Municipality of Niagara (collectively, the “Lands”) for a purchase price of \$1,525,000 and associated transaction costs not exceeding \$50,000, **BE APPROVED**.
3. That the Commissioner of Public Works **BE AUTHORIZED** to execute the necessary documents, in a form satisfactory to the Director, Legal and Court Services, in order to complete the transaction.

## Key Facts

- The purpose of this report is to seek Council approval for an increase to the gross budget for Project 20000464 (Niagara Falls WTP Intake Relocation) by \$2,071,000 to acquire property from the Niagara Parks Commission and additional Engineering Design requirements. The proposed increase will be funded through the Capital Variance Project - Water which has a current balance of \$11,630,543 as of April 5, 2024.
- Per the Budget Control By-Law section 6.5(c) iii), Council approval is required for budget adjustments from Capital Variance greater than \$250,000.
- OPG is planning to carry out major repair work to the Queenston / Chippawa Power Canal which requires dewatering and shutdown of the canal. Due to the engineered reverse-flow of the Welland River, once the Power Canal is dewatered, the flow will return to its natural direction and the Welland River water will flow past the Niagara Falls WTP intake. Welland River water is undesirable as source water because it is

of lesser quality than the Niagara River and requires a higher degree of treatment. In addition, the quality of the Welland River water varies depending on weather conditions and other factors, and this variability creates challenges to control and optimize treatment chemistry at the Niagara Falls WTP.

- Through the 2018 EA process a new alignment was selected that involves relocating the existing Niagara Falls WTP intake from its current location in the Welland River into the Niagara River just east of the mouth of the Welland River for a new permanent intake. This alternative will require a tunnel to cross the Welland River, a watermain to then follow the Niagara Parkway east to a new pumping station, and intake pipe to then extend 45m north from the shoreline into the Niagara River. (See Appendix 2 – Key Plan)
- Purchasing these parcels for the current preferred alignment for a new permanent water intake will ensure reliable, high quality, and consistent raw water to the NFWTP during the planned canal outage and any future OPG canal maintenance and shutdowns.
- Additional engineering fees are recommended on the basis that pre-engineering investigations revealed design improvements necessary to mitigate potential water quality concerns. The required design changes are associated with moving the intake structure off-shore as opposed to a river bank intake structure which will alleviate water quality concerns. Additionally, an update to the Source Water Protection Analysis is required to align with the latest MECP guidelines along with additional terrestrial and marine archaeological investigations at a total estimated cost of \$504,366 (including non-recoverable HST).

## **Financial Considerations**

In 2017, Council approved a budget request of \$750,000 for design of the temporary Raw Water Intake at the Niagara Falls Water Plant (Project 20000464) which was to be partially funded from reserves (\$200,000) and partially by OPG (\$550,000).

In 2018, Council approved a budget request of \$10,000,000 for construction of the temporary intake which was to be fully funded from OPG. In 2019, Council approved a construction top-up of \$4,800,000 to be fully funded from OPG, for an overall construction budget of \$14,800,000 for the temporary intake.

As the temporary intake was no longer considered favourable by OPG, they informed Niagara Region of their intent to fund the planning/design phase for \$2,500,000 at this time for the permanent intake. On that basis, the construction budget was reduced in 2020 by \$12,850,000.

To proceed with the permanent intake relocation project, the Niagara Region needs to acquire two parcels of land from the Niagara Parks Commission (NPC). Niagara Region has received a copy of the appraisal completed by NPC. Each parcel of land has been given a valuation of \$775,000 and \$750,000 totaling \$1,525,000 as compensation for the Lands. The NPC obtained the services of Colliers International Canada to provide appraisal values for the lands, which was reviewed by staff and deemed it to be fair and reasonable. It is anticipated that additional cost to complete the transaction (e.g. land transfer tax) will not exceed \$50,000.

The Agreement of Purchase and Sale (APS) has been executed by Niagara Region and the NPC, but closing of the transaction is conditional upon the NPC obtaining Order in Council and by Niagara Region obtaining Council approval for the acquisition. The transaction is expected to close 30 days following receipt of both required approvals, failing which the APS shall be null and void. The costs associated with the acquisition of the Lands will be charged to Capital Project 20000464.

Additional engineering fees are recommended on the basis that pre-engineering investigations revealed design improvements necessary to mitigate potential water quality concerns. The required design changes are associated with moving the intake structure off-shore as opposed to a river bank intake structure which will alleviate these water quality concerns. Additionally, an update to the Source Water Protection Analysis is required to align with the latest MECP guidelines along with additional terrestrial and marine archaeological investigations at a total estimated cost of \$504,366 (including non-recoverable HST). This results in a total adjusted budget of \$4,771,000 as shown in the following table .

Table 1 – Project Budget Including Non-Recoverable HST

<b>Cost Allocation Project Stage</b>	<b>Niagara Region Contribution</b>	<b>OPG Contribution</b>	<b>Total Contribution</b>
2017 Detailed Design	\$200,000	\$550,000	\$750,000
2018 Construction/Internal Costs/Contingency/Warranty	-	\$10,000,000*	\$10,000,000
2019 Construction/Internal Costs/Contingency	-	\$4,800,000*	\$4,800,000
2020 Construction/Internal Costs/Contingency	-	(\$12,850,000*)	(\$12,850,000)
<b>Total Approved</b>	<b>\$200,000</b>	<b>\$2,500,000</b>	<b>\$2,700,000</b>
Land Acquisition/Design Fee Budget Adjustment	\$2,071,000	-	\$2,071,000
<b>Total Adjusted Budget</b>	<b>\$2,271,000</b>	<b>\$2,500,000</b>	<b>\$4,771,000**</b>

\*Capital funding related to the temporary intake.

\*\*The remaining unfunded portion of construction costs can be found in the 10-year Capital Forecast in 2025 at a value of \$30,000,000.

Per the Budget Control By-law section 6.5(c) iii), Council approval is required to increase the budget by \$2,071,000 gross to purchase the property and perform additional engineering studies. The proposed increase will be funded from the Capital Variance Project - Water and staff confirms the current balance of uncommitted funds in this Project prior to this current request is \$11,630,543.

A full budget breakdown prior to construction can be found in Appendix 1 - Total Estimated Project Cost to Report PW 15-2024

## **Analysis**

The Niagara Falls Water Treatment Plant (WTP) supplies drinking water to the City of Niagara Falls, portions of the Town of Niagara-on-the-Lake and the City of Thorold. The raw water intake is located on the north bank of the Welland River, just west of the Niagara River.

Historically, the Welland River flowed from the west to the Niagara River. In the 1920s, a section of the Welland River was deepened and the Queenston-Chippawa Power Canal (Power Canal) was constructed which reversed the normal flow of the Welland River. Now, water from the Niagara River flows into the Welland River and into the Power Canal to the hydro-electric generating stations. The WTP intake therefore receives its raw water from the Niagara River.

OPG is planning to carry out major repair work to the Queenston / Chippawa Power Canal. This canal delivers water to Sir Adam Beck #1 Hydro-Electric Generating Station. The canal is anticipated to be dewatered and out of service for two six (6) month periods (anticipated summer 2027- summer 2028).

Due to the engineered reverse-flow of the Welland River, once the Power Canal is dewatered, the flow will return to its natural direction and the Welland River water will flow past the Niagara Falls WTP intake. Welland River water is undesirable as source water because it is of lesser quality than the Niagara River and requires a higher degree of treatment. In addition, the quality of the Welland River water varies depending on weather conditions and other factors, and this variability creates challenges to control and optimize treatment chemistry at the Niagara Falls WTP.

Therefore, it was determined that the shutdown of the Power Canal required the construction of an alternate intake for the Niagara Falls Water Treatment Plant (WTP) to ensure source water quality.

An Environmental Assessment was completed in 2008 that identified and assessed a new temporary water intake relocation. However, OPG expressed concerns with the preferred temporary intake at this location due to conflicts with the Niagara Tunnel Project commissioning that would take place in 2013, consequently, determining that the 2008 EA study preferred solution was no longer feasible. Therefore, an addendum to the EA commenced in 2018 that identified a new preferred alternative for a permanent relocation of the Water Intake.

As the temporary intake was no longer viable by OPG, they informed Niagara Region of their intent to fund the planning/design phase for \$2,500,000 at this time for the permanent intake. On that basis, the construction budget was reduced in 2020 by \$12,850,000.

The 2018 EA addendum selected a new alignment that involves relocating the existing Niagara Falls WTP intake from its current location in the Welland River into the Niagara River just east of the mouth of the Welland River. This alternative will require a tunnel to

cross the Welland River, a watermain to then follow the Niagara Parkway east to a new pumping station, and intake pipe to then extend 45m north from the shoreline into the Niagara River.

Detailed design commenced in 2020 and is ongoing. The preferred solution and current design require acquiring property currently owned by Niagara Parks to accommodate the new pumping station that is required as part of the current planned design arrangement.

Purchasing these parcels for the current preferred alignment for a new permanent water intake will ensure reliable, high quality, and consistent raw water to the NFWTP during the current planned canal outage and any future OPG canal maintenance and shutdowns.

### **Alternatives Reviewed**

**Do Nothing Alternative:** If the acquisition of this property from NPC is not approved this could pose significant risks to the security of water supply and quality should the canal dewatering occur, and a new alignment/water supply solution has not been identified. The preferred solution identified in the 2018 EA addendum identifies acquisition of this property as necessary for the associated infrastructure (pumping station) required as part of the current intake design. If the opportunity is lost to secure the necessary property this would result in additional costs including but not limited to an additional EA Addendum, and studies related to Archaeological, Bathymetric, Cultural Heritage, Geotechnical, Hydrogeological, Source Water Protection, Sub-Surface Utility and Topographic work, as well as additional Engineering Design, and rendering efforts and cost to date obsolete. This may also impact Niagara Region's obligations under its current cost-sharing agreement with OPG.

Niagara Region staff have and continue to meet with OPG for the remaining life of the project to discuss technical details of the works. Staff will continue to work towards a cost sharing agreement with OPG, successfully maintain essential service supply, and facilitating the dewatering and rehabilitation works of OPG's Power Canal.

### **Relationship to Council Strategic Priorities**

This recommendation is related to Effective Region, Objective 1.3: Deliver fiscally responsible and sustainable services. Funding of the property acquisition/and water intake relocation works is necessary to mitigate effects of the contemplated canal closure ensuring water security while maintaining the same level of service.

## Other Pertinent Reports

- PW 3-2017 - Ontario Power Generation (OPG) Queenston/Chippawa Power Canal Maintenance Project – Impact on Niagara Falls Wastewater Treatment Plant Discharge Location and Niagara Falls Water Treatment Plant Raw Water Intake
- PW 4-2017 - Confidential A Matter of Advice that is Subject to Solicitor Client Privilege and Litigation or Potential Litigation; pursuant to section 239(2) of the Municipal Act, 2001 – Ontario Power Generation Queenston/Chippawa Power Canal Maintenance
- PW 5-2018 - Confidential A Matter that is Subject to Solicitor-Client Privilege regarding the Planned temporary shutdown of the Ontario Power Generation Power Canal in Niagara Falls

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### Prepared by:

Michelle Miller C.E.T.  
Manager Capital Project, Engineering  
Water & Wastewater Services

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### Recommended by:

Terry Ricketts, P.Eng.  
Commissioner of Public Works  
Public Works Department

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### Submitted by:

Ron Tripp, P.Eng.  
Chief Administrative Officer

This report was prepared in consultation with Frank Fucile, Manager Real Estate, Renee Muzzell, Manager, Program Financial Support and reviewed by, Phill Lambert, Director, Water and Wastewater Services (Acting), Tony Cimino, Associate Director, Engineering Water-Wastewater.

## Appendices

Appendix 1 – Total Estimated Project Cost

Appendix 2 – Key Plan