

MEMO / NOTE DE SERVICE



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TO: Chair and Members of Standing Committee on Environmental Protection, Water and Waste Management

DESTINATAIRE : Président et membres du Comité permanent de la protection de l'environnement, de l'eau et de la gestion des déchets

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**DATE:** October 8, 2020

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**FILE NUMBER:** ACS2020-PIE-IS-0003

**SUBJECT:** Lemieux Island Water Purification Plant Project Update

**OBJET:** Mise à jour relative à l'usine de purification de l'eau de l'île Lemieux

**PURPOSE**

The purpose of this memorandum is to address the motion raised at the Standing Committee on Environmental Protection, Water and Waste Management on Lemieux

Island Water Purification Plant ([ACS2016-COS-ESD-0010](#)) and provide an update on the project:

That the Environment Committee approve that the results of a Value Engineering Study for the Lemieux Island Water Purification Plant Intake Improvements Municipal Class EA Study be brought back to Environment Committee for the Committee's receipt and approval.

## BACKGROUND

The Lemieux Island Water Purification Plant (LIWPP) is one of two facilities that supply drinking water to the residents of the City of Ottawa (the City).

Historically, the LIWPP has experienced challenges with water production during extreme winter weather conditions when ice build up hinders the ability to freely draw water from the river. This decrease in water intake compromises the supply of drinking water throughout the city. Prior to 2013, compromises to the plant were limited to one or two days, and impacts were relatively minor. However, since then, the impacts have become of longer duration and greater impact. As a result, an Environmental Assessment (EA) Study was initiated in May 2014 to evaluate alternative solutions for improving the water intake reliability.

In May 2016, Council (25 May 2016 - [ACS2016-COS-ESD-0010](#)) approved the report and provided direction to report back on the results of a Value Engineering Study for the Lemieux Island Water Purification Plant Intake Improvements Municipal Class EA Study.

## DISCUSSION

As directed, a comprehensive Value Engineering Study (VE) was included as part of the scope of work for the project. The VE aims to provide an independent review of the project and defines a list of opportunities to assist the City in delivering a quality product.

The VE report put forward two major conclusions, both have been incorporated into the project:

- 1) Modify the deep chamber connection location at the shoreline
- 2) Consider changing intake location (from Hole 1) to downstream of the Prince of Wales Bridge (Hole 2) with additional geotechnical investigation.

Pursuing the VE recommendation to consider an alternate location for the water intake's inlet structure was a lengthy process and many steps were undertaken to make a final

decision including hydraulic modelling, water sampling, current velocity investigations and an expanded geotechnical program.

After an analysis of the data, a decision was made to change the water intake from Hole 1 (the original location) to Hole 2, attached in Document 1. As with Hole 1, Hole 2 is a deep hole / depression in the riverbed and is located beyond the area of ice cover. The additional benefit of Hole 2 is that it is larger; and therefore, provides a smoother flow pattern.

The VE successfully produced dozens of ideas for consideration. Over the course of the last two years, the project team has been reviewing the feasibility of the VE ideas to determine which of them could be incorporated in the design to meet the objectives. While some ideas have been incorporated into the design, others were determined to be not technically feasible, not cost effective or not acceptable from a regulatory standpoint. The VE ideas incorporated into the design were able to reduce the construction cost by an estimated total of \$1.9 million.

The project is in the final stages of design.

The project requires significant coordination with regulatory bodies since the intake pipe will cross the provincial border into Quebec as it extends out from the LIWPP to the final intake location (Hole 2). The consultation processes with the relevant regulatory bodies are on-going. Permits and approvals from various municipal, provincial and federal ministries and conservation authorities are required prior to this project proceeding to construction. Project timing for construction will be confirmed once approvals and budget are in place.

Here is a summary of the approvals required prior to the start of construction:

- Ontario Ministry of Environment, Conservation and Parks (MECP)
- Ontario Ministry of Natural Resources and Forestry (MNRF)
- Rideau Valley Conservation Authority (RVCA)
- Transport Canada
- Ontario Ministry of Culture, Tourism and Sport
- Fisheries and Oceans Canada
- Environment and Climate Change Canada
- Mississippi-Rideau Source Water Protection Committee

- Ministère de l'Environnement et de la Lutte contre les changements
- Climatiques du Québec (MELCC)
- Centre D'expertise Hydrique du Québec (CEHQ)
- City of Gatineau

The budget authority for this project is currently \$18.25 million. The preliminary cost estimates are approximately \$30 million, pending the finalization of the design and approvals required. The remaining funds will be brought up for approval through future budgets.

## CONCLUSION

The VE has been completed for the LIWPP Intake Improvements. The VE recommended several ideas for the City's consideration to add value to the project. Some of the ideas were able to be incorporated into the design and resulted in an estimated construction cost reduction of \$1.9 million.

The detailed design is near completion and is proceeding through the regulatory approvals process. Project timing will be confirmed once approvals and budget are in place.

*Original signed by*

Carina Duclos

## SUPPORTING DOCUMENTATION

Document 1 Lemieux Island Water Purification Plant Project: Intake location options

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