
Subject: Niagara Irrigation Initiative – Next Steps

Report to: Planning and Economic Development Committee

Report date: Wednesday, June 7, 2023

Recommendations

1. That this report **BE RECEIVED** for information

Key Facts

- The purpose of this report is to provide an overview of efforts related to developing a new agricultural irrigation system in northwest Niagara as well as the expansion of the existing Niagara on the Lake irrigation system.
- The Region has worked with the agricultural sector including the Grape Growers of Ontario and the Ontario Tender Fruit Growers since 2004 to advance the development of agricultural irrigation with a focus on north Niagara.
- The next step in advancing this initiative requires the completion of a Municipal Class Environmental Assessment.
- Regional staff are working with the agricultural sector to source funding to help offset the cost of the Environmental Assessment as well as a temporary project manager.

Financial Considerations

The Region and local municipalities have assisted the agricultural industry with funding to complete the work outlined in the Background section of this report (2004-2021).

The next step, the completion of a Municipal Class Environmental Assessment (EA), has an estimated cost of \$700,000. Funding for the entirety of this work is not identified in Regional or local municipal budgets. Staff have identified federal, provincial and private funding programs that may align with this project and offer matching dollar grants.

In 2019, the Region contributed \$32,000 toward advancing irrigation work. Going forward, \$120,000 (\$60,000 in 2023 and \$60,000 in 2024) has been identified to assist with the total cost of the Environmental Assessment.

In addition, if funding can be secured to complete the EA, a project manager will be required to guide the project. Staff are investigating options to fund this role through federal funding programs.

Staff will report back to Council with further information, including financial details, if funding can be secured for this initiative.

Analysis

Background

Niagara's specialty crop lands are one of only a few areas in Canada with climate and soil conditions suitable for high value crops such as grapes and tender fruit. However, the impacts of climate change, such as drought conditions, highlight the need for improved irrigation infrastructure across Niagara. Work began in 2004 on this initiative and identified that there was significant room for increased yields of high value crops throughout the region; however, difficulties in accessing irrigation water and capital funding to build water delivery systems was preventing expansions. It was estimated in 2007, that access to irrigation would have a direct value between \$10.6M and \$15.7M, with a regional value chain impact of \$34.9M. In the years since 2007, these values have increased due to climate impacts and growth of the greenhouse and horticulture industry.

- In 2004, the Region engaged Stantec Consulting to undertake an irrigation study, the result was "Feasibility Study – Raw Water for Agricultural Irrigation Purposes". The study was completed in September 2005 and identified an order of magnitude of the costs associated with the project.
- In 2006, Stantec was again engaged by the Region and developed Phase II of the study, which further quantified the cost and demand. Preliminary infrastructure sizing was estimated using unit demands of crops based on the different alternatives proposed. Capacity calculations were included for both open channel and pipe systems.

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- Phase II estimated proposed infrastructure costs at approximately \$95M. Costs were further broken down by zones, which included phasing scenarios.
 - In the years following the Stantec work, various applications were made by the Region to Agricultural Canada and Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) to subsidize the capital costs of developing this system.
 - In 2014, the Niagara Fruit and Vegetable Growers Limited attempted to attain funding through OMAFRA's Growing Forward II program. The request sought funding to identify a preferred irrigation option that met the managerial, fiscal, and environmental needs of Niagara's agricultural industry. The cost of this work was estimated (at the time) to be \$110,000. This request was not successful.
 - At the November 2016 meeting of the Region's Agricultural Policy and Action Committee (APAC), a working group was established to advance irrigation initiatives.
 - In 2017, the Region and the Niagara Fruit and Vegetable Growers were successful in obtaining partial funding from OMAFRA's Growing Forward II program for the development of a *Niagara Irrigation Strategic Action Plan*. This study was carried out by JF Partners (James Farrar) and included steps for a "Call to Action" including:
 - Hire an irrigation point person for the Niagara Region for two years to accomplish key irrigation goals;
 - Improve public awareness and opinion on local irrigation and its importance in the region in terms of economic, social and environmental benefits; and
 - Secure public investment to relieve financial pressure from local farmers by leveraging infrastructure improvement initiatives on the basis of climate change mitigation.
 - With support from the Region and several local municipalities, in 2019, the Niagara Fruit and Vegetable Growers retained the above suggested irrigation point person. While funding commitments were for a two year term, this work is ongoing.
 - In 2021 the Niagara Fruit and Vegetable Growers retained a team of university researchers from Brock University and Toronto Metropolitan University to develop a Niagara Irrigation Governance study. Further discussions on governance are included later in this report.

Moving Forward

Work carried out on the project since 2017 has streamlined the proposed systems from what was initially proposed in 2006. A revised layout for St. Catharines and Lincoln have been proposed. Niagara on the Lake has explored both open ditch system expansion and infrastructure improvement options. In order to move forward with potential solutions a Municipal Class Environmental Assessment is being proposed.

A Municipal Class Environmental Assessment allows the planning of municipal infrastructure utilizing an approved procedure designed to protect the environment and consider public input through consultation. It is an important prerequisite for infrastructure projects such as the proposed irrigation system, and a key component of a “shovel ready” project when applying for funding to support infrastructure development.

The deliverables of the proposed Environmental Assessment and Conceptual Design are summarized below:

1. Develop and review the following alternatives:
 - a. Drawing water only from Lake Ontario, or
 - b. Drawing water only from Lake Moodie, or
 - c. A combination of pumping and reservoirs, or
 - d. Additional alternatives that may be presented by the proponent.
2. Show the most cost-effective and environmentally-sound system to be designed for the long-term.
3. Determine lifecycle costs including:
 - a. Annual operating costs for the alternatives above
 - b. Capital costs, including high level district share costs for systems delivering water (for each alternative)
4. Consultation with regulatory, Indigenous communities, and key interested parties.
5. Complete a conceptual design showing pumping station locations/requirements, draft intake design, pipeline sizes and route on a map, and cost modelling to help develop a business case, engage growers and start discussions with governments, jurisdictions and funding agencies.

In addition to the EA as a next step, some preliminary work has already been done related to governance of the proposed irrigation system, however, there is much more to understand. The initial work undertaken by Brock University outlined seven existing irrigation governance models used across Canada. The same report narrowed the suitable models down to three that could work in the Niagara context outlining their benefits and limitations. The outcomes of the EA and conceptual design need to be better understood before advancing with additional governance work including selecting an appropriate model.

Funding

Efforts to secure funding in support of irrigation initiatives have been met with mixed success. Most recently, the Province's Growing Forward II program provided funding to support the development of the 2017 Niagara Irrigation Strategic Action Plan.

Since 2019, the Region, Town of Lincoln, City of St. Catharines, Town of Niagara on the Lake, Ontario Tender Fruit Growers and the Grape Growers of Ontario have contributed financially and in kind to the work undertaken to refocus the scale of the project scope and develop the terms of reference and deliverables for the Environmental Assessment.

Due to the high costs associated with undertaking the Environmental Assessment, the Region has begun to explore grant funding opportunities to leverage the existing funding available.

Staff are seeking direction from Council to continue supporting this project and pursuing the grants or matching dollar funding in support of this initiative.

Alternatives Reviewed

Council could direct staff not to provide support to this initiative. As the Region has been involved both through Council's Agricultural Policy and Action Committee as well as at a staff level, it is recommended that staff continue to support the development irrigation in Niagara.

Relationship to Council Strategic Priorities

- Supporting Businesses and Economic Growth
- Healthy and Vibrant Community
- Responsible Growth and Infrastructure Planning

- Sustainable and Engaging Government

Other Pertinent Reports

None

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