

Staff Report

Report To: Council
Report From: Michele Harris, Chief Administrative Officer
Meeting Date: February 4, 2025
Subject: 2025 Emergency Flood Mitigation on Saugeen River

Recommendations:

THAT in consideration of staff report '2025 Emergency Flood Mitigation on Saugeen River', Council:

1. Directs staff to work with Saugeen Valley Conservation Authority (SVCA) to:
 - i. request immediate response and financial aid from the Province of Ontario for the frazil ice flood risk situation in Durham (winter 2025), along the Saugeen River;
 - ii. request technical and financial support from the Province of Ontario to develop a long-term plan for flood mitigation and dam rehabilitation/replacement on the Saugeen River, through the town of Durham; and
2. Requests that SVCA delegate to West Grey Council on the engineering concerns related to the Durham Upper Dam, identifying plans and financial strategies for replacement/remediation of the Conservation Authority's Upper Dam to remedy flooding concerns in the town of Durham.

Highlights:

- On November 26, 2024, the Saugeen Valley Conservation Authority (SVCA) advised of the cessation of winter operations at the Durham Upper Dam in an effort to prevent structural failure and ensure public safety.
- On January 6, 2025, SVCA issued a flood watch for the Municipality of West Grey, citing the presence of frazil ice and the potential for localized flooding.
- West Grey and SVCA staff have been working to mitigate potential risks for flooding through 24/7 monitoring of river conditions, and mobilizing equipment, as required, to clear out frazil ice accumulation in the river and keep water flowing.

- Costs for flood mitigation are an unfunded cost for the Municipality of West Grey.
- Longer-term solutions will be required to rehabilitate/replace dams along the Saugeen River through the town of Durham, to mitigate flooding concerns in future years.

Previous Report/Authority:

None.

Analysis:

On November 26, 2024, the Saugeen Valley Conservation Authority (SVCA) issued a media release advising the cessation of winter operations at the Durham Upper Dam to prevent structural failure and ensure public safety.

On January 6, 2025, SVCA issued a flood watch for the Municipality of West Grey, citing the presence of frazil ice and potential for localized flooding along the Main Saugeen River. Frazil ice is a naturally occurring phenomenon that forms when cold air interacts with open water, creating slushy, gummy ice that can settle unpredictably in river systems. The watch and subsequent flood warnings from SVCA identified heightened water levels and the potential for significant flooding between McGowan Falls and downriver past the Durham Lower Dam, an area extending through the Municipality's largest settlement area.

Background

Since 1977, the Durham Upper Dam operated seasonally, with stoplogs and flashboards removed each fall and reinstalled after spring melt.

In January 1997, the Town of Durham dealt with a flood disaster as a result of frazil ice, resulting in more than 200 residents being displaced, and causing more than \$1.1 million in damages.

In 2006, West Grey Council voted to adopt management of ice at the Upper Dam by leaving stoplogs and flashboards in during winter operations.

On November 26, 2024, [SVCA announced the end of winter ice operations](#) at the Durham Upper Dam, citing repeated engineering assessments highlighting risks to the structure. According to SVCA, operating the Durham Upper Dam in winter for ice management has always been outside the original design and intent of the structure, causing “extensive damage” and “placing the dam at risk of failure”.

2025 flood mitigation efforts

The Municipality of West Grey has been working closely with SVCA to monitor the dynamic situation as a result of frazil ice buildup in an effort to protect the citizens of Durham from catastrophic flooding and ensure public safety.

Since the initial flood watch at the beginning of January, and subsequent flood warnings, staff have been monitoring the river 24/7 during critical periods. The Municipality has also mobilized high hoes and other construction equipment, including bulldozers, to assist in clearing out frazil ice accumulation in the river. This equipment remains on standby at all times and will continue to be available throughout the winter. During the most dangerous conditions for flooding, up to eight high-hoes and two bulldozers have been mobilized 24-hours/day in an attempt to clear channels and keep the water flowing.

Addressing the long-term impacts of flooding

Minimizing water flow at the Durham Upper Dam has proved a successful mitigation effort in reducing frazil ice and flooding risk along the Saugeen River in Durham for the last 28 years. The recent engineering report related to the Upper Dam, the decision by SVCA to remove the boards, and the buildup of frazil ice this year since the removal of the boards, have highlighted the need for long-term solutions to prevent flooding risk.

On January 15, 2025, West Grey and SVCA staff met with the engineering firm who prepared the Durham Upper Dam study to understand the issues identified in the reports that resulted in the removal of the boards from the Upper Dam. The engineers identified that the Upper Dam was 100+ years old, that stress on the metal walkway and severe concrete damage and erosion, as well as concern for operator safety in managing the stoplogs and flashboards were the key considerations in the recommendations for ceasing winter operations.

The Lower and Upper Dams that traverse the Saugeen River through the Municipality of West Grey are owned by SVCA, and the Middle Dam is owned by the Ministry of Natural Resources and Forestry; but the impact of their potential failure puts the residents of the downtown core of Durham at risk.

On January 17, 2025, the SVCA Board directed their staff to collaborate with West Grey to seek immediate response assistance from the province related to the frazil ice situation along the Saugeen River through Durham as well as for support to identify and implement effective long-term solutions.

Financial Implications:

Mitigation of a flood disaster is the priority of the Municipality of West Grey, and every effort is being made to ensure the community isn't faced with catastrophe similar to what was experienced in 1997. However, the financial impacts for mitigation are significant,

and are a non-funded burden on the Municipal tax levy. During a five-day period (January 7 to 11, 2025), the Municipality contracted heavy equipment operators to assist in removal of frazil ice and slush; preliminary estimates for this five-day period alone are upwards of \$70,000 (excluding taxes).

The Municipality is aware of the province's Municipal Disaster Recovery Assistance Program (MDRA), however, have been advised that the program does not provide assistance for mitigation efforts, and only provides financial assistance in the event of emergency response or damage to essential property or infrastructure in the event of an eligible natural disaster. Flood mitigation efforts, such as using heavy equipment to break up ice to prevent possible flooding, are not eligible for support.

Climate and Environmental Implications:

Addressing the issues along the Saugeen River through the town of Durham aligns with the Province of Ontario's priorities of promoting resilient infrastructure, safeguarding communities, and supporting municipalities in adapting to climate-related challenges. Ensuring the safety and well-being of residents and protecting the Saugeen River watershed are consistent with these goals.

Communication Plan:

Updates on potential flooding risks provided by SVCA and Municipality of West Grey through media releases and through each organization's website and social media channels.

Consultation:

West Grey Director of Public Works and Infrastructure
Saugeen Valley Conservation Authority

Attachments:

None.

Submission recommended and approved by:

Michele Harris, Chief Administrative Officer

For more information on this report, please contact Michele Harris, CAO at cao@westgrey.com or 519-369-2200, ext. 222.