



REPORT TO: Reeve Vincent and Members of Council
PREPARED BY: Sean McGhee
DATE: 15/01/2018
SUBJECT: Howson Dam – Dam Safety Assessment Report
ATTACHMENTS: [Click here to enter text.](#)

RECOMMENDATION:

THAT the Council of the Township of North Huron hereby receive the report of the Director of Public Works, dated January 15, 2018 regarding the status of the Howson Dam Safety Assessment for information purposes.

EXECUTIVE SUMMARY

The Township of North Huron entered into a Class EA process with the Howson Dam in August of 2016. The EA process which was being undertaken by GSS Engineering Consultants Limited was suspended in short order when it was determined that questions surrounding the permit requirements under the Lakes and Rivers Improvement Act (LRIA) could not be answered in the absence of detailed information relating to the Howson Dam.

KGS Group was commissioned to complete a Safety Assessment of the Howson Dam following the outcome of RFP 2017-004. The expected outcome of the project was the generation of a report that would provide information that was essential to meet the permit requirements of the Ministry of Natural Resources and Forestry (MNR) and the Lakes and Rivers Improvement Act (LRIA). The safety assessment is being completed as authorized by Council Resolution M273/17, dated June 6th, 2017.

Once received, the final report will provide the necessary information surrounding the Hazard Potential Classification (HPC), Inflow Design Flood (IDF), Breach Analysis, Slope Stability, and Concrete Condition. This report will be based on the actual condition of the dam and will assist Council in determining next steps.

It is anticipated that all data will be collected and a report generated by KGS Group in the Spring of 2018. This report will be brought forward to Council as a matter of highest priority and will provide critical information to assist in the determination of next steps. Decisions associated with the Howson Dam are unique in that the ensuing actions carry with them the inherent risk of consequences that can potentially impact the health, safety, and quality of life within our community.

DISCUSSION

Upon receipt and presentation of the final report, any discussions surrounding the preferred course of action leading to a decision of Council will be based on comprehensive data. This will include information on the following:

- Hazard Potential Classification (HPC) – This classification is determined based on the potential impact to the community in the event of a failure. Factors such as loss of life, environmental

and infrastructure damage, economic consequence and damage to cultural resources are all taken into consideration in the determination of this classification.

- Inflow Design Flow (IDF) – This is a determination of the maximum flood flow not presenting an unacceptable risk to downstream life or property.
- Breach Analysis and Flood Wave Routing – In order to properly determine downstream impact and calculate the HPC and IDF a hydrodynamic model is utilized. This model is used in conjunction with elevation data and details on any municipal or residential development to estimate damages and consequence resulting from various breach scenarios.
- Slope Stability Analysis – As part of the overall dam stability analysis, this will look at the construction, design, and composition of the existing earthen slopes that make up part of the overall Howson Dam to determine their condition.
- Concrete Condition Testing – Previous concrete analysis performed on the Howson Dam in 1984 was terminated at a depth of 8 inches due to the poor condition of the material encountered. This stability assessment will include coring to a depth of 5 feet utilizing thin walled diamond drill coring equipment to recover core samples to be utilized for laboratory strength testing.

The information above will be provided at a level of detail that is consistent with the requirements of MNRF and LRIA prior to advancing with any long-term plan surrounding the Howson Dam.

FINANCIAL IMPACT

The financial impact associated with the Howson Dam is yet to be determined.

FUTURE CONSIDERATIONS

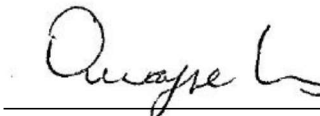
There will be discussions surrounding the Howson Dam upon receipt of the final report from KGS Group Consulting Engineers.

RELATIONSHIP TO STRATEGIC PLAN

This project relates to **Goal No. 2** of the Strategic Plan in that our residents are engaged and well informed, **Goal No.3**, the Township is healthy and safe. **Goal No. 4**, the administration is fiscally responsible and strives for operational excellence, and **Goal No. 5** in that our natural environment is valued and protected.



Sean McGhee, Director of Public Works



Dwayne Evans, CAO