

Grand River Conservation Authority

Report number: GM-10-22-79

Date: October 28, 2022

To: Members of the Grand River Conservation Authority

Subject: Dam Safety Maturity Matrices – Evaluation of the GRCA's Dam Safety Program

Recommendation:

THAT Report Number GM-10-22-79 – Dam Safety Maturity Matrices – Evaluation of the GRCA's Dam Safety Program be received as information.

Summary:

This report provides an overview of the evaluation of the Grand River Conservation Authority's dam safety program using the Dam Safety Maturity Matrix tool to compare the level of development (maturity) of the program against industry standards.

Report:

The Grand River Conservation Authority (GRCA) owns and operates 27 dams. The dams perform a range of functions with the 7 major dams providing watershed scale flood and supplying water to the river during periods of low flow (flow augmentation). Auxiliary benefits such as hydro production and recreation result from the operation of the dams.

GRCA's other 20 dams are generally run-of-the-river dams or earthen embankment dams with small head ponds. Although the smaller dams do not serve a water management function, they are important community features that provide local benefits that include municipal fire supply, wildlife habitat, local aesthetics and recreation.

The purposes of a dam safety program are to protect life, property, and the environment by ensuring that all dams are designed, constructed, operated, and maintained as safely and as effectively as is reasonably possible. Accomplishing these purposes requires commitments to continually inspect, evaluate, and document the design, construction, operation, maintenance, rehabilitation, and emergency preparedness of each dam and the associated public.

The Dam Safety Maturity Matrix provides a template for a benchmarking exercise to evaluate dam management programs. The matrices were developed for owners to assess the effectiveness of their dam safety program against industry practice, and to assist with identifying improvement initiatives. The matrices have been developed within the Centre for Energy Advancement through Technological Innovation's (CEATI) Dam Safety Interest Group. They are available for internal use only by members of the Dam Safety Interest Group, of which the GRCA is a member organization.

The Dam Safety Maturity Matrices evaluate the 12 elements considered most typical of a dam safety program. Using the matrices, the current state of development (or maturity) of a dam safety program can be evaluated for each of its elements and sub-elements. Where required, improvements to the program can be subsequently developed, prioritized and planned, and the process can be repeated periodically to determine if progress has been made.

The Dam Safety Maturity Matrices are a powerful tool that can be used to:

- Evaluate the effectiveness of a dam owner's dam safety program against industry practice.

- Identify program strengths and areas for improvement.
- Communicate program strengths and areas for improvements to managers and other key stakeholders.

The primary benefit of using the maturity matrices is the improved understanding of the dam safety program across the whole range of activities that influence its effectiveness by GRCA staff and senior management. The matrices are also a useful tool for communication of the GRCA's dam safety program to wider audiences.

The appended report "Dam Safety Maturity Matrix Report, October 6, 2022" provides an overview of the results of the evaluation of the dam safety program elements completed by internal staff and the recommendations for areas of improvement in the GRCA's dam safety program.

Financial Implications:

None.

Other Department Considerations:

None.

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