Grand River Conservation Authority

Report number: GM-09-23-63

Date: September 22, 2023

To: Members of the Grand River Conservation Authority

Subject: ERO No. 019-4706: Technical Bulletin – Flooding Hazards: Data Survey and Mapping Specifications

Recommendation:

THAT Report Number GM-08-23-63 – ERO No. 019-4706: Technical Bulletin – Flooding Hazards: Data Survey and Mapping Specifications be received as information.

Summary:

On July 4, 2023 the Ministry of Natural Resources and Forestry (MNRF) posted a proposal on the Environmental Registry of Ontario (ERO) titled 'Technical Bulletin – Flooding Hazards: Data Survey and Mapping Specifications'. This proposal is seeking feedback on updates to technical guidance to support flood hazard identification and mapping by municipalities and conservation authorities in Ontario.

GRCA staff participated in two provincial technical teams and were involved in the preparation of source documents used as a basis in development of the proposed technical bulletin.

The Grand River Conservation Authority (GRCA) supports and will continue to uphold policies and technical guidelines that support implementation of the natural hazard policies in Ontario.

The GRCA supports the proposed updates to technical guidelines to support flood hazard identification and mapping by municipalities and conservation authorities in Ontario.

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On July 4, 2023 the Ministry of Natural Resources and Forestry (MNRF) posted a proposal on the Environmental Registry of Ontario (ERO) titled 'Technical Bulletin – Flooding Hazards: Data Survey and Mapping Specifications'. This proposal is seeking feedback on updates to technical guidelines to support flood hazard identification and mapping by municipalities and conservation authorities in Ontario.

The Grand River Conservation Authority (GRCA) supports and will continue to uphold policies and technical guidelines that support implementation of the natural hazard policies in Ontario. Over the past few years, the GRCA has adapted the River & Stream Systems: Flooding Hazard Limit technical guidelines prepared by Ontario Ministry of Natural Resources and Forestry (MNRF) in 2002 for flood hazard mapping projects and has contributed to development of Technical Guidelines for Flood Hazard Mapping prepared by Environmental Water Resources Group Ltd (EWRG) in collaboration with other conservation authorities in 2017. The proposed technical guidelines provide recommendations on survey and mapping procedures and standards for flood hazard mapping and would replace Appendix J of the existing River & Stream Systems: Flooding Hazard Limit technical guidelines.

The GRCA supports the proposed updates to technical guidelines to support flood hazard identification and mapping by municipalities and conservation authorities in Ontario.

Comments provided to inform the Conservation Ontario response on the proposed Technical Bulletin – Flooding Hazards: Data Survey and Mapping Specifications:

1. Section 1.2.1 - Figure 1-1: Recommended geospatial data components and workflow for flood hazard mapping. It appears that the final outcome for flood hazard map is limited to land use planning and regulation. It is suggested to add other applications of flood hazard mapping including development of municipal emergency response plans, development of dam emergency response plans and flood forecasting and warning.
2. Section 3.3 Data Quality and Accuracy Recommendations: It is stated that :

   "In Ontario, municipalities have a responsibility to identify areas subject to natural hazards and to develop management plans to limit exposure to public health and safety risks. It is up to the individual municipality to determine how best to achieve this requirement. Conservation authorities may also ***elect*** to map flooding hazards to identify areas where development is regulated under Section 28 of the Conservation Authorities Act, to support administration of their permitting role."

   GRCA recommends that the wording be revised to "Conservation authorities are responsible for mapping the regulated area associated with floodplains where a permit for development and other activities is required." to be consistent with other newly introduced guidelines such as ERO Posting #019-2927 – Proposed updates to the regulation of development for the protection of people and property from natural hazards in Ontario. Under section 2.3.2-Mapping of areas where development or other activities are prohibited it is stated that:

   "Under section 21.1 of the Act, conservation authorities would be ***required*** to create maps of areas within their jurisdiction generally depicting where a permit is required for development and other activities and make these maps publicly available at the head office of the authority and in any other manner consistent with conservation authority policy. In some cases, regulated areas will still need to be confirmed based on the technical description as set out in the regulation, which is what officially determines the areas where permits are required. It would also be required that if the conservation authority makes significant changes to this mapping based on new information or technology, or changes in watershed conditions (i.e., beyond any minor modifications or corrections or adjustments made regarding site specific applications) that result in an enlargement of the area depicting where the permitting requirements apply, the authority shall provide notice to the public in an appropriate manner, as set out in a policy adopted by the authority, and consider public comments in making any decisions regarding the proposed mapping changes."
3. Section 3.3.2 Recommended Accuracy Classes and Cell Sizes. Discussions and recommendations have been provided for raster products; however rasters are not the only form topography can be used for modeling. Some discussion on TINs (Triangular Irregular Networks) would be useful too.
4. Recommendations for survey of hydraulic structures are provided in the document, specifically under section 3.4. It is recommended to identify the need for two sets of topography data (DEMs) under section 3.5 Data Processing and Derivative Products, specifically for large systems with significant hydraulic structures. It is best to develop one set of "pre-processing DEM/DTM" which is appropriately hydroenforced and has all hydraulic structures (Bridges – Culverts and dams) removed which can be used for proper hydrology and hydraulic model development and one set of "post-processing DEM/DTM" with all bridge decks, Culvert Tops and Dam Crests incorporated into the dataset which can be used for flood hazard mapping.

Financial Implications:

Not applicable.

Other Department Considerations:

GRCA staff in Engineering and Information Systems were consulted in preparing these comments.

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Approved by:

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