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CSA W210:21
National Standard of Canada

Prioritization of flood risk in existing communities

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Preface

This is the first edition of CSA W210, *Prioritization of flood risk in existing communities.*

The purpose of this Standard is to provide voluntary guidance on a flood hazard and vulnerability screening framework. The purpose of the screening is to support the process of prioritizing flood risk areas within an existing (previously developed) community comprised of residential and mixed uses. This Standard provides a transparent, evidence-based, and defensible framework that supports resource allocation decisions regarding flood risk-reduction at the community level.

Users of this Standard are reminded that additional and site-specific requirements could be specified by federal, provincial/territorial, municipal, or other authorities, or by a project owner. This Standard should not be considered a replacement for the requirements contained in any:

a) applicable federal/territorial, or provincial statute;
b) regulation, license, or permit issued pursuant to an applicable statute; or
c) contract that an owner has with a contractor.

CSA Group gratefully acknowledges the generous support of the Standards Council of Canada in helping make the development of this Standard possible.

This Standard was prepared by the Subcommittee on Flood Prioritization in Existing Communities under the jurisdiction of the Technical Committee on Flood Resilient Design in Communities and the Strategic Steering Committee on Natural Resources, and has been formally approved by the Technical Committee.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*
2) *Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users of the Standard to judge its suitability for their particular purpose.*
3) *This Standard was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*
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5) *This Standard is subject to review within five years from the date of publication. Suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include "Proposal for change" in the subject line:*
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   c) *wording of the proposed change; and*
   d) *rationale for the change.*

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0 Introduction

0.1 Support for a new flood risk prioritization framework

Many regions of Canada are experiencing environmental, social, and economic impacts that can be attributed to flood risks which are being exacerbated by climate change influences. Developing voluntary standards and guides is one way to ensure infrastructure is properly planned and designed to address those locations in existing urban communities that are most prone to flood risks. This can be accomplished by optimizing public resources and addressing first, the worst or most critical flood risk problems in Canadian communities. From planning to design to construction, maintenance to decommissioning, standards and other policy instruments should be investigated as to how best to prioritize works that can be used as the integration point for flood risk management into the infrastructure planning processes. The implementation of this Standard and the integration of its measures with other related policy instruments are critical for flood protection measures in existing communities to be effective.

In January 2018, the Standards Council of Canada and the Intact Centre on Climate Adaptation signed a Cooperation Agreement to produce a report to identify practical and cost-effective approaches to strengthening flood resilience in existing urban and suburban communities, in anticipation of more extreme precipitation and continued growth within towns and cities across Canada. The National Research Council of Canada (NRC) and the Intact Financial Corporation also contributed financially to the project.

The report, entitled Weathering the Storm: Developing a Canadian Standard for Flood-Resilient Existing Communities (WTS) (https://www.intactcentreclimateadaptation.ca/wp-content/uploads/2019/01/Weathering-the-Storm.pdf) was published in January 2019. Drawing on extensive engagement with key stakeholders across Canada, the report characterizes common flood risk challenges in existing communities and identifies practical approaches to flood risk reduction related to planning, operations, maintenance, and public engagement.

In addition, the report (WTS) proposes a hazard and vulnerability screening framework for prioritizing flood risk within residential communities. The framework suggests three levels (Foundational, Intermediate, and Advanced) of hazard and vulnerability assessment, the criteria to consider at each level, and methods for scoring each criterion.

With due regard for differences in the planning and flood risk management approaches across various Canadian jurisdictions, this Standard builds on the approach described in the WTS report to include additional guidance with respect to applying the outcomes of the screening framework.

0.2 Widespread need and application

Flood risks and hazards are complex in terms of their formative or causative mechanisms, as well as their inherent variability across a community, particularly in built up urban areas. For instance, flooding can be caused by multiple mechanisms including riverine (floods caused by overtopping river banks

