



Project 1-1: Update of Current Flood and Storm Quantiles

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Presentation Outline

- Overview of Project 1-1
- Linkages to other projects
- Research approach
- Progress to date
- Path forward

Flooding in Estevan, SK, July, 2016.



Flooding in Louisiana, August, 2016.



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Flooding in Manchester, UK, September, 2016.



Project Overview

- The project goal is to enhance the management of floods and extreme events
- The research program will advance our knowledge of flood regimes in Canada and provide guidelines for infrastructure design

Project Overview

- This project seeks to:
 - Provide updated estimates for flood and extreme rainfall quantiles for locations across Canada
 - Develop a unified procedure for applying frequency analysis

Linkage to Other Projects

- Other related projects include:
 - Project 1-6 (Project 1-1 provides direct input)
 - Project 1-4 (rainfall analysis complements work on new procedures for updating IDF curves)
- Results will be of use to several projects in Theme 4 (e.g., Project 4-4)

Research Approach

- General approach
 - Based on the regional (or pooled) frequency analysis approach
 - The approach will be flexible to allow for the unique characteristics of individual sites to be reflected in the implementation of the procedure at a specific location

Progress to Date

- Flood quantiles
 - “Investigating techniques for flood quantile estimation in Canada”
 - Presentation by Shabnam Mostofi Zadeh
- Rainfall quantiles
 - “Automatic Feature Selection and Weighting for the Formation of Homogeneous Groups for IDF Estimation”
 - Poster by Zhe (Emma) Yang

Progress to Date

- Flood database has been assembled and is available on the FloodNet website
 - Includes data for 220 RHBN sites
 - Variables include:
 - Annual daily maximum flow and date of occurrence
 - Instantaneous maximum flow and time/date of occurrence
 - Daily flow data
 - Peaks over threshold (POT) data (for 188 sites)
 - Metadata are also available for all sites

Path Forward

- Consultation with our industry and governmental partners (and interested stakeholders) will be undertaken to ensure that the needs of the user community are reflected in the products of this research