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Development of a Data Warehouse for Riverine and Coastal Flood Risk Management

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Abstract. In New Brunswick flooding occurs typically during the spring freshet, though, in recent years, midwinter thaws have led to flooding in January or February. Municipalities are therefore facing a pressing need to perform risk assessments in order to identify communities at risk of flooding. In addition to the identification of communities at risk, quantitative measures of potential structural damage and societal losses are necessary for these identified communities. Furthermore, tools which allow for analysis and processing of possible mitigation plans are needed. Natural Resources Canada is in the process of adapting Hazus-MH to respond to the need for risk management. This requires extensive data from a variety of municipal, provincial, and national agencies in order to provide valid estimates. The aim is to establish a data warehouse to store relevant flood prediction data which may be accessed thru Hazus. Additionally, this data warehouse will contain tools for On-Line Analytical Processing (OLAP) and knowledge discovery to quantitatively determine areas at risk and discover unexpected dependencies between datasets. The third application of the data warehouse is to provide data for online visualization capabilities: web-based thematic maps of Hazus results, historical flood visualizations, and mitigation tools; thus making flood hazard information and tools more accessible to emergency responders, planners, and residents. This paper represents the first step of the process: locating and collecting the appropriate datasets.

Conference paper (PDF, 973 KB)

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