

COASTAL HAZARDS IN AN EXPANDING URBAN CENTRE: IQALUIT, NUNAVUT

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Project Location:

Iqaluit, Nunavut.

Timeframe:

Two field surveys:

Aug 14th – 24th, 2010.

February 14th – 25th, 2011.

July 20th – Aug 20th, 2011.

February 14th – 25th, 2012

Total project Length:

Aug 14th, 2010 – Aug 31st, 2012.

Project Description:

The main purpose of this research is to understand the main components of coastal hazards in Iqaluit, Nunavut, so that the city has a detailed baseline of how the occurrence and severity of floods in the city will change under predicted climate shifts. The specific goals and objectives are:

1. Quantify and describe the contribution of four components to past flooding and damage hazards along Iqaluit's shoreline: storms, waves, ice, and erosion.
2. Make rough predictions on the local changes of these components based on the current understanding of regional and global scale changes to the Arctic climate.
3. The main objective is to develop risk maps for the entire shoreline of the city in order to help the city identify vulnerable areas.

Methodology:

Much of the data to be used is already in existence. The CHS had a tide gauge in Iqaluit from 1963-1977, which will be used to try and get an idea of some of the flood levels found through that

period. Climate data is available from the Environment Canada station in Iqaluit. Ice cover data is available from the Canadian Ice Service, as well as from Transport Canada.

Data will be collected on the tidal flats in front of the city using GPS gear, and by taking some sediment samples all around the flats. Also, data will be taken on past flooding events from the archive of the newspaper Nunatsiaq News in Iqaluit. If resources permit, there will also be data collected on the bathymetry offshore of the tidal flats.

Iqaluit was chosen as the site of the research because it expressed the need for further research into coastal hazards within the city. The city has also spearheaded and provided leadership for a national partnership on climate change adaptation within Nunavut, and so the policy incentives for adaptation and sustainability are in place already. This makes a detailed understanding of the physical landscape beneficial to these efforts.

Data usage:

The short term usage of the data collected will be in the analysis done for my Master's thesis. The long term use of the data will be for the city of Iqaluit to use in coastal zone planning and management.

Reporting:

The end product will be a series of flood hazard maps in digital form, which will be given to the city of Iqaluit for their use. These maps will also be used in a public workshop where the overall results of the project will be presented. A copy of the thesis will also be left in the library at the Unikkaarvik visitors centre in Iqaluit. Lastly, a short booklet outlining some of the main findings of the research will be put together for distribution within the city.

*NOTE: An Inuktitut version of this project description is in progress, and will be provided to NRI as soon as it is received.