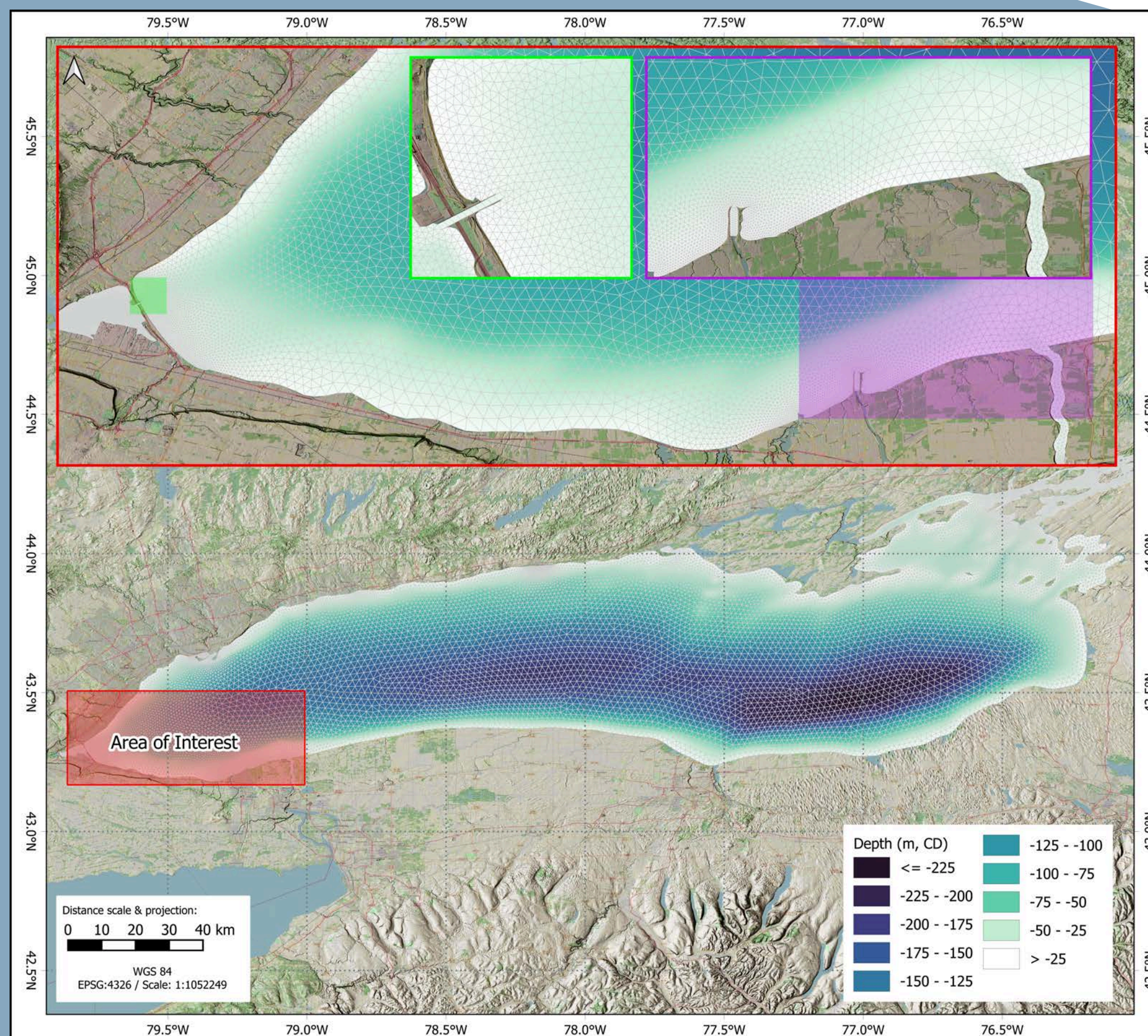


Purpose

To understand how storm surges from Lake Ontario affect the area during different seasons and lake levels over the years, helping to map where flooding could happen in the future.

1

Surge Model Mesh



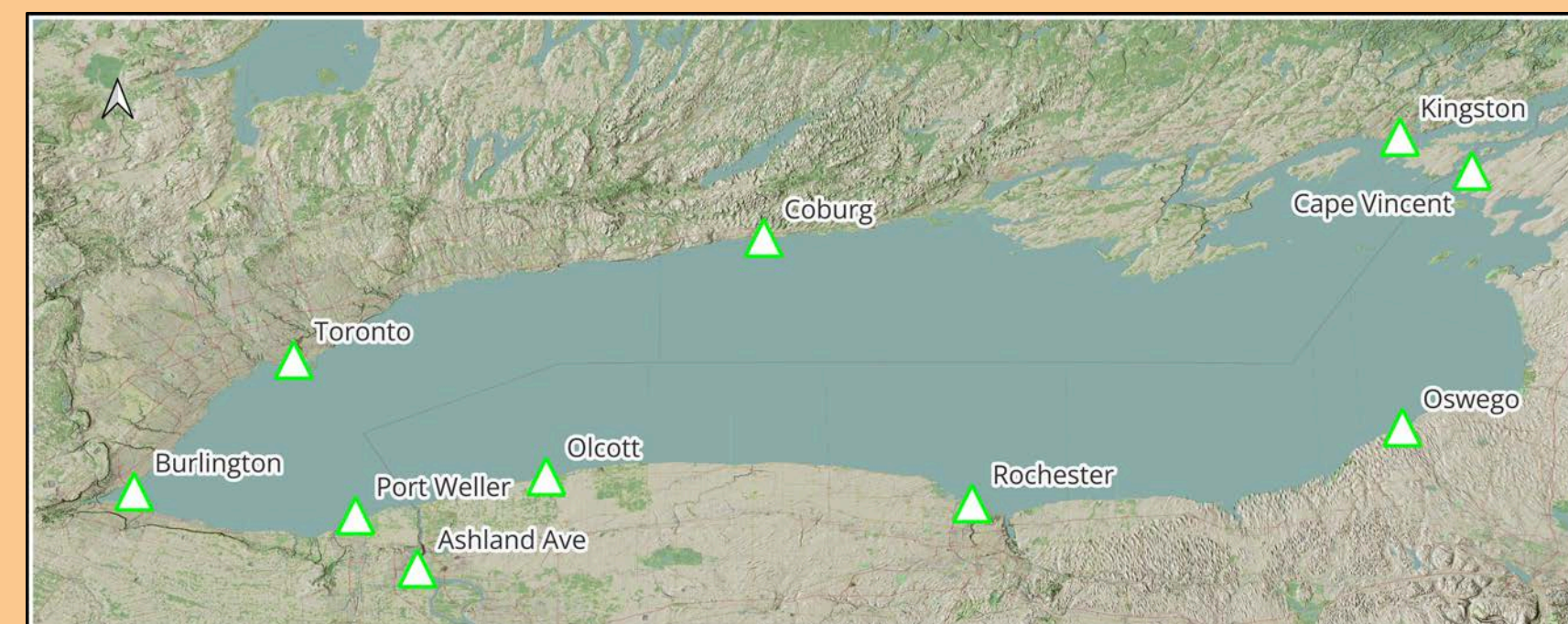
The flood model covers the entire Lake Ontario, with focused high-resolution at key areas of interest. This Regional model will be refined for local analysis.

What is Surge?

Surge is defined as the temporary local rise in lake levels due to extreme winds and pressure gradients experienced during storms.

2

Lake Ontario Surge Model Calibration



The Lake Ontario flood model is used to inform storm surge levels and was calibrated to measured data. Below shows the comparison between measured water level vs modelled water level at Burlington during a 75-year return period surge event.

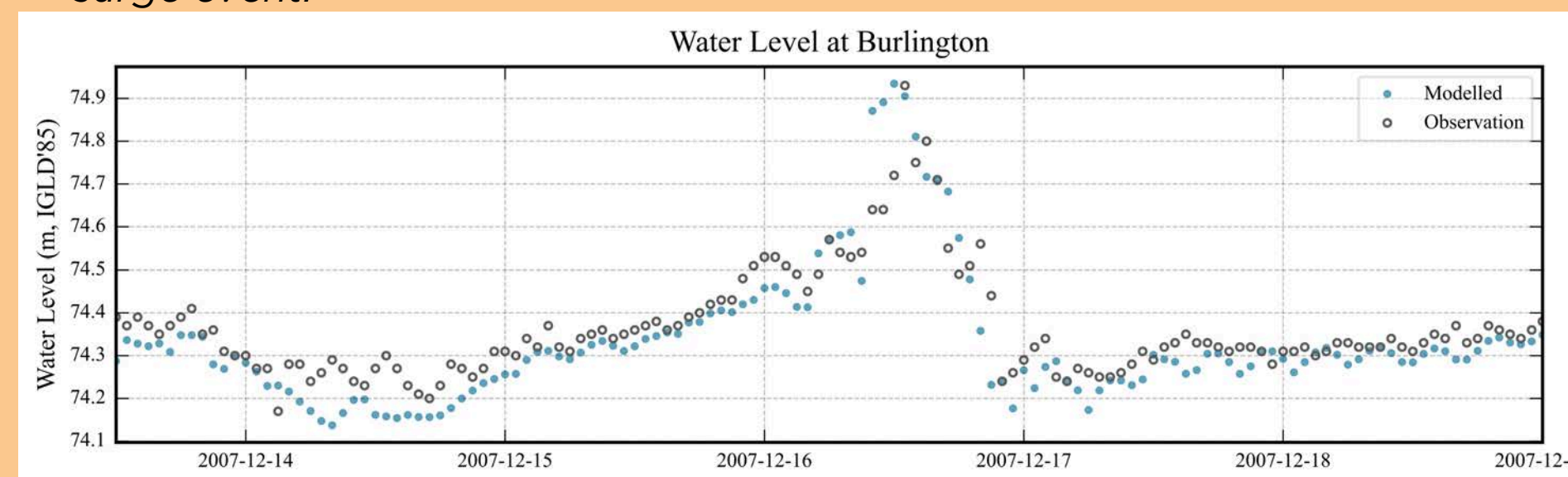


Image Credit: Niagara Peninsula Conservation Authority



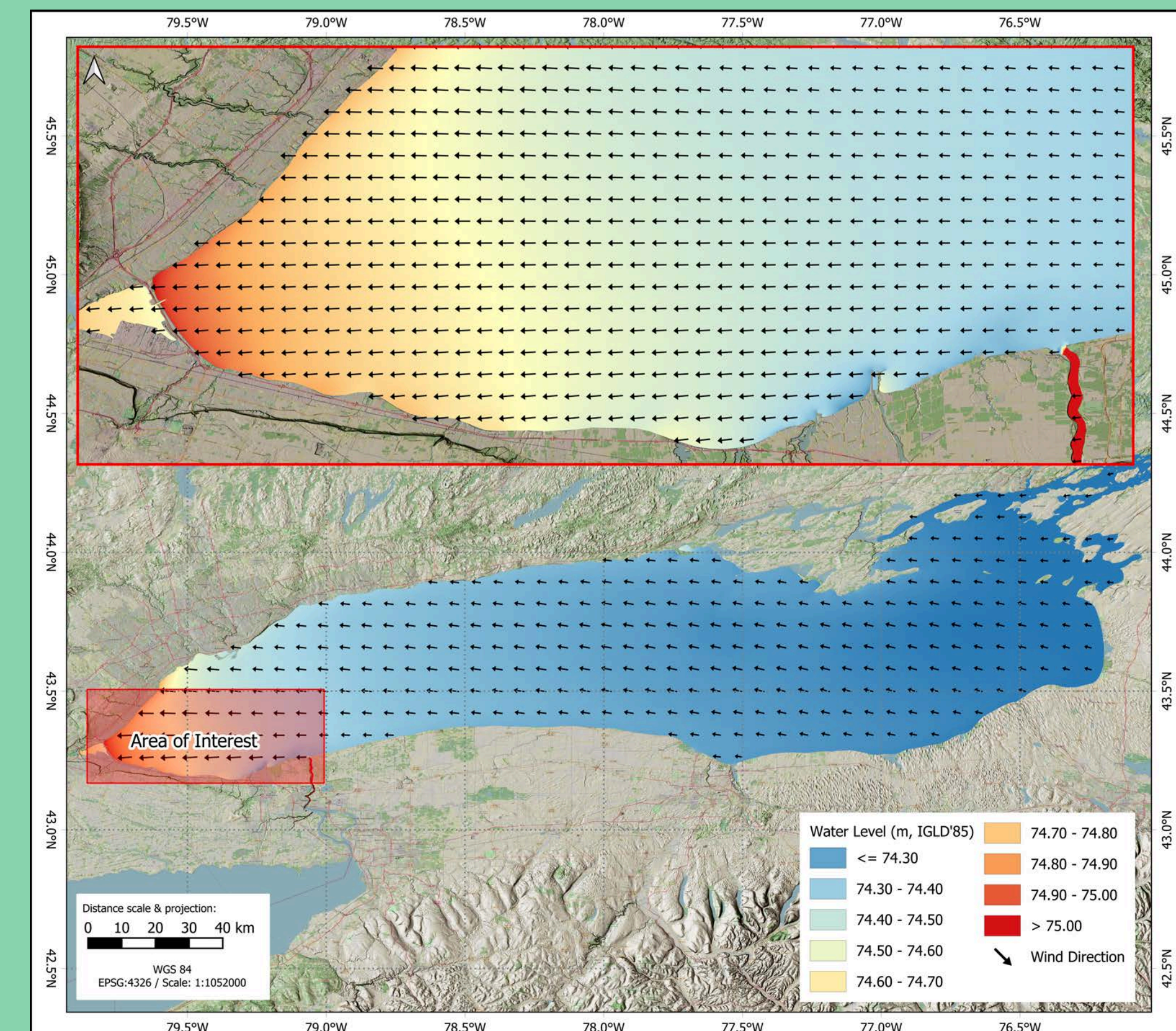
Image Credit: Niagara Peninsula Conservation Authority



Image Credit: Niagara Peninsula Conservation Authority

3

Lake Ontario Surge Model Results



An example of modelled water levels on Lake Ontario (December 16, 2007). Modelled water levels are shown as coloured shading while wind directions are shown by the black arrows. Winds blowing from the east push water toward the west side of Lake Ontario, causing storm surge.

The flood model is capable of predicting storm surges based on complex geometry of the coast and lake bottom depths.