



### **PROJECT DESCRIPTION**

Coldwater Consulting Ltd. was contracted by Economic Development Corporation of Wawa to evaluate ongoing sedimentation problems and to develop effective and efficient means to ensure long-term safe passage of boats through the Michipicoten River Basin from the public marina to Lake Superior.

### **DESIGN APPROACH**

In order to properly understand the processes of sedimentation at the Michipicoten marina, it was necessary to understand the hydrodynamics and sediment transport potential of the Michipicoten River. This was done by establishing a computational model of the river from the Scott Falls Dam to the mouth at Lake Superior. Two and three-dimensional flow simulations were generated using the ADCIRC finite element flow model. Sediment transport calculations were performed using Coldwater's Particle Tracking Model (PTM). These tools were then used to test various conceptual alternatives.

### **CLIENT**

EDC Wawa  
Wawa, ON

### **LOCATION**

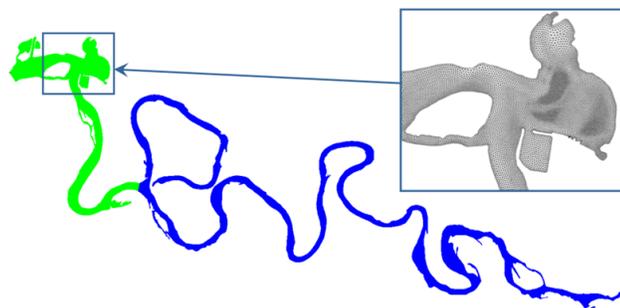
Michipicoten, ON

### **DATE**

2008-2009

We performed the following services:

- site investigation and collection of bathymetric and flow data;
- 2D finite element modelling of flows for average and various flood conditions;
- 3D flow simulations to assess helical flow patterns near marina;
- sediment transport modeling, and;
- development and evaluation of conceptual alternatives, including assessment of environmental permitting, constructability and cost issues.



*Domains of the two finite element models: calibration model (blue); simulation model (green). Detail shows the finite element mesh in the vicinity of the marina.*