



INFORMATION SYSTEMS

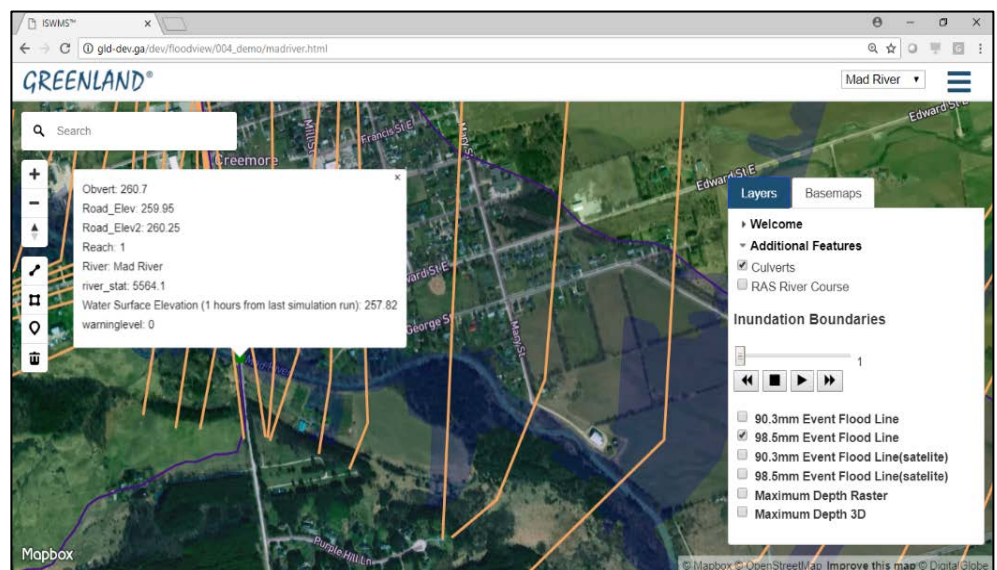
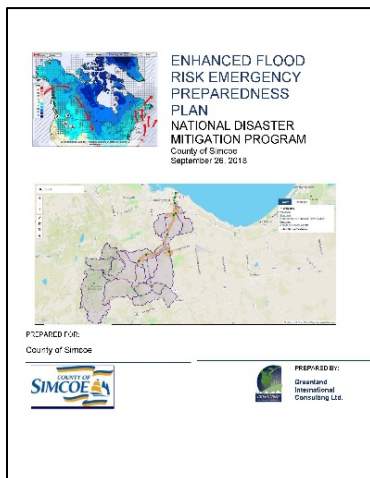
Real-Time Flood Prediction to Inform Emergency Response

Supported by the National Disaster Mitigation Program (NDMP), the County of Simcoe (Ontario) retained GREENLAND® to develop a flood forecasting decision support system (DSS) using the company's proprietary ISWMS™ technology. The DSS was intended to provide multiple functions and including prioritizing infrastructure upgrades and providing real-time information for emergency response.

Hydrologic and hydraulic models of two (2) pilot watersheds were developed, calibrated and verified using industry standard software (HEC-HMS and HEC-RAS) and supported by the U.S. Army Corp of Engineers. Field surveys were also undertaken to tie watercourse crossings with available digital elevation mapping.

These models were installed on a cloud platform. Real-time predicted weather data can now be retrieved / processed for use by the models. Every six (6) hours, the models produce updated flow and water elevation predictions at cross section locations & road crossings within the watersheds.

When threshold flow levels are approached, warnings are now triggered via web to alert water resources managers of conditions that could result in flooding conditions. Simulation conditions can be viewed 48 hours into the future through an interactive web mapping system. The platform also delivers specially-formatted data products that can be readily integrated into the County's emergency response management system. In 2020, further work was initiated to further develop the ISWMS™ platform and involving the Town of Wasaga Beach and local Conservation Authority.





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October 19, 2015

Mr. R. Mark Palmer, President / CEO
Greenland International Consulting Ltd.
120 Hume Street
Collingwood, ON L9Y 1V5

Dear Mr. Palmer:

Re: Canada-Europe Partnership to Develop a Cloud-based Flood Reduction & Forecasting Platform

The County of Simcoe is the upper tier government and planning authority for most of the South Georgian Bay – Lake Simcoe Source Water Protection Region. The County, in partnership with its member municipalities, other levels of government, floodplain management agencies and two (2) conservation authorities, also provides leadership through policy, and actively in the restoration and protection of the environmental health and quality of these watersheds. As you know, in order to comply with, and be environmentally proactive with respect to the Province of Ontario's "Places to Grow" legislation, the County of Simcoe utilized innovative decision support tools such as Greenland's CANWET™ model. In 2012, CANWET™ was also used by the County to prepare a "Water and Wastewater Infrastructure Visioning Strategy". To this day, the information in the Strategy's final report is used by local municipalities, development interests and other stakeholders as a background reference to help identify sustainable development solutions.

As part of Greenland's growing international opportunities and commercialization of other in-house tools and decision support systems, we believe the subject Canada – Europe partnership will enable Greenland and its Ontario-based partners to further develop the "Integrated Science and Watershed Management System (ISWMS™) not only for use across Canada but also overseas for the benefit of many. The ISWMS™ platform includes the CANWET™ system, other proven tools and new ones being developed for an integrated stormwater management; low impact development; climate adaptation; and floodplain management focus.

This letter confirms the County of Simcoe's commitment of support which includes initially facilitating the introduction of this landmark international collaboration with all 16 local municipalities, other governments (small and large) and other agencies that partner now with the County of Simcoe on land use planning; infrastructure renewal; and flooding risk/damage reduction initiatives. Further considerations could also be contemplated through County Council once the project is approved and underway in the spring 2016.

As always, I look forward to our continued working relationship with you and your colleagues and the significant benefits these efforts will have for our residents and environment. The County of Simcoe appreciates your efforts towards developing information based decision making tools and we are confident that this project will prove beneficial in our collaborative goal to improve watershed health for all County residents.

If you require any further information, please do not hesitate to contact me.

Sincerely,

Mark Aitken
Chief Administrative Officer
The Corporation of the County of Simcoe