



WATER RESOURCES

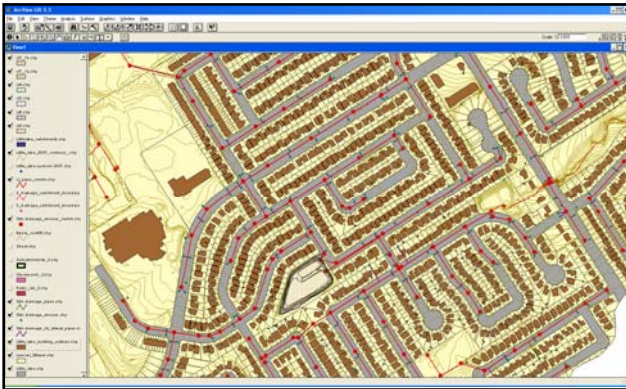
Stormwater Modeling

Flood Studies for Little Lake Subwatershed and the Nelson and John Drainage Areas

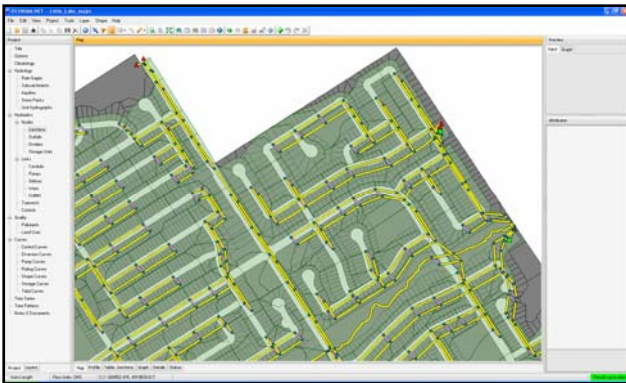
Client: City of Barrie

Location: Barrie, Ontario

Severe rainfall events in 2005 resulted in flooding within the City of Barrie. To reduce the City's vulnerability to damages occurring from these types of events, the City took measures to develop flood reduction plans by subwatershed or drainage area. In 2008, **GREENLAND** was retained to create these plans for Little Lake Subwatershed and Nelson and Johnson Drainage Areas.



Stormwater management models of the three areas were constructed in **PCSWMM** using existing GIS layers, as-built drawings, and data obtained from field surveys. Precipitation events for a range of return periods from 2 to 100 years were run through the model and flood-prone areas were identified. The simulation results were verified against the City's complaint database from the event as well as through comparison to monitoring data within the study areas.



Using the model results, appropriate methods of reducing both the frequency and magnitude of flood events were developed, including the identification of flood protection measures where reduction in flood elevations is not feasible. Final recommendations include storm sewershed and watercourse improvement options which may include the implementation of new or retrofitted structures to help mitigate flooding from severe rainfall events.

Final Report Completion: Summer 2008.

