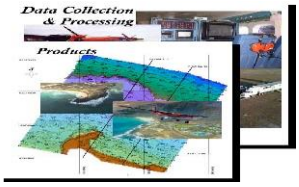
Information Management

"Data collection and existing criteria substantiation will make up a major initial step in the study process."



How do water levels in Lake Ontario and the St. Lawrence River relate to Information Management Needs interests?

Why was the Information Management Needs Technical Working Group (TWG) created?

What are the Group's goals for the Study?

How will the Group achieve these goals?

How do water levels relate to Information Management interests?

An important feature of water level fluctuations along the Lake Ontario – St. Lawrence River system is the change in water depth and flows. The Plan of Study (PDF document) identified that:

1. High resolution topographic and bathymetric mapping in the near shore are needed to provide the requisite information for modeling flooding, erosion and low water level impacts
2. Detailed elevation data are needed to assess the impacts of various water level scenarios on wetland health and sustainability with emphasis on the relationships between topography, water circulation, plant communities, and key habitats.
3. Accurate elevation data are also required to assess water level impacts on private and public shore properties, municipal water intakes and outflows, recreational boating facilities, and public bathing beaches.

Why was the Information Management Technical Working Group (TWG) created?

1. To complete topographic and bathymetric mapping and other imagery requirements along the shores of Lake Ontario and the St. Lawrence River.
2. To address issues related to the use of Geographic Information Systems (GIS) and data/information management
3. To work towards an information management strategy to facilitate the sharing, access and use of all data and information generated within the study.

What are the Group's goals for the Study?

1. To collect bathymetric and topographic data for identified priority zones of the shoreline.

2. To acquire aerial photography and other imagery for specified areas of the shoreline.
3. To develop shoreline digital elevation models (DEMs) with the topographic and bathymetric data.
4. To develop GIS guidelines for the use of geo-spatial data within the Study.
5. To develop an information management strategy that addresses all issues related to the sharing, storage, use and distribution of data and information generated as a result of this study.

How will the Group achieve these goals?

Recent technology advances in airborne laser mapping systems provide unprecedented potential for the mapping of coastal topography and bathymetry using airborne **LIDAR** (Light Detection and Ranging) systems that have a ± 15-cm vertical and 3 metre horizontal accuracy.

LIDAR - an active remote sensing system that uses pulses of light to illuminate the terrain. By measuring the travel time of the laser pulse from the aircraft to the ground and back to the aircraft, a highly accurate spot elevation can be calculated.

Maps, Charts, Diagrams etc.

Figure 1

Figure 2

Figure 3: (to be provided)

Figure 4: (to be provided)

Figure 5

Figure 6

Links of Interest and Resources

SHOALS (Scanning Hydrographic Operational Airborne Lidar Survey)

Airborne Laser Mapping (A reference source on an emerging LIDAR technology)

Definitions:

What is a Digital Elevation Model?

A DEM (Digital Elevation Model) is a digital map of elevation data. These maps, a type of DTM (Digital Terrain Model), are raster data meaning that they are made up of equally sized gridded cells each with a unique elevation