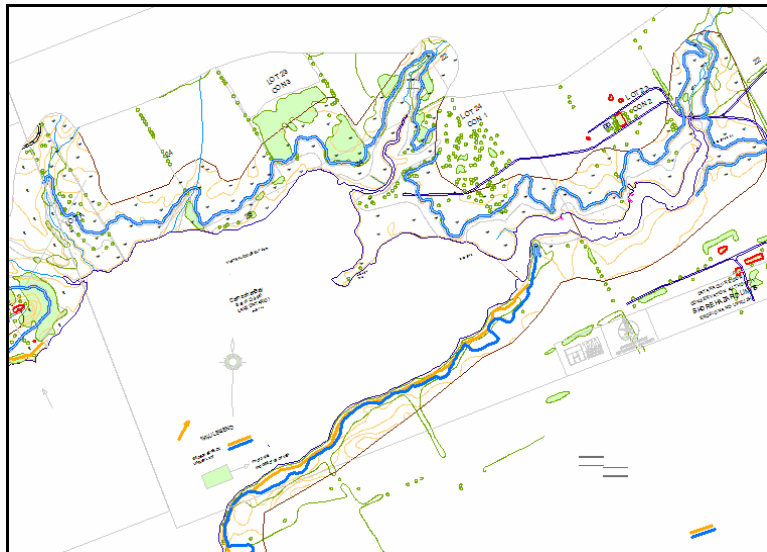


Task Summary Report
(Baird Phase II Task 1.12)
**Overview of Available Canadian Flood Damage
Reduction Program (FDRP) Mapping**



**Coastal Task Working Group
International Joint Commission
Lake Ontario – St. Lawrence River Regulation Study**

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Prepared By



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Overview of Available Canadian FDRP Mapping (Baird Phase II Task 1.12)

Status: This task is complete.

1.0 Introduction

This task forms part of a series of tasks being conducted for the Coastal Task Working Group (CWG) of the IJC Lake Ontario – St. Lawrence River Study by Christian J. Stewart Consulting (CJS) and W.F. Baird and Associates (Baird). Specifically this task comprises a portion of “Task 1.12 – Overview of Available Canadian FDRP Mapping” in the June 14, 2002 Phase II proposal submitted to the CWG by Baird and CJS.

2.0 Purpose

The Coastal Task Group of the IJC Lake Ontario – St. Lawrence River Study requires a range of data and information regarding the Canadian and United States shorelines of Lake Ontario and the St. Lawrence River in order to complete a series of tasks examining the impacts of water level regulation on riparian shoreline interests. Some of this information includes available shoreline mapping and aerial photography. On the U.S. shoreline, a range of mapping and photographic products are readily available (e.g., digital orthophotography, digital USGS quadrangle maps, tax parcel mapping, etc.). On the Canadian side, digital mapping products are not as readily available, however one data set – Canadian Flood Damage Reduction Program (FDRP) Digital Mapping – was available and was examined for use in the Study.

Mapping under the FDRP program initiated in the mid 1970's. Over time, mapping has been updated and many areas of the shoreline are now available in digital (GIS) format. The comprehensive digital database includes 0.5 m contours, buildings, structures and roads. For the purposes of the Coastal Task Group, this information was required to fill in the gaps between available digital orthophotography on the Canadian shore of the lake and river. For example, it was proposed that the digital building footprints would be utilized to populate key attributes in the relational database of the Flood and Erosion Prediction System (FEPS), such as the total number of structures per reach and the average distance to the top of bank. The FDRP maps also show the 1:100 year flood elevation contour as well as the 100 year shoreline recession limit (where applicable), both of which are useful pieces of information for the Coastal Task Group to obtain.



3.0 Methods and Coverage

Inquiries were made with the various Conservation Authorities surrounding Lake Ontario about the availability of digital FDRP mapping data. Environment Canada and the Ontario Ministry of Natural Resources were also contacted.

In the western portion of Lake Ontario, digital FDRP mapping was obtained for portions of the Niagara, Credit Valley and Central Lake Ontario Conservation Authority shorelines (Figure 1). In the eastern portion of the Lake and the River, mapping was available for portions of the Lower Trent (Figure 2), Prince Edward (Figure 3) and Cataraqui (Figure 4) Conservation Authorities.

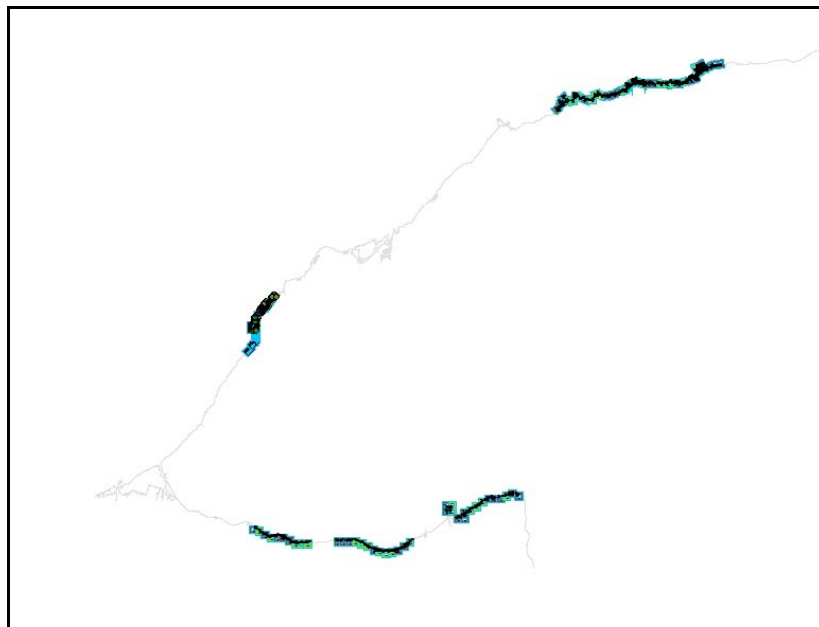


Figure 1 - FDRP Digital Mapping Coverage, Niagara, Credit Valley and Central Lake Ontario Conservation Authorities

Additional mapping (not shown) was also received for 3 smaller sections of shoreline within the Cataraqui Conservation Authority including Hay Bay, Cataraqui Creek and Robinson Cove.

All FDRP mapping received was imported and verified in ArcMap GIS and new coverages and shape files were generated as required. Data was attributed so as to clearly show structures, roads and transportation networks, the shoreline, the 100 year flood contour, the 100 year erosion limit, vegetation polygons and other relevant cultural features. An example of this is presented in Figure 5 and 6.



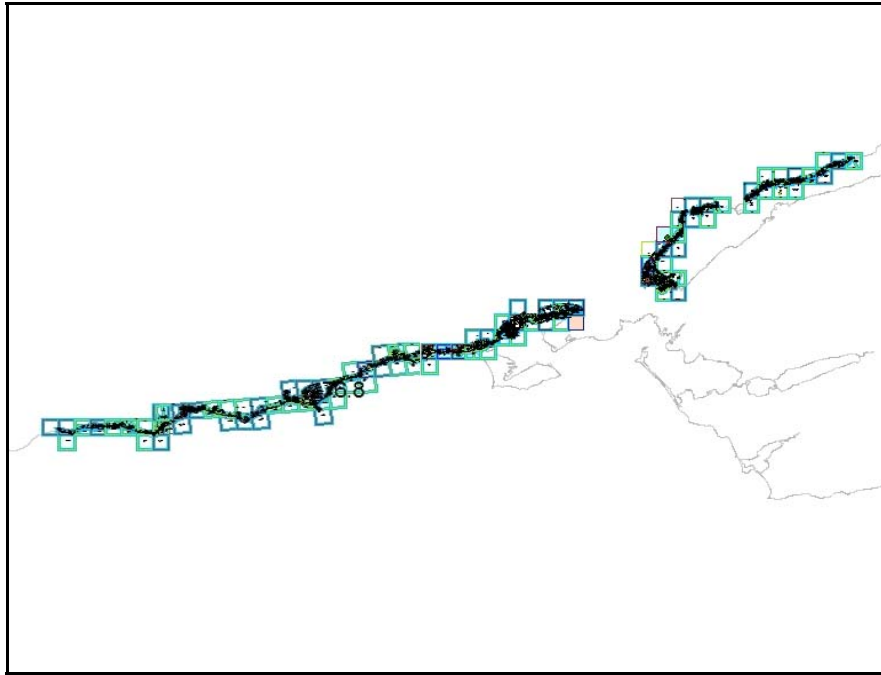


Figure 2 – FDRP Digital Mapping Coverage, Lower Trent Conservation Authority



Figure 3 - FDRP Digital Mapping Coverage, Prince Edward Conservation Authority (shoreline not shown due to projection errors in GIS).



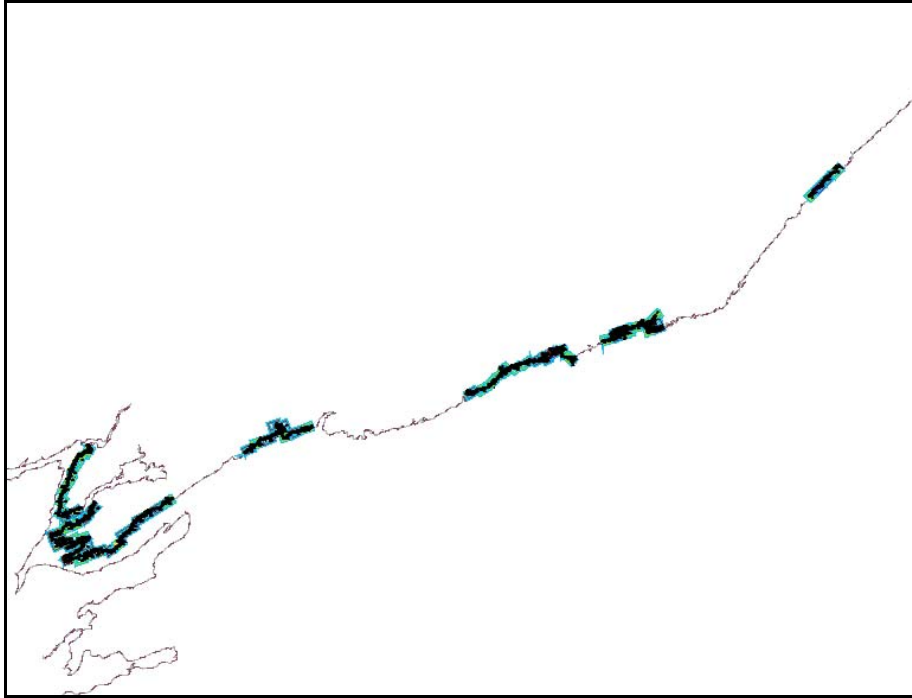


Figure 4 - FDRP Digital Mapping Coverage, Cataraqui Conservation Authority

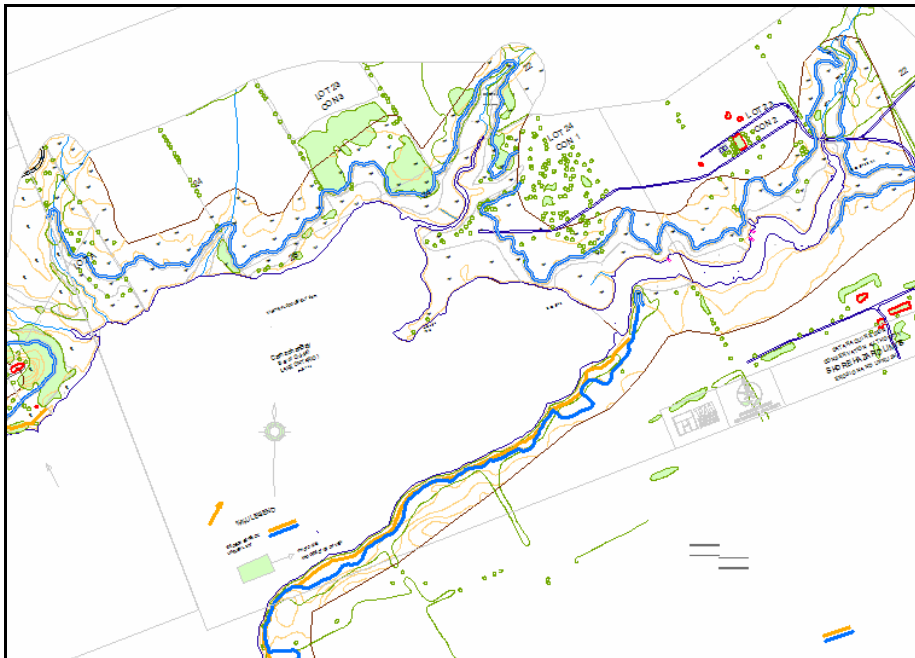


Figure 5 - Attributed FDRP Mapping Example Showing 100 Year Flood contour (blue line) and 100 Year Erosion Limit (orange line).



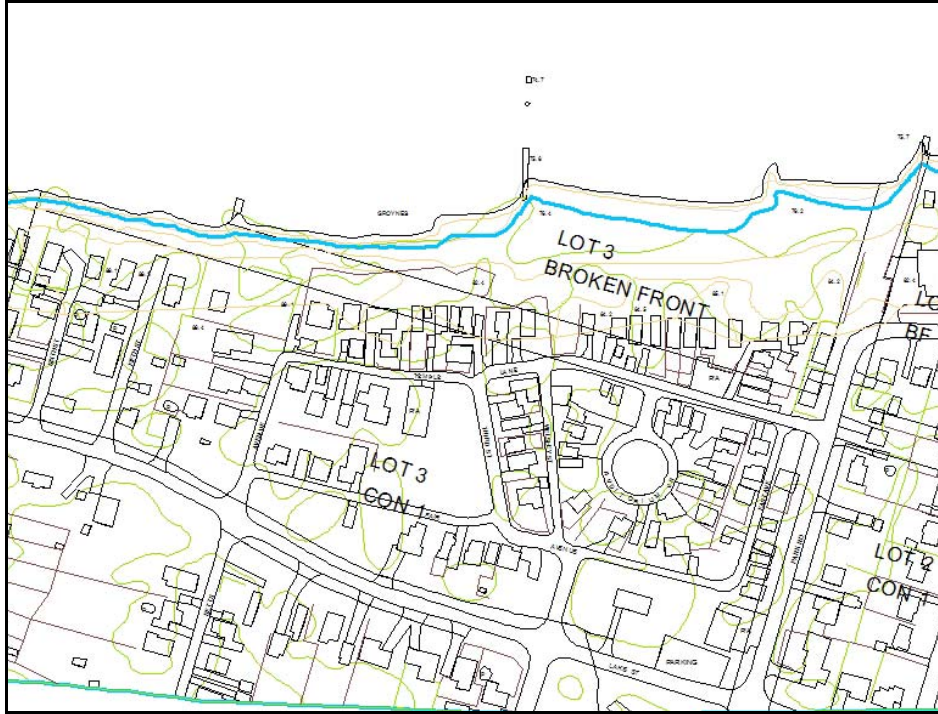


Figure 6 - Attributed FDRP Mapping Example, Niagara County, Showing Structures and 100 Year Flood Contour (Blue Line).

All mapping data has been delivered to Baird & Associates for input to the Coastal Data Server and for use in the FEPS model as required.

4.0 Summary and Proposed Activities for Phase III

FDRP mapping data will be used as required in modeling and analysis by Baird for the Coastal Task Group.

