Great Lakes Regulation and Forecasting

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US Army Corps of Engineers
Detroit District
Great Lakes H&H Office
International Missions

1. Produces official coordinated lake level forecasts

2. Provides technical expertise to the International Joint Commission's (IJC) Great Lakes Boards of Control

3. Measures flows in the connecting channels

4. Monitors hydrologic conditions of the Great Lakes
Great Lakes Regulation and Diversions

<table>
<thead>
<tr>
<th>Long Lake and Ogoki Diversions</th>
<th>Chicago Diversion</th>
<th>Net Diversion</th>
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<tbody>
<tr>
<td>5,200 cfs into the basin</td>
<td>3,200 cfs out of the basin</td>
<td>2,000 cfs into the basin</td>
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<tr>
<th>Lake Superior average outflow</th>
<th>Lake Ontario average outflow</th>
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<tr>
<td>74,000 cfs</td>
<td>201,000 cfs</td>
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Both set by IJC approved regulation plans
The Boundary Waters between the U.S. and Canada
Lake Superior Board of Control

Distribution of Lake Superior Outflows

- Cleveland Electric Cooperative Power Plant - 21,000 cfs
- U.S. Government Power Plant - 10,400 cfs
- Fishery Remedial Works - 600 cfs
- Compensating Works - 3,000 cfs
- Soo Locks - 400 cfs

Long-term Average Outflow - 76,000 cfs
Niagara Board of Control

- Oversees and Monitors Flows
- Treaty Minimum Flows
- No Regulation plan
St. Lawrence Board of Control
Forecasting and Basin Conditions

St. Clair River Conveyance Change
2007 to 2012

Morphologic Change in the St. Clair River 2007 – 2012
Conveyance Change Report

U.S. Army Corps of Engineers, Detroit District
Great Lakes Hydraulics and Hydrology Office
Lake wide Average Levels
Connecting Channel Gages
Glacial Isostatic Adjustment (GIA)

- Canadian GL-CORS
  - 9 existing
  - 1 reinstall
  - 2 planned

- Thunder Bay
  - Planned 2014?

- Goderich
  - Reinstall May 2013

- Port Stanley
  - Planned 2013?

- Vertical rate of change due to Post-Glacial Rebound

- International Great Lakes Datum of 1985 (IGLD 1985), IGLD 2020 is coming
Coordinating Committee of Great Lakes Basic Hydraulic and Hydrologic Data

- US/CA Federal agencies key to water management of Great Lakes

- Coordinates key data in support of regulation to include:
  - Water Levels
  - Precipitation
  - Evaporation
  - Datums
  - Flows

- Established over 50 years ago.
  - 100th Meeting in Ottawa, May 2016
Of the 140 Great Lakes Navigation Projects, 29 (21%) received Presidents Budget funding at least one year in the past five. 50% of all the commercial projects received no funding for dredging in the last five President’s Budgets.

President’s Budget Funding For Dredging Projects Between FY09-13

- **Funded For Dredging – 29**
- **Total Commercial Projects – 60**
- **Total Recreational Projects – 80**

- Of the 140 Great Lakes Navigation Projects, 29 (21%) received Presidents Budget funding at least one year in the past five. 50% of all the commercial projects received no funding for dredging in the last five President’s Budgets.
Long Term Average Lake Level

Datum

~ 2'

Current Lake Level

Authorized Project Depth 27'

Available for Navigation << 27'

Dredging Backlog

Available for Navigation

~ 2’