

Corp of Engineers Muddy The Water Over Huron Water Level Issues

By Mike Mahoney, LCIA Liaison to the Georgian Bay Association - September 20, 2006

Notwithstanding the title of this article, the Good News is that the International Joint Commission (IJC) has begun the "Upper Great Lakes Study" with USA funding in place for 2006 and 2007. Senior Canadian politicians, close to the Georgian Bay Association (GBA), stated that their NEW Prime Minister (Mr. Harper) will confirm Canada's commitment later in the month, as part of his "Green" Announcement. The bad news, at this juncture, is that it is estimated to take a minimum of two (2) years, to get to the bottom of our water level issue and initiate appropriate mitigation.

Under pressure from the W. F. Baird & Associates, Coastal Engineering Report of 2005 (i.e., GBA funded Analysis of the St. Clair River's impact on declining water levels), the "Upper Great Lakes Study" will initially focus on St. Clair River erosion issues, to provide the best mitigation solution(s) and associated costs. It is anticipated that this initiative will reach fruition in approximately two (2) years. At that time, Mary Muter, GBA's VP & Environmental Chair, stated: "It will be up to our respective governments to decide if they want to implement the IJC's mitigation recommendationsand then, **nothing will happen without wide public support.**

On September 6, 2006, Rob Nairn, Ph.D., P.Eng., with Baird Associates, provided Mary Muter with an update to their 2005 Report entitled: "Regime Change (Man Made Intervention) and Ongoing Erosion in the St. Clair River, and Impacts on Lake Michigan-Huron Water Levels". The focus of this 2006 update / analysis, was on the St. Clair River Bathymetry (profile) changes from 2000 – 2005 and it's impact on the previously reported hydraulic regime modelling efforts.

After much analysis involved in dividing the river up into nine (9) polygon cells, approximating 500 linear meters of river to model bathymetry change; studying the net change in erosion and accretion in cubic meters; factoring in other NOAA datum, and running an updated 2-dimensional RMA2 model obtained from the Corp of Engineers that had previously modelled bathymetry changes from 1971 to 2000, and incorporating more current mean flow rates and mean lake levels, etc., the profile grids were finalized for a 2000 – 2005 evaluation of a few river sections.

YEEEEIKESsome complex and Treacherous Waters, for an X-Marketing Guy!!

Anyway, the net/net of the eight (8) page W. F. Baird Update is that "**previously reported lake level decreases may be underestimated**", as only a section of the river was surveyed in 2005 by the Corp. (e.g., between Dunn Paper and the Dry Dock). Therefore, data is not available to update the entire bathymetry (profile) grid, thus providing a more contemporary result /conclusion (e.g., most other areas utilized NOAA -2000 bathymetry data). **The variance in results from model runs, relative to water levels can, therefore, according to Mr. Nairn, "be attributed entirely to the bathymetry changes in the survey area"**. Reference – September 6, 2006 Baird Report entitled: "Analyses of St. Clair River Bathymetry Changes (2000 – 2005)"; and an August 27, 2006 NOAA / Great Lakes Environmental Research Historic Water Levels Graph (i.e., Lakes Datum – 2005).

I asked Bill Bialkowski (GBA Consulting Hydrology Engineer) to define the loss of water reported by Baird, due to erosion (e.g., 845MG per day / the delta between a 30' and 60' depth in the St. Clair River, with terms that we can all understand / visualize. Bill said: "**On an annual basis, think of a block of water one (1) mile long, one (1) mile wide, by about .5 miles high**"!

That said, the USACE (U.S. Army Corp of Engineers), on September 13, 2006, really Muddied The Waters, by dredging up all the potential possibilities that may cause a "**PERCEIVED drop in the water levels of Lakes Michigan-Huron, relative to Lakes St. Clair and Erie**" with a Press Release entitled "Corps Responds to Recent Lake Level Study".

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The Corps stated that they have “some significant technical concerns with the W. F. Biard Report”. Further it states “The report (Biard) is based on the premise that the difference in water levels between Lakes Michigan-Huron and the lower lakes is becoming smaller over time. While all parties agree that the difference between water levels on Lake Michigan-Huron and the lower lakes is getting smaller, there is some disagreement on why this is happening. GBA’s report (Baird) states that the levels of Lakes Michigan-Huron are falling, while the Corps of Engineers and other experts contend that a review of historic data show that the level of Lakes Michigan-Huron is not falling, but that the level on Lake Erie is rising over time. A stable Lake Michigan-Huron level and a rising Lake Erie level would also cause the difference in water levels between the two lakes to become smaller”.

Another important factor to consider, the Corps report states, “is the issue of crustal rebound. As the earths crust is rising, the water level appears to be receding, when in fact it may not be. The impact of this phenomenon on measured water levels throughout the lakes and the differing rate of rebound across the basin need detailed technical analyses. This issue has been too quickly dismissed by the report as not being significant”. The Georgian Bay Area’s rebound rate ranges from 7” to 12” per century. The Corps Press Release sites other possible rational for our “Perceived” lower water level on Lakes Michigan-Huron.

- . Investigations need to be made into changes in the water supply. Initial thoughts have been that the Lake Erie basin is becoming wetter over time, in relation to the Lakes Michigan-Huron’s.
- . Ongoing erosion in the St. Clair River has not been sufficiently documented, nor can it be linked to dredging operations, at this time.
- . Deeper areas of the river were around that depth in the past. These deeper areas that have been documented historically, are natural river depths, and have never been dredged.

Are the waters now sufficiently muddied??? It’s easy to understand why it will (unfortunately) take years to get at the bottom of issues centric to low water levels at our cottages and marina’s, and the looming negative impact on our lakes region economy. One has to ask, **IF** “The Corps is committed to studying the issues of a perceived drop in the water levels of Lakes Michigan-Huron, relative to Lakes St. Clair and Erie, in coordination with our Canadian counterparts, etc.”

- . Why did the Corps build the foundations for mitigation (i.e., Weir’s) in the St. Clair River a long time ago, but never completed the project?
- . Why are they just now getting around to being committed to “studying” the issue?
- . What will be our water level in two (2) years, and will it be effectively recoverable (over time), assuming a mitigation proposal is finalized in that time frame, and acted upon accordingly?
- . **The \$64,000 Question** - Why don’t we agree to simply dumping rocks into the river, thus stopping the on-going erosion and decreasing the volume of water running down the St. Clair River / “Huron Outlet” from 60’ to 30’ (i.e., minimum shipping depth), while various experts rationalize a range of more fascinating scientific challenges, with more complex solutions?

Mary Muter (GBA’s Environmental Chair) stated: “At this point, we only want both governments to step up and do the right thing, to stop the downward trend in Michigan-Huron water levels”.