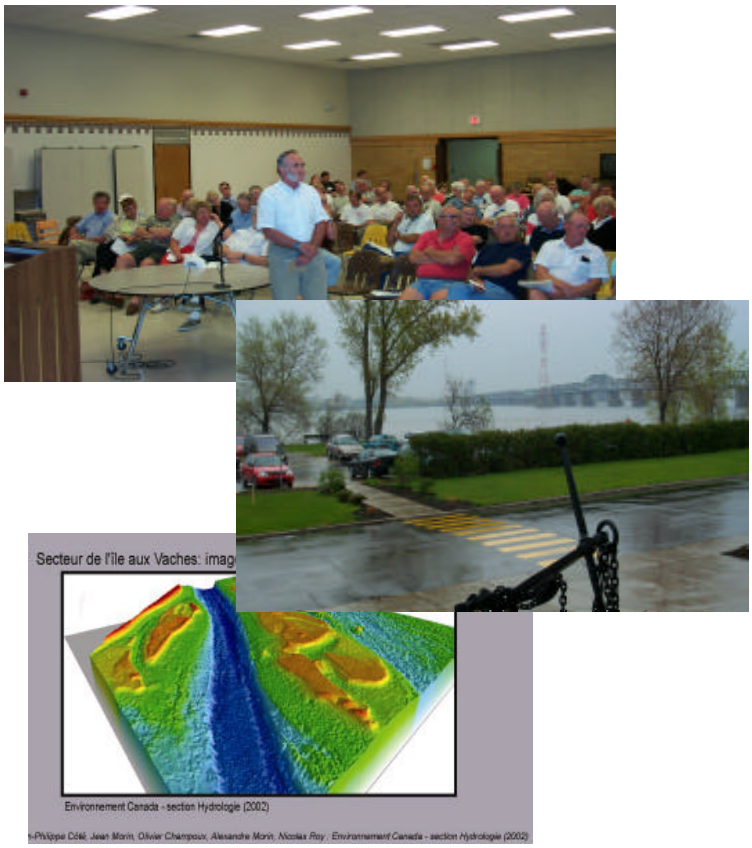
FOURTH PROGRESS REPORT
to the
INTERNATIONAL JOINT COMMISSION
by the
INTERNATIONAL LAKE ONTARIO – ST. LAWRENCE RIVER STUDY BOARD

Covering the period
15 March 2002 through 20 September 2002



20 September 2002
Ottawa, Ontario
Buffalo, New York

INTERNATIONAL LAKE ONTARIO-ST. LAWRENCE RIVER STUDY BOARD

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International Joint Commission
Ottawa, Ontario
Washington, D.C.

Commissioners:

The International Lake Ontario-St. Lawrence River Study Board submits herein its fourth Semi-annual Progress Report, covering activities from 15 March to 20 September 2002.

1. SUMMARY

Since the last report, one main emphasis of the Study has been the to complete the data collection activities related to coastal processes, recreational boating and environmental factors, and towards developing a framework for evaluation of alternative regulation plans. With the assistance of the Technical Working Group (TWG) for Common Data, all topographic and the majority of the bathymetric data collection was completed. Also, an extensive survey of marinas was undertaken to determine the impact of various levels on operations. A comprehensive inventory of municipal and industrial water intakes was also completed.

A major accomplishment during the reporting period was the completion and distribution of the Year 1 reports of the Study and the Public Information Advisory Group (PIAG), describing activities that took place from 12 December 2000 up to 31 March 2002. Both of these reports were produced and published in English and French. A separate appendix to the Study Report entitled "Detailed Descriptions for all Technical Work Groups" was also completed.

The Board met twice during the reporting period: on 9-10 May 2002 in St. Catharines, Ontario and on 19-20 September 2002 in Ogdensburg, N.Y. The September meetings in Ogdensburg coincided with the Study Board public meeting held for the first time jointly with the International St. Lawrence River Board of Control. The Study Board attendance at these meetings are listed in Attachment 1.The Board also held three conference calls, on 30 May, 20 June, and 4 September 2002.

The PIAG sponsored a public workshop during the reporting period in Sackets Harbor, New York on 8 August 2002. The group also held a meeting with the Plan Formulation and Evaluation Group on 8 May. On 18-19 September 2002 PIAG held a meeting of the group, including a two-hour joint session with the Board on 19 September 2002.

During the reporting period, the two Co-Chairs of PIAG, Fred Parkinson completed his term and retired, and Dalton Foster resigned, effective 9 August 2002.

The following is a summary of main accomplishments during this reporting period:

- Continued refinement of the Shared Vision Model by the Plan Formulation and Evaluation Group (PFEG) for plans incorporating initial Performance Indicators (PI) from the TWGs;
- Distribution of the second newsletter to more than 3000 individuals and the establishment of a corresponding database;
- Completion and distribution of the Year 1 Study Report and Appendix;
- Completion and distribution of the Year 1 PIAG Report;
- Refining of the Study web site with more than 5000 hits to date;
- Completion of all topographic, bathymetric and ortho-imagery data collection by the Common Data TWG for application by the Coastal Processes TWG and the Environmental TWG;
- Extensive marina survey conducted by Cornell University for the Recreational Boating TWG;
- Completion of the inventory of municipal and industrial intakes for the Water Uses TWG;
- Refinement of the flood and erosion prediction system (FEPS) – ongoing;
- Initial plans for a comprehensive Information Management strategy (developed and submitted by the Common Data TWG) along with implementation of some key elements dealing with exchange of large datasets;
- A number of other research and studies in progress relating to the impacts of water level variations on the environment, recreational boating, commercial navigation and coastal processes;
- Delivery of a well attended joint public meeting with the International St. Lawrence River Board of Control on 19 September 2002 in Ogdensburg. N.Y.

2. BOARD ACTIVITIES

The Board participated in a conference organized by the Center for Environmental Information entitled “New York’s North Coast – A Troubled Coastline” in Rochester, New York on 3 May 2002. The Board also continues liaison with the Lake Ontario Management Committee associated with the Lake

Ontario Lakewide Management Plan (LaMP), also a co-sponsor of the Conference. Further, the Board representatives met with the Committee on 18 June 2002 in Niagara Falls, New York. Representatives of the Board attended the Shared Waters Conference sponsored by Pollution Probe in Hamilton, Ontario, 23-28 June 2002. Finally, members from the Board and PIAG participated in the Integrated Transboundary Water Management Conference held in Traverse City, Michigan, 24-26 July 2002.

3. PUBLIC INTEREST ADVISORY GROUP (PIAG) ACTIVITIES

The PIAG met at a workshop held on May 7 and 8, 2002 in St. Catharines, Ontario to discuss and develop their continuing public involvement program and activities for the second year of the Study. The group has discussed and is considering the idea of developing and distributing a Story Board which will be used to help create public awareness of the complexity of regulating water levels of Lake Ontario and the St. Lawrence River.

Public involvement activities included the review of the PIAG Year 1 survey and the subsequent feedback provided by the public. After an analysis of the results of the Year 1 survey, the group discussed the development of two new surveys, to provide data to the technical work groups and aid in the development of their work, as well as providing an opportunity for the public to express their concerns about water level regulation.

In May, the group was briefed on TWG activities and had an opportunity to brief study participants of the concerns and views of the public of the Lake Ontario – St. Lawrence River community. The Plan Formulation and Evaluation Group presented the PIAG members with a demonstration and explanation of the Shared Vision Model and the challenges the Study will collectively face in developing a recommended regulation plan.

The group developed and published a Year 1 report. The report has been widely publicized and circulated throughout the Lake Ontario – St. Lawrence River community. The report is available in both English and French on the Study website and in hard copy.

The PIAG initiated the development and design of a Year 2 presentation to reflect the newest information and data collected by the TWG and to re-iterate the importance of public involvement in the Study.

The PIAG has also been active in the Lake Ontario – St. Lawrence River community. They conducted 21 stakeholder meetings, circulated information about the Study, and continued to gather public feedback and concerns about water level regulation in the basin.

The PIAG hosted a roundtable discussion, as well as a public meeting in Sackets Harbor, N.Y. on August 8, 2002 to provide the community with an update on the Study and all it's activities. The meetings were well attended with 17 members of the public at the round table and about 67 members of the public attending the evening meeting. The majority of concerns raised at the meeting focused on the problem of erosion. The group has panned three similar meetings to take place this fall.

4. TECHNICAL WORK GROUP (TWG) ACTIVITIES

A list of currently appointed and proposed TWG members along with Board liaisons to the TWG's is included as Attachment 2.

4.1 Common Data Needs

Topographic Data Collection

Airborne topographic surveys, using LIDAR technology, were collected in May 2002 at 8 key wetland study sites in the U.S. and 3 key wetland sites in Canada. The U.S. wetland sites are in the eastern end of Lake Ontario or near the mouth of the St. Lawrence River, as are all of the Canadian sites. These data are currently undergoing quality assurance reviews and will be made available to researchers by the end of the calendar year. In addition, TWG members are digitizing topographic information from Flood Damage Reduction Program (FDRP) maps for 9 additional wetland sites in Canada on Lake Ontario. All topographic LIDAR surveys collected last year around Montreal have been processed and delivered to study researchers.

Bathymetric Data Collection

The majority of bathymetric data collection along Lake Ontario shorelines needed for coastal process modeling was collected last year using airborne LIDAR methods. These data have passed all quality assurance steps. , However, detailed bathymetric surveys at all 32 wetland study sites identified by the Environmental TWG have not been completed as desired. These sites are along the Lake Ontario shoreline or in the upper reaches of the St. Lawrence River. In May 2002, it was decided that it would be too risky to conduct airborne bathymetric LIDAR surveys using the SHOALS system due to the shallow nature of the sites and the onset of emergent vegetation.

Instead, conventional hydrographic surveys were investigated and a contract was awarded to collect data at 8 initial sites in the U.S. starting in August 2002. This collection effort has been very labor-intensive and slow in completion, due to very low water levels and extensive quantities of emergent vegetation.

Digital Elevation Model (DEM) Development

Efforts to merge the bathymetric and topographic LIDAR data collected over U.S. Reaches 2, 4 and 7 (southern and eastern shore of Lake Ontario) into DEMs have mostly been completed with some clean up yet underway. Bathymetric LIDAR and topography from the FDRP maps for Ontario have all been merged into DEMs and are available on the Study web distribution sites.

DEMs from topographic LIDAR and conventional hydrographic surveys in the Montreal archipelago area are all completed.

Work is in progress on the merging of topographic and bathymetric data for the first 8 wetland Study sites in the U.S

Imagery

High-resolution color aerial photography was collected in May 2002 over all hazard zones in U.S. Reaches 2, 4 and 7 (southern and eastern end of Lake Ontario). This photography was used to generate digital ortho-photography, which are very accurate base maps of areas where economic and ecological investigations are being conducted. In addition, this photography has been used for a large area to map significant features (buildings, roads, transportation types, bluff characteristics and others) needed by the Coastal TWG

Other ortho-photography has been contracted to the Ontario Ministry of Natural Resources for the Niagara Region, but has not been delivered yet.

High-resolution satellite imagery from the IKONOS system was acquired in August 2002 and delivered to Environment Canada, Quebec Region for habitat mapping in the Montreal archipelago.

Information Management (IM) Strategy

A comprehensive Information Management strategy was presented to the Study Board at its May 2002 meeting. The objectives of this strategy are three-fold: one, to manage the large volume of data and information being generated within the study; two, to facilitate the efficient exchange of data and information between study participants; and, three, to provide broad public access to new information being collected or generated during the Study and after the Study is completed.

Other related work completed includes conducting extensive interviews with TWG researchers on their anticipated data inputs and outputs, designing metadata (catalogs of information attributes) requirements and conducting workshops to refine the strategy, define computer system resources and requirements and assign responsibilities for implementation.

The IM strategy is focused on managing information around the Internet. The three main components of the strategy are: one, a robust "data discovery" front-end, which is essentially a user-friendly search engine; two, regionally distributed data "warehouses" (one in Ontario, one in Quebec and one in the U.S.); and three, an integrated document and related general information storage/retrieval system, based upon an advanced web-page package.

At the September Board meeting, the group presented the Board proposed plans and options including: conducting metadata assistance workshops to populate these critical datasets; implementing networking relationships within the regional data distribution nodes; populating large quantities of geo-spatial and temporal datasets; enhancing the study web sites to provide robust search capabilities; developing prototype web mapping applications; defining network support requirements for the Shared Vision Model; and, advertising the utilities provided by this enhanced IM strategy. The group is continuing to develop and implement information management strategies.

4.2 Coastal TWG

A classification of the Lake Ontario and upper St. Lawrence River shoreline was completed. This classification provides a characterization of the exposed (above water) area, the near-shore (under water) area, and the shore protection, in one-kilometer increments. A similar classification is underway for the lower St. Lawrence River. These will assist in the evaluation of response to water level/flow scenarios.

Wind-wave hind-casting for Lake Ontario and Lake St. Lawrence was completed covering the 40-year period of 1960 to 2000. This information will serve as input to the coastal processes models used to evaluate shoreline response. The wind-wave climate has also been synthesized for the St. Lawrence River between Montreal and Sorel.

Seventeen locations on Lake Ontario and the upper St. Lawrence River have been selected for detailed analysis. These sites range in size from two to fifteen kilometres, and they represent a wide diversity of shore characteristics. The development of a detailed computerized database on the whole shoreline, with special emphasis on these sites, is underway. Thirteen representative sites on the lower St. Lawrence River have been selected, and detailed data collection and modeling for these sites are underway.

Work continued on the development of modeling capabilities for both Lake Ontario and the St. Lawrence River. Model development will continue into the third year of the Study. To assist the group, a technical committee consisting of four experts from the United States and Canada was been established to provide peer review of modeling procedures. The committee held its first review meeting in July 2002.

4.3 Environmental TWG

Projects were arranged according to a set of Performance Indicators identified by the TWG during the first year of the study. Work on each of these is summarized below. In general, all projects appear to be on schedule, despite several weather-related problems for fieldwork.

Fish

Fish and habitat sampling were conducted in both managed marshes and natural marshes between early April and late July in the Lake Saint-Pierre area. The database should be ready shortly for preliminary analyses concerning the access to managed marshes for fish. The extensive fish and habitat sampling in the natural habitat at Lake Saint-Pierre started on 19 August and is expected to be completed by the end of September 2002.

Water levels and water temperatures are being monitored in the upper St. Lawrence River at four wetland tributary habitats (Chippewa Creek, Little Cranberry Creek, Cranberry Creek, and French Creek) and at a single mid-river site at the Thousand Islands Biological Station on Governor's Island, Clayton, N.Y.

Preliminary data from experiments of the egg-larval temperature and development relationships have been completed for northern pike and muskellunge.

A regression model of northern pike year-class formation against a series of environmental variables was developed. Wetland vegetation inventory transects have been set up in the four wetlands being monitored for temperature and levels.

The group sampled larval fish in 8 different wetlands in May, June and July of 2002 for species richness, abundance, hatch date and growth analysis. The wetland types include barrier beaches, drowned rivers, sheltered and exposed bays that are sampled by habitat type (emergent and submergent plant communities as well as unvegetated areas). Near shore temperature loggers were also deployed in these wetlands to monitor thermal structure. A GIS-based analysis of habitat supply in different areas of the Bay of Quinte for 8 different fish groups was conducted using water level changes over the past 50 years and

temperature cues for spawning. Work on species-specific habitat models and habitat supply analysis is progressing.

Work was finalized on the analysis of tagging experiment, which revealed that a large proportion of the freshwater fish inhabiting the lower St. Lawrence River do migrate seasonally between Lake St-Pierre and the downstream sector around Quebec City. Some fish species, such as walleye, perch and sucker, were shown to be quite active migrates, moving over 200 km-distance within the year. Results were presented at the 132nd meeting of the American Fisheries Society (AFS) in Baltimore, Maryland.

The statistical analysis to verify the effect on seasonal fluctuations in St. Lawrence River flow and the timing of seasonal migration of St. Lawrence River fish (using daily catch data between 1975 and 2000) progressed and significant relationships were derived for a number of species. The influence of water temperature was examined for a subset of data. A first presentation of these findings was also done at the Baltimore meeting.

The project on fish juveniles and habitats in the lower St. Lawrence River was pursued for the second year. Sampling began in mid-May and was conducted every two weeks until the end of August. Ten sites distributed on both shorelines were surveyed with a beach seine sampling protocol.

During the spring of 2002, sampling conditions differed greatly from the two previous years, with cold weather and high water levels. Nevertheless, 130 specimens of northern Pike were captured and released in the area of Boucherville islands. Age of specimens was determined by scale examination in the summer. During the same period, northern pike eggs and larvae were collected to study embryo development and growth in relation with water temperatures.

Habitat Quantity

Air photo interpretation and digitizing of vegetation types were completed in all 16 study wetlands in the U.S. for years 2001 (new photos), pre-regulation 1958/59, and intervening years 1988/90. Air photo interpretation and digitizing were also completed. Ground validation of vegetation maps of 16 study wetlands in the U.S. derived from air photo interpretation was completed. Surveys were conducted in seven transects at selected elevations in each of the 32 study sections; they are now ready for quantitative sampling in Year 3. Canadian and US counterparts met to discuss and ensure comparability of field methods. Most of the above tasks were also completed in Canadian wetlands of Lake Ontario.

Wetland Birds

Canadian and U.S. investigators have been collaborating on development of

wetland bird indicators for use in an Ecological Response Model. This spring, a coordinated breeding bird survey of Lake Ontario wetland study sites (U.S. and Canada) and St. Lawrence River wetlands (Quebec) was undertaken and extensive site and landscape level habitat attributes were collected.

Ecological Response Model

In order to assess impacts of water levels on the breeding population of dabblers in the fluvial section of the St. Lawrence, information has been regrouped including: reproduction phenology, population dynamics and available habitats and support capacity.

Habitat Quality

Plant species diversity - Canadian St. Lawrence River: One person was hired to help with the field survey of emergent wetland plants diversity; 8 of the 15 sites have been visited so far this summer in the St. Lawrence River.

Habitat productivity - Canadian St. Lawrence River: Historical water temperature data series (6 months to 80 years span) were gathered from 13 locations (municipalities, industries, individuals) between Montreal and Quebec City. Identification of water mass, description of intake location-conditions and validation of data is being finalized this fall.

Water Quality (Lower St-Lawrence River)

Efforts so far have concentrated on PAHs, pesticides (Atrazine and Metolachlor) and metals in the dissolved phase, relating their concentration near Québec City to seasons, average water levels and Great Lakes/tributaries water mixture. Dilution relationships are being estimated, seasonal patterns and low water level effects are being quantified. The second phase of this project was designed to assess the impact of water level fluctuations on the river's sediment dynamics.

Project Integration

Details of a habitat-based assessment model for evaluating consequences of different water management plans for Lake Ontario are being defined. A process-based integration modeling effort was started, resulting in the development of a preliminary modeling framework. This initiative is in its early stages and will be refined through further discussions and input from Board and the TWG members.

Reptiles and Amphibians

The reptile and amphibian research group had two objectives for the summer 2002 field season: (1) to characterize turtle and frog diversity and abundance in

relation to vegetation diversity and structure in wetlands along Lake Ontario and the upper St. Lawrence River, and (2) to perform detailed analyses of the habitat requirements and movements of a high profile, threatened species, the Blanding's turtle. To address objective (1) turtles and tadpoles were trapped using standard methods at some 250 sites in 10 wetlands and characterized vegetation associations and water depth at each trapping site. These data will permit tadpole and turtle population parameters to be related to wetland vegetation and thereby provide a direct link to the hydrological/wetland modeling efforts of the TWG. To address objective (2) in August 12 Blanding's turtles were trapped and temperature-indicating radio-transmitters were attached. Tracking of these animals has begun and their activities will be followed through one annual cycle to examine movements between uplands and wetlands, associations with particular vegetation types within wetlands, and response to thermal gradients. A preliminary analysis of the data was presented at the meeting of the TWG in Montreal in September 2002.

4.4 Recreational Boating /Tourism TWG

During the reporting period the group met twice, on 13 June 2002 in Sackets Harbor, N.Y. and on 18 September 2002 in Ogdensburg N.Y. Work that was outlined in this group's year-2 work plan was initiated and is currently in progress.

On the Canadian side, contracting is being finalized for some of the work relating to boater and marina surveys and boating-related tourism in Canada. Work for updating the marina inventories and GIS integration started and is currently in progress at the Environment Canada Centre Saint Laurent.

In the U.S., The Human Dimension Research Unit, Cornell University conducted a survey of all U.S. Lake Ontario and St. Lawrence River marinas and yacht clubs in operation during the summer of 2002. The survey included a personal interview with the owner or manager to inventory facilities and services and assess past experiences with high or low water levels. The survey also involved taking GPS and depth measurements to enable forecasting of impacts of high or low water levels in the future.

The methodology for recreational boaters and their related tourism impacts was developed. The boater survey and sampling framework has been designed and reviewed.

A two-stage survey approach is being used. In Stage 1, screening telephone interviews are being conducted with boaters who identified a county to determine if they normally boat on Lake Ontario or the St. Lawrence River. In Stage 2, Lake and River boaters identified in Stage 1 will be surveyed by mail to determine such factors as expenditures, days lost to high or low water levels, the non-market value of the loss. The mail questionnaire to be used in Stage 2 was developed during the summer of 2002.

Finally, the proposed work plan and corresponding budget for the Recreational Boating TWG for year three has been developed and is in review by the TWG.

4.5 Commercial Navigation TWG

The Commercial Navigation TWG held three meetings among its members during the reporting period, on 25 March, and16 May 2002 in Montreal, and on 5 June 2002 in Cornwall Ontario.

The group elaborated a document describing the Planning Objectives and developed the Performance Indicators for the commercial navigation activity throughout the system, as outlined in their Work Plan for year-2. Four planning objectives were identified with the main focus being on optimizing the levels that would provide best benefit and safety in the system, providing stability and predictability, and minimizing risk of ice jams and flooding in wintertime particularly as relating to winter navigation to the Port of Montreal.

As a next step, the TWG has been working on development of the tools and models needed to define and evaluate impacts that may result from the variations of the water levels on the activities of commercial navigation on the Lake, in the Seaway system, and from Montreal to overseas.

The group has proposed contracting their work and is currently finalizing four contracts to be performed before the end of March 2003.

The hydraulic attributes that cause commercial navigation impacts were identified. Performance indicators were developed to identify when these impacts would begin. A total of 42 initial indicators were developed which looked at identifying when impacts to navigation are encountered (speed reductions, loading reductions, cessation of vessel movement due to unsafe cross current conditions, etc.). The indicators were developed for high and low flow conditions, timing of discharges and target gradients for each area. Indicators were also developed that would enhance the development of a stable ice cover important to winter navigation at the Port of Montreal.

The group has been working on the development of a transportation model to define the relationships of traffic movement to the long and short-term variations of water levels.

4.6 Hydroelectric Power Generation TWG

Other than one tele-conference call, there was no activity of this group during the reporting period.

4.7 Domestic, Industrial and Municipal Water Uses TWG

During the reporting period, the group met on 19 April 2002 in Syracuse, New York to discuss progress regarding the survey being conducted by Planning and Management Consultants Ltd. (PMCL) and define the work that was required in Year 2. In July 2002, PMCL provided a report of impacts of lake levels on municipal and industrial uses based on their inventory. In September 2002, the contractor was awarded a contract to inventory and evaluate domestic uses including shore wells. The scope of this contract was based on discussions of the TWG during the Syracuse meeting.

4.8 Hydrologic and Hydraulic (H&H) Modeling TWG

The Hydrology and Hydraulics TWG met once during the reporting period to initiate and coordinate the work in their year-2 work plan.

In essence, the work plan is designed to develop hydrologic scenarios for use in the formulation and evaluation of alternative regulation plans, and to develop models of the Lake Ontario - St. Lawrence River system to enable the simulation of levels, flows and other hydraulic conditions that would result from the application of any given plan. Work is in progress on the following year 2 tasks.

Lower St. Lawrence River level - flow relationships. A model to route flows from Lake Ontario and the Ottawa River around the Montreal islands and calculate the levels of Lac St. Louis is being updated and tested.

Pre-project outlet hydraulic relationship. A method to estimate the hydraulic effects of ice in the upper St. Lawrence River under pre-project conditions is being developed to allow the simulation of unregulated outflows for hydrologic sequences other than the historic case.

Plan 1958D with deviations model. A model that attempts to simulate the outflow deviations from Plan 1958-D made by the Board of Control is being developed and tested for a variety of hydrologic inputs.

Hydrodynamic modelling of the St. Lawrence River. Two projects are continuing to develop detailed models for the upper St. Lawrence River and Lake St. Louis to enable simulation of flows, levels and velocities. Work in this period has included obtaining missing bathymetry data, taking field measurements of velocity for model calibration, model calibration tests, and liaison with other TWG to refine the model information to meet their requirements.

Great Lakes Basin Supply and Ottawa River Inflows Stochastic Generation.
Phase II of the work is underway to develop and test a set of stochastic models to generate many sets of supplies for the Great Lakes and Ottawa River. These sets of supplies will form realistic hydrologic scenarios to use to evaluate the regulation plans.

Climate Change Simulation Ottawa River. A meeting was held to review the state of climate change modelling information and to organize a cost-effective plan to apply projections of climate change on hydrology in the Study. One of the recent Global Climate Model (GCM) scenarios, that has already been applied to the Great Lakes, is being used to develop and test a prototype method to generate outflows from the Ottawa River into the St. Lawrence.

Hydrologic Forecasts for use in Regulation. A review has been completed of the hydrologic forecast methods for Lake Ontario, Ottawa River, and key St. Lawrence River tributaries.

Members of the H&H group continue to participate in meetings of the other TWGs to coordinate activities and foster communication.

4. 9 Plan Formulation and Evaluation TWG

Share Vision Model

The Plan Formulation and Evaluation and Technical Working Group have completed the development of the mock Shared Vision Model. The Performance Indicators and Interest Satisfaction curves that are currently incorporated into the Shared Vision model are being re-submitted to the TWGs for review and update. This is being done to assist in the development of the final Shared Vision Model and aid in the formulation of new plans.

Interest Satisfaction Model

Members of this group have recently completed the development of an Interest Satisfaction Plan Formulator and Evaluator. It allows the user to optimize a plan for different geographic areas, as well as for particular interest groups. The IS model also allows the user to experiment with ranking alternatives according to how well the plans satisfy each and all of the interests. This provides a valuable introduction to the decision support process, which will inevitably be an iterative and challenging task.

Liaison with TWGs

Since June 2002, the PFEG has been holding semi-monthly conference calls with the TWGs. These calls provide an open forum for discussions regarding the PFEG process, economic evaluation issues, actions required by the TWGs, and general discussions pertaining to the studies being conducted by the TWGs. It was noted that there existed various approaches to the TWG studies, with respect to economic analyses and evaluations. To assess these differences, the PFEG developed an economic strategy questionnaire, and requested each TWG to consider the economic approaches being used (if any) in their specific studies.

A report summarizing the economic approaches will be developed and forwarded for review.

Economic Advisory Committee

The issues of incorporating economic analyses into the process of assessing impacts on the various interests and evaluating plans have been raised. Due to the nature of the diverse TWGs, there are various opinions on how economic impacts can be fairly and objectively assessed for plan evaluation. PFEG developed an economic questionnaire for the TWGs – all but Hydropower and M&I have responded. PFEG has developed a summary of the responses to date and is developing a first draft Evaluation Methods Standards document. PFEG has also been tasked with establishing an Economics Advisory Committee by the Fall 2002, to provide expert advice on the role of economic analyses in plan evaluation.

5. COMMUNICATIONS

Communication activities continued throughout the reporting period, with the full commitment and support of the Board to reach the public, provide timely information and obtain regular feedback.

The ad hoc communications team actively worked to develop study contacts throughout this period. A draft communications strategy for the remainder of the study has been developed and is currently under review by the PIAG and other study participants. Collaboration between the communications team and the Common Data group is also underway.

The second edition of the study newsletter, *Ripple Effects*, was released in April 2002. It was mailed to approximately 1,096 U.S. and 1,700 Canadian recipients, in addition to copies distributed to the Commission and all Study participants. Further, the newsletter was widely publicized, including an announcement on the Study website, an electronic notice to the Study user group (RippleEffects-EauxCourantes group) and posting on the Great Lakes Information Network (GLIN) listserve. Announcements were also posted in the LevelNEWS and water level bulletins distributed by the U.S. Army Corps of Engineers, Detroit District and Environment Canada.

Outreach efforts at the North Coast Conference sponsored by the Center for Environmental Information in Rochester, New York, added 59 addresses to the study database. A news release was developed and distributed to support the marina survey conducted in the U.S. during the summer of 2002.

Assistance was provided to both the PIAG and the Study Board in development of their Year 1 reports, including a communications plan for the release. Announcements of the reports were posted to the Great Lakes Information

Network (GLIN) listserv, IJC announce listserv and the RippleEffects-EauxCourantes group. In the U.S., both reports were mailed to 119 elected officials, 117 media outlets, 88 libraries and 61 study participants. Libraries in the U.S. were also sent copies of the first two newsletters to provide a place for easier public access to Study information. A news release was placed on the wire to media outlets in New York State, Ontario and Quebec, resulting in three written articles about the Study and one radio interview in Canada and 3 written articles about the Study and 1 radio interview in the U.S. Postcards were sent to 975 citizen's addresses in the U.S. announcing the availability of the reports, including an option to request a printed copy of the reports. Requests for the reports received through August 30 totaled 226 from that postcard mailing.

The Study's website, www.losl.org was re-designed to accommodate new Study developments and information, including a library of completed Technical Work Group reports, the Year 1 Reports, an image gallery, and an organized list of additional resources. A new Study web logo was designed and will be used in a campaign to engage other agencies in advertising our website.

A roundtable and an evening public meeting were held in Sackets Harbor on 8 August 2002. Personal invitation letters were extended to 55 people for the round table meeting. Postcard invitations for the evening meeting were sent to all New York State mailing addresses in the database. Advertisements announcing the evening meeting were developed and placed in 25 newspapers. Eleven posters were distributed and news releases were distributed to 49 media outlets in the area surrounding Sackets Harbor.

Publicity efforts were coordinated with the International St. Lawrence River Board of Control communications team for the joint public meeting held in Ogdensburg, NY on 19 September 2002. Invitation postcards were mailed to 1207 New York State addresses from the database. A news release was distributed announcing the joint meeting and 56 posters were distributed in surrounding communities.

Work is being done for the third edition of *Ripple Effects*.

6. BUDGETS AND TIMELINES

Both the Canadian and U.S. Sections of the Board were guided by the Year-2 budget, which was formulated during the 13-14 March 2002 meeting held in Quebec City. The table below gives the year-2 budget and the distribution among the various Study groups. For comparison purposes, the table also gives the amounts and distribution among the various Study activities as they were initially estimated in the Plan of Study (POS) of 1999.

Year-2 Budget: U.S. and Canadian *($'s shown are in each country's respective currency)*				
GROUP	POS Canadian	POS US	Budget Canadian	Budget US
H & H	295,000	215,000	436,000	110,000
Coastal	1,130,000	1,030,000	500,000	1,236,000
Common Data	0	0	650,000	549,000
Rec-Boating	180,000	180,000	291,000	193,000
Power	0	0	0	0
Water Uses	124,000	79,000	70,000	50,000
Commercial Nav.	396,000	73,000	325,000	0
Environment	955,000	540,000	982,000	454,000
Plan F&E			100,000	150,000
PIAG & Communication	340,000	270,000	182,600	146,000
Study Management (IJC and Secretariat)	250,000	250,000	470,000	300,000
TOTAL	3,670,000	2,637,000	4,006,600	3,188,000

The Board expects to conduct the identified studies and all other information gathering and communication activities within the approved funding limits. While some variations from the initial Plan of Study estimates have taken place, the Board fully expects to deliver its mandate consistent with the intent of the Plan of Study.

Respectfully submitted,

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DOUGLAS CUTHBERT Canadian Co-Director	EUGENE STAKHIV U.S. Co-Director
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HENRY LICKERS	SANDRA LeBARRON
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ELAINE KENNEDY	JAMES SNYDER
_____	_____
STEVEN RENZETTI	DANIEL BARLETTA
_____	_____
ED ERYUZLU Canadian General Manager	ANTHONY EBERHARDT U.S. General Manager

Attachment 1

Attendance at Board Meetings

13-14 March 2002 - Quebec City

Doug Cuthbert
Lynn Cleary;
Andre Carpentier
Ed Eryuzlu
Eugene Stakhiv
Frank Quinn
Tony Eberhardt

9-10 May 2002 – St. Catharines, Ontario

Doug Cuthbert
Steven Renzetti
Andre Carpentier
Fred Parkinson
Ian Crawford
Ed Eryuzlu
Eugene Stakhiv
Sandra LeBarron
Dalton Foster
Tony Eberhardt

19-20 September 2002 – Ogdensburg, New York

Attachment 2:

List of Technical Working Groups and Board / PIAG Liaisons

(Note: Four members are proposed: Mr. St-Martin to be added as the Canadian Lead of the RecBoating TWG and Mr. King-Fisher, Mr. Plante and Ms. Lee as members of the PF&E group, subject to IJC concurrence).

COASTAL PROCESSES		
Last Name	**First Name**	**Remarks**
BENDER	**Tom**	**US Lead, USACE, Buffalo, NY**
POPE	Joan	USACE, ERDC
BONNANO	Sandra	TNC
ELLSWORTH	Joanne	Niagara County Planning, Lockport, NY
WOODROW	Donald	Hobart & William Smith, Menlo Park, CA
O'NEILL	Chuck	SUNY College, Brockport
SHEARER	Robert	NYSDEC
THIEME	Scott	USACE, Detroit
MOULTON	**Ralph**	**Canadian Lead, EC, Ontario**
LABUDA	Teresa	HALTON Conservation
RONDEAU	Bernard	EC, CSL - Montreal
CANTIN	Jean-François	EC, Quebec Region
BOYD	Ala	MNR, Ont.
SCIREMAMMANO	Frank	**BOARD LIAISON**
STEWART McKENNA HUDON FIELD	Henry Tony Marc Larry	**PIAG CONTACT**

COMMERCIAL NAVIGATION		
Last Name	**First Name**	**Remarks**
HABERLY	**Roger**	**US Lead, USACE, Buffalo**
LAVIGNE	Thomas	SLSDC, Massena
ROBINSON	Dennis	USACE
LANTZ	**Ivan**	**Canadian Lead, Shipping Fed., Montreal**
DUMONT	Stéphane	Canadian Coast Guard, Quebec
VINCELLI	Pat	Cnd Seaway
BÉDARD	Jean-Luc	Port of Montreal
D'AGNOLO	Flavio	CCG –Nav. Services
ERYUZLU	Ed	**BOARD LIAISON**
LANGEVIN McAUSLAN HUDON TURGEON	Anjuna Tom Marc Michel	**PIAG CONTACT**

Attachment 2: (Continued)

ENVIRONMENT		
Last Name	**First Name**	**Remarks**
HAYNES	James	SUNY College, Brockport
BONANNO	Sandra	TNC
SCHIAVONE	Albert	NYSDEC
WILCOX	Douglas	USGS
LAPAN	Steve	NYSDEC
MASON	Doran	GLERL
ATKINSON	**Joseph**	**US Lead, U of Buffalo**
DAVIS	Jack	USACE, ERDC
MANNO	Jack	SUNY-ESF
RANSOM	Jim	Akwesasne Mohawk Terr.
HUDON	Christiane	EC, CSL
DE LAFONTAINE	Yves	EC, CSL Montreal
LEHOUX	Denis	EC, CSL Montreal
MINGELBIER	Marc	Faune & Parc, Quebec
PATTERSON	Nancy	Cdn Wildlife Services
STEWART	Tom	Ont MNR
MINNS	Ken	DFO, Burlington
BARKO	John	USACE, Vicksburg, Miss.
LeBARRON STAKHIV CUTHBERT CLEARY	Sandra Eugene Doug Lynn	**BOARD LIAISON**
CARPENTER HALL HUDON LAWN WEISS	Bruce John Marc Sandra Stephanie	**PIAG CONTACT**

Attachment 2: (Continued)

POWER GENERATION		
Last Name	**First Name**	**Remarks**
CHING	John	OPG
LAVEAN	Cindy	NYPA
ROBERT	**Sylvain**	**Canadian Lead, H. Que.**
FENLON	Brian	NYSDEC
FINNEGAN	**Paul**	**US Lead, NYPA**
CRAWFORD	Ian	**BOARD LIAISON**
LUSSIER TRIPOLI	Marcel Scott	**PIAG CONTACT**

HYDROLOGY & HYDRAULIC MODELING		
Last Name	**First Name**	**Remarks**
CROLEY	**Thomas**	**US Lead, GLERL**
SHEN	Hung Tao	Clarkson University
YU	Paul	USACE, Buffalo
WERICK	Bill	USACE, IWR
FAY	**David**	**Canadian Lead, EC Ontario**
BELLEMARE	Jean-François	Min Env Que
FAGHERAZZI	Laura	Hydro Quebec
KLAASSEN	Joan	EC, Ontario
MORIN	Jean	EC, CSL Montreal
MORTSCH	Linda	EC, Ont. Region
MOIN	Syed	EC, Ont. Region
LEE	Debbie	USACE, Buffalo, NY
LOUCKS CARPENTIER QUINN	Pete Andre Frank	**BOARD LIAISON**
KENNEDY	Elaine	**PIAG CONTACT**

Attachment 2: (Continued)

WATER USES		
Last Name	**First Name**	**Remarks**
STREPELIS	John	NYSDOH
SHOEMAKER	Clarence	NYSDEC
GOULD	Steven	Monroe County
GAGNON	Christian	EC, CSL
KAYE	Brian	MOE,Ont.
PELOQUIN	Denis	Montreal Metropolitan C.
		BOARD LIAISON
LUCSIER GAGNE	Marcel Michel	**PIAG CONTACT**

RECREATIONAL BOATING		
Last Name	**First Name**	**Remarks**
BROWN	**Jonathan**	**US Lead, USACE, Buffalo**
WHITE	David	SUNY College @ Oswego
DEYOUNG	Gary	1000 Islands
BURNS	Rockne	Cape Vincent, NY
ST-MARTIN	**Serge**	**Proposed Canadian Lead, Private, Quebec**
BIBEAULT	Jean-François	EC –Quebec Region (CSL)
DONALDSON	Al	Ont. Marina Owners Asso
PETITPAS	Robert	Cnd Coast Guard, Auxiliary
ORR	David	1000-Islands
DIKE	Jim	Council of Commodores, Ontario
BROWN	Tommy L.	Cornell U., Ithaca
		BOARD LIAISON
McAUSLAN LAWN WEBB	Tom Sandra Paul	**PIAG CONTACT**

Attachment 2: (Continued)

COMMON DATA NEEDS		
Last Name	**First Name**	**Remarks**
GAUTHIER	**Roger**	**US Lead, USACE, Detroit**
MURAWSKI	Paul	USACE, Buffalo
POPE	Joan	USACE, ERDC
GILLESPIE	**Ian**	**Canadian Lead, EC**
KENNY	Frank	Ontario MNR
CANTIN	Jean-Francois	EC, Quebec Region

PLAN FORMULATION AND EVALUATION		
WERICK	**Bill**	**US Lead, USACE**
FAY	David	EC, Ontario Region
LEGER	**Wendy**	**Canadian Lead, EC Ontario Region**
EBERHARDT	Tony	U.S. GM
KING-FISHER	Paul	(Proposed) MNR, Ontario
LEE	Debbie	(Proposed) USACE, Lakes & Rivers Division
PLANTE	Andre	(Proposed) EC, Quebec Region
CARPENTIER LOUCKS	Andre Pete	**BOARD LIAISON**