# Ripple Effects

*Volume 8, May 2004*

## Contents



*Dear Friend of Lake Ontario and the St. Lawrence River,*

*The Public Interest Advisory Group (PIAG) recently spent two days in Toronto with the rest of the Study* Team working with the Plan Formulation and Evaluation Group. We practiced the decision process for evaluating and choosing alternative regulation plans using shared vision planning. Shared vision planning and the Shared Vision Model are the main focus of this volume of Ripple Effects (see "The History of Shared Vision Planning", p. 2, for background information).*

*Once again, the PIAG would like to thank all of the people who submitted comments and concerns regarding the Study's performance indicators. Your suggestions are important to the Study and are currently being considered by the Technical Work Groups. Our next volume of Ripple Effects will contain an article regarding your performance indicator suggestions.*

*Our summer meeting schedule is listed below. We are firming up the locations now and will have more information to you in the next volume of Ripple Effects and also on the Study website at **www.losl.org**. It is our goal to identify flow regulation criteria that best serve all interests, and that are widely accepted by all interests, while considering the climatic conditions in the basin. We hope you will be able to attend to provide us with your input regarding our methods of developing alternative plans!*

| Date | U.S. | Canada |
|---|---|---|
| Thursday, August 12, 2004 | | Cornwall Island |
| Wednesday, August 18, 2004 | Massena | Grimsby |
| Thursday, August 19, 2004 | Alexandria Bay | Toronto |
| Wednesday, September 1, 2004 | Henderson | Belleville |
| Thursday, September 2, 2004 | Oswego | Gananoque |
| Wednesday, September 15, 2004 | North Rose | Cornwall |
| Thursday, September 16, 2004 | Greece | Montreal |
| Friday, September 17, 2004 | Olcott | Sorel |

*If you have not already done so and would like to reserve your copy of the Study's Year Three Report (available in the summer of 2004) please fill out and mail us the tear-out sheet on the back page of this volume.*

*Sincerely,*

*Dan Barletta, D.D.S.*
*U.S. Lead*
*Public Interest Advisory Group*

*Marcel Lussier*
*Canadian Lead*
*Public Interest Advisory Group*

*The International Lake Ontario-St. Lawrence River Study was set in motion in December 2000 by the International Joint Commission to assess and evaluate the Commission's Order of Approval used to regulate outflows from Lake Ontario through the St. Lawrence River. The Study is evaluating the impacts of changing water levels on shoreline communities, domestic and industrial water uses, commercial navigation, hydropower production, the environment, and recreational boating and tourism. The Study will also take into account the forecasted effects of climate change.

The Public Interest Advisory Group is a volunteer group appointed by the International Joint Commission to ensure effective communication between the public and the International Lake Ontario-St. Lawrence River Study Team. This newsletter is published by the Public Interest Advisory Group to help keep you informed about the Study.

# The History of Shared Vision Planning

***By Pete Loucks, Study Board, and William J. Werick, Co-Lead, Plan Formulation and Evaluation Group***

A major feature of the current Lake Ontario-St. Lawrence River Study is that it includes many stakeholders representing such interests as municipal and industrial consumers of water, land owners who are concerned about flooding and shore erosion, recreational boaters, shippers who use the system for navigation, power companies producing hydropower, and numerous groups desiring improvements in water quality and the health of the basin's ecosystems. Each interest group has its own objectives, interests and agendas, and some of these may be in conflict. The decision-making process will require reliable information, negotiation and compromise. This takes time, but from it can come decisions that have the best chance of being considered the right decisions by most participants. Computer models can assist in this process of reaching a common understanding and agreement among different stakeholders. This has a greater chance of happening if the stakeholders themselves are involved in the modeling process.

Involving stakeholders in model building accomplishes a number of things. It gives them a feeling of ownership. They will have a much better understanding of just what their model can do and what it cannot do. If they are involved in model building, they will know the assumptions built into their model. Otherwise they are not sure, and hence may not really trust or be able to fully evaluate the model results.

In addition, just the process of model development by numerous stakeholders can create discussions that can lead toward a better understanding of everyone's interests and concerns.

*Through such a model building exercise, it is possible those involved will reach not only a better understanding of everyone's concerns, but also a common or 'shared' vision of at least how their system (as represented by their model, of course) works.*

In the early part of the twentieth century, large water projects were designed without significant public involvement. By the 1960's, it was not unusual for water agencies to hold formal meetings with the general public just before completing their plans. Today, the preferred form of public involvement involves the solicitation of opinion and involvement in decision making from the beginning of the planning process.

In the mid 1970's, researchers at the International Institute of Applied Systems Analysis near Vienna, Austria, and at Cornell University began developing and using interactive graphics-based modeling of river basin systems as a way to better manage and communicate model input and output. In one exercise, various agencies responsible and interested in the operation of New York City's reservoirs in the Delaware River Basin could input functions that defined their operating policies, simulate those policies using the record of historical flows, and watch the values of various performance indicators change over time. They claimed to have gained a much better understanding of the impact of various policy changes using such tools, even after having been involved in the operation of those reservoirs for years.

In another example, and without the use of graphics, John's Hopkins University researchers, in the late 1970's, developed and used a simple simulation model in a gaming exercise in which representatives from water supply agencies in the Washington, D.C. area pretended to represent each other's positions. The exercise not only demonstrated how they could improve the reliability of their individual systems by joint operation, it convinced them to do it. These efforts were carried out before the age of personal computers.

**PIAG members Henry Stewart from Rochester, New York, John Hall from Burlington, Ontario, and Sandra Lawn from Prescott, Ontario, represent different interests of the Lake-Ontario St. Lawrence River system at a workshop in Toronto in March 2004.**

*Photo - Arleen Kreusch*

Fast forward to 1989. On the heels of severe droughts in much of the west, southeast and the Missouri-Mississippi Valley of the United States, the Corps of Engineers began the "National Drought Study" to find a better way to manage water for drought. After a year of study and collaboration with the many groups focused on drought that year, the Corps proposed a drought preparedness method and applied it in test cases around the country. It required planners to find out what criteria decision makers and stakeholders would use in accepting or rejecting a drought plan, and then develop metrics so that each alternative could be evaluated according to those criteria.

In 1991, Richard Palmer, a Civil Engineering professor at the University of Washington, attended a workshop of the Cedar and Green River Case Study in Seattle. There he proposed that the Corps develop system simulation models in each test case, and showed how the models could be built with stakeholders and decision makers. Each of the five case study managers agreed to do so, although they were not allowed any increase in budget or time for what might appear to be an "extra" task. At the time, Palmer was using software called STELLA®, which made it easier to create models that could be understood by non-modelers because the functional relationships were diagrammed as they were mathematically defined. Stakeholders could literally see the factors that affected any variable. Reservoir systems appeared as a series of boxes connected by flows.

Two of the five planning efforts convinced people to manage water differently. In two other case studies, the participants

*(continued on page 3)*

# The History of Shared Vision Planning (continued)

built good models that improved understanding of how the water system worked and demonstrated the soundness of ideas that probably would have been implemented without the models. In the fifth case, the modelers failed to build a good model, and the study had no effect on decision makers. During the National Drought Study, this planning approach was called the "DPS Method" (Drought Preparedness Study). Brian Mar, a University of Washington professor, suggested a different label that was more descriptive and reflected the fact that the process would be useful for other topics than drought management. Based on his suggestion, the Corps named this combination of systems-based planning, advanced public involvement, and stakeholder built models "Shared Vision Planning." The models were called shared vision models.

Since that time, the approach has been adapted for use in a variety of water resource management planning studies, all characterized by water conflicts. In addition to STELLA®, a variety of data-driven interactive graphics-based computer programs specifically designed for river basin planning and management have been built, mainly in Australia, Europe, Russia and North America. AQUATOOL (Andreu et al., 1991), RIBASIM (DHL, 1998), MIKE-BASIN (DHI, 1997) and WEAP (Raskin et al., 2001) are representative of these interactive river-aquifer simulation programs. They allow people who are not modelers to define the system to be simulated, input the appropriate data at the level of detail desired, formulate their own management alternatives, (e.g., for individual and multiple reservoirs, diversions, wastewater treatment, aquifer pumping and artificial recharge) and display the results in various meaningful ways.

The Lake Ontario-St. Lawrence River Study has adopted shared vision planning and a STELLA®-based shared vision model to aid in their development of alternative water-regulation plans. It is very likely no new water management policy will be identified that will satisfy all users all of the time; however, with shared vision planning, the Study Board hopes to find plans that all stakeholders perceive to be the best that can be achieved with respect to all interests.

# Does the Environment Have a Price Tag? Challenges Facing the Environment Technical Work Group

***By Michelle Tracy, Study Staff***

How will changes in water levels affect muskrat habitats? Northern pike spawning? The proliferation of purple loosestrife? The health of cattails? The food supply of migratory ducks? The Environmental Technical Work Group (TWG) for the Lake Ontario-St. Lawrence River Study is tasked with answering these types of questions and then making sure that the answers can be used by the people making the decisions about possible new regulation plans.

This means that the ways water levels affect muskrats and cattails have to be translated into numbers that can be incorporated into the Shared Vision Model that all of the Technical Work Groups are using. The Shared Vision Model is a computer model that is taking data from the Technical Work Groups and showing decision-makers what kinds of effects proposed regulation plans will have on various interests.

While the other Technical Work Groups are putting their data in economic terms (i.e., costs to marinas, costs of replacement power, costs of lighter shipping loads, costs of extra water treatment, costs to landowners due to erosion, etc.), the Environmental TWG is faced with the obvious challenge that the loss of muskrat habitats or fish spawning grounds doesn't come with an easy-to-read price tag. While some effects on the

*(continued on page 4)*


**Scientists doing fieldwork at Parrott's Bay for the Environmental Technical Work Group.**

*Photo - Canadian Wildlife Service*

# Does the Environment Have a Price Tag? (continued)

environment can be measured in monetary terms (i.e., revenue loss to commercial fishing), many of Mother Nature's ecological priorities are not easily nor fairly translated into prices.

Given these difficulties, then, how is the Environmental TWG going to ensure that its data are weighted equally with data from the other groups? Environmental TWG's proposed method is to assess water-level regulation plans based on adverse impacts to the environment.

This means that the environment experts would make a series of decisions (based on data and experience) about impacts: If they consider the impacts to be a) adverse, b) significant, and c) likely, then a regulation plan would not score as highly.

By using this method, members of the Environmental TWG can get around not being able to put a price tag on things like biodiversity, but still weigh impacts according to severity.

**Spotted turtle at South Colwell Pond.**

*Photo - Canadian Wildlife Service*

**A bird's-eye view of Parrott's Bay, near Kingston, Ontario.**

*Photo - Canadian Wildlife Service*

Some members of the Study Team are concerned, however, that by not putting the environmental data into economic terms, the Environmental TWG is trying to mix apples and oranges. It still remains to be decided exactly how the environmental data will feed into the decision-makers' Shared Vision Model. But while some details still need to be ironed out, Christiane Hudon of the Environmental TWG praises the IJC for putting the environment on the agenda at all. In the past, she says, the environment was not even considered:

"And now the tendency has been reversed, we are much more conscious of the environment, and the desire on the part of the IJC to involve the environment as one of the stakeholders in determining the new regulation plan, that's audacious, that's really courageous, and it's really complex."

**A bird's-eye view of Lake St-Pierre.**

*Photo - Christiane Hudon*

www.losl.org

**Zizania, a type of wild rice growing in the Berthier-Sorel Archipelago.**

*Photo - Christiane Hudon*

# The Next Step in the Decision Process: Working Towards Tradeoffs

***By Wendy Leger and William J. Werick, Plan Formulation and Evaluation Group Co-Leads***

Over the winter months, the Technical Work Groups (TWGs) supplied the Plan Formulation and Evaluation Group (PFEG) with some of the performance indicator (PI) functions to be used in the Shared Vision Model. These PI functions describe the complex relationship between something of importance to society (e.g., hydropower costs) and water levels and flows[1]. The PFEG is taking the PI functions from all the TWGs and incorporating them into the Shared Vision Model so that all PIs can be evaluated using the same model.

The regulation plans themselves are also being developed within the Shared Vision Model. The PFEG has put together a team of people made up of TWG members and the Study Board to begin developing alternative regulation plans. Plans are generally made up of a set of rules that specify how much water should be released based on how high the Lake is. These releases are adjusted based on forecasts of how much water is going to flow into the system. Limits are then applied to the adjusted releases to avoid flooding or extreme low water conditions.

Early in February, the Plan Formulation Team went through a week-long training session together to learn how to use the Shared Vision Model and to begin formulating plans. The first plans developed by this team were evaluated at the March workshop. If you have ideas about a new regulation plan, PFEG would like to hear them. You can reach the PFEG by contacting the communication representative in your country listed on page 10.

The Study Board, however, needs to do more than just evaluate plans and criteria: it needs to compare the evaluation results and see which mix of outcomes it prefers. It is almost certain that no plan will outperform all others for each objective, so the Board will have to trade performance towards one objective for performance towards another. The Board will have to develop "decision factors," based on its Guidelines (see *Ripple Effects,* Volume 7, p. 2). For example, the degree to which a plan meets the guideline that criteria and regulation plans will be environmentally sustainable and respect the integrity of the Lake Ontario-St. Lawrence System ecosystem will be measured primarily on the environmental performance indicator scores for that plan. But which performance indicators are most indicative of sustainability? What tradeoffs between biodiversity on the Lake and biodiversity on the River are acceptable, if any? The search for answers will force us not only to improve regulation plans, but to refine our objectives.

**With the Shared Vision Model, recreational boaters and riparians, such as those on Irondequoit Bay, will have a say in new water regulation plans.**

*Photo - Tony Eberhardt*

This phenomenon is often illustrated with an analogy of car buying. Evaluation of alternatives produces performance scores such as the ones below in Table 1.

The evaluation data do not point to one inarguable choice. How important is acceleration compared to cost? How important is the fact that Car C has the lowest theft rate? Just as the car buyer might look for a Car D that makes fewer compromises between performance and cost, we may use the Shared Vision Model to try to design a plan that avoids certain conflicts between interests.

The PFEG is working with experts to design a tradeoff process that is customized to the needs of this Study – a process that can take full advantage of the power of the Shared Vision Model, allowing planners to change plans and re-evaluate them within hours or even minutes. This means that new plans can be created that will reduce the need for tradeoffs.

In Toronto in March 2004, the Study held its second practice-decision workshop. Thanks to the work of the TWGs this winter, and a result of requests from the September 2003 decision workshop, the Board members were able to work with refined and prioritized hydrologic criteria, which were shown geographically. The Board also had better regulation plans to evaluate. Most importantly, Board members were able to make a more meaningful decision as

*(continued on page 6)*

## Table 1: Car Performance

| Alternative | Objective: Satisfying performance | | Objective: Minimize costs | |
|---|---|---|---|---|
| **Performance Indicator** | **0-60 time** | **Reliability** | **Life cycle cost** | **Theft rate** |
| **Car A** | 8.5 seconds | Well above average | $0.56 per mile /km | 0.02% |
| **Car B** | 7.4 seconds | Below average | $0.86 per mile /km | 0.01% |
| **Car C** | 11 seconds | Average | $0.46 per mile /km | 0.0005% |

[1] For example, the Coastal TWG has a performance indicator for economic losses due to erosion. What we have learned from the Coastal Group, however, is that erosion damages are not simply caused by water levels. Accordingly, the performance indicator in the Shared Vision Model takes into account things like the shoreline type (rock, bluff, beach etc.), wave energy and the angle at which that energy hits the shoreline, historical recession rates, bottom type (rock, mud, sand, gravel etc.), whether existing shoreline protection exists, the size of the property, and how close a structure is to a shoreline.

# The Next Step in the Decision Process: Working Towards Tradeoffs (continued)

they were able to use the results of a few of the performance indicators, some of which the public had contributed.

The practice-decision workshop helped the Study Board members identify the types of additional information they would need in order to make their decisions.

The concepts of the tradeoff process were introduced at the March workshop, and the Study Board will continue to refine their decision-making until the final decision workshop in March 2005.

# PFEG Workshop

*Members of PFEG met with Technical Work Group (TWG) co-leads in Buffalo, New York, in October 2003. The TWGs represent the major stakeholder interests around the basin, and PFEG is working with them to develop alternative regulation plans that best serve the wide range of affected interests.*

**From L to R: Paul Yu, Hydrologic and Hydraulic TWG; Ed Eryuzlu, Canadian General Manager; and Tony Eberhardt, U.S. General Manager.**

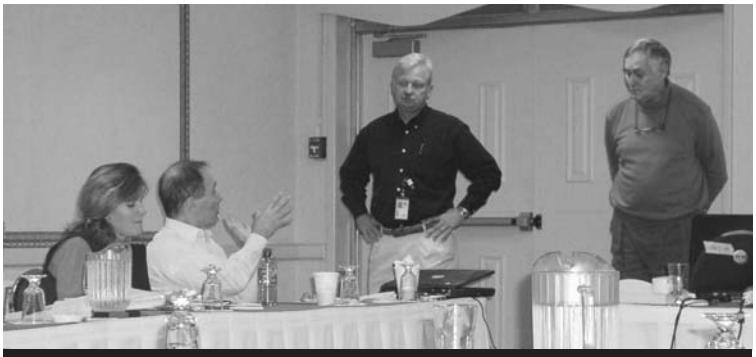
*Photo - Arleen Kreusch*

**From L to R: John Osinski, U.S. Co-Lead, Hydroelectric Power TWG; John Ching, Hydroelectric Power TWG; and Scott Tripoli, Public Interest Advisory Group.**

*Photo - Arleen Kreusch*

**Roger Haberly, U.S. Co-Lead, Commercial Navigation TWG.**

*Photo - Arleen Kreusch*



**From L to R: Wendy Leger, Canadian Co-Lead, PFEG; Bill Werick, U.S. Co-Lead, PFEG; Jon Brown, U.S. Co-Lead, Recreational Boating TWG; and Serge St-Martin, Canadian Co-Lead, Recreational Boating TWG.**

*Photo - Arleen Kreusch*

# Study Meeting in Kahnawake *By Michelle Tracy, Study Staff*

On November 20, 2003, members of the Study Team met with Chiefs from the Mohawk Council of Kahnawake (MCK), and representatives from the MCK's Environment Office and the general community.

**Chief Eugene Montour of the Mohawk Council of Kahnawake.**

*Photo - Michelle Tracy*

The meeting involved introductions, brief opening remarks by both Tom McAuley, IJC liaison, Canada, and Elaine Kennedy, PIAG member, and then two short but informative presentations by Christiane Hudon of the Environmental Technical Work Group and Jean Morin of both Environmental and Hydologic & Hydraulic Technical Work Groups. Christiane's presentation focussed on the impacts of changing water levels on ecology of Lac St. Louis. Jean showed images and graphs of past water levels and flows on Lac St. Louis, specifically in the Kahnawake area. He also showed an image of projected levels based on very low water supplies.

After the presentations, a dialogue ensued about the impacts of water-level regulation on the Kahnawake community.

## The Seaway

Much of the initial discussion focused on the impacts of the Seaway, including a concern that the Study was gathering information for the project to further widen the Seaway. Participants were assured that our Study is separate from the Seaway Navigation Study. Prior to the Seaway construction, people depended on the St. Lawrence River for fishing, washing clothes, swimming and other community activities. The word "Kahnawake" reflects this reality, as it means "swiftly moving currents which we depend on daily for our survival."

Once the Seaway was built, people were cut off from living off the River. According to members of the Kahnawake community, impacts were numerous, including a change in diet and a subsequent increase in diabetes-related illnesses and cancers. Neighbouring marshland was destroyed, which affected populations of pike, carp and muskrats. Elders now speak of "pipes floating in the water" (the ships). The River had been a place for family activities, and one community member remembered washtubs, clothes drying in the sun, a pot of soup cooking; others remembered swimming in the St. Lawrence.

Chief Tiorahkwathe questioned the notion of "progress," which to him was equivalent to a short-term right leading to a long-term wrong.

## Environment

There were concerns about water quality, as it affects both fish, especially sturgeon spawning beds downstream, and drinking water, as well as contaminated sediment, especially near the Onake Paddling Club, where children play.

There were conflicting reports about the numbers of ducks and herons. One person reported seeing less and less of them, while others reported seeing a return of herons and mallards, especially near the marina. Ecologists have even found mating egrets along the Seaway wall.

There were concerns about the spraying for the West Nile Virus, which is affecting pike, muskrats, turtles, ducks and cranes. There were also concerns about increasing zebra mussels.

Christiane Hudon suggested that an increase in herons could be due to a decrease in chemical pollutants, as toxins make heron eggs brittle.

Jean Morin brought up the influence of the Châteauguay River, in terms of contributing agricultural chemicals and sediment accumulation into the bay near Kahnawake. This area has significantly slower currents compared to the pre-Seaway period, which favour fine sediment accumulation.

On the subject of zebra mussels, both Christiane and Jean Morin agreed that when water is slow, low and warm, chances are that there will be more mussels than there used to be.

**From L to R: Christiane Hudon, Environment TWG; Jean Morin, Hydrologic and Hydraulic TWG; Eva Johnson, Mohawk Council of Kahnawake, Dept. of Environment; and Chief Tiorahkwathe of the Mohawk Council of Kahnawake.**

*Photo - Michelle Tracy*

## Drinking Water

The Kahnawake water treatment facilities are upstream of the community. A pipe goes under the Seaway into the main part of the St. Lawrence River. In Kahnawake, 1700 homes use the water infrastructure, while 200 homes use wells. There were concerns about water levels over intake pipes, water levels as they affect water quality, and the amounts of chlorine needed to treat the water at the purification facilities.

*(continued on page 8)*

# Study Meeting in Kahnawake (continued)

## Recreational Boating

Since 1999 water levels have been exceptionally low around Kahnawake's marina, which houses the Onake Paddling Club, as well as private boats. According to Serge St-Martin, Recreational Boating TWG Canadian Lead, one of the Study's criteria should be that water levels are high enough in October for people to pull their boats out of the water. However, as early as August, there was only one foot of water in the bay behind the Seaway channel. Different people mentioned that they can practically walk across to nearby islands, and that they're seeing rocks they've never seen before near the marina.

One person wanted to know if it would be possible to have some machines come in and cut the weeds in the water at the marina. This, however, was deemed to be expensive and inefficient, as the weeds would grow back quickly.

**Satellite view of St. Lawrence River flowing from the Beauharnois dam (bottom left) to Lake St. Louis and Kahnawake (upper right, southern shore).**

*Photo - Meterological Service of Canada*

Chief Eugene Montour wanted to know if it would be possible, through the Study, to lobby people to bring more water down the River. Elaine Kennedy replied that the Study was gathering information about desired water levels from people both upstream and downstream of the Moses-Saunders Dam. She underlined that one of the goals of the Study was to try to improve things for everybody, but that it wouldn't be possible to please everybody all of the time.

## The Science Behind the Study

***By Elaine Kennedy, Public Interest Advisory Group***

Do you know how the water levels in Lake Ontario and the St. Lawrence River affect our environment? Will climate change affect future generation of hydroelectric power? How much do we know about pesticides and their affect on our water?

These are just a small sample of the questions that will be dicussed at the upcoming conference in Cornwall Ontario. On May 18,19,20, 2004, the 11th Annual International Conference on the St. Lawrence River Ecosystem, hosted by the St. Lawrence River Institute of Environmental Sciences in partnership with the Mohawk Council of Akwesasne, will again be held at the NavCanada Conference Centre.

This year's theme will be "Managing Our Waters: The Great Lakes/St. Lawrence River Ecosystems. The impacts of water level changes: past, present and future." If you use your imagination, you can guess at the range of topics that can be addressed at such a conference.

Scientists from all over North America and beyond, will explore this topic and open our eyes to their investigations. Many of the key research projects from our Lake Ontario-St. Lawrence River Study will be highlighted.

Come and join us and learn about water, water, water. For more information, check out **www.riverinstitute.com**.

# Study Announcements

The Study Board welcomes **Luc Lefebvre** of the St. Lawrence Seaway Management Corp. as the **new Canadian Co-Lead of the Commercial Navigation Technical Work Group**. Luc Lefebvre has an honors degree in Forestry from Lakehead University. He has worked for the St. Lawrence Seaway Management Corporation as Senior Operations Analyst and Manager for the Iroquois Canal, and is currently Chief, Operational Services. His interests are golf, carpentry, fishing and biking.

## Next Issue

- Abstracts from the St. Lawrence River Institute Conference
- The final schedule for the public meetings this summer
- Response to performance indicator suggestions

*Share Study News!*

Do you know someone who would be interested in this newsletter? If so, please pass it on!

## Contact Us

If you are interested in sharing your concerns about water levels in Lake Ontario and/or the St. Lawrence River, would like to receive more information about the Study, or would like to participate in one of our meetings, please contact the communication representative in your country.


### United States

**Arleen K. Kreusch**
Public Affairs Specialist
1776 Niagara Street
Buffalo, NY 14207-3199
Tel: (716) 879-4438
Fax: (716) 879-4486
arleen.k.kreusch@lrb01.usace.army.mil

### Canada

**Michelle Tracy**
Public Information Officer
234 Laurier Avenue West • 22nd Floor
Ottawa, ON K1P 6K6
Tel: (613) 992-5727
Fax: (613) 995-9644
tracym@ottawa.ijc.org


*Visit the Study website at:* ***www.losl.org***

1st fold here

Please
affix
first class
postage

International Lake Ontario-
St. Lawrence River Study Office
1776 Niagara Street
Buffalo, NY 14207

2nd fold here

Tape closed here

HELLO,

- ❑ *I am interested in receiving a printed copy of the Study's Year Three Report, which will be available in the summer of 2004.*
- ❑ *I am interested in receiving an electronic copy of the report on a CD.*
- ❑ *If the Shared Vision Model becomes available on CD, I would like a copy.*

My name and corrections, if any, to my mailing label are below.

Name: _____

Organization: _____

Address: _____

_____

_____

www.losl.org

Printed on recycled, Chlorine-free paper with soy-based inks

International Joint Commission
U.S. Secretariat Study Office
1776 Niagara Street
Buffalo, NY 14207