Summer 2004 Meeting Questions and Responses

By The Study Team

Study Board

New regulations will only be as good as the model that is tested. My concern is after implementation. Is there a follow-up plan to evaluate what has been done and to identify any gaps?

- *The Study has gathered a lot of strong scientific information and developed many different models.We will make recommendations to the IJC about how to keep the information alive after the Study to monitor how new plans fair. A follow-up plan will cost money to alleviate some of the gaps that are discovered along the way. Costs are a political issue. The system will not heal itself immediately.*

How are you going to ensure that the information you develop in the Study gets to the people that are affected?

- *We will ensure that final results and information generated by the Study are placed on the Study website and are available in hardcopy form to anyone who requests a copy. We have been and will continue to let people know that information is available through our newsletter, media relations, and at our public meetings and workshops.*

Social and cultural views of the River are important both to Aboriginal peoples and others. Can you take those factors into account in your Study?

- *Several meetings have taken place with First Nations to assure that their specific concerns about social and cultural factors are considered.*

What is the Study Board's response to the Edmonds Report?

- *That report is based on a 50-year history of water regulations and the institutions responsible for regulation during that time. Many of the issues raised in the report fall within the mandate and jurisdiction of the International Joint Commission (IJC) and possibly the International St. Lawrence River Board of Control. The report has been submitted to the IJC; more recently it was discussed with the IJC and the Study Board in a joint workshop.*

Will public input be sought regarding how the new plans should be managed?

- *Yes, the Study will hold extensive and basin-wide public meetings in the Summer of 2005. It is expected that similar public meetings will be held by the IJC in 2006. We are gathering input during presentations to interested groups when requested wherever feasible.*

Why are you including the Upper River with the Lake? The Upper River area has different problems than the Lake. Why are they included together?

- *Although they are discussed together, the more detailed evaluations consider them separately. We have reviewed our work on the Upper River with several experts in the area and have had very positive feedback on the work that has been done.*

What is your ability to regulate the Lake? How much control do you have?

- *We cannot completely control the level of the Lake since we can only control what goes out, not what comes in. The revised plan will attempt to manage the levels given revised acceptable outflows and estimates of possible inflows. We can't stop the very highs and we can't stop the very lows, but we can offset them a little with a robust plan. We want to avoid damage, but there is no way to keep the Lake or the River permanently at optimum levels, given the various water supply scenarios that naturally occur in the basin. Particularly during sustained wet or dry periods, our ability to regulate to the satisfaction of all stakeholders is extremely limited.*

What are you doing about abrupt changes? We want stability in the system.

- *This is a dynamic system. It is not always possible to maintain a stable water level. Our objective is to produce regulation options that minimize abrupt changes caused by Mother Nature, minimize abrupt flows and meet the needs of the various interests.*

Why can't more controls be put on the system to regulate it better?

- *Additional dams or control structures are not included in the mandate given to the Study by the International Joint Commission. Such structural changes are specifically not in the scope of the Study. In any case, additional structures might only complicate the regulation of an already complex system and governments would not*

approve such a structure because of the potential disruption and damage to the system. Such structures would likely not pass environmental assessments.

Do any interests have priority over other interests?

- *The intent of the Board is to provide net benefits to the affected interests without creating disproportionate harm to any one interest. Keep in mind that to gain improvements some tradeoffs might be necessary between the interests.*

Has the Study been in contact with the Great Lakes Governors regarding the diversion of water? How does water withdrawal relate to water levels?

- *That's a separate issue. The primary factor in supplies right now is Mother Nature. It is not within the scope of the Study to get involved with the discussions of water diversions from the system except to say that we hope and are working to ensure that whatever plan we have will be robust enough to handle both high and low water supplies based on current levels, flows and forecasts.*

Are you going to update the Department of Environmental Conservation and the Army Corps of Engineers regarding your findings and recommendations?

- *The Army Corps of Engineers is involved and the Department of Environmental Conservation (D.E.C.) is represented on the Study Board. The Study will update both agencies on anything related to their activities.*

What will the end result of the Study look like? How will it work?

- *The purpose of the Study is to formulate revised regulation plan options and criteria. Options are being developed and they will be the end result of the Study. The workings of the plan will be developed once the International Joint Commission selects an option.*

Is no loss to any faction an attainable goal?

- *At any one point you may have a loss. The idea is to reduce the losses and gain as many benefits as possible. It's a complicated issue, but there are many more interests being studied now than ever before. At this time, the scientists and engineers involved with the Study believe that a new plan can be developed that will be better for all stakeholders.*

We must consider lowering the water more in the winter so that when spring rain occurs we are not in a delicately high water situation already. Comments?

- *We have the research and information to model this idea and will do so. There will be a price to pay for the benefits of drawing the Lake down. The model will help to determine the tradeoffs that will be required and we will have to assess how much draw-down is reasonable in light of all interests. Winter drawdown is important in terms of fish production. Sometimes when winter ice forms at the wrong levels, there is a larger fish kill. In 1964 and 1965 large numbers of fish were found dead due to water levels.*

Coastal Processes Technical Work Group

Not only do we have to fight the forces of nature but regulatory bodies too. In the past, one could easily put in a groin or a load of concrete. Is any assistance available in terms of regulations and obtaining permits to protect shorelines?

- *This issue is beyond the scope of the Study, but meetings are planned in 2005 with regulatory agencies to demonstrate Study products that may help streamline the permitting process.*

What effects do storm surges have on the lakes?

- *Wind driven events can cause the lake levels to rise rapidly in one or more areas of the system. These are most common in the late fall and are factored into the Study's flood and erosion prediction system models.*

Regarding erosion in the Eastern Lake Ontario area, why have things been so bad with water levels since the 1930s?

- *Eastern Lake Ontario is a complex area. The supply of water into Lake Ontario has been much greater than in the early part of the 20th century. The eastern portion of*

Lake Ontario has therefore suffered more due to greater supply coming into the lake in comparison to the 1930s when the beaches were very wide. Shore protection also has a negative impact to the natural process of beach formation so it adds a dynamic complication.

We have built 100 feet back on the property but since the 1940s the shoreline continues to erode. Comments?

- *This is not uncommon. Erosion is a natural process around the perimeter of the Great Lakes. It is not good news but it is not due to the control of water levels. It would be useful to look at the history of lake levels. You built during very low lake levels. Over the past 50 years we have entered into an era of larger amounts of water coming into the lake system, noticeable since the 1950s. Levels are a function of natural processes. Levels would have been even higher without any control at all. Erosion will continue naturally and the only question is whether we can slow it down a little with water regulation regimes.*

What has the Study reported about winter? What is the erosion impact of ice coupled with wave action?

- *Ice cover during the winter can actually reduce wave action and thereby reduce erosion. However as temperatures increase in the spring, chunks of ice can increase the amount of scouring that occurs during wave action. This process is complex and the Study's modelers are attempting to formulate new ideas of how to regulate the water levels during the winter to benefit property owners.*

Where is the economic value due to loss of property value to the shoreline property owner when levels are low?

- *Erosion occurs at all lake levels but is generally accelerated during higher lake levels. It is therefore possible that a property could lose value during low water periods especially if a home was located very close to the shoreline. The Study evaluated the cost and time at which shoreline protection would be required at a given parcel. Regulation plans with lower water levels defer the need for shore protection whereas those plans with higher water levels accelerate the need for shore protection.*

What about the economic value contributed by the shoreline property owners? Why isn't there a performance indicator regarding the taxes property owners pay and the economic value we add to the region?

- *The economic value of shoreline property owners to a region and the property taxes they pay is well beyond the scope of this study. The economics of the study are based on a comparison of alternative regulation plans and the economic impact of each plan with respect to each other.*

How many places have been put off of the tax rolls because of erosion?

- *We could consider taxes, but we've been focusing more on direct expenses. We focus on measurable economic data to compare plans, not completely quantify every dollar spent. We are looking at compromise and trying to balance between all interests. This information was not collected. Regardless of the regulation plan selected, it will not bring back any properties already lost because of erosion, so information on lost properties would not help in plan selection. We focused on measuring the future economic impacts to existing properties, which could be impacted by changes to the regulation plan.*

As a property owner on the eastern shore of Lake Ontario, spring erosion is my biggest concern. Riprap is ineffective. Why can't something be done in anticipation of high waters in April caused by storms? Why can't we drop levels in the winter?

- *To answer the first part of your question a well designed and constructed riprap structure is generally the most preferred method of shore protection due to its effectiveness and affordability. If you have experience with an ineffective riprap structure it is likely due to it being improperly designed, constructed or maintained. The second part of your question pertains to the abilty to control winter water levels in anticipation of high spring levels. The problem with dropping the winter lake level too low is that it may not recover in the spring and summer thereby having a major impact on lake and river interest groups that rely on adequate water levels during the spring through fall period. Furthermore, the system simply cannot be operated in a manner that would change water levels in a way that would prevent damages from storms and unforseen metorological events. However as part of the study we will be making recommendations that allow for quicker operational changes to the system based on improved weather forecasting.*

Are you studying erosion caused by the Fast Ferry in Rochester?

- *No, it is not in the Study's mandate, but people are making the ferry aware of their concerns through their communities.*

Is the money I've spent protecting my property being included in your studies?

- *Yes, it is factored in as part of the economic models. One aspect being considered in the evaluation of regulation plans is the impact they will have on the need and cost to strengthen or repair/replace existing protection. For example, if a proposed plan led to a greater frequency of high water levels during stormy seasons, damage to shore protection would be accelerated and the protection would need to be replaced more frequently, with an economic cost.*

Commercial Navigation Technical Work Group

Why is the shipping season two months longer than before regulation?

- *The length of the shipping season is beyond the scope of the Study.*

Why is there a need for higher water levels potentially towards the end of the year for commercial shipping?

- *Water levels typically have a seasonal variation to them. In general, Lake Ontario levels tend to rise from around January to June and then fall, depending on basin water supplies, from June to December. During this fall season, there is a major movement of grain through the system for export to Europe. Also during this time, vessels are making their last trips through the system before the Seaway closes for the season in December. . Requests for higher levels, usually downriver, occur infrequently and are normally for short periods of time. These requests are usually made when the actual supplies are short of the anticipated or forecasted supplies.*

Is the water kept high strictly because of shipping?

- *Lake Ontario levels are not made high for shipping interests. If levels are high, it is a result of high supplies into the Lake or restrictions on outflows due to downstream conditions. In the past 50 years, supplies have generally been high. However, the water levels are lower under the current regulation plan than they would be without the plan.*

What is the economic justification for shipping west of Montreal?

- *Shipping is an inexpensive mode of transportation when compared to alternative modes such as truck and often rail. Ships move such bulk commodities as grain, iron ore, petroleum products, manufactured iron and steel and coal through the Seaway system to a wide range of Canadian and U.S. ports located throughout the Great Lakes. In 2004 for instance, over 2,600 commercial transits were recorded, transporting over 30 million tons of cargo.*

Environmental Technical Work Group

How do you rank the importance of the environment?

- *The Study ranks the importance of the environment equally with other interests.*

What is going to be the arbitration method for ranking and placing priority on the environment?

- *Our integrated ecological response model has been incorporated into the Shared Vision Model. The Study Board has a guideline that identifies the need for any recommendations to respect the ecological integrity of the Lake and River ecosystem.*

How do we bring environmental protection and natural systems to the forefront?

- *Environmental interests and concerns are being evaluated as a key part of the Study. Plan 1958-D did not take the environment into consideration.*

Why didn't the Environmental Technical Work Group investigate the environment in the upper section of the St. Lawrence River?

- *The upper section of the St. Lawrence was studied and is included in the more detailed analysis, although the area has been grouped together for some purposes with Lake Ontario. Three PIs have been identified for this section of the river (northern pike, Virginia rail and muskrats), and the metrics by which they are evaluated were determined to be similar to the metrics in other parts of the Study area.*

What are the impacts of water levels on wetlands?

- *Plant diversity and abundance depend on the frequency with which a particular wetland area is either drowned or left dry. Periodic high and low water levels are generally good for wetlands. There is also a secondary impact, in terms of faunal species that inhabit wetlands. For example, our investigations indicate that wetland sustainability is greatly affected by the abundance of muskrat in the wetland. If we can develop recommendations that will result in water levels that increase the muskrat population, we will be able to help the wetlands.*

What is the linkage between water levels, their impact on the environment, and groundwater?

- *This issue has been considered, but the relation to ground water and lake levels is minimal. Based on an examination of data on the water supply and outflows, it has been determined that ground water probably plays a minor role in the overall water balance.*

Are any of your studies related to a cleaner Lake?

- *We only look at the environmental issues that have a relation to water levels. While water pollution is a major issue, it is not addressed in this Study because it is not affected by water levels.*

Why have you not converted environmental indicators to economic values?

- *It is very difficult to put a dollar figure on an environmental indicator since dollars cannot replace, say, a lost species. The Environmental TWG has used an Integrated Ecological Response Model to determine the impact of levels on environmental factors.*

Hydroelectric Power Technical Work Group

Can large variations caused by peaking and ponding near the dam be reduced or controlled?

- *Peaking and ponding is an operational aspect of any plan option. The Study is not investigating this aspect of operations.*

Could the power companies not install more hydro generators allowing greater outflow as alternatives to holding water back?

- *There are no plans to modify the existing control structures, and that is not within the scope of the Study.*

Hydrologic and Hydraulic Technical Work Group

What are you doing about forecasting? If we know levels are going to be high, why can't we lower the water in anticipation? Why can't water just be let out the St. Lawrence River when there are problems with high supplies?

- *The current regulation plan doesn't have any forecasting components. Now we have developed forecasting technology, and our new recommendations will include the use of a forecasting component. But the accuracy of forecasting future conditions is imperfect and risks of releasing or storing water will continue to be carefully considered in balancing the needs of all interests. Water cannot be let out of the Lake when there are high supplies without considering the impacts to the River.*

In some months we have a lot of rain. Holdback caused higher levels and made things worse. Why do we hold water back?

- *When large volumes of rain fall, any plan will do its best to release some of that rain. Under most plans, some water is held back in case the opposite happens and supplies reduce substantially. It's usually easier to let water go than to hold back water you don't have. The various interests have different views on higher water: riparians don't like it in some months, recreational boaters like it in some months. Any plan will try to reduce the extremes for all affected interests and achieve a compromise between conflicting interests in a very complex system.*

This year we have had a very mild summer with a lot of rain. In August the St. Lawrence dropped over eight inches. Why?

- *Seasonal decline in the fall is normal. Levels peak in June and decline in the fall. The decline has begun through diminishing supplies and evaporation. Although July 2004 experienced record rainfall, we are now on the natural curve. With a lot of rain in July more water was released to return to average levels as much as possible, but the increase in flows was not noticed due to high supplies. Although levels were down by eight inches, the average is usually more than that. No operational changes will occur until the new plans are in place.*

Where and how are water levels measured?

- *There are six major gauges around the Lake. At each location, a shallow well is built near the shore with a pipe connected underwater to the Lake. The level of water in the well is the same level as the Lake. The levels of the six gauges located at Oswego, Kingston, Port Weller, Cobourg, Rochester, and Toronto are then averaged. There are also a number of gauges along both shores of the River.*

What is the long-term forecast for levels and supplies?

- *We cannot say with certainty what the levels will be in the long-term. To address this uncertainty, the Study has considered a very large sample of cases based on historic, randomly generated as well as climate change conditions.*

How does climate change affect long-term water levels?

- *The Study is considering four possible cases - some of which result in higher levels, others result in lower levels - reflecting the uncertainty regarding climate change.*

How much can you raise or lower the Lake, in practical terms? With control structures in place how much does man alter the four-foot range? Do we control the entire four-foot range or only the extremes?

- *The natural range from the highest high to the lowest low on Lake Ontario was over seven feet prior to regulation. Regulation has reduced the range to closer to six feet with a target range of four feet, which the plan and the Board achieves most of the time.*

Can the four-foot window be smaller?

- *A smaller range may be possible, but it may not provide the best overall results for all interests.*

Please explain how having the dam has lowered levels.

- *The River was dredged to provide a channel for ships as part of the power dam project. Other changes also increased the volume that the River could hold. Releases can, therefore, result in more water leaving the Lake than would have without the dredging. The Moses-Saunders power dam controls the outflows from Lake Ontario, so depending on supplies, outflows can be increased to lower levels.*

Why are Lake levels so much higher than, say, in 1972 when there was so much more beachfront and better clearance for boating?

- *Lake levels vary every year, and in any year levels may or may not be higher than in 1972. Beachfronts and boating clearances change as a result of the levels occurring at the time. The last thirty years have, in fact, seen fairly high levels with much higher supply into Lake Ontario than before. Variation from year to year will always occur.*

What is the difference between the 100-year average and the average over the past 40 years? The constant reference to the 100-year average is confusing and doesn't give the answer that should be given. Shouldn't we be looking at the 40-year average?

- *These long-term levels are natural changes and may happen. The 100-year average is the most reliable record of historic conditions. The 40-year average, often referred to, relates to the period during which the current control structures have been in place. Both periods are important.*

Information Management TWG

When will the public be able to see the information gathered by the Study on the website?

- *We expect to have information available on the site in 2005, prior to the summer public meetings.*

Where is the data and where are the results? The public wants to review the information.

- *Each Technical Work Group is compiling its information and reports, and this will be available in 2005 on the Study website at www.losl.org.*

I could not locate water level information on the web. How can I access that information?

- *Information on water levels and flows is available. A list of sites is available on the Study website at www.losl.org.*

Are your presentations and other documents made available on the website?

- *Wherever possible, they are. If there is a specific document that you need or would like to see, you can e-mail or call the communication representative in your country and they will provide the information if it is available.*

Plan Formulation and Evaluation Group

Can a new plan address issues of reliability and predictability? Can water levels be more consistent?

- *The Plan Formulation and Evaluation Group is looking at reliability and predictability as it considers plan options.*

Under the new plan could the Control Board make more frequent decisions and somehow achieve greater accuracy in their forecasts and releases?

- *The recommended plan may include more frequent outflow changes than the present weekly decisions. However, making decisions in response to short-term events may have long-term consequences that we are unaware of.*

How have you factored politics into the regulation plan options presented to the public?

- *We are not factoring politics into regulation decisions. The Study is focusing on meeting the needs of all interests as best we can and adhering to our guidelines and mandate from the International Joint Commission.*

Is monitoring the rainfall in the upper lakes included in a portion of the Shared Vision Model?

- *The Shared Vision Model is a tool used to evaluate regulation plan options by modeling the various aspects of the system in a way that is agreed upon by the Study Team. The selected option may include a forecast procedure that would be based on future supplies, such as rainfall, on the upper lakes.*

Recreational Boating TWG

Can the levels be held higher for a longer period of time during boating season?

- *There is a gradual natural decrease in levels following the peak. The current plan stops that a little, but natural processes dictate. In many cases, the decline happens too rapidly and causes problems. A new plan could modify this decline in levels. The Study is trying to come up with something that will be an improvement over the existing plan.*

September 1st seems to be the magic date for a dramatic drop each year. Since power stations east of Cornwall do not have the capacity to hold water back, water is released down the system. Why can't surplus water be let out slower over a longer period of time? This would benefit recreational interests and should not provide any negative impact. Is an easy drop of the system possible?

- *Levels follow a natural cycle. During the spring more comes in. The peak is normally seen during late June, and then the supply goes down during the summer and fall months. Even without the dam the Lake would follow seasonal highs and lows with the lowest point in December. One problem with holding back the water is where to keep it. At the shoreline of Lake St. Frances, flooding would be a real problem. Lake St. Frances is not as big as Lake Ontario so fluctuation of water levels is much more restricted, the fluctuations can be dramatic and the effects on residents more significant as a result. We try to stabilize levels there because there is no place to store the water. A more gradual drop of lake levels will be modeled and the results will be presented at the summer public meetings.*

Can more be done to meet the short-term needs of boaters to get out of the water at the end of the season?

- *The plan formulators are looking at options that can slow the decline of water levels after the levels peak in the summer.*

If a marina is poorly placed, why is that our problem?

- *We've included marinas and recreational boating as one of the interests and an area for study. We could ask the same thing about other economic interests such as shoreline owners who locate in floodplains or build too close to eroding shoreline, or municipal water intakes that are too shallow. Where possible, planners have tried to provide plans with some improvement to all interests, but poorly placed facilities still always face the risk of either very high or very low supplies and no plan will entirely avoid those problems. The marinas are there and the impact of water levels on those marinas is real so we have taken them into account in our economic models.*

How are you weighing the various stakeholder interests with respects to the environment, coastal repair and shipping and recreation? At the time that the Seaway was built, they used about a quarter of the area of Lake St. Louis as a dumping ground for rock. So that has made a quarter of the area of Lake St. Louis useless for recreational boating. Can anything be done about that?

- *We are weighing all interests equally. The Study is not considering structural changes to the Lake or St. Lawrence River, such as dredging Lake St. Louis.*

International Joint Commission

Will the IJC be performing an independent evaluation of how the plan will be run and who will run it? Will there be some type of independent evaluation of how this will be managed?

- *The Study Board is completely independent of the I.J.C. We will put together recommendations that may include examining the Control Board. The IJC will determine, independently, how the Control Board will be run, how that would be expressed in new orders of approval and how they implement a plan.*

Is anyone monitoring water releases? Is there something showing the balance of accounts between what happens now and what would have happened without the Project? We need to achieve balance.

- *The Board of Control keeps a record of what water is let out and what would have been let out before the plan. Pre-project plans that emulate the natural responses of the system without the dam are used as a baseline and considered with other plans. One of the concerns about pre-project plans is that there were a great deal more extreme highs and lows causing more flooding and erosion among other undesirable outcomes, so most of the time we consider modified pre-project plans.*

Will we have long-term management of a plan for all areas?

- *There are weekly changes made under the current regulation plan. The Control Board can deviate in extreme situations. We may recommend more frequent changes.*

How will the new plan be managed?

- *That is still to be determined.*

What is the IJC's response to the Edmonds Report?

- *The International Joint Commission has not responded to the Edmonds Report since it was a report to the Study Board.*

Why can't the Treaty be redone?

- *It's not within the scope of this Study to consider changes to the Treaty.*

Why have levels been kept so high? We want our beaches back.

- *If levels are high, it is a result of high supplies into the Lake or limits on outflows due to high water downstream as well. In the past 50 years, supplies have generally been high. However, the water levels are lower under the current regulation plan than they would be without the plan.*

Relationships between the International Joint Commission and the public reflect apathy and mistrust, what is the IJC going to do to rebuild a trusting relationship with the public?

- *The International Joint Commission has been involved with the Study Board, with TWGs, and with Plan Formulation among other things. Members from the IJC have*

attended the public meeting series to hear input first hand. There will be further consultations with the public once the Study makes its recommendations to the IJC.

I am fearful there is no written or legal mandate to implement regulations. What is the obligation to achieving required levels?

- *The Boundary Waters Treaty empowers the IJC to make regulations and to require that they be adhered to. The various hydro authorities that control the dam must be licensed and seek approval from the International Joint Commission under the treaty and regulations.*