Transcripts

UNITED STATES & CANADA
INTERNATIONAL JOINT COMMISSION
PUBLIC INTEREST ADVISORY GROUP
PUBLIC MEETING

In the Matter of:

INTERNATIONAL LAKE ONTARIO/
ST. LAWRENCE RIVER STUDY

July 13, 2005

Transcript of Public Meeting held in the above matter at 215 South Broad Street, Sackets Harbor, New York on July 13, 2005 at 7:00 p.m. pursuant to Notice.

PRESENT:

SCOTT TRIPOLI - Chairperson

JOHN DEANS - Mayor, Village of Sackets Harbor

TONY EBERHARDT - Study Manager

IRENE BROOKS - USIJC Commissioner

RUSS TROWBRIDGE - IJC Liaison to the Study

JON MONTAN - PIAG Member

EUGENE STAKHIV - U. S. Co-director - Powerpoint presentation

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PROCEEDINGS

MR. TRIPOLI: Good afternoon, everybody. We'll be getting started here. I'd like to call the meeting to order tonight.

We have a variety of members from the Study Board with us, and I would also like to invite the Mayor of the Village of Sackets Harbor, John Deans, to open the meeting and say a few words. Thank you.

MR. DEANS: Thank you, Scott. And thank all of you for joining us here tonight in the Village of Sackets Harbor. Many of you I know are familiar with Sackets Harbor. Some may not be quite as much, but certainly, as you know, we're a community that owes its very existence to water.

It was that deep water harbor that attracted Augustus Sacket. It's that deep water harbor that made Sacket's Harbor the biggest shipbuilding center on the whole northern frontier during the War of 1812.

So water I know is something that was historically of interest and, of course, continues to be of interest as here in our Village we now are able to, frankly, boast of several marinas and a lot of water-related life that exists along the Sacket's Harbor waterfront.

I think that the only other thing I would add is that, certainly a thanks to you folks for hosting these sessions and for giving people in the region an opportunity to express their sentiments regarding the water level study.

I would close my comments here very quickly by extending a warm welcome to all of you to come back to Sackets Harbor this weekend. I can't help myself but to get in the notice that this is our 34th Annual Can Am Festival, which celebrates the now wonderful relationship that exists between our community and Canada. Join us for the Budweiser Clydesdales that are housed here in the Village and for some great fun over the course of the weekend.

So again, thank all of you for coming. The Village is pleased to host this session, and you might also know, very pleased, of course, by our school which the committee is so proud of as well.

So thank you all for joining us.

MR. TRIPOLI: My name is Scott Tripoli. I live in Mansville, a few miles south of here. I'm a member of the Public Interest Advisory Group. I volunteer my time to participate in the study and represent you folks and all the interests around the lake and the river, mainly in my area up here on the eastern shore. I do not work for any of the agencies that do the work on the study. I'm strictly a volunteer, a liaison between the study and the public.

I'd also like to introduce one of the International Joint Commission commissioners who is in attendance today to listen to your concerns. That is Irene Brooks down in the third row. There are other members of the study team here to help answer your questions. Right now I'd like to have any of the Study Board members stand up, and if you'd like you could introduce yourselves. We have members from both Canada and the U.S.

(Introduction of study board members)

Thank you all. Tonight the study team is returning for the last time to talk to you about the study in general and water levels and flows in Lake Ontario and the St. Lawrence River as affected by future decisions related to the work that the study has done.

The format for the evening is as follows. There will be a 30 minute Power Point presentation given by Gene Stakhiv, who is the U.S. co-chair of the Study Board, in the middle. Then the meeting will be turned over to Jon Montan, another member of the Public Interest Advisory Group who will facilitate the question and answer period. So with that we'll begin the presentation.

MR. STAKHIV: Thanks for attending the meeting. It's always helpful to have the real decision makers listening to the public.

I'd also like to thank the members of the Public Interest Advisory Group who are hosting this meeting. I think -- I don't think many of you people realize that they've been with us for five years. And they've organized many of -- many, many meetings such as this over the course of five years. They're unpaid volunteers and really a tribute to the kind of citizen activism that we have here in the United States and in Canada.

Anyway, I'm just going to give you an overview of my presentation, tell you a little bit about who we are, why did we do the study. I mean, who motivated the study. What we found in terms of the operation of the current system.

We'll present some of these candidate regulation plans that were developed in the course of the last five years, discuss the process to implementing these plans. What happens after the study is over.

What we expect from you, or what we hope, the feedback that we get from you at this meeting and many other meetings after this, and then we'll have a question and answer period that will be facilitated by Jon Montan. We're now in the final year of this five year, $20 million study, and we've had well over 120 people involved in the study team, and you could see sort of the organization charge of just the various groups that we have here.

The technical working groups, the Public Interest Advisory Group and the Study Board itself. The International Joint Commission mandates that all the boards and the studies must have equal representation from both countries. And you need to sort of understand that the Study Board is an independent advisory body, as is the Public Interest Advisory Group.

In other words, we don't represent any particular agency or entity. Our job is to give the best advice, the most objective advice that we can, to the Commission. But we have engaged many technical experts from the Federal government, provincial state agencies, academia and the private sector in both countries.

Five years ago the federal governments of Canada and the United States requested and funded the International Joint Commission to review their orders of approval for the regulation of water levels and flows in Lake Ontario and the St. Lawrence system. The action was in response to public concern that the 40 year old regulation plan for directing and managing water outflows through the St. Lawrence Seaway control dams was out of date and not responsive to current and future uses of the system.

The International Joint Commission is a binational organization created under the Boundary Waters Treaty of 1909 for the purpose of preventing and resolving disputes related to our shared inland waters from coast to coast. This study is the vehicle by which the IJC is undertaking this work.

The final decision -- I want to emphasize this -- the final decision on changing the regulation plan and criteria rests with the Commission in consultation with stakeholders and the governments. In other words, we're only providing the commission with options. They will make the final decisions on which of those options will be implemented.

The outflows through the Moses Saunders Dam at Cornwall and Messina, I think as most of you know, are currently regulated using a set of written rules for releases that's called Plan 1958-D. Although it takes into account the interests of water uses, commercial navigation and hydroelectric power, this plan doesn't consider the needs for the

environment, recreational boating and shoreline erosion. It just wasn't built into the original treaty.

Plan 1958-D was based on the kind of water supplies we got in the first half of the 20th century and was not well designed to handle the extreme dry period of the mid 1960's and the very wet period of the 1970's.

This plan is implemented by the International St. Lawrence River Board of Control, that's also appointed by the IJC.

The operation of 1958-D with deviations, and we call it 1958-DD, shorthand, has been able to accommodate the needs of shoreline property owners as well as hydroelectric power and commercial navigation interests despite significant increases in natural water supply to the lake in the last few decades.

The operators have tuned the system to reduce extreme water level conditions by deviating as necessary from Plan 58-D as implemented in 1963. In other words, when the plan came into force in 1963.

But without detailed data on the environment, operators can't address environmental issues in the same way. Recreational boating is also a recent and growing interest that has specific needs that 1958-DD does not meet.

We've consulted with a wide array of people, including many of you who provided us with preferred water levels from the perspectives of the interests of the groups listed on this slide.

We've been able to translate these needs and wants into specific and measurable indicators for each aspect of the system. And the Public Interest Advisory Group has been instrumental in getting this type of information, the feedback from the public.

Now let's go to the findings of the study. During many of the slides we'll refer to the upper river, which is above the Moses Saunders Dam, and the lower river, which is below the dam.

We have certainly found that Lake Ontario, the St. Lawrence River and the many interests affected by water levels and flows represent a complex water management system. And that includes the large watershed of the Ottawa River that flows into, discharges at Montreal.

The dam at Messina is just one factor in managing and dealing with water levels and flows. Nature and changing water supplies to the region is the more unpredictable factor.

For example, this is a plot of total water supplies to Lake Ontario over 140 years, from 1860 to 2000, and the line, the vertical line you see at 1960 is when Plan 1958-D was implemented.

There's considerable variation in these water supplies from year to year. Also, you could see trends of very dry water supply years occur as in the 1930's and 1960's. Higher water supply trends were also experienced in the 1970's through the end of the 20th century.

So the current regulation plan, 1958-D, was designed based on water supply conditions up to 1960 and was not designed to deal with the extreme low water supply conditions that immediately followed its implementation in the 1960's, nor the higher supply conditions of the 1970's.

Here's another example of the complexity of the system, showing what happens when attempts at changing water levels are made through operation of the Moses Saunders Dam at Cornwall and Messina.

During wet periods and rising water levels on Lake Ontario consideration could be given to letting more water out of Lake Ontario in order to lower water levels on the lake and reduce the potential for shoreline flood and erosion problems.

Similarly, during dry periods in the summer, the same action could be considered to help ships that are having low water level problems in Montreal harbor.

But if the Lake Ontario outflow is increased for one week, so that Lake Ontario is reduced by two centimeters, or three-quarters of an inch, you could see the water level changes in Lake St. Lawrence upstream of Moses Saunders Dam are magnified almost tenfold to 30 centimeters, a decline of 30 centimeters, and on Lake St. Louis just upstream of Montreal it increases by 23 centimeters. And that creates an additional problem for the operators of the system.

During this study we've carefully examined the effects of fluctuating water levels throughout Lake Ontario and St. Lawrence River on the ecosystem, on recreational boating and tourism, as indicated on this slide, in addition to coastal property -- coastal processes and coastal property damages, hydroelectric power.

This has been the most sophisticated research ever done on the issue. And we followed a long line, many studies have been, have been conducted on Lake Ontario on this system over the past 40 years. It's been reviewed by outside scientific and economic experts and the study is currently subject to an independent peer review by the National Academy of Sciences and the Royal Society of Canada.

In the studies, for example, in the studies of the natural environment and ecosystem, over 400 environmental indicators were developed, examined and researched. Thirty-two of those were identified as being especially sensitive to water level variations, including some species at risk. Further details about these environmental indicators are in your handouts. So if you look in, you'll see the charts. The information on those 32 indicators are in the handouts.

A general conclusion is that a more natural variation in water levels is better for the environment on Lake Ontario and the upper river, but not much of a difference for the lower river.

In the recreational boating and related tourism sector, we found quite expectedly that water level problems are greatest at low water levels, fewest at average to higher levels, and increase in extreme high water level conditions. Because of the location of marinas in shallow waters, recreational boaters need higher water level conditions than commercial ships that operate in the main channels.

Economic impacts have been identified for each part of the system and reviewed by outside experts.

For coastal processes, the current regulation plan and Control Board deviations, Plan 1958-DD, have significantly reduced flooding on Lake Ontario and the St. Lawrence River shorelines. 1958-DD is effective in slowing shoreline erosion, but no regulation plan can eliminate shoreline damage. Shoreline erosion is worse during the fall, winter and spring because of storm events.

High water levels during calmer, summer weather are not as damaging, simply because there aren't as many storms during that period.

Commercial navigation, our investigation of fluctuating water level impacts on commercial shipping have identified that navigation costs go up when ships don't have enough water or are delayed by high currents. And we recognize that it's difficult to keep enough water in Montreal harbor for ships during the fall and extensive dry periods.

When we looked at the sensitivity of municipal, industrial and domestic water intakes and outfalls, the varying levels, water levels, we found that municipalities basically have adapted to expected water patterns and water fluctuations. But individual shoreline water users tend not to adapt to extremes and are vulnerable to high and low water level conditions.

The hydropower sector, consisting of the hydropower plants at Cornwall and Messina and Beauharnois, represent a huge piece of the water puzzle. Small changes in water flow and level regimes can result in differences of millions of dollars to this sector.

Now let's go to the heart of the presentation, you know, what did we spend five years on developing. We've developed lots of new regulation plans and we've tried to consider all of the interests, balanced, in a fair and balanced manner. We've developed a lot more plans than what we'll be presenting tonight, but let's go through sort of, the thought process of the Study Board.

You see the guidelines that the Study Board developed early in the study to try to guide the formulation of the plans. That is, how are they created, how are they developed, as well as their evaluation. What's important. And a lot of this comes from the public meetings that we had previously. Let's define some of these terms.

Contributes to ecological integrity means that the Study Board would look at how well the plan performs against the environmental indicators that you have in your handout.

Maximize net benefits, means that the Study Board will look at both economic and ecological performance of each of the candidate plans.

No disproportionate loss, means that no interest or region is seriously harmed. Those three that I've just read are the key guidelines that the Board used in evaluating the plans. We also used the other guidelines, for example, adaptable to climate change and climate variability to test how sensitive each of the plans are to some anticipated probable future events. The board also -- so we considered the flexibility of each plan with respect to climate change.

We've insured that our work has been transparent to the public and representative of all of the interests through the involvement of our Public Interest Advisory Group, through our public meetings, through our website and through our newsletters. Throughout the study the Board assured that decision processes were open to the public and representative of all the interests.

We've examined what we call reference plans and developed interest specific plans. For example, the reference plan, the official plan 1958-D is a reference plan. How well does it do against our selected performance indicators, the indicators that you developed and the criteria that you gave us and said, this is what we think -- this is how we think the system ought to operate. Same thing with Plan 58-DD, and 58-DD is the current -- is the plan for the basis of comparison for all of the other plans. You're familiar with 58-DD so you would understand that if another plan is compared to that what the impacts would be, what the changes are.

We also looked at Plan 1998, which was the best plan from the previous study that was done prior, about five years prior to this study. We developed an Ontario Riparian Plan that reduced flooding and erosion on Lake Ontario but it had severe environmental and recreational boating impacts. We developed a plan specifically to maximize recreational boating interests, but it resulted, and you could see the data in your handout, it resulted in severe impacts on the environment, downstream flooding, and difficulties in navigation.

We also designed a natural flow plan. This would be almost the ideal environmental plan. Because of the significant concern that current regulation has had adverse considerable impact on the environment and the natural ecosystem. To implement this plan, however, would result in economic losses to shoreline property and recreational boating interests. Although this plan is considered by some as a longer term management goal for the system, the Board believes that it cannot at this time be considered as a candidate plan for implementation. But you have all the data and you could check what the relative benefits and costs are of each plan.

This slide gives you a sense, a quick snapshot of the target water levels that were developed for the different interests that we encountered in the study. They want different water levels at different times of the season and the year. The plan formulators that we have, the people who are actually putting these plans together, the group that's putting it together, are trying to meet as many of these targets as possible, but as you can see, there are conflicts. And it's difficult to keep everyone happy all of the time.

On the previous slide you saw the target levels for this, for Lake Ontario, for this particular area. There are similar target levels identified for locations, these boxes and triangles that you see for the entire system. So we've done this in, it looks like nearly 30 or so sites in the system.

The result of all of this work, debate and public input is three candidate regulation plans that we'll summarize for you tonight and on which we'd like your views and comments.

More than 10 plans were formulated, reflecting various inputs from the public and technical participants. These plans were considered and evaluated by the Board and some were discarded.

These three plans remain as the best and the most representative of the plans that were developed. All of these plans were designed to provide overall benefits to the economy and

environment with minimal harm to any sector. But they differ in the distribution of benefits among the different interests, both geographically and the interests, and how much loss a sector, a particular sector would bear.

The following slides will give you an overview of these plans.

We've come up with the new plans that all have improvements over 1958-D with deviations, but we still haven't found the golden plan that makes everyone happy all of the time. Our plan formulators are still working, even as we speak, to design the best plans they possibly can, recognizing that the trade-offs will always have to be made.

Let me just describe, quickly describe each of these plans in terms of their broad objectives, what goals were they trying to meet.

Plan A we call the balanced economics plan. It's designed to maximize overall economic benefits. It provides some improvement for the environment, especially on the upper St. Lawrence River, has losses to shoreline interests on Lake Ontario and the river, and provides recreational boating benefits.

Plan B is designed to simulate more natural conditions for the environment and provide overall environmental -- economic benefits. It improves the environment on the lake, Lake Ontario and the upper river. It has losses to shoreline interests with significant flooding potential around Montreal, and it has losses to recreational boating, especially on the lake.

Plan D, the third plan, we've labeled as the blended benefits plan, designed for balanced performance with overall economic benefits and minimizes losses. Little change from 1958-D with deviations for the environment. In other words, no significant improvement for the environment. No overall losses for shoreline interests, but some flooding, minor flooding potential. And it provides recreational boating benefits.

During the winter and spring months this year the Board and the study team have evaluated these three candidate plans from economic, environmental and equity perspectives, and in quantitative and qualitative terms, the results of which are in the handouts that you have.

We've over-simplified even the handout that you have into sort of a very, very simple chart of the specific information that you have. For example, the environmental index is a ratio where one, this is what we mean when we compare plans to 58-D with deviations; one is the same as what's happening today. That is Plan 58-D with deviations. Anything above one is better. Anything below is worse.

The rest of the interests -- so you could see that plan A, 1.15 is 15% better than 58-D with deviations. Plan B, 1.41 is 41% better, Plan D is 3% better, really within the range of statistical -- you can't discriminate statistically.

The rest of the interests from shoreline owners to hydroelectric are also shown in millions of dollars of average annual benefits. We can see that plan A and B both result in losses to shoreline property. Plan A has minus 1.1 million dollars loss per year, Plan B has minus 2.88 million dollars losses per year.

Plan D, as you could see, strikes a balance. There are no losses in any of the sectors, with some modest gains, of course, but it doesn't produce any strong benefits and each of the plans has a -- we'll get to that later. Sorry. I'm getting ahead of myself. But Plan D does not significantly improve conditions for the natural ecosystem.

To evaluate all of these plans, we simulated the water level and flow conditions that they would produce if they were to receive the same water supply and weather conditions that occurred from 1900 to 2000. So essentially we looked at the historical record and superimposed it on the new plans.

We could show many tables of data, graphs and charts of information on all of these plans that should satisfy even the most extreme number and data junkie here tonight. And we have Bill Werick here, so if you do want to satisfy that urge, he can stay here after the meeting.

Although we don't to prolong this presentation and attempt to bury you in numbers; here are a few examples. The slide and the next two slides show an estimate of the water levels that would occur under each of the plans, for comparison. This plot shows the average of levels for Lake Ontario throughout the year. In this comparison, plan A has higher average levels throughout the year. Plan B has about the same levels in the summer but higher levels in the fall, winter and spring. Plan D for the most part has lower average levels than the base case, Plan 58-D with deviations, but higher summer and later peak level. You could also see that the difference from the average winter low to the summer high is less with Plan B and more with Plan D. In other words, Plan B is more gradual, gradual changes. These average levels explain in part the economic and environmental results of the plans. The higher average levels of Plan A and B in the stormier fall and winter months are reflected in increased erosion damage on the lakes -- on the lake, but average levels don't tell the whole story.

This is a plot of the highest Lake Ontario levels that occurred in the 100 year -- 101 year simulation. The plot shows that the maximum level in each of the plans would be higher in the spring than 1958-D with deviations. The highest peaks are all slightly higher than 1958-DD and occur at different times. In the fall and winter the maximum level would be a bit higher with Plans A and B but lower with Plan D.

Since the peak levels of the candidate plans are just about the same as the base case, there is little or no increase in flood damage in the plans. Plan A causes a bit more flood damage because the higher peak levels occur in the stormier spring season.

The, on the previous slide the median line was 247.37 feet and on this slide it's 243.44 so now we're looking at the lowest Lake Ontario levels. This plot shows the lowest levels for Lake Ontario that occurred during the 101 year simulation. All of the plans generally have higher minimum levels than Plan 1958-D with deviations. Plan A consistently has the highest minimum levels throughout the year.

I'm going to switch to the environment, the environmental indicators and which are the most sensitive. The environmental technical working group identified a number of environmental indicators that together tell the story of the health of the environment. These individual indicators represent important information about the habitats and life cycles that are affected by water levels. They've looked at fish, mammals, birds, reptiles and amphibians, some of which are species at risk. This slide highlights two of those indicators

on the lake and up the river. These two examples show you how we compare the plans for their environmental impact.

For Lake Ontario Meadowmarsh, the left bars, you could see that Plan B's index of 1.43 means Plan B performs about 43% better in relative terms for this type of habitat than the current operating plan, 58D with deviations. For upper river northern pike, the end of the year productivity, you could see that Plan A does much better than Plan B which is the natural flow plan. And you have these differences and that's why it's so difficult to select among plans, because they vary with each indicator.

When comparing plans for black tern reproductive index on the river below Montreal, Plan D has the only positive index of 1.03, which is not considered a significant improvement. It's just hardly slightly better than the existing plan, which is one. And you could see fairly large losses, large negative indices for Plan A and B. Same with lower river muskrats.

Let's switch to, let's switch to the economic impacts of the three plan options for shoreline, recreational boating and water uses over the regions considered. On Lake Ontario shown by the blue bar. On the upper river shown by the maroon bar. And on the lower river shown by the yellow bar. Compared to 1958-DD which is the zero or no change point. So anything above zero, it's a benefit. Anything below zero is a loss.

Also shown are the overall hydropower and seaway impacts, meaning the navigation impacts, shown by light blue and purple bars respectively. Note the values are in average annual million U.S. dollars.

As shown, Plan A, the balanced economics plan, would result in average annual economic benefits to interests on the upper and lower river, and slight net losses on Lake Ontario. Plan B, the balanced environmental plan, would result in average economic losses in all regions. However, hydroelectric power and the Seaway would see positive economic benefits under Plan B.

Plan D, the blended benefits plan, would result in positive economic benefits for all interests and regions, although the benefits in the upper river would be small.

Another way of showing this, basically the same information is, it shows the economic impact in a more aggregate form. Plan A shows that the average annual benefits to recreational boating, navigation and hydro interests and losses to shoreline interests resulting in a total net benefit of $9.25 million dollars.

In other words, let's look at Plan A again. You could see that it hits, it's slightly higher than $10 million a year. It's like $10.2. But if you subtract that piece of the green bar, subtract that green bar, the net result is $9.25 million.

The same thing for Plan B shows net benefits of $4.32 million but with losses, the green bar and the light blue bar, and Plan D shows benefits to all interests, resulting in a total net benefit of $5 million on the average.

Let's look at the economic impacts just to shoreline interests. So now we're looking in much more detail just at the shoreline sector and river flooding and erosion damages.

This slide shows the economic impact to shoreline interests in greater detail. Plan A and B would result in economic losses in terms of flooding and erosion in all regions except for a slight erosion benefit in the lower river with Plan B compared to Plan 1958-D with deviations. Plan D shows positive economic impacts for all regions in terms of erosion but a slight increase in upper river flooding losses.

Let's look at recreational boating, the economics of recreational boating. This slide shows the economic impacts. Plan A and D show positive average annual benefits in all areas considered, except Ogdensburg, when compared to Plan 58-D with deviations, and the net average annual benefits are highest with Plan A. Plan B shows losses for all areas except Lake St. Louis.

Now moving to regional environmental impacts. This slide shows the performance of the three options compared to 1958-DD. This slide shows a plot of the environmental index used to evaluate plan performance. Again the value of one represents the status quo or condition under Plan 58-DD. Values higher than one are an indication of an improvement. Values less than one, worsening conditions. As shown Plan A would show slight improvement on Lake Ontario, which is the blue bar, significant improvements on the upper river, the maroon bar, and slight decline on the lower river, which is the yellow bar. Plan B would provide some improvements on Lake Ontario and the greatest improvement in the upper river of the three plans considered, naturally. It was designed to improve the environment.

Lower river conditions would be slightly worse than Plan A and Plan 58-D. Plan D would very slightly improve conditions, but conditions, we consider those conditions essentially the same as the current condition, which is Plan 58-D with deviations.

Okay. So what happens after this. We've given you the plans. You have the material in your hands. We have difficulty making these decisions and tradeoffs. We're having these public consultations throughout June and July. We've been consulting and briefing elected officials and agencies on both sides of the border since April and we'll be doing it through July and beyond. And the closing date for public comments will be August the 5th. The study team, the Study Board will make the final modifications to these candidate plans in August after we receive your comments and digest them. The Board and Public Interest Advisory Group will discuss the study results with the International Joint Commission in the fall and complete the final report for public release on December the 31st, 2005. We expect that the International Joint Commission will consider the study results over the winter and hold public hearings and government consultations in 2006. Then the decision on the selection of a new plan and implementation of that plan will be made by the IJC in consultation with governments. That's it for me. Thank you. And I'll hand over the discussion and question and answer period to Jon Montan.

(Applause.)

MR. MONTAN: Thank you, Gene. Before we move to the question and answer part of the evening, I would like to emphasize a few things. We, the Public Interest Advisory Group, the Study Board and the IJC want to hear your views tonight on these candidate regulation plans. We would also appreciate your filling out the survey postcard that was in the left-hand pocket of the folder that was handed to you when you arrived this evening. You can leave it with us at your departure tonight or mail it to us. We will insure that your views are conveyed to the Commission. Your comments and questions will be recorded so that we can make sure that they are taken into account as the final decisions are made. If you wish to

make a comment, please use the microphone so you can be heard by everyone. And please state your name and where you are from. Each question will be responded to by a member of the Study Board and I would ask that whoever, whichever member of the Study Board fields the question would repeat their name so that people know who they are.

One other thing, a matter of comfort. If you would like to drink some water, that water fountain, as you may have discovered, does not work. However, if you go out the door, go past the table where you signed in and turn right, you will go through a couple double doors and immediately to the right after those double doors is a working drinking fountain. Also the restrooms are across the hall, which you may have, may or may not have noticed.

MR. STAKHIV: And after the meeting the Clydesdales are waiting for us.

MR. MONTAN: Right. We don't have horses and we don't have beer, but we do have air conditioning. So can't, you know -- okay. I would ask both the people who are asking questions and those answering them to be as concise as possible. This way we can have time for more people. And if someone asks a question very similar to what you were planning to ask, please consider waiting until everyone else has had a chance to ask theirs. And then, if we have time, you could ask yours. If for some reason your question is not adequately answered tonight, we will try our best to get an answer for you. So I'm going to stand up and move around a little bit. So I would just see if anyone would like to start off and pose the first question or comment on what you heard and seen tonight so far. Yes. Thank you, sir.

MR. SMITH: My name is Jerry Smith. I am a resident of Lewis County and I've spent about 40 years along Lake Ontario. First I'd like to congratulate you all for taking the first long-term look at this system from a management standpoint. It's something that has been very badly needed for many, many years.

I would look at Plan B and I would be inclined to support Plan B with the comment that the ultimate goal should be to move to Plan E. The -- 50 years ago when the modifications were made to the system, the environment was not given adequate consideration. This is really the first attempt to give the environment adequate consideration. Quite frankly, had the developments that changed, the human modifications to water levels, waited 15 or 20 years to the passing of the national environmental policy act, we would not have these modifications to the St. Lawrence River. So my comment would urge all of you to take into account, and the IJC in particular, as the priority, environmental considerations. All of us in this room will not be sitting around this table in a hundred years, perhaps not in 50. I could speak for myself and I won't be here in 50. But what we do now and in future in managing water levels future generations will be far more concerned about that than whether or not someone has messed up a lower unit in their boat engine. They will be far more concerned about that than any minor economic impacts and the treasures of the Great Lakes and the St. Lawrence River are, the environmental needs of those need to come first. And I would urge the Commission to certainly begin with implementing Plan B and hopefully going beyond that in the future. Thank you.

(Applause.)

MR. MONTAN: You sure you won't be here another 50 years? Sure?

MR. SMITH: I'm pretty certain.

MR. MONTAN: Okay.

MR. SMITH: If I am, if I am I'll still be saying the same things.

MR. MONTAN: Okay. Eat blueberries and broccoli. That will be good for you. Yes, sir.

MR. GRADER: My name is William Grader and I live in Clayton and I've got a couple questions actually that were raised by -- suggested by something that Jerry just said. And I'm a little confused about the chart with the net economic benefits. For one thing, we seem to have this discussion of environment on one side, economic benefits on the other. And I'm curious in just how were the economic impacts of Plan B assigned? How was the value of a health environment, healthy wetlands, bio-diversity, how was that determined? It seems to be to me misleading when you talk about net economic benefits, down here at the very bottom. And I'm just curious if I could get a response about clarifying that.

MR. STAKHIV: I'll try that.

MR. MONTAN: Okay.

MR. STAKHIV: We record, two things sort of. I want to make two points. One is that the ecology and the ecosystem was the most understudied component of -- in other words, we knew the least, the least information on, and understood the least about how the ecosystem worked. So we spent, we invested a lot of money in doing these indicators, looking at the environment, building an integrated ecological response model, to get a better understanding of how the ecosystem responds to water levels fluctuations. And we also understood that even though technically economists, and you'll find this in journals and well-studied, claim that they could put values on the environment. And they've done so in many other studies. Our Study Board decided to keep them separate. In other words, to have the environmental indices and the environmental information in its own category and then use that as another piece of information in the overall decision process, coupled with the economic information.

So while we also debated putting values on ecological -- putting economic metrics on ecological values, it was rejected by the Study Board even though there were a number of economists in favor of doing it. So that's why you have these two pages here. And it's up to the Study Board and the IJC to make a qualitative determination of which of these -- how much are you willing to give up in economic benefits to gain an extra increment of environmental value, as represented in these indices or collectively in the big index below.

MR. GRADER: Well, I know that there are certain -- well, for instance, ecotourism. The possibility for ecotourism. Obviously more diversity suggests that there is more potential for that. And in the -- you do have a column here for tourism. And I'm just curious if that was taken into consideration as a possibility. Were those --

MR. STAKHIV: I would say, first of all, not explicitly. Yes, there are again economic techniques called edonic pricing. We only did a subset of that. That could be used for that. We didn't go into that level of detail, no.

MR. GRADER: So it seems to me that there is, there's some of this equation that might be out of kilter if --

MR. STAKHIV: But no. Well, I mean, you raise a valid point. If we move into Plan B or Plan D and the environment improves dramatically, then the values associated with the environment and all of the recreational opportunities would go up. I mean, I think that's clear. And we could -- if we had more time and more money we could demonstrate it. But on the other hand, the natural flow, we could also demonstrate here in these columns, the natural flow plan would result in disbenefits, or costs, to the recreational boating sector because they would never -- they wouldn't always have the water that they needed to recreate. So it would be a trade-off anyway.

MR. GRADER: But when you get down and call it net benefit at the bottom, that suggests that the economic benefit of the improved environment has been taken into consideration. And I don't think that's the case.

MR. STAKHIV: It's a net benefit of the categories of benefits and costs that we considered. Yes. And it doesn't include the whole realm of all possible economic benefits.

MR. GRADER: All right. Thank you.

MR. MONTAN: That was a very good and provocative question because it gets at the whole assumption structure behind how to evaluate these plans and which metrics can be translated into economic terms and which ones can't readily be translated. I say readily. I mean, I suppose everything could be somehow. But -- are there any other Study Board members who would want to hop on and say anything to supplement Gene's comments? Yes.

MR. WERICK: Hi. My name is Bill Werick. I'm head of the American planning team, and I just had two things. One is that throughout the five years we asked ourselves these same sorts of questions because there's all sorts of connections that we think are real but are hard to measure and demonstrate. We even brought in an outside panel of economic advisors. We had the Nature Conservancy working with us, other environmentalists, always challenging ourselves on this. So what we think we ended up with were the metrics that were the most defensible. We're pretty sure that there are other factors that we weren't able to measure defensibly that are probably real. For instance, the effect of air quality improvements from increased hydropower production. That's a real thing. It's a valuable thing. But it's very hard to quantify for a specific region.

Now, the second thing I wanted to add is, specifically when we say net economic benefit, we mean the net compared to the plan that we have now.

MR. MONTAN: Yes, sir.

MR. GRANVILLE: Hi. My name is Dick Granville. I'm from the Salmon River Sandy Pond area of Oswego County, and something that is, I've often wondered about, if you will here, is the impact of the Ottawa River outflow. We always hear about, you know, we don't have adequate water in Montreal at certain times, and as some of the information came out this evening, the impact on the lower river. Well, certainly the Ottawa River affects some of these things in the lower river. And it just seems to me that's slighted. Now I don't know if that's true. But it seems to me it should be included somehow in the impact on these studies.

MR. STAKHIV: I'll defer to my colleagues, two specialists here. But we did a substantive study of the Ottawa River hydrology and its contributions to the flows and the timing of peak flows and all of these other things. But let me start with Andre Carpentier, who's here.

MR. CARPENTIER: Andre Carpentier from lower part of the system. I think Gene is right. We made a big study in order to know the flows coming from the Ottawa River and also the timing of these flows. And we take care of that on the simulation. When you mentioned that the Ottawa River have a good influence on the levels on, water levels on the Lake Contrecoueur-Montreal and Lake St. Louis, you're right. But the regulation of the Ottawa River is already I would say full, or done, at its maximum. We had there, we have there 43 dams, and reservoir where we can store water in the spring and release the water after that. And we use this water as efficiency as possible for Ottawa River and also Montreal area. So we I think are doing a very good job on the Ottawa River, and we use the result to carry on in order to integrate that in the regulation of Lake Ontario. So I can answer more question if you want about that.

MR. GRANVILLE: That was adequate that it was included as part of --

MR. STAKHIV: Very much, very much so.

MR. GRANVILLE: Good. Thanks.

MS. LAGO: Karen Lago from Clayton, New York. I'm with Save the River, and I have a comment and a question to follow up on what was just said about using 1958-DD as the baseline for the study. I started off the meeting in Alex Bay asking that question and you told me that that's how it's done. You use what we have now to compare. But to do that you skew the results because you do compare. The net is compared to what we have now. And to get an environment that's healthy, as healthy as it was before the projects were created, we need to compare, use that as the baseline because otherwise what you give as .02 or .03 better than what we have now is actually in real terms for the environment far more negative than those numbers would indicate. You're not going to have as healthy a wetland or as healthy a pike population by comparing it to 1958-DD. The goal and one of the guidelines for your study was to improve the integrity of the environment for the lake and the river. And so where that is one of your prime goals, realizing that it was not included when the projects were constructed, I think you would do everybody a service by going back to what the pre-regulated river was. It's one of the things that makes it obvious is when you look at muskrats and how they do under Plan E, which is very similar to the pre-project river. And even Plan B falls drastically behind that. When you look at A, B and D, there's very little difference. I mean, five years, $20 million and we're talking in hundreds of a percent here. Why is pre-project Plan E so much better for the environment for muskrats, for example?

MR. STAKHIV: We have two people here from the environmental technical working group but let me give you my take. One is the difficulty of the -- the importance of using the current baseline is, as you mentioned, we're looking for improvements. And then the question is improvements over what. What is the baseline. We know, we're familiar with what's happening today. We know the current state of the environment and we can make, we can look at those adjustments. No one really knows what the environment was in the pre-regulation state. The ecology and the ecosystem has changed so much over the last 100 years because of invasive species, land uses that I don't believe that we have an ecological model that can tell you what it was and hindcast backwards into what the true state of the environment was. But we do know the system today. So we can say that if

we're changing the system, these are either improvements or they're, or they're disbenefits to the system.

MS. LAGO: But in such small incremental steps? I mean, they aren't really net gains for the environment.

MR. STAKHIV: Yes, but the second thing. But the second point I'll make is, regardless, we looking at the environment that we have today and the ecological response model that we developed, you can still get the sense of what the -- what we think the pre-existing condition was or the natural condition. It's under Plan E. So in other words, you can still look at what the improvements that Plan E is, would still be far better to bring it back to its, closer to its natural state. So the data are there in the charts anyway.

MS. LAGO: Well then, moving on Plan E would be my next suggestion, but that's been taken off the table.

MR. STAKHIV: You know, if you're really insistent you might get the Commission to agree to reconsider Plan E.

MS. LAGO: How would you suggest we do that?

MR. STAKHIV: When they go through their public meetings, next year.

MS. LAGO: Will you present them with Plan E at --

MR. STAKHIV: Well, no. Plan E, we have the data. It will be in the report. It's just that the Study Board decided that the public isn't ready for Plan E yet.

MS. LAGO: Well, someone asked you in Alex Bay, when is a good time for Plan E. There will never be less development than there is now. People will continue to build on flood plains where they shouldn't. It's not going to get to be easier to implement Plan E.

MR. STAKHIV: What I'm saying, we're not censoring Plan E or any of the other plans. They will be presented in the report. What I'm saying is that the Study Board recommends as its final set of three plans that the Commission ought to be considering seriously are A, B and D. That doesn't mean that we're simply going to ignore it and eliminate it from the report. The information will be there.

MS. LAGO: Will you include in your report a list or a summary, some sort of, something so that the IJC knows exactly how the environment has been degraded over the last 50 years?

MR. STAKHIV: The environmental technical working group has prepared that report, yes.

MS. LAGO: Okay. About the muskrats.

MR. STAKHIV: Yes.

MS. LAGO: I was curious why that number was so high.

MR. STAKHIV: Do we have a -- yeah, we have Dr. Muskrat here.

(Laughter.)

DR. FARRELL: Dr. Muskrat. That's a new one. Actually I'm Dr. John Farrell and I'm a member of ETWIG and we, you know, getting to your question about the pre-project as a baseline, we developed something called the integrated ecosystem response model that had that 400 indicators that were distilled down to 32. There was a great deal of research that showed the impacts of regulation on the ecosystem. I agree with you, Gene, that we don't have a lot of information about the history of the environment, but we do have several indices that do show severe declines in northern pike populations, for instance, from commercial landings that go back to the 1920's, for instance. We have strong linkages between the water level regulation and what's called year class formation of northern pike, and that's the ability of northern pike to produce strong numbers, which is called recruitment, which supplant the population and year class formation has declined precipitously in this system. And we've also seen a decline in a major fishery. So we do recognize that there are major environmental issues that affect economics and the environment in this region.

Another one, getting to the muskrats, why are muskrats important? Muskrats are a primary herbivore in our wetlands around here. And it's one that we were able to model quite precisely. We have reference marshes throughout the system, not throughout the system, but about seven reference marshes where we regulate water levels independently of the lake and river, and we can see the ecosystem responses unfold without having to make major regulation changes. So there's -- I'm a director of the Thousand Islands Biological Station and we're doing long-term ecological research that takes water levels into consideration. But muskrat houses, they need higher water levels in the wintertime to build their houses. And in our experimental marshes we've seen muskrats eat 20% of the cattail biomass in a single year when they're given adequate water levels. And we've also seen marsh birds respond to that. Virginia rails, for instance, and also northern pike respond to the opening up of the marshes. Doug Wilcox, who is with ETWIG, has shown that many of the marshes have closed in throughout this region with cattail, which kind of provides an effective barrier for use by fish and wildlife. Some wildlife do prefer the dense cattail stands, but the wet meadow habitats that once were predominant in this system have been encroached upon by cattail and I'm sure many of you have noticed that throughout the system. So that's, there's linkages between that and water levels management as well. So, thanks.

MR. MONTAN: Dan.

MR. BARLETTA: I'm Dan Barletta. I'm the U.S. PIAG lead and also on the Study Board. Just a follow-up answer to your question about the environment. The environment was only one of our guidelines. I mean, we looked at -- we did not treat any of the interests any better than the others. We didn't want to have disproportionate loss. Plan E has a lot of disproportionate loss and that's the reason why it didn't make the cut as a candidate plan. You know, at the present time we can't, quite frankly you can't destroy the other interests that are in there any worse than the other, other people. We wanted to have equal damage, if there was going to be equal damage.

MS. LAGO: Okay. I hate to use the phrase, because it's not very popular these days, but affirmative action, you know, should try to compensate for losses and for 50 years the environment has --

(Whereupon, at approximately 8:00 p.m. there was a power failure in Sacket's Harbor and subsequently, no electrically oriented equipment was functioning.)

CERTIFICATE

I, THOMAS BAKER, certify that the foregoing transcript of proceedings in the USACE-PIAG, Public Meetings, was recorded utilizing a Sony BM-264, and transcribed from a Sony BM-246 transcribing and recording machine, and is a true and accurate record of the proceedings.

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