Transcripts

INTERNATIONAL JOINT COMMISSION
LAKE ONTARIO -- ST. LAWRENCE RIVER STUDY
PUBLIC INTEREST ADVISORY GROUP
PUBLIC MEETING
HÔTEL GOUVERNEUR
TROIS-RIVIÈRES, QUÉBEC
FRIDAY, SEPTEMBER 17, 2004
7:00 P.M. -- 9:40 P.M.

COMMISSION MIXTE INTERNATIONALE
ÉTUDE INTERNATIONALE SUR LE LAC ONTARIO ET LE FLEUVE SAINT-LAURENT
RÉUNION PUBLIQUE DU GROUPE CONSULTATIF SUR L'INTÉRÊT PUBLIC
HÔTEL GOUVERNEUR
TROIS-RIVIÈRES (QUÉBEC)
LE VENDREDI 17 SEPTEMBRE 2004
19 h à 21 h 40

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FRIDAY, SEPTEMBER 17, 2004
EVENING SESSION

…Upon commencing at 6:55 p.m.

WELCOME AND INTRODUCTORY REMARKS BY MARC HUDON

Marc Hudon, as Chairperson, called the Public Meeting to order and welcomed everyone present, also noting the presence of the MP from the Bloc, Maxim Anger(ph) and his attaché, Michel Lamprend (ph), as well as Normand Gariépy, the Director of the centre local du Développement. He introduced the Study Board members present and gave a brief outline of the work that had been done by the Advisory Study Group.

As well, he outlined the agenda for the evening, noting that there would be a power point presentation on the state of the development of the project, followed by a question and answer period, which would be shared with Olcott, New York, through a telephone link-up. He encouraged everyone to participate and share their comments, views, ideas and concerns with both the Study Board members and the interested parties in Olcott, New York, in order to bring modifications to the project.

He then invited Marcel Lussier to proceed with the power point presentation.

POWER POINT PRESENTATION BY MARCEL LUSSIER

Marcel Lussier then proceeded to the power point presentation, giving a brief outline of the origin of the Public Interest Advisory Study Group, its mandate and its activities to date and its deadline for the completion of the projection. He stated that they were all volunteers, representing different locations and interests around the Lake and down the River, and emphasized that their job was to make sure that everyone's concerns, ideas and suggestions, expressed at the public meetings, would be addressed in the Lake Ontario-St. Lawrence River Water Levels Study.

He went on to give a brief history of the International Joint Commission and their mandate and activities. He reviewed different points pertaining to different areas; however, in terms of the Lake St. Pierre region, he highlighted the following points:

The upper level is the flooding threshold. The lower level is the flooding threshold from late spring on, due to the flooding of farmland on the north shore of Lake St. Pierre.

Riparians, people who live along the edge of the Lake or the River, can be affected by all of these performance indicators.

From April 15th through October 15th, these are the optimum levels for recreational boaters. The lower level impacts boats since docks of recreational boaters, who live along the river, are too high and shoals are exposed. The higher level floods these docks.

The 5.77 m is the level at which commercial dock facilities at Sorel could be flooded. To allow for optimal loading for all vessels at Sorel, the Navigation Group would be 4.38 m. At 4.08 m, loading reductions are necessary for most vessels. Below 3.78 m, ships must do what they call "light load", raising their costs dramatically.

At the conclusion of the power point presentation, numerous attempts were made to link up with Olcott, New York, but to no avail. Hudon subsequently decided to continue with a question and answer period solely in Trois-Rivières.

QUESTION AND ANSWER PERIOD FACILITATED BY MARC HUDON

MARC HUDON: So that is it. We cannot connect up with Olcott. We are giving up. It is not going to work here. So, with this, I guess that we will continue and proceed on.

I would like to invite you to not hesitate to ask your questions, make comments on what was presented this evening or on any relevant topic or any preoccupation or anything that you want to communicate.

So I will turn the microphone over to the lady who is here. It is recorded so give your name and mention who you represent.

VICKY DELLETTE(ph): Well, good afternoon, evening. My name is Vicky Dellette. I am with the Lake St. Pierre Zip Committee.

My question is simple. When you showed the graph with Lake St. Pierre, there was the environmental point of view, and then there was a straight line. I was wondering if you anticipate imitating the seasonal fluctuations with more water in the spring. That is my question.

MARC HUDON: Christiane.

CHRISTIANE HUDON: My name is Christiane Hudon. I work for Environment Canada at the St. Lawrence Centre and I am on the Environment Committee.

Now, the reason that there was a straight line there is because, right now, we are working with criteria that are temporary, interim criteria that were set up temporarily to be able to establish the model and to put some simulations in there. So we have a lot of scientists, many of whom are here in the room, who are working on the environmental issue in the river and who are concentrating on Lake St. Pierre. Some people are working on wetlands, including me, on birds, fish.

And the consensus is stronger and stronger to the effect that we want the regulation plan. It must resemble as much as possible the natural variations that we would see in the system if it was not regulated. In other words, the golden rule, in terms of the environment, is that the closer it is to nature to non-modified state, the better. The big issue is: Well, to what point can we deviate from the natural cycle that would still be acceptable? That is the big challenge of our group. This is what we are working on and this is why we have not put any values into the model because we are still digesting data and information to be able to find this value. Okay?

MARC HUDON: Does that answer your question?

VICKY DELLETTE: Yes. Thank you.

So another question or a comment? Yes, sir.

ALAIN DAIGLE: Thank you. My name is Alain Daigle and I represent a simple citizen. I am very interested in the environment. I have been so for many years, especially in terms of climate change. My question deals with the salination rate in the river inasmuch as the Great Lakes, as it seems to be the case in some documents that I have read in the past few years, is that, if the water level goes down, what effect will it have at the outlet of the St. Lawrence, in terms of salt water intrusion and the effect on the wildlife?

So, first, is my fear founded? So can someone answer.

MARC HUDON: So we need an answer for this gentleman.

DENIS LEFEBVRE: Denis Lefebvre, Oceans and Fisheries.

I work at Mont-Joli. I work on water levels between Quebec and Montreal for navigation. That is my work for the Canada Hydrographical Service.

Yes, there have been some salinity fluctuations. Right now, salinity goes up below Ile d'Orléans. In other words, salt water stops around Montmagny. With the tidal flows, yes, that front moves and, with the decrease in water levels, it can slowly creep up to Quebec City, but so far nothing indicates that it will increase any more than that. Now, in terms of climate change, we are talking about a 50-year timeline, the water level will increase slightly, and this will increase this saltwater front slowly. So there is a first source of potable water that is the Ste-Foy water inlet, which may be the first one to be affected, but no study indicates that it is threatened.

MARC HUDON: Does that answer your question?

ALAIN DAIGLE: I have a follow-up question.

MARC HUDON: That is why we are here.

ALAIN DAIGLE: So, to follow up on your answer, I have another question.

If ever the process - my name once again is Alain Daigle - let us say that the process as such would continue to progress, do you have a possible solution? Does it make sense to eventually build some locks between Lévis and Quebec to keep the water level, if ever the Great Lakes were to go down? Would that be possible? Is that something that could be realized because we know that, between Lévis and Quebec City, the distance is fairly narrow?

MARC HUDON: Normally, our American friends are the ones who ask these types of questions. I will let André Carpentier answer it.

ANDRÉ CARPENTIER: André Carpentier, from the Study Group and the Control Group.

There have not been any plans to build a dam with some locks between Quebec City and Lévis, but it is an often asked question. I mean, they are asking us: Why not build a dam in the river since we are sending you water and you are sending it to the ocean?

Now, if you remember, in 1987-88, the Quebec government had considered building a big project in the Montreal area, the Archipelago project that would regulate the waters around Montreal and would help all other interests. So this project was abandoned for various reasons, including the main one being that it was a huge investment with no profitability. Well, obviously they tried to add hydroelectricity there, but there were so many secondary impacts and the mitigating factors would have cost $300 million on a project of $1.3 billion. So, considering the low effectiveness versus investment, that project was abandoned and we have no plan to start it up again.

Now, the mitigating factors were for the environment at the time, and the visual aspect as well. So these are not solutions that we would want to submit as mitigating factors.

There was another study that was concluded in 1992 for all of the Great Lakes, to try to find a new way of regulating all of the Great Lakes from Lake Superior all the way to Lake Ontario. The conclusions of that study are: Forget to build any other structures at the outlet to Michigan or Erie.

In my opinion, I participated in these studies. This was the best recommendation that could have been given for the people downstream on the St. Lawrence. You can imagine that, if you have a tap, well, you can open it or close it at will. If we have too much water, so there is also too much water on Michigan or Erie. It will be easy to think that some people will want to open the tap and, therefore, we will have to open Lake Ontario and we will get it.

Well, there again, we had considered all the conditions at the time. One of the conclusions was that, if we did not want to flood everyone, well, there was a canal between Montreal and Three Rivers and we would have to build dikes. That was also very expensive. If there is no water and we are headed towards climate change and we think that there will be less, well, there is a good trend to close the tap. Well, if we do not have much, we will not give you too much.

So that is why these solutions of dams from north to south, these are not solutions and it is not in the mandate of that study. It is written in our mandate not to consider any new structures, and I think it is to our advantage in the St. Lawrence.

Now, in the mitigating factors that we mentioned previously, there may be some dikes - small dikes, partial dikes - that might be built if we get to very low levels, but it is simply as a hypothesis. No one has seriously considered them or designed them.

MARC HUDON: Did you want to add anything else? Okay. So does that answer you? Yes, Normand.

NORMAND GARIÉPY: Normand Gariépy, Chairman of the Biosphere Solidarity Co-op. We want to have the most natural management possible. I want to remind people that in the past, the St. Lawrence River, before man intervened in the management of its waters, it was a natural river. It is no longer a natural river. It will never be a natural river. In the past, the St. Lawrence flooded Montreal partially. It flooded the Lake St. Pierre archipelago completely. It dried out to a point where, some summers, some people have almost been able to cross Lake St. Pierre on foot.

Today, we maintain a water level artificially high. It is beneficial for navigation, beneficial for the large urban cities, for drinking water, beneficial for the public safety. All of that is all well and good, but there is a lasting phenomenon since the mid-fifties, and we have not found the solution.

I would like to call on the IJC because it is very accountable with the erosion of the shores, on the erosion of the islands. There are 300 kilometres of shore that have eroded between Montreal and Lévis and, unfortunately, we had chosen at the time not to protect this heritage, which we are losing.

So we have to admit that this water level control, if we control the water level, if we have a constant or a quasi-constant water level on the St. Lawrence, this produces a lot of erosion of all of the islands between Lake St. Pierre and Montreal.

So what I want to say is that we will never succeed in recreating the natural management. We can hope that there will be, okay, a favourable fluctuation for wildlife and the least fluctuation possible for the safety of people, for drinking water and all of that, but, someday, we will have to admit very candidly that our management of water level - and especially the IJC - creates erosion, and we will have to have the honesty of saying that we will try to find a solution.

So that is my comment. It is not really a question because the area is very well documented. Everyone knows that, yes, there is navigation, yes, there is an erosion by pleasure boating, but the maintenance of high water levels to favour some criteria has generated unnatural management of the St. Lawrence. We will probably, in this study, have to find some solutions to protect our island heritage in the St. Lawrence.

MARC HUDON: So thank you, Normand. Do you want to add anything? Jean-François?

JEAN-FRANÇOIS BIBEAULT: Jean-François Bibeault from the Pleasure Boating Technical Group. I want to react to the comments that have just been made.

Now, in the erosion factors, especially between Varennes and the Sorel islands, there is commercial shipping as well. In some areas, when you are less than 500 metres from the waves of the shipping in this section, we have noted strong erosion. We see that the further away you get from that zone, there is less and less erosion of the shoreline. So we have to be careful. Yes, the water level is one element, but the passing of larger ships is also an element when the ship is close enough to the shore. The seaway is fairly close to the shoreline in some areas so that is an element that must be taken into account as well.

MARC HUDON: So Christiane?

BERNARD DOYON: So another part of the answer here… Bernard Doyon. I work on the Technical Work Group on coastal processes.

Just to add a comment to what was said before is that, yes - I do not want to talk about responsibility, there are other people who are better able to do that than myself - but, yes, we are aware of the problem. It has been taken into account. There are performance indicators that do take into account the erosion of the coastal shoreline. All those factors will be brought together in a shared vision model and will contribute to establish the new regulation plan. It is known. It will be taken into account in the new plan that will come out in about a year's time.

MARC HUDON: Yes, sir.

BERNARD DOYON: I just want to add that it leads us to thinking that things that happen pretty far away from us, that we do not see, can have an impact all the way here. That is why your comments are important.

MARC HUDON: Is that a comment related to this? Okay. So I will come back. I just had this gentleman in the back and I will come right back. Tom.

TOM McAULEY: Tom McAulay of the Joint Commission.

I just wanted to remind people that, in the whole basin area, there are different conditions, geologically speaking, and the clay that is at the bottom of Lake Champlain, which filled the entire area above Montreal to Lake St. Pierre, this is a clay that is very easy… that erodes very easily. In other places, there are other materials, harder materials, and, therefore, there is less erosion.

So in the study, there are many parameters that lead to this erosion apart from the passing of boats, large or small, wind, waves, but there is also the regulations and we will see which factor or how much we can improve on that with a better plan.

That is the objective of the study.

MARC HUDON: We have a picture up front simply to show you. It is in English, but I wanted to take advantage of it, because it says a lot. This is 1890 all the way to the year 2000. The black line is when the dam came into play. The dark parts are the volumes of water before the building of the dam. So the dam… the plan in 1958 was built according to what the people, at the time, thought was going to be the flow of water, but then the flow of water improved constantly up until this date. Well, maybe not all the way to today. We see that it is starting to go down here on the topic. You can see that the plan reacted well within the context of the water influx that was taken into account in preceding years.

So, Gariépy, is your comment on the same subject? Okay.
Okay. And I will be right back with you.

ANDRÉ CARPENTIER: André Carpentier of the Study Group.

I just wanted to add that, with the plans that are being proposed, we are going to evaluate the impacts as though there were no regulations. We will be able to see the difference between the actual plans, if there were no regulations, and the new plans.

Without having done this analysis, I wonder if the erosion would not have been even more if there had been no regulation. You spoke earlier of the fact that we are trying to have a constant, stable level. Well, I think that, if we look at the fluctuation of the water levels in Lake St. Pierre, it is not very stable. There is definitely, maybe not as importantly as though there was no regulation, but there are variations due to the upflows from Lake Ontario and the Ottawa River.

We know that the erosion is a function of the quality of the soil, of the shores, but also the water levels and the variations of the water levels. I think that, if there had been no regulations, the fluctuation would have been greater and, therefore, we would have gone higher and lower and, therefore, as well, we would have seen more erosion.

MARC HUDON: Is it something to complete what is being said? Yes.

NORMAND GARIÉPY: One must have walked along the shoreline, as I have for the last 20 years, to not agree with what is being said. The water level that is being maintained, you know, I am thinking of someone who was born on Ile de Grâce, Ile Letendre, who is now deceased, but who was part of the focus of a movie by the National Film Board. He died last year, but, in his entire youth, he said that he never saw any erosion on his island and forever and ever.

At the point when we started managing the water levels to build a seaway, erosion started to take place. Why did it begin at that point? You will see, this is what I learned from speaking to that person. Previously to that, his house was inundated by about one metre of water so the island, by being submerged, there is almost no water current that hits the shore.

In the springtime, of course, the water withdraws. Now, in July, Henry would tell me that there was an area where the vegetation would grow during that period so that the next spring it would protect the incoming water.

Today, what we have done with the management of the water levels is that we have kept the vegetation from taking root, and it is gone. It is no longer here. When this gentleman was saying that, yes, the soil is unstable, that it is clay, but before, that vegetation was what made it possible for the island to not erode. It held the soil together.

What was noticed in 1960, when someone did their PhD on that, that was at a period when we just started to manage water levels. Deconais(ph), when he screams out, because he discovered the archipelago at the time when there was more than one metre of erosion, I would say, up to five feet in certain areas, he was looking for an answer, a solution or the cause of that.

It was Henri Letendre and Jean-Georges Lavallée who explained it to him, the grandparents of whom have never seen any erosion on that island. A few times, an erosion, which they called "le grand nordin" in the month of May when the water would withdraw after the spring thaw, a strong wind for weeks, yes, there would be erosion there, and that is nature that would decide, you know, to take up a little corner of the island.

But look at what the federal government has done, the Canadian government. As soon as it started to manage the islands in 1960, it set up a program to protect the shorelines, paid by the government, because they had destabilized them. I am talking about the St. Lawrence as well. It is easy to criticize that today they chose not to protect the insular environment and, you know, this is our wealth, our heritage. Maybe it should have done so.

I want to insist on the fact that there is a water level phenomenon that has brought a lack, an imbalance in our ecosystem in the St. Lawrence, and that is the real reason.

Now, you, sir, are right by saying, yes, that, in the studies that have been made near the Maritime canal - I do not remember the distance from that, as I participated for three years with Denis - yes, it is true that the boats and the waves, that they cause, cause a more severe erosion, but I can tell you that, in the Lake St. Pierre archipelago or on the other side, where there were no boats going through near l'Ile Lamage, near Lac Aval, they are all under erosion, and there are no boats going there. There is not enough water for that.

So I do not want to criticize the management. That has enabled us to have a commercial navigation, drinking water and to not have, as in 1865, flooding that killed 40 people in the Lake St. Pierre area, but, yes, we had to do something. Mankind had to do something, but recognize as well, which is what I am saying, is that that action had consequences and that, together, we need to find a solution to that. As this gentleman was saying, yes, we will take it into account, but we will recreate a natural cycle that will enable vegetation on the shoreline to settle in once again so that, the following spring, the shoreline will be better protected.

You will forgive me. Marc knows me with this file. I am very concerned.

MARC HUDON: Yes, I am just a little disappointed that the people from Olcott cannot hear what we have to say.

CLAUDE LEMIRE: Claude Lemire.

We often hear, in Lake St. Pierre, when the water levels are very high, they say: "Oh, yes, it is people from the Great Lakes who do not want to get their feet wet, so they send us the water."

Well, I want to know the reaction time, when there is a regulation, whether we hold water or let is flow through, by the time we feel it in Lake St. Pierre and the amplitude that it could have dependently on the measures taken.

MARC HUDON: Well, we have some colleagues in that process that have asked the same question. André, this one is yours.

ANDRÉ CARPENTIER: Well, André Carpentier, once again, from the Control Group that manages uploads from Lake Ontario.

The time that it takes is about 24 to 36 hours for the Montreal area, and another 12 to 24 hours. Here, when I give numbers such as these, you will say: "Well, that is an important difference." It depends on whether we are in a strong outflow or slow one. Another 24 hours, I would say, to influence the Lake St. Pierre area.

One way to determine what amplitude that could have, we have a slide here that shows the impacts if we lower Lake Ontario by two centimetres and what would happen. It is about the same thing pretty much. There are a few centimetres of impact.

If we reduce the outflow of 150 cubic metres per second of Lake Ontario for a whole week, it is important because Lake Ontario, you are going to say the same things that everybody knows, but Lake Ontario is a lake, whereas the St. Lawrence River is a river, because we do not keep the water. We cannot hold on to it. There is no dam and we do not want water either.

So, when we reduce and lower Lake Ontario by 150 metres per second during a week, it goes down by two centimetres; if we increase it, well, okay, it is the reverse. There is an impact on that part just above the dam. If we lower the outflow, again, that is the reverse. It is the other slide. If we increase, by two centimetres, Lake Ontario, we increase the level above the dam by two centimetres and, in Lake St. Louis, by 30 centimetres. It is about the same thing in Lake St. Pierre. It is something like one centimetre for 25 to 30 cubic metres per second in elevation. So, if we reduce, it is the reverse.

So let us not forget. We are talking about whether there are strong outflows from the Ottawa River and the St. Lawrence, which are very important, and we can reduce because of those characteristics. We can see that there is a factor of about seven to 20 times, if we look at it that way.

So, if we reduce Lake Ontario, lower Lake Ontario because it is not at its maximum level... that is important because it reaches its peak at the end of June, but we have these

problems in April or May. So we could reduce or lower Lake Ontario, and that is pretty much the order of 300-350 cubic metres, that is one centimetre per week. We have that impact per day if we continue to lower it that way.

So we could do that for a few weeks. We know that these peaks last about two weeks, but then, if they do not have any problems out there, they keep the water to send it down later on in the fall.

If they have problems, they send it as soon as our problems are reduced, and that is the compromise that we have. We cannot do it any differently. We cannot say, you know, help us when we need them but then keep the water that you have taken. So we return the water when we do not have any more proble It does not favour the environment. I see some people reacting with big eyes, but we do reduce the fluctuations, but that is what regulating the water levels does.

MARC HUDON: Yes.

CLAUDE LEMIRE: Claude Lemire.

What is the maximum amplitude after 48 hours that we receive? What is the height of the water level that is due to regulation of Lake Ontario? We spoke of a few centimetres. What is the greatest amplitude, let us say, that could be observed, that is recurrent in this under normal circumstances? Can we go up two feet two days later as a result?

ANDRÉ CARPENTIER: Well, I think that you are all aware that it depends on circumstances and they are normal circumstances. We cannot increase by more than 500 cubic metres, normally. Alright?

CLAUDE LEMIRE: …off mike comments…inaudible)…

ANDRÉ CARPENTIER: Well, it is 350 so about 15 centimetres. You divide it by 30 and you get 15.

But, if there is flooding in the Montreal area, we will diminish more gradually. We have gone already up to 2,000 cubic metres of reduction, so 70 centimetres of reduction.

Another example, which could be the reverse, if you remember when there was that famous blackout, about a year or a year and a half ago, in August of last year, we had to reduce the outflow enormously because there was no… well, it happened during the ice period and we had to close Beauharnois and the Niagara Port Authority because we could not handle it anymore.

So we had to reduce by 3,000 cubic metres for a few hours. It had an impact on Lake St. Louis and it had an enormous impact on the St. Lawrence Lake. They were almost flooded because, by reducing, you could see that it has an inverse effect; we increase. So, for them, 1,000 cubic metres for them is almost a metre. Now, at that point, they had to close the nuclear plant and, since it does outflow rapidly, we came back to a normal level, the flow that we had before. Then, during peak periods, we increased by about 1,500 cubic centimetres.

So we played a lot to try to help each other mutually, Ontario, the state of New York and Quebec.

MARC HUDON: Your name.

CLAUDE BÉRUBÉ: Hi! I am Claude Bérubé, in my own name.

I live on the shore and I have a question for Carpentier perhaps. How do you measure the water level? What is the method used and the frequency that the area has a place for us in this area here, in the Three Rivers area? How do you do it?

And the other question that I have as well, which this gentleman behind me had asked, is: The time that it takes from the time you open the tap in Cornwall to come to here, how long does it take normally, let us say, in the month of May? Because then people could, at a certain point, try to use methods to protect themselves. Thank you.

ANDRÉ CARPENTIER: Yes, well, by now, you know me. André Carpentier, since this is being taped.

The alterations for regulating, we identified the water levels in Pointe-Claire. This is a control point that we have, where there is an impact on the Ottawa River and the St. Lawrence. That tells us that, if there is a problem in Pointe-Claire, there are also problems for the down river. There is a link, a relation that is established and we have a correlation.

So we have an alert point in Pointe-Claire. We have a flooding point in Pointe-Claire. Then we can verify elsewhere. Although we now are aware of the problem, we do not have, at the present time, as a constraint, the floodings in Lake St. Pierre. It is done automatically because we control in Pointe-Claire, but, if there was any external water inflow at the Ottawa River and the St. Lawrence River, an important river, let us say, a strong rain, catastrophic rain, let us say, if we knew about it, we would do something, but it is not part of the plan. These are part of the discretionary decisions that are made.

The other question as to how long does it take in the month of May, I mentioned it earlier. In Lake St. Pierre, it is about three to four days, yes, from the moment that we open it up in Cornwall. And we have tried to do some forecasting to determine what will happen in three days in Lake St. Pierre to say that, well, maybe we could close further up. It is a matter of forecasting the different rivers and tributaries. That is where we need to forecast because the outflow from Lake Ontario is determined, as you know, for a week so there is no variation there.

It is what happens between Cornwall and Lake St. Pierre, all the entire flood basin, which is fairly important. We are talking about three miles of Montreal, with 3,000 square kilometres in Montreal, plus all the tributaries so that is quite important.

MARC HUDON: Thank you, André. You wanted to add something?

DENIS LEFEBVRE: Denis Lefebvre, Fisheries, Oceans and Fisheries.

We have a series of observation points along the river between Quebec and Montreal, and different areas. For Lake St. Pierre, there is one right in the centre, which is on the second curve and, in the summer, at Port St. François. So these are observations that are available.

Oh, and there is Three Rivers itself. So these observations are available in real time and we can monitor.

MARC HUDON: Where is the number two station?

DENIS LEFEBVRE: Well, it is right in the middle of the canal towards the west, more towards Sorel, two-thirds of the way between Trois-Rivières and Sorel.

CLAUDE BÉRUBÉ: …(off mike comments…inaudible)…

MARC HUDON: Please use the microphone. It is important for the taping. We are in no hurry. We have plenty of time.

CLAUDE BÉRUBÉ: Claude Bérubé. It is me again from the Three Rivers area.

The method used, what method do you use to measure the water level? Because, if we consider the wind direction and speed, there is a bunch of factors at a certain point that become contradictory. So that is why I want to know how you go about measuring these things precisely.

MARC HUDON: Very good. Let us go get the answer to that. You do not do that by canoe, do you?

DENIS LEFEBVRE: Alright. The method is a pressure method. It is a pressure system that is at the bottom of the water, and the pressure is proportional to the height of the water column above the sensor.

The other issue: Since the measurement is taken in the centre, if there is a wind coming from a different direction, from the north. Let us say more simply, a wind from the south, the northern shore will be higher than the southern… the south shore.

So, since the measurement is made in the centre, yes, there could be some differences in the measurement. It is the middle of the lake and there is a slope in the lake that is not being registered. So it could influence, but, when we interpret the measurement, we can apply a corrective factor, but we do not have it in the initial measurement.

MARC HUDON: Does that answer your question?

CLAUDE BÉRUBÉ: Yes.

MARC HUDON: One second please. Is that on the same subject?

ANDRÉ CARPENTIER: You have asked. The data is collected every 15 minutes, it is real time data, and the wind factor also plays an important role at the dams, at the outflows from the da So, if there is wind, the level at Beauharnois will increase and they have to release more water, and the opposite is true as well. So there is a certain impact, if you want to call it that, caused by the wind on both sides.

MARC HUDON: Yes, Elaine.

ELAINE KENNEDY: Elaine Kennedy, Public Interest Group. I am sorry I cannot express myself so well in French.

Some of the things that the folks here are missing because we could not connect with Olcott was the fact that the people on the south shore of Lake Ontario asked very similar questions to this gentleman here, and one of their complaints to us is: Why not lower the lake more to get rid of some of this water because, when we have big storms coming from the northwest, it floods our property along the south shore of Lake Ontario?

So they have the same problem as what you are talking about here with the wind causing problems on Lake St. Pierre. These problems are even more augmented on Lake Ontario from nature. Nature does so much more controlling than what we can do, and that is one of the things, in looking at this whole problem of what is good for Lake St. Pierre, what is good for Lake Ontario, that we have to look at how do we balance both of the two ideas, i.e. what we can control and what nature controls.

MARC HUDON: On the same issue? Okay. You are on the waiting list then. I have a lady who was very patient here.

MARYSE LONGCHAMP: Maryse Longchamp, Zip Committee, Lake St. Pierre.

This is my question. You talked about water levels, ideal water levels, for example, for Lake Ontario. So knowing full well the ecosystems, their evolution, is not the same, is not at the same level as that in Lake St. Pierre, what are you going to base yourself on to control a given water level? Will it be on the richness of the lake, Lake Ontario? Is it going to be on the more important population density? What are the bases, ecologically?

MARC HUDON: So I am headed towards Christiane Hudon.

CHRISTIANE HUDON: That is another very good question.

When you look at the series of water levels at Lake Ontario, before and after a regulation, maybe we could even show it on a graph or on the screen, we realize that, before regulation, Lake Ontario - could you put it to the right slide? - so before regulation, Lake Ontario followed some variations that were not cyclic, but they were over 15 to 30 years so that we had seasonal variations, but we also had larger cycles of water levels.

So long cycles that corresponded to climatic cycles, in the thirties, for example, there were many years of drought in the American Midwest and the level of all the Great Lakes, including Lake Ontario, went down quite a bit.

So, in blue, this is without regulation and, in red, it is with regulation. So, if you look at the blue line, starting… well, before the sixties, we followed some broad cycles. So the minimums and the maximums had a very high amplitude, but, with the regulation in red, you see that we lost the broad cycles, the larger cycles. We still have seasonal variation, but we have a similar mean.

So that means that we have eliminated these huge swings that resulted in the fact that the wetlands of Lake Ontario would move closer to shore or farther into the lake, depending on the wetness of the climate. So, when you eliminate these long-term cycles, it has consequences on the environment of Lake Ontario because the shoreline zone becomes

narrower and narrower and more and more stabilized. This gave rise to an important invasion of wetlands by typha(ph), which is an invasive species that likes reeds, that likes stable environments. So they would be dried up or wet, but no species can dominate all the rest.

So, alternately, by having more stable levels in Lake Ontario, when the climate was very wet, we sent more water into the St. Lawrence. When it was dry, we kept more water in Lake Ontario and we gave less to the St. Lawrence. So the variability in the river was amplified to compensate for that.

So, on the one hand, we stabilized and, on the other hand, we exaggerated the variability. In both cases, it had effects on the ecosystem, and this is what we would like to try to correct by favouring a management that is closer to what the climate imposes because, with climate change, we will have to deal with greater variations, and the trend in management will always be: Oh, there is not much water in the system, let us keep it, let us keep the water as a reservoir in Lake Ontario. There will be less in the river, and vice versa. When there is a lot of rain, we will have a huge amount more.

So this is the interplay that we are trying to counter because we cannot always tighten the screw in the system more and more. But, once again, we have to deal with the other interests of the other players in the system to see how their requests will counterbalance those of the environment because, of course, most other interests are not very interested in having huge swings in levels, high in the spring and low when it is dry.

This is where the public opinion and the interest for the environment will play on the weight that will be given to our recommendations. It is really a matter of satisfying everyone without hindering anyone, including the environment. Thank you.

MARC HUDON: Do not sit down. I think that someone wants to make a comment on the same subject. I will be back. I am sure.

BRUNO DROLET: Good evening. Bruno Drolet from the Canadian Wildlife Service.

Christiane gave you the broad overview, but I would like to respond more specifically to your question, and your question was on what region will we base our criteria.

I work, with the Environment Technical Working Group, with ducks and other birds. We have four years of data, of inventory from Lake Ontario all the way to Lake St. Pierre. This data is included in models, but the tool that we did not show you, because it is not done yet, it is being revised to be sure that our models are exact, well, this model allows us to evaluate how they behave in each zone for Lake St. Pierre, for the Montreal archipelago, for Lake St. Louis, for the international part of the St. Lawrence Rapids and Lake Ontario.

So this allows us to see how the indicators fluctuate in each region. So there will not be just one indicator and we will not choose just one region, but we can see how each indicator will respond and will fluctuate.

In that, to give you an example, you have, for example, nesting of ducks. What is the performance of duck nesting according to flow? The same thing for the other birds that are not hunted.

So we are building a model or a tool, a study tool, to see how the wildlife will react according to the flow rate. Now that I can speak and are paid to continue, we are quite aware that we cannot recover the system as it was historically because the seaway and the watershed has changed tremendously. The seaway has changed a lot of things.

However, what we are trying to do is to compare the alternatives to what exists right now to get the best possible plan that will improve the environment or at least that will maintain the environment in the best possible conditions. So I hope that answers your question.

MARC HUDON: An additional comment on the same issue? Okay. So you are number 14 then.

MARYSE LONGCHAMP: Maryse Longchamp, Zip Committee.

Well, I am glad to hear what you have just said because the committee is a consultative committee, and it has to represent the public interest. We want to create some wildlife reserves and the aspects that you have mentioned involve the users and the water levels. I am thinking of commercial fishermen, sports fishermen, fishing centres and recreational activities.

You have to follow up on environmental issues. There is the problem of the outlet of rivers that is inaccessible due to a silting up, and this affects all the economic aspects as well.

So there are two points that the committee must raise, environmentally, and the socio-economic aspect as well.

MARC HUDON: Does anyone want to add to that?

ANDRÉ CARPENTIER: André Carpentier from the Control Committee. I just want to comment on what Hudon mentioned.

When they have a lot of water upstream, they open the tap and we get more. Well, it does not happen at the same time. I do not think that we are flooded because of the problems that they have on Lake Ontario and it does not happen at the same time. So, as I have explained, we were able to keep them. The variation is not the same. It is not in the same time, in terms of impact on the environment. That is very important. I did not want you to leave here saying that, when they have too much water, they send us some and we are flooded and that, when they do not have enough, they close the tap.

I have been there for 20 years and these situations have never occurred and, if you look at what happened in the past, it never occurred either. There are some criteria that exist in the regulation rules so it can never be worse than in the past. When the plan was devised, we had a common hand on the tap, and that is essential.

So that is why you saw, in the guidelines, that the second one says "no disproportionate loss". If we did not have that, it would be very dangerous for us because a lot say that we should look at the net economic benefits. Well, I think that we are against that and this is something that we will never accept.

I think that you asked the question: What will we favour, the lake or the river? I think that both will be favoured, and we are a good group, from the downstream part, and we will

always be on the lookout for these things. It will be a compromise, but everyone has to win or at least the status quo.

So those will be the criteria. Economic criteria will help us to do that. The qualitative criteria, in terms of the environment, will help us to realize this. But one of the most important ones for us is no disproportionate loss.

MARC HUDON: André has been there for 20 years. If you are looking for the guilty party, look at him. Okay, next question. I have this lady, and that gentleman, and that gentleman, and that gentleman, and that gentleman.

LAURENCE ROCHELEAU: Good evening. Laurence Rocheleau from Laflèche College.

We have dealt with the environmental aspects of the problem, but I would like to know more about the socio-economic aspect of the problem. In other words, what are the economic issues that are in play with the fluctuations of water levels in Lake St. Pierre, as the lady from the Zip Committee alluded to?

I know that someone talked about pleasure boating. So what are the economic issues?

MARC HUDON: The economic issues, pleasure boating, fishing and other factors.

JEAN-FRANÇOIS BIBEAULT: Jean-François Bibeault from the Pleasure Boating Technical Group.

Well, when we are talking about economic issues, we are talking, first and foremost, of the users, so the pleasure boaters, the value of what they spend daily, but also yearly, because they buy equipment. So there is an economic value that is fairly important.

There are some effects on businesses that may be far afield from the river, but it is indirect impact that has to be taken into account. You have to take into account the direct impact on marinas and boating clubs. There are some effects, in terms of affluence, in terms of the commercial value of their holdings. There are also effects on nautical tourism. Gariépy… and I cannot see him anymore, but he is well aware of the effects that water level variations may have on all ecotourism, water tourism.

So it is a whole other sector that needs to be taken into account. When you are talking of economic incidence, there are the other uses that are considered within the study plan, commercial shipping, for example, especially the effects in terms of the Port of Montreal since that is where you transfer most of the merchandise going through Lake St. Pierre. Part goes to the Great Lakes, but most of the commercial value is in the Port of Montreal.

We are also talking about the costs, in terms of public services, when you are talking about water inlets, for example, so there are some costs that are associated with the management of services. When there are low water levels, in some case, we get problems, but we have to think about investing in installations.

Now, another dimension in the whole issue of the trade-off or the balance between environment and economics, there is the cost of adaptation in the way that we have developed some economic services, how we have adapted, so far, to the existing water

level. So the equipment, our infrastructures, our boats, are they well adapted to water level variations?

So, if we start from the existing situation and we try to predict ourselves into the future, taking into account pragmatic change, there is a basic questioning on what we want to do and the way that we could and should maybe think of adapting.

The question needs to be asked as well, in terms of the way we will develop our land base, the use of the soil, urbanization, the agricultural use of land. So to what point can we, there again, try to avoid the errors of the past? The regulation plan and the studies will give some answers in line with today's situation, but we will not have all the answers with regard to what we should do in the future.

MARC HUDON: Bibeault, you understand, is fairly gifted in economics. Another subject?

BERNARD DOYON: Bernard Doyon, Technical Working Group on shoreline processes.

I got hung up on the first part of your question. You talked about social impacts… oh, socio-economic. Okay, well, anyway. I would like to say that there are some performance indicators that have been developed. Most have an economic flavour. In other words, the metrics are dollars, except for our friends from the environment. I will give you another example that shows that we have developed some complementary indicators. I consider that, in terms of the impacts on riverside communities, when they were numbered in terms of dollars, it was insufficient, it was incomplete to describe what these communities were going through.

So, in the margin of all of that, I developed other indicators, for example, the number of affected houses. It is one thing to have damage to housing. You have to know the number of families that will be affected, on the one hand. The areas that will be flooded, that is very important as well, all that defined according to the areas affected: agricultural land, urban land or unused or natural habitat. That is important to know. Another performance indicator was the length of flooded roadways, in terms of kilometres.

So all of these performance indicators allow us to evaluate the social impacts.

MARC HUDON: Thank you very much. I will move on to a gentleman who has been very patient for a long time now, if he did not forget his question.

CHRISTIAN HART: No, no, I wrote it down.

Christian Hart. I am Vice-President of the Biosphere, and I am also Vice-President of the Sarcelle Group. We manage 400 hectares of the land included in the Ramesare(ph) Convention for wetlands so we are very much affected by this type of a project.

So, at the Biosphere Cooperative, I will read the official position because it is official and it has been carried. The Biosphere is not a compromise due to its mandate and responsibility internationally. So what we mean is that it is not because we are at the end that we must have to stand for all the rest upstream.

In the past, downstream, that is where the sewers go. That worries me, in the wetland section, when you are talking about the possibility that ideally we can give an economic

value to the losses by the environment. So what environmental advantage can you get from the loss of wetland and what is the value if 50% disappears? I mean, that stresses me out as a position.

I am not the only one, I guess. Well, that is it. Let us say that we have tabled a document. There are many questions in it, but I want to remind you that we have succeeded, in the eighties, in stopping a mid-department of the Agriculture Department, on using fisheries, because there are commercial fisheries, because we managed to stop the destruction of fish spawning habitat. So, if we were able to stop one government, maybe we can try to stop another one.

However, we remain positive because, if possible, we want to have an official process between the Biosphere reserve and the study group because we do not like it when we have international mandates and we learn through an e-mail that there is a meeting to debate our own territory.

MARC HUDON: A good comment. Does anyone want to comment on the economic aspect first, and we will have someone for the other aspect next.

CHRISTIANE HUDON: Christiane Hudon, from the Environment Technical Working Group.

Well, you have raised a point that has generated a lot of horror and debate with all members of the Environment Technical Working Group.

The pressures came from outside the Technical Working Group and, in fact, they request to have economic indicators due to the fact that, for hydroelectricity, for pleasure boating, for many areas of interest, the economic condition remains the simplest way of numbering costs and benefits. But, very quickly, when it came time to try to impose that on the Environmental Working Group, they almost had a mutiny on their hands and it was totally rejected, without hesitation, by all of the group.

So the Board and the Study Board or group had, on the one hand, generated economic models that will have a dollar cost and benefit analysis, but, on the other hand, evaluate the environmental costs and benefits of using other measures, and that will be measured due to the number of hectares of wetlands, of different types of the productivity of some ecosystems, the type of nests or young or cycles.

So we eliminated economic units and we stay concentrated or focussed on the environment.

Oh, yes. Now, about your memoir and the position that you tabled, I thank you tremendously for sending us, in writing, your position. I will send it to the people concerned, notably, Jean-François Bibeault and representatives of coastal erosion and pleasure boating and all the other members of our group, and we will debate it at our next meeting in Montreal.

So we are taking good note of it and we will come back to you on each of the points that you raised.

MARC HUDON: Now, with regard to this aspect, I do not know, Tom, if you wanted to comment.

T. McAULEY: Well, following up on this, that was two years ago, and Christiane explained it quite well. The whole Board agrees that we will use appropriate metrics. It is unfortunate that we do not have the model, what we call the "shared vision model", here this evening.

I went on the Web and I tried to open it because, when we do some test runs, we can see how each plan, the provisional plans that we will try out, how they measure up, compared to - well, let us say, the environment - to all parts of the system. Everything is distributed along the system, all the way down, and each technical group, each performance measure is there, and to see where it is worrisome in one area or if it is better than the existing plan in 1958D. I found it marvellous when they produced the shared vision model, this way of comparing plans to see. So, when something goes wrong in one part, in one geographic area of the system, they are able to receive immediately.

In the Commission itself, when we started this study, we decided first. We tried to have each member of the study take their hats off, and not represent anyone, but, rather, work for the good of both countries with our conscience, with our personal and professional abilities. Everyone did that. We found that there was a lot of respect and a lot of knowledge exchanged. In terms of the objective, we were able, in that way, to have a fair objective, as fair as possible. That will also be presented to the commissioner at the end of 2005.

They will have public hearings around the system and they will decide afterwards. After having consulted the governments, they will decide which plan they will implement, what regulation plan they will implement and what criteria.

There are enough benchmarks to audit the process. Originally, we wanted to have the representation of everyone in the system. This is why we have people who are very knowledgeable from Quebec City all the way to Montreal and upstream and around the lake. In the public interest group, we have people from just about everywhere. So I was marvelled to see that we work quite well together in spite of our differences, and maybe thanks to our differences.

MARC HUDON: But before that, go ahead.

BRUNO DROLET: Bruno Drolet, Canadian Wildlife Service, Environment Technical Working Group.

Well, I think that there is a danger in communication to go too far back in the past on the Web because this process evolved tremendously. We were made aware of the whole complexity of the work to be done, and many things evolved as the study moved ahead. Now, in 2004, the criteria, that you are referring to, were given as an example of where we should go in the use of the tool to do the follow-up, but the criteria are now being defined on the basis of the responsive indicator.

I know that it is frustrating because we do not have fresh information to give you today, but we are working very hard to have the best indicators, the best performing indicators that will allow us to succeed in each area. So this is a point that is important to be said. There was a lot of evolution in this case.

MARC HUDON: So, Elaine, you wanted to comment.

ELAINE KENNEDY: Elaine Kennedy, Public Interest Advisory Group.

One of the points that you brought up is the nightmare of those of us involved in speaking to the public, and that is hearing about people that have not heard about us before.

One of the things that I hope that everybody here has done is turned in their little sheet for sign-up so that you can get our information and, if we ran out of the latest volume IX tonight and you did not get one when you came in, please tell either Greg, myself or Stéphanie back there, and we will make sure that you get the latest copy, if you want it - in hardcover, of course.

Pardon? They are available on the Web. Thank you.

But the key thing is that we want people to be aware of when our meetings are taking place, when we are coming, what we are doing, et cetera. So please make sure that you hear about it because, for instance, at least three volumes before this one, before our latest one, we made mention of the fact that our meetings were coming up and where they were going to be, or at least the dates, and then let people knew where they were going to be.

So you have hit a worry for us, in the Public Interest Advisory Group, that you did not hear about the meetings until quite lately. So you folks were not on our mailing list before.

MARC HUDON: Another comment?

CHRISTIAN HART: I would like to make a suggestion. Include in your mailing list the representatives of the MRCs. They are developing plans, if they are riverside MRCs, on the whole question of recurring, 20-year flood plains for urbanization or town planning. So, if it affects their town planning, it is important to include them because the hydrology expert in my MRC had never heard of the meeting.

MARC HUDON: Péloquin. Now I catch you. Péloquin is a municipal representative. This gentleman has just mentioned that the people here in the MRCs were not aware or are not informed about what the influence of the plan might have in their town planning and, in Montreal, the study does influence your town planning in the Greater Montreal area.

D. PÉLOQUIN: Denis Péloquin.

Well, the study is known at the CMM, but is not communicated right now. We are waiting for complete results to discuss it with the local authorities, but the CMM has delegated - I did not mean to talk about that - so, at the executive level, they are partially aware, but no more than that.

That means that, for people from MRCs or municipalities faced with the municipal working group, as you have mentioned, the data are going to come, but, notwithstanding that, will make sure that we can reach the respected MRCs to give them information because, for a few years, we have the mandate to manage streams so we have one-third of the surface of the lake where it is the waterside MRC. So we have to manage new buildings and we even had to manage with a new right, the right to produce for farmers, so we had to have different management and flood plains compared to non-flood plains. So it is important.

I will quote something that I read. It was the Director of the Loi Watershed who said: "When you have a project, it is easier to get someone in your ship. He will see where you

are going. When you are on a shore looking through the branches, it is hard to see where you are going."

MARC HUDON: Is this on the same issue?

MARYSE LONGCHAMP: Maryse Longchamp from the Zip Committee.

I support what this gentleman has just said. In the project, we have nine hectares of territory to cover, that is in the wildlife refuge, so there are some installations in place that are, and will be, affected by the water levels, and some future construction that may be affected as well.

MARC HUDON: So on to the next question.

ROGER MICHAUD: Roger Michaud, President of the Commercial Fishermen of the Lake St. Pierre area. Are there any studies that are made within the plan on the damages or the advantages of the spawning of fish in the area?

MARC HUDON: Go ahead, Christiane.

CHRISTIANE HUDON: Christiane Hudon.

Well, with regard to the spawning groups themselves, there is a study that deals with the access to the pike in the flood plains and the relationship between the area flooded and the recruiting of different classes of ages of the pike. The greater the inundation areas and the more space there is for the genitors to go and deposit their eggs, of course, and more of the younger pikes will then be able to come into the fishery a few years down the road, five or six years further down. But that is a first study.

There is also a follow-up over a 30-year period, where there is the fishing near St. Nicholas in Quebec, with the over-abundance of about 40 species with regard to the water levels, and that indicates that, for certain species of fish, many species are favoured by strong outflows and that this abundance will be influenced, of course, during the spring thaw and during the summer.

There are also indications that the variations of water levels will affect the migration pattern of fish. The eel, for example, at the time, will migrate between the river and the sea, and is very strongly connected to the water level conditions. The fish feel that there is something going on maybe in regard to the water level and they will move around because of that.

There is also a study that you may want to talk about on the habitat, and all of that shows that, if we take care of the habitat and the water levels, we will favour or handle the development of certain species, some of which may have a commercial potential. So that is the kind of work that we are doing.

MARC HUDON: Further comments on that issue?

SYLVAIN MARTIN: Sylvain Martin from Environment Canada.

Along with the work that has been done at the St. Lawrence Centre, we have developed models that exist, and have existed for a few years. We have taken certain criteria for low

flow, high flow, and for the whole area between Beauharnois and Trois-Rivières, all the potential zones that could be used for spawning. So for the pike and the perch, there are some areas where we can estimate, for these different scenarios, where the potential habitats will be, for example, where there are construction or developments that are not available. I am talking about if the level is not high enough in Lac des Meunières, there will not be any spawning for that.

So, for the reproduction habitat, for the pike and the perch, we have created those models. Those two performance criteria are indicators that will be taken into consideration for the study.

MARC HUDON: Do you want to add something to that?

R. MICHAUD: Roger Michaud.

Now, here we are talking about the spring spawning, but what about June for l'achigan and catfish? When there is a high water level up by a couple of feet and then, after a few weeks, it lowers by a couple of feet, what is the impact on the fish?

S. MARTIN: Sylvain Martin once again.

We have considered only the two species of perch and pike. If you want to have more detailed information, there is Marc and Philippe Brodeur back in your area that might be able to indicate. We have been working with them and sharing information with them to create this model.

ROGER MICHAUD: Roger Michaud once again.

From here to 2005, we do not have much time to have studies on this before the decision is made. As we said earlier, when the decision is made, it will be final. We will not be able to change anything. If there is a negative impact, what do I do after that? I just hang up my nets and go home?

S. MARTIN: Sylvain Martin.

I do not have any answer to this. Those are the two species that have been chosen for study. Once again, we will have to speak to Marc and Philippe.

MARC HUDON: Your comment is noted. Please remember the scope of the study and the amounts of money available. Yes, there is a certain flexibility, but do not think that, because we do not have the answer tonight, that we will not get back to you. People will do a follow-up and you will have an answer to that particular question. Is that on the same subject?

BRUNO DROLET: Bruno Drolet.

Just to give an element of an answer, you have to look at the overall pattern when you look at fluctuations for catfish in the month of June. It could be damaging to the birds, to the sauvagine and the water birds, waterfowl.

When we look at the overall pattern, there are different indicators that tend to cover different species, that we may not talk about directly, but that we do reach indirectly with other indicators.

So, for la sauvagine, we look for stability in order to enable the adults to create a nest and hatch their young, so to have as little fluctuation in the wetlands as possible and seeing where the waterfowl that create their nests on the floating platform.

So, when we have the general tool, we will be able to see if there are anything lacking, anything missing, and we will see where those species are being selected. These are target species that cover others that you mentioned.

ELAINE KENNEDY: Elaine Kennedy, Public Interest Advisory Group.

When the government in Canada and the United States gave the money to this study, the people working in each of the technical working groups got their chunk of money out of the whole pot. They knew that they would not be able to study every part of the environment, every species that would be affected by water levels. So what they did was that, in mammals, fish, plants, birds, they chose certain species that they thought that, if they studied those species, it would give them a good idea of what was happening with all of the fish, for instance, or all of the animals that live in wetlands and along the coast.

So, although your interest in your particular fish, which I did not get quite the translation, but it was not one of the indicator fish, right? So, although your concern about your type of fish, your species of fish was not being studied, what they learn they can apply to your concern and, therefore, try to take that into account when we are trying to make our decisions.

So we are not disregarding your concerns, but they had to do the science in certain areas and not every area.

MARC HUDON: And another point?

CHRISTIANE HUDON: In fact, if you leave me your name and a way to contact you, e-mail perhaps, I could verify with my colleague, who was working on the different 40 species of fish, if there are any relations that have been established for the achigan and the catfish. What we have observed is that there are certain species of fish that have very strong relationships, correlation with a high… or the water level, in general, and some that do not. Since I do not really know that area that well, I could verify with some of my colleagues and get back to you later.

MARC HUDON: Another question now?

CLAUDE LEMIRE: Claude Lemire. The lady is before me.

N. BENKHEROUF: Nabila Benkherouf, Environment Department of Quebec.

My question is: Has one of the study groups taken into account the cumulative impact or impacts? We talk about deadlines for the study in 2005.

Well, it is not on the same subject. This is on another subject.

MARC HUDON: Okay, sorry. I want to come back to my fisherman here.

CLAUDE LEMIRE: Claude Lemire.

Roger did not mention it before, but the commercial perch in Lake St. Pierre is quite important in Quebec, 90%, depending on how you look at it, but the important thing is the high-water level in the springtime when ice is still present, towards the end - the beginning of April, let us say, there are certain examples of that that are really obvious.

In Baie St. François, at a time when they did not remove the ice to avoid flooding, all the vegetation, that was stuck in the ice, was being torn away. In Lake St. François, there was a lot of water. The plants were still caught in the ice and the water, as it rose, would tear away the plants.

Now, if there is no more vegetation, there can be no more perch around, and it is the same thing for Lake St. Pierre. The vegetation, in some areas, becomes very dense and it then becomes a habitat that is not quite as good for perch.

Now, for example, last winter, it was cold and, if there is a good flow of water that is well coordinated as the water warms up and it carries away the vegetation, we cannot wait for it to happen. It is important because spawning for perch, it is vegetation that is caught in the ice. So a very strong water level, which rips away the vegetation, this is what happens. Today, there is not even 100 pounds of fish that gets caught in there.

When we talk about regulating water, that is very bad. We would like, with regard to commercial fishing, we dream of it, we have been dreaming for over ten years to coordinate these efforts. We just wanted to bring that comment.

MARC HUDON: Does somebody want to comment on that?

CHRISTIANE HUDON: I am very happy to hear your comment because it corresponds to exactly the kind of observation that we have made, with regard to the fact that we have modified a lot of things in the system of the river, not only the water level, but everything, that we modified since the fifties and sixties, make it that the ecosystem of Lake St. Pierre is changing. We have dug out the seaway, we controlled the ice and we make it so that water flows more and more into the canal. The water is now channelled so vegetation accumulates unduly. Some plants are becoming more and more prominent, and we do not have these openings that are so important. The vegetation itself is changing. Plants are more and more dense, and that makes it that the lake resembles more and more a great swamp. That is what it is.

Productivity changes because we have more algae, more plants. We do not have the same type of food to feed the different fish and birds that depend on that. It is a bit of a domino effect because we have all kinds of things happening at the same time. The entire system responds and evolves.

So I would encourage you to look at the T.V. show Découverte, on Sunday the 26th of September, not this Sunday coming, but the week after, on CBC-Radio-Canada at 6:30. It is a report on the impact of Lake St. Pierre, where we talk about a variety of elements that are changing within the system. I think that for those people who are interested in the environment, there will be many elements of interest to you.

MARC HUDON: There is also within the shared vision model elements that what you mention here will perhaps be part of a new regulation plan because it will be part of the input into the model. So on to another issue.

PARENT: Yes, my name is Parent. I live on Lake St. Pierre. I am a riparian.

If I understand, we are gathering different criteria, performance indicators, from everywhere with a lot of effort and good will in order to succeed, but it is always with regard to those machines that we call "dams". And from there, all decisions are made.

We do not necessarily start with the ideal that there might be within each of the sectors that lead to the dam. We start with what the dam can do and, then from there, we go down to other areas of experience, of the water flow.

I am wondering if, eventually, in order to rectify the different difficulties that the dams can bring, if we should not have different installations all over that could rectify the problems caused by the dams that would enable certain things fairly important that are necessary to be put into place.

I am thinking about the biosphere, which I have had the privilege of visiting. I find that very important. It is no longer a matter of knowing how much money we are going to put into it, if there are things that are destroyed, because this is a qualitative issue. It is a matter of knowing in what kind of society we want to live and what kind of a world.

In the beginning, we would say that we were there to maybe adjust the orientation of the mandate, but why would we not vary the possibilities of establishing counter systems that would enable us to better establish the natural order of things?

Well, look, it is disproportionate. We need to send X or Y cubic metres of water into the dam, but that is a man-made decision to know at what level do we reach a disproportion. Who will decide on that? I think that it could be interesting to look at that aspect.

That is a point of view that I notice being expressed tonight, and I think that it is important that we be here for that reason.

MARC HUDON: Thank you for your comment. Does anybody want to add anything to that? Jean-François. After that, I am back to my lady friend there.

JEAN-FRANÇOIS BIBEAULT: Jean-François Bibeault.

It is more a social economic point of view and not what was said earlier on boating.

Yes, first, we question the means, but we have not defined objectives of the system of what we want to have for the St. Lawrence in the future or for the Great Lakes for that matter.

Within the context of the study plan, what we see is that, because people have placed more emphasis on pleasure boating or commercial, other aspects, it is hard to reach a consensus on areas in which everyone can agree.

Now, until we have these reference points, we have said well, maybe we can clarify the issues, the different issues that seem to be generally important for the majority of stakeholders, and see how we can maximize the different interests.

But you are right. Eventually, we should perhaps look at things from a greater perspective and give ourselves objectives for the entire system.

MARC HUDON: Alright. Does that answer your question? Madame, your turn.

N. BENKHEROUF: Nabila Benkherouf, Environment Department.

It is more questions that I have than a comment.

I would like to know where is the study at, at this given date. The other question that I have, did the study take into account the cumulative impacts in the model, the shared vision model, the cumulative impact of the raising or the lowering of the water levels?

MARC HUDON: Well, the study is four years into its development.

LYNN CLEARY: Lynn Cleary, Study Board.

To my knowledge, we do not have an orientation as such on the cumulative impact. We are discussing presently about the possibility of doing a follow-up on the effects on the regulation plan that will be adopted. So we do not know what frequency. We call that adaptive management. We want to say that our next plan, we will be able to modify it according to the consequences and the climate, because we cannot forget the impact of the climate.

So the idea is to make, to formulate a recommendation and then to monitor and we evaluate at a frequency yet to be determined. It is under discussion at this time.

MARC HUDON: For the cumulative impacts

TOM McAULEY: Tom McAuley is my name.

With few exceptions in the study of the shoreline, the erosion process, we have everything that could be found in the old aerial pictures, photographs that were taken. We know how much land was lost to erosion.

So, in terms of the cumulative, we have an idea of what it was like before the project from aerial photographs. In other areas as well, we have some cumulative impacts that we could determine. I just wanted to mention that.

BERNARD DOYON: Bernard Doyon, Shoreline Processes.

Yes, the models roll on for periods of 101 years. So it is a cumulative impact that we are talking about. Yes, it applies to the erosion and it is cumulative damage that is done, for example, in residential areas.

MARC HUDON: André.

ANDRÉ CARPENTIER: Well, André Carpentier.

That is a comment that I was bringing to a study or an analysis, give an historical horizon of 100 years. Now, we could see everything that could happen in terms of sequences of high and low levels, normal water levels. We will have a good picture, a long-term picture of the impact, whether it be environmental or shoreline or boating, water intake.

Now, the second question of where we are at with the study, well, there is a little chart. Most of the study groups are just about ready or have given their performance indicators.

Now, still those remain in suspense so that if we want to add any modifications, we can still do that, and it is the Environmental Group that will give us that within the next few months because normally it should be finished everywhere.

We are now in the phase of analyzing the performance indicators, whether they be economic or qualitative for the environment, in order to enable us to have an idea of going into the funnel and examine different options between three and five to present to you next year.

MARC HUDON: Jean-François.

JEAN-FRANÇOIS BIBEAULT: Jean-François Bibeault from the Groupe de Plaisance.

I wanted to come back to the cumulative aspects. There are two of them: Those that do add up with time and those that combine and create a synergy. That synergy, we will be examining it within the framework of our study.

We would need to develop probably an analysis that is much more complex, that would take into account other pressures on the environment since we only look at the regulating. We do not tackle other elements that may be modified on the territory.

What Lynn Cleary was saying is important in that we need to monitor the situation to see what would be the links based on the knowledge that we have acquired. So there is a limit. We can look at community facts elements per element and maybe a little bit of the synergy among all of them, but there will not be a synergy analysis between the environment and the use, and that is a limitation of the study.

MARC HUDON: Madame.

HÉLÈNE LEMIEUX: I would have two questions because, as I was saying, my first question, and then my second one.
Hélène Lemieux, to answer your question.

Madame mentioned here that the Story Board, I was thinking of the National Film Board. I was wondering: Does she work for the federal at the National Film Board? It is a study group. It is a study board. Oh, I understood "story board". Okay, I was wondering.

The other thing is that I asked a question when I came in to the hostess. I asked if there were some people from the université du Québec. She said that she was not from this area, and I heard everyone speak, but there is no one who introduced themselves, and there is the flag, the banner of the university. This gentleman here?

CHRISTIAN HART: There was supposed to have been with us a member from the Biosphere, which is in charge of the group on the research and education. It is André Bérubé, who is a researcher, but he was operated on yesterday and he is in a wheelchair today. But he wrote a large part of our text, and his position is known.

HÉLÈNE LEMIEUX: …(off mike comments…inaudible)…

CHRISTIAN HART: André Magnan. Pierre Magnan.

HÉLÈNE LEMIEUX: Well, I can repeat my question, can I? Hélène Lemieux. I was worried to know what name we had found for the ship of the university's researchers.

MARC HUDON: Well, I do not believe that I have an answer for that. Magnan. Okay. So you have a question.

ALAIN DAIGLE: Again, my name is Alain Daigle.

We have been talking about the impacts, both socio-economic impacts and wildlife impacts, due to the regulation of the water level in the river. I would like to come back to another problem that is just as important as human activity and its impacts, the climatic change as such.

I would like to know: Is there a meteorologist or climatologist in the room who could talk more about these impacts of climate change between the 44th and the 46th parallel from the St. Lawrence estuary all the way to the Great Lakes because these changes will affect, not only water levels, but also wildlife.

MARC HUDON: Well, someone may be able to answer.

DENIS LEFEBVRE: Denis Lefebvre, Oceans and Fisheries.

There was a study group, first of all, to look at atmospheric modifications over 50 years, so centred around 2050. Then, from these scenarios, we looked to see what the impacts would be on water levels.

So the atmospheric scenarios are from two sources: the Canadian Climatology Centre and the European Centre in Hadley, the British Centre, in fact. Each of these two groups has produced two scenarios according to the two possible poles of evolution of CO2 in the atmosphere.

So we have four scenarios overall, and they are all just as likely. We considered all four of them. So, overall, in all cases, the mean air temperature will increase, but what happens also, it is combined with an increase of rain in the Great Lakes region, as was here, but in variable proportions.

Now, the precipitation brings more water, and the increase of temperature generates more evaporation so it is the equilibrium that is always of opposing forces. In all cases, one case gives us a situation that looks like today's situation and all of the other three give a net contribution.

For Lake Ontario, it varies from 4% to 22% in decreased net supply of water. Now, that is for the watershed in Ontario.

Then, we looked at the Ottawa River watershed and, in this case there are some variations. They are not as important in amplitude for the Ottawa River watershed because it is farther north.

Now, the main thing that happens is that the air temperature increases and the spring melt will happen one month earlier and, in some years because it is a multi-year mean, we may have no snow accumulation at all. In that case, there is no spring melt. There is a spread of water throughout the winter. So this creates a very important hydraulic change.

So, in summary, the impact of climatic change centred around 2050 shows that the main changes will occur in the winter and that, for the shipping period that interested us more, in other words, from May until November, we have a slight decrease of the levels in these four simulations. So does that answer your question?

ALAIN DAIGLE: Yes. André Daigle again.

We have heard in the media for the past few months that we have seen in both hemispheres, south and north, the accelerated melting of glaciers. Might this phenomenon compensate in terms of water levels, including that of the St. Lawrence River and the Great Lakes, even if the Great Lakes flow into our direction?

DENIS LEFEBVRE: Well, what I have told you is a very specific situation. Denis Lefebvre, sorry.

It is a very specific situation to Eastern Canada. When you look at the worldwide geography, we do not see this increase in precipitation. It is because we are in Eastern Canada.

In general, we have an increase of temperature and more drought. Now, at the worldwide scale, yes, the anticipated evolution is that we will have accelerated melting of glaciers and a rising sea level. We are talking of 20 centimetres of increase in sea levels for 2050 that is counterbalanced for us because we are still in our post-glacial land raising. So it would be mitigated for Eastern Canada. We only have a 14-centimetre increase of water on the shoreline.

Now, it has no effect for the Great Lakes because we are much higher than the sea level, and it has effect downstream of Quebec City. The effect of the increased sea level goes down slowly all the way to Trois-Rivières.

At Trois-Rivières, there is almost no more effect. It is for the Quebec City, Neuville and Portneuf stations that will see an effect.

MARC HUDON: Okay. You still have time. I mean, you took the trouble to come.

ALAIN DAIGLE: Thank you. Alain Daigle, once again.

So, as you were able to notice in the last few weeks, we have seen some meteorological phenomena in the south, that are very particular, especially on the eastern coast of the U.S.

I am thinking of Charley and the other hurricanes, Frances and Ivan, and we may even see its remnants, and Jeanne who is forming.

As you have noticed this year, in prior years, it is these hurricanes that arise in the southern seas. To explain their wind speeds and rain and their strength, could we attribute that to the warming of the seas in the last 10 to 12 years that might explain this?

On the other hand, would we be called to have these rains as much as the south? You have seen the damage that follows so, in the next few years, because it seems to move up from the south as warming also. So are we basically sandwiched?

DENIS LEFEBVRE: So this is a question that goes beyond the scope of the study. Denis Lefebvre, Oceans and Fisheries.

Yes, but the precipitations do affect us. So, for the climate change issue, all the atmospheric models show that there will be more frequent storms because the systems adjust and you see this in the simulations.

Now, for hurricanes, yes, there is an effect of water temperature. Hurricanes feed off the difference of temperature between air and water and the warmer the water, the stronger the hurricane.

Maybe this is what we are seeing, but we are still in normal fluctuations. It is a random phenomenon. So yes, for example, Jeanne is not too strong, but they expect that Jeanne will intensify because the water is still warm. So it will gain strength.

Now, the last thing. What is the effect for us? Yes, hurricanes will not arrive here as hurricanes because the water is cold as you move north. So, no, we will not have any hurricanes of that magnitude, but it does affect us because the hurricanes bring us precipitation, and this is in line with the climate models. We will have more rain, and that is part of the reason. Okay?

MARC HUDON: André, did you want to add something?

ANDRÉ CARPENTIER: André Carpentier. A comment.

When we say that we will evaluate the plans of 100 years of historical data, that is one way. We will also evaluate them according to the four climate change scenarios to see if the plans will be able to take that into account, and we have also done what we call the data generation. We will evaluate them over 10,000 years, all kinds of fluctuations to be able to decide which plan is best able to get through all these hydrological situations. That will be part and parcel of the selection criteria, the decision-making criteria so that is what we will include.

Another point now. When we say that we will go through all four scenarios, we will manage them from regulation. It is not only a matter of, as Lefebvre mentioned, up to 20% less water. It is not 20 all the time. It will go up and down, up and down. So we will be able to manage that, but differently from what we are doing right now.

ALAIN DAIGLE: …(inaudible…off mike)…
Alain Daigle. I do apologize.

Well, I thought that that was an important aspect, and on top of human activity in managing the river, because climate change is an important element that we cannot control unless we would stop consuming fossil fuels, but I think that that is not in the cards, and that is also part of human activity, unfortunately. So these are elements that are important and that need to be taken into account.

MARC HUDON: Thank you, Alain. Any other questions or comments? If not, I will tell you that I put up the map of the system. Yes, Lemieux.

HÉLÈNE LEMIEUX: A comment that came to mind when I was listening to this gentleman, it is with regard to acid rain. How come that was not discussed? Would that have any incidences in this study?

MARC HUDON: No. That is really beyond the scope and the scale of the study.

HÉLÈNE LEMIEUX: The acidity of rain has no effect on the disintegration, for example, of soils or shorelines?

MARC HUDON: André will field that question.

ANDRÉ CARPENTIER: André Carpentier.

Well, maybe acid rains do have an impact on various elements of the environment, different environments of people's lives, but I do not think that it is the regulation or the fluctuation of water levels that are going to change anything.

HÉLÈNE LEMIEUX: So it is well outside the scope of our study.

ANDRÉ CARPENTIER: I do not think so. I do not think so. No, no. Fluctuations will not have an impact on an increase or decrease of acid rain.

CLOSING REMARKS BY MARC HUDON

MARC HUDON: So, with this, I would say, well, you can see from the scale of the Lake Ontario-St. Lawrence River system how this system is complex and what a challenge it is to try to decrease the effects for various users and to have a regulation plan that is fair for everyone. Even if the study will give new regulation plans, the 1958D Plan did fantastic work because modern technology did not exist at the time.

So it is a marvellous job that has been done in the last 15 years to regulate this system, and it is thanks to your comments and those of the American members of the study who follow the evolution of the work.

You can comment on an ongoing fashion the public documents that are made available to you, as well as in the Web site. So you can influence the results we will have.

So, with this, I want to thank you for coming here this **evening** to meet us and to comment our work. We will meet again, I am sure.

For those of you who did not get an answer to their questions, there will be a follow-up. We taped everything this evening. So thanks very much to all fishermen and all those who took the trouble to come here this evening.

...The Session was adjourned at 9:40 p.m.

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