MANITOBA CLEAN ENVIRONMENT COMMISSION

LAKE WINNIPEG REGULATION REVIEW

UNDER THE WATER POWER ACT

VOLUME 6

* *

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Winnipeg, Manitoba
WEDNESDAY, MARCH 18, 2015

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WEDNESDAY, MARCH 18, 2015

Upon COMMENCING AT 1:07 P.M.

THE CHAIRMAN: Good afternoon. A few minutes late today, luckily we don't have a heavy agenda this afternoon. We have two parties that will ask questions of the Manitoba Hydro panel, followed by the Commission panel.

So first up to ask questions are the Keewatinook Fishers. I understand Ms. Whelan Enns will be posing questions on their behalf as Ms. Ballard is otherwise occupied this afternoon.

MS. WHELAN ENNS: Good afternoon. Dr. Ballard is still teaching, so the options in the schedule this week here at the hearing still left me with the request to ask these questions on their behalf.

There's a short opening here, so it will be evident that I'm using Myrle Ballard's words. She wants to acknowledge that we're in Treaty One traditional territory for this hearing, and that it is being held at -- and I'm about to spell -- ka Winni-bee-ag, Manitou, ka abit.

Thank you also to the Chair and the Commissioners and to Manitoba Hydro for the presentation on March 10th.

Dr. Ballard represents the Keewatinook Fishers of Lake Winnipeg. She is their expert in terms of when they are up in the hearings. She's indicating here that she's Anishinaabe from Treaty 2 territory and that her Ph.D. from the University of Manitoba is in Natural Resources and Environmental Management.

The first question here is page 66. I get to ignore all my yellow tags and focus on her questions. So this is a question in terms of the pathways of effects. Her observation is that the altering of water levels and ripple effects is anthropogenic. She would like to know why humans are not mentioned anywhere on the charts?

MR. SWANSON: Could you restate the observation?

MS. WHELAN ENNS: Yes. The altering of water levels and its ripple effects is anthropogenic. I'm assuming she means that it's caused by humans from regulation. And her question then is why humans are not mentioned in the charts?

MR. SWANSON: Well, I think it's implicit in terms of project effects, and who would be undertaking the project effects would be

humans. I assume she's referring to the linkages portion, and at the other end, I think the inference is that all of those can have effects on humans. It doesn't implicitly say that it's humans at the start and humans at the end, humans who undertake the project and humans who, in part, who suffer any impacts from a project, but that's understood.

MS. WHELAN ENNS: Thank you. The next question here pertains to page 67, and the second last bullet on the slide about mercury concentrations in fish were and are low. Is Manitoba Hydro saying that consumption of mercury contaminated fish over a prolonged period does not pose a health risk?

MR. SWANSON: No.

MS. WHELAN ENNS: We'll stay at that then, okay, answer. Thank you.

The second question here is whether Manitoba Hydro has conducted studies recently on fish in Lake Winnipeg and its tributaries to determine contamination from mercury or any other contaminants?

MR. SWANSON: No. The works that we refer to are samples collected downstream, not as

part of Lake Winnipeg proper.

MS. WHELAN ENNS: Right. Thank you.

The next question here is from page 71. The slide states, and this is the first bullet, studies to standards of the day, not standards of today. And then following the second bullet, that there are gaps in the knowledge which is common for studies of 40 plus years ago.

Did Manitoba Hydro use traditional knowledge, or why didn't you use traditional knowledge as a methodology in understanding effects of Lake Winnipeg Regulation on water quality and fish?

MR. SWANSON: There were a few different IRs that answered that question. And essentially, the point is that to the extent that studies were undertaken because of community claims, and this would include, this is primarily focused on downstream of Lake Winnipeg. This presentation was, in fact, entirely about downstream effects on Lake Winnipeg -- or downstream of Lake Winnipeg. So the ATK was included to the extent that it was included in either the lead up to, or part of the questions, the studies that were included in the report. For

example, the post project effects evaluations were done with communities? And many of the site and issue specific studies that were done were the result of communication and information that came from the community.

So in the sense that it was included in those studies, and we summarized those studies, ATK is included here, there was no additional initiative to sort of have conversations with communities specific to this. But it was included in the studies.

MS. WHELAN ENNS: I know that Dr. Ballard will ask me this, at this point. So you are basically clarifying that there has been -- there is information that's based on community communications between Manitoba Hydro and the communities affected, in your assumptions and what you filed in terms of downstream effects, which is different than whether there were traditional knowledge studies. And you're also saying then that you basically used traditional knowledge you had in hand also. Am I getting it right?

MR. HUTCHISON: I got a little lost on the question.

MS. WHELAN ENNS: The reason I asked the question is because I know she'll want some more clarification. Again, trying not to be speaking for somebody here. There's a difference between Manitoba Hydro's communications with community members, who may be of Aboriginal descent or of Aboriginal communities, about things to do with downstream effects. There's a significant difference between that and, in fact, what she started out to ask, which is about Aboriginal or traditional knowledge studies.

So I think we're going to have to leave it there. That's my sense. And it will be up to Dr. Ballard in terms of whether she chooses to come back to it in the hearing. Fair enough?

She does have one other thing that she wanted to say at this time that I believe is, if you will, for the record, and that is traditional knowledge is based on oral history and the oral tradition of Aboriginal people. It is the accumulated knowledge of Aboriginal people over generations of their environment in the world. So, definition.

The next question here is page 128. She's referring to the third bullet on this slide,

which refers to Socio-economic Effects then, title on the slide, that alter the landscape and people's use and relationship with the landscape. And her question is, what about altered waterways and the waterscapes that have contributed to effects? So I think that this is a correction from her, as in do you also mean waterways and waterscapes?

MR. SWEENY: Yes, that's correct.

MS. WHELAN ENNS: Thank you. The next question here pertains to page 134, which is called Resource Use, and refers to the bullet on this page, Negative Downstream Effects. So the third dash down, you have indicated that the ability to transmit traditional teachings across generations is a downstream effect, a negative downstream effect. And Dr. Ballard is asking for some expansion and some explanation as to what you mean?

MR. SWEENY: Well, the examples, there are many, but some of the examples would include the examples I used in my presentation where I was out with my grandmother. And as I explained earlier on, traditional knowledge is passed on by sometimes verbal and by visual. By doing so, some

of the loss of land, or some of the lack of the ability to get out and resource harvest has caused some ability to transmit some of those knowledge. And I think the example I used was when my grandmother took me to a certain site and the site was somewhat impacted, that ability to transmit that type of knowledge was impacted.

MS. WHELAN ENNS: Thank you.

Dr. Ballard's second question then pertaining to 134 is whether or not Manitoba Hydro would agree that the loss of livelihoods from downstream effects leads to loss of traditional activity, which leads to the loss of traditional teachings, and which leads to the loss of culture. Loss of livelihoods to loss of traditional activity to loss of traditional teachings to loss of culture.

MR. SWEENY: Yes, I think to the degree the Lake Winnipeg Regulation has impacted those areas, correct. Having said that, there has been mitigation efforts to address some of those losses in various ways.

MS. WHELAN ENNS: Thank you. Her next question has to do with page 135, and the statement on the slide that -- and this is about

domestic and commercial fisheries -- the statement on the slide that there's programming to allow for continuation of the domestic fishery. I believe this one may have previously been answered in the hearings, but to stay with her questions. She's basically asking whether or not there's baseline data regarding both the domestic fishery and commercial fisheries in Lake Winnipeg? Fish population, species before and after regulation.

MR. HUTCHISON: I'd just like to comment that the slide that you are referring to is referring to downstream impacts, so I guess you changed the question to talk about Lake Winnipeg. Our understanding is there is not information on domestic fishing on Lake Winnipeg. However, there are records for commercial fishing on Lake Winnipeg.

MS. WHELAN ENNS: Thank you.

She's now referring to page 138, the header being Loss of Reserve Land. Does Manitoba Hydro document and acknowledge the loss of First Nation traditional lands around Lake Winnipeg as it relates to traditional use of both land and water? So this question is similar to the previous one where the presentation is about

downstream effects, and Dr. Ballard is asking parallel questions in terms of Manitoba Hydro regarding effects on Lake Winnipeg.

MR. HUTCHISON: So if I can paraphrase the question, has the project caused loss of reserve lands on Lake Winnipeg?

MS. WHELAN ENNS: Yes. It's got two questions in it. As in does Manitoba Hydro document that and do you acknowledge that? And she's not linking it to the LWR.

Trying again with the question. Does Manitoba Hydro document and acknowledge loss of First Nation traditional lands and territories around Lake Winnipeg?

MR. HUTCHISON: Okay. Well, number one, Manitoba Hydro does not monitor erosion on Lake Winnipeg, so that would include sort of loss of reserve lands. Do we acknowledge that there has been loss of lands that aren't attributable to the project? Is that how you phrased it?

MS. WHELAN ENNS: You could answer it that way, sure. Certainly, answer it that way.

MR. HUTCHISON: Yes. So we do acknowledge that there has been significant erosion around Lake Winnipeg and that would, I'm

sure that likely includes loss of reserve lands, but I can't be positive because I'm not familiar with that specific aspect of lands around Lake Winnipeg.

MS. WHELAN ENNS: Thank you. The next page she's referring to is 144, health issues and concerns. And it also then relates to her earlier question in terms of slide 67. So you're saying on this slide, among health issues and concerns, that mercury, quote:

"Causes changes to traditional food consumption."

She's asking whether any studies have been done regarding mercury contamination and studies on Aboriginal people's health and the linkage, if any, on fish consumption or consumption of other species in the food chain. We are downstream in this question.

MR. SWANSON: So the question again is? Is that one question or is that two questions?

MS. WHELAN ENNS: She's asking whether Manitoba Hydro has done or conducted any studies regarding mercury contamination in relation to Aboriginal people's health and the link on fish

consumption or consumption of other species in the food chain?

MR. SWANSON: So Manitoba Hydro has looked at, and it's documented in the Plain Language Report in the appendices, has looked at mercury in fish. And that's part of a routine monitoring for the CAMP program. But the human health concerns, my understanding is that that's done by Health Canada. There were studies that were done in the '80s, I believe, as part of the FEMP program. It wasn't a Manitoba Hydro study, though, it was a Canada study to look at mercury levels in residents in the communities.

MS. WHELAN ENNS: Thank you. We'll see how her time is and her capacity, but I'll bring the contents in the Keeyask filings and proceedings to her attention also on this subject. And I'm sorry, if I interrupted you?

MR. SWEENY: I just wanted to add there, in relation to the slide and the changes in the traditional food consumption, I made comments in relation to the, sometimes the interpretation of the word, in the Cree language can contribute to the people's understanding of mercury as it pertains to traditional food. And I think I

mentioned that in the Cree language, Bi-chi-poin, which means poison, sends a message in itself. So that was the interpretation for mercury. And that will have an impact on one's thought process when it comes to --

MS. WHELAN ENNS: Whether to fish.

MR. SWEENY: Related to fish consumption, yes.

MS. WHELAN ENNS: Thank you.

Let's see. The next question is from Mr. Hutchison's part of the presentations, and it's on page 158. And it does have to do with Lake Winnipeg, and the map and the water gauges. So there have been a fair number of questions and exchange of information on this subject already in the hearings, so I'm just choosing here.

Are all the readings from the water gauges on Lake Winnipeg digital? Do the gauges operate electronically?

MR. HUTCHISON: Yes, that's correct.

MR. WHELAN: Thank you.

Does Manitoba Hydro -- I remember this one from my IRs I believe -- does Manitoba Hydro release water in the winter and track how much water you are releasing in the winter?

MR. GAWNE: Yes, that's true. We do release water in the winter and we track discharge.

MS. WHELAN ENNS: Thank you.

Getting to I think the main question here. There's an assumption in her question which is that readings are not taken when everything is ice, okay. As in water gauge readings don't occur when things are frozen. So how does Manitoba Hydro track the water -- how does Manitoba Hydro track the water it releases in the winter in terms of how far inland it travels?

MR. GAWNE: If I could just address the beginning of your question there. We do record water levels and flows year round. And we measure discharge at our station during the winter, the same as we would during the summer months. So it's the same process.

MS. WHELAN ENNS: So the water gauges on Lake Winnipeg measure what in the winter when the ice is on the lake?

MR. GAWNE: Again, I think we had an exchange with Mr. Lloyd -- earlier.

MS. WHELAN ENNS: Lloyd Stevenson, perhaps you are referring to?

MR. GAWNE: Yeah, it was with Mr. Lloyd Stevenson where the water level gauges measure the pressure in the water, and that translates to an equivalent water level. And that's done year round.

MS. WHELAN ENNS: An equivalent water level below the ice?

MR. GAWNE: Well, below the ice there's still water, right, and the ice itself is floating on the water surface. So imagine if you had a body of water that inflows and outflows weren't changing, and one day it was open water and it got cold, and the next day you had the first skim of ice, you would still record the same water level. So it would measure the water content in that ice.

MS. WHELAN ENNS: And you're correct, that was the first part of her question.

The second part had to do with then how and whether Manitoba Hydro tracks water you have released in the winter in terms of how far inland it goes?

MR. GAWNE: We do record discharge at the Jenpeg project, as we do in the open water season. There is what we call a rating curve for

the east channel, where we measure discharge in the east channel in the winter months, as we do in the summer months. So we're measuring the total discharge out of Lake Winnipeg in the winter very similar to the way we do in the summer.

As far as how inland it goes, or the effects of that discharge downstream, we have water level gauges along the reach, you know, Cross Lake and downstream to measure the water levels downstream at Jenpeg.

MS. WHELAN ENNS: Thank you.

She's provided her reason for the sequence of questions, which has to do with fishers facing increasing danger travelling overlands during winter, that are close to water releases. Page 159, looks like this is the last page of these questions.

So she's acknowledging, Dr. Ballard is acknowledging, she's indicating your graph shows no significant changes in water level between pre and post levels. And she's asking whether or not there's been any work to compare traditional knowledge regarding pre and post water levels against the graph, and the basis for your technical analysis to make the graph.

MR. HUTCHISON: There has not been a comparison with traditional knowledge concerning the graph.

MS. WHELAN ENNS: Thank you.

She has one final comment here to make, and that is that western science does not always show or depict everything that traditional knowledge knows, and that traditional knowledge would depict changes in the altering water levels differently.

Thank you, Mr. Chair.

THE CHAIRMAN: Thank you, Ms. Whelan Enns. Albertine Spence?

MS. SPENCE: Are you not going to ask me to swear on anything?

THE CHAIRMAN: No, you're not giving evidence, you are just asking questions.

MS. SPENCE: I brought (native language spoken)

THE CHAIRMAN: Would you speak a little more closely to the mic, please?

MS. SPENCE: I'm from Tataskweyak where I have membership at Tataskweyak. And both my parents are northerners, and we have lived there for generations. So I don't particularly

speak on behalf of TCN or Tataskweyak, but I have been attending and trying to pay attention with the Hydro development projects and the Clean Environment Commission.

And there is great respect for our teachings. One of them is truth, honesty, and I'm bringing the eagle feather. When I come to the hearing, I have a lot of respect for the task at hand. Because after all, we all are stewards of the land.

And as I heard the presentations and listened to the questions that were brought forth, what I also was dreaming about, it came to me unconsciously in a dream that we have amassed so much information, scientific study and, you know, tracking these projects and how they impact the water, the land and the people, and we have given it such a language to define that and track that?

So I have heard a lot of science data, and I'm asking Manitoba Hydro and the Clean Environment Commission why this information couldn't be used towards an environmental assessment? And you know, I have heard the different rationales about the environmental assessments not being in place when the first

initial regulation was put in place. But, you know, in this time and age, you know, we have that information. I think we can put it together, you know, as some sort of standard of practice. And their environmental assessments are all on the projects already.

And I'm sure that question has been posed generally, so I guess I'll ask this: How much longer will Manitoba Hydro require to produce an environmental assessment for the Lake Winnipeg Regulation licence renewal?

MR. CORMIE: I am sorry, I didn't catch your name at the beginning and I don't want to speak to you without knowing your name.

MS. SPENCE: Albertine Spence.

MR. CORMIE: Okay. Ms. Spence, it's nice to meet you.

When it comes to new developments, like has happened at Keeyask or at Wuskwatim, Manitoba Hydro undertakes very detailed and long-term baseline studies of the environment, collects information beforehand, and then is able to do an environmental assessment of the anticipated effects of the project. But it's based upon the pre-project conditions.

When it comes to reviewing the projects that were built, like Lake Winnipeg Regulation, 40 years ago, and other projects that we have on our system, there is a lack of that kind of baseline data.

So what we have done in the Lake Winnipeg final licence application is collect all the information that we know about, and we have referenced that in the document. But it is just not possible to do an environmental assessment the way you would expect us to do for a brand new project.

However, we are engaged in an analysis of the downstream effects of Hydro development on the Nelson River, and that project is underway. And we believe that that regional study of the river will be complete in another year or so.

But again, it's just getting the existing information and then looking at analyzing that and looking at the gaps in our knowledge. But it can't be done as if we were starting from scratch.

On Lake Winnipeg proper, Manitoba Hydro is of the view that the benefits of the project are lower levels during flood conditions,

and the lake remains within the natural range that existed prior to the project. That the seasonal patterns of lake levels have remained the same and that there are no adverse effects as a result of the project on the lake. But, again, we don't have a modern pre-project set of data in order to be able to do what we would be expected to do today.

So as we go for a final licence application, we're not required to do that kind of study, because that's different than applying for a licence for a brand new project. New projects are subject to the Manitoba Environment Act and it lays out the requirements for new projects. Lake Winnipeg was built and licensed well before the Environment Act took place. And so there wasn't a requirement at that time to do these studies that would allow us to do those kind of assessments that you're talking about.

MS. SPENCE: Okay. That wasn't quite clear, but I guess I have to accept that.

The other thing that I want to ask you about is the Aboriginal traditional knowledge and how Manitoba Hydro defined, you know, what -- how did you go about defining what Aboriginal

traditional knowledge is, and how you would collect it, and how you would incorporate it, and how is it stored? How is the information that you gathered on Aboriginal traditional knowledge stored? How is that information used? Is it archived within your information systems? That's basically about Aboriginal traditional knowledge.

MR. SWEENY: I'll speak to it and then I'm going to ask my colleague Gary to speak to it as well.

Aboriginal traditional knowledge is and has been inputted into our agreements, our settlement agreements. It's been put into our various programs that we have implemented to address the adverse effects. It's involved with many of our studies that have been conducted throughout the downstream effects on various communities, including the Split Lake post environmental assessment review in 1996.

And it's incorporated in a way that, although some of these agreements are multi-party agreements, the agreements are with the impacted First Nations or impacted resource harvester groups. So, therefore, during negotiations, during discussions, during meetings that happen in

boardrooms, that happen in town or band halls that happen in council offices, that happen in those various forums, the input we get from that aspect gets incorporated and eventually comes to conclude a settlement agreement that's agreed to by all parties.

So I think traditional knowledge is inputted in the various studies, in the various agreements, sometimes verbally, sometimes through the various meetings that have been conducted throughout the many years that we have been dealing with the issues.

I'm just going to ask Gary to --

MR. SWANSON: So, Mr. Cormie talked about how we used the available information, and that available information, some of it was quite specific in including ATK, I believe, and the example Mr. Sweeny just mentioned about, the Split Lake post-project effects report. Some of the reports contained or were the result of dialogue and specific issues or concerns that communities, harvesters and communities had. So to the extent that there was, that issue got explained and was researched and studied, there was local knowledge, if not specifically ATK included. And some of the

reports were provincial reports that are the result of provincial management activities with resource harvesters and communities. And so we didn't undertake any specific new ATK studies for this.

We were asked to compile the existing available information and synthesize, as best we could, the story of Lake Winnipeg Regulation downstream. And so it contains some ATK. It didn't undertake any specific new studies. And where it's contained and compiled is essentially in the reports that we collected.

Does that answer your question?

MS. SPENCE: So, if someone wanted access to that Aboriginal traditional knowledge and to review it, they could go, and you could just bring a file that's just on Aboriginal traditional knowledge?

MR. SWANSON: No, it wouldn't be specific. We separate it out. It would be contained in the reports that were provided to the Clean Environment Commission along with this. There is a pdf of each report that's referenced in the Plain Language Document and the appendices. So you would have to go through and find those

pieces, those parts that are in there. That's for this exercise, for this initiative, that's how it was done.

MR. SWEENY: If I can just clarify too, it will also be contained in the various settlement agreements that we have with the communities and resource users.

THE CHAIRMAN: Ms. Spence, maybe I can help you out a little here. I think they are missing the point of your question. I think the question you are asking is, how does Manitoba Hydro protect the Aboriginal traditional knowledge that it collects, and specific, or more specifically, does Manitoba Hydro have a protocol for how they maintain and protect -- an awful lot of ATK is considered confidential to that community, and I know that governments in different parts of this country do have specific protocols to handle it. Is that what you were asking?

MS. SPENCE: Yes.

THE CHAIRMAN: Does Manitoba Hydro have a protocol for, once they gather the ATK, then protecting what it is and particularly the confidential parts of that?

MR. HUTCHISON: Thank you.

My understanding is that the information that is collected from specific individuals, the way that's protected is there are arrangements put in place with the community itself when we're gathering this information, so it's not readily shared.

I think what we were referring to earlier when we talked about how you find information in certain reports, that information, in essence, would have been sanitized so that you don't, you are not getting the sort of proprietary information that the community had. There are arrangements in place so that that information is kept confidential between the community or First Nation and Manitoba Hydro.

MS. SPENCE: And following up with the Aboriginal traditional knowledge, do you make an effort to put it in a digital library, or do you digitize a lot of that information? Like, I know there are times when you did studies, or you contracted studies on behalf of Manitoba Hydro, and there was Aboriginal traditional knowledge that was shared, or even at your presentations, I don't know how you record that and store that.

And I guess I didn't quite hear that. How does Manitoba Hydro store that information?

MR. HUTCHISON: We're having a little difficulty with the response because it varies between communities. Sort of generally, the First Nation or the community would be sort of the holder of that information, so we wouldn't -- well, as information was provided say verbally and there were -- it would be recorded down. My understanding is that information belongs to the community. Let me see if I can do better with this.

So there are summaries in the reports, so there would be summaries of traditional knowledge in the reports that form the environmental assessment, but the raw information is held by the community, and they would only let what they felt was comfortable become part of the report.

MS. SPENCE: Okay, thank you. That concludes my questions.

THE CHAIRMAN: Thank you, Ms. Spence.

Mr. Shefman?

MR. SHEFMAN: Mr. Chairman, is it possible to ask a follow-up question to

Tataskweyak's questions?

THE CHAIRMAN: Certainly.

MR. SHEFMAN: Thank you, Mr. Chairman.

It's Shefman, S-H-E-F-M-A-N, for the record, for the Interlake Reserves Tribal Council. I just have two short follow-up questions from the evidence of the last witness, I am sorry, the last questioner.

The panel mentioned that ATK is primarily found, or used by Hydro in reaching settlements and mitigating damages downstream of Jenpeg. Is ATK used to improve regulation or assist Hydro with regulation itself?

MR. HUTCHISON: To the extent that it would have been used for agreement related provisions, such as downstream of Lake Winnipeg, there are predetermined compensation arrangements. So to the degree that that traditional knowledge would have incorporated into those provisions, those provisions themselves do help dictate how we operate the system. Because they, in the example of predetermined compensation, they tell us the community's sense of when water levels cause problems. So that is a way for us to understand in sort of more of a course way how our operations

are impacting communities.

MR. SHEFMAN: And that was exactly what I was asking, so thank you. That particular knowledge, is it only used in the context of agreements which have been signed? Has Hydro ever worked with First Nations to gather Aboriginal traditional knowledge to assist with regulation in the way you just described, prior to damage being caused, or prior to compensation agreements being signed, preemptively I suppose?

MR. HUTCHISON: On new projects, definitely, but I believe you're talking about Lake Winnipeg Regulation?

MR. SHEFMAN: I am.

MR. HUTCHISON: We did not conduct Aboriginal traditional knowledge studies prior to Lake Winnipeg Regulation being built.

MR. SHEFMAN: In deciding whether or not Hydro was going to request any changes to its licence during this process, did Hydro collect or consult on any Aboriginal traditional knowledge to determine whether ATK may lead to Hydro preferring some changes?

MR. HUTCHISON: I guess from our point of view, the fact that we haven't asked for

changes to the licence, our understanding was that would be a better way -- not a better way to proceed, that is really the only way to proceed, because we don't know the impacts of changing any of our operations. Also, the fact that we have been operating for the same way for 40 years, there has been a lot of arrangements put in place around the way those operations have occurred. So to actually change something would be sort of a new impact. Whereas the impacts that we do understand, we have put in place mitigation mechanisms, as you have heard, for downstream communities that were, in fact, impacted.

MR. SHEFMAN: And I certainly appreciate the complexity of the making -- requesting changes would have. I suppose my question is, did Manitoba Hydro consider the fact, or the possibility, that Aboriginal traditional knowledge may have lead to, if it had been collected, may have lead to beneficial changes potentially being requested?

Perhaps I can clarify. Did Manitoba Hydro consider that Aboriginal traditional knowledge may have provided greater context, or a context within which changes to the licence may

have been made reflecting the knowledge that the Aboriginal peoples had?

MR. CORMIE: Mr. Shefman, as Mr. Hutchison had indicated, had we been proposing changes to the licence, we wouldn't need to consult with all stakeholders, including the Aboriginal people. We are not proposing to change anything. We are, in a sense, finalizing a licence that's been in place. And so, you know, the need to consider changes was not there. We are just asking to change the name from interim to a final licence, and no changes were being proposed.

Were we considering changing the licence and, you know, I'm not saying that in the future the licence couldn't be changed, but that's not the process we are involved in now.

MR. SHEFMAN: I suppose then I can clarify where the question comes from. It's my client's position that, given the magnitude of Lake Winnipeg Regulation and the impacts that it has, the decision to not request a change is as substantive a decision as the decision to request a change. Because you are moving to a new licence, as you stated. And so the question is,

did Manitoba Hydro consider that Aboriginal traditional knowledge may have helped inform whether or not to request a change?

MR. CORMIE: If we were to consider changing a licence, I agree it would be appropriate to consult with all stakeholders. We did not consider consulting on not changing anything.

MR. SHEFMAN: Thank you. That was my question.

My final question then, the panel mentioned, in the answer to the previous questioner's question, that ATK is used in the context of agreements and compensation packages and mitigation agreements downstream of Jenpeg. Is ATK ever used upstream in the context of Lake Winnipeg Regulation?

MR. CORMIE: Mr. Shefman, there are projects upstream of Lake Winnipeg, the Winnipeg River, the Saskatchewan River, people who live upstream of those projects, including the Aboriginal peoples, we have settlement agreements with those communities. And my understanding is that ATK was used as part of understanding the impacts of those projects.

If you are referring to on Lake Winnipeg proper, we don't believe that there are any impacts associated with Lake Winnipeg Regulation. This is not to say that people aren't affected by the water levels on Lake Winnipeg, but the specific effects of the project, we have no agreements, settlement agreements for something that there are no impacts.

MR. SHEFMAN: So Manitoba Hydro's position, as you have stated a number of times, is that there are no impacts upstream on Lake Winnipeg. Has Manitoba Hydro ever used Aboriginal traditional knowledge to assist its determination that there have been no impacts upstream?

MR. HUTCHISON: To my knowledge, no, we haven't.

MR. SHEFMAN: So, to confirm, that determination was made based only on western science?

MR. HUTCHISON: I don't know if the only other -- I guess, I'm trying to see, are there only two ways to look at information? Because a lot of what we know about Lake Winnipeg is from anecdotal evidence that's historical, that there were flooding issues. And that's part of

the reason, or a large part of the reason why this project came to be.

So I guess I would sort of point the question back, is there only a western science and a traditional knowledge sort of basis to look at impacts?

MR. SHEFMAN: You are the one answering questions, not me.

MR. HUTCHISON: Well, then I guess I'm having a little trouble with that question. We have not engaged in traditional knowledge studies on Lake Winnipeg.

MR. SHEFMAN: Does Manitoba Hydro believe that Aboriginal traditional knowledge could be of use in determining whether or not there have been negative impacts upstream?

MR. HUTCHISON: I think Aboriginal traditional knowledge would be useful to look at the impacts on Lake Winnipeg right now. I think it would be difficult to look at impacts of Lake Winnipeg Regulation specifically, because there are so many impacts. Also due to the fact that there are so many, when we talk about Aboriginal traditional knowledge, it's not just one form, there are, as I mentioned before, more than 30

Aboriginal communities around Lake Winnipeg. And what I do understand of Aboriginal traditional knowledge, it can vary from community to community quite substantially. So I think these would be some of the issues that would have to be considered.

MR. SHEFMAN: Maybe I can just ask you to repeat the initial part of that answer, whether or not you believe that Aboriginal traditional knowledge can be useful for that purpose?

MR. HUTCHISON: I believe the first part of the answer was that it would be useful to understand the factors affecting Lake Winnipeg. And I think through the presentations, both from Manitoba Hydro and the expert witnesses for the Clean Environment Commission, we are aware that there are many factors affecting Lake Winnipeg. And I think traditional knowledge would be very useful in helping to get a greater appreciation of those factors.

MR. SHEFMAN: I think we are having a little bit of a semantic issue here. You believe that Aboriginal traditional knowledge would be helpful in understanding impacts on Lake Winnipeg, but not the impacts of Lake Winnipeg Regulation on

Lake Winnipeg? I believe you said there were two too many impacts for Aboriginal --

MR. HUTCHISON: No, I said there were a number of impacts. I wouldn't rule it out, but I think that it would be difficult to look at the -- use Aboriginal traditional knowledge to isolate Lake Winnipeg Regulation impacts.

MR. SHEFMAN: I'm not asking whether it would be difficult, I acknowledge that it would absolutely be difficult. My question is whether it would be useful?

MR. HUTCHISON: The difficulty I'm having in answering your specific question is because we, where Manitoba Hydro does engage in Aboriginal traditional knowledge, it is where we acknowledge that we've got impacts in the area. So downstream, definitely. And I think you have heard a lot of information that that has been the case downstream, on Lake Winnipeg. We don't acknowledge that we have --

MR. SHEFMAN: I'm sorry, but that's specifically my question, whether Aboriginal traditional knowledge could be useful in determining whether there has been those negative impacts or not?

What we have discussed here is that Manitoba Hydro has reached a determination that there have been no negative impacts upstream. I'm asking what -- you said that Aboriginal traditional knowledge was not used to reach that conclusion. And my question is whether it would be useful in making that determination?

MR. HUTCHISON: Can we just take a second?

MR. SHEFMAN: Yes.

MR. HUTCHISON: Thank you.

Once again I would just like to say that Manitoba Hydro believes that, due to the number of factors on Lake Winnipeg, Aboriginal traditional knowledge can add information to understanding what's going on with the lake, and how to address the impacts to Lake Winnipeg. As there are no negative impacts from Lake Winnipeg Regulation project specifically, we wouldn't look to Aboriginal traditional knowledge specific to Lake Winnipeg Regulation.

MR. SHEFMAN: With the greatest of respect, you haven't answered my question, and I think you know you haven't answered my question. So I'd like you to try again, please?

THE CHAIRMAN: I kind of suspect he's not going to answer your question.

Ms. Mayor?

MS. MAYOR: I'm just reviewing the transcript from March 11th. Mr. Shefman has already canvassed this panel extensively on the use of ATK in relation to Lake Winnipeg Regulation, and we have concerns that he's now coming back and taking another opportunity to go over the exact same ground that he covered starting at page 283 and going on for a number of pages. So, Manitoba Hydro objects to this continuing when he's already had an opportunity to do so.

THE CHAIRMAN: Thank you, Ms. Mayor.

We don't enjoy the same degree of technology, so I don't have the transcripts in front of me. I'll take you at your word.

And if this is area that has already been canvassed, Mr. Shefman, then it shouldn't be re-canvassed.

MR. SHEFMAN: Absolutely, Mr. Chairman. And I do not believe I asked this specific question, and I can tell you that this is the only question I have left to ask. And if the

witness is to answer it, then I would be satisfied in this regard.

THE CHAIRMAN: Well, we can try once more, but I'm not sure you're going to get much more than what you have already got from Manitoba Hydro.

MR. SHEFMAN: I suppose I would ask the panel to ask the witness to correctly answer, or to properly answer the question.

THE CHAIRMAN: Well, I think that whether it's a proper answer or not is a matter of argument, and you'll certainly have your opportunity later when you present on behalf of your client, and in final argument, to make the point that in your view they haven't answered the question fully.

MR. SHEFMAN: I suppose if I could rephrase one more time, and then I'll give up.

THE CHAIRMAN: We'll try one more rephrase, and if Manitoba Hydro -- well, we'll leave it at that.

MR. SHEFMAN: Sure.

Yes or no, does Manitoba Hydro believe that Aboriginal traditional knowledge can help inform whether or not there have been negative

impacts of Lake Winnipeg Regulation upstream?

THE CHAIRMAN: Ms. Mayor?

MS. MAYOR: I think Manitoba Hydro has done its best to answer the question. There was, again, already exhaustive detail asked on Aboriginal traditional knowledge. And in any event, they are never restricted to a yes or no answer. I think it's been asked and answered.

THE CHAIRMAN: Thank you, Ms. Mayor. I'd agree with Ms. Mayor on this one.

MR. SHEFMAN: Thank you, Mr. Chair.

THE CHAIRMAN: Thank you, Mr. Shefman.

Are there any other members of the public who have questions of Manitoba Hydro?

Okay. We'll turn to the panel now. I must warn you that the flow of our questions may not make sense, they will be all over the place. We have a number of questions that have been provided by our consultants and our advisors, but each of us has our own questions. So we may be bouncing back and forth on topics. We'll go by individual panel member rather than by topic. So Mr. Yee?

MR. YEE: Thank you, Mr. Chairman.

I have a few questions for the Hydro

panel, and I would like to begin with slide number 24. I'll refer to them as slides, as this presentation was given to us last week, because I will refer back to your supporting document and its appendices as well.

Mr. Gawne, as shown on slide 24 of your presentation, the majority of Lake Winnipeg drainage base lies outside of Manitoba. And it's our understanding that Manitoba utilizes flow information collected from gauges outside of Manitoba to anticipate flows. Is that correct?

MR. GAWNE: Yes, that's correct. Flow information, precipitation information, and reservoir information from throughout the basin.

MR. YEE: So obviously for the spring frechette period, the snow pack in the basin also plays a key role. How does Manitoba Hydro assess the snow pack in Manitoba and in other states and provinces in the watershed?

MR. GAWNE: We certainly look at snow pack through the winter, absolutely, including looking at snow pillow data in the Rockies and Sunshine Mountain and elsewhere, and snow pack information as well as projected runoff conditions from, you know, produced by Alberta Government,

Saskatchewan Government, Manitoba Government.

As to how that information is used, on a system-wide basis we look at statistical system flows versus accumulated winter precip. And then if there's specific areas of interest, perhaps areas of concern where we're looking at flooding, for instance, we do look at more detailed modeling, which is what we call physical based runoff modeling, that looks at the physics of the problem, the hydrologic cycle. And then to the extent that external agencies that are providing us with flow forecasts use that precipitation and snow pack information, you know, we're beneficiaries of that modeling and that science to use those info forecasts in our decision-making.

MR. YEE: Thank you.

Turning to slide 40. In your presentation on the energy operating planning cycle, you indicated that Manitoba Hydro realizes its need to change flows on the system, it will go to external stakeholders for input and feedback. You indicated your Hydro operations people consult with the Aboriginal relations department people, who will then contact local stakeholders about changing flow conditions. And you use the example

from CRD, I believe. And I know you have answered this and in last week's testimony, but I would just like to explore this in a little more detail.

Can you be more specific about how this happens, and in regards to say Jenpeg, specifically which communities do you speak to? And who in the community would that be, and what would the basis of their input be?

MR. GAWNE: Okay. You have asked a number of questions within that question, and I'll try to knock some of those off, but for sure you can ask me again if I've missed.

In terms of how external input is considered in the decision-making and operations, it's not -- perhaps I need to clarify here. For the most part, it's not a matter of Manitoba Hydro deciding it's about to do a flow change and then going out into a community, speaking with a specific community or person asking, you know, permission or that sort of thing, if that flow change is acceptable. It's more of, if we have people involved in the decision-making process that are familiar with conditions in the field, that we impact through our operations, familiar with his issues -- for instance, ARD staff have

been involved in developing these long-term relationships and agreements, then they are aware of the issues, and they are also in touch with kind of what's happening at that time of year. So we obtain that kind of information through them.

There is kind of issues specific, you know, instances, for example, where we have say staff in the field, or even community members themselves working on the waterways programs that are, you know, aware of specific conditions, or there's people out on the waterway doing this sort of activity and there's issues with high or low water levels, that feedback kind of comes into our shop, so to speak, and we can consider that in planning our decision-making.

I think there was a question posed by Pimicikamak about, apparently at our technical workshop the interpretation was that Manitoba Hydro is in contact with Cross Lake every week, and how is it getting that information? That was a misunderstanding, and I apologize if that was the impression I had given.

MR. SWEENY: If I can just add to that as well?

In relation to Jenpeg, you mentioned

Jenpeg specifically, we have a sub office in Cross Lake that employs six employees, full-time employees. And the employees' primary roles, although vary depending on each individual, their primary role is to work with the community members and to implement various programs that are there to mitigate the adverse effects of the project. And so input that comes from concerned resource users comes either directly to the office, or it could be provided on the trail when we're monitoring the trail. So it comes in various forums.

And I think it's very good to make the point that it is issue specific. There are certain times of year that concerns may be of a concern for certain resource, so they are very issue specific, and they could vary from year to year. So it's not necessarily every other week that there's an issue, you know. So at times we might get one or two concerns that might, or that are impacting some of the resource users. And in turn, when we hear that, that information is shared through the hydraulics department.

I mean, I can elaborate on this because, you know, we have commitments to meet

with our resource users on a regular basis in Cross Lake, with the trappers associations, with the commercial associations. And those people are the ones that are really mainly utilizing these waterways for their own resource harvest as it pertains to commercially. So input through those sources are very valuable. And again, those are areas that we receive input, or we share input at the same time, and in turn share it with the hydraulics area.

MR. GAWNE: Perhaps it would help to offer an example more close to the LWR operation. I think I had raised the CRD operation. And one example would be concern about slush ice on Cross Lake. And I know from, you know, being involved in these weekly operations meetings, we are well aware of the concern about slush ice on Cross Lake. And there's been a few occasions, a few winters prior to freezeup where the decision was made, despite the modeling and the economics and all that. The decision was made to, knowing that we are going to go into a high flow scenario during the winter months, to increase flows out of Jenpeg prior to freezeup to allow Cross Lake to freeze in at a level closer to the winter level,

thereby, you know, reducing the water level change after the ice has set in to address slush ice.

And there was some earlier questioning, I believe it was by Pimicikamak, about documentation around the Lake Winnipeg Regulation ice stabilization program. And I don't think I was able to offer up much in terms of formal documentation around that. But I would like to add that as part of that process, and that's where we're operating Jenpeg to improve the ice conditions and improve the winter outflow capability of Lake Winnipeg. You know, the hard objectives of that program are, one, to develop stabilized cover upstream of Jenpeg to allow that water to come out of Lake Winnipeg. Two, to not overly disrupt generation at Jenpeg. And three in that program is to not have -- you know, to be minimizing impacts on Cross Lake and the waterway users around Cross Lake.

So, you know, those are direct kind of priorities or considerations in that program itself.

MR. YEE: Thank you, Mr. Gawne and Mr. Sweeny. I think you have answered most of my questions I had on that.

Maybe just one other point to clarify. It's probably not a formal process in terms of this communication, it's when everything has come up and the frequency varies depending on issues?

MR. GAWNE: Yeah. I think that's fair that it's not something that there's a formal memo, communication every week that happens, but it's definitely an item, let's say on the agenda, where we are, you know, to discuss with Mr. Hutchison and staff from Aboriginal relations divisions about stakeholder concerns. And that's specifically a topic that we go through on a weekly basis.

MR. YEE: Great. Thank you.

If I could turn to slide 45? This is probably just me, because it's quite a busy slide and I'm fairly confused but -- I have succeeded as an engineer.

You had indicated, Mr. Gawne, in terms of you do monitor and you make decisions based on when you know there's going to be high precipitation events or water levels are high for the season, because you're monitoring this. But I guess my question is, really, when I look at this, and you mention that sometimes where it's possible

Hydro will increase flows knowing full well that the water levels are going to be high on Lake Winnipeg. I'm just wondering why, in particular if you look at the 2013 and 2014 events, it seems like just this dramatic increase all of a sudden between spring and summer?

MR. GAWNE: Yeah. Just bear with me one second, Mr. Yee.

The 2013 event, if you'll recall, was the massive flooding that occurred in Alberta. So as we were heading into that event -- or sorry, following spring runoff, the inflows were not nearly what eventually they turned out to be. So we are in kind of more of an average water condition. But then, of course, we had a few rain storms prior to the flooding event in Alberta.

I'm just looking for a few notes on that year specifically.

Yeah. So in that event, if you recall, or at least my notes here indicate the Saskatchewan River experienced that massive flood event on June 19th to the 22nd. And we were already stepping up outflows from Jenpeg at the time. I believe it was from rains primarily on the Winnipeg River, probably right around May long

weekend, because that typically happens when people are camping. I think there is some hydrologic significance to May long weekend, by the way.

So, anyway, we are increasing outflows from Jenpeg in response to I guess more typical storms in the Lake Winnipeg basin. And then, as you can see, things were stepped up dramatically mid-June to late June. Again, that was looking at conditions out in Saskatchewan, you know, and eventually we were forced to start spilling water at Grand Rapids, so there was no room left in Cedar Lake. We were spilling I think 50,000 CFS at Grand Rapids, and I think we may have achieved an all time high discharge out of that project as a result of that flooding in Saskatchewan.

So, again, I think my point was, when I was explaining this chart, is things are a little more stable and predictable in the winter. Flows are what they are and snow will change, but we can kind of work that into our planning. In the open water conditions, inflows can change dramatically from below average to over, after a few major rain storms, quite dramatically high. And you know, we respond and see these inflows are

going to pick up, and the intent is, well, let's transition to a higher outflow. And it really serves everybody's, you know, provided adequate notice is given, if we start to increase flows, we can do it more gradually than waiting until like Lake Winnipeg crosses 715 and you're pushing up against the 15,000 CFS a day constraint. So we can start moving that water, start providing notice. It results in lower levels on Lake Winnipeg. It results in ultimately a lower peak discharge downstream of Lake Winnipeg.

So, you know, we're being proactive to the extent we can given that those major storms are not in the forecast.

MR. YEE: Right. And then I gather, given that it's just in early spring, you still have the ice issue to deal with as well. So that probably further complicates things?

MR. GAWNE: Yeah. And that's exactly true. As you look in that spring box and you see those traces of discharge is increasing, those grays, that's likely Manitoba Hydro operating Lake Winnipeg Regulation at maximum discharge, seeing all that snow on the ground, Lake Winnipeg is already starting high. We know that we don't have

to wait for an Alberta flood, we know that it's a '97 condition or something like that, where we've got all this snow on the ground just waiting to run into Lake Winnipeg. So basically discharge out of Lake Winnipeg is increasing as that ice is melting off.

So that's why you see that two bands. Kind of one is we've got maximum discharge because we know floods continue into Lake Winnipeg, and that's kind of the upper collection of lines in the spring. And then the lower kind of grouping is into conservation mode in the spring.

MR. YEE: Thank you very much.

If we can turn to slide 51? And actually, I can deal with this as a group, because my questions really are on 51, 52 and 54.

I went through the report, and I gather slide 51, and I believe 52 is in the report, definitely 54 is, and that really slide 51 is sort of a derivation from the other slides.

I guess the question I have for you is that on page 43, figure 20 of the supporting document, as well as page 15, appendix 3, there is a similar chart showing the Cross Lake water levels pre and post weir, as well as pre Lake

Winnipeg Regulation and post Lake Winnipeg Regulation. You slightly changed the wording around, but that's not significant. The point I'm asking is, is this the same time period because there's no time periods on your slide?

MR. GAWNE: Certainly that's the intent is to have the same time periods. We re-created these charts to kind of break them up so there's less to look at. I'm quite confident they are the same time periods. At least that's the intent.

MR. YEE: I kind of assumed that. And I guess there's one other question I have relating to these, and I'm not asking you to look at each one of them. But perhaps, in particular, the one that's in appendix 3, which is probably slide 54, it might be useful for the Commission if we could see, rather than just the monthly average over this time period, if it's possible Hydro could provide us with minimum and maximum levels. One of the issues that we were faced with, and we heard from communities, is the fluctuation of water levels. So it would be helpful for us to review what the fluctuation is like, both pre and post LWR, as well as pre and post weir.

I couldn't find that in supporting documents or the appendix, if there is any minimum and maximums provided?

MR. GAWNE: Yeah, Mr. Yee, I think there is information in various forms that may help you in that regard. It's a bit of a messy chart to look at, but if you refer to CEC 15, we have charts in there of upper and lower decile, upper and lower quartile levels. So it gives you a little more information around those monthly averages, which I agree is not the whole story. It's just they are pretty busy charts to throw up on a presentation, there's a lot of information in those distributions. I would encourage you looking at that.

I can tell you that pre LWR, the monthly average rate of change on Cross Lake was about .6 feet per month. Then we went into the post LWR period prior to the weir and that was -- the average monthly change was one foot per month. And then following installation of the weir, it was .7 feet per month.

Now, that's clouded by the different hydrology that's occurred over those periods.

And lastly, I would be really looking

at the hydrologic effect, in my opinion, a very valuable resources appendix 4 to the plain language document, where in there, although it doesn't have Cross Lake levels specifically, there is distributions of flows at Bladder Rapids, which is essentially the outflow of Cross Lake, since 1977, and what it would have been with LWR removed. And that gives you a very good sense of kind of the hydrologic regime over the same period with and without LWR.

MR. YEE: Thank you, Mr. Gawne. I'll take a closer look at those other charts as well.

I just have one other question, I guess it's sort of two questions.

Recommendation number 10 of the Lake Winnipeg/Churchill and Nelson Rivers Study Board stated that a long-term monitoring program was needed. I'm just wondering why there wasn't a program implemented as part of the project? Anyone on the panel can answer that.

MR. GAWNE: Sorry?

MR. YEE: As far as the project went, I mean, why wasn't there a more long-term inclusive monitoring program established and implemented?

MR. SWANSON: Can you refresh my memory on recommendation 10 specifically? Is it ecological monitoring, or is it --

MR. YEE: I should have brought it with me. But I did look it up. It's sort of a general mention that it should be a long-term monitoring program to look at the impacts of the project. Someone can look it up, but I did check on it the other day.

MR. GAWNE: Maybe while these gentlemen are chatting about it, certainly the water level regime is monitored and has been monitored continuously. Now as far as impacts and beyond that, I'll have to leave that to other panel members.

MR. SWANSON: The MEMP and FEMP studies in the mid to late '80s were both in response to that particular recommendation. And I'm not sure why the time lag between the start of that. And they were five year studies, both, by the Provincial and Federal Governments. So there was long-term. It didn't continue through past the late '80s.

MR. YEE: I'm aware, and you have mentioned I think previously in testimony last

week regarding these other studies such as CAMP, and the other one you just mentioned. But I'm thinking, and I guess my question is why there wasn't a comprehensive monitoring program that would address, for example, predictions of effects of the project on outlet lakes, wetlands and wildlife? And I'm wondering if Hydro is contemplating such a program?

MR. SWANSON: In terms of the wetlands and wildlife portion, there were studies that were done and reported on in the status reports. I know the Canadian Wildlife Service, for example, the study that was done in the outlet lakes area about waterfowl was also in response to that. And I believe that was technically part of the FEMP program. So it was included. I can only, I could only guess as to what the conversations were and why those rolled out in the particular fashion that they did.

Sorry, you asked a question at the end as well. I'm not sure I recall?

MR. YEE: Essentially, I was asking if you are contemplating such a program, given that you will be looking at relicensing in the fairly near future?

MR. SWANSON: What I can tell you is that more information and a broader area of study is going to be included in the regional cumulative effects study that was mentioned previously. And some of that will be to see what there is in terms of information on shoreline, additional information. And I think the fact that Manitoba Conservation and Water Stewardship is part of that initiative should help bring additional information to the table.

MR. YEE: Thank you, Mr. Chair. I have no further questions.

THE CHAIRMAN: Thank you, Mr. Yee. Ms. Suek?

MR. SWANSON: The recommendations were directed at various parties from the study board, and that particular recommendation was directed at the Province and Federal Government.

MS. SUEK: I've got a few.

A lot of my questions are based on things we heard from the people in the communities when we did the community consultations. Because there seems to be a lot of different perceptions about what is, you know, what is the result of LWR and what is the result of natural occurrences?

And so I want to ask some questions around sort of clarifying, you know, which are based on LWR and which you see as being naturally occurring.

There is a lot of concern about the state of Lake Winnipeg. We can, I think we can all understand that. So people would talk a lot about the impact on, you know, the marshes and sediment in the lake and erosion and pollution. And you know, I'm not sure how that related to LWR, so I want to clarify some of those items. So my questions are sort of based on that.

But before I start that, I want to clarify the term stakeholders, because it's been used a lot in your presentation and in some of your answers. And sometimes it seems to refer to First Nations or Metis communities, sometimes it seems to include trappers associations, sometimes it seems to include people downstream and upstream. There doesn't seem to be real clarity in terms of who you consider stakeholders in relation to LWR.

MR. CORMIE: I believe that everybody who has an interest in Lake Winnipeg would be considered a stakeholder, the tourists, the cottage owners, the fishers, the Aboriginal

communities. I don't think we are excluding anybody from that definition.

MS. SUEK: Would you consider that you were giving equal weight to all the stakeholders, in terms of their input or their needs, or do you differentiate?

MR. HUTCHISON: Maybe I can take a stab at this.

I think in the case where there are a lot more of a certain type of stakeholder, like in the north downstream of Lake Winnipeg Regulation, you are talking primarily people of Aboriginal descent. And so as a stakeholder group, they would carry a lot of weight. I also appreciate that First Nations and Aboriginal people don't tend to like be considered stakeholders, but I think it kind of goes back to the definition that you would use of a stakeholder.

MS. SUEK: Yeah, I think it can be a confusing definition for sure. And perhaps it's, you know, communities or people affected by -- well, of course, that could include a lot of groups. Anyways, I think it's a bit confusing using the term stakeholders.

MR. HUTCHISON: If I can even add a

little more, the definition I have tended to use is anyone who affects or is affected by a decision.

MS. SUEK: Okay, I just wanted to clarify that.

So as our Chairman said, we are jumping around for topics, so I'm going to be jumping around. I'm going to start with fish.

So if we can turn to the slides on 84, 85, 86 and 87? And probably the most illustrative is -- let me just see -- I'm just going to use the one on 85 and Playgreen Lake.

There was a lot of concern about the loss of whitefish, because that had been a staple prior to Lake Winnipeg Regulation. And it certainly looks from this chart and the others that there is certainly a loss of whitefish after LWR.

Do you see that as specifically related to Lake Winnipeg Regulation? Do you think that's an impact of Lake Winnipeg Regulation?

MR. SWANSON: If you are asking my opinion, I can give you my opinion. What I will say is that, to preface anything else I say, is that there are a lot of factors that are going

into the changes in the fish community. I mean, this slide was one where we talked about the difficulties using catch per unit effort data from one year or one study within the same year to the next study. So some of those changes that appear to be a decline in whitefish may simply be a change in study design and net set locations, and some of the other issues that affect -- you heard Dr. McCullough talk about temperature change and climate change, to what degree that's affecting things, I don't know. But we also have invasive species in the north basin of Lake Winnipeg, rainbow smelt, and now the spiny cladocern. So the community of fish is changing both as part of the bigger environmental picture and also associated with aquatic invasive. And then you add on top of that the impacts from human harvest activities.

Commercial fishing, for example, the Lake Winnipeg commercial fishery has had for a few years, I'm not sure what the status is right now, but there was a fall harvest of lake whitefish during the spawning period because the eggs in the females was a product that could be marketed and brought benefit to the fishers. But it also has

potential to have conservation effects as well.

And even eutrophication and algal blooms, I have heard postulated the thought that algal blooms in the north basin may be encouraging whitefish to move into other areas. And we have seen the province actually assign additional whitefish quota in the channel area specific for whitefish, but associated with increases in whitefish abundance that they hadn't sort of historically known, or in the recent history known.

So there are a number of effects that are going on. And so to say that LWR has had or not had an effect is very difficult to do in that context.

I'm also aware that the study board described Cross Lake as shallow, or fairly shallow. There were some concerns expressed related to it being a shallow water body, and that probably has an effect on temperature. And maybe the reason that I have heard sort of as well, the thought that maybe Cross Lake whitefish were there and more susceptible to changes or external factors, because it was a shallower lake than perhaps you often, or most often see lake

whitefish in.

So not to say that there hasn't been a decline, especially on Cross Lake, but as to figuring out what contributes to that, and by extrapolation what you can do to bring it back is sort of a complicated question. And the information that was available wasn't specific to that. It laid out a number of factors and described the status of the whitefish. And most of the impacts that were referenced by communities were -- I think predominantly it was Cross Lake. There is still commercial quota on Lake Winnipeg, and a number of whitefish fleet quota is purchased by Norway House, and fishing in Mossy Bay in the north basin as well as into Playgreen Lake on those quotas.

I am not sure if I am answering your question?

MS. SUEK: No, no, that's interesting. It sounds like there may be multiple factors involved in the declining whitefish population.

Do you see any of those related to Lake Winnipeg Regulation, like the water levels going up and down, or the impact on spawning? Is that a factor?

MR. SWANSON: Well, my thought is and I think it's probably broadly held, is that prior to the weir on Cross Lake, the reduction in water levels in the summer time would have definitely affected the quantity and quality of fish habitat. And to the extent that it made it more shallow, or that it was any warmer, that definitely would have an effect on whitefish.

MS. SUEK: Okay.

MR. SWANSON: The other thing I think is that the whitefish did move through the area. They are known to move from Lake Winnipeg to Playgreen Lake, and it's possible that there were movements that were down into Cross Lake as well. And the presence of Jenpeg Generating Station, would have minimized those movements, eliminated those movements essentially. But there isn't any study specific to that, it's just the observation that there is a barrier to fish movements.

MS. SUEK: Right. Okay. There seems to be, and I noticed on all these charts that there's a lot of "other". Have you any idea what the "other" is? You know, you've got what kind of fish, but there's significantly more other. And you know, are we talking rainbow smelt, or are we

talking, you know, other kinds of fish in the other?

MR. SWANSON: Yeah. And where I referenced it in the presentation, it was relative to the CAMP information, so the last few years. Predominantly, it was white suckers, yellow perch, and in some instances rainbow smelt were part of that. The CUE, the catch per unit effort data were standardized to gill net sizes, and so it would have tended to be the larger bodied fish community though. For that reason, it would have been the larger bodied fish community, and smelt being a smaller species wouldn't have been represented or as catchable in that. So it's mostly going to be white suckers, yellow perch, that predominantly was white suckers, for example, on Playgreen Lake.

MS. SUEK: Okay. This is a question from one of our consultants that is related to fish.

Does Manitoba Hydro know where all the critical fish habitat, the spawning sites for walleye, whitefish, sturgeon, pike is between Jenpeg and Sipiwesk Lake, in areas that are influenced by flows through Jenpeg to the east

channel? And related to that, what is the likelihood that a minimum flow of 25,000 CFS at some of those sites are rendered, some of those sites are rendered not usable by fish for spawning?

MR. SWANSON: I'm not aware of any specific information or study that's looked at flows relative to fish spawning downstream between Jenpeg and Sipiwesk Lake. But I guess by extension, I'm not aware of any issues that have been addressed indicating that changes in flows are having effects on fish spawning in that area.

MS. SUEK: So, you're saying you're not aware, you're not saying that it doesn't have an effect?

MR. SWANSON: Yeah, I'm saying I can't confirm that there are no effects specifically.

MS. SUEK: Right. Yes?

MR. GAWNE: If I can add to that, Ms. Suek?

If you have the document in front of you, appendix 4 that I was speaking of earlier, just to give you a sense of how frequent those types of flows have occurred in the past. Page 30 and 31 show monthly distributions of flows at

Bladder Rapids, which is essentially out of Cross Lake. And it does give you the sense that, to my knowledge, I think as far as minimum outflow from Lake Winnipeg of 25,000 CFS, I believe we were at that level in 2003, or very close to that level. To my recollection, there may be one other time in our operating history we did have to get down that low, subject to check.

MS. SUEK: Right.

MR. CORMIE: Yes, prior to the weir in the drought of 1977, we were down at 25,000 CFS. And we have Cross Lake levels in the range of 673, 674 post weir. With those kind of discharges we'd be more up in the 678, 679 range. So those minimum levels, they would have occurred naturally with 25,000, they would now have been well supported by the weir project. And as Mr. Gawne said, we filled in the low parts of the outlet channel of Cross Lake to support the levels under those flow conditions.

So the weir has been quite effective in mitigating low water impacts as a result of minimum discharges out of Lake Winnipeg.

Now, downstream there hasn't been any effect, any additional efforts made, except that

when you get downstream, you start getting into the effects of the Kelsey Forebay, which tends to support the level of Sipiwesk Lake under those low flow discharges. But on Cross Lake, specifically the weir project was designed to mitigate those kind of extreme low water levels.

MS. SUEK: Okay.

MR. CORMIE: Mr. Gawne is correcting me. In 2003 at 25,000, we were between 676 and 677 with those flows, but it's still three to four feet higher than we had pre weir.

MS. SUEK: Okay. Right.

As part of mitigation, I understand that some species are stocked in some areas by Manitoba Hydro; is that correct? Are you stocking sturgeon? Can you just talk a little bit about that stocking program?

MR. SWANSON: Yes. Initially going back to the weir in Cross Lake, post weir construction whitefish were stocked for a number of years by the Province. And I'm not sure what the arrangement was exactly with Manitoba Hydro, but it was to attempt to rehabilitate that. And then there was a monitoring component to the Cross Lake. On the slide for the west basin Cross Lake

catch per unit effort, there was eight or 10 years that were Cross Lake weir monitoring specific. So that was one project.

And more recently, sturgeon are being stocked in the upper Nelson River area, and there's other habitat investigations. And we're going on in other parts of Manitoba Hydro system specific to sturgeon as well. But I believe I mentioned previously that there weren't specific habitat works that were done because the populations were low. So that's the reason for stocking the sturgeon is to replenish the sturgeon stocks in the area based on the habitat that is available.

MS. SUEK: That was going to be my next question, you know, stocking versus habitat development. So at the same time as you are stocking, are you looking at habitat development, so that they would naturally be able to spawn? Is it a two-pronged effort or is stocking the answer?

MR. SWANSON: Stocking is the first step, just because the numbers were depleted.

MS. SUEK: Right, yeah.

MR. SWANSON: There is a stewardship program that Manitoba Hydro is implementing, and

it includes activities in the area. There is habitat inventory work that is going on, and opportunities where we would see to do habitat enhancement work. We would, I'm sure we would consider those. I haven't heard specifically that that's the case at this point, but I'd also point out that there is spawning habitat available. That's where the spawn source comes from is actually downstream from Sipiwesk Lake, they are spawning in the Landing River.

MS. SUEK: And so this is Manitoba Hydro doing this stocking? Because you said the Province is doing the stocking of whitefish?

MR. SWANSON: What I'm aware of is that whitefish were being incubated, the spawn was taken and eggs were incubated in the Grand Rapids Hatchery, when the Manitoba Fisheries Branch was running that.

Currently, Manitoba Hydro operates the Grand Rapids Hatchery and the sturgeon stocking is taking place through that facility. It's not divorced from the Province, the activities would have to be endorsed and essentially licenced or agreed to with Provincial Fisheries Branch.

MR. HUTCHISON: There was some

whitefish stocking after the weir by Manitoba Hydro exclusively as well.

MS. SUEK: Oh, okay, there was. Did that help?

MR. HUTCHISON: My understanding with whitefish is that it wouldn't have made, the numbers that were sought wouldn't have made that much of a difference relative to the stock that was already there. So that was why the program was discontinued.

MS. SUEK: Yes, I gathered it was discontinued at some point.

I want to talk a little bit more, my next topic area is communications. And I have a question here.

You know, we did hear a lot of concern from, you know, downstream about the changes in the water levels, of course, and partly not knowing or understanding when they were coming and how they were coming. And it didn't sound like people had really good information on when water was being released. And you know, I did see, you know, some things posted in various places, and I understand there's some radio announcements about, you know, there's going to be some release. It

didn't seem like it was universally understood by people. And I'm just wondering if there isn't -- you know, this has great impact on people who are going out on the lake and then water is released and -- yeah, it has impact on them. I'm just wondering if there are other ways to sort of give them better, more information on how this is going on? So, you know, I know people had mentioned the website, but I don't think having information posted on the website -- I went to the website and I didn't fully understand what was posted. So I'm assuming that people in the communities wouldn't necessarily either. I mean, there seems to be a bit of a communication gap there.

Are there other, better ways of getting this information across to, like the people?

MR. HUTCHISON: I agree with Commissioner Suek, it is difficult for people, for many people to understand say a chart. What we do consistently, to give people a sense of what the water levels are expected to be, is through our water level forecast notice program, where we do -- every month we send information what the anticipated water levels are going to be. That's

a notice that's sent to the community. So often you would see it up on the, say the administrative office for the First Nation or whatnot.

In addition, though, there are broadcasts that are done on the local radio stations. And it's a whole host of radio stations actually, there's the NCI in the north, as well as the local stations, and it's done in English and Cree several times a day for the first few days that the forecast comes out. And then if it rains or something more than you anticipated, and there's a certain threshold crossed as far as the water level rise being different than the forecast, this whole procedure is repeated again.

And of course, when we do talk about the water level rise, we're talking about inches. So we're trying to use information that's more relative for people to understand. So it would say, you know, the water level on Split Lake is expected to rise five inches through November and then another two inches through December. It would be sort of information to that effect where it's trying to use very simple information.

MR. SWEENY: If I can just add to that as well?

I agree the charts can be somewhat difficult to interpret. And I think the value of saying them in Cree on a regular basis does assist people in properly understanding. Although, communications is done through other forums as well. For an example, in Cross Lake there is a community information centre that's part of article, reflection of article 20 of the Northern Flood Agreement, where community members can come into a neutral office and ask questions in relation to the various programs, communications in regard to some of the water levels. So that's one avenue that local people can utilize to hear.

Through that information office as well there's a number of workshops, community workshops that have happened over the years. So we have brought in various groups from various departments of Manitoba Hydro, including departments within Manitoba and Canada that, you know, someone can speak to some of the various impacts associated with water development. We had our hydraulics people explaining how the actual water level forecasts are captured and how they end up on the chart.

So that ongoing communication,

informing people to assist them better understanding those types of processes. So aside from the communication here, there's also that ongoing dialogue that's very important so that people can somewhat understand what they actually were providing them.

MS. SUEK: Do you get wide participation in those things? Like when you do those things, do a lot of people come, or is it pretty limited? I mean, I know sometimes people don't want to go to a workshop or whatever. Do a lot of people come, or is it sort of leaders?

MR. SWEENY: Well, I think it depends what you're having for lunch also might factor in.

No, I think it depends on the issues. Like I say, it's like any other community, you know, people will come out when there's an issue, or various things that they want to be heard, right? So, I mean, any time we have had workshops, there we would include the schools so that young people become more aware of what's going on. So we'd have school buses running back and forth, so that they are involved. They might not know what they are actually getting, but it provides them a sense of what, you know, the

various departments within Manitoba Hydro or the Province of Manitoba. But, yeah, people generally, you know, it could vary depending on -- the open houses work out very well, there's lots of residents, the workshops, depending on what type of workshop you are having would obviously limit. And then there's people that show up every time no matter what you're having.

MS. SUEK: Right.

MR. GAWNE: If I could just add to that? You know, we produce forecasts of water levels from our shop as being responsible for the, you know, the flow operations. And I'll admit they are not always 100 percent accurate. Part of that is, and part of maybe what you've heard is sometimes water levels are changing and they are not forecast to change, or they are not changing and they were forecast to change. You know, you have to realize that there's other drivers to water levels beyond Manitoba Hydro's operations. And although we may forecast conditions to be a certain state, other things can affect.

And one good example is wind effects on lakes. And like, for example, Cross Lake, and the wind effect on the north basin of Lake

Winnipeg can be quite dramatic, and that effect literally flows through to Cross Lake. And if the north basin, for instance, gets blown down because of wind, the discharge through the east channel and through the west channel can only be -- it gets reduced. And that translates to water level effects on Cross Lake.

In October 2010, with the big weather events, the weather bomb, you know, Manitoba Hydro is operating at maximum discharge. Really, you know, without the wind, things should be fairly stable and that flow just kind of changes as Lake Winnipeg declines. But, you know, we had these two days of wind that translated into, you know, the equivalent flow change of about 35,000 cubic feet per second reduction into Cross Lake for a few days. And it resulted in the lake dropping down by like over a foot, 1.2 feet in the course of two days, purely because of wind effects at the north basin.

So, you know, you forecast what we expect water levels to be in the transition, but you have other factors such as wind or ice at the outlets of the lakes that invariably -- and you know, individuals would have seen the effects of

wind on these lakes, regardless of Lake Winnipeg Regulation that would have been there. So there's this variability. But you simply can't forecast that resolution of detail, and it's kind of the nature of, I guess, other effects on water bodies.

MR. HUTCHISON: I don't know if you have got enough, but I do have another example.

MS. SUEK: Yes.

MR. HUTCHISON: I just thought about it and it's kind of a good one. It's more on our CRD route, but just last month word came to me through Mark Staff (ph), up in the north, that our water level forecast for Footprint Lake showed that it was going to be stable the past month. And yet people were noticing, there were these reports of slush ice and that the water was rising. So we looked into it and we could see that the flow at Notigi hadn't been changed, that supplies the water into the CRD route, it hadn't changed for two months. And yet when we looked at Wuskwatim, which is sort of the next station in line where we monitor, it showed that they weren't getting the same flow that was being released at Notigi, it was a couple of thousand CFS less. And so what they indicated was that ice constraints at

the outlet of Footprint Lake was causing that lake level rise. And when we also looked into it, we realized that this had happened a couple years back, there is a similar occurrence. And so we were able to relay this information to Mark Staff, who relayed it to the community members who had brought it up.

MS. SUEK: Right. Okay. Sounds a little unpredictable.

We had comments from people who went out on their traplines one day and were not anticipating that there would be, you know, water would be released. And when they came back, things like slush ice, and they would have difficulty getting back because they weren't aware of it. And it sounds like there are occasions when it's unpredictable.

MR. CORMIE: There's one other situation where there is an emergency. If you remember back in 2011, with the flooding that was occurring in Minot, there was a lot of press associated with that, and there is a lot of fear downstream of Lake Winnipeg that this large flood was coming. And I think it was Mr. Penner and his staff went to Cross Lake to meet with the Chief

and go over the forecast, explain the magnitude of the flood, reassure the community that things would be within the ranges that the community is prepared for. So it's not just this, you know, on the radio or graphs or things. In those kind of emergencies, we will go and make contact, and make sure that the communities have the information that they need to manage what potentially could be quite a devastating situation.

So, you know, there's no rule, but as we publish forecasts for on Lake Winnipeg and the big flood events, we publish them for other users, we will actually, we'll go and meet and try and bring a better understanding of what's happening.

The pictures on the TV and the newspaper can be quite dramatic, and everybody knows that they are downstream, and they are wondering, if that's happening in Minot, what's going to happen in Cross Lake?

MS. SUEK: Right.

MR. CORMIE: So we do take that responsibility quite seriously.

MS. SUEK: Thanks very much.

MR. SWEENY: If I can just speak to the issue, I've been holding back here a little

bit, but speak to the issue of slush ice? You mentioned slush ice, and I have heard it mentioned a few times.

There's many contributing factors to slush ice. And slush ice impacts obviously the resource user's ability to do what they do. But there's many different factors. In the north specifically, sometimes the challenges pertain to the time of year the trapping season starts. Okay. I'm a trapper myself, so your trapping season usually starts right in November, in mid-November. So most trappers try to get out to their traplines very early, the sooner the ice could freeze, they are gone. And in respect to the trappers that do that, that's their decision, they make those decisions. And often our safe ice trails won't be out if this ice in certain areas is not safe. There's certain measurements that we take. But most trappers will go out prior to our trails getting in, and that's their decisions that they take.

Precipitation plays a factor, and in the last number of years it has played a factor. So the time of the type of snow you get, and the amount of snow you get at certain time of year

obviously will impact the condition of the ice, including slush ice.

I think you will recall in 2011 or 2012, that year there was a lot of precipitation which put a lot of snow. That contributed slush ice, but it also contributed to slush ice on some of the non-regulated lakes. I currently trap on the Paint Lake area that is non-impacted, and there again you are dealing with slush ice. So there's a fine line on many different factors that impact slush ice.

And I can say in relation to Cross Lake, for an example, those areas, when there is a condition that it is causing, there is a claims process that people can take. So there's many different factors at play in there, I just want to clarify that.

MS. SUEK: I have a couple of follow-up questions on slush ice and on compensation, but I think we're going to take a break right now.

THE CHAIRMAN: Let's take a break and come back at about just after 25 after.

(Proceedings recessed at 3:13 p.m and reconvened at 3:30 p.m.)

THE CHAIRMAN: Okay, let's get back at it. Ms. Suek still has a few questions.

MS. SUEK: You almost answered my slush question, but I just have a little bit of clarification to ask.

We did hear from people that they thought that the slush was created because Manitoba Hydro would release water, the water would come up through the existing ice and form slush on top of the ice. So, I mean, if that's the case, then part of the slush problem is related to LWR. But I have also heard that there is slush ice in other places not affected by LWR. So how much of it is related to LWR?

MR. GAWNE: I'll provide part of an answer to this, and perhaps I can get some addition from the other panelists.

So there's a few ways that slush ice can be formed, and one that you have heard in the communities is correct, if ice, the lake ice is established at a certain level and then inflows to the lake change because of operation of Lake Winnipeg Regulation, then it's possible that essentially the water gets driven up and saturates the snow above the ice surface and that creates

slush.

Similarly, if there is ice effects at the outlet of the lake, and this can happen at any lake, where ice restrictions at the outlet basically choke the outflow from the lake, and that causes the water level in the lake to rise before it kind of re-establishes equilibrium, and then outflows kind of return to the inflows, that causes similarly the lake level to rise and can result in slush.

And then thirdly, and perhaps there's others that these gentlemen can add, but if you have, for instance, a large precipitation event where you have a lot of snow now landing on the ice surface, that creates weight, pushes the ice surface down, and then causes the water to come up through cracks in the ice surface, again, saturating some of that snow, and then you have slush.

And it's in those years where you have a tremendous amount, like a lot of snow, snow acts as a good insulator, and so you have this water on top of the ice surface insulated by a depth of snow. And then it's not until you ride over that with a snow machine or something like that, that

now you are exposing and there's water even when temperatures are cold.

MR. HUTCHISON: Just to follow with that last description of how slush ice can form. Both in 2012 and 2013, the first week in December, so you don't have a lot of ice forming, but we got a huge dump of snow. Mark started to talk about this example, but it had happened actually two years in a row. So you've got this thin layer of ice, huge dump of wet snow, and the weight of that snow presses down on the ice and it bubbles up at the edges, and then the snow acts like a sponge and you get a lot of slush ice. This was widespread across Northern Manitoba, right from the Saskatchewan River area all the way through the north.

So at that time we actually put out travel advisories, more of a public notice, not that it was affected by LWR. So that was just an example that jumped into my head of a time where slush ice happened very widespread on an off system, and it was not due to LWR.

MS. SUEK: So what I think you are saying is it occurs naturally, but LWR has contributed somewhat to the changing water levels

and, therefore, the creation of slush? Is that correct?

MR. GAWNE: Yeah. I think it's difficult to say what percentage and how much, but certainly I think that, you know, operation of Lake Winnipeg Regulation and changing flows after ice has formed can result in slush ice.

MR. CORMIE: And it's impossible for Manitoba Hydro to argue in any particular circumstances whether it's our responsibility or not. So under the reverse onus provision, you know, we would either provide compensation, or better yet, to have a safe ice trail where users of the trails aren't exposed to that. Because we can't prove that we are not, and ultimately that's not very constructive.

MS. SUEK: Right. Okay.

MR. GAWNE: Perhaps I can just add one more?

I was reminded of a few other mechanisms, let's say, that can result in slush ice, just to finish off the discussion. And we experienced this just very recently on the Churchill River Diversion, or actually in the instance that Mr. Hutchison was explaining where

water levels were rising on Footprint Lake, yet inflows from the diversion were essentially unchanged for weeks. So Footprint Lake was rising because of that outlet being choked up by ice. So you would perhaps have slush experience on Footprint Lake. But also downstream lakes would have been starved by water because of that choking. And then, you know, with the release of that outlet, which can happen during the winter, you then get this kind of surge of inflow to downstream lakes which, you know, is similar to a regulated flow increase, for example, and can cause that lake level downstream to rise and result in slush.

So, in a dynamic environment, you know, affected by ice six months of the year, there's various sources of slush ice.

MS. SUEK: Good. Thank you.

My next topic area is compensation. I'm into terminology today, I have noticed there's sort of been almost an interchangeable between the word mitigation and compensation. And I see mitigation as quite different from compensation. I mean, mitigation is let's solve the problem. Compensation is, we can't solve the problem so

we'll pay you. I don't know if that's the same thought that you have. I notice that the words are used in different ways by different people.

MR. HUTCHISON: The department that I first joined in Manitoba Hydro was called the mitigation department in the mitigation management division. And the terminology there would have described sort of all mitigation in a broader sense. You know, it could be remedial works like Cross Lake weir, it could be programming, it could be offsets like an arena, and it would also comprise the compensation. But you are also correct, it's also used a different way where mitigation is sort of not the money part.

MS. SUEK: Right.

MR. HUTCHISON: It's a little bit of both.

MS. SUEK: Okay. All right. Well, you were in that department so you should know.

We did have, we had a lot of comments from people about the compensation for, you know, when their skidoo hits slush and they can't get out, or it falls through the ice, or the nets being broken by debris and those kind of things. And there seemed to be some concern about, you

know, they go to Manitoba Hydro, their concern just gets dismissed, they don't even get to process it. And I'm wondering if you think that there is an issue there, or do you have data on how many requests for compensation you get, whether they are verbal or written, how are they processed, how many are denied, how many are approved? Is there -- there seems to be an issue there for people.

MR. SWEENY: And you're talking about Cross Lake?

MS. SUEK: I'm talking about Cross Lake, yeah, sorry.

MR. SWEENY: Cross Lake, as I said, Cross Lake has an office there. So one form, when an individual has an issue that pertains to personal property damage or injury, would come to the office and fill out a form that we keep on track. Then after that process, a date would be arranged, if not then, depending on the nature of the claim, an appointment would be set up to take a further investigation of the matter.

So the claims could vary. So depending on -- you mentioned the snowmobile claim or you mentioned a boat claim -- if those claims

come in, we have a process that we try to get them out quicker, like depending on the claim itself. So there's many different factors that factor in a claim. But the point is to try to get the claimant back on the water, back on the ice as soon as we can.

Some factors might cause a claim to take a little longer, if it relates to say a broken lower unit for an example. Well, that claim will take a little bit longer because there is an assessment that has to be done by a certified mechanical shop. So that boat would be transported to Thompson, it would be assessed, and determined at the time the cause and effect, and then the boat and motor would be repaired. So that time factor could cause a delay in getting the claim resolved.

MS. SUEK: So, do you have any knowledge of how many are approved and how many are dismissed?

MR. SWEENY: I do, yeah. We have -- there is an extensive list, but 90 percent of the claims have been resolved that come in. Like I say, they vary, they are very different. Some claims come in, in various different forms. Some

claims will come in two years later in the form of either a lawyer, or it will be a phone call. So they vary in the nature of type of claim. The personal injury claim, sometimes we don't hear about those claims for, like I say, two years. And then we have to do our due diligence to find out exactly where that happened, get the water levels, take pictures, all these types of things. But that delay itself could cause a delay in that process. But the claims that pertain to personal property, those are done quicker. And where they are not done quicker, for an example if it's a prop claim, and we get some prop claims, we have mitigation measures to try and minimize those props from getting damaged, but we do have some prop claims. Those are in the office and out the office the same day. So we keep a stock of props, we keep a stock of nets in the office so that we can quickly get the customer back out on the water so that he can carry on his business.

MS. SUEK: So you don't think that there's a lot of denial of claims out of hand? Is that what you're saying?

MR. SWEENY: Yeah, that's exactly what I'm saying. I don't think there's denial claims.

In fact, I think that we do a great job in getting these claims resolved quickly, and I think we have the -- we keep a documented report of the claims that come in, and get them out. So I think --

MS. SUEK: So about how many claims do you get in a period of time? Do you have any idea off the top of your head? Like are you getting like 10 a year or a thousand a year? Well, not a thousand, a hundred. Do you know?

MR. SWEENY: From the top of my head, I would be strictly guessing. Are you talking about personal property?

MS. SUEK: Yes.

MR. SWEENY: Like I say, I think it would vary on the time of year. And I'm not trying to gauge your question, I'm just trying to explain, it would vary on the time of year. For example, during the summer months, if we have directional, a directional buoy system in Cross Lake in that area, so that system is mitigating. So, depending if the water level is a little bit higher then, you know, you might get a few more claims. Or if you're talking about in the fall time when people are normally out on the waterway going resource harvesting, you can get quite a few

more claims. But the exact amount, I wouldn't be able to answer at this time, but we can certainly provide.

Sorry, I'm just trying to give you a rough average.

MS. SUEK: No, no, that's fine.

MR. SWEENY: I'd say just going back and doing the math, we'd probably be looking anywhere from 100 to 200 a year, a range. And that could be, like I say, it could be a prop claim, it could be a net claim, it could be a snowmobile claim. And it's, you know, Cross Lake is a large community, so it would be around that range.

MS. SUEK: When you said 90 percent, it's 90 percent of what, you know, so 90 percent are approved?

MR. SWEENY: Yeah, I would say 90 percent is definitely approved in relation to the property damage claims. The smaller claims, that would be higher. I'm including, 90 percent including some of the arbitration claims, so, overall.

MS. SUEK: Okay, thanks.

You know, back to sort of compensation

versus mitigation. I believe that the trappers were compensated for loss of their trapping at some point in time. Is that correct, that there was a compensation package for trappers?

MR. SWEENY: Yes, that's correct, yeah.

MS. SUEK: That was a number of years ago?

MR. SWEENY: That was in mid 2000s, like 2007, 2006, I'll just confirm that very quickly here, but in 2007.

MS. SUEK: So my question is, you know, I haven't seen, and correct me if I'm wrong, I haven't seen a lot of economic development efforts to, you know, instead of compensation for the trappers, looking at other ways to create economic development in communities so that there are other opportunities, and particularly thinking of the high school students we talked to who looked very gung ho, ready to go, and there's not a lot of things for them to move to when they graduate from high school. And it seems to me, you know, mitigating some of the effects by creating economic opportunities would be a worthwhile thing to do.

Is Manitoba Hydro doing anything like that or is that -- do you not see that within your mandate?

MR. CORMIE: The only statistic that I'm aware of is that approximately 40 percent of Manitoba Hydro's northern employees are Aboriginal, which is much higher than, you know, the provincial average. So, you know, I think our training programs and our apprentice programs are focused in the north, and to the extent that we can't, you know, offer trappers trapping jobs, there are other employment opportunities. And Manitoba Hydro has gone to extensive efforts to, you know, have a very high percentage of employees, Aboriginal employees in the north.

MS. SUEK: I think those efforts are great, and I know you hire people for the debris clearing program as well. But, you know, that's a pretty limited number of jobs really. You can't employ everybody in the communities.

MR. CORMIE: And the training program is actually, it's probably, that number probably underestimates. Because once we train people, they don't necessarily stay at Manitoba Hydro, they take those skills and work in other areas of

the economy. So, you know, I think we are able to keep 40 percent, but I think we are providing training to much more than that.

MS. SUEK: But in terms of sort of developing ventures within the community, or businesses, or those kind of things, do you think that that is part of your mandate, or do you see that beyond and being somebody -- someone else should be doing that?

MR. CORMIE: Well, I think Mr. Sweeny described, I think it was last week, you know, the directly negotiated contracts where we are purposefully not opening it up to competition. We are targeting northern ventures so that, you know, they have the opportunity to develop. And that is very purposely done to try and build capability, either with the new projects or, you know, with our existing operations.

MS. SUEK: Yes.

MR. SWEENY: If I can just add to that?

Yes, we do see it as our mandate to maximize the opportunities that we can in relation to our projects in these communities. In relation to your question in regarding the trappers, you

know, the trappers dating back, going back right to the '70s is the economy. An economy that, you know, might not necessarily -- has changed up until today and for many different reasons. But it's still an economy in relation to their ability to get out to the land, their ability to do many different things, or to teach, that's still a big part. So the economy can vary.

The programs are designed to not only deal with some of the adverse impacts or address the past adverse and present adverse impacts, but also to put measures in place so that that knowledge or that activity can continue so that it contributes to the overall effect.

In relation to some of our programs, we utilize our programs so that any time we can have the trappers or resource users involved, such as our safe ice trail program, incorporate and them install so that we can provide some sort of short term jobs opportunities, those are opportunities that we utilize and we include with the resource user groups.

With the commercial fishers, although we have an agreement, we have them install the buoy markers at the beginning of the season and

remove them, and we contract with them on a regular basis. And that happens in Cross Lake, but it also happens in some of our other areas where we have other programs. But any time we can utilize the resource user groups in our agreements to get involved with our programs, we do that.

In addition to that, like we spoke of Cross Lake there, there's also six seasonal positions that are part of our boat patrol program. Some of those individuals are trappers, are resource users that, in fact, are the experts when it comes to utilizing the waterways. And they are the ones out there, they are the ones monitoring the waterways on a regular basis and providing input on how we can best address those. In relation to our debris contract agreements, those are areas that we utilize either the First Nation or we utilize an entity that we enter into contract to do the debris programs. So any time projects are in town, the First Nations and some of the resource user groups get, would receive the first opportunity.

And there's many different policies that Manitoba Hydro has, including our northern purchasing policies, that helps assist and ensures

that happens. So those policies are put in place to ensure that the communities being impacted have the opportunity to take advantage of the opportunities that pertain in their specific community. So that's incorporated in any of our policies that we operate in. There's many different, you know, I can go on, I know, like about the pre-placement training program, like many different policies and programs that we put in place to maximize the participation of the communities that are directly adversely impacted by the projects, and communities that aren't.

MS. SUEK: And I applaud you for doing that. I think that's all great. But what I'm hearing is, you know, you have contracted with the people for your projects and you, you know, use the people, hire the people in the community as much as you possibly can. I guess, you know, the third piece of that for me is new economic development in the communities, things, new things, new ventures, new businesses, supporting sort of economic growth in the communities in ways not necessarily related to your contracts. Do you see that as being anything related to you, or is that completely not Manitoba Hydro? I mean,

starting a skidoo fixing business, that kind of thing, is there any ventures like that that you would --

MR. SWEENY: Yeah, I think wherever there are opportunities, we would look to doing that. I know you mentioned, there are small mechanical shops that aren't necessarily -- have a certified mechanic. And any time in those communities, we try to utilize them there where we can, but certainly there's been discussion with some First Nations to look at those types of things. But, yeah, if we could create opportunity in that, definitely, we look at those opportunities.

MS. SUEK: Okay.

MR. HUTCHISON: I'll probably just add to that, that I think we're -- there is an assumption out there in a lot of these communities that we were supposed to, you know, end unemployment and things like that. And I know that there were government programs at the time, for instance the NFA, there's sort of references to that. I don't think Manitoba Hydro believes that that's really our purpose to go much beyond the programs that are available, or programs and

opportunities that are available with our, you know, when we're doing projects to maximize employment, to do training in that regard, to try to make sure that we attract employees from, for instance, Aboriginal and impacted communities.

MS. SUEK: Okay. That answers my question, both of you. Just one last question.

We have heard sort of, we've got to be careful or we won't be able to turn the lights on in the winter time. And I'm just wondering if you are pursuing any alternative energy projects in the north, things like solar power, wind power, those kind of things, to sort of help offset some of the need for hydro? Is there any activity at all like that in northern communities?

MR. CORMIE: Ms. Suek, there was an announcement, I think yesterday or the day before, about Aki Energy installing geothermal heat pumps into, I think it's Peguis and Fisher River. It sounded like 680 homes would be heated geothermally, and the cost of that would be paid out of the savings, because a lot of these homes don't have access to natural gas and so they are heated electrically, and it's much more efficient to use geothermal. And the person on the, I think

it was Darcy Wood -- no, I don't remember the gentleman's name, but he described how there was a significant savings associated with that.

Most of the communities in Manitoba are on the central grid, but there are some isolated communities like Brochet and Lac Brochet and, you know, we're trying to find alternatives that are more economic than fueling these communities with diesel power. And so in those areas we would be looking for alternative supplies. But these are very, very small projects.

MS. SUEK: So Peguis and Fisher River, is it a Manitoba Hydro project or is it some other, someone else involved in that?

MR. CORMIE: I think Aki Energy, it's a non-profit organization that is working with Manitoba Hydro's Power Smart Program. And we have this pay as you save program where we provide the financing and the bill goes down. Some of those savings are used to pay off the capital cost. I think Manitoba Hydro puts up the capital.

MS. SUEK: Right, I'm aware of that.

MR. CORMIE: And we use our ability to borrow money at low interest rates and we pass

that off on to those communities. So as long as the ground conditions are suitable for heat pump installation, that sounds like an innovative way of reducing electric bills. The rate that is paid for electricity around the province is exactly the same for every customer class, residential in Winnipeg is the same as it is in Cross Lake. What's different, though, is that a lot of homes in the north are heated electrically, so they are using a lot more kilowatt hours. Even though they are paying the same, the bill is much higher. And so there's a huge opportunity to get the bill down by insulating homes, by putting in geothermal. And in the case of the geothermal program, it applies employment because, you know, there's maintenance and you've got to keep these things going.

MS. SUEK: Right. Sounds like a new venture.

MR. CORMIE: So I was excited to hear that.

MS. SUEK: We did hear a lot about the bills up there, and the homes are not well insulated.

Mr. Hutchison, did you have something

you wanted to add or are you okay?

MR. HUTCHISON: I think I'm okay.

MS. SUEK: That's all the questions I have. Thank you.

THE CHAIRMAN: Thank you, Ms. Suek. Mr. Harden?

MR. HARDEN: Okay. I have a few questions. I was going to save this for last, but you may want to think about it for a bit and come back to it. But Mr. Cormie, you spoke about having a road map for the next licensing period, and I kind of took that to be in the broad context, not just for Lake Winnipeg Regulation, but for perhaps many of your older projects that are coming up for relicensing.

What do you think this map should include, from Manitoba Hydro's perspective? And I'm not expecting a comprehensive, you know, every i dotted and t crossed, but just what would be the major things you would expect to see on this map?

MR. CORMIE: I think, Mr. Harden, we would like to know where the knowledge gaps are, what knowledge gaps we are expected to close, so that we can address those knowledge gaps with sufficient time so that we can come to the

licensing process informed.

And we heard from Mr. McMahon yesterday about how the cooperators, I think he described it as, in the U.S., you know, they come to the table early on, there's a process identifying their interests, and work is done to understand those issues, and essentially have a consensus on what issues need to be studied and informed about, rather than Manitoba Hydro arbitrarily choosing issues and addressing them.

You know, the Water Power Act talks about the administration of licences under the Act, but clearly there's other issues, environmental issues, and those aren't addressed in there.

The other issue that we raised is that it's hard to separate the effects of Lake Winnipeg Regulation from the effects of Kelsey, from the effects of Churchill River Diversion, depending on where you're looking at. So an integrated licences process that involves, you know, maybe looking at the projects together. And then we don't have to worry about, well, who's causing it, if they are a result of maybe hydroelectric development. And so some thought of combining

those processes, I think there's some efficiencies to be gained there.

You know, I believe that the RCEA process that we are in, and the monitoring program we are in through CAMP and other programs are identifying, you know, some of the gaps but maybe those aren't all the gaps that might be necessary to deal with.

We have heard a lot about ATK and, you know, there's no mechanism now to understand how that would affect a relicensing process. It would be good to understand, you know, what value that would bring to a relicensing process.

I think Mr. Bedford spoke yesterday when he was asking Mr. McMahon questions about well, you know, there's the option of walking away from the project, you know. Is that really an option? And I doubt it, given our dependency on hydroelectricity. But moving from a model where Manitoba Hydro holds a licence to another model for regulation, you know, those issues we have to understand, what are we talking about? And if Manitoba Hydro is no longer regulating Lake Winnipeg for power, it becomes one of the special interest groups. Then what does that mean for our

compensation agreements? What does it mean for our reverse onus obligations, having to pay compensation if we're no longer responsible for regulating the lake?

So, we would like to know, you know, we'd like to have those issues thought through, so that when we actually start the relicensing process, you know, we know what issues are on the table and we can proceed through that process in an orderly fashion.

And we did talk about the role of the Minister and the role of politicians in this. And I think the better job we do beforehand dealing on a cooperative basis with stakeholders, the more certain we can be that the outcome will be one that Manitoba Hydro is prepared for, and it doesn't end up having to be decided at the political level. We can say, you know, this is in the best interest of Manitobans.

The alternative is stumble through the process, and I don't want to stumble. I think we want to do the right thing.

MR. HARDEN: Okay. You mentioned about walking away. I guess, just how many megawatts does Lake Winnipeg Regulation represent

and how would you replace those megawatts? Presumably, building another station downstream on the Nelson. Have you got any estimate of what that would cost in terms of replacing Lake Winnipeg Regulation?

MR. CORMIE: Yes. And that's a really a good question, Mr. Harden. And we talked about it a little bit yesterday when we talked about the projects that Mr. McMahon was talking about, where hydro was a very tiny portion of the electrical supply, and I think it was in that particular state.

Manitoba is almost entirely dependent on hydroelectricity. Our dependable energy around, let's say around 25 terawatt hours. Of that 25 terawatt hours, now about six of those terawatt hours comes out of the dependable storage, the storage range that we can count on. So you can see that from our dependable supply, a significant portion is counting on that four feet of storage being available to get through a drought. So if you were to take away that six terawatt hours of storage, we would have to find alternative supplies, either building more generating, more hydro stations or more gas

turbines, or more wind turbines or something, but we would have to replace that in order to maintain the same level of reliability.

So the water would still flow down the river, but Manitoba Hydro couldn't just say that they hoped that whoever is regulating the lake would regulate for power purposes, so that the energy was there should the drought start tomorrow.

And Mr. Gawne spends half his life worrying about, is there enough water in reservoir storage today? So if the drought starts today and it lasts five years, that we can get through?

And if we can't say that with a high level of certainty, then we have to say, well, we're not going to count on Lake Winnipeg Regulation and the storage that's available under the licence as a dependable supply, and we'll put alternative supply in place.

And the issue there is, we need a long lead time. For example, the dependable energy that comes out of Conawapa I believe is around four and a half terawatt hours. So the capability of Conawapa is equivalent to the capability to the storage that we have in Lake Winnipeg,

approximately.

So, if we were to be notified that Lake Winnipeg would no longer be regulated for power, that four feet of storage is not there, Manitoba Hydro would have to start a planning process that would replace that resource.

And I would contrast that with the projects that we talked about yesterday in the U.S., where hydroelectricity is a byproduct. They have lots of energy alternatives. They can get that from the market. It's not very important.

In Manitoba Hydro's case, that storage on Lake Winnipeg is critical to our plans for providing a reliable supply during that drought, those drought periods that you saw on those charts that we have been looking at. We have to supply electricity in those drought years, and part of the supply is being confident that we can draw the lake down over that drought period if that was required.

MR. GAWNE: If I could just add to that, seeing as I worry about this half my life.

Just, we talked about drought briefly, and Dr. McMahon addressed drought management in his report. And I think there is a bit of a

nomenclature difference, or a difference in understanding perhaps in how Manitoba Hydro worries about drought versus what's in the licence specifically. And as Mr. Cormie had indicated, we need to rely on that storage to survive those drought years. And that accounting of that storage, or the balance in the bank, or whatever analogy you want to do, is done very closely through modeling and through our rules. Because we are driven by policy, we're actually driven by our Act to reliably -- for the continuance of supply of electricity in Manitoba, we are required by Act to do that. And our policies are such that we are planning our operations to be whole through a drought. And so, you know, that's a very rigid kind of constraint in our operations, that we need to test our operating plan to make sure that we are not going to run out of energy if conditions transition to that drought flow year.

So, you know, I think it was identified in the chart yesterday as the power production pool or something. But within that pool is a drought pool for electric production. And we are at 95 percent hydro entity, and we need to take that very seriously and account for that

drought storage, because we know that droughts will happen. And the storage that's in there is, you know, what we get from inflows is about 15 terawatt hours in our worst drought flow year. And if we're talking about six terawatt hours of storage in Lake Winnipeg, that's a large percentage to augment the inflows in that drought flow year.

So, absolutely, we take that seriously and we model those details in our operations. And that gives me comfort for the other half of the day.

MR. HARDEN: Okay. It's probably a good time then to talk about that drought situation.

When I was reviewing the licence provisions, it seems that everything is defined what should happen down to a level of 711. But below that, other than some vague words, it will be as directed by the Minister, and we don't have any clarification of what that means. But you did mention yesterday you have a drought plan, which is not unexpected. You probably identified the critical period of when that would be, and you have done all sorts of modeling studies.

At least in terms of Lake Winnipeg Regulation, what is included in that drought plan and that sort of thing?

MR. GAWNE: If I could start with this?

Basically, all of the elements of that supply and demand balance, remember that chart with simple words on either side of the balance, so we need to have assumptions about what drought flow case we are going to plan for. And as you said, it's that drought on record, which is similar to other utilities such as B.C. Hydro, and they look at their worst drought on record. So, on the supply side, how much wind generation can we rely on? So we have a specific, and it's a proportion of that wind power over the course of the year that we can rely on. So now we're worried about energy, how much in energy can we get from that? How much energy can we rely on from our imports from neighboring markets? How much energy can we rely on from our thermal generation? What load do we design for? Is it prudent to -- or, pardon me, operate for? Is it prudent to operate through winter banking on an average weather winter? We don't think that's

necessarily the case, so we look at a more severe winter case, we want to make it through a cold winter and have sufficient energy to make it through that.

So, it's a well thought through, basically a ledger of supply and demand that we ensure we have a balance and we ensure we keep that balance through a drought year.

And our system, as I said earlier, is designed to make it through that drought year. And we have, you know, planning criteria that we adhere to. And if we see that, you know what, with 10 years of load growth we are going to get into a scenario where we will not meet our energy requirements in that drought year, then that's when we start kicking into the resource planning phase and putting those new resources in. And the decisions that we make about those new resources, again, is predicated on what the system is today, which includes Lake Winnipeg Regulation.

MR. HARDEN: Okay.

MR. CORMIE: Mr. Harden, we are much more conservative in operations than we are planning. We're planning for a resource that might come in 10 years from now. In that 10 year

period of time, we have lots of other options that we can do if things change. But in the operating horizon, there's very little additional things that you can do. So you have to create the reliability through maintaining storage in reservoirs.

And so, you know, Mr. Gawne said, well, we have assumed the coldest winter on record, lowest flows. We have to assume that, what are we going to do if the boiler at Brandon, for example, explodes and fails? It's not a station that we're running all the time. So you have all these risks.

And the consequence of those risks are immediate shortages of power. So you have to be much more conservative in operating than you do for planning. Planning you have lots of time, you can change your mind, you can do more things. So our operating planning criteria is more conservative than our long-term criteria that triggers new resources.

The other issue that you asked about is using the 711 on Lake Winnipeg. If you assume that you get down to that level, the outflow capability is insufficient from Lake Winnipeg at

those low levels to meet the power demand, even if you're using all the other resources, the thermal and the imports. So you actually have to end the drought with water in storage above the 711-foot level. I think our modeling shows you have to be somewhere around 711 and a half. So we would never plan an operation that we'd actually get down there. So, you know, it would have to be some kind of unexpected event, a drought that, you know, maybe it was one in 300 or 200 years or something like that to get down there. But, you know, drought is not an emergency from our perspective because we planned so that we keep the lights on even in a drought. So it's not an emergency.

That doesn't mean that we'll never get below 711, but it's not an event that we planned for, from an operating perspective. And our operating criteria for risk is much, much -- you know, it's like, you know, more than one in a hundred, probably 1 percent chance that we would run out at any particular time.

MR. GAWNE: If I could just add to that a little bit more, and back to the modeling discussion we had yesterday. So we have these

rules and requirements and policy really to plan for that drought flow year. And those rules aren't established in the licence, and those rules were not included in the simple models that were done to prepare appendix 10, for example, that Dr. McMahon was reviewing. But I think if in the scenario where down the road if we were into this integrated licensing planning process, where we had models that were accessible to other interests, then those rules would have to go into that type of modeling, right? Not the simple modeling, the incremental modeling that was done, you know, for example, for appendix 10 to the study. So it's not that those rules don't exist, it's just that they were not embedded within those models specifically for those appendices.

MR. HARDEN: Okay. During the critical period then, would you be able to maintain the minimum 25,000 CFS, or would you be asking the Minister for something less, particularly during the summer period when the demand is lower?

MR. GAWNE: Mr. Harden, when we plan for the drought operation, we define what we call a minimum drought reserve storage, essentially, to

start that driest '40, '41 year, the drought on record. And in our studies to come up with what does that drought reserve storage have to be, we are abiding by the constraints on the system, the 25,000 minimum constraint, the Churchill River Diversion constraints, and what's the capability of those reservoirs or not. So that's considered a boundary.

And as Mr. Cormie said, if levels did get down that low to the 711 range, we would be challenged by getting enough water out of the lake to meet load through the winter. And the modeling, you know, we are addressing that in our modeling as well. So we're basically back calculating, how much do we need in advance to make it through that drought, considering the minimum 25,000 outflow, considering the hydraulics, the ice effects at the outlet at Lake Winnipeg, storage elsewhere in the system? All those factors we're taking into account.

MR. HARDEN: Okay, thank you for that.

Now, there was an information request about how that 25,000 was derived, other than it seems to be based on what the minimum over the period of record at Bladder Rapids was, it wasn't

really known how that 25,000 was derived. Have you done any sort of analysis from an environmental point of view, or economic point of view, or whatever, needs of downstream communities, whatever that might be as to what that minimum flow should be?

MR. GAWNE: I don't think I can answer your question directly, but I think one piece of information I guess that may be helpful is, you recall the chart of Lake Winnipeg, the blue and red chart -- maybe Mr. Penner could pull that one up -- but of the monthly average levels on Lake Winnipeg pre and post weir. And there's a period in the '30s where levels got very, very low on Lake Winnipeg for an extended period of time. The water level regime that we have for Cross Lake doesn't actually include that period. We don't have flows at Bladder Rapids or levels on Cross Lake during that time. And it's quite possible, when Lake Winnipeg was down at the 708, and I'm going off memory here, 708, 709 level -- pardon me, 709.5 let's say -- that flows at Cross Lake would have been very low. Like inflows to Cross Lake, if you look at the 1940, '41 period there where Lake Winnipeg was down around 709.5, flows

into Cross Lake would have been very low during that period, so quite possibly below the 25,000 CFS, but I don't think we have flow records for that time at Cross Lake directly.

I don't know if, I don't think we're able to find the basis for the 25,000 beyond the period of record after that.

MR. HARDEN: Okay. Then I was going to ask about the 15,000 CFS rate of change, which seems to be even more nebulous, other than it was somebody's judgment at the time the licence was issued that it was a good rate of change.

Do you, I guess, have any insight as to where that might have come from? You know, I imagine you'd want, the downstream, you usually want to know -- certainly wouldn't want a surge of water coming down and bringing out the surf board sort of thing. Any ideas as to what the justifiable figure might be, or scientifically justifiable figure?

MR. GAWNE: I don't think it's necessarily scientifically justifiable, but I believe that flow change, you know, if it's allowed to stabilize at Cross Lake, would have translated to in the order of one foot on Cross

Lake. It depends, of course, where you are on the rating curve, right.

Now, I guess I'm speculating here, but some rationale that I could come up with is, if you look at the wind effects on Cross Lake, and I spoke of the weather bomb and its effects on the inflows to Cross Lake, for two days the inflows to Cross Lake reduced by about 35,000 cubic feet per second over that two days from that wind effect. So you would see chatter, or short-term fluctuations on Cross Lake because of wind effects on Lake Winnipeg. And maybe the variation, the short-term variation on Cross Lake that was experienced because of that effect, because pre LWR is likely within that range of 15 KCFS per day. It doesn't (inaudible) the multiple days of transitioning from flows, you know, stacking 15 and 15 and 15. But that seems like a plausible reason where, you know, 15,000 is in that range of wind effects on Lake Winnipeg.

MR. HARDEN: Okay, thank you for that.

Now, a few more questions. The Lake Winnipeg levels are a reference to the Lake Winnipeg datum, I believe, which was established in 1986 using the Berens River gauge, which is the

one which all other gauges are referenced today. Is there a periodic correction applied to the other gauges since '86, or has there been any periodic correction applied to account for isostatic rebound, and if so, how often does that occur?

MR. CORMIE: All the gauges, Mr. Harden, as you indicated, are on the Lake Winnipeg datum, which is measured at Berens River, that master benchmark. It was chosen because the Lake Winnipeg project was designed on that datum, the GSC 1960 datum. The Water Survey Canada gauges are maintained on that datum, but they are not adjusted. However, Mr. Gawne in his calculation of average level of Lake Winnipeg, I understand he is making an adjustment?

MR. GAWNE: Not necessarily an adjustment to how the levels are calculated, but there is like a level water analysis that we would do after a period of ice cover. So in the spring, we'll look back at levels from the various gauges. And essentially if it's apparent that a gauge has drifted, and this is for the water levels used in operations and our reporting of smooth water levels, you know, under ice conditions essentially

all the levels should read the same. Right? Wind effects is not there. You have multiple months of what is essentially the same water level. So there can be, there is a process where we review those gauge levels, and holding again Berens at the Lake Winnipeg datum as kind of the rock, adjust to that to ensure that the gauges are aligning under a level water scenario.

MR. HARDEN: Okay. Do you have any idea how often those corrections are made?

MR. GAWNE: Well, I know the practice is to review the levels annually towards the end of the ice cover season. So whether there is necessary adjustment, I can't speak to the frequency of that.

MR. HARDEN: Okay.

If I can just turn to the issue of erosion? You know, one of the central themes that we heard from communities around the lake is that it's Hydro's fault that erosion is occurring and that sort of thing. But Dr. Thorleifson, on Monday, gave us his big picture calculations that suggest that isostatic rebound is a principal driver of erosion, and that the long-term rates of erosion are consistent with this rebound.

Now, in the paper prepared for the Commission, Mr. Baird, or Dr. Baird has suggested that it is possible to do more site specific calculations to determine precise effects at given locations.

Have you done that, or do you see value in doing that at typical locations around the lake?

MR. HUTCHISON: I think I mentioned previously, we haven't done any erosion studies on Lake Winnipeg. But what we have talked about is the effect of LWR and how you can't, or you wouldn't assume that LWR has had an effect on erosion rates, or you wouldn't conclude that LWR has had an effect on erosion rates. So if that's sort of the, you know, premise you are going on, then doing studies on such a large water body, where erosion forces are different all around the lake, it's difficult to see how you'd, or why you'd want to go that direction. And also I think when this has been brought up in the past, like in 1998, when the south basin advisory group was formed by the Province, erosion was one of their primary considerations. And they also reached the conclusion, you know, that it's primarily a

natural force.

MR. HARDEN: Okay.

I was just thinking in terms of, you know, people seem to be unaccepting of that. And if you could come up with a definite, you know, scientifically supportable calculation at particular sites, then it would be better than sort of the big picture isostatic rebound which, you know, your local cottage owner might think, well, you are evading the question sort of.

MR. CORMIE: You know, I think in those kind of studies you would have to start involving wind and other factors that Manitoba Hydro doesn't control. But the underlying factor would be what the average lake level would be. And then on top of that, you would turn that into a wind-affected level. But, you know, our studies say that the average level, the wind-eliminated level is lower as a result of the project. So, you know, I don't know what useful information would -- you know, like I don't know what it would mean for Manitoba Hydro. Like we would do the study where we're saying that we are, to the extent that we're having an effect, we're having a beneficial effect, if it's coming to, you know, to

the issue of erosion. Some people may get more benefit, some people may get less benefit, but overall, we're using as the basis of a beneficial effect the wind-eliminated level, which is the average. And our studies say that that's definitely been proved. So I'm not sure how studying that in much more detail would start assigning responsibility for more or less erosion to Manitoba Hydro.

MR. HARDEN: Well, other than point a quantifiable study rather than just, you know, we haven't changed the water level sort of thing, that's the only reason I think that could be done.

But I'll turn on to a different question. A couple of times we have been presented with maps and assessments of historic erosion in Lake Winnipeg. I think once just last week and then a second time at Sagkeeng. Are there any measurements available for the downstream portion of the project that would show typical shorelines, pre project, post project, that sort of thing?

MR. CORMIE: Clearly, Mr. Harden, we have changed the water regime downstream and raised water levels at certain locations, and that

that's triggered shoreline erosion. We have monitoring stations and erosion profiles that we're maintaining. That information is available but we don't have that here, but we do monitor those effects that are happening downstream.

MR. HARDEN: Okay. Go ahead.

MR. HUTCHISON: If I could just add?

As far as erosion, under the agreements we've got with communities downstream, erosion is one thing we have to protect against. And we would have sort of erosion protection measures that are put on. So there would be, in some there would be monitoring what the erosion rates had been sort of on reserve.

MR. HARDEN: Okay. Would that translate to say, the typical aerial photograph of this is a shoreline in 1971, this is a shoreline in 1980, 1990, whatever, do you have information such as that?

MR. GAWNE: It's my recollection from Keeyask that we do have similar information to that for like Kettle Forebay, Stephen's Lake Reservoir, and I believe that reservoir was used to inform statements that we have made about erosion rates on the newly impounded reservoir of

Keeyask. That's kind of subject to check, but there was definitely some erosion study done. And that's about all I can offer, sorry, at this time.

MR. HARDEN: What's that?

MR. GAWNE: Sorry, that's about all I can offer at this time, is there were studies certainly with Stephen's Lake erosion rates, and that information was used to inform the Keeyask process.

Now, whether that was associated with LWR, or I think the primary driver for the erosion around the lake was the establishment of a new lake level and the lake having to re-establish, or the shore having to re-establish an equilibrium, and the drying and ponding of Stephen's lake as opposed to LWR effects. So that was more of a lake level impoundment erosion study.

MR. HARDEN: Okay, thank you. Those were my questions.

THE CHAIRMAN: Thank you, Mr. Harden. I have a few questions. Hopefully, we can get them done in about 25 minutes.

I'd like to refer to slide 106, which talks about aquatic fur bearers. And it indicates that there are no current population estimates,

and also states that water level fluctuations may have negatively impacted muskrat and beaver. When we were in the communities, in particular in this respect in Cross Lake, we heard a lot from people that there has been significant negative impact on both muskrat and beaver, and perhaps to a lesser extent martin, but certainly the two big ones are muskrat and beaver. Yet there seems to have been very little work done by Manitoba Hydro or by others to corroborate this, to determine just what the population is. I'm not a trapper, I'm not a wildlife biologist, I don't know much about muskrat and beaver. But I understand that it's relatively simple to go out and count beaver houses and muskrat pushups. Why has no monitoring work been done?

This is probably one of the knowledge gaps that Mr. Cormie referred to earlier that we are interested in anyway.

MR. SWANSON: So a lot of the studies that were undertaken were specific to issues that were raised by communities. And for I think logical reasons, that tended to look at issues like fishery, fish harvest, trapping and the success rates of that. And so the studies looked

at factors that affected the activity, and the ease of the activity or the difficulties associated with it, and not so much on the population of the animals themselves. And it was because the objectives of the study were to assess the issue that's identified by the community. So that's sort of the context for the issue in site specific studies.

And information around harvest success would be more about, or would be also greatly influenced by market factors which, you know, have undergone some significant changes or fluctuations.

So using that information would give you kind of a presence/absence feel, but even at that, there may be certain, I know in the fishery, for example, there was a focus on walleye and sauger, as the price differential between walleye and whitefish was increasing, fewer and fewer whitefish were being harvested and produced from the fishery. So I think that's sort of the history of it.

The monitoring question, the long-term monitoring recommendations were directed at the Province and Canada out of the study board. And

their undertaking was to look at the studies they did for FEMP and MEMP. And there was some wildlife associated with that, but it was pretty much restricted to the waterfowl on the outlet lakes, I believe.

THE CHAIRMAN: It's come to our attention, our being the Commission's attention, or we noted when we reviewed the phase one report from RCEA that there is additional information regarding fur bearers in that area, but that doesn't appear to have been used or referenced in this study or this review.

MR. SWANSON: And some of that, I'm not sure which references you are referring to specifically, but RCEA has commenced after the Plain Language Document.

THE CHAIRMAN: I'm aware of that but --

MR. SWANSON: So the sequencing is, what information we had available in terms of published reports, we used.

THE CHAIRMAN: I would have thought that if this was helpful information to your cause, that you would have brought it in, you know, at these hearings and noted that this had

been published or come to your attention since the Plain Language Document was finalized.

MR. SWANSON: Additional information from the RCEA process brought into this conversation?

THE CHAIRMAN: That's what I'm suggesting, if it was available and if it would have benefited your efforts or endeavours in these hearings, that you would have used that, I would have thought?

MR. SWANSON: All I can say is the information that we had when we produced the document to support the application, we included. And the additional information, I know you reference gaps and Mr. Cormie's referenced sequencing and gaps, and I guess the thinking is that that's going to be part of the ongoing dialogue around.

THE CHAIRMAN: It's referred to on the same slide, and a number of times throughout these hearings we have heard that the weir at Cross Lake improved a number of situations. I mean, in particular, it stabilized water levels, which in turn would improve travel in that area. But it's also been stated that the weir would have improved

habitat conditions for aquatic fur bearers. And I believe you said this in your presentation a few days ago, or last week, but you have no data to corroborate that. Is that correct?

MR. SWANSON: The data that would corroborate that would be the water level information. What we said in our cross-examination was that the statement references the habitat as opposed to the population numbers. So the inference would be that in providing more stable, a more stable aquatic environment, the Cross Lake weir has mitigated some of the issues around the habitat of those shoreline riparian species, like aquatic fur bearers. And then the inference would be that the habitat is available or enhanced, there would be more use made of it. But we don't have data specific to talk about the population numbers. I believe there was a study that counted beaver lodges, but nothing sort of that would give us the kind of data that would say that it's improved the population by X percent, or X number.

THE CHAIRMAN: So for beaver and muskrat, it's not a case of, if you build it they will come?

MR. SWANSON: What I'm saying is that we haven't done the study to determine if they came.

THE CHAIRMAN: Switching a little bit further south into the outlet lakes area, reference is made to some fishery studies that were done in the early '90s. There doesn't appear to have been anything done since then.

MR. SWANSON: Yeah, the graphs are perhaps a little deceiving because they show in sequence the catch per unit effort to fit it on the page, but there's large gaps between studies. And there may be other information out there. For example, the Conservation and Water Stewardship would have, perhaps have index netting information, but it wasn't information that was in a published report. I'm going to guess it's likely in file information or something. So we used the information that was available in the studies that were available. And there may be, like I say, there may be information that could be used to fill some of those gaps, and that might be useful in terms of the RCEA, and the additional work and the information that the province might bring to the table.

THE CHAIRMAN: This is sort of off on a bit of a tangent, but it does relate to the outlet lakes. We have heard a lot over many weeks now of upstream and downstream. Where is the access? Is it Jenpeg or is it Warren Landing and 2-Mile Channel?

MR. HUTCHISON: When I've been talking about upstream and downstream, I have been using the north end of the lake, so upstream of the --

THE CHAIRMAN: So Warren Landing and 2-Mile Channel would be the access?

MR. HUTCHISON: Exactly, because you have got impacts as soon as you get downstream of there.

THE CHAIRMAN: Yeah, exactly, that's where I was going. I was never quite sure where the dividing line between up and down was.

I'd like to talk a little bit about water levels on the lake in particular. And we heard in a number of communities that the water is higher. We heard in Pine Dock and in Grand Marais, and perhaps one or two other places, I can't recall, but those two for sure, that docks are underwater, fishing docks are underwater.

When we asked them how long this had

been, they said the last couple, two or three years, you know, which leads me to believe that perhaps it's because of the high water period we have been in the last two or three years. But is that the best explanation for this high water, or is there another explanation? They all think it's your fault, but we have heard other sides of that story over the last number of weeks.

MR. HUTCHISON: I think that is the best explanation, is that we have been in a wet period so the water levels are high. I would also counter, not really counter, but give another anecdote but where Matheson Island had the example of one person give a story about how they remember, before regulation, cooking their breakfast in their hip waders because the water levels were so high. And it was that community's general impression that lake levels were lower recently. So I did hear a lot of different things around the lake as well.

THE CHAIRMAN: And I think we had only one couple from Matheson Island come out at Pine dock, and I'm not sure if they said anything.

MR. GAWNE: If I could please add to that, Mr. Sargeant?

And I continue to go back to this appendix 4 of this document, because I think it is a very helpful reference. And Dr. McMahon had reviewed it, and what that was, it was comparing actual water levels, wind-eliminated water levels that had been observed on Lake Winnipeg, to simulated levels as if LWR had been removed. So we go back to the rating curves, the outlet rating curves that had existed there before the channels were excavated, take those inflows that came into Lake Winnipeg, and allow them to drain out as the lake rises and falls. And certainly from that simulation, and it's a very basic simulation as Mr. McMahon explained, inflow plus delta storage equals outflow, or however you want to do the math. It's quite clear that Lake Winnipeg levels would have been significantly higher absent Lake Winnipeg Regulation the last few years. And it's hydrology driven, driven by inflows.

And Ray Hesslein and Greg McCullough had agreed to this as well. So it's a peer-reviewed study and it's a very but helpful study to kind of try to truth things to the recent hydrology. And I think you are seeing the benefits of the flood reduction purpose of Lake

Winnipeg Regulation in those charts.

THE CHAIRMAN: So if high water continues, patterns over the last few years -- I know the answer to this but I'm going to ask it anyway -- is there any way for Hydro to release more water at Jenpeg?

MR. CORMIE: I don't believe so, Mr. Chairman. We're naturally at maximum discharge every winter.

THE CHAIRMAN: Yes.

MR. CORMIE: We don't wait until the level gets to 715, we anticipate the arrival of floods. We move the water out of the lake faster than we are required to by licence. Unless there were to be new channels dug --

THE CHAIRMAN: Well, that was sort of --

MR. CORMIE: That's really all that --

THE CHAIRMAN: That's my next question.

It would require digging other channels to move more water out of the lake. If the water, or when the water is higher, or significantly higher as it is the last year or two or three, does the flow through the east arm, or

channel, or whatever it is, increase significantly or just proportionately?

MR. GAWNE: Significantly or proportionally? It increases significantly. I think during the drought -- maybe I can be corrected by my back row here -- but in 2003/04, when lake levels were quite low, east channel flows were low. In the 2011 flood, east channel flows were in the 25,000 CFS range, so I think they have ranged between six to 25,000 in my recent memory.

Yeah. Again, it's roughly 15 percent of the flow. So it's quite variable and it's dependent on water levels in Playgreen Lake and, therefore, closely tied to Lake Winnipeg levels.

THE CHAIRMAN: Now, we heard from Dr. Goldsborough yesterday his suggestion about lowering the lake level for a year or two every 10 or 20 years. Would that be possible?

MR. GAWNE: Again, if inflows are low.

THE CHAIRMAN: Okay. I mean, rephrase it, would that be possible in a normal water year? Let me elaborate a bit more. My understanding is that 711 to 715, can you physically go below 711 in a normal water year?

MR. CORMIE: No. For example, in the winter time, the outflow capability of the lake in an average water year is equivalent to the inflows. So in the winter, essentially, the lake cannot be drawn down under average flow conditions. And if inflows are higher than that, the lake will actually go up. So, on average, it's not possible to draw the lake down in the winter time.

In the summer time, it's then dependent on what the inflows are. And if inflows are very, very low, you could go to maximum discharge and draw the lake down. But then you would not be able to meet the electrical demand in the fall and winter.

So, hypothetically, you could go to maximum discharge all the time, and then the likelihood of getting down to those water levels is driven by the frequency of natural drought. And as Mr. Gawne has explained, the primary driver of water levels on Lake Winnipeg is inflows. So if inflows are low, there is a chance the lake will go down. If inflows are average, the lake can't be drawn. Inflows are high, the lake will go up.

THE CHAIRMAN: So, if waters are more or less normal, I think you are saying you would not be able to lower it to meet the marsh needs as described by Dr. Goldsborough?

MR. CORMIE: Yeah. And if you think, what was the average prior to Lake Winnipeg Regulation, 713 and a half, so that's the average level that needed to pass the average flow. So to think that under average conditions you could get down to 711, thereabouts, or 710, you can't do that on average. You can only do that when inflows are much less than outflow capability.

And as I explained to Mr. Harden, we can't meet the power demand if Lake Winnipeg level is, in winter time is below 711 and a half or thereabouts. We just don't have enough discharge capability, given the configuration of the outlet.

THE CHAIRMAN: Thank you.

MR. CORMIE: So you would need to go and dig deeper channels in order to lower the invert level of the outlet, and so that you could pass inflows at a lower level to achieve that. And my understanding is, all the cheap excavation has been done. Anything that would be done, would be done now. To do that would be miles of rock

excavation through the rock control sections of Playgreen Lake.

THE CHAIRMAN: You guys got lots of money, though.

MR. CORMIE: Mr. Williams doesn't think so. He's always complaining that our rates are going up way too fast.

MR. GAWNE: Can I just answer that?

I do think that that severity of, you know, cutting the cake pan deeper, or the notch deeper or wider, would require obviously a lot of study, because now we're changing, we're kind of moving away from this regime that we have had for 40 years. And the idea of excavating channels and that, that would be a pretty radical measure, I would think.

THE CHAIRMAN: Actually, I think Mr. Williams thinks you have enough money, you shouldn't need to raise your rates anymore. Am I not correct in that?

Off on another tangent, last week we heard from Dr. Kulchyski in what was supposed to be a question, and he made a statement to the effect that there are, I think he said hundreds of dams throughout the Province of Manitoba that may

be decommissioned, which would lead to more water entering the system. Are you aware of these dams? Is it something that's significant on your radar, if at all?

MR. CORMIE: Manitoba Hydro doesn't have an inventory of those dams and we're not monitoring that.

THE CHAIRMAN: Okay. I have one, this is off topic and I'm just curious. How many terawatt hours does CRD represent?

MR. CORMIE: Well, I think Churchill River Diversion flow probably represents about a quarter of the Nelson River Generation, which would be around, oh, you know, probably in the range of seven or eight terawatt hours per year.

THE CHAIRMAN: So it would be higher that LWR, you said about six for LWR, six of 24?

MR. GAWNE: Okay. So, Lake Winnipeg, the four-foot storage range, assuming that full four foot is used, we have roughly eight terawatt hours, although we don't necessarily assume that in our drought runs, we mention the six terawatt hours. And in Southern Indian Lake, the storage quantity is about one terawatt hour -- I think I would need to check this number actually. The

flows in the rivers -- sorry, yeah, the average flow in Notigi is on average 27,000 cubic feet per second. The average flow out of Lake Winnipeg is in the range of 76 to 79,000, 79,000 cubic feet per second, so 40 percent roughly.

Of course, you have more generation downstream of Lake Winnipeg than downstream of Cedar Lake, although it's getting close now with Wuskwatim.

THE CHAIRMAN: Okay. That's all of my questions, and I think that conclude the panel's questions. Are you going to add more? You know, it's always a dangerous thing, you know, one more thing?

MR. SWEENY: And this is for Commissioner Suek. You asked me, your previous question, one of your questions was the average monthly number of claims we get in Cross Lake and the average number is 20.

THE CHAIRMAN: Per month?

MR. SWEENY: Per month, yeah.

THE CHAIRMAN: Mr. Cormie, you had something to add?

MR. CORMIE: Mr. Chairman, I had one correction on the transcript that I would like to

put on the record. I misspoke, and this was on March 11th, page 204, line 17 and line 19. And we were talking about the 2011 flood. And in referring to the threshold level of Lake Winnipeg, I indicated it was 711 at which we went to maximum discharge. And I just wanted to have the record corrected that those two references to 711 were incorrect and I misspoke. I should have said 715 rather than 711.

THE CHAIRMAN: Thank you, Mr. Cormie.

So that concludes the questioning of the Hydro panel, so you'll be excused momentarily.

As you are aware, it's always open to the panel to come back and ask questions, but I suspect that we won't have anything where we will need your entire panel to do that.

Madam secretary, anything to table today?

Okay. Well, that's perfect timing, right on the nose of 5:00 o'clock. We will adjourn for the afternoon. Some of us, the panel and our staff and a few Hydro folks will be back this evening at 7:00 o'clock. We have seven people who have already registered to speak this evening, so we'll take most if not all of the two

hour evening session. So back at 7:00.

And thank you to the hydro panel for all of your good responses over the last few days in response to your presentation.

(Proceedings recessed at 5:01 p.m. and reconvened at 7:00 p.m.)

THE CHAIRMAN: Good evening, we will call this session to order. Tonight's session is for public presentations. We have a fairly full slate of presenters for this evening. Presentations are limited to 15 minutes. I have some flash cards that go down from five minutes to one minute, to please wrap up, to time is up. And if I wave the time is up flag, the sound man will cut off your mic. If it gets to the one minute sign, please move to conclude your comments as quickly as you can.

I would also like to note that this is a cell phone free zone, please turn off your cell phone or at least turn it on to a no noise setting. If you must take a call, please take it out in the hallway. We have an order for those who will be presenting tonight. I would ask the presenters when it is their turn to come up to

this table in front of us, under our procedural guidelines you are required to be sworn in, so the Commission secretary will swear you in and then you can proceed to make your presentation. So first up is Linda McMillan. Ms. McMillan.

MS. McMILLAN: I'm visually impaired and I can't see well. Am I to sit, stand or --

THE CHAIRMAN: Sit. There is a light there, if you like the light. Please make sure that the microphone is fairly close to your mouth and we will hear you.

MS. McMILLAN: Okay. Is that working?

THE CHAIRMAN: Yes. Now the Commission secretary will swear you in.

Linda McMillan: Sworn.

MS. McMILLAN: Chairman, members of the panel, representatives of government and other agencies who are present, and audience. My name is Linda McMillan. I am here to speak as a long time property owner of the Rural Municipality of Victoria Beach, and as a member of the council of that RM.

The primary focus of my presentation will be on level of Lake Winnipeg and its effects on our community. I do have concerns about the

state of the lake and Netley Marsh, but David Suzuki has clearly laid those issues in his documentary from a few years ago.

Let me begin by stating this committee must recommend changes to the parameters under which Manitoba Hydro operates. Since the first years of Manitoba Hydro has failed to operate within the guidelines set forth in the 1970s. For many months in each of the past several years the lake has been held at a dangerously high level.

The natives knew that the water levels of Lake Winnipeg rose and fell according to the wind direction and rainfall. Their descriptions of the lake lead LaVerendrye to assume that he was heading to the ocean because no lake would ever ebb and flow.

In flood years the fluctuation is exacerbated. Anyone who lives along the lake is aware of the peculiarity of our lake. Back in the late '80s I was the editor of the Victoria Beach Herald. There was worry about the level of the lake then, and the erosion that was occurring. Many of the residents of the municipality hoped that the precursor of this committee would help us by ordering Manitoba Hydro to hold the water level

in Lake Winnipeg between 709 and 713 feet above sea level, not 715, the upper limit. Hydro placed ads in our little paper showing that in the past the lake level had fluctuated, and that since they had controlled the lake things were not worse. They based their statements on the level of their monitoring equipment placed at Berens River near the mid point of the lake.

Now, some would say that the corporation is doing the only logical thing by monitoring the average lake level of the lake at mid point. How else can you determine lake level? Here is a thought. We know that the lake level fluctuates depending upon location. Strong south winds in summer often push the water from the south basin into the north basin. Conversely, winds from the north push water from the deeper north basin into the more shallow south basin. Fisheries and Oceans has monitoring equipment in many locations around the lake. One can monitor the south basin level if one wanted to. The data that Manitoba Hydro generates suits their purposes. Mid point, used by Hydro, is not the only way to monitor the lake level.

And here is the reason I make this

statement. In the course of a year every point on earth gets the same amount of daylight hours, the same number of nighttime hours. Every spot on the earth gets 4,380 hours of daylight. And if we lived at the equator that's what we would experience, 12 hours a day and 12 hours a night, same as Hydro does in its averaging of the lake level.

In Manitoba, however, we know a different -- we have a different understanding of daylight hours. Here in the south we know that days vary in length from eight hours roughly in December to 16 hours in June. We live -- and if we lived in the far north or in Antarctica we would experience 24 hours of daylight in the summer and 24 hours of darkness in winter, but we still would have 4,380 hours of daylight a year.

We have different ways for measuring day length, and there is no reason to only measure the lake level in terms of level at the mid point of the lake. The lake level should not be simply an average. Graphing the data would be difficult, more complicated, but it would be far more accurate. There would be a greater understanding of the effects of high water on our great lake.

I am aware this is not a popular thought to members of the government who believe that Hydro is Manitoba's oil, to quote the Premier from a few years ago. My statement would be even less acceptable to the officials of Manitoba Hydro.

There are even Reeves in the municipalities in the south basin who would disagree with me. They are the Reeves of municipalities on the west shore of the lake. I can understand their viewpoints to a certain extent. In Manitoba we rarely get winds from the east. Their communities are not affected often by high waves crashing on to their beaches caused by east winds. Some Reeves do understand, as they are affected by north or south winds.

Most municipalities along the west shore have had help reinforcing the shorelines. At Victoria Beach on the southeast shore of Lake Winnipeg we are strongly affected by west winds and north winds, and most seriously by northwest winds. We have had no help reinforcing our shores.

Manitobans often discuss the high water events of 2011 or 2012, and the resulting

devastation. In Victoria Beach we discuss the high water of late October 2010. That was when our first responders and many others in the community were on alert, moving boats, moving vulnerable seniors, dyking and eventually losing. There were boats in the trees. Parts of the community were flooded. And much of the land was eroded in to the lake. The lake level, already riskily high, rose by four feet caused by strong winds from the northwest that blew for three days. I have never seen anything like it. Waves were crashing over the Federal pier, waters flooded three miles to the south until they were stopped by a road.

There was nothing we could do and there was something that Hydro could have done. Who would the lake -- or why would the lake level be so high when Manitoba normally experiences north winds in autumn and winter? Winds do blow the water from the north basin into the south basin. Failure to see the risk in holding Lake Winnipeg at high levels puts our community at risk.

The effects on our community: As a result of the storm we lost much of the municipal

public reserve land set aside when the community was formed 100 years ago. Several individuals lost feet of property. They were frightened, they took remedial action, they built a rock revetment to prevent further erosion. Because some of that rock went on Crown land, others in the community launched a legal action. Our community was torn apart. Most sales of property ceased. The case is languishing in the courts because the province has taken no action in the four years since.

In 2011 the municipality assembled the Shoreline Advisory Committee. I sat on that committee. We studied the damage done by the storm of 2010. We commissioned W.F. Baird and Associates Coastal Engineers to study the wave action and sand movement. They looked at options for saving our land. Their report was delivered to us, our municipality, yesterday. The solution that they suggest will cost between 5 and $6 million to begin with.

Possible solutions: The cheapest solution to our problem is to insist that Manitoba Hydro be ordered to hold the lake at the lower level. We would recommend 713 above sea level, that way when engineers or hydrologists

miscalculate the amount of water reaching us from the snow accumulations in our watershed or when we have unpredictably high rainfall or when farmers in Saskatchewan make ditches, or those in Minnesota and North Dakota and now Manitoba install more drainage tiles to remove the water quickly from their fields and into the Red River, there is room to hold the water that comes our way.

Manitoba Hydro controls the lake level. They tell us that they are wise and concerned. They say that the outlet gates are totally open, but 99 per cent of Manitobans must take their word for it because the dams are in remote areas of the province, far away from most of the population.

If it is not possible to lower the lake, Manitoba Hydro should take responsibility for the damage that high water causes. They should be paying for the shoreline protection that we need. They have helped other municipalities, but see no reason to help us. Our small RM is facing millions of dollars of expenses to stop further erosion caused by high water.

Another solution would be help from

the province. The province benefits when Hydro profits, and traditionally has not stood up and called for better protection for lake front communities. They could pay for solutions suggested by Baird.

There is another way that our cash strapped government could help us, if it was -- if there was a political will. This could sound like a weird solution to our need to protect ourselves. 40 years ago the Pawley government decided to help some communities by forcing some cottage owners in the Province of Manitoba to pay school taxes to school divisions. Our municipality -- in our municipality there is no benefit to most of us. No vote, no ability to send a child to school, nothing. The RM of Victoria Beach is being asked to contribute $2.2 million to educate 14 children. If instead we were asked to pay 25 or $30,000 per child to cover the transportation cost and the share of the child's teacher, we would have an extra $2 million to be able to protect ourselves from the high water. It is another solution.

So to sum up, I would be happiest if our community were made safe by opening the gates and lowering the lake level. A level of 713 would

be safe for us. Then in times of strong winds and unusual rainfall we would not be facing disaster.

If that can not be done, we need financial help to make our community safe by implementing the recommendations of the Baird report. Pete Zuzuk from W.F. Baird will be speaking to you on Monday. This can be done if -- this can be done by Hydro providing financial compensation for the damage they cause, and not hiding behind the act of God clause.

Or, and this is the most unlikely solution, the province could change their unjust school tax laws, thereby freeing our taxpayers of Victoria Beach to cover the cost of protecting the community from erosion ourselves.

Thank you very much for hearing me.

THE CHAIRMAN: Thank you very much, Ms. McMillan. Baldur Nelson.

MR. NELSON: How is this?

THE CHAIRMAN: Fine. The Commission secretary will swear you in.

Baldur Nelson: Sworn

MR. NELSON: Thank you, Terry. I guess firstly, Terry, my condolences from myself to you, as to the passing of your mom. I know you

knew my mom, and these things can weigh on us.

I guess also to start off with I would like to note that I'm being here as a private citizen. I'm not being paid like almost every other person sitting here, so therefore I consider it doing my civic duty. With that -- yes, I guess I should have, even though you recognize me, I am Baldur Nelson, lake front property owner from Gimli, Manitoba.

The question of issuing a final licence to operate Lake Winnipeg as a water reservoir should be denied. Not only denied, but the interim licence should never have seen the light of day. Manitoba Hydro is an entity that has shown by past performance it has absolutely no corporate conscience or responsibility. Its primary purpose is to produce revenue for its operations, and as a cash stream for the province, and has shown in no uncertain terms that it will try to achieve theses aims by any means in conjunction with its partners, the successive line of Manitoba governments.

What a change since the original concept of an engineering feat that was to be a benefit to all Manitobans. Both Canada and

Manitoba corroborated on a comprehensive study of the parameters necessary to achieve a balanced scale between nature, engineering and the peoples of the lake. They undertook four years of study and millions of dollars of investment to recognize and protect what nature created in the form of such a massive watershed as the Lake Winnipeg basin. Hence the summary report of 1971 and its completion in 1975, just before Hydro closed the gates on Jenpeg power dam.

One of the first recommendations, among many, was a creation of an independent body with authority to oversee and advise Hydro in its operations and the effects thereof. This board never came into being. Why?

Another recommendation, Manitoba Hydro is to provide compensation for all damages. So far Hydro only says damages are caused by nature, and that no compensation is due anyone.

And another, an appeal mechanism was to be established to which appeals can be adjudicated. I for one have never heard of this before.

And another, also a mechanism to deal with social psychological stress.

And another, governments and agencies develop and implement long term coordinated ecological monitoring and research. I take that to mean the Federal and Provincial governments and their departments.

Whereas Manitoba Hydro is a beneficiary and cause of changes to Lake Winnipeg, should it not be the responsibility to see that those requirements are enacted?

While the study board was beginning its investigations, Manitoba Hydro changed the parameters of the outlet channels of Lake Winnipeg from two gated structures to the generating dam of Jenpeg. The dam itself was special in that it is a low head facility necessitating special turbines that were only available in Russia, creating considerations that caused much angst. Language and different measurements extended time and expenses. The outlet channels at Ominawin were not properly surveyed for material consistency, and rock outcropping causing further delays and expenditures. The realignment of the Ominawin entrance today causes further restrictions to water outflow of the lake. Delays to that portion of the overall project hampered water discharge in

1975, that combined with the wet spring enhanced the flooding around the south basin where number 9 highway was under water, and many temporary dykes needed constructing. Results such as this are further compounded by ice buildup during the winter months and the reluctance by Manitoba Hydro to go to the maximum discharge mode until the 715 above sea level mark is met. At which point Hydro seems to finally notice that they must react, but in a hampered manner.

Measuring statistics were originated and long kept by the Federal government station at Winnipeg Beach. Those numbers were actual with wind set included. 1913 to 1966, produced an open water lake level of 713.4 feet, compared to today's statement of a lake average of 713.2 wind eliminated. Is that a fair comparison?

Enter into the mix of calculations glacial rebound. I for one do not know whether that measurement is recognized in the elevation calculations. The phenomena and its effects is now a known consideration changing the face of the landscape of Manitoba. Raising the lake in the north end higher and faster than the south end. While the process is slow, it is there and should

be dealt with. Repercussions, I'm told, include less water head available at the Jenpeg outlet thereby necessitating a renewed deepening of channels. Continuing along the do nothing path that the Manitoba government in conjunction with Hydro has so far taken will increase the expropriation by erosion that has and is now in effect. While this effect is a responsibility of Manitoba, it can be noted that the deepening of outlet channels to protect Lake Winnipeg shorelines should also allow extra outflow to Nelson River dams.

Why was it necessary to change the original plans? Gated controlled structures produce no revenue. While grasping at expanding efficiencies, Hydro has only produced deficiencies. In attempting to confirm my thoughts and asking for cost revenue statements to Jenpeg, I'm told that there are no such accounting statistics. Sad but true, that a corporation the size of Manitoba Hydro does not keep records of this kind.

Manitoba Hydro was forced to implement the Northern Flood Agreement to involve native communities on the downstream side of Jenpeg dam

at the behest of the Federal government. Why the same was not conceived for the Lake Winnipeg First Nations is beyond me. The lack of Federal guidance definitely is a bonus for Hydro operations where consultations between the First Nations are kept at a minimum, and the ability to play one community against the other eases any outcomes. It also helps in keeping the other communities in the dark as to any negotiations. Which brings up the question of the Clean Environment Commission holding private, non-advertised meetings such as the one at Sagkeeng First Nation. Was this meeting and perhaps others a directive by the Clean Environment Commission board, Manitoba Hydro or the Manitoba government?

The signed and agreed to recommendations by the study board make note and states that government parties covenant and agree to assess the impact of the water regime changes on existing and potential tourism and recreation activities, including cottage development, sport fishing, boating and swimming, and to consider the benefits and costs of developing such additional recreational opportunities. Coming from a resort

location, nothing of this sort I'm aware of has ever been mentioned.

It also seems that there is a statistic coming in to notice that there is now a restricted or extended time that water remains in the lake. Prior to regulation the time period was 2.7 years for a flush through. It is now being suggested that the time is expanded to 7 years. This is a time of -- this is at a time of increased pollution and concerns of eutrophication. But then one Hydro spokesperson did mention that one drop of water not going through a turbine was wasted, which to me points to the most basic of human feelings, and that is of greed.

For these reasons and more, I ask that Manitoba Hydro be denied any access to a final licence.

As a Provincial Government is a regulatory body who has created the regulations of the Water Power Act, the so called independent arm's length corporation of Manitoba Hydro, the duty falls to them to control and discipline its creations for the betterment of the public they are in power to govern. To act arbitrarily on

their own agenda and to allow Manitoba Hydro to continue its bullying is termed tyranny. If there ever was an appropriate analogy to encompass this situation is that power corrupts, and absolute power corrupts absolutely.

Thank you very much. If there are any questions I will be happy to receive them in the mail.

THE CHAIRMAN: Thank you, Mr. Nelson. I just want to assure you that there was nothing nefarious behind the fact that the Sagkeeng meeting was not advertised. As a matter of fact, none of our meetings in First Nations communities are publicly advertised because First Nations reserve the right to allow whoever they wish into their community. Those meetings are intended to meet with First Nations people in their community. In many of them, such as Cross Lake and later next month in Norway House, we also meet in the neighboring Northern Affairs communities, and those meetings are publicly advertised. So thank you for your presentation.

MR. NELSON: Thank you for that explanation, Terry. It seems a little bit awkward, though, that should anybody wish to

attend we will say meetings in Gimli, they are quite welcome and open to do so. I realize that First Nations do have a unique situation. I'm not going to argue the point with you. But in my particular case I was quite welcome to go to Sagkeeng.

THE CHAIRMAN: But as you explained to us that night, somebody from the community had invited you to come.

MR. NELSON: That's true, but I did have to find out about it first. Thank you.

THE CHAIRMAN: Thank you, Mr. Nelson. Jon Gerrard.

Jon Gerrard: Sworn

MR. GERRARD: Let me start by thanking the Commissioners for the opportunity to talk about Lake Winnipeg, its future and how it should be regulated. Lake Winnipeg is a large dynamic lake that changes not only with the seasons, like all water bodies, but from year to year. Some of the changes which have occurred may reflect the influence of man-made construction and/or the way that Lake Winnipeg water levels have been regulated. It is therefore important to look at parts of Lake Winnipeg where there has been

significant shoreline movement.

My presentation today will review shoreline changes in two areas of the lake and the possible impact of man-made infrastructure on these changes.

The two areas are noted in this figure, Traverse Bay, TB, on the right, and Riverton Harbour on the left. Examples of the infrastructure being considered for their impact include the dams along the Winnipeg River, starting in 1906 and the Grand Rapids dam on the Saskatchewan River completed in 1968, the Hecla Island causeway completed in 1971, and the Jenpeg dam completed in 1979.

The first area I would like to examine is around Traverse Bay at the mouth of the Winnipeg River. This image compares a map of the shoreline in 1926 at the top, with an aerial photograph of the shoreline in 2010 below it. By using Provincial highway 11 as a landmark, you can see clearly that by 2010 there had been a very large amount of erosion along the south shore of Traverse Bay, as indicated by the arrows. Erosion is also apparent at Bruyere Point, labeled BP on this photo, where the channel has become much

wider. The distance between the points of the arrows on the south shore of Traverse Bay decreased by about 500 metres from 1926 to 2010. That is 500 metres of erosion.

In the next figure, we see an aerial photo from 1948 on the top, compared with the aerial photo from 2010 on the bottom. The arrows show the large amount of erosion since 1948. Along the southern shore of Traverse Bay the shoreline has moved southward up to 500 metres as shown by the arrows getting much closer together. The photo also shows that in the period before the Pine Falls dam was built, not far upstream from this spot, there was much more silt deposition creating a sand bar which might have provided some protection from erosion at Bruyere Point, that sand bar is labeled SB.

Thus the bulk of the changes noted in the first comparison occurred between 1948 and 2010. This is true both for the Bruyere Point and for the region to the west on the south shore of Traverse Bay. In reference to the sand bar labeled SB, visible on the aerial photo of 1948, it should be noted that where a fast flowing river like the Winnipeg River carrying a significant

amount of suspended particles enters a large lake like this there is a substantial deposition of suspended material from the flowing river water where it enters the slower moving water of the lake, forming a delta.

The building of the dams along the Winnipeg River, creating the water impoundments behind the dams, has resulted in much of the sediment carried by the river being deposited behind the dams. Much less sediment is now left to deposit at the river delta. This effect will be most pronounced for the dam closest to the river mouth, which would be the Pine Falls dam completed in 1952.

In my discussions with people in the area, I have noted the following. First in 2007 I met Murray Courchene who lived along Provincial highway 11, where there had been the greatest erosion. He told me that when he was growing up in Traverse Bay the water was so far away from his home that you couldn't see the water. By 2007 the water was very close to his house beside the road, consistent with what you see in the aerial photos.

In the fall of 2007 I was there, shortly after winds and waves combined to cause

this fairly dramatic destruction of the foundation of this house. This resulted from a severe single storm that eroded the bank by 15 metres, that's 15 metres going back from the water, and caused the foundations of the house to fall from the top of the bank down to the water's edge.

In addition, I have learned from others that historically, that would be before 1950, it was sometimes possible to walk across the Winnipeg River in this area in the fall because the water level was low and probably also because of the build-up of silt in the area. It is quite likely that the changes in the south shore of Traverse Bay, with the nearly 500 metres of receded bank, are the result of the combined impact of the dams on the Winnipeg River, which have drastically reduced the deposition of silt at the river mouth, and the way that Lake Winnipeg water levels are regulated, keeping water in the lake longer into the summer and fall, making the shore more susceptible to erosion from autumn storms and high water.

The second area of Lake Winnipeg that I will examine is Riverton Harbour bordered by Hecla Island on the east. The Hecla Island

causeway shown here at the top was completed in 1971. At the bottom you can see two projections visible coming into the lake. Sandy Point on the right comes out from Hecla Island and Sandy Bar on the left comes out from the west shore of Lake Winnipeg. Between the promontories there was a short walking distance over the ice or a short row in the summer up until 1970. Historically, occasionally the water was so low it could be walked in warmer temperatures as well.

In this area, as at the mouth of the Winnipeg River, we see quite dramatic changes in the lake shoreline.

These are aerial photos of Sandy Point and they show that there was a complete land structure there in 1949 at the top, which has all but disappeared with only small remnant islands left by 2010. Along the promontory attached to Hecla Island, on a treed strip of land about 400 metres wide, a farmer had built his home, and for years he and his family harvested hay on Hecla Island or on the mainland to feed cattle at a feed lot near their house on this peninsula.

Here we compare Sandy Bar in 1949 on the left with its eroded sliver in 2010. The

changes may have resulted from the influence of the man-made construction in the 1970s. It likely reflects the combination of the construction of the Hecla Island causeway and the building of the Jenpeg dam, with uncertainty as to whether one or both were primary contributors.

It is not only at Sandy Bar and Sandy Point that we can see significant changes in the shoreline in this area. This figure shows the changes around the area immediately southwest of the causeway. Again, using a Provincial highway as a landmark, in this case highway 8, it is evident that the distance between the shore and highway has shrunk significantly on the west side of Riverton Harbour, as shown where the arrows are. A comparison of the map from 1974 and the recent satellite photo from Google Maps suggests that the shoreline has moved westward by about 1100 metres. That's more than a kilometre. At the north end of Riverton Harbour the shoreline has also receded to the north, this time by about 400 metres.

These changes have had an impact on the ability of people to live and farm in the area.

The point of my presentation is to emphasize that there have been significant changes in the shoreline of Lake Winnipeg in these two areas. It is likely that man-made changes to the infrastructure around Lake Winnipeg, including the dams on the Winnipeg River, the Jenpeg dam, the Hecla Island causeway and the way that water levels have been regulated have been contributing factors to these changes.

I'm here to urge you in your deliberations to be aware of the changes which have occurred likely as a result of human influence and to consider these effects. These alterations in water flows since 1970 should be a lesson to be reviewed as we look at the approach that's taken to regulate the waters of Lake Winnipeg and to develop a plan for the decades ahead.

I'm not speaking against growth or change, but rather to say that optimizing the regulation of the lake should not only recognize the need for impounding water for Manitoba Hydro, but appropriate regulation must also consider what is optimal for the Lake Winnipeg ecosystem as well as the ideal water level for those living around

the lake.

It is of interest, in relation to the ecosystem, that the Grassy Narrows marsh near the causeway used to be famous for the wildlife in the marsh. I'm told by a local observer that since 1970 there has been a substantial deterioration in the quality of the marsh, and a drastic decrease in the amount of ducks, geese, muskrat and moose using it.

Lake Winnipeg is a large and ever changing body of water. Responsible stewardship and careful consideration require in-depth studies that give us an understanding of the damage and changes that may happen with water regulating structures and the approach taken to regulating water levels. The examples that I have reviewed provide a demonstration of change and the substantive impact that historic changes may have made on Lake Winnipeg. It is important to stay vigilant as a new approach to regulation is developed and to consider what impacts it may have.

In concluding, I will add one additional comment. Research has shown that storage of water upstream on the watershed, for

example, in the land in southwestern Manitoba, can have a very large impact to decreased flooding. Much improved storage of the water on the land upstream can have a potential beneficial impact on the level of Lake Winnipeg, and the ability to regulate it wisely. As well as serving to decrease the impact of drought on farmers in southwestern Manitoba, it can decrease the impact of a drought on the amount of water in Lake Winnipeg available for the production of hydroelectric power, because the stored water can result in continued flow at times when streams and rivers would otherwise have little to no water. Such upstream storage can potentially also allow for occasional significant lowering of the water level, which may be desirable from an ecosystem perspective.

Thank you.

THE CHAIRMAN: Thank you, very much, Dr. Gerrard.

MR. GERRARD: That was clear enough? Is there any questions that you would like clarification on?

THE CHAIRMAN: No, thank you very much, that was very clear. It was a thorough

presentation. So thank you for coming out. Next is Angela Enright.

Angela Enright: Sworn.

THE CHAIRMAN: You may proceed.

MS. ENRIGHT: Thank you for the opportunity to speak to the Commission today on behalf of the Winnipeg River Property Owners Group. My name is Angela Enright. Our group consists of property owners along the north shore of the Winnipeg River, within approximately two kilometres immediately downstream from the Pine Falls generating station. Previously a member of our group presented with a complimentary but distinctively different area of focus.

The Minister of Conservation and Water Stewardship has asked the Clean Environment Commission to consult with communities regarding the impacts and effects on Lake Winnipeg, and to hear back from people with concerns and provide recommendations.

Our concerns are not uncommon. They have been experienced historically and globally. We do not need to dig deep to find evidence that we are experiencing a duplication of negative impacts to the land, people and environment

arising from the same type of man-made activity experienced globally in different locations.

We need only to look to Dr. David Suzuki's recent documentaries which support and document in explicit detail the causes and negative effects created by hydro dams on those environment, lands and the lives of the people who inhabit those lands, in order to provide the convenience of inexpensive electricity to the masses, while creating big wealth for big business and government.

This is not saying that the well-being of the few should not be sacrificed for the benefit of the many. However, there needs to be an accountable and truthful recognition of those sacrifices, losses and costs involved. And those few who do sacrifice should be compensated generously by the many beneficiaries.

Will Braun of the International Church Council on Hydropower referenced in his presentation a compensation agreement with indigenous people at Cross Lake, though it only dates back a few years. Manitoba Hydro has also provided other communities and people multi-million dollar compensation packages as

consideration for past and future environmental impacts resulting from Hydro operations in their locale. Sagkeeng, downstream and adjacent to the Winnipeg River group, was also offered a settlement package for adverse effects.

It is time for the discrimination between communities and peoples to be over, and for the secrecy behind closed doors to be ended. Heritage should not be a factor in fair treatment. There needs to be greater transparency, openness and equity in the way that compensation is reached and timeliness in its settlement. Prioritization should not be based on Hydro's future needs. The political clout of certain community leaders or the ability to intimidate and silence some of the injured voices.

Now I will speak specifically with reference to Winnipeg River Property Owners concerns with the Lake Winnipeg Regulation. The head waters -- the head waters for the Winnipeg River system originate in Ontario and enter through the Winnipeg River watershed. You will note this on this appendix. The Winnipeg River is the main contributor of water flows into Lake Winnipeg, a fact overlooked by many and rarely

mentioned by others when discussing the levels of Lake Winnipeg.

At its peak in 2014 the cumulative river flows into the lake were approximately 224,000 cubic feet per second, while the flows out of the lake into the Nelson River were 150,000 cubic feet per second. At that same time, the flows along the Winnipeg River were forecasted at 98 cubic feet per second, but look at the difference in the width. At this velocity, can you imagine the speed, increased depth and power that this fast moving current must have within a confined channel to raise the level of the lake even just fractionally?

Prior to the early years of dam construction, the east-west rivers, Assiniboine and Winnipeg, were somewhat comparable. Now they couldn't be more different.

As a consequence of Hydro's interim licence with respect to regulated water levels on Lake Winnipeg, a loop system of interconnected and inter-related flows was created originating from watershed feeder rivers into the Lake Winnipeg basin and culminating in Hudson Bay. Consequently the natural behaviour and hydrology of the crucial

Nelson and Winnipeg River systems have been significantly and artificially altered in response to Hydro's business choices.

Properties along the Winnipeg River subject to Manitoba Hydro operations and generation and Hydro's desire to hold back water to accommodate Lake Winnipeg lake levels have experienced magnified, negative environmental impacts and personal property losses, particularly those located along the river channel between the Pine Falls generating station, which is the last dam before the mouth of the Winnipeg River at Lake Winnipeg's south basin. Thank you to Jon for preceding me.

When we look at the diagram up here you will see the little tiny funnel, and the two rock outcroppings. The dam is at the back, and you see the small forebay. Hydro's Water Act licence extends only in a little line in that first little bay in advance of the dam, which is the forebay. It does not -- because of the Water Act, they are not liable for anything else and that is what they have told us.

Winnipeg River bank erosion impacts arise from exposure of its fragile clay

embankments to the artificially increased volumes and the accelerated velocity of the river currents generated by their turbines in order to create profit. The granite outcroppings at the first narrow in the picture up here acts much like a garden hose with or without its nozzle attachment. Once the thrust of the water originating from Hydro's turbine hits this area of resistance, the excess water behind it backs up and becomes pressurized. I'm sure you have all put a nozzle in a hose pipe and pressure builds up when it goes on. Well, those rock outcroppings do that to that section of the river.

The velocity of this water then cuts into the clay banks on the sides beneath the river surface. Once the volume hits the narrow bottleneck only a portion of the water in the speedy man-made currents proceeds through uninhibited, while the excess capacity circulates backwards as backwash in the opposite direction, much the same as when you pull a plug in the bath tub. And you can see on the lighter gray area, where the -- just where it wants to go through, there is some lighter gray stuff that goes backwards towards the embankment and then circles

back again and cuts that other current in half.

These actions devastate the river embankment and the soft clay becomes saturated. The turbulent water activity created by the dam outflows subsequently loosens the clay particles and they slide away with the strong undercurrent. The land above the area that was carved out by the undercurrent then falls down into the void below.

We have pictures showing only the tips of willows submerged in the river, which were 8 feet high and located on dry land 40 feet outside of the river just a couple of years ago. We have additional pictures showing deep crevices, which we have learned by experience is a precursor to embankment slippage, these crevices are anywhere from six feet to two feet wide, and when they fall, they roll down.

This process repeats itself every time Hydro interferes with the natural flow of the river. Sudden changes occur and result from opening and closing of the dam gates which increases or diminishes the volume and the velocity of the water flow.

The river in the section between Pine Falls generating station and the mouth of the

Winnipeg River where it enters into Lake Winnipeg Basin has frequently been known to vary eight to ten feet within days.

This awesome power is frequently displayed in photos which could be forwarded to the CEC if desired.

As a consequence of this man-made interference, the river attempts to equalize the challenge by widening its own path at its weakest point, namely along the soft clay embankment.

Since Hydro upgrades 20 years ago, residents have documented and photographed that when a certain output occurs at the dam, the direction and flow of the river current changes. It no longer shoots directly down the centre of the river, but is directed towards the north shoreline. The increased capacity and fluctuation in turbine output has contributed to the escalated speed of river bank erosion, which is also a contributing factor to Lake Winnipeg pollution.

When Manitoba's original dams were built along the Winnipeg River, not beaver dams as the original dams, it is understandable that lessons would be learned as environmental and hydrological knowledge was in its infancy.

However, throughout the intervening 85 years expertise and technology advanced and flourished. The dams built today are more sophisticated and far from resemble those old ones of the past. We contend that Manitoba Hydro has modern day expertise on staff, or at the very minimum, an accessible resource, because Manitoba Hydro promotes, markets and contracts out their own expertise around the world.

Throughout the last 25 years we have evidenced Manitoba Hydro selectively cherry pick facts to publicly justify their past actions, and more appropriately lack of action, to remediate and compensate negative environmental impacts with flagrant disregard for human compassion towards adversely affected individuals. Simultaneously, when a light is shone on the cause of negative impacts, Hydro publicly decries any relevant expertise to that end.

In law, a reasonable person is a composite of relevant community's judgment as to how a typical member or party of a said community should behave in situations that might pose a threat of harm to the public. The intent of a party can be determined by examining and

understanding a reasonable person, after consideration is given to all relevant circumstances.

Today negligence is by far the widest ranging tort encompassing virtually all unintentional, wrongful conduct, including omission, that injures others. One of the most important concepts in negligence law is the reasonable person which provides the standards by which a person's and entity's conduct is judged. A person or entity possessing a higher level of expertise is held accountable to a far stricter standard. In determining negligence as a cause for injury most courts focus on the foreseeable ability of the harm that resulted from the negligence.

We contend that individuals with land rights or property ownership along the Winnipeg River were injured as a direct result of Hydro's negligence.

Once Hydro acquired a given level of knowledge and expertise, it became morally incumbent upon them to recognize their past errors in judgment and mitigate their wrongs. Consequently it became an error of omission and

negligence not to mitigate the cause of negative impacts created by their operations.

An escalation of negative effects to the environment and people along the Winnipeg River coincided with Hydro's upgrading of the turbines at the Pine Falls generation station at a time when expertise and knowledge as to the cause and effect was already internalized. The Winnipeg River Property Owners Group believes that the negative effects along the Winnipeg River are the direct result of Hydro's willful negligence as it follows an unbroken, natural sequence from Hydro's act which caused the injury.

We ask the Commission to consider our situation and make recommendations to hold Manitoba Hydro responsible for losses incurred arising from the damages to our properties and persons and the environment along the Winnipeg River as a condition of final licensing.

We can all benefit from learned lessons of history, to make adjustments so that we never repeat past mistakes.

Our recommendations:

One, we would like to see included as a condition of the final licence that the Lake

Winnipeg final licence acknowledge the true scope of Manitoba Hydro's liabilities, past, present and future, as it applies to all peoples with land rights along the rivers and the lake where Hydro operates its assets, namely the Winnipeg River, Nelson River and Lake Winnipeg.

Equity, to make whole, number 2, make whole all land rights holders and property owners negatively impacted along lake and river shorelines, whom hold assets which are subject to Hydro operations, including the LWR licence. At the very least, the amount of water rental payments should be diverted from the province to satisfy compensation to all affected parties, regardless of heritage, for losses and negative impacts, including errors of omission until such time as all losses have been satisfied.

Number 3, in the absence of remediation, ensure timely mitigation by Manitoba Hydro through fully compensated property buyouts, which includes compensation for adverse effects of all river channel and lakeshore properties that presently exist at impacted locations prior to granting the final Lake Winnipeg Regulation licence.

Number 4, re-describe the boundaries of the Water Licence Act area to include presently impacted and potential areas of impact given today's' advanced knowledge and technology. That's doable.

Five, limit the transfer of existing Crown land to private ownership in areas where potential Hydro development may occur with broader parameters than currently exist at currently impacted locations.

Number 6, perform a global review of lessons learned and conduct a study of the best practices to serve as a basis for the development of optimum support strategies and management practices designed to combat negative environmental impact and ensure that Hydro operations are conducted in a manner which continually strive to improve the health of Lake Winnipeg.

Number 8, study factors of change in head waters of contributing rivers, all of them, and this should not be done at arm's length -- it should be done at arm's length.

Number 9, engage a third party NGO, not a unilateral decision, but one that's

agreeable to all stakeholders, to monitor continued progress of the health of Lake Winnipeg and ensure that Hydro is held accountable to mitigate all negative environmental impacts in a timely fashion and as they occur. This monitoring entity should report back to all stakeholders affected by Manitoba Hydro operations every four years, including those who have provided submissions to the CEC hearing.

Thank you for your time and careful consideration.

THE CHAIRMAN: Thank you, Ms. Enright. Ken Porteous.

Ken Porteous: Sworn.

THE CHAIRMAN: Go ahead, sir.

MR. PORTEOUS: Members of the Commission, fellow presenters and guests. The shoreline of Lake Winnipeg is in ruin. Once pristine beaches are devastated. At least one bird species may be gone forever. Why? Because we have turned a natural lake and water system into a man-made cesspool.

The only way to end and reverse the destruction of the past 40 years and to begin the healing process is to reduce the regulation range

by at least one foot or more.

I am not a biologist or an engineer or any other particular expert. My comments are based on my experience around Lake Winnipeg. It is the culmination of 50 years of observation. Call it traditional knowledge. My parents bought a cabin at Grand Beach in 1960. My formative summers were spent there. I built my own cottage on the other side of the lake at Sandy Hook in 1979. It would eventually become my permanent residence where my wife and I reside today.

I began a 35 year career with Manitoba Parks in 1975 at Hecla. I again lived, worked and played along the shoreline of Lake Winnipeg. During that career I became involved with the Piping Plover recovery program, eventually co-chairing it. I'm currently its coordinator working for the Portage Natural History Group in conjunction with Manitoba Conservation.

And last, I had the good fortune in 2012 to participate on a summer tour aboard the research ship Namao, owned and operated by the Lake Winnipeg Research Consortium, and saw and experienced the north basin of Lake Winnipeg first hand.

When the idea of Lake Winnipeg Water Regulation was first broached, the decision-makers at the time were dealing with a more or less consistent climate pattern. And after regulation was put in place everything went according to plan, especially during the 1980s when water levels and precipitation amounts were low. Does everyone remember the province seemingly on fire every summer during that decade? Do you remember the labour day fires in Nopiming Provincial Park in 1983? I believe those daytime highs are still all time records. And then there was the devastating fire at Wallace Lake in 1987s. And the fires continued every summer until the end of the decade. People were wearing the T shirts "I survived the fire of." Then things changed.

Since the early 1990s we have been in a high precipitation regime. Whether it is cyclical in nature or a product of climate change, I am unable to say. However, that is the fact of the matter. And because Manitoba Hydro has not reacted quickly enough or has been resistent to lowering lake levels to acceptable levels, the Lake Winnipeg shoreline has been ruined. And don't get me wrong, I'm not attacking Manitoba

Hydro. They are well within their legal obligations, and as a consumer I enjoy inexpensive electrical rates, just like everyone else, maybe more so as our home uses electric heat.

But the fact remains the shoreline has greatly changed from pre-regulation days and does not enjoy the benefits of a naturally fluctuating lake level. Have devastating floods been prevented as were seen in the 1950s? Perhaps. However, the accumulated costs of remediating shorelines and the loss of environmental goods and services have never truly been factored into the equation. If they were, they would surely be more costly than one time minor flood events.

I had no better opportunity to see the destructive impact of high water levels than when I toured the Lake Winnipeg north basin aboard the Namao in 2012. I was shocked to see the northern shoreline literally caving into the lake, coniferous trees lined the shoreline like so many match sticks in an ashtray. Surely the shoreline did not look like this before Lake Winnipeg Regulation.

Let me try to paint you a word picture of what I have seen over the past 25 years. Try

to picture Lake Winnipeg as a giant bath tub, not unlike the one in your own homes, except bigger, gigantic. It has a drain with a stopper or plug we will call the Nelson River. What makes this bath tub different from yours is that it has three faucets to fill it, one at the opposite end of the drain we will call the Red River, the other two faucets are on opposite sides of the bath tub. The one on the right when facing the drain we will call the Winnipeg River. The one on the left side when facing the drain we will call the Saskatchewan River. Now imagine those faucets being opened at the same time. And here is the kicker, imagine that the tub is already almost full. Now with the faucets open, you don't have to be a brain surgeon to know what happens next, the tub fills to nearly overflowing even with the drain open. If the water in your tub gets sloshed around by a couple of your kids what happens? You end up with a heck of a mess with water on the walls and floors. This happens to the Lake Winnipeg tub when storms and high winds occur.

And as an aside, wind setup needs to be accounted for in the final determination of the next licence agreement. To not include the

effects of wind on lake levels is a gross misrepresentation. To set levels that are wind eliminated is pure poppycock. The wind is always blowing on that lake.

So what is the point of this word picture? The fact is when we artificially leave lake levels high, even if they are within the limits of the current Manitoba Hydro licence agreement, there is no where for this extra water to go, and thus our shorelines and beaches are ruined as the water sloshes around the lake. No one expected or could have predicted the high precipitation levels that have occurred over the past 25 years, so no one built in a contingency for the extra water.

To be able to accept the water from the three faucets being turned on at the same time, Lake Winnipeg's overall water level must be reduced. Now I can hear the uproar from the executives of Manitoba Hydro and our current government, that this can't be done as it would not be economically feasible and Hydro rates would skyrocket. And I would counter that argument by saying that if Manitoba Hydro had to mitigate the true costs of the ruination of the lake shoreline

and beaches, the cost would be much higher than any lost revenue from reducing the lake level in their next licence.

I would like to end my presentation with a few comments about the Piping Plover. A shore bird first placed on the endangered species list in 1985. This bird nests on the ground. It prefers wide, flat sandy beaches, not unlike what you would see at Grand Beach. They occur in three separate populations; the Great Plains, which includes our population, a small but increasing group around the Great Lakes, and a third population residing up and down the Atlantic coast. In other words, any place with habitat consisting of wide un-vegetated expanses of sand will have a breeding population. Their numbers have struggled due to a loss of habitat. And what preferred habitat exists is exactly what we prefer for recreation. Thus they need to dodge human activity as they attempt to nest and reproduce.

However, as the precipitation levels have increased across Manitoba, our big lakes like Winnipeg and Manitoba have filled to overcapacity. The natural outcome of this situation is a reduction in preferred habitat, preferred breeding

habitat, and so our population has plummeted. But the outcome is not natural. The situation on Lake Winnipeg is that the contractual operating levels have eliminated low water periods that typically are conducive to providing optimal habitat for Piping Plovers to reproduce, and this also compensates for high water years. The population cannot withstand the high water period. Even at 711 the habitat is a third or half that of what it was during low water years. The narrowness of the range allowed in the current licence does not allow for the sustainability of the Piping Plover. We already may be too late. The bird has not been seen anywhere in the province for the past two years. That is a sad statement. For Piping Plovers to have any chance of re-establishing on our Lake Winnipeg beaches, the regulation range must be lowered by at least a foot or more.

In conclusion, I would like to take -- I would like to thank you for giving me this opportunity to make my recommendation to reduce the overall lake level and expand the range of high and low water periods within a new licence agreement. No doubt you will be bombarded with scientific papers and more statistical information

than a professional sports franchise. I only ask that you not be fooled and that you give equal weight to the information that you receive from those that have real experience with and on Lake Winnipeg. Only you have the ability through your decisions to begin to mend the injuries inflicted on this once great lake by inappropriate regulation. Remember the bath tub.

Thank you.

THE CHAIRMAN: Thank you, Mr. Porteous. Neil Shepard.

Neil Shepard: Sworn

THE CHAIRMAN: Go ahead, sir.

MR. SHEPARD: I guess to start with I was kind of looking at my presentation, I forgot to tell you guys where my property is.

THE CHAIRMAN: Could you pull the mic in?

MR. SHEPARD: Is that better?

THE CHAIRMAN: Yes.

MR. SHEPARD: I just realized that I forgot to tell you where my property is. It is on the south end of Chalet Beach on the mouth of the Red River. In 1980 I paid taxes on 40.5 acres of property. In 2015 I pay taxes on 19.9 acres. I

have lost over 20 acres of property since regulation. Since regulation we have lost six family cottages due to high water. In 1982 I had to move the cottage from its original site on Salamonia channel, which was built in the 1930s, to it's current location. Since 1980 I have invested close to $350,000 on shoreline protection, and I'm losing. I have been hauling rock now for close to 35 years.

As I sit before you, I have no access to my property. The access was washed out in 2014 when the static level of the lake was 717, and during wind events water at the front of my property was in excess of 724. I have driftwood coming over my dyke.

At this present point in time, I have no police, no fire, no medical help available, which is pretty sad when you think of it, the property is 35 minutes north of McPhillips and the perimeter.

The lake level at the current regulated height is a continuous erosion level. There are no natural fluctuations. The natural shoreline at Chalet Beach has been destroyed. The lake level on March 15, being today, is 714.1.

That is way too high for this time of year. If there was significant spring runoff coming in, the lake would be well above 715, and another year of uncontrollable water levels would occur as they did in the past few years.

If the water levels were lower and as I show here, I took a water level reading at December 22, '14, which was 714.8, and on March 15th, '15 it is 714.1. So the lake has dropped seven inches over the winter. And as I kind of said, that's just way too high. We are going to be lucky this year so far, I believe, because we don't have any significant snow runoff, et cetera, so we might dodge the bullet this year.

Hydro has a licence to regulate the lake level to a maximum of 715. When they exceed the licenced level, there are no penalties, no consequences. If you or I exceed the regulated speed limit on a highway, there is a penalty to pay. Hydro does whatever they want.

The current system of reporting the lake level is absolutely flawed. To report an average lake level at a reporting station with no regard for wind is ridiculous. A one or two day north wind event will report a level of 710 at

Norway House and possibly a level of 720 at Gimli, just figures. This shows under the regulation that the average is still 715, when it is actually obviously much higher in the south.

The system actually would work really well if you were measuring the water level at the Pan Am Pool, not in Lake Winnipeg.

When talking to Dale, Hydro's Dale Hutchison last week, we discussed the discharge capability of the spillway. He said Hydro had to monitor the outflow so it would not impact people north of the spillway. Does this limit Hydro's ability to lower the water level?

The current licence has absolutely destroyed Netley Marsh. It is no more. The channel mud bars are gone. The natural vegetation has been wiped out. There is no natural filtration left. No ducks, no geese. Ducks and geese do not do well in three to four foot waves.

In conclusion, I would like the Commission to review the way Manitoba Hydro reports lake levels to a more realistic one. If Manitoba Hydro continues to hold water levels at the upper level of their licence during the winter, and it has no regard for spring runoff

volumes, the Commission should change the licence to a maximum of 714 to stop the excesses in years of high runoff.

And that pretty well wraps it up. I certainly appreciate it and thank you.

THE CHAIRMAN: Thank you, Mr. Shepard. That completes the list of people who indicated prior to this meeting that they wished to speak. Are there any other members of the public who would like to make a presentation at this time? Okay. Well then, that will conclude our proceedings for this evening. I would like to thank the half a dozen or so of you who did come out tonight to make a presentation. I thank you for putting in the time, having the interest and putting in the time to prepare your presentations and also for taking the time to come here to this meeting room and to present those to us. Your presentations now become part of our official record, and we will certainly be aware of them when we are coming to our conclusions in another number of weeks. We resume tomorrow morning at 9:30. We are adjourned for this evening, thank you. Sorry, we have documents to be registered.

MS. JOHNSON: Yes, we have documents

to be registered. WPG 12 will be Ms. McMillan's presentation, and number 13 will be Mr. Nelson's, and number 14, Dr. Gerrard, and number 15 will be Ms. Enright's; 16, Mr. Porteous'; and 17, Mr. Shepard's.

(EXHIBIT WPG 12: Ms. McMillan's presentation)

(EXHIBIT WPG 13: Mr. Nelson's presentation)

(EXHIBIT WPG 14: Dr. Gerrard's presentation)

(EXHIBIT WPG 15: Ms. Enright's presentation)

(EXHIBIT WPG 16: Mr. Porteous' presentation)

(EXHIBIT WPG 17: Mr. Shepard's presentation)

THE CHAIRMAN: Thank you. Any other business that we need to deal with? Now we are adjourned. Thank you and good night.

(Adjourned at 8:30 p.m.)

OFFICIAL EXAMINER'S CERTIFICATE

Cecelia Reid and Debra Kot, duly appointed Official Examiners in the Province of Manitoba, do hereby certify the foregoing pages are a true and correct transcript of my Stenotype notes as taken by us at the time and place hereinbefore stated to the best of our skill and ability.

Cecelia Reid

Official Examiner, Q.B.

Debra Kot

Official Examiner Q.B.