MANITOBA CLEAN ENVIRONMENT COMMISSION

REGIONAL CUMULATIVE EFFECTS ASSESSMENT

RE: Presentation by Dr. Jill Blakley for Consumers Association of Canada (Manitoba Chapter)

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Transcript of Proceedings

Held at Winnipeg Convention Centre

Thursday, September 14, 2017

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APPEARANCES

CLEAN ENVIRONMENT COMMISSION:

Serge Scrafield - Chairman
Terry Johnson - Commissioner
Glennis Lewis - Commissioner
Neil Harden - Commissioner
Tim Sopuck - Commissioner
Cathy Johnson - Commission Secretary
Doug Smith - Consultant

Lori Streich - Commissioner
Aurelie Mogan - Commissioner
Ian Gillies - Commissioner

CONSUMERS ASSOCIATION OF CANADA (Manitoba)
Byron Williams - Counsel
Joelle Pastora Sala - Counsel
Gloria DeSorcy

MANITOBA HYDRO:
Shannon Johnson
Allison Zacharias
Shelley Matkowski

DEPARTMENT Of SUSTAINABLE DEVELOPMENT
Don MacDonald

Patricia Fitzpatrick - University of Winnipeg

Reporter:

CECELIA J. REID

Official Examiner, Q.B.

THURSDAY, SEPTEMBER 14, 2017
UPON COMMENCING AT 9:30 A.M.

THE CHAIRMAN: Well, welcome everyone. I wonder if I could ask you to take your seats? We're about to start.

Okay. So welcome to our CEC information session. We did have a request or a suggestion from the Consumers Association that they would like to present some information to us in person at a meeting, so we accepted that as a good way to hear what they had to say.

We will, and I assume it will come at the end, be open for -- it won't be us, but there will be time for questions, of course. I would like to stress these will be questions of clarification and further information. There will be plenty of time throughout the process to make arguments supporting or not supporting this and many other things that we hear in this process. So it will be an information session. Whether we will have others depends on, of course, whether various participants want to go that route or not.

I would like to start. And the last time I introduced people, of course, that didn't end too well. So I think what I will do this time

is I will go around the table. I'm Serge Scrafield and I'm chair of the Clean Environment Commission and chair of the RCEA panel. I will let Cathy introduce herself and the speaker, and then I'll move this way.

MS. JOHNSON: Cathy Johnson, secretary to the commission.

MS. BLAKLEY: Dr. Jill Blakley, I will be speaking on behalf of myself and my co-author, Dr. Ayodele Olagunju, who I believe should be on the phone for most of the meeting.

MS. LEWIS: I'm Glennis Lewis, CEC commissioner and member of the RCEA panel.

MR. HARDEN: I'm Neil Harden, also a commissioner and a member of the RCEA panel.

MR. JOHNSON: Terry Johnson, member of the RCEA panel and commissioner.

MR. SOPUCK: Tim Sopuck, member of the Clean Environment Commission and member of this panel.

MR. SMITH: Doug Smith, I'm a contractor working as a writer for the Clean Environment Commission on this project.

MS. JOHNSON: Shannon Johnson, Manitoba Hydro.

MS. ZACHARIAS: Allison Zacharias, Manitoba Hydro.

MS. MATKOWSKI: Shelley Matkowski, Manitoba Hydro.

MR. MCDONALD: Don McDonald, Regional Fisheries manager in Thompson with Manitoba Sustainable Development.

MS. STREICH: Lori Streich, Clean Environment Commission.

MS. MOGAN: Aurelie Mogan, Clean Environment Commission.

MS. GILLIES: Ian Gillies, Clean Environment Commission.

MS. FITZPATRICK: Patricia Fitzpatrick, University of Winnipeg.

MS. DESORCY: Gloria DeSorcy, I work for the Manitoba branch of the Consumers Association of Canada.

MR. WILLIAMS: Byron Williams, Public Interest Law Centre. We are assisting the Consumers Association, and not quite physically present, but my colleague Joelle Pastora Sala will be joining us as well.

THE CHAIRMAN: All right. It is Serge Scrafield, chair, again. I believe we have one

person on the phone. Are they there yet? I would ask them to introduce themselves if they are and if they can hear me.

MR. OLAGUNJU: I'm Ayodele Olagunju, I'm co-author with Dr. Blakley.

THE CHAIRMAN: Okay. Thank you very much.

The only other matter I wanted to raise here is I would ask you all to clearly state your name before you speak, when you're asking questions or when you're part of the presentation. That's also our -- also so that our recorder can be sure to ascribe the remarks to the right person. And I would ask you in the same vein to speak relatively slowly and clearly. I know when you are giving presentations or answering questions, or sometimes even asking them, certainly I have the habit of speeding up as I go along. So once in a while I may ask that you slow down. So that's all so we get a good recording. All of this, as everything that we do at the CEC will be recorded and publicly available.

Thank you. And I'll turn it over Byron.

MR. WILLIAMS: Thank you, and good

morning everyone. I will be mercifully brief this morning. We did want, on behalf of the Consumers Association of Canada, the Manitoba branch, to thank you for this opportunity. We see this process and this hearing as a mutual learning opportunity, and it was in that spirit that we offered to present Dr. Jill, Dr. Jill Blakley. And so we are very appreciative of that effort. And I did want to also acknowledge that this would not have been possible without the funding support through participant funding, as well as our colleagues at the University of Winnipeg who were generous -- Jill is speaking there tomorrow -- and that helped to cover some of the costs. And as you will see when you see the written report, this is a very significant undertaking. And we were the beneficiaries of a significant private donation, without which this work could not have been done. So we are appreciative of the CEC, the University of Winnipeg, our clients obviously, and the unnamed private donor.

And I will turn it over to Dr. Jill and her colleague and I will let you go. I did want to say, we certainly are hoping there will be lots of questions. We welcome Hydro and

Conservation. I think Jill is quite -- if there is a slide where you are not sure, I think you can ask her then or ask her at the end as well. She is used to voracious students, so I think she can handle the Clean Environment Commission as well. So feel free anyone to ask questions if you choose.

MS. BLAKLEY: Good morning everyone. So my name is Dr. Jill Blakley, and I'm associate professor at the University of Saskatchewan. And as I mentioned, I'm speaking this morning on behalf of a co-author as well, Dr. Ayodele Olagunju, and he is a strategic analyst, recently took up a post with Alberta Environment. So he is on the phone. He co-authored the report and presentation, and he has made himself available later on for questions that may be related to part 3 People, and part 4 Physical Environment. Those were his areas of review.

So I just want to present to you this morning highlights of our report, which is entitled "Critical Review Of the Regional Cumulative Effects Assessment for Hydroelectric Developments on the Churchill, Burntwood and Nelson River Systems."

The total report will be complete within a couple of weeks, so there are a couple of details that we are working out with the text of the report, and it should be available very soon.

So, if you don't mind I will just begin with a little bit about my own background and about Dr. Olagunju's background. I began working in the area of cumulative effects in about 2005.

It seems like there is a little bit of feedback or something with this mic. Does that seem to be better? Okay.

So, I began working in the field of cumulative effects in about the middle of 2005, and at that time I was looking specifically at regional and strategic approaches to cumulative effects, and how those things integrate and how they can be accomplished. That research lead into the development of guidance for Canada, through the Canadian Council of Ministers of the Environment. So they published a guidance about principles, methodology on regional cumulative environmental assessment. And that work supported Alberta Environment's process at the time to develop their own regional planning approach based

on cumulative effects assessment. The work also informed a project that was being done by Fisheries and Oceans Canada, and over the years was used by a number of other entities in Canada that were interested in this type of assessment. I also developed, not too long ago for the CCME, definitions for cumulative effects that they can use Canada-wide. And that's on line, on their website.

Now, that foundational work has informed the Building Common Ground Report, which was issued in 2017 by the Minister of Environment and Climate Change. In that report, in the Building Common Ground Report, there is a section there on regional impact assessments, and it draws directly from the CCME principles.

In terms of my I guess background or experience with an electric utility company, in the 2000s I spent six years consulting directly to BC Hydro. I was documenting a range of innovative management practices. They were doing vegetation maintenance in such a way to support wildlife habitat management. And that was really interesting work, and I still find it very interesting, you know, working with hydroelectric.

In terms of this file today, I was involved in conducting reviews, cumulative effects methodology reviews for the Bipole III hearing, the Keeyask hearing and the Needs For and Alternatives To hearing.

Now, Dr. Olagunju has a similar academic background. His doctoral focused on integration of environmental assessment planning and policy making on a regional scale. And he also has some experience with reviewing CEA for hydroelectric. And of course, he publishes regularly in this field, as do I.

So the agenda this morning is, of course, to provide some context of the review and the purpose of the review. I will do a bit of an overview on Regional Cumulative Effects Assessment, what it is and why it is important, and talk to you a bit about our approach to doing the review, and of course I will talk about synthesis of our key findings and observations.

I ended up by talking about some next steps. I understand that the Minister and the Clean Environment Commission are looking for advice for next steps in the process. So I do touch on that.

All right. With regard to context and purpose: So in the last 13 years there have been three separate recommendations for Regional Cumulative Effects Assessment in Northern Manitoba. The first one was in September 2004, that's when the Clean Environment Commission, as part of the Wuskwatim hearings, recommended a cooperative regional planning approach to assess cumulative effects of past, present and future developments. And they noted particularly that there was a potential for a strategic approach to that work.

Later on in November 2012, Gunn and Noble -- so that's myself and Dr. Bram Noble -- in reviewing the cumulative effects prepared for Bipole III, we also recommended that the government undertake a regional strategic cumulative effects assessment.

Shortly thereafter in 2013, the Clean Environment Commission once again recommended, with respect to their decision on the Bipole III, that a regional cumulative effects assessment for all Manitoba Hydro projects and associated infrastructure in the Nelson River sub watershed be undertaken. And of course we know that

recommendation was accepted and a terms of reference was agreed to. And at that time, in the terms of reference, the scope of the regional cumulative effects assessment was expanded beyond just the Nelson sub watershed, but also would include the Churchill, Burntwood in addition to the Nelson River system. There was all three.

However, the scope of the terms of reference only allowed for a retrospective analysis of cumulative effects, which as well that it would be stated in the terms of reference that it would be retrospective only.

So our purpose then we took a look at the RCEA report, and we did undertake what I suppose we academics would call appreciative inquiry. We really wanted to go in obviously with an open mind and look for the strengths of the filing. In so doing, of course, we also noticed some of the weaknesses, and so I do talk about both of those today.

The scope of our work does not include assessing the scientific accuracy or disciplinary appropriateness in presenting past and current effects. There are many other experts that you will hear from on those subjects. We also do not

assess the accuracy in presenting any community perspectives or concerns. Again, there are other experts that you will hear from that will talk on those subjects.

So looking now to what Regional Cumulative Effects Assessment is from our perspective: So, just starting with the foundational concept of a cumulative effect, there is a classic definition issued by Hedman and others in 1999 as part of the Canadian guidance. That guidance is really quite dated now, but it is still widely used and it was relied upon in the RCEA. In that guidance a cumulative effect is defined as a change to the environment caused by an action in combination with other past, present and future actions. Many definitions of cumulative effects actually also include reference to the change induced by natural processes. So previously I mentioned that we did some updated definitions for the CCME around cumulative effects, and those updated definitions do refer to natural processes being part of the change that can contribute to the cumulative impact or effect.

So really what is at the heart of this, the idea of a cumulative effect, is that

there may be a high cost to what we perceive as a small or incremental change. And how we get to understanding that high cost or the significance of that smaller incremental change is by understanding the context of the effect. That is what is different about looking at a cumulative effect versus perhaps a direct or immediate impact or effect.

So, in other words, each individual disturbance or impact, regardless of its perceived magnitude, even if that's perceived as a small magnitude, it can represent a very high marginal cost to the environment or the society. That's really what is at the heart of cumulative effects.

Now, naturally a regional scale of analysis is quite important to capture cumulative effects, because oftentimes those effects are registered beyond the project footprint. So, for example, this diagram is a little hard to decipher from where you're sitting, I know that. What it is trying to show you there is that if we take the example of let's just say building, you have a railroad passing by a community, they are going to be adding a new rail spur and unloading facility associated with some new pipeline within the

project boundary. Obviously that construction, or that project could result in impacts that are felt beyond the project -- boundary of the project footprint. So, for example, there could be new effects of noise reaching that community, possibly dust, if there is a new road put in associated, could be a variety of impacts or effects that obviously go beyond the project boundary. And so we need the regional scale of analysis to be sure that we're capturing the full impact. But Regional Cumulative Effects Assessment is something different to that. It is not just a project based impact assessment with a bigger physical boundary. It goes -- it's something different to that.

So, Regional Cumulative Effects Assessment is used to predict the total impact of all initiatives on the sustainability of a valued ecosystem component, so called, in the RCEA that is referred to as a regional study component. But what we are trying to do is predict the total impact of as many activities as we can on the sustainability of the regional study component. And then we are looking at the contribution, or the significance of adding one more project to

that total. So you see how that is a different concept. So, with all of these sort of bubbles here -- if I had a pointer, but I don't -- over to the left, so whether these activities like road building, forest clearing, could be ground disturbance, could be building a dam, could be flooding a reservoir, could be water table drawdowns, we are looking at as much of that as possible, taking into account as much of that as possible to get a picture of the total stress on a regional study component. So it's the total stress and the ability of the regional study component to withstand any further stress. That's important, and helps us to understand the significance of one more project or one more disturbance.

Now, ideally regional cumulative effects assessment would be strategic in nature, whereas a project impact assessment is designed to explore project alternatives. So, how can we reroute the project? How can we redesign the project? So project alternatives, strategic environmental assessment looks at alternatives to the project, or alternatives to the suite of projects, which is referred -- in the impact

assessment it is referred to as a program of projects. So there is a difference there again. So just to try to capture that once more, project impact assessment looks at project alternatives whereas strategic impact assessment looks at alternatives to the project or the suite of projects, the program of projects.

So in strategic environmental assessment, the focus is on developing potential future scenarios for development and modeling or predicting the cumulative effects and consequences that would be associated with each. So the idea is to collectively establish a vision for the region and select a preferred development scenario that will get you closest to achieving that vision. And it is that vision, those goals, those objectives, that then would guide subsequent project decisions.

Regional Cumulative Effects Assessment matters within the family of environmental assessment frameworks, and Patricia and I know that there is a wide family of these kinds of frameworks. It really is a unique avenue to capture and debate the significance of past, present and future impacts to a region, because

this cannot be achieved in any single project assessment. It can't, it is not designed to do that.

If you look at the Building Common Ground report, Canadians believe that Regional Cumulative Effects Assessment may play a major role in addressing cumulative impacts on Indigenous and northern communities. This is cited directly in the report.

Regional Cumulative Effects Assessment matters to Manitoba: In our opinion this is an unprecedented opportunity for leadership and collaboration with regard to the fate of Northern Manitoba, to collectively influence the future of hydroelectric and other developments, and to inform all subsequent project assessments and decisions.

Regional Cumulative Effects Assessment matters as well if we take a moment to peek into the future. So this slide, which is offered on the Manitoba Hydro website, depicts, you know, plans for past -- for future Hydro development. It also shows past and present development.

MR. WILLIAMS: Jill, can I interrupt, just for a second? I think this was one that was

added to everyone's package.

MS. BLAKLEY: I am sorry, this was the one slide that I did add to your package that you would have received this morning, handed out to you, I hope. There are actually two slides with changes. The first one is this map. Does everybody have the map, or you can see it behind me here?

So when we think about, you know, the future, the future of the north and why Regional Cumulative Effects Assessment is very important, some may say, well, 60 years have gone by, 60 years have past, it's way too late, what is the point of this now? But what about, you know, the next 60 years? What about the next 100 years after that? And when we look at, you know, this slide which shows the plans for past, present and future Hydro development, we see that at best we are only halfway down that path, not even halfway down that path when we look at planned hydro for the future.

If we focus just on the regional, or the region of interest, so the northern portion, what we have at present, you know, just looking at this for four minutes you will see at present we

have six reservoirs. In the future we could have 11 reservoirs or more. What I'm trying to say is there would be 11 additional reservoirs, so that would be a total of 17. So on the Burntwood River, three more are planned; on the Nelson River, six more are planned. There are five right now, there would be six more. The Upper Churchill, there aren't any, if I'm interpreting the map correctly. However, two would be added. So that would be brand new development in an area that hasn't been substantially altered by flooding yet. So if we look at that slide and we look at the future, we realize in fact that Regional Cumulative Effects Assessment is really incredibly important at this point, even though 50, 60 years have gone by.

All right. So our approach to reviewing the work: Generally speaking, there are four basic stages to any good cumulative effects assessment, and those guided our review. Those four stages are scoping, so scoping of participants, scoping of boundaries, scoping of your regional study components, their indicators, their metrics; there would be a retrospective analysis phase to establish baseline conditions

and establish cumulative effects trends. There would be a prospective analysis of potential cumulative effects of additional projects. And then there would be a management phase, so management measures would be identified based upon significance determination. Of course, it would include attention to monitoring and mitigation.

So those were the four stages that we used that guided basically our analysis of the RCEA filing. However, because the CEC previously recommended a strategic approach in the Wuskwatim hearing, because myself and Bram Noble previously recommended a strategic approach in the Bipole III hearing, and because the Consumers Association of Canada and the Manitoba Chapter is interested in understanding more about the strategic approach, and the Public Interest Law Centre is as well, we did place that lens on the work. Essentially we did a bit of a gap analysis to see how the RCEA, as it stands now, would compare to a couple of frameworks that are out there to guide cumulative effects assessment on a regional scale.

So we compared with the CCME guidance. They have issued ten core principles for Regional Strategic Environmental Assessment and five

Methodological Principles. So I will speak more about that later on. And we also compared the work to a basic step-wise process that had been issued for regional strategic environmental assessment. This process has three main phases, a pre-assessment, assessment and a post assessment phase. As I said, though, I will probably comment on that later. For now I really just want to focus on those four core components to the CEA methodology, which is what we were ultimately tasked to look at, because the terms of reference did not call for a strategic approach.

All right. Now let's look at some of our key findings and observations with respect to each of those phases. The RCEA contained some good practices. It did fall short in a few other areas. So as I said, I'm going to be commenting on both of those. So first let's look at scoping. So again scoping is about what is included in the assessment and what is not included in the assessment. Again, it's about scoping participants, regional study components, spatial boundaries, temporal scale. The temporal scale is related to how far back we're going to look in our retrospective analysis, and how far forward we are

going to look in our prospective analysis.

Now, with respect to scoping, the spatial scope of analysis in the RCEA is adjusted to suit each regional study component and it's adjusted often and well. Typically a sub regional, sometimes location specific approach is actually adopted to assessing effects. And at times the boundary of the analysis was extended even further beyond the region of interest to capture, for example, the extent of some migratory species and their use of habitat through different seasons. So this was very good practice, and as I said, we were really happy to see that.

However, scoping the Regional Cumulative Effects Assessment as a retrospective exercise rather than a strategic exercise, we feel does represent a missed opportunity in light of the past recommendations. We noticed that regional stakeholders were not engaged in building the Regional Cumulative Effects Assessment, including the scoping phase, including significance determination, et cetera, they were not engaged in real time. They were only engaged indirectly through a review of historical transcripts and reports. And I believe this

possibly has already lead to some issues.

We noted that with section 3.5, in part III People, that section is not yet complete, it is pending consultation with communities. So we would have hoped and expected to see that consultation with communities had been happening throughout the process, right from the start, through to the middle and through to the finish.

We note that the regional study component list is fairly limited, with many wildlife species affected by hydroelectric development not included. Now, let me just qualify that comment. We did feel that there was very good and strong rationale behind each of the regional study components that were included, and the reasons for excluding certain components was also very clear. There was rationale around what was chosen to be focused on. But where our concern more so lies is that it is possible that certain regional study components were not captured that maybe should have been captured, for a couple of reasons. The first being that impacts are -- like when you're looking at impacts on a regional scale, sometimes impacts are likely to be expressed sooner at other levels of the ecosystem

organization than they are at the species level. So some regional study components possibly could correspond with key ecosystem services.

Now, ecosystem diversity is assessed in the Regional Cumulative Effects Assessment, but the list of regional study components could possibly have been extended if we followed this line of thinking. So, for example, biodiversity underlies all ecosystem services and could possibly constitute a regional study component itself within each ecosystem examined.

Other possible regional study components could include supporting ecosystem services, such as nutrient cycling, soil formation, primary production. Possibly provisioning ecosystem services could be included; that might be something like intactness of the food web, provision of freshwater, availability of wood and fibre, et cetera. Regulating ecosystem services could include climate regulation, flood regulation, I'm talking about natural flood regulation, disease regulation, water purification. Some cultural ecosystem services could include aesthetic values, spiritual values, educational values, recreational services and

values. So, I'm just suggesting, or we're just suggesting that the regional study component list may or may not have captured all that is truly important in the north. And we really can't know if that list is complete or if it's appropriate until it has been publicly and independently vetted.

All right. So moving on to the second point on that slide. A significant portion of the Bipole III transmission line is omitted from the region of interest. And I note that the route for Bipole III has changed from what it was as proposed when I did a review on it. However, a significant part, the southern portion of that line is omitted from the region of interest.

Okay. So moving on to the next phase, retrospective analysis. This is where the bulk of the effort was made by Manitoba and Manitoba Hydro, and I suppose it's therefore where the bulk of our praise and our I guess critical observations also lie. So retrospective analysis is used to determine baseline conditions and how developments have changed conditions over time, and whether that change is significant to the sustainability of regional study components. It

involves activities like threshold determination, identifying acceptable limits, and ultimately trying to pick out associations and trends that can be used to predict regional study component responses to future developments and cumulative change. So we've identified six strengths of the work -- seven, sorry, we weren't trying to find one more, but seven what we felt were general weaknesses. So if you'll bear with me, I will go through those now.

So on the positive side the Regional Cumulative Effects Assessment does address both environmental and socio-economic effects. That's great. The Regional Cumulative Effects Assessment consistently reports changes and trends over time for regional study components examined, providing both quantitative and qualitative descriptions. It compares pre and post development conditions and it generally attempts to assess the overall health of selected regional study components within the regional ecosystem for part V Water, and for part VI Land.

The RCEA also compares on-site/on-system conditions with off-site/off-system conditions, in many instances

where they are available for part V Water and part VI Land. So RCEA consistently provides a high-level overview of predominant pathways of effects in the form of network diagrams that illustrate drivers, pathways, and effects for each regional study component, for physical environment, land and water.

The Regional Cumulative Effects Assessment consistently also uses indicators, metrics and benchmarks to assess impacts to part V Water and part VI Land regional study components. However, this is not evident in part III People or part IV Physical Environment.

The Regional Cumulative Effects Assessment identifies driver and response indicators to facilitate a clearer picture of the overall health of each regional study component in part IV Physical Environment, part V Water and part VI Land. In our view this is a really useful and in fact innovative practice. I haven't seen this done before and I found it very helpful myself.

Now on I guess a bit of the downside with respect to the retrospective analysis, Keeyask is included in the scope of the RCEA, but

it does have yet to be completed. The RCEA does not do prospective analysis. So I guess we were left scratching our heads a little bit about how the future impact of the Keeyask on the Nelson River system and estuary could have been adequately captured. If we're only doing a retrospective analysis of existing information, I don't see how the future effects could possibly be captured in a retrospective analysis, yet it is included within the scope. So a bit of a head scratcher for us.

We also noticed that almost exclusively the Regional Cumulative Effects Assessment focuses on the direct additive effects of hydroelectric development on each RSC. A synergistic approach linking multiple stressors to each component is perhaps avoided, perhaps overlooked, but we were hoping to see a little bit more discussion about synergistic impacts.

We also noticed I guess you could say a discrepancy or perhaps an inconsistency in the approach taken to retrospective analysis in comparing parts III and IV, so people and physical environment, to parts V and VI, water and land. Basically the focus in the former is on

information provision rather than also quantifying and qualifying the magnitude of pathways of combined perturbations.

Now in general, save for a few instances, the use of environmental thresholds that could help assess the significance of historical impacts on RSCs is avoided in the RCEA, reportedly mainly due to unavailability. And you know, that very well is likely the case, they are likely unavailable in a lot of cases.

In part V Water and part VI Land, it is the short time line of the RCEA that was often cited as the reason that thresholds could not be developed. So we don't have enough time. The RCEA process is too short. Thresholds cannot be developed. In that time, therefore, we can't use them. Again, that likely is the case. But I guess the point is, and the recommendation later is about perhaps taking the time or making the investment to try to develop some of this stuff, because it is so very, very important to significance determination in the future.

All right. Looking to the next page; at times in part VI Land, and this didn't happen too often but it did happen often enough to note,

the cumulative impact of hydro development on a regional study component is qualified relative to the impact attributable to other developments and deemed proportionately less. In other words, the incremental impacts of hydro development are sort of minimized against the significance of other disturbances in the region. And it's just an area that we did flag in both the Bipole III and the Keeyask CEA reviews. So just to be careful that, again, we really are looking at total impact. We are not trying to say, well, our impact is really small compared to this other larger impact, therefore, it doesn't matter. That's not the point of Cumulative Effects Assessment. So we just wanted to bring that up.

The RCEA does not attempt to qualify the total cumulative stress placed on any given sub region, even though it's apparent that the total stress on certain sub regions is much greater than others. So, for example, area 2, the Nelson River and estuary being the most stressed. As I guess someone reviewing the work, I think that the material is there to provide -- even if it's just a description -- a description of the total stress for particular sub regions would be

really good to have. I think it would be very helpful to the CEC and to the public.

The RCEA avoids the issue of significance of regional impacts. Scientific benchmarks are definitely consistently used to gauge the seriousness of noted cumulative effects to regional study components in part V Water and part VI Land, but the societal significance of cumulative effects throughout the RCEA is not addressed. So, assigning significance to the impacts caused by hydro power development in Northern Manitoba is not just a scientific exercise. Okay. So it would be nice if we had the thresholds, if we had, you know, scientific ways to define the seriousness of impacts. But significance determination is ultimately a dynamic process, it is a contextual process, it is a political process, and it's ultimately a judgment call. Scientists will evaluate significance differently from one another and differently from the public. And the public, different sectors of the public will define significance differently from one another. So this is a collective exercise and one that is not approached in the Regional Cumulative Effects Assessment at this

time.

The third stage of a typical cumulative effects assessment would involve prospective analysis. So I will discuss that just briefly before moving on to management, the final stage, and then to our recommendations and next steps. So prospective analysis is used with potential responses in regional study components to disturbances in the future, including those directly attributable to projects in question and to other future projects and actions within the regional environments. Now it's typically centred on quantitative modeling using a scenario based approach. The focus is on how indicators and metrics will change under different intensities or types or mixes of development versus perhaps levels of environmental protection. Now, where the data are not available, you know, to do let's say some quantitative modeling, lessons from the outcomes of similar developments can be used, expert judgment can be used. There are a variety of ways to explore possible future conditions.

Well, as we know, the RCEA does not include prospective analysis as per the terms of reference, in spite of the fact that a major

question regarding the future welfare of the environment of communities in Northern Manitoba is the potential for more dams. So when I'm talking about prospective analysis, there are a number of ways that that could be approached. A prospective analysis could be included in the RCEA, just as it is now, and that might include simply taking a look at projected hydro developments and trying to predict how regional study components would respond to Keeyask, to Conawapa, and other projects if the modeling would allow. So taking a look at, you know, the trends, the conditions that have developed, which is well articulated in the retrospective portion, and projecting that into the future, how will those change when we add Keeyask, Conawapa, et cetera, et cetera? That kind of prospective analysis, we think, definitely should be included in the Regional Cumulative Effects Assessment. But if we are taking a strategic approach to all of this, which is ultimately what the CEC formerly recommended, what we recommend, what I think would be most beneficial, if we take a strategic approach, prospective analysis could be done in two different ways.

The first way would be to simply look within the energy portfolio, so developing scenarios, different possible scenarios for energy development in Northern Manitoba. So different mixes of energy, could be hydro, could it include wind, could it include solar? These are some of the other potentially viable options that were talked about in the Needs For and Alternatives To hearing. So you might do a prospective analysis in that sense. So we would strategically evaluate different scenarios of energy development.

Now you could take it to one level further, also strategic, and this would be more akin to, almost like a regional planning initiative or effort where it is going to be a multi-sector evaluation of all development in the region of interest. So in that case you're looking not just at hydro power, not just at energy, but how does mining come in to play, how does forestry come into play? And that would broaden the prospective analysis to include other partners at the table. So, of course, all of those other multiple sectors would have their own representatives and their own voices, and of course, through all of this affected communities,

northerners, Indigenous persons.

In a strategic prospective analysis, whether you use just a single sector or multiple sectors, is predicated on a collective visioning exercise, a collective evaluative exercise. It's about collectively deciding on what is a preferred scenario or pathway for development, and then following through on that with the project decisions that we make in the future. So those are some options around prospective analysis.

Now looking at the management phase of Regional Cumulative Effects Assessment, this phase, as I said before, is used to identify appropriate mitigation and monitoring actions predicated on significance determination, and understanding how much more change an affected regional study component or valued ecosystem component can withstand. Okay.

Significance determination in a regional setting could be done as a sustainability test, rather than the classic way to determine significance. We can talk more about that later, if you like. But basically the point of this phase is that in cases where a regional study component is already known to be unhealthy, or

regional conditions are already unsustainable, the management efforts should focus on rectifying or restoring conditions and delivering net positive contributions to regional sustainability.

Now this next slide is your second addition from this morning, so I wanted to clarify or comment on this slide. So I've altered the wording and we have provided you with a handout. So our observation with respect to management is that the Regional Cumulative Effects Assessment does provide a comprehensive overview of mitigation and compensation initiatives in part III People. But, of course, it does not revisit those strategies based on the results of a prospective analysis or significance determination. That's really what we were trying to get at, is that ultimately or ideally, once the prospective analysis or significance determination was made, of course you would revisit your management and mitigation plans to determine, you know, are these the right activities, the best activities to achieve our vision or our goals for going forward?

All right. So moving on to recommendations then. So I will just really read

these to you. Number one: We recommend to clearly state the intended purpose of the Regional Cumulative Effects Assessment. Right now it's not clear if this is being done, to inform perhaps the Provincial Energy Strategy, is it supposed to be informing a watershed plan, is it supposed to be informing a regional management plan, is it supposed to be informing future project assessments, conditions for approval, is it supposed to be informing a future strategic exercise? It's not clear. So without a clear statement of the tactical purpose of the RCEA, it's really hard to understand what is supposed to be the influence of the work, what its value is supposed to be and to whom.

We recommend that the regional study component list be publicly and independently vetted.

We recommend to include prospective analysis to highlight potential cumulative effects that would be induced in the Nelson River system and estuary by Keeyask and Conawapa, at the minimum, more if possible.

We recommend to include all of the Bipole III transmission line in the region of

interest.

We also recommend to conduct further analysis of the cumulative effects of transmission line construction, clearing and vegetation maintenance en masse in the region of interest, with a special focus on wildlife habitat and riparian zone degradation locally. And we do recognize that an intactness analysis was done, but from my own experience with transmission rights-of-way, a single transmission right-of-way that carries a 500 kV transmission line is enough to act as a permanent barrier to crossing of many, many species. And if it is not properly mitigated, and by that I mean through ongoing, careful attention to vegetation maintenance, it will act as a barrier permanently. So that really is important.

Number 5: We recommend to facilitate independent scientific review of the use of thresholds in the RCEA to determine whether their near absence is justified. It very well could be. I'm not the person to say. But also we recommend that the time and money is invested in developing scientific environmental thresholds appropriate to assist in future assessments in Northern Manitoba.

Yes, that could take some time. We've got the time.

We further recommend to attempt to describe synergistic effects in the region of interest, as well as the total cumulative effects on regional study components on an area by area basis, particularly for the Nelson River system and estuary, and other highly stressed sub regions.

We recommend with regard to linkage diagrams to illustrate drivers and pathways -- drivers and pathways of effects to provide a more explicit depiction of the other developments taken into account when possible. We realize that oftentimes it is not possible, but when possible more detail would be helpful.

We recommend to implement stakeholder engagement to assist in scoping regional study components and determining impact significance particularly. And we recommend to reinstate the public hearing on the Regional Cumulative Effects Assessment as originally planned.

We recommend to include a complete list of past and current monitoring and remediation programs and initiatives, which we

have acknowledged is done. But the point of it would be that we recommend further to facilitate -- we use it to facilitate a gap analysis. So it should be used to inform the development of an all-inclusive, comprehensive regional monitoring program that involves public, involves industry, involves Indigenous partnerships as appropriate, and is based on a clear articulation of action for achieving or maintaining the sustainability of each regional study component.

Number 10: Develop part III People and part IV Physical Environment beyond an information provision approach, to also include retrospective and prospective analysis of change trends and their significance.

Now, looking beyond the RCEA report and toward strategic regional cumulative effects assessment in Northern Manitoba, we have three recommendations. We do recommend that the initiative be revisited as a strategic exercise, that is objective lead and does include evaluation of alternative development scenarios, and would result in a selection of a preferred alternative that details the desired nature and pace of

development in Northern Manitoba in the future.

We further recommend that the results of a strategic regional cumulative effects assessment would inform future hydroelectric development project approvals -- inform future hydroelectric development project approvals in Northern Manitoba, including for the Conawapa Generating Station and associated infrastructure, and related regional policy and planning processes such as the Growing Our Watersheds initiative or the Provincial Clean Energy strategy.

Finally, we recommend to explore the opportunity to possibly designate the RCEA region of interest as an identifiable pilot project for regional impact assessment in Canada, as described in the Building Common Ground report.

We recommend that, you know, if such a thing were to come to pass, that the Manitoba Government could use that opportunity to undertake a northern visioning project to help establish the goals and set the objectives of a strategic Regional Cumulative Effects Assessment exercise. We strongly believe and we strongly suggest that transforming the RCEA from non strategic to strategic is essential in order for it to reach

its fullest potential in benefiting and strengthening Manitoba's environment, economy and people.

So that brings our review of the RCEA to a conclusion, but I do have a couple of slides about next steps. If you will just bear with me, I'll take you briefly through those.

So earlier I introduced the CCME's core and methodological principles for regional strategic environmental assessment, which at its heart is cumulative effects assessment. And I just wanted to -- I just wanted to highlight where I feel the RCEA actually already meets these criteria, and where work could be done for it to meet these criteria.

So on the left there, when we look at the ten core principles, the box should be showing, the green box should show that in fact already the RCEA is cumulative effects focused and it is multi-scaled.

Now, with respect to early commencement, you know, I wouldn't say it is exactly early when we look backward, but when we look forward it is sufficiently early. So that's good. So we could say it's in advance of several

more decades of planned development.

Now, where we would need to do a bit of work to adapt the RCEA is the bottom portion of that list. So we would need to adapt it to become strategic or objective lead, to become futures oriented, to become multi-tiered, meaning that there is a planned or deliberate downstream influence on project decisions, possibly upstream influence on policy decisions. We need to adapt it to become more participatory, more opportunistic, meaning are there opportunities to actually improve our institutional relationships here, to strategically improve communication among key partners. So opportunistic, and also work to become more adaptive, meaning that it becomes flexible. So as new information is gained, then we can adapt our plan as necessary.

Now, on the methodological principles side, already the Regional Cumulative Effects Assessment is looking at regionally appropriate regional study components with, like I said, the caveat that perhaps more need to be added. It already is structured and systematic. And actually to a good degree, it is already integrated in the sense that it does bring many

scientific perspectives to bear on the work. But by integrated here, what the CCME is recommending is that it be fully integrated with other regional planning and policy-making exercises, so that these things are not discrete processes that don't inform one another, that they are somehow linked and mutually supportive.

It would need to be adapted to be focused on alternatives, as I explained, and perhaps interdisciplinary could become a further focus.

Now, the RCEA is very multi-disciplinary already, meaning that, yes, there are many disciplines that have contributed information. But interdisciplinary is about bringing those different scientific disciplines together to collectively communicate and try to evaluate and assess impacts and significance.

Finally looking at -- there is the box. Okay. I don't think I did that. I didn't program it to do that. Let's see if I can get to the end of the boxes here. Okay. All right.

So the final slide then, looking at the step-wise process for regional strategic environmental assessment. Again, the RCEA already

accomplishes some of this. So the regional baseline definitely has been scoped and scoped very well. There has been a lot of attention to identifying past regional stressors and trends in the region, and that's great. And that really is a very strong foundation for moving forward. What we would have to do to transform it into a strategic exercise is, of course, we would have to revisit the terms of reference. You need a different terms of reference that make it into a strategic or objective lead exercise. And then where you are going to see some additional work is through that middle and back section of the framework.

Number 4 is all about defining and identifying the strategic alternatives for the region, so what are those different scenarios for development in the future? And then assessing the cumulative effects of each of those scenarios and comparing them, comparing their attributes, which of them gets us closest to our vision? So that's how you get to your preferred development scenario; which one gives us the most of what we want and need?

And then, of course, you would revisit

perhaps your current remediation or mitigation plan, and develop management actions appropriate to the strategic assessment results, and in following through then with monitoring, adaptive management, implementing the strategies, et cetera, et cetera. All of that information, of course, would be fed back into the process which becomes sort of a living process, an iterative process.

So those are our recommendations around next steps. And they provide maybe just a little bit more perspective beyond the recommendations that are specific to the RCEA report.

So that's the conclusion of the presentation. Thank you very much.

THE CHAIRMAN: Well, thank you very much, Dr. Blakley. So we will turn it now to questions, or maybe I will ask Byron first if the CAC has anything to add?

MR. WILLIAMS: We don't. If there is -- I may have a couple of questions, but I want -- if there is enough time to ask them, we will ask them. But if not, we will leave it to others. We will just say that we appreciate the

opportunity. This will inform the advice of CAC Manitoba and also the independent advice of our expert witnesses as well. Thank you.

THE CHAIRMAN: All right. Thanks Byron.

I wonder then if I could turn to questions and comments from the various participants at the table, and then I will turn to the panel at the end of that. So certainly any questions or comments, we're open for that.

All right. I'll turn to the panel and we'll still come back to the other participants at the end if this sparks any further interest. Any member of the panel have a question? Mr. Sopuck.

MR. SOPUCK: Tim Sopuck, panel member. In one of your statements concerning the retrospective analysis, I'll just read it:

"Almost exclusively the RCEA focuses on the direct additive effects of hydroelectric development on each environmental component. A synergistic approach linking multiple stressors to each component is avoided."

Did you note any difference in sort of

the analytical approach between the RCEA, what amongst the panel we call binders, and the -- they're almost four feet high -- and comparing the binders against the integrated summary report, did you notice any difference in say the willingness to get into the area of synergistic impacts?

MS. BLAKLEY: Well, I would say that my approach as a scientist was to focus on the binders and not so much the integrated summary report, because in my experience, you know, my lengthy experience with these things, I know that the integrated summary report is a document prepared for a public communication. And for me the translation of what appears in the binders to what appears in the report is not going to be quite the same thing. It's obviously not the same level of detail. And to be quite honest, I looked at the integrated summary report, but I didn't want that to cloud my interpretation of what's presented in the binder, and really for that exact reason, because I would expect that there is a difference in communicating in the integrated summary report versus the binders. So I'm not sure if you notice a difference, but I deliberately avoided that because I didn't want to

be distracted by such a difference, if there was one. I wanted to focus on the scientific evidence.

THE CHAIRMAN: Ms. Lewis.

MS. LEWIS: Glennis Lewis, panel member. I have a question about taking a prospective approach in cumulative effects assessment. How do you factor in natural forces such as fire, and further from that, how would you address climate change?

MS. BLAKLEY: So how you would address those natural changes or something like climate change is going to depend entirely on the modeling exercise that you undertake and the abilities or capabilities of the model that you use, and also would depend upon the kinds of data that are available to populate those models. So I wouldn't say -- like for each instance, it will be different how that's approached. And the choice of models, the selection of data, all of that would be decided at the time by the scientific team who best understands that issue.

THE CHAIRMAN: Mr. Sopuck.

MR. SOPUCK: In your slide where you define cumulative effects, there's a statement at

the bottom, and it says:

"The high cost of incremental decisions is at the heart of cumulative effects."

When I read that, just as an independent statement, it strikes me as being kind of presumptive, it kind of assumes that, you know, if you're going to look at incremental affects, automatically there will be a high cost associated. Anyway, I'm just trying to understand that statement.

MS. BLAKLEY: I guess to qualify the statement, or to be more clear, it's that there could be a high cost to an incremental action. And that is what is at the heart of Cumulative Effects Assessment, is to find out, is it a high cost or not? It may not be, it may not be, but that's the point to try to find out if it is or if it's not.

THE CHAIRMAN: Any other questions from the panel?

I do have one myself, at several points in the presentation you referred to the terms of reference for the study. And of course, the terms of reference limit the work considerably

when compared to what -- and obviously I respect, and I think I can speak for the panel, saying that we respect your knowledge and understanding of what a classical -- and classical may be the wrong word -- given that it's an emerging science may be too strong, but it is an emerging method for tackling environmental impacts on a regional scale and cumulatively. So you're saying this is, if you're doing it thoroughly and if you're doing it globally, at least within the region, this is how it should be done. So accepting that, that you obviously have a lot of experience in this area, you then refer back to the terms of reference a number of times, which I think you qualify as being something less than that, and focus very much on the retrospective. So I like the way you broke it out because it does allow us to have a look at even how they match up on the retrospective evaluation. But is that a fair assessment to say that some -- some parts of what you point out is a thorough model for doing regional cumulative impact assessment, some parts of that were not in the terms of reference? It doesn't mean they shouldn't be done, it doesn't preclude us from making recommendations in those

areas for the future, but would that be a fair conclusion based on your knowledge and based and what you've seen?

MS. BLAKLEY: Yes, it would. The terms of reference specifically call for only a retrospective analysis. And when you look at the, like you said, sort of the classic approach to Cumulative Effects Assessment, whether or not it is done in a strategic manner, the classic approach to cumulative effects assessment would be to call for a prospective analysis going forward, so looking into the future. But because the terms of reference only say -- only allow for a retrospective analysis, therefore there is no prospective analysis, so that piece is missed. And so I don't know, I'm not sure, like I guess when I saw the terms of reference I was confused, to be honest, because I thought, well, why would there be no allowance for a prospective analysis, and further, why would there be no strategic approach when those had been the former recommendations? So I don't know, I wasn't privy to that information.

THE CHAIRMAN: Yeah, and I thought you outlined that quite well actually here, here were

the recommendations, and you went back even further to Wuskwatim, and then you said, and here are the terms of reference. So right away there is an obvious difference there.

And then secondly, you outlined I think quite well, the differences between what would be a thorough regional cumulative impact assessment and the retrospective portion of that. So perhaps it's a definitional issue -- it's not a good use of that word but -- in that what we have here is the retrospective, and that's helpful to us, you evaluated even that, but we have perhaps the retrospective portion with its strengths and weaknesses of an impact -- of what you would call a full regional impact analysis. Would that be a fair way to summarize it or is that too simplistic?

MS. BLAKLEY: No, that's not too simplistic and that's exactly right. I think, yes, you have a good solid foundation, a good solid attempt at a retrospective analysis, given its relative strengths and weaknesses, and that's great. And then I would recommend to move forward with that into the prospective analysis phase, and I would further recommend the strategic approach

which introduces all kinds of scenarios for development and collaborative decision-making and visioning about the future.

THE CHAIRMAN: Okay, thanks for those answers. Are there other questions or comments? Yes, Neil.

MR. HARDEN: Neil Harden. I was just wondering if you could comment on how well you feel that the study integrates the socio-economic impacts from say hydro development with the overlying socio-economic impacts of say the decline of the fur industry, the rise of the internet and modern basically social trends? Do you feel that's good or bad or -- what kind of job do you feel it does?

MS. BLAKLEY: So my partner in this project, Dr. Olagunju, was responsible for the primary assessment of part III People, which is primarily the section that would apply to your question. I will maybe make a comment and then turn it over to him, I can hear that he is available on the phone still, which is good. But in general I do -- my impressions of the work was that less attention is given to social and cultural impacts than perhaps is warranted. I

think the work is fairly tentative in that area. It does establish some of the -- like the attempts over time for remediation, et cetera. Again, it is also a historical perspective. But for now that part of the RCEA was not crafted in partnership or consultation with affected communities, or taking into account, as you said, modern trends, modern concerns. Even, you know, concerns today are quite different possibly than concerns five years ago, ten years ago. And that's why it is very important that it is done in collaboration, in consultation, to allow the people to speak for themselves about what's affecting them.

So I will turn it over to Dr. Olagunju.

MR. OLAGUNJU: Yeah, thank you, Dr. Blakley. I will review just some of what Dr. Blakley has said with regards to the People section of the report; quite a lot of useful information that can really help us to predict into what might be the future impacts of hydro development and all the development in the region of interest.

And again, just to reiterate what she

said, she said it is just about missing the opportunity to actually update all of the good information and try to project into the future. The contemporary issues are not addressed. Most of the section focused rather on the historical context that create hydro development, some of the social issues that are taken is around economy transformation and health and wellness of the people, which are useful data trends and all of that, but we need to actually take a bit of reflection on that. And they are interested presently, and that does need the people, the affected people and the stakeholders in the region to come back to the table and kind of speak on those issues. And I think the current authors kind of missed an opportunity to reflect on these issues and to move the conversation beyond the historical data provided. And the information, as it appears, really provides a lot of good background to do that. And it is just to bring back the people and have those conversation with them and try to predict into the future.

THE CHAIRMAN: Thank you very much, both of you, for those responses. More questions, or comments? Mr. Johnson.

MR. JOHNSON: Yes, thank you for your report, Dr. Blakley. My question is underneath the area of scoping, and you say that the RCEA's list is fairly limited with many wildlife species affected not being included. Can you give us some sense of what they are?

MS. BLAKLEY: Well, you know, in reading Part V Water and Part VI Land, you know, certain species were dropped from the list that, you know, I guess were justified in being dropped. For example, when you look at let's say fur bearers, you know, aquatic fur bearers was limited just to look at beaver. And the look at beaver was just in two of the sub regions, and the data were extrapolated from those two sub regions to the entire region of interest. So for me, you know, aquatic fur bearers, I mean, obviously there's more than just beavers. Or if you look at terrestrial fur bearers, certain fur bearers are more sensitive than others to disturbances. So, for example, although they may be rare and secretive, let's say wolverine, so why was that not considered? There are so many possible species that could be included. And I know that good practice scoping is not about throwing

everything in but the kitchen sink, that's not the point. But, you know, the point is to say, are we sure that with this fairly limited list that there isn't anything more, from a public view point, from a scientific viewpoint, independently that should be on that list? Because, you know, the possibilities are endless.

What about amphibians? There are no regional study components that have to do with amphibians. That may or may not be important. But how do we know if we haven't publicly and independently vetted that list?

MR. JOHNSON: Thank you.

THE CHAIRMAN: Serge Scrafield again. Any more questions? Ms. Lewis.

MS. LEWIS: Glennis Lewis. I have a question about viewing the Regional Cumulative Effects Assessment through a strategic lens. Just to clarify, that doesn't eliminate the need for a project by project cumulative effects assessment, so the regional assessment would be an upper tier assessment?

MS. BLAKLEY: That is exactly right. Hopefully, what the results of a regional strategic assessment would do is set the context

to make subsequent project by project decisions. And at times it can actually streamline the project impact assessment process. You know, for example, now that all of this work has been done to collect baseline information and establish trends for the region, that should make it so much simpler when you have the next project decision to make. In certain countries, in certain states, for example, Western Australia, they have -- it is written right into their legislation that if a proponent elects to do a regional cumulative effects assessment, then they are going to receive -- like their project applications will be expedited if they can show that they adhere to conditions set at the regional level. So it is a way for proponents to streamline their project applications. So, you know, that's an example of how formally you have a tiering relationship, but informally works as well. So this is the vision for the region, this is what we want to accomplish, and that then sets guidelines for subsequent projects.

THE CHAIRMAN: Additional questions from the panel? Mr. Sopuck.

MR. SOPUCK: Thank you. Tim Sopuck.

I just want to read from your management section one of the comments.

"Identify appropriate mitigation and monitoring actions for RCEA subject to cumulative effects."

I just want to focus on the mitigation part of it. And maybe it is unfair, I just might ask you to speculate a bit here. One of the things that I still have trouble with here is, when it comes to mitigation activities there is a separate process that's been ongoing in Manitoba, the Northern Flood Agreement process, under which communities and the proponent, Manitoba Hydro, have developed a large suite of projects, and considerable sum of money has been spent. And I appreciate that dollars does not necessarily equate to effectiveness. But knowing that process is there and knowing it is an adversarial process, which is well discussed in the report, what do we do about that? What do we do about this mitigation side of things, knowing that there is this whole other process that's been set up and has been dealing with mitigative aspects of developments?

MS. BLAKLEY: Well, if I understand

your question correctly, you know what, no one is suggesting whatsoever to, you know, throw all of that out, or that those aren't extremely valuable and valued interventions and processes. So if that's the impression that you're getting, that's definitely not the impression we're trying to give. But what do you do with all of that? Hopefully you keep it and you build on it. The difference being is that after you undertake, let's say a strategic cumulative effects assessment, you might look at all of that a little bit differently. It might show you some opportunities for coordination. It might show you some opportunities to do things a little different or better. And it definitely would hopefully involve the people affected, it would involve them coming to the table to have I guess as much influence as possible on how those things occur and are rolled out. So it's about empowerment and capacity building. Again, it's not a comment on how much of that has already been done. I certainly appreciate there is a vast amount of energy and time and resources that have gone into that, and that's all great. It's about checking to be sure, are we doing the right things to

ensure the sustainability of the components of the environment and the economy and culture that we want to preserve? Are we doing the right, I mean, the most -- the right things and as much as we can do to protect that? And we won't know that until we take that big picture look.

THE CHAIRMAN: Thanks again for that response. Are there other comments or questions from the panel? Seeing no hands up there, are there other comments or questions? Mr. Williams.

MR. WILLIAMS: Byron Williams. I have just a couple of questions. I'm going off of very faded memories, but I think perhaps in the 1990s, a former Provincial Government undertook a northern visioning exercise. I think it flowed out of the Natural Resources Institute, perhaps Mr. Henley.

In any event, how would strategic regional cumulative effects assessment fit in with some sort of northern visioning exercise? How does that interaction take place?

MS. BLAKLEY: Well, it would depend if there is an existing vision for the north or for the region of interest already. Like perhaps the government has done that work. And if they had

and if that were on file, then probably you would, in the regional strategic cumulative effects assessment exercise, you would look at that and once again validate that is the vision for the north. And then from that vision you might articulate specific objectives that you want to achieve, so these are the things that in reality, in a practical sense we want to achieve for this region that would reflect the vision, as it may be. And from establishing the vision and the objectives, those would be your guide posts as to whether or not one scenario is preferred over another. So when you do your scenario evaluation and you look at the cumulative impacts of each and the different options and opportunities they offer, what you would use to make that judgment in part is how well it fits with the vision and the objectives. Does that answer your question?

MR. WILLIAMS: The second one is a question you've heard both from Ms. Pastora Sala and myself in the past. We see some tension, if we look at the Keeyask Environmental Assessment, between the western scientific approach, which focuses on what we call in those cases VECs, versus Indigenous or Cree worldviews, for example,

which perhaps are arguably more focused and -- excuse me, holistic. I wonder if you can address that tension or how that might be -- we might bring together those perspectives or at least give appropriate space for them in a RCEA?

MS. BLAKLEY: Sure. So the concept of a valued ecosystem component is almost as old as impact assessment itself. And it involves identifying what we feel are the most important pieces of the environment to assess and protect, with the understanding that if we assess and protect those little individual pieces of the ecosystem, that it will have a trickle down effect and the whole ecosystem will be thereby protected. And so it comes from, like an analytical reductionist approach to science, which was very common throughout time until the advent or age of ecosystem science and understanding. So it's still very common today to take that reductionist approach to understanding and evaluating impacts to environment.

But in a regional cumulative effects assessment there is a great opportunity to look at regional study components or valued ecosystem components in a different way that is much more in

line with Indigenous world perspective. And that's because we are looking for regional study components, for lack of a better term, that are actually I guess indicative of the health of an entire region, or an ecosystem, et cetera. So yes, you might still identify individual species on those lists, but there is room for and there is opportunity for regional study components that actually are relationships, they're representative of an important relationship.

So that's what I was talking about earlier, maybe a regional study component is, in fact, food web intactness. That's a set of relationships that you are concerned about, you're trying to protect. And how you would measure that is obviously through your selection of indicators, which may be rolled up into an index. So you might have a suite of indicators rolled up together into an index that would measure let's say food web intactness. Another example might be a regional study component could be, let's say natural flood regulation. Well, if that's of importance to us, that we protect that relationship or process regionally, then we would design our assessment to be able to measure that.

And again, it wouldn't be about one particular species of plant or animal, it would probably be a fleet or a host of relationships or individual components rolled up together that would give us a measure of ability to perform natural flood regulation.

So that's where, you know, that kind of thinking is fairly advanced in impact assessment, and I'm not suggesting it's easy to do or that we necessarily know all of the answers as to what indicators or metrics are appropriate. But the point is there is an opportunity there that would allow -- it is more compatible with Indigenous worldviews.

MR. WILLIAMS: Could I have one more question, Mr. Chair? Just -- Jill, you have got experience across Canada in best practice and certainly international in terms of the literature. And recognizing flowing from the terms of reference there is some future steps that could be contemplated, whether on prospective based or strategic, are there best practices in both of those context? We are looking around for analogous or good practices for Hydro to look to. Are there, in the Canadian experience, some that

you might refer us to?

MS. BLAKLEY: Can you just reword the question? The first part, so you are asking are there examples?

MR. WILLIAMS: In terms of looking for -- so you have delineated prospective.

MS. BLAKLEY: Okay. Right. Right.

MR. WILLIAMS: And then moving beyond that to strategic, and then in the context of prospective as well as strategic, if there's good Canadian practice that you can refer us to?

MS. BLAKLEY: Okay. Yes, I could. I would probably prefer to do that at a subsequent date than to try to sort of spin those off the top of my head. Because each approach is highly individual and depends on what you're looking for in terms of, specifically in terms of guidance. Because in Canada, like the practice has been ongoing now for I would guesstimate about 15 solid years. I think there are some examples that are 20 years old. So it's a relatively new area, but there are some well-established cases that do illustrate possibilities or ways that prospective analysis can be approached. They adopt different types of models, different ways of evaluating

scenarios, et cetera, et cetera. So, yes, there are, but I would probably prefer to explain all of that at a later date.

MR. WILLIAMS: Your lawyer would probably advise that too. Probably a better answer than the question.

THE CHAIRMAN: Thank you both for that. More questions, comments?

Okay. Well, then it's my turn to thank you for your presentation. It was very informative. And I'm sure it will be helpful to us. And thanks to the CAC for making this available to the CEC. All right. And I would like to thank the rest of you for attending, and the panel members, of course, for all of their questions. And I think, unless Cathy has any procedural issues to discuss, that will be it.

Nothing today. Okay. Thanks again all of you, and we'll see you at our next session or in some other venue. Thank you.

(Concluded at 11:15 a.m.)

OFFICIAL EXAMINER'S CERTIFICATE

I, CECELIA J. REID, a duly appointed Official Examiner in the Province of Manitoba, do hereby certify the foregoing pages are a true and correct transcript of my Stenotype notes as taken by me to the best of my skill and ability at the time and place hereinbefore stated.

Cecelia J. Reid

Official Examiner, Q.B.