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Manitoba Wildlands Closing Statement – Based on Transcript
Lake Winnipeg Regulation (LWR) – Clean Environment Commission (CEC) Hearings 2014-2015

Gaile Whelan Enns, Director, Manitoba Wildlands
9:30 AM April 16, 2015 - Transcript

Introduction:

Manitoba Wildlands has been a participant in three sets of CEC hearings regarding Manitoba Hydro projects in the last three years. Each of these start with a proceedings phase and move into full public hearings. Each has a timeline of a year or more from start to finish.

Certain themes repeat in each process, in each filing from Manitoba Hydro, and in expectations from participants in the CEC. The reference from cabinet to the CEC to undertake this set of LWR hearings contains a repeat requirement. This is the need to satisfactorily report to the CEC, stakeholders, affects communities, and government how the utility fulfills sustainable development and sustainability standards under Manitoba's Sustainable Development Act.

The Lake Winnipeg Regulation (LWR) summer 2014 filing Manitoba Hydro failed miserably in this task. The fact that the Act did not exist 40 years ago when the licence was issued (now 43 years) seemed to be the excuse. With another 11 years before a filing to request a renewal of the presupposed final licence for Lake Winnipeg Regulation, surely the utility could have indicated how they would aim to fulfill sustainability and sustainable development standards (guidelines and principles under the Act.)

Note: Manitoba Wildlands closing statements, expert witness presentations and reports, and exhibits in BiPole III, Keeyask Generation, and now Lake Winnipeg Regulation CEC hearings, are on the commissions website and also on manitobawildlands.org
Please use this document for LWR with the two reports and presentations (climate change and public policy) Manitoba Wildlands brought to these hearings.

Therein lies the problem with these proceedings and hearings. The problem is common to all parties to the reviews and hearings, and a challenge for the CEC in its recommendations and reporting. Manitoba has regulated one of the largest reservoirs in the world for 40 years without a single public regulatory review. The interim licence has just continued decade after decade. As some community speakers told us during the hearings – 'why are you coming to talk to us now when you haven't bothered for decades?'

So we had the 'Lesser Hearing' with fewer resources for participants, many CEC in-community hearings, and a set of assumptions and messages from Manitoba Hydro with

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little connection to the reality of LWR, as the licence for Lake Winnipeg water levels is viewed by Manitobans.

As noted by Manitoba Hydro's speakers, and various experts in these CEC hearings, we do not have **Churchill River Diversion** (CRD) content in this review. The CRD is also without a final licence – and a public process for that decision is long outstanding. The CEC could have and should have been mandated to do these reviews and hearings jointly – on both an environmental and water regulation basis, with adequate resources. The CRD has also been licensed for decades without a regulatory review. It also still has only an interim licence. Clarity on next steps for the CRD licence would have been quite relevant during these hearings.

These hearings, after 40 years of licence for Lake Winnipeg Regulation, are the beginning; we hope, of a collaborative set of steps for both Lake Winnipeg, the regulation of Lake Winnipeg and the Nelson River system.

We commend the CEC for its use of external experts, especially for providing the reports from these experts, and then having these experts present in the hearings.

We recommend that the CEC continue to pursue this pattern with external experts. In particular experienced CEC participants could assist in identifying the terms of reference for specific experts in a way that would utilize the knowledge of each expert for the best outcomes in a hearing. Our organization would have suggested experts who may have made a difference in the hearing outcomes.

The only failure in this pattern is the CEC commissioned history about LWR. We tried to use it in our LWR public policy research. I started to find errors in dates. Then statements regarding Aboriginal rights began to appear. The report was far too interpretive, and prepared by individuals who lack context for the contents of the product. We would recommend that the CEC have it peer reviewed before deciding whether to keep it posted on the CEC website. It is noteworthy that none of the participants relied on the report during the hearings.

Manitoba Hydro Assumptions and Messages:

Many Manitobans have seen the presentation materials concerning Lake Winnipeg Regulation used by Manitoba Hydro in community events, for the last 4 years.

There are various assumptions and messages built into Manitoba Hydro LWR filings and hearing presentations also evident in the community materials. For instance Manitoba

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Hydro assumes and tells us that:

- there are no impacts from regulation of Lake Winnipeg for forty years on the lake itself
- there are only impacts downstream, from LWR
- flooding of communities around the lake has been mitigated and decreased as a result of LWR
- shore erosion is a natural ongoing process, and that engineered water levels on the lake do not contribute to shoreline erosion, island erosion etc.
- climate change is real, but not affecting Lake Winnipeg at this time, perhaps there will be effects by 2050
- the commercial fishery benefits from regulation of lake levels
- the dramatic increase of inflows to Lake Winnipeg is not an ingredient in managing LWR
- the Channel and intended Channel 2 on the west wall of Lake Winnipeg will not contribute to water levels
- the existing water gauges on the lake provide the data needed to regulate and manage the lake
- Any effects around Lake Winnipeg are therefore not the problem or responsibility of our utility
- Manitoba Hydro has no responsibility or role in decisions about water level effects, flooding, shoreline erosion, lost islands, effects on the fishery, etc in Lake Winnipeg.
- Lake Winnipeg water does not flow into rivers, which feed Lake Winnipeg. See April 16 transcript for the excerpt from Alexander Morris from 1875 where he describes Lake Winnipeg flowing aggressively into the Red River.

1) Whole Lake, Whole System, Systems Thinking

We started our April 16, 2015 final comments in the hearings with some comments about how we think, and about concepts.

The lack of any alertness, reference to, or content from Manitoba Hydro regarding applying the precautionary principle for regulation of Lake Winnipeg is noteworthy. Perhaps they think they are taking all precautions needed, and do not need to provide public information in this regard. This principle comes up in every CEC hearing for Hydro projects. Why the omission again?

We are dealing with a project, a licence, and a team that has not seen a review, these kind of proceedings, or hearing at all. So we have this 40-year gap. This may be the reason why we have a tendency, among the participants and experts who have been in the room to emphasize **interdisciplinary thinking, interdisciplinary action, and shared sets of information for decision-making and for review.**

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Anything interdisciplinary, other than perhaps legal and engineering content, has been absent in the approach Manitoba Hydro took for these LWR proceedings and hearings.

We went looking for definitions for systems thinking in preparation for closing statements. There's entire websites, and academic sources; there are business management sources that specialize in helping people who have responsibilities, who are planning and operating systems, in terms of how to use systems thinking to the benefit of all of the parties that are clients or partners in the decisions made.

The Fifth Discipline field-book seems to be referenced and used right all across materials about systems thinking. (Definition below.)

'Systems thinking is a way of thinking about, in a language for describing and understanding the forces and interrelationships that shape the behaviour of systems. This discipline helps us to see how to change systems more effectively, to act more in tune with natural processes of both the natural and economic world.'

We recommend that the engineers involved in Lake Winnipeg Regulation do some reading, do some learning, and get ready for the future in terms of their responsibilities.

Systems thinking and interdisciplinary methods are the way to and through the future, including for Lake Winnipeg and our hydro system.

Going forward for Lake Winnipeg Regulation, both upstream and downstream, is going to need good will, collaboration, and openness on how to go forward together. Our two suggested authors include: John Ralston Saul, starting with Voltaire's Bastards.

In this book Saul basically tells us we are all here in the 21st Century, based on 17th Century thinking and systems. He would probably say that engineered operations of a huge reservoir is an example of the need to get out of our single expertise for single endeavor methods.

Two of John Ralston Saul's books are about Canada as an Aboriginal country, and they are both relevant for all of us who are parties to Manitoba Hydro decisions and operation of our hydro system.

The second author to read is Malcolm Gladwell, also a Canadian. You don't have to agree with everything Mr. Gladwell theorizes about, because no matter what your perspective on his conclusions, he makes us think.

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We recommend The Tipping Point, Blink, The Outliers, and David and Goliath by Malcolm Gladwell. The Outliers is surprisingly relevant in terms of race, aboriginal peoples, culture, and who is impacted how. I would go so far as to say Mr. Gladwell could be describing some of Manitoba Hydro's personnel policies. Wait till the last chapter to see what I mean.

The IISD, in its presentation to the hearing, and certain of the CEC experts who presented in the LWR hearing, are recommending a whole lake, whole basin, whole watershed, whole hydro system approach for the future of Lake Winnipeg as the main reservoir, and the hydro system.

The reservoir expert Dr. McMahon, brought to the hearings by the CEC, strongly advised a whole lake, whole basin, and whole hydro system approach to both operations and planning. He also advocated access to information far in excess to the approach our utility takes today.

2) Public Policy for Lake Winnipeg:

Our staff and researchers sought out the public policy framework for Lake Winnipeg regulation, management, governance, monitoring and protection. It starts in the early 1900s when water across Canada was fully a federal jurisdiction.

We provided participants and the CEC with a report regarding the outcomes of our research, a chart with listings for categories of public policy materials, a legend for this chart, and a presentation product for use in the hearing room.

We found:

Public policy, programs, studies and reports about Lake Winnipeg are a hodge podge of single issue, single location, single species, or single environmental topic products. Some involve Manitoba or Canadian laws and regulations. There is an incremental pattern of new laws, new policies, but most continue to be in relation to one element or one aspect of Lake management, or operation.

All seem to leave the onus on citizens, the environment, and curative rather than preventative management.

Manitoba Wildlands concluded that Lake Winnipeg must have a comprehensive governance, regulation, management, monitoring and protection system. The communities, stakeholders, fishers, and ecosystems would benefit. The Manitoba economy would benefit. Manitoba Hydro would benefit, even if they are not convinced. There are simply too many players and not enough accountability, planning, reporting, or beneficial outcomes. It should be noted that the Lake Winnipeg Implementation Committee recommended this approach ten years ago.

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We concluded:

- Lake Winnipeg has an extremely fragmented and insufficient public policy network or system, and almost none of the public policy is with regards to Lake Winnipeg being a reservoir.

- Public policy and the regulatory framework for Lake Winnipeg needs to follow a whole systems approach, rather than having singular policies for singular issues.

- Based on our research, and the lack of any real framework, we reiterate the need for a comprehensive governance, regulation, management, monitoring, and protection system for Lake Winnipeg.

- There is a need for greater accountability, planning, reporting and beneficial outcomes for communities around the Lake and downstream of LWR. This goes with the lack of information and study, follow up, and report back, and the dominant pattern of single-issue policy and planning, often short term, for Lake Winnipeg, found in our public policy research.

- The onus needs to be shifted from communities seeking to communicate the impacts, and effects, to an accountable and transparent governance system for the lake which responds to the upstream and downstream impacts *which all need action.*

While Manitoba Wildlands located a great deal of public policy, there appears to be a huge gap or absence of policy and law that would lead to best governance, regulation, management, monitoring and protection of Lake Winnipeg.

We recommend the CEC consider the public policy situation identified in Manitoba Wildlands' research in their review of the proceedings, hearings, filings, and presentations. Our recommendations and research are the start of what needs to become an easily accessible, understandable, and connected system of public policy and regulatory measures for Lake Winnipeg.

To complete this LWR Public Policy Research the following research activities need to be conducted:

- develop a protocol for completion of the research including drawing upon previous research products, such as peer reviewed papers, theses, working papers, further government of Manitoba materials, specific regulatory materials, etc.
- search in repositories in Manitoba

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- creation of a database to make it all accessible
- set up an online web vault for Lake Winnipeg public policy so these actual materials were available
- develop a protocol for systematic naming and public policy materials categories
- establish goals and standards for the dissemination of public policy products, such as peered reviewed publication, suggestions for school curriculum, recommendations for government and Manitoba Hydro action, models for governance/management/monitoring/regulation and protection of Lake Winnipeg etc.
- consider the most appropriate way to include Aboriginal policy, natural laws, knowledge system, and related materials in the public policy system.
- keep the public policy data base, web vault and online resources a living system by adding materials, and being alert to the users, and activity regarding the lake
- consider how to include all commercial and industrial sectors' policy and standards material in the system.
- encourage Manitoba Hydro to share public materials which it holds about the lake.
- include scientific and technical reports, studies, and data about lake Winnipeg and its systems

Manitoba Wildlands recommends that the CEC ensure these steps for the Lake Winnipeg Public Policy system be taken and be fully available to the public.

3) State of the Lake – Observations and Recommendations

- Manitoba Wildlands would like to assert that following presentations from various participants and experts at this hearing **it is now clear that regulation of Lake Winnipeg is adversely impacting communities and the Lake Winnipeg ecosystem.** It is also clear that technical work, and study – independent of Manitoba Hydro – is needed to unwrap the causes of these effects and impacts so that decisions can be taken that reduce impacts, benefit communities, and the fishery – and improve governance, management, regulation, monitoring and protection of Lake Winnipeg.

- **We do not agree that LWR regulation reduces flooding.** While some flooding such as that described pre-regulation may be prevented, there are now new flood patterns emerging. There is good evidence that the flood patterns of Lake Winnipeg have changed, and evidence (i.e., adequate water gauges at communities, flow pattern studies, use of fine scale satellite data, etc.) is needed to determine the new flood patterns around and on the Lake. What was true in the 1970s or 1980s is simply not true now.

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- **The wet cycle discussed in the hearings is persistent, and at least 10 years long.** Manitoba Wildlands concurs with the descriptions of the increase in shoreline erosion, loss of Aboriginal lands, new quantities of debris along shores and on the lake, changes in ice, changes in spawning locations, changes in weather on the lake, and significant descriptions of the effect, throughout the Lake Winnipeg system, including of draw down of water in winter under the ice on Lake Winnipeg. All of these and other impacts and effects identified in the CEC hearing require independent study.

- **Artificial management and changes of water levels in a reservoir** as large as Lake Winnipeg is further complicated by the wet cycle. The lake has been high for most of a decade or more. Combining the wet cycle water levels with regulation and engineered water levels appears to be compounding certain of the impacts and effects of LWR. It seemed we all need a reminder: we are regulating the lake levels; therefore lets determine what the effects are. Many voices in the hearings described those effects. As we noted in our transcript closing statements, we need to get past fault and arrive at responsibility and solutions. Little Black River First Nation, Sagkeeng First Nation, other communities on the east wall of Lake Winnipeg are losing too much land to waste time.

• We listened to presentations about many of the consequences of a high risk combination: unnatural and seasonal reversed water level fluctuations as determined by Manitoba Hydro *plus* dramatic ongoing high water levels due to inflows.

Our Recommendations include:

- **Adequate and appropriate water elevation gauges for communities affected by Lake Winnipeg water levels. These gauges are not just to prove the 715 ft maximum elevations in the lake. They are needed in order for communities to plan, mitigate, and make decisions! Water flow gauges are also needed on every river.**

- **A review of the placement of existing water gauges is required, as there are no water gauges on the west wall of Lake Winnipeg where two Channels enter into the lake are intended to carry Assiniboine River and Lake Manitoba Water into Lake Winnipeg.**

- **All sectors and all communities require notification regarding changes in Lake levels, winter draw downs, water level changes, significant weather risks, etc.**

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- **A neutral and collaborative approach is needed to determine how to deal with current and past impacts while planning for the future of Lake Winnipeg. After 40 years we need to identify a common set of goals for Lake Winnipeg, and work together to achieve these goals. Perhaps after 40 years the Crown, and the Crown Corporation should listen and learn, and act.**

- **The same neutral and collaborative approach is needed to arrive at a governance, management, regulation, monitoring and protection system for Lake Winnipeg. See our comments later regarding the Lake Winnipeg Implementation Recommendations from 10 years ago.**

4) Missing Information/Avoided Information:

During the proceedings and the hearings Manitoba Wildlands became aware of sets of information about Lake Winnipeg Regulation that were missing, not available or outright refused when asked:

- **Manitoba Hydro will not report how much water it spills**, that is how much water goes through but does not produce energy. The hearing content about increased inflows to Lake Winnipeg and possible effects (denied by Manitoba Hydro) means we need to consider how to slow down the inflows and potentially reduce the amount of inflow to the Lake. Manitoba's drainage system and policies have needed scrutiny for some time. But the hidden issue is that spilled water is not making energy. It is flowing into other lakes, or communities, or being spilled into the Nelson River, CRD system. Are we wasting water? How much has spilling water increased during the wet cycle ? Are we wasting money? Should we be discussing how to reduce this practice? Why is this such a gap? Why would Manitoba Hydro refuse to provide this information?

- **Lake Winnipeg shoreline information**

We have some concern about the information that is not available in terms of the shoreline, and baseline information about the shoreline for Lake Winnipeg as of 1970.

The filing says that in 1974, the Lake Winnipeg, Churchill and Nelson River study board measured shoreline erosion rates around Lake Winnipeg, or rather that shoreline erosion rates were investigated by them. This involved creating two sets of maps, using aerial photos and land subdivision surveys. One set of maps plotted location of the shoreline at several different points in time starting in 1876, while the other set used these shoreline positions to determine erosion and rates at various locations.

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Clearly there is information that could probably have helped all of us in our work and understanding of LWR.

Manitoba Hydro has two tracks in their information and presentations in this area also. Manitoba Hydro states that they know concretely that none of the shoreline erosion has anything to do with LWR. But are they providing any information? No. How can they make a statement after 40 years of no study, or rather 40 years with no public access to shoreline information?

We recommend that the CEC obtain the set of maps described by Manitoba Hydro in order to identify further shoreline erosion studies, and technical information needed for future decision-making about Lake Winnipeg shorelines. Further we recommend that Manitoba Hydro make these maps public, with communities around the lake being able to request copies of the shoreline information relevant to their situation.

We recommend that the CEC commission or recommend that up to date shoreline data and mapping be put in place based on the aerial photos Manitoba Hydro holds, and current fine scale satellite data. These Lake Winnipeg shoreline-mapping tools could be set up so the products show the shoreline every ten years since 1972, and in the future.

We ask the CEC to recommend thorough shoreline change analyses and mapping to answer the questions posed by affected communities. These studies would need to be adequately resourced, with Manitoba Hydro cooperating at all stages.

- **We found that the attachments to the 1970 and 1972 LWR licences mentioned in the licences were not provided in the summer 2014 filing by Manitoba Hydro**. Why? Manitoba Wildlands made attempts to request the attached data and maps. We received one shape file, that was not relevant and at a poor scale.

- **We recommend that Manitoba Hydro provide these attachments to the CEC and all parties to these hearings**.

- **We found that the annual reports which Manitoba Hydro files with the Director of Water Resources under the Act, and the Licence, for LWR, were not filed by Manitoba Hydro, were not provided to the CEC or the parties.** The Manitoba government started requiring these reports in 2007. (30 years late). The entire LWR system and all infrastructures are included. These reports have never undergone independent review, peer review, or analysis by any professional other than public sector engineers. Why not?

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- **We recommend the CEC to consider these missing reports as part of the regulatory requirements for the licence, and therefore the mandate for the CEC LWR hearings and your recommendations.**

- **Manitoba Hydro chose to continue to communicate as if the water levels on Lake Winnipeg are between 711 – 715** ft as per the LWR licence, all the time, everywhere. This approach is reflected in its community engagement presentation. Manitoba Hydro provided no information about water levels on the lake that are not applied to the LWR licence calculations. They ignored water levels which are a day to day reality for communities around Lake Winnipeg. Thorough investigation is needed in order to determine how the current wet cycle is affecting the water levels around the lake in relation to regulation of water levels.

- **We recommend that Manitoba Hydro should be required to report each year in its annual report under its licence what the pattern of water levels were at each gauge, and for what periods of time any gauge exceeded 715 ft.**

- **We further recommend that all of these annual reports be posted on the Manitoba Hydro website and the government of Manitoba website. A registry should be set up for all materials regarding the licence, reporting under the licence, and the relevant Water Power Act regulation.**

• No schedule was provided to explain the LWR licence or the regulation under the Water Power Act. As it is there is no easily accessible information since 1970 and 1972 with respect to the licence. This means little of the regulatory information is available – and the filing does not explain any of the changes in regulations since 1972 with respect to LWR. There is a 20 year period before internet based posting started. No bridging of this information gap is evident online.

- **We recommend the CEC review the entirety of the LWR licence, with a view to making recommendations as to updating the regulations regarding the LWR licence, and keeping information accessible to the public.**

- **We recommend that the CEC require Manitoba Hydro to maintain website access to all materials from this LWR licence review, proceedings, hearings and all future information about LWR on line for the life of the project. Given there is no public registry for this LWR regulatory review a solution is needed. We trust the CEC will identify that solution.**

There is an opportunity to dramatically improve on reporting under the LWR licence. A variety of steps would help all parties to regulation of Lake Winnipeg, again, downstream and upstream. And this is a repeat comment, from Manitoba Wildlands in three sets of hearings.

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5) Climate Change

Manitoba Wildlands has focused on climate change effects with respect to Manitoba Hydro projects over the last 10 or more years. While moving away from climate change denial or skepticism our utility is still a long way from paying attention to its social licence to operate with respect to climate change.

Some observations with respect to LWR and climate:

- Why are we ignoring or downsizing the current scientific knowledge that should be combined with engineering to make decisions about water levels in the lake? This is especially urgent with in relation to climate change.

- Engineers need climate scientist to help them. They are capable of contributing the systems thinking that is desperately needed to remediate the current conditions and plan for the future of Lake Winnipeg and LWR.

- Lake Winnipeg north basin (2005 Lake Winnipeg Implementation Committee) actually was close to 2 degrees C increase by 2005, with the north basin around 1 degree C increase in average temperature. That is ten years ago.

- Temperature and water temperature - according to various peer reviewed articles and experts - are already increasing in the Lake Winnipeg basin.

- There is a significant potential for drought in Manitoba. Inflows should be checked, reduced, held back, and drainage and other systems need reviews with climate change, wet cycles and drought in mind. Mr. Beckwith also recommends a review of the Prairie Water Management Agreement.

Climate Change Expert in LWR Hearing

Manitoba Wildlands brought Paul Beckwith, Phd candidate (requirements completed) from University of Ottawa into the hearing. He is an expert in accelerated climate change. His previous professions were as an engineer and a physicist. His report and presentation are available on the CEC and Manitoba Wildlands websites.

Mr. Beckwith provided us with a summary statement for closing statements. He also provided a set of recommendations to the CEC.

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Paul Beckwith closing statement:

"Historical climate records that are used by Manitoba Hydro and the independent climate report only go back a century or so using the instrumental records from weather stations in the region.

If Lake Winnipeg lake floor sediments have been cored, then proxy records from such coring could be used to get temperature and precipitation records going back much further (many hundreds of years to thousands of years). Presumably such coring would have been done in the deepest part of the lake, that being the narrows between the north and south basin. If coring has not been done in Lake Winnipeg, than it has likely be done in some nearby lakes and that data can be obtained.

We have changed the chemistry of the atmosphere. This has changed the latitudinal heat balance. This, in turn has changed the atmospheric jet streams and the ocean currents that transport heat. Extreme events (torrential rains causing floods, drought spells) are increasing in frequency, severity and duration. Variability in the system (climate whiplashing) will increase.

A Key metric that is cause of accelerated whiplashing, and temperature rise, is the Arctic sea ice area, extent, and volume.

Lake Winnipeg needs to prepare for two types of possible torrential rain events:

a) Calgary type event, 3 to 4 months of rainfall in a day or two over Lake Winnipeg and its Basin.

b) Toronto type event, 3 to 4 months of rainfall in a day or two over Lake Winnipeg region.

Linear climate change is the human expectation. Nonlinear climate change is our new reality.

We need IPCC updates every year. We need better methods to quickly disseminate information almost real-time on significant ongoing abrupt climate changes. Systems thinking is vital. Connecting the dots is vital. Blowing apart the information silos is vital."

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Paul Beckwith climate change recommendations, including with respect to the Manitoba Hydro climate report for LWR hearings from his presentation to the CEC:

Global-to-Local Scale: Local Lake Winnipeg Effects

1) Climate history (temperature, precipitation) over last century in Lake Winnipeg basin (normal and trends) used as basis to extrapolate future changes. Justified if climate system is stable, however not when global climate system changes alter the statistics of climate and weather events (i.e. a 1 in one hundred year flood no longer occurs, statistically once in a hundred years).

2) Variability has increased across most timescales (daily, weekly, monthly, seasonal, yearly, multi-decadal). "Weather Whiplashing" often occurs. Over span of 3 years, Mississippi River in U.S. experienced record flood levels, record low water levels, and then record flood levels. Over a few weeks, a city can experience record high temperatures, record low temperatures, and then swing back to record high temperatures. "Whiplashing" frequency depends on location relative to jet streams.

3) Regional climate projections based on "downscaling" Global Circulation Models (GCM); works well when GCM projections are for a slowly varying, linear climate system. However, it is risky relying on models when we are experiencing rapid changes in overall climate system. Models project averages, but it is the extreme peaks/valleys that have the largest detrimental effects.

4) Hydro climate studies assess lake levels, stream flows and water temperatures based on historical data and projections from regional models and/or downscaled models. With much greater variability from global climate system changes, these studies are expected to be much less accurate.

5) Climate statistics have changed (globally and locally), probabilities based on a historically stable climate (eg. risks of "one-in-a-hundred" or "one-in-a-thousand" event) need to be reevaluated since they may no longer be valid. For example, higher weighting on recent behaviour (nearest decade) may lead to better risk assessments.

6) Lake temperature will become very important during heat waves with extended droughts. Annual evaporation will remove much more than 20% of the inflow, the lake volume will decrease and there will be much greater risk of eutrophication and blue-green algae blooms.

7) It is difficult to know if the annual mean inflows increase in the watershed of 58% from 1924 to 2003 will maintain this trend. Given the recent abrupt changes in the global climate system it is very important to examine and weight, more recent data higher.

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8) Glacier covered regions in South and North Saskatchewan River Basins in Alberta declined in area by 37% and 22% respectively since 1975 (Pomeroy, 2014). In the short term glacially sourced water flows can temporarily increase during "last gasp" of glacier. Water access rights for one unit of water input into the Saskatchewan River in Alberta allow Alberta 50%, Saskatchewan 50% of the remainder (25% of input),and Manitoba the remainder (25% of input). These ratios were determined under drought conditions and usage may need to be re-evaluated. This reduction of high elevation glacier water storage is a risk to people around the planet.

9) Climate "normals" from thirty-year period 1981 to 2010 are used in analysis of climatic characteristics of the Lake Winnipeg basin. Since most of rapid changes in global climate system have occurred from 2000 to present, it makes sense to also analyze climate based on older 1971 to 2000 climate "normals".

10) Lake Winnipeg Watershed has had a "wet cycle" for last 15 years or so. There is no expectation this will continue as global climate system changes accelerate. Many climate models (noted previously to underestimate the rate of change) project increased global aridity in the 21st century over much of the planet (most of Africa, the Americas, Australia, Southeast Asia, southern Europe and the Middle East). It seems clear that variability between exceptional drought and severe flooding will increase in many regions.

Mr. Beckwith's report, and slide presentation are posted on the CEC and Manitoba Wildlands websites.

6) Undertaking for Manitoba Hydro – Public Engagement

In posing questions to Manitoba Hydro we became concerned that their presentation for the LWR hearings only included 5 concerns from Manitobans about LWR. The Panel lead from Manitoba Hydro confirmed that they had been visiting communities since 2010 to explain LWR and the upcoming request for a final licence.

When asked why there were only 5 concerns provided, and where the verification for these 5 concerns was located, with the help of counsel for Interlake Tribal Reserves Council, an Undertaking was issued by the CEC Chair for the utility to provide reports on these community engagement sessions. This included the First Nations visited.

During the last week of the hearings Manitoba Hydro provided a pdf containing reports from a range of community engagement sessions, and a chart indicating the status of that report. Many of the communities had not seen the written summary of the community session prior to the Undertaking being issued. And most of those communities had not

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responded or agreed with the summary before the utility filed its results.

Other CEC hearings and the filings for those hearings have included extensive community information. The additional EIS process required for the Bipole III hearings, with a 3 month recess etc., resulted in the notes from a range of meetings being filed, without the knowledge of those communities. It seems Manitoba Hydro does not have its standards in place from one filing, one hearing to the next.

We recommend that the CEC comment on these 'practices and standards' with suggestions as to how our utility can maintain its social licence to operate, and improve its transparency and accountability to any organization or community it engages regarding a licence request, or development intention.

7) Sustainable Development

- Manitoba Hydro failed to fulfill the requirements for the LWR hearings with respect to the sustainable development guidelines and principles for Manitoba, as per the reference for the hearings. A chart listing the Guidelines and Principles for Manitoba's Act, and those adopted by Manitoba Hydro is insufficient.

  Manitoba Hydro Sustainable annual Development Reports are not being kept online on their website. There appears to be no archive so even a student who wished to study the utility's approach to sustainable development would not be able to access their reports.

- **We recommend that the CEC require Manitoba Hydro to provide clear indication of how they will fulfill the Act's guidelines and principles for sustainable development going forward with the LWR.**

- **We further recommend that a peer review or independent review of sustainable development standards regarding LWR be performed once every 3 years.**

- **We recommend that Manitoba Hydro re required to keep all their sustainable development reports available on line.**

- **We further recommend that the Lake Winnipeg Regulation licence and operation be included in all future Manitoba Hydro sustainable development reports.**

- **We recommend that the LWR team and anyone associated with LWR in other branches of Manitoba Hydro partake in reading and workshops about sustainable development so they are up to date. This should include study of**

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the substantive content in the Keeyask Generation hearings from experts regarding sustainability and sustainable development.

8) Data Sources, Data Access, Data Age and Quality

Manitoba Hydro claimed in their presentations during week one of the hearing that the Lake Winnipeg, Churchill and Nelson Rivers Study Board technical reports analysis and data from the 1980s and 1970s was not useable today. We have asked a few experts and there are clearly techniques to convert this data to formats and data bases/ inventories used today. So what risk has Manitoba Hydro identified that makes them so reluctant to apply this data information in today's decision making format?

We remember well the frustration at an earlier and similar set of excuses from our utility. In 1997 I had a volunteer researcher from UBC working the CN line and in town for 4 day stints. She spent considerable time in the Manitoba Hydro library including to reviewing maps. When she came upon the complete set of maps from the fieldwork for Bipole III lines from Conawapa we both went in to view the materials.

Imagine a medium sized, wide board table. Then imagine it about 8 – 10 inches high with full size map sheets. Each with one third of the page in a detailed legend of the biophysical, environmental, aquatic, species related information from field work (on the ground fieldwork) in 3 wide swaths down the east side of Manitoba. When it was discovered that we were reviewing these maps – at a time when I represented World Wild Life Fund in Manitoba - I received two letters from future and current VPs of Manitoba to indicate that access would not be continued and that this information was no longer able to be converted to a mapping system.

This fieldwork was done in the late 1980 and cost Manitobans over $ 20 M in 1980s dollars.

Since then none of that information has been provided to the 13 First Nations on the east side of Lake Winnipeg who were attempting to conduct lands studies and plans. Nor has any of the information been provided to the First Nations involved in the World Heritage Site nomination.

- **We recommend that Manitoba Hydro cooperate with access to data and ability to use the information and data in the 1970s and 1980s study board reports, based on current technology and methodologies. They will need to take this step anyway to complete the Regional Cumulative Environmental Assessment for the Nelson River Basin, due in October 2015.**

- **We recommend that the CEC make sure that all reports from the Lake Winnipeg, Churchill and Nelson Rivers Study Board are publicly available,**

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with content applied to any technical work about and for Lake Winnipeg and the LWR. To be explicit the reports need to be public so that our utility's owners can access them, and make sure the RCEA, and future Lake Winnipeg assessments are using valid and clear data.

- **We also recommend that the CEC direct Manitoba Hydro to solve its problems about data from former mapping systems not being usable. If the utility is not able to handle the technical steps then we recommend that the CEC and Manitoba Water Stewardship put a peer review based project in place. They need to stop complaining about tens of millions of public dollars spent on sound science and analysis.**

9) Notification about Water Levels etc.

Mr. Derek Gould is knowledgeable, and has at least 3 professions/ occupations currently. On Wednesday April 15 Manitoba Hydro decided to ignore the context in Mr. Gould's comments about notification to fishers and communities around Fairford dam AND Lake Winnipeg. It is not feasible to try to discount Mr. Gould's contribution through the Keewatinook Fishers of Lake Winnipeg or the IRTC.

Specifically Mr. Gould connected his example of improved but not yet good enough notification re the Fairford dam to the need for notification about water levels on Lake Winnipeg. He was communicating what could be put in place, and made suggestions as to how notification could be communicated.

Manitoba Hydro has been vague about how they notify and who they notify. Email, texts, and broad broadcast messaging are all possible now in the 21st century. Faxes to one or two offices in a community simply do not meet the need downstream or upstream of LWR.

- **We recommend the CEC confirm what form of notification exists downstream to date and make recommendations to improve Manitoba Hydro notification about LWR both downstream and upstream. Then the CEC could consider how notification to communities around Lake Winnipeg could be put in place – and make recommendations based on the number of times we have heard this request in the LWR hearings. It would be helpful if Manitoba Hydro cooperates with and aids an improved system for notification around Lake Winnipeg.**

10) Environment Left Out of LWR Review …

See Manitoba Wildlands Lake Winnipeg public policy report for our statement about the Clean Environment Commission recommendations in 2004 regarding the need to review LWR, CRD, and for environmental assessments to be conducted, etc.

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It was reassuring to hear the Manitoba Hydro LWR panel lead indicate that once they have their 'road map' from government they will do what is necessary regarding renewal of LWR final licence. The hitch with that is that it could take till 2030 or 2035 for steps under a renewed final licence to be in place, starting in 2026.

Their assumption is that a final licence on the 1972 interim licence is an entitlement. During the hearings it sounded as if Manitoba Hydro thinks they do not need to make any changes in operation of LWR or their due diligence or their shabby social licence to operate LWR until the review for a renewal of the final licence.

Though the lead on the LWR Panel was indicating they expect that 2016 licensing process to require environmental assessment and review. Will they claim lack of data and no information then?

- **Manitoba Wildlands recommends that CEC identify the technical, scientific, and operational steps Manitoba Hydro needs to take now in order to obtain the final licence for LWR.**

- **Manitoba Wildlands recommends that the CEC further identify what preparation needs to be taken, starting in 2015, so that data, technical studies, independent analysis, and mitigation steps regarding LWR are in place or underway in advance of the request for a renewed final licence for LWR.**

The contents of the in-community and Winnipeg LWR CEC hearings transcripts contain requests for a range of studies, technical work, public policy analysis, scientific reviews and field work which are outstanding for our Great Lake, and the Nelson River/ LWR system.

- **We further recommend that an arms length, independent team of experts and specialists be assembled to identify issues, methods and scientific work needed immediately regarding Lake Winnipeg and LWR. Further that team of experts and specialists should be resourced, and able to assemble the information, data and work plan (little done since 1980s) with a 5 year timeline, in order to inform and structure any environmental assessment required of the utility regarding LWR.**

11) Governance, Management, Regulation, Monitoring and Protection of Lake Winnipeg and the LWR region.

Manitoba Hydro seems to want it both ways. They are in no way responsible for any effects or impacts on Lake Winnipeg. But they wish to direct the next steps regarding Lake Winnipeg.

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Manitoba Wildlands thanks the Consumers Association of Canada in Manitoba, and the Public Interest Law Centre for their in depth and thoughtful analysis regarding how we can 'change up' decision making about Lake Winnipeg and the LWR. Their case studies are important. Their Canadian case studies tell us it is actually usual to have governance and decision making system for a Canadian Great Lake.

We need the immediate short term set of advisors they recommend to identify the next steps for Lake Winnipeg. We also need the political will and resources to make sure that we find and keep a new system for Lake Winnipeg.

- **Manitoba Wildlands recommends that the CEC specify in its recommendations both immediate short term steps, and options to arrive at a long term system for governance, management, regulation, monitoring and protection of Lake Winnipeg. It is essential for the public policy framework, despite it being a hodge podge, be identified, and improved on a systems basis.**

- **Manitoba Wildlands recommends that the CEC identify specific recommendations from their independent experts' work in the LWR hearings which will contribute to a whole lake, whole system future for decision making for Lake Winnipeg, and its communities both human and flora/ fauna.**

- **In particular Dr. McMahon, the CEC reservoir expert, had recommendations that are both operational for the future of LWR, the reservoir, and the downstream connected system. He also provided process-based recommendations for the future of Lake Winnipeg's communities. We support Dr. McMahon's work, and hope that his work and recommendations will assist in arriving at a collaborative, systems based model for Lake Winnipeg.**

- **We also support Dr. Goldsborough work and recommendation to expanded to all marshes and wetlands on the lake.**

Conclusion

We are not in 1972, 1976 anymore. We are stuck with a licence that is 40 years old that has never been reviewed. We are all holding the bag together on the CEC recommendations of 2004 about the kind of review needed for Lake Winnipeg and the CRD. Each of us in our roles in this hearing is attempting to fulfill the limited, narrow mandate for these hearings.

Perhaps this is what First Nation voices are trying to say to us in these hearings. We are not just in 2015 here either. We are literally dealing with, as these Aboriginal voices have reminded us, with 1970 to 2015 to 2026 to 2076. The LWR assumptions, the risks the

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questions are a hundred years worth, or four or five generations of Manitobans who own their utility and carry the liability and the risk for operations and licencing decisions.

We need to proceed with caution. We need to be constantly thinking about the future and not basing everything on average numbers, over weighted, and based on the past.

You have heard from Manitoba Wildlands from the start of the proceedings, about our hopes for a new governance system for the lake, improved management, improved regulation, monitoring and protection of Lake Winnipeg. We have recommended to the CEC to review the report and recommendations of the Lake Winnipeg Implementation Committee from 2005.

We need to get past who is responsible for what and whose fault is whose, to get into a collaborative mode for the future of the lake.

Everybody in this room understands that Manitoba Hydro has an interim licence and Manitoba Hydro must fulfill the licence. But is that all you do if you are a public utility? Does minimum compliance still live and breath inside Manitoba Hydro?

I want to thank all the participants in the hearing. Such a lot of work with fewer resources. There is genuine support from Manitoba Wildlands for the recommendations to you from Consumers Association of Canada, IISD, Pimicikamak, the Interlake Tribal Council, Keewatinook Fishers, Sagkeeng First Nation, Black River and Peguis First Nation.

We ask the CEC to listen to the pattern of issues, and recommendations. Good luck in your work this spring. We look forward to your report.

Regards,

Gaile Whelan Enns