Equity and Balance in the LWR dialogue

Submission to the
Clean Environment Commission

Consumers' Association of Canada
(Manitoba Branch)

Prepared by The Public Interest Law Centre

April 1, 2015

Table of Contents

Part 1: Water, Water Governance and the Lake Winnipeg Regulation Dialogue

Preamble – we lost our riches where we live[1]

You cannot feel what we feel today, as an elder, each morning when you get up and knowing what's going on. And you look at the lake in the summer time, you know, those islands that were there, they were beautiful, you know. They were, you know, they were not nothing wrong. . . And now you don't see those. You don't see -- some of them are gone because the water is high, you don't see the beautiful thing. . .

And you see the rivers, they come from all over in Manitoba, Lake Winnipeg, even from the States, look where we are . . . nearly at the end there. That comes, the water that destroyed our lives, and that's where we are and that's what's happening. You know, it seeps into all the lakes and into the rivers, . . .and we could never have that back. We could never have that back. It's gone.

And we talked about the animals also that are being destroyed. But our spirits and our being, it's also being destroyed. Everything that happened to us, nobody, you cannot replace that. . .And I know that you want something going so we can make money here in Manitoba. But to us, we lost our riches where we lived on this Mother Earth, our riches was how we lived and what we ate and what we lived on from the animals. . .

And I thank you for listening, because this is what's happening to us and what we go through everyday. . . . And praying hopefully that someone will have a heart to help us out, what we go through, what we don't see now.

The Eloquent Silence of Licensing Bodies

the control of the water of Lake Winnipeg is really,
I think is not as good as it should be.[2]

Profound, ongoing change

Profound change came to Lake Winnipeg and the Nelson River watershed forty years ago. To capture the recumbent water power of the Nelson River, Manitoba Hydro built a number of major, interrelated projects during the 1960s and 1970s (the Projects). Among the most prominent were the Lake Winnipeg Regulation project (LWR) and the Churchill River Diversion (CRD) both of which were completed in 1976.

The Projects are generally held to have brought significant financial and energy reliability benefits to Manitoba Hydro and its ratepayers. Nelson River power is the primary vehicle by which Manitobans light and heat their homes. Billions of dollars are now being spent on future hydro-electric development through a ground breaking partnership between Manitoba

1 Martha Spence, Winnipeg, March 25, 2015 at pp 1707 – 1709.
2 Leslie McKay,Winnipeg, January 26, 2015, p. 67.

Hydro and the Keeyask Cree Nations.[3]

LWR and the CRD are capstone features of the hydrological system relied upon by Manitoba Hydro. They are integral features of Hydro's day to day and long term planning.

Downstream

But their social and ecological legacy is far more controversial. It is generally accepted that LWR and CRD have had significant, compounding and adverse effects on the Nelson River system and upon the people, plants and animals who rely upon the watershed.

Over the last four decades, affected communities and Manitoba Hydro have engaged in an exhaustive and often heart wrenching attempt to reach agreement on compensation for past effects and on efforts to study and mitigate certain effects. Some environmental analysis is being undertaken through the Coordinated Aquatic Monitoring Program (CAMP) program. Partnership agreements to build new generation on the Nelson are seen by some as a means to begin a process of reconciliation.

Driven by the initiative of community and the advice of the Clean Environment Commission, the foundation for a regional cumulative effects assessment (RCEA) of the Nelson River watershed also is being put into place.

But a number of individuals and downstream communities suggest the devastating effects of Hydro operations have not stabilized. As noted by a resource user from Norway House:

There's a lot of unforeseen that is going on in the community[4]

From this perspective, the waters of the Nelson River are becoming increasingly turbulent. There is real danger. The unpredictability of the environment is a risk.[5] Islands are beginning to disappear.[6] Ice roads are unsafe.[7]

Upstream

There is sharp disagreement regarding the implications of LWR on Lake Winnipeg and upon the communities that live upstream of the project. Manitoba Hydro claims that LWR is doing what it promised it would – enhance flood protection on Lake Winnipeg and provide energy reliability to Manitobans. It argues that LWR effects on Lake Winnipeg are generally either positive, benign or insignificant.

3 Manitobans have benefited from many decades of inexpensive electricity, in large part because of earlier decisions to develop the province's rich hydraulic resources. Manitobans will continue to be highly reliant on these resources for their power generation, and this Report addresses incremental additions to a hydro-dominant system. *Needs For And Alternatives To (NFAT) Review of Manitoba Hydro's Preferred Development Plan – Final Report*, June 20, 2014 , p. 3

4 Langford Saunders, LWR Hearing, March 24, 2015, p. 1497.

5 Chief Ted Bland, LWR Hearing, March 26, 2015, p. 1654.

6 [I]slands which have existed for as long as we can remember that are now starting to disappear. Tataskweyak Cree Nation, Clean Environment Commission Lake Winnipeg Regulation Participant Submission, March 26, 2015, p. 6

7 Ice conditions are not predictable and this can make winter travel unreliable and unsafe. Leroy Constant, LWR Hearing March 26, 2015, p. 1655.

Others beg to differ. Ordinary citizens as well as organizations representing Indigenous people, resource users and cottage owners often take the position that LWR in conjunction with other Hydro activities has had a material, adverse and ongoing effect on the Lake.

There is general agreement that Lake Winnipeg is currently under significant stress. The Global Nature Fund (GNF) designated Lake Winnipeg as the Threatened Lake of 2013.[8] Among the prominent concerns are:

- a dramatic deterioration in terms of the health of certain wetlands including the Netley-Libau marsh;
- flooding of adjacent farm lands, homes and habitat;
- erosion leading to significant damage to traditional lands, public property and private property; and,
- a marked deterioration in water quality related to eutrophication.

Leaving aside disputes about the effects of regulation, there appears to be general agreement that the problems of Lake Winnipeg are part of broader watershed problem related to ongoing processes of change fundamentally impacted by human activities. With the possible exception of a few Tea Party hold-outs, human influenced climate change is generally accepted as a significant current and future source of risk.

In response to the crisis of Lake Winnipeg and broader watershed concerns, there has been an almost bewildering spectrum of responses ranging from legislative reform[9] to a series of consortiums,[10] foundations,[11] stewardship boards[12] and Lake Friendly accords.[13] Renewed interest is being shown in the potential of interprovincial and international advisory and regulatory bodies.[14]

An eery oasis of inaction

Amid frenetic efforts at community advocacy, law reform, committee formation and committee renewal, there has been an eery oasis of licensing inaction.

As noted by bodies as diverse as the Manitoba Clean Environment Commission[15] and the Wisconsin State Legislature,[16] LWR and the CRD have been operating under interim water power licenses for almost forty years.

Despite the undoubted and significant downstream legacy of LWR, no additional license

8 http://www.livinglakes.ca/news/lake-winnipeg-named-2013-worlds-most-threatened-lake

9 Including the perhaps optimistically titled *The Save Lake Winnipeg Act*, Bill 46, Fifth Session, Thirty-ninth Legislature.

10 The Lake Winnipeg Research Consortium founded in 1998. (http://www.lakewinnipegresearch.org)

11 Lake Winnipeg Foundation founded in 2005 (http://www.lakewinnipegfoundation.org/about-us)

12 The Lake Winnipeg Stewardship Board was created in 2003 as part of the Lake Winnipeg Action Plan, a strategy to reduce the contribution of nitrogen and phosphorus by about 10%. See Lake Winnipeg Board Final Report (2007).

13 www.lakefriendlyaccord.ca.

14 For example see the Red River Basin Commission, Natural Resources Framework Action Plan. http://www.redriverbasincommission.org/Services/the_plan.html. International Joint Commission - A Water Quality Plan of Study for the Lake of the Woods Basin January 2015. Prairie Province Water Board. The stratgic plan was revised in October 2012. http://www.ppwb.ca

conditions relating to ecological protection or rehabilitation appear to have been added to the interim licenses. The conditions attached to the LWR operating license stand in marked contrast to more innovative licensing approaches in other jurisdictions[17] and well as the modern environmental licenses related to the Wuskwatim and Keeyask Hydro-electric generating station.[18]

Similarly, neither LWR or the CRD have been subject to a review under s. 12(2) of the *Environment Act* (EA) notwithstanding the admitted adverse downstream effects of their operation and their status as capstone features of the Hydro system. Indeed, the Terms of Reference (TOR) for the current CEC review process contains the allegation that:

> *The Environment Act does not apply to the Lake Winnipeg Regulation project as it was completed before this legislation came into force.*[19]

Defenders of the licensors may argue that licensing inaction is consistent with the statutory intent and the executive will of the government. They might argue that regulation is not simply about licensing and point to productive non licensing activities such as recent improvements in reporting and research and the formative RCEA efforts.

Others might suggest that licensing inaction is more a function of the lack of value we give to water, the archaic legislative structure of the WPA, a lack of regulatory imagination and a preternatural emphasis upon short term economic objectives at the expense of social, ecological and economic sustainability. They might wonder whether the geographic, economic and social isolation of the people of the Nelson River has made it easier not to act.

Water, Water Governance and the Lake Winnipeg Regulation Dialogue

This unusual proceeding is overtly about an opportunity to chat about the performance of Manitoba Hydro under its interim license. Manitobans have been invited to comment on project effects, successes and failure in implementing historic policy and opportunities for future beneficial research and monitoring.[20]
But underlying the cautious scope of the TOR is the reality that many of the most challenging

15 The Clean Environment Commission recommends that: The Government of Manitoba require Manitoba Hydro to resolve all outstanding issues with regard to the Churchill River Diversion, the Augmented Flow Program and Lake Winnipeg Regulation. Following resolution of these issues, Manitoba Hydro should apply for the appropriate final licences for these three operations under The Environment Act and The Water Power Act as soon as possible. The application for the approval of final licences for Churchill River Diversion, Augmented Flow Program and Lake Winnipeg Regulation should include a review of the terms and conditions, an operational review and any required environmental impact assessments. Clear guidelines should be developed with respect to what constitutes conformance to and/or violation of the terms of the licences. (R7.6, 7.7) Report on Public Hearings,Wuskwatim Generation and Transmission Project, p. 116/117

16 "The Wisconsin legislation Act 34 only allows a Wisconsin utility to count a power purchase from Manitoba Hydro as renewable once the Lake Winnipeg and Churchill River Diversion final licences had been issued." Cormie, LWR Winnipeg Hearing, March 12, 2015, p. 516, ll. 2-6

17 See Appendix __6_ for licensing examples from the NWT and Yukon.

18 Please see Appendix ___6_ relating to Licensing Models.

19 Terms of Reference, p. 1

20 Terms of Reference, p. 3

historic, current and future policy issues for LWR relate directly to the value we place on water, our sense of stewardship towards the resource and the importance we put on our Government fulfilling its water governance obligations and mandate. Indeed, there have been powerful voices in this proceeding expressing a clear lack of confidence in the ability of the Province and Hydro to steward provincial water resources.[21]

Finding a voice for water[22]

Access to clean, safe and secure water is essential.[23] Water is used for drinking, cooking, cleaning, washing and recreation. For some, it can be both a means to great joy and a soothing source of solace.

Renewable water power helps make the Manitoba economy tick. It is an important and generally reliable resource for power production yielding relatively modest green house gas emissions.

Water is central to ecosystems, vital to health and sacred in Indigenous cultures.[24] TCN tells us that Kischi Sipi, also called the Nelson River, was the lifeblood of its relationships with Mother Earth:

> *The River, which widens at Split Lake, was our highway and food supply and was the centre of recreational and cultural pursuits. The River and all it contained helped to sustain us and, in return, we respected and cared for the River and everything that was part of it.*[25]

Anishinaabe elders tell us that water has a strong spirit[26] and that it needs a voice[27] because it

21 I don't really believe that Manitoba Hydro or the Province has our best interests at heart. They are just going through the motions to get what they want." Roddy Ourskin, LWR Transcript, January 15, 2015, p. 40. See also Ron Greenwood, LWR Transcript, February 2, 2015, p. 54

22 For insight into Metis perspectives, please see Manitoba Metis Federation Historical Research Report on Métis Presence in the Keeyask Generation Project Study Area , May 2014

23 This concept is often referred to in the literature as "water security".There are many definitions of the term "water security" including those focusing on political science and international relations; physical science definitions and social science: see IIDS, "Water Security in Canada: responsibilities of the federal government" (2011)

24 Water Policy and Governance Group 2010

25 Tataskweyak Cree Nation, Clean Environment Commission Lake Winnipeg Regulation Participant Submission, March 26, 2015 at p 2.

26 *The water that flows was here in the beginning. The water has a strong spirit.* Elder Peter Atkinson cited in Aimée Craft, "Anishinaabe Nibi inaakonigewin Report: Reflecting the Water Laws Research Gathering conducted with Anishinaabe Elders" (2014) at p 25.

27 Elder Harry Bone shared a personal story about when his grandmother was a young woman. She was gifted with a vision that the Elders interpreted for her – she was told "the water needs a voice": *My grandmother lived to be 107. One morning, as the sun was coming up, she went to the creek by the house to get water to make tea. She saw a small little man with long white hair. She watched him and then turned away to get her water. When she looked back, he was gone. She asked Elders about this. They told her that the message was that somebody needs to speak for the water. They explained that the water she had taken meant that she would have to speak for the water and be its voice. The pipe meant that she had a role and that was to teach - the four directions. They also said that white hair represented that she would live a long time to be able to speak for the water.* Harry Bone cited at p 17 of Craft 2015 Harry Bone cited in Aimée Craft, "Anishinaabe Nibi inaakonigewin Report: Reflecting the Water Laws Research Gathering conducted with Anishinaabe Elders" (2014) at p 16

is hurting.[28] In the words of Councillor Derrick Gould:

> *To us, water is a living spirit, it moves. And you can't control that water, you can't control it. It has a natural flow, it has a natural system. And when that system is changed and redirected, it comes with devastating costs. And it's not the water's fault, it's the people that control those waterways, that make diversions that aren't even supposed to be in those areas, they change the whole structure of the system.*[29]

Upholding our responsibilities – equitable, adaptive water governance

A central question in this proceeding is our relation to water as a community and as individuals. From a western knowledge perspective, water governance is about a range of systems to develop, manage and deliver water services. The Global Water Partnership describes water governance as:

> *the range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society.*[30]

There are equity implications flowing from our approach to governance. Canadian[31] and American research suggests that historically the societal cost of pollution was disproportionately borne by the poor and politically less powerful. Among the mechanisms for redressing this inequitable exposure to environmental impacts and risk is to "reduce or eliminate the benefits and protections environmental grandfather clauses confer on older polluting facilities."[32]

Increasingly, water governance is about how we respond to risk and uncertainty. Drs. Fitzpatrick and Diduck observe that "uncertainty is a reality when it comes to managing complex ecological and social systems."[33] Recognizing the limits of human planning and foresight, adaptive management aims to prepare and deal proactively with uncertainty as well as to learn from experiences and mistakes.[34]

In contrast to the western dialogue about systems, society and risk, some Indigenous people

28 Violet Caibaiosai at p 19 of Craft 2015. *Every time we came by a small stream, we would offer our song and tobacco. We passed one that I thought didn't have life in it because of all the pesticides. But, I offered tobacco and something came up right away to take it. The water is hungry for our help. We have to unclog our Mother's veins so she can live – so we can live. I saw at the end of that second lake how congested her veins are becoming. She's really struggling. It's just like us – if we don't take care, we're going to have health problems. It's a privilege to see how many others are walking.* Violet Caibaiosai cited in Aimée Craft, "Anishinaabe Nibi inaakonigewin Report: Reflecting the Water Laws Research Gathering conducted with Anishinaabe Elders" (2014) at p 32

29 Winnipeg LWR Hearing, March 25, 2015, p. 1579, ll. 7-16

30 Rogers, P., & Hall, A. W. (2003). *Effective water governance* (Vol. 7). Stockholm: Global Water Partnership

31 Loo, Tina. 2010. *Africville and the dynamics of state power in postwar Canada*, Acadiensis XXXIX (2) Summer/Autumn 2010. See in particular paragraphs 6, 13, 14 and 25. Miller, Alexander C. 2011. *From the Indian Act to the Far North Act: Environmental Racism in First Nations Communities in Ontario*. Research Paper, Centre for Environmental Health Equity, Queen's University, Kingston, ON. (pages 17-18)

32 Heidi Robertson, "If your Grandfather could pollute, so can you: Environmental "Grandfather Clauses" and their role in environmental inequality", 1995, Catholic University Law Review at 139.

speak more directly to the importance of relationships and duties. From a Cree worldview, the TCN observe:

> *Traditionally, our people maintained a healthy and reciprocal relationship with the Nelson River – we consider ourselves the custodians of the River and its inhabitants.*[35]

In discussing *Anishinaabe* understandings, some learned writers have suggested that governance is about relationships. Responsibilities and obligations are associated with each of these relationships:[36]

> *Anishinaabe law isn't so much about rights but responsibilities to all of Creation.*[37]

Support for maintaining the licensing status quo

Much of the dialogue about the value we place on water, our sense of societal responsibility and the approach we take to water governance is reflected in the varied responses taken to the proposal by Hydro to finalize its WPA license.

LWR is licensed under an almost 39 year old interim license under the *Water Power Act*. Manitoba Hydro is accorded significant operating discretion under the interim license. Hydro seeks finalization of this license. It does not seek any change in the licensing terms. It has not sought licensing under the *Environment Act.* For the next 10 years, Manitoba Hydro would appear to support the licensing status quo under the *WPA* and *EA* (the status quo)

Hydro acknowledges a relicensing process will need to take place prior to 2026 and that societal values have changed considerably over the last forty years. Recognizing the magnitude of the societal shift, Hydro seeks policy guidance on the values by which future operations of LWR will be governed and clarification of the research that will need to be undertaken. Given the integrated nature of its system operations, it suggests a more integrated future review of the licenses underpinning its operations will be required.

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33 Alan Diduck and Patricia Fitzpatrick "Assessing Adaptive Management in the Keeyask EIS" (2013). Uncertainties in water governance can emerge from a number of factors including: variability in the natural environment, climate change, human impacts to the environment, lack of knowledge of baseline information, long time frames, large projects, different social and political goals, international export and import contracts. List modified from Diduck and Fitzpatrick 2013 at p 1.

34 Armitage, Derek R. "Collaborative environmental assessment in the Northwest Territories, Canada." *Environmental Impact Assessment Review* 25.3 (2005): 239-258 at p 253

35 Tataskweyak Cree Nation, Clean Environment Commission Lake Winnipeg Regulation Participant Submission, March 26, 2015, p. 3. See also: Our relationships with Mother Earth, which have evolved over thousands of years, are expressed in our customs, practices, and traditions and underpin our worldview. Maintaining harmony and balance in our Ancestral Homeland requires healthy relationships with Mother Earth – these relationships are central to our distinctive cultural identity and our continued existence . (p. 2)

36 If we understand law as governing interactions between beings, Anishinaabe law and governance is all about relationships. John Borrows, "Drawing out Law: A Spirit's Guide" (Toronto University of Toronto Process, 2010); Craft Living Treaties. They include express frameworks of obligations and responsibilities which are both procedural and substantive in nature. Craft 2015 at p 2. Responsibilities and obligations are associated to each of the relationships which are exercised both individually and collectively. Craft – Stone Fort Treaty at p 16.

37 Peter Atkinson cited in Aimée Craft, "Anishinaabe Nibi inaakonigewin Report: Reflecting the Water Laws Research Gathering conducted with Anishinaabe Elders" (2014) at p 11

There appear to be three streams of argument in favour of the status quo.[38]

Argument one – Focus on the Next License

Implicit, if not express, in the Hydro submissions is the suggestion the status quo is acceptable in the short and medium term given Hydro's compliance with its license and the effort it has poured into reconciliation with affected communities and ongoing research. While Hydro has significant discretion under its interim license, it may wish to argue that it has exercised this discretion honourably and in good faith.[39]

Implicit in this perspective is the suggestion that given the complexity of the issues, the intractability of upstream and down stream perspectives and the risks of re-opening the psychological and spiritual wounds of past effects, a commitment to the status quo is desirable. It is better to close the door to dialogue on this license and get cracking on the engagement and research needed to modernize its next WPA license:

> So I think we now have a period between now and 2026, if policy is set and the rules of the road are described, then we can achieve what I would call a modern balance for a renewed licence. Now, it may be that that modern balance is exactly the same as the old one, but it will be done deliberately, having studied it, got input involved, the public in a public consultation process, using best science to derive best policy.[40]

Hydro also suggests that certain alternatives aimed at reducing ecological risks on Lake Winnipeg would come with an unacceptably high cost in terms of reliability and economics and might have unforeseen effects on downstream communities.[41]

Argument two – A Flawed Mandate Leading to a Flawed Process

A second argument in favour of the licensing status quo comes from a very different place. Certain affected downstream communities make a powerful argument that the compounding effects of LWR and the CRD have been devastating. Current effects are increasingly unpredictable and their communities are struggling to adapt.

This perspective appears open to examining future flow modifications that may assist in restoring their fundamentally altered worlds.[42] But these affected communities do not see the current CEC process as the appropriate vehicle from which changes to the operating conditions should flow.

A central element of their position relates to the concern that the mandate of the Clean Environment Commission does not provide “an appropriate venue for the inclusive, holistic

38 Please see **Appendix 1** for a more complete description of some of the perspectives presented in this hearing.

39 Mr. Cormie speaks of “Manitoba Hydro's commitment to doing the right thing.” David Cormie, March 12 2015 at p 509

40 David Cormie, LWR Hearing March 11 2015 at pp 224-5.

41 Manitoba Hydro, *Lake Winnipeg Regulation*, March 10, 2015, p. 49

42 “Yeah. I was thinking about that, and it was about the potential increases in the water levels. And you know, again, we’re not – I said may, may help York Factory but, again, we’re not sure. You know, it all revolves around studies that would be undertaken by Manitoba Hydro, in which we would like to participate.” Chief Ted Bland, LWR Hearing, March 26, 2015, p. 1670, ll. 9-16 (emphasis added)

assessment required**"**.[43] Among the shortcomings noted are the absence of analysis relating to the CRD, the failure to meaningfully enable community analysis and the failure of the record to present a holistic Cree world view.[44]

Communities such as the York Factory First Nation and TNC highlight the palpable concerns that efforts to placate upstream interests will only bring **"**new, unpredictable changes and uncertainty, to a greatly altered and delicate ecosystem."

Argument three – Not much can be done by licensors

An invitation to endorse the status quo is transparent in the *Terms of Reference* (TOR) for the CEC Review. From this perspective, there are limited licensing options under the current legislative regime given:

> the right to a final license under the WPA for those who have complied with the interim license criteria;[45]
>
> the claim that LWR is exempted from review under the EA.[46]

While the Province appears open to future monitoring and research, some might interpret the language of the *TOR* as foreshadowing the Minister's endorsement of status quo operating conditions.

Challenges to the status quo

Although not always cast as express opposition, the hearing dialogue reflects a significant current of resistance to the status quo.

This challenge to the status quo centres around a concern with the material adverse social and ecological effects of the LWR, a sense of emerging risks including climate change and a frustration with the absence of meaningful adaptive management tools under the existing license. There is a powerful sense that the status quo is neither defensible or fair.[47]

43 While we commend the government of Manitoba for undertaking a review of the Licence, it is evident that the scope of the review and the mandate of the Clean Environment Commission do not provide an appropriate venue for the inclusive, holistic assessment required when considering a final licence for the Lake Winnipeg Regulation Project. . .We do not want any changes to the operating conditions of Lake Winnipeg Regulation. While our Nation has suffered the adverse effects of regulation for 40 years, any changes, including those options assessed in Hydro's Lake Winnipeg Regulation report, would bring new, unpredictable changes and uncertainty, to a greatly altered and delicate ecosystem. Tataskweyak Cree Nation, Clean Environment Commission Lake Winnipeg Regulation Participant Submission, March 26, 2015, pp. 1 and 7.

44 In regard to when it comes to Clean Environment Commission, TCN has always, and had always insisted that we look at the holistic, have a holistic review which includes our members' involvement, and to review the documents that are out there, documents that speak of, that were done back in 1975, before LWR and CRD, and studies that have been done to date since the operation of this. So we want a more significant role and involvement in looking at the environment and the project to date. But when we do have – I'm not – I will be blunt – we're not provided enough resources to be able to have a whole review and a lengthy process with our members. The western science deals with review and studies in the sense of separate components. In ATK we look at environment from the holistic view, which is inclusive. So we need to be able to have that provided to us as a means of looking at and reviewing the project on Lake Winnipeg." -Victor Spence, (LWR Winnipeg Hearing), March 26, 2015, p. 1702, ll. 2-22

45 Terms of Reference, p. 1

46 Terms of Reference, p. 1

47 Please see Appendix 1 for a more complete description of some of the perspectives presented in this hearing.

At the risk of being entirely too concerned with watertight analytical compartments, we have categorized concerns with the status quo under four major themes:

Opportunities to rehabilitate and protect are being missed

- evolving and significant adverse effects suggest the licensing system is not functioning well
- a view that government licensors are being passive in the face of significant environmental impacts
- concerns that important issues have been poorly studied, that monitoring is inconsistent and that knowledge sources such as traditional knowledge have been undervalued or ignored
- a perception there are missed opportunities to adaptively protect and restore our water and riparian habitat through better research and potential modification of operations, flows and lake levels
- a concern with regulatory, legislative and research silos
- a sense that too much of the responsibility for responding to risk and change is being left to the relatively unfettered discretion of Manitoba Hydro

The system does not listen and is biased and opaque

- A perspective that the costs and benefits of LWR are not being fairly shared
- a sense of exclusion from both deliberations and the decision making process
- a view that existing decisions are tilted in favour of economic objectives and biased against ecological and social objectives
- a concern that important decisions are being made behind closed doors or in an opaque environment

The legislative regime is inadequate

- a sense that the legislative regime is not well suited to addressing environmental issues relating to Manitoba Hydro operations affecting the Lake Winnipeg, Churchill River and Nelson River Watersheds;

Hydro's analytic tools are unproven

- a concern that Manitoba Hydro has not demonstrated that its water resource system analysis capabilities are currently capable of providing a good decision making tool to:
    - assist in efforts to balance ecological, economic and social objectives
    - address pressing risks including climate change.

A Broader Context to the LWR Dialogue

For those who see the status quo as untenable, there may a temptation to single out Manitoba Hydro or licensors under the WPA and EA as being sadly out of step with modern social and ecological values as they relate to water power governance.

However, it is important to situate the LWR/CRD dialogue within the broader discussion of the value of water resources, the risks associated with change and the evolving understanding of governance including the responsibilities of government, industry and community.

The evolving nature of this dialogue can be seen both within Manitoba and beyond our borders.

The Manitoba PUB – Risk, upheaval, climate change and planning capacity

Parallel to a number of CEC Hydro related processes, the Manitoba Public Utilities Board (PUB) has been active over the past five years in considering both Hydro's technical capacity to model for risk and its planning capacity to respond to climate change and market upheaval.

In recent commentary, the PUB has highlighted perceived challenges in modelling for low flow conditions, the uncertain nature of our energy future and the need for Hydro to adopt modern integrated resource planning.

> *The Board sees a need for MH to enhance its modeling forecast by adding a comprehensive hydrologic component. . . .Evidence from external experts and the independent consultant indicates that the models are less accurate in replicating actual low-flow periods (such as 2003/04) than they are in replicating average or above-average flow scenarios. The Board sees this as a significant risk issue.*[48]
>
> *Manitoba's energy future is* ***uncertain****. Wind, solar and energy efficiency technologies, flattening load growth, volatile natural gas prices,* ***climate change and the resulting impacts on water flows****, and regulatory changes including the potential for carbon taxes are all creating* ***upheaval*** *in North American energymarkets.*[49] (emphasis added)
>
> ***Manitoba's energy future no longer lies exclusively with hydroelectricity****. In a time of rapid technological innovation in both the demand and supply side, openness to alternative resources and new technologies will be required. This may involve new methods of saving electricity as well as new methods of generating it, such as wind and solar power. Integrated resource planning provides the analytical framework to evaluate such options and, as such, should be required before any further generating facilities beyond the Keeyask Project are constructed.*[50] (emphasis added)

48 *Order 5/12*, p. 181. While the peer reviews on behalf of Manitoba Water Stewardship were generally favourable, the Board notes that the concerns and improvement suggestions are similar to those of other external experts and KM. In particular the Board notes the weak simulation of Lake Winnipeg outflows during low flow years. (203) We are not aware of any formal PUB process considering whether the alleged deficiencies have been addressed.

49 *Needs For And Alternatives To (NFAT) Review of Manitoba Hydro's Preferred Development Plan – Final Report* June 20, 2014 , p. 3

50 Needs For And Alternatives To (NFAT) Review of Manitoba Hydro's Preferred Development Plan – Final Report June 20, 2014 , p. 35

From working rivers and lakes to stewardship opportunities

The emerging dialogue in Manitoba at both the CEC and PUB echoes long held values of our Indigenous people as well as ongoing conversations in many other jurisdictions.

Since time immemorial, Indigenous legal traditions have emphasized the importance of maintaining a respectful and reciprocal relationship with water. Over the last quarter of a century, western thought has shifted from a focus on harnessing nature for human gain to a more holistic approach encompassing ecological as well as human goals and benefits.[51]

As the UN Millennium Report points out, economic activities cannot be separated from their social and political context.[52] A healthy global economy advances broader and more socially inclusive purposes that are rooted in shared values and reflected in institutional practices.

Indeed, it has been argued that water resource management activities that focus solely on economic gain cannot be sustainable, even in an economic sense. In the past, a policy (for instance a dam operating license) has been seen as beneficial if it created economic wealth, even at the expense of human quality of life, environmental quality, or indeed the ecosystem services[53] such as water supply that originally enabled the economic gain.

Tarnlock describes the conversation as an evolution from a model of working rivers and lakes towards one of stewardship[54].

> *In the name of science and efficiency, engineers and others posited a vision of water management which resulted in the full development of river basins. Humans would improve upon nature by turning unruly and often dangerous rivers into managed "working rivers."*[55]

51 Gleick (2000) *The changing water paradigm: a look at twenty-first century water resources development.* Water International 25(1): 127 – 138

52 *We The Peoples The Role of the United Nations in the 21st Century (*Millennium Report of the Secretary-General) http://www.un.org/en/events/pastevents/we_the_peoples.shtml

53 Water systems provide a wide range of human and ecological services, including provisioning (e.g., water supply); regulation (e.g., of climate, flooding, and erosion, and water and air purification); ecosystem support services (e.g., nutrient and gas cycling); and cultural and spiritual services. Today, it is widely recognized that valuation of "natural capital," including ecosystem and cultural services, can be an important part of informed policy analysis (UNU-IHDP and UNEP (2012) Inclusive Wealth Report 2012: Measuring Progress towards Sustainability. Cambridge: Cambridge University Press. 2) and make tradeoffs more easily understood and evaluated.

54 Dan Tarnlock, "The Legal-Political Barriers to Ramping up to Hydro" (2011) 86 Symposium on Energy Law : There are several strands of resource stewardship. One posits that rivers should be managed and "restored" to maximize the maintenance of the ecosystem "services" that they provide such as biodiversity, polluter filtering, and flood retention." Ecosystem service provision is an anthropocentric concept and grounded in benefit-cost analysis. The idea is to value items which have traditionally not been monetized and thus were ignored in decisions to modify rivers. A more radical stewardship version argues that a river's natural hydrograph should be restored, within the bounds of reason, to support the stream's historic functions regardless of whether these functions can be quantified as ecological services. (271)

55 Dan Tarnlock, "The Legal-Political Barriers to Ramping up to Hydro" (2011) 86 Symposium on Energy Law at pp 264, 265)The cornerstone of efficiency was the concept of the multiple use of water of all resources. As applied to water, dams and reservoirs would provide flood control protection and water for irrigation, while also generating hydroelectric energy.

This shift has been reflected both at the operational level and on the broader policy and legislative front. It is apparent across a spectrum of water management activities, including the planning[56] and operation of major dams and reservoirs.[57] Jager and Smith highlight both the historic approach and the opportunity offered by more robust analysis and planning:

> *Hydroelectric power provides a cheap source of electricity with few carbon emissions. Yet, reservoirs are not operated sustainably, which we define as meeting societal needs for water and power while protecting long-term health of the river ecosystem.*
>
> *Reservoirs that generate hydropower are typically operated with the goal of maximizing energy revenue, while meeting other legal water requirements. Reservoir optimization schemes used in practice do not seek flow regimes that maximize aquatic ecosystem health.*[58]

While there have efforts to remove control structures in certain systems, the more typical thrust of stewardship is grounded in the assumption that a return to pre-development conditions is unrealistic on large, regulated rivers. Instead:

> the goal is to create a new managed hydrograph that performs a reasonable range of these functions within the constraints such as existing water rights and the legislative mandates which control reservoir operations.[59]

Considerations of inclusion and equity

Drawing on deep and resonant strains within Indigenous legal traditions, communities in the current proceeding have been eloquent spokespeople for the need for an inclusive and holistic assessment of LWR and CRD operations as an essential underpinning of any final license.[60]

Consideration of a broad range of values and perspectives is central to a holistic approach. In the year 2000, the World Commission on Dams called for more inclusive planning and management processes, and more equitable distribution of the benefits of large dams (WCD 2000). They state in part

> *improving development outcomes in the future we need to look at proposed water and energy development projects in a much wider setting – a setting that reflects full knowledge and understanding of the benefits and impacts of large dam projects and alternative options for all parties. It means that we have to bring new voices, perspectives and criteria into decision-making, and we need to develop a new*

56 Keeyask Hydrolimited Partnership, "Keeyask Generating Project: Environmental Impact Statement" (2012).

57 See: Henriette Jager & Brennan Smith, "Sustainable reservoir operation: can we generate hydropower and preserve ecosystem values?" (2008) River Research and Application 24 at pp 340-352; McCartney, "Decision Support systems for large dam planning and operation in Africa, Colomba, Sri Lanka: international Water Management Institute" (2007).

58 Henriette Jager & Brennan T Smith "Sustainable reservoir operation: can we generate hydropower and preserve ecosystem values?" River. Res. Applic. 24: 340–352 (2008), p. 340.

59 Dan Tarnlock, "The Legal-Political Barriers to Ramping up to Hydro" (2011) 86 Symposium on Energy Law at p 271.

60 See for example Tataskweyak Cree Nation, Clean Environment Commission Lake Winnipeg Regulation Participant Submission, March 26, 2015, pp. 1

*approach that will **build consensus** around the decisions reached. This will result in fundamental changes in the way decisions are made.*[61]

Leading writers have characterized the elements of effective water governance that flows from the evolving dialogue as:[62]

Approaches that are:

- Open and transparent
- Inclusive and communicative
- Coherent and integrative
- Fair, equitable and ethical

Performance and operation that is:

- Accountable
- Efficient
- Responsive and sustainable

Integrated Resource Management that is:

- Coordinated
- Flexible and Adaptive

Our retainer

It is tempting (and often emotionally satisfying) to highlight the differences in this proceeding between those who speak in favour of endorsing the WPA license without operational change and those who do not.

But on a going forward basis, there is substantial common ground between the Hydro call for a modern balance, the TCN focus on an inclusive and holistic process and the perspective of those who feel the current system is underperforming, underinclusive and biased. There would appear to be a strong commitment from many organizations to process and law reform.[63]

Within a general analytic framework of effective governance, we have been asked to outline

61 World Commission on Dams, "Dams and Development: A New Framework For Decision-Making" (2010) at p xxxii

62 See Rogers and Hall (2003); Pahl-Wostl 2007; Wilson 2013, Among the elements of water governance and integrated water management we have considered are: i)The policy framework including legislation, regulation, strategic policy and ongoing review ii) Interrelationship with other legislative schemes iii) Interrelationship with other jurisdictions iv) Project Assessment including supportive research v) Project Licensing and Relicensing vi) Day to day operations of the regulated structure including supportive research vii) Regulatory oversight including license compliance, planning for and responding to significant risk, research, monitoring and reporting and adaptive management. As a simple rule of thumb, we have defined governance to be the administrative structures and the rules, including the rules for required processes. Governance is the enabling framework for day-to-day operations and decision making. It is the arrangements for approvals and licencing, compliance assessment, and enforcement. We refer to Integrated Water Resource Management as the decisions you make and the way you choose to make those decisions, first in planning (how much water can be used, in which ways, by which users) and then in management (identifying problems, implementing management actions, checking how well those actions worked).

short term and long term administrative and governance approaches that might assist in moving the LWR dialogue forward.[64] In doing so, we have been asked to consider:

- selected legislative and policy trends in other jurisdictions including Western and Northern Canada, the US and Australia (Part Two);
- selected North American assessment approaches (Part Three);
- selected developments in the common law as well as international agreements which may relate to evolving concept of our stewardship duties (Part Four);
- the Manitoba context (Part 5); and,
- some future options that may be worthy of consideration (Part Six).

63 The Public Interest Law Centre has been in existence since 1982. Much of the Centre's work involves: i) using law reform and legislative reform as mechanisms to address community concerns and social science evidence ii) the utilization and evolution of Western administrative, regulatory and legal processes as a mechanism to address community concerns and to incent administrative practice reform and policy reform iii) application of Western legal principles to social science evidence, technical evidence and traditional knowledge iv) employing legal and administrative mechanisms to facilitate the incorporation of community values and knowledge into administrative, regulatory, legal and legislative processes

64 Our retainer from CAC Manitoba was a verbal one. It should be understood that the options presented by the Public Interest Law Centre (PILC) are preliminary ones that flow from the research undertaken and the record of the proceeding. They do not represent the position of CAC Manitoba. In developing, this written brief the Public Interest Law Centre undertook a number of activities including: i) review the social science literature with guidance from Dr. Robert Patrick an expert in water governance and Dr. Isobel Heathcote an expert in integrated water resource management ii) review the record of this proceeding iii) review legislative and licensing approaches in selected jurisdiction iv) review relevant US and Canadian case law relating to the Public Trust and Honour of the Crown v) review relevant case law relating to the Manitoba *Water Power Act* and *Environment Act* vi) consider guidance from community interviews undertaken by CAC Manitoba and PILC and, vii) workshop recommendations with a large team including experts in water governance, integrated watershed management, sustainability and law.

Part 2: Selected Legislative Development

Preamble: Responsiveness, Balance, Integration and Direction

Many observers regard a modern legislative and policy framework as an important step in developing a robust approach to good governance. Over the last 30 years, there has been an extensive evolution in water governance in certain jurisdictions as legislators and policy makers respond to increasing stresses flowing from man made disturbances and climate change. As the Canadian Science Advisory Secretariat notes:

> *Many riverine ecosystems are under increasing threat from anthropogenic activities, both in terms of consumptive (e.g. irrigation) and non-consumptive (e.g. hydroelectric) uses. Increasing societal demands for water have led to* ***substantial flow alterations*** *of rivers in Canada. Such flow alteration can be directly linked to impacts on the physical attributes of rivers and cause subsequent ecological changes.*[65](emphasis added)

In some jurisdictions, the response has been to make express provision for ecological flow regimes. In others, there has been an overt effort to better balance economic concerns with other values. While we do not endorse this statement, we note a powerful characterization of the need to restore balance in the Oregon *Water Code*:

> *The economic and general welfare of the people of this state have been seriously impaired and are in danger of further impairment by the exercise of some* ***single-purpose*** *power or i****nfluence*** *over* ***the water resources of this state*** *. . .* [66]

We also observe a number of efforts to better integrate decision making across bureaucratic, regional and national barriers:

> *The existence of* ***multiple political jurisdictions*** *at federal, provincial, state and local levels complicates decision making and cross-boundary cooperation. Overcoming political barriers to water management will take continual work on the part of all stakeholders.*[67]

Finally, we see some legislators in Canada and the United States and administrators in Australia seeking to provide greater clarity in terms of their decision making criteria. Jager and Smith note the importance of giving regulatory guidance to industry. They suggest that one barrier to increased ecological sustainability is:

> *the incentive structure for power producers, which is focused on producer value and neglects other societal values unless these are provided for by regulation*.[68]

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65 Canadian Science Advisory Secretariat, "Framework for Assessing the Ecological flow Requirements to Support Fisheries in Canada" *(2013)* at p 3.

66 Oregon Water Code, 536.220: Policy on water resources generally; integrated state water resources strategy

67 Red River Basin Commission, INTRODUCTION TO THE NATURAL RESOURCES FRAMEWORK PLAN (NRFP), http://www.redriverbasincommission.org/Services/the_plan.html

68 Henriette Jager & Brennan Smith, "Sustainable reservoir operation: can we generate hydropower and preserve ecosystem values?" (2008) River Research and Application 24 at p. 350

Legislative and policy guidance is particularly important for the purposes of setting an inclusive vision, enabling community voices and providing guidance to administrators and incentives for industry.

There is no one-size-fits-all

> Whole academic careers could be built (or destroyed) in seeking to understand and assimilate Canadian and international legislative and policy trends with respect to water governance.[69] Excessive faith in the path chosen by any particular jurisdiction could obscure the dual realities that:
>
> - there is no magic, one-size-fits-all pathway to good governance[70]; and
> - many good opportunities for learning lie in our own backyard.

In preparing our analysis, we consulted with a number of academics and researchers. We shared our understanding of Manitoba's circumstances and asked them to suggest jurisdictions of particular interest. Given the volume of information and our time limits, we began an exploration of these jurisdictions with a focus on the LWR dialogue. Appendices 2 and 3 details our review.

In this section, we highlight some interesting legislative and policy trends from Western and Northern Canada, as well as the United States with a particular focus on the Pacific Northwest. We provide an extensive discussion of Australia in Appendix 3**.** In particular, we observe efforts to promote greater balance in water resource decision making by:

- acknowledging the importance of ecological or environmental flow patterns[71];
- expressly articulating the need to give consideration to social and ecological values as well as economic criteria;
- creating a larger space for the knowledge, interests and the voices of Indigenous people;
- enabling greater community participation; and
- creating financial mechanisms to support ecological and social objectives.

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69 We would note that we have been chasing a moving legislative target which appears to be related to Federal/Territorial and community tensions. While we have undertaken a follow up review of primary researcher, we note that our final edit identified very recent changes in the NWT (effective April 1, 2015) and potential changes in the Yukon that were not identified in either the original analysis or the review. Anyone wishing to rely on this analysis should undertake an update.

70 As OECD (2011) observe, "There is no one-size-fits-all answer, magic blueprint or panacea to respond to governance challenges in the water sector, but rather a plea for home-grown and place-based policies integrating territorial specificities and concerns." :OECD, " The "Water Crisis" is largely a governance crisis" at p 1.

71 Environmental Flow: "Environmental flow describes the quantity, quality and timing of water flows required to sustain freshwater ecosystems and the human livelihoods and well-being that depend on these ecosystems" (after the Brisbane Declaration, 2007). Ecological Flow Needs: "The flows and water levels required in a water body to sustain the ecological function of the flora and fauna and habitat processes present within that water body and its margins". (4) Canadian Science Advisory Secretariat, "Framework for Assessing the Ecological flow Requirements to Support Fisheries in Canada" *(2013)* at p 4.

It is well understood that water is a highly mobile and interconnected resource that is challenging to regulate. As noted by the Canadian Science Advisory Secretariat:

> *riverine ecosystems that support CRA fisheries are managed by multiple authorities (federal, provincial, territorial, municipal), often with limited coordination across jurisdictions.*[72]

With that in mind, we note some attempts to better integrate decision making among different governmental bodies and within watershed systems.

Focusing on British Columbia, the Northwest Territories and the Yukon

Over the last 25 years, a number of Canadian jurisdictions have undergone extensive debates over their water governance legislation and policy. Our particular focus in this report is on British Columbia, the NWT and the Yukon.[73]

BC – The move to modernization and the recognition of ecological flow requirements[74]

Challenges related to dated water legislation are not unique to Manitoba. Licensing and regulation of water power projects in British Columbia currently falls under the 100-year old *Water Act* (WA).[75]

However, BC has actively engaged in a modernization effort. The *Water Sustainability Act* (WSA) is expected to replace the *Water Act* in 2016.[76] It is intended to provide a comprehensive, modern legal framework for water management in BC.[77] Our review of water legislation in BC highlights the importance that jurisdiction has placed upon:

- engagement[78];
- the express provision for ecological flow needs for new projects;

72 Canadian Science Advisory Secretariat, "Framework for Assessing the Ecological flow Requirements to Support Fisheries in Canada" (2013) at p 13.

73 Analysis was undertaken with regard to Alberta and Saskatchewan and is available upon request.

74 Also of interest in British Columbia is the *Water Protection Act,* RSBC 1996, c 484. The Act prohibits bulk removal of BC water to extraprovincial locations and large-scale diversion between major provincial watersheds. Please also see the *Forest and Range Practices Act,* SBC 2002 Chapter 69: This act sets out expected standards of practice for forest management. Interestingly, s. 150 enables the Minister to identify establish objectives for areas such as i) watersheds with significant downstream fisheries values and significant watershed sensitivity ii) lakeshore management zones iii) scenic areas iv) streams, wetlands and lakes. Section 171 and 172 provide for the development of pilot projects for forest or range management and set out regulatory requirements for public and stakeholder engagement including establishment of a public advisory committee.

75 Licence renewals under the WA are treated as if the application were for a new licence. Licenses for water projects built after 2003 and licence renewals and amendments are limited to 40 years. Licensing applications must be viewed with reference to the Columbia Basin Management Plan. *Water Ac*t s 12.2

76 The WSA received Royal Assent in May 2014 The Regulations accompanying the WSA are still in development and the WSA will not take effect until they are complete.

77 http://engage.gov.bc.ca/watersustainabilityact/the-proposal/ The WSA focuses on seven policy areas: i) Protect stream health and aquatic environments ii) Consider water in land use decisions iii) Regulate groundwater use iv) Regulate during scarcity v) Improve security, water use efficiency, conservation vi) Measure and report vii) Enable a range of governance approaches

- the consideration of water objectives in land use planning[79];
- express considerations for license renewal decisions; and
- special consideration to "sensitive streams"[80].

Of particular interest are the requirement to consider environmental flow needs in new allocation decisions and the express consideration of climate change and stream flow in the assessment of certain license renewals.

Provision for environmental flow needs (EFN)

Section 15 of the WSA introduces a requirement to consider environmental flow needs (EFN) in new water allocation decisions. EFNs are defined in relation to "the **volume** and **timing** of water flow required for the proper functioning of the aquatic ecosystem of the stream."[81] (emphasis added)

Express considerations in license review

Section 23 of the WSA articulates express considerations for the review of certain licenses including[82]:

- the best available technology in respect of water use efficiency and water conservation;
- best practices in respect of water use efficiency and water conservation;
- any increase in knowledge respecting **actual stream flow** or aquifer conditions; and
- and the effects of **climate change**.

78 http://www.livingwatersmart.ca/water-act/docs/wam_report-on-engagement.pdf. The *Act* is a product of over five years of public engagement and policy development. Along with a stakeholder and First Nation dialogue, a Discussion Paper was released and 12 regional workshops were held. Over 900 submissions were received from a broad range of interests and citizens.

79 Section 43 sets out "water objectives" to provide a more consistent approach to considering water in natural resource decisions and local government planning. Section 43 also provides legislative authority to the Provincial Cabinet to specify criteria for evaluating the impacts of a land use or resource use proposal.

80 According to section 16, if the decision maker considers that the use of water proposed are likely to have significant adverse impacts on water quality, water quantity or the aquatic ecosystem of a stream or aquifer; it may require the applicant to submit a proposal for mitigation measures to address those effects. Section 17 makes special consideration to "sensitive streams", the applicant must include mitigation measures and the decision maker will only grant the application if it is satisfied that:
- any adverse impact resulting from granting the application on the sustainability of any protected fish population of the sensitive stream is likely to be insignificant
- the mitigation measures would ensure that the application is not likely to cause significant adverse impacts

81 WSA, s. 1(1). The applicant can be required to provide assessments supporting a determination of the EFN for the applicable stream. Decision makers may take into account the environmental flow need of any stream the decision maker considers may be affected by granting the application. WSA, s. 15(4) The WSA also sets out a "critical environmental flow threshold" which is defined as "the volume of water flow below which significant or irreversible harm to the aquatic ecosystem of the stream is likely to occur." WSA 1(1). Section 86 states that a declaration of significant water shortage provides for restrictions to all water users to protection critical environmental flow.

82 Appendix 2 provides an explanation of which licenses this provision applies to.

Making space for Indigenous people in the NWT

In the Northwest Territories, the *Waters Act* provides a framework for the administration of water use in the territory.[83] The *Waters Act* is designed to work in concert with the *Mackenzie Valley Resource Management Act* (MVRMA)[84] which provides a unique institutional framework for resource co-management by establishing land and water management boards.[85]

The NWT water regime is of significant interest to those seeking to respect Indigenous culture and knowledge alongside dominant Western approaches It offers interesting approaches to[86]:

- the requirement for consent where water uses have adverse effects;
- express recognition of the need to integrate Western and traditional knowledge;
- robust monitoring and review[87]; and
- transparent licensing[88].

In making space for Indigenous people, the water regime acknowledges that consent is required for water uses that would adversely affect the waters of the Gwich'in, Sahtu First Nations[89], or the Tlicho Government.[90]

The provision for cumulative effects monitoring explicitly refers to the integration of Western scientific knowledge and traditional knowledge. Boards must consider "the importance of conservation to the well being and the way of life of Aboriginal peoples of Canada... and any traditional knowledge and scientific knowledge that is made available.[91] Finally, there is express protection for Aboriginal water rights including the use for traditional heritage, cultural

83 S.N.W.T. 2014, c. 18. The *Water Act* does not have a "interim licence" equivalent. Licenses may be issued for terms not exceeding 25 years. (s. 26(2))

84 S.C. 1998, c. 25. The MWRMA does not apply to the Inuvialiut Region.

85 It also sets out the legal process for environmental assessment in the NWT. Boards regulate the use of water and deposit of waste in each territory. They have authority to issue licenses, create management plans, and carry out environmental assessments of proposed projects in the Mackenzie Valley. The regulatory regime in the NWT is a result of negotiations and land claim agreements between the federal government First Nations in the area. It is a co-management system between governments and Indigenous groups that is radically different from models in other parts of Canada.

86 We note significant change pending on April 1, 2015 where a new 11-person superboard is supposed to come into effect. It is intended to replace the Wek'eezhii, Sahtu and Gwich'in land and water boards. This change (from decentralized boards to a superboard) is currently subject to an injunction (the injunction being appealed by the federal government) – see http://www.cbc.ca/news/canada/north/canada-appeals-decision-delaying-n-w-t-land-and-water-superboard-1.3010987 .

87 The Act states that the Cumulative Impact Monitoring Program and an environmental audit must be conducted every five years with the participation of First Nations. See sections 146 and 148. The requirements for reporting contained in licensing documents are extensive and provision is made so licensing documents and associated plans can be adjusted as monitoring and reporting requirements are submitted.

88 All the documents related to water licensing in the Northwest Territories are available from the Mackenzie Valley Land and Water Board's public registry. Licensing decisions are accompanied by written reasons http://www.mvlwb.ca/Boards/mv/SitePages/registry.aspx

89 We observe that the land claim for the Sahtu includes the "Sahtu Dene and Metis"

90 S.N.W.T. 2014, c. 18. The *Water Act* at s 33.

91 S 60.1. The Wekeezhii Land and Water Board is also bound by laws of the Tlicho Government, and cannot exercise its powers in a way that contravenes its laws [s.61(2)]

and spiritual purposes.[92]

An integrated approach to water, Indigenous rights and environmental assessment in the Yukon

Under the *Waters Act*,[93] the Yukon Water Board is responsible for the issuance of water licences.[94] The Yukon Water Board also has specific responsibilities under the Umbrella Final Agreement (UFA)[95] and the *Yukon Environmental and Socio Economic Assessment Act* ("YESAA").[96]

The UFA is a modern treaty. Chapter 14 contains special provisions for water management. The right of First Nations to exclusive use of the water flowing through their territory is protected.[97]

The YESAA is a federal law intended to give effect to the UFA provisions respecting assessment of environmental and socio-economic effects.[98] Under the UFA, First Nations and Indigenous people may apply to the Yukon Environmental and Socio-Economic Assessment Board (YESAB) to determine whether their rights are being infringed, whether they are entitled to compensation, and whether there is an alternative way to mitigate or avoid an adverse affect.[99]

The Yukon Water Board cannot issue a water use licence, or set terms of a licence, that are contrary to a decision document issued under YESAA.[100]

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92 According to section 72, "the Gwich'in and Sahtu First Nations have the right to use waters or deposit waste without a license for purposes of trapping and non-commercial wildlife harvesting other than trapping, for purposes of transportation related to those activities and for traditional heritage, cultural, and spiritual purposes." Section 73 provides exclusive rights to use water flowing through first nations lands

93 S.Y. 2003, c. 19 The Waters Regulation also sets out the requirements related to the water licensing process. YOIC 2003/58.

94 http://www.yukonwaterboard.ca/role.htm The objectives of the Board are to provide for the conservation, development, and utilization of waters in a manner that will provide the optimum benefit from them for all Canadians and for the residents of the Yukon in particular.

95 Umbrella Final Agreement, between the Government of Canada, the Council for Yukon Indians and the Government of the Yukon, 1993 [UFA]

96 S.C. 2003, c. 7. We note there are proposed changes to YESAA. See Bill S-6 (see links at http://www.cbc.ca/news/canada/north/kwanlin-dun-drummers-interrupt-premier-at-s-6-hearings-1.3015226) The Umbrella Final Agreement is a modern treaty formed between the government of Canada and the Indigenous people of the Yukon in the late 1980s. The modern treaty agreements outlined in the Umbrella Final Agreement are intended to ensure that First Nations in the Yukon have a meaningful role in water management decisions and that their rights to water are protected. The government must consult with First Nations before making any inter-jurisdictional agreement that will affect their water rights. UFA (s.14.10.2)

97 UFA s.14.5.4.

98 *Yukon Environmental and Socio-economic Assessment Act*, SC 2003, c 7. [YESAA]

99 S. 14.11.

100 http://www.yukonwaterboard.ca/role.htm For this reason, an application for a water use licence must be accompanied by a decision document issued under YESAA.

Balancing the interest of Indigenous peoples and economic development

The Yukon legislative and treaty scheme attempts to balance the interests of Indigenous people, the environment and economic development by setting out an administrative scheme for water use that explicitly recognizes and integrates the rights of Indigenous peoples and the need for environmental assessment.

The provisions of the UFA are woven into every applicable law governing water in the territory. Environmental and social assessment legislation sets out an independent and comprehensive process for the assessment of new projects.

Indigenous people are engaged in many ways. One third of the members of the Yukon Water Board must be nominated by the Council for Yukon Indians.[101] The creation of the YESAB is intended to enable an independent Board to determine whether Indigenous rights have been infringed and to ensure that proper compensation is provided.

The proviso a YESAB decision cannot contradict the YESAA allows for express coordination between the two legislative schemes.

Review and Reporting requirements

The Yukon's water licensing regime is similar to that of the NWT in that there are extensive reporting requirements. Undertakings are required to undergo an annual dam safety inspection and a comprehensive dam safety review at least every five years. Such inspections must comply with the Canadian Dam Safety Association's "Dam Safety Guidelines".[102]

American Dynamics – the Federal Role

Given its jurisdiction over interstate commerce and navigable rivers, the federal government is a key player in the regulation and administration of hydropower in the U.S.[103]

Over half of the hydropower produced in the United States is licensed by the Federal Energy Regulatory Commission (FERC). The bulk of the remaining U.S. hydroelectric production flows from large federally operated dams that are governed by various Acts of Congress.

The Pacific Northwest has a high concentration of hydroelectric dams and is heavily reliant on hydroelectric power generation. Washington and Oregon are the largest producers of hydroelectricity in the nation.

Key insights from our U.S. analysis relates to:

- attempts to better balance economic, ecological and social values;

101 *Waters Regulation*, s. 14(1)
102 World Commission on Dams, "Dams and Development: A New Framework For Decision-Making" (2010) at p xxxii
103 For more information visit the US Fish and Wildlife Service website at http://www.fws.gov/

- measures to incorporate wildlife and habitat enhancement into licensing;
- robust efforts at integrated resource planning;
- attempts to look at the basin as a system[104]; and
- requirements relating to water quality.[105]

Our particular focus will be on efforts to balance ecological and economic values, measure to incorporate wildlife and habitat enhancement into licensing and robust efforts at integrated resource planning

The Obligation to Balance Interests and to incorporate protective licensing conditions – FERC

The *Federal Power Act* ("FPA") sets out an administrative scheme for the regulation of hydroelectric projects and establishes FERC.[106]

FERC is an independent regulatory agency. It is responsible for determining whether licenses should be granted for the purpose of developing, operating, or maintaining works necessary for hydroelectric power.[107]

When making licensing decisions,[108] FERC *must* consider:

104Under the *Pacific Northwest Electric Power Planning and Conservation Ac*t, the Northwest Power and Conservation Council is notified that its efforts should **"to the greatest extent possible...be designed to deal with that river and its tributaries as a system",** 16 U.S.C. 839. In Oregon, whenever the WRC receives an application to appropriate water for a hydro project, it must consider whether the impacts of the project would be cumulative with proposed or existing projects in the same river basin. If the WRC finds that there are cumulative effects, it must conduct a review. The review must provide enough information to support a decision to approve or deny the project. RSO 543.255 After the order regarding cumulative impacts has been issued [per ORS 543.255], the WRC must conduct a case hearing upon request from any person RSO 543.230 (1)

105Under section 401(a)(1) of the *Clean Water Act* (CWA), FERC may not issue a license authorizing the construction or operation of a hydroelectric project unless the state water quality certifying agency has either issued water quality certification for the project or has waived certification by failing to act on a request for certification. Section 401(d) of the CWA provides that the certification shall become a condition of any federal license that authorizes construction or operation of the project .

106*The Federal Power Act* forms part of the US Code and is found in Chapter 16 at 16 USC 791-828c.

10716 USC 797(e). FERC may grant licenses lasting thirty to fifty years and may place conditions on the license. 16 USC 799. The Environmental Protection Agency (EPA) is the federal agency responsible for safeguarding human health and the environment. With respect to hydropower, the EPA is responsible for receiving and reviewing environmental assessment documents that federal agencies including FERC are required to submited under NEPA. The Agency publicly reviews and comments on all Environmental Impact Statements that stem from hydropower licensing and regulation. If the EPA decides that a federal agency has not met its environmental assessment obligations it refers the matter to the Council of Environmental Quality (CEQ) –the supervisory body for NEPA.

108The Act states that FERC must consult with Indian tribes and federal and state agencies. 16 USC 117(a) It also allows FERC and other Agencies administering lands to place mandatory conditions on projects on federal lands, including Indian reserves and national forests 16 USC 797(e)

- the extent to which the proposed project is consistent with the comprehensive conservation plans in place under federal or state authority;

- the recommendations of Federal and State agencies affected by the project; and

- the recommendations of Indian tribes affected by the project.

Balance - *The obligation to give equal consideration to power and non-power values in licensing*

Under the FPA, licenses are intended to protect the public interest by striking a balance between economic considerations, the facility's operation, the multi-use nature of the river, and environmental concerns.[109]

When deciding whether to issue a licence, FERC *must give equal consideration* to power and non-power values to ensure best use of waterways.[110]

This includes balancing various interests such as power development, energy conservation, mitigation of damage to and enhancement of fish and wildlife, protection of recreational activities and preservation of other aspects of environmental quality.[111]

Protection - The *obligation to include licensing provisions for the protection of fish and wildlife*

Every license must include provisions to protect fish and wildlife and mitigate damage to the environment.[112] Section 7(a) (2) of the *Endangered Species Act* (ESA) requires FERC to determine whether the proposed license will jeopardize the existence of an endangered or threatened species.[113]

<u>The Pacific Northwest – Integrated Planning, Protection and Enhancement</u>

The Bonneville Power Agency and The Mandate to Protect and Enhance

The Bonneville Power Agency (BPA) is a federal agency responsible for marketing power

10916 USC 803
11016 USC 117(a)
11116 USC 797(f)
112In order to adequately protect fish and wildlife affected by the development or operation of the project, (including their spawning grounds and habitat) each license <u>must</u> include conditions for protection, mitigation of damage, and enhancement of fish and wildlife. These conditions are based on recommendations of various Federal and State agencies, including the Bureau of Fisheries, and the Fish and Wildlife Service. Consultations must be undertaken "for the purpose of preventing loss of and damage to wildlife resources" wherever a license would control or modify a stream or body of water : Fish and Wildlife Coordination Act 16 USC 661-667e.
113 *Endangered Species Act of 1973*, 16 USC 1531-1544. FERC must consult with the National Marine Fisheries Service to make this determination, and must consider NMFS recommendations when placing conditions on the renewed license.

produced by federally owned dams in the Pacific Northwest.[114] The Bonneville dam and other federal dams in the area are created through Acts of Congress. They are not regulated by the State or FERC.[115]

In 1980, Congress enacted *The Pacific Northwest Electric Power and Conservation Act,* which expanded the mandate of BPA to include protection and enhancement of fish and wildlife affected by hydropower.[116]

Under the direction of that Act, BPA funds conservation programs developed by the Northwest Power Planning Council which is an independent planning body. Since 1978 over $13.8 billion has been allocated to fish projects by Bonneville.[117]

Integrated Planning and the Northwest Power and Conservation Council

The Northwest Power and Conservation Council (NWPC) is a planning, policy-making, and review body with a mandate to provide direction on electric power and environmental issues.[118]

The NWPC was created by an agreement between the U.S. Congress and the states of Idaho, Montana, Oregon, and Washington. The NWPC develops a fish and wildlife protection, mitigation, and enhancement plan (called a “fish and wildlife plan”) every 5 years.

Implementation of the plan is funded by BPA and overseen by FERC, and undertaken by the Federal Bureau of Reclamation, the Army Corps of Engineers, and public and private utilities.

The NWPC also prepares a 20-year electric power plan, which is updated every 5 years. The electric power plan forecasts how much power will be needed in the region over the next 20 years and ways the need will be met, including greater energy efficiency.

114It was originally created in 1937 to market electricity from the Bonneville dam on the Columbia River.

115This was under *The Bonneville Project Act* of 1937, 16USC 12B 832.

11616 USC 12H, see s.839(6) and 839d(1).

117 According BPA's own data. See Bonneville Power Administration (2014) *BPA Facts*. Available online at <https://www.bpa.gov/news/pubs/GeneralPublications/gi-BPA-Facts.pdf> last accessed March 20, 2015, at p.2.

118 NWPC was established pursuant to the *Northwest Power Act*, enacted in 1980

Part 3: Trends in Governance Practice

Trends in Governance Practice - From the Policy Framework to Planning, Acting and Learning

Rogers and Hall (2003) emphasize the importance of an enabling environment, especially political will, for improving water governance: one that will support necessary changes to create a coherent legal framework, reform and develop water institutions, realign financial and economic practices, and encourage a climate of trust and shared responsibility among stakeholders.[119]

An effective planning regime coupled with a commitment to put plans into action and a readiness to adaptively manage are essential elements of good governance. Many agree that there is much learning to do as we move from theory to actions. Our review of the literature and of the record suggests a number of key steps:

- acknowledging the implications of both flow alterations and compressed variation in lake levels as risk factors for ecological and community health
- developing a holistic and inclusive planning and operational approach
- enabling early and meaningful participation by communities
- careful consideration of how we attribute value to economic, social and ecological attributes
- recognizing the evolution in the science beyond the commitment to minimum flow requirements
- addressing knowledge gaps by identifying key areas for research including scientific and traditional knowledge as well as robust planning and operational tools
- recognizing the inherent risks associated with flow and hydro operations and adopting an open, adaptive approach
- enabling the consideration of a robust spectrum of alternatives for flow and levels
- considering carefully the type of governance structure that might enable this robust approach

Acknowledging the Implications of Flow Alterations and Compressed Variation in Lake Levels

There would appear to be general acceptance that substantial flow alterations are one of the

119Rogers, P., & Hall, A. W. (2003). *Effective water governance* (Vol. 7), Stockholm: Global Water Partnership.

key threats to riverine ecosystems. As noted by the Science Advisory Secretariat:

> *Such flow alteration can be directly linked to impacts on the physical attributes of rivers and cause subsequent ecological changes.*[120]

A considerable body of research related to the Laurentian Great Lakes also has highlighted the importance of fluctuating water levels for the health of biological communities. Concerns have been raised about the implications for wetlands and riparian habitat flowing from the artificial compression of lake levels. The importance of further study has been highlighted.[121]

Holistic and inclusive planning and operational approach

The importance of holistic and inclusive assessment and planning has been highlighted both by Indigenous communities and western scientists. In this proceeding, the most powerful call for an inclusive and holistic approach has been from the TCN. Their views are amply supported by western science including the Canadian Science Advisory Secretariat and Jagger and Smith:

> *From an ecosystem perspective, the holistic methods are the most comprehensive and best suited to the overall consideration of the broad range of species and ecological relationships and processes*. [122]

> *We envision that future, holistic management strategies for reservoir projects will be designed to maximize both ecological benefits and those associated with energy production. In contrast, conventional reservoir management strategies typically optimize energy and producer-economic benefits and address ecosystem values only as constraints on reservoir releases and elevations.*[123]

120Canadian Science Advisory Secretariat, "Framework for Assessing the Ecological flow Requirements to Support Fisheries in Canada" *(2013)* at p 3.

121See Steinman et al, *Influence of water-level fluctuation duration and magnitude on sediment–water nutrient exchange in coastal wetlands*, Aquatic Ecology, June 2014, Volume 48, Issue 2, pp 143-159. Coastal wetlands in the Laurentian Great Lakes provide both important habitat for fish and wildlife (Uzarski et al. 2005; Cooper et al. 2007; Niemi et al. 2007) and essential ecosystem services with very high value (Krantzberg and DeBoer 2008; Sierzen et al. 2012; Allan et al. 2013; Larsen et al. 2013). **They require fluctuating water levels to maintain healthy biological communities** (Chow-Fraser et al. 1998; Wilcox 2004; Gathman et al. 2005; Uzarski 2009) (emphasis added). See also Jonathan D. Midwood and Patricia Chow-Fraser, *Changes in aquatic vegetation and fish communities following 5 years of sustained low water levels in coastal marshes of eastern Georgian Bay, Lake Huron*, Global Change Biology, Volume 18, Issue 1, pages 93 – 105, 2012.

122Canadian Science Advisory Secretariat, "Framework for Assessing the Ecological flow Requirements to Support Fisheries in Canada" *(2013)* at p 7. The holistic method is described as: Examination of flows based on multiple data inputs including expert opinion, leading to recommendations of flow regimes for all components of the riverine ecosystem. May include consideration of socio-economic objectives. Useful to examine overall ecosystem function. Broad-scale, often comparable to environmental assessments in scope and content. These methods are often disciplinary in nature and may require the use of experts for each riverine element/component being assessed. As such, conducting these studies may be beyond the ability of most fisheries managers to conduct by themselves . Table 1, page 6.

123Henriette Jager & Brennan Smith, "Sustainable reservoir operation: can we generate hydropower and preserve ecosystem values?" (2008) River Research and Application 24 at p. 340.

Early and meaningful participation by communities

In the course of this hearing, cross examination by Manitoba Hydro has appeared to suggest that some issues are so controversial they should be left to the politicians.[124]

By contrast, the Manitoba Law Reform Commission has highlighted the importance of early and meaningful participation by communities especially when competing interests exist:

> *Decisions that have the potential to cause adverse environmental effects are always controversial and involve a broad range of stakeholders with interests that are often conflicting or competing. Therefore, it is extremely important that environmental assessment legislation and the policy decisions associated with the application of these legal frameworks are developed in a way that creates meaningful opportunities for public participation and the incorporation of public opinion into the design and approval of new and existing projects.*[125]

Independent witness Dr. McMahon[126] made a similar point:

> *stakeholder participation in the licencing process could potentially be made more effective, and prospects for studying and resolving stakeholder concerns improved, by integration of stakeholder issues into the licencing process from the start, rather than addressing stakeholder concerns after studies have been scoped and performed by the applicant (MH in this case).*[127]

Among the numerous potential positive outcomes of early community engagement are:

- improved scoping of the issues to be addressed
- clarification of community priorities and measurements of success
- the articulation of necessary research

Careful consideration of the value attributed to economic, social and ecological factors

Hydro decision making criteria

Manitoba Hydro agrees that aquatic ecosystems provide numerous functions of value to society.[128] Like many utilities, Hydro does not attribute any monetary valuation to the health of the Nelson River ecosystem.[129]

124Mr. Bedford: "Do you find, with the work that you've done over the years in the United States, that some decisions in operating major public structures like dams, control structures, are so politically sensitive, some would say politically volatile, that a majority of citizens will only tolerate those decisions being made by an elected representative of the people?" - Doug Bedford, LWR Hearing, March 17, 2015, p.1005 ll. 1-8

125LRC Consultation paper for Environment Act, p. 46/47.

126See also Dr. McMahon, (LWR Winnipeg Hearing), March 17, 2015, pp. 1017-1018, ll. 25, 1-10Dr. McMahon, (LWR Winnipeg Hearing), March 17, 2015, pp. 1017-1018, ll. 25, 1-10

127*Review of Hydrologic and Operational Models*, George F. McMahon, Ph.D., PE, D.WRE, PH

128Swanson, LWR Hearing March 12 2015 at p 468

In balancing considerations, including reliability, Manitoba Hydro attributes an economic value to the net revenue for Hydro and employs a value judgement for environmental considerations.[130] Environmental considerations become a constraint to the extent the regulator imposes those conditions in a license or Hydro in its discretion decides to adopt an environmental constraint:

> *There is no value function put into the modelling that says with certain river flows the system becomes healthier. We assume that it is healthy, given the rule set that we have.*[131]

> *Licence constraints, environmental constraints are exactly that, they are not – they constrain our operations.*[132]

Quite properly, Hydro acknowledges this is " an issue that's being struggled with" and "an area of growth in terms of understanding and research."[133]

Challenges to the Hydro approach

Indigenous witnesses in this proceeding have highlighted the incalculable loss occasioned by industrial and hydro activities:

> *But to us, we lost our riches where we lived on this Mother Earth, our riches was how we lived and what we ate and what we lived on from the animals.*[134]

The ISD and other western scientists have suggested that ecological values tend to be devalued when compared against economic and reliability values. As argued by Jager and Smith:

> *When economic and power values are contrasted with ecological benefits, the latter tend to be devalued simply because they are difficult to quantify using a single currency. This difficulty of projecting multi-dimensional ecological benefits onto a plane tempts us to neglect them altogether. Valuation methods tend to be subjective and often appear to reflect the bias of the individual assigning value, rather than being founded on well-accepted, internally consistent principles. Nevertheless, scientifically defensible valuation methods exist, and have been applied to reservoir operation.*[135]

129According to Mr David Cormie, Division Manager Power Sales and Operations for Manitoba Hydro, estimating ecosystem values and services "are externalities." According to Mr. Cormie, Manitoba Hydro has traditionally not included these externalities: "Only once in my memory have we included externalities in our operational planning... to the extent that there are other external values, generally we don't make those value judgements." David Cormie, LWR Hearing, March 12 at pp 469 and 470. If Manitoba Hydro staff finds an issue, then "Manitoba Hydro will either mitigate it, fix it, or we will change our operations so that our operations also not causing that unhealthy state." David Cormie, LWR Hearing, March 12 p. 471, ll. 14-16

130Gawne March 12 2015 at p 473.

131Cormie, March 12 2015 at p 471.

132Cormie, March 12 at p 470.

133Swanson, March 12 2015 at p 475

134Elder Martha Spence, (LWR Winnipeg), March 26, 2015, p. 1708, ll. 17-20.

135e.g. Kotchen et al., 2006: Henriette Jager & Brennan Smith, "Sustainable reservoir operation: can we generate hydropower and preserve ecosystem values?" (2008) River Research and Application 24.

The ongoing valuation debate

While many voices have critiqued the traditional approach adopted by utilities there is less agreement on an appropriate replacement.

Organizations such as the ISD[136] and learned authors such as Troy and Bagstad[137] and Jager and Smith[138] appear to lean towards valuing ecological services by attributing a monetary value to them. Troy and Bagstad have estimated the value of ecosystem services provided by southern Ontario's water and wetland systems at over *$40 billion each year,* exclusive of any consumptive use, power generation, or recreational revenues.[139]

This may be an important step towards levelling the playing field between economic and ecological values. However, it is open to strong criticism from Indigenous and other voices who may argue that you cannot put a price on a way of life:

> *And then other things is, how can you put a value on what's happened of our Treaty, our right, our way of life has been altered in a way for Playgreen Lake and for our families. Not just commercial fishermen, for our families, the other families in the community. Everything has been altered.*[140]

Taking a different approach, ground breaking processes such as the Glen Rock Canyon EIS had stakeholders including community members develop preference based values assigned to different criteria.[141]

In any future LWR and CRD scoping process, the question of how to appropriately value ecological, social and economic criteria will require careful consideration from the community, the utility and from Government.

136IISD Submission to the Manitoba Clean Environment Commission February 2014 *Strategic Large-Basin Management for Multiple Benefits* , p. 33

137Spatial Informatics Group Austin Troy and Ken Bagstad (2009), "Estimating Ecosystem Services in Southern Ontario" (2009) Ministry of Natural Resources Ontario at p 1. Also see: Bingham, G., R. C. Bishop, et al. (1995). "Issues in Ecosystem Valuation: improving information for decision making." Ecological Economics 14: 73-90, Millennium Ecosystem Assessment (2003). Ecosystems and Human WellBeing: A Framework for Assessment. Washington DC., Island Press

138The choice of currency and valuation of ecological health is an important issue in optimizations that consider multiple criteria. Few studies used monetary values as a common currency in optimization, but results of several studies are relevant to the relative valuation of energy (Ward, 1987; Ward and Lynch, 1996; Edwards et al., 1999;Hodge, 2001; Newlin et al., 2002; Draper et al., 2003). Henriette Jager & Brennan Smith, "Sustainable reservoir operation: can we generate hydropower and preserve ecosystem values?" (2008) River Research and Application 24 at p. 349. Although increased instream flows typically decrease hydropower revenue (producer costs), they may increase aggregate benefits to society. Loomis (1998) determined that the value of instream flows as aquatic habitat is higher than is assumed by most studies. Willingness-to-pay surveys showed that optimal flows (flows at which the value to the river ecosystem equals the opportunity cost of foregone hydropower or agriculture) are often significantly higher than minimum flows specified by law. (349)

139Spatial Informatics Group Austin Troy and Ken Bagstad (2009), "Estimating Ecosystem Services in Southern Ontario" (2009) Ministry of Natural Resources Ontario at p 1. Also see: Bingham, G., R. C. Bishop, et al. (1995). "Issues in Ecosystem Valuation: improving information for decision making." Ecological Economics 14: 73-90, Millennium Ecosystem Assessment (2003). Ecosystems and Human WellBeing: A Framework for Assessment. Washington DC., Island Press

140Councillor Saunders, (LWR Winnipeg Hearing), March 24, 2015, pp. 1519-1520, ll. 25, 1-6

The evolution beyond minimum flow requirements

A number of jurisdictions have attempted to take a short cut to ecological good health by adopting year-round minimum flow requirements.[142] However, there appears to be a significant body of science suggesting that minimum flows do not achieve the best ecological outcomes.

Recent Canadian and international research has suggested that a focus on minimum flows does not address the wider range of ecological flow requirements, including flow timing and the need for very high flows at some times of the year (e.g. to maintain channel structure, inundate wetlands or resuspend sediment to create spawning habitat for fish).[143]

Addressing Knowledge Gaps

Notwithstanding the RCEA and CAMP, Manitoba Hydro has suggested that a key challenge in achieving a modern balance between ecological, economic and social issues relates to knowledge gaps.[144]

141 Hajkowicz and Collins (2007) define multiple (or multi-) criteria analysis (MCA) as decision model that contains a set of decision options which need to be ranked or scored by the decision maker; a set of criteria, typically measured in different units; and a set of performance measures, which are the raw scores for each decision option against each criterion. They conclude that MCA is "being heavily used for water policy evaluation, strategic planning and infrastructure selection." Hajkowicz, Stefan and Kerry Collins. 2007. A review of multiple criteria analysis for water resource planning and management. Water Resources Management (2007) 21: 1553-1566. Huang et al. (2011) note that the approach evolved in response to the need to support environmental decision making that require consideration of tradeoffs between socio-political, environmental, and economic impacts, and where the debate is "complicated by various stakeholder views." Huang, Ivy B., Jeffrey Keisler, and Igor Linkov. 2011. Multi-criteria decision analysis in environmental sciences: ten years of applications and trends. Science of the Total Environment 409 (2011): 3578-3594.

142 The most common way that habitat-based goals are considered by water allocation problems is to impose minimum flow constraints. A minimum flow is loosely defined as the smallest amount of flow that can be left in the river without harming downstream fish populations. Henriette Jager & Brennan Smith, "Sustainable reservoir operation: can we generate hydropower and preserve ecosystem values?" (2008) River Research and Application 24 at pp. 342/343. The fact that pulse flows were found in the solutions above, without being requested as targets, suggests that providing a fixed minimum flow year-round does not always result in the best ecological outcome. (p. 346).The traditional approach of representing habitat requirements via constraints on minimum flow has advantages and disadvantages. The first advantage of this approach is that it assumes that the regulatory agencies have already quantified the ecological benefits of flow and used these in setting regulatory minimum flow releases. A second advantage is that it uses flow as a common currency, which simplifies combining environmental with non-environmental objectives. However, using regulatory minimum-flow constraints does not ensure that goals for fish habitat will be met for several reasons. First, as Loomis (1998) pointed out, setting minimum flows is a political process that balances environmental objectives with other, potentially conflicting goals. Consequently, it is unclear to what extent the goal of providing fish habitat is really addressed. (p. 349)

143 Another approach would be to develop **a set of operating rules and benchmarks for flows**, and for maintaining natural connections between the river and its flood plain and adjacent marshes. Rules might be different for different river reaches or parts of the system. Rules may be needed for: **Extreme low-flow events**: which can be important for species reproduction and establishment, and to purge invasive species. **Base flows**: which can be important for maintaining a wet channel, pools and associated habitats and for maintaining water tables. **Intermittent flow pulses**: which can be important for improving water quality after long dry periods, for triggering breeding and migration, for maintaining appropriate salinity levels, and for shaping the river channel. **Floods**: including bank-full and overbank flows: which can be important for sediment transport, for maintaining channel form, and for inundating floodplains and wetlands and maintaining their connection to the river channel threshold. Please see Canadian Science Advisory Secretariat, "Framework for Assessing the Ecological flow Requirements to Support Fisheries in Canada" *(2013)* at p 3. and Linnansaari, T., Monk, W.A., Baird, D.J. and Curry, R.A. 2013. *Review of approaches and methods to assess Environmental Flows across Canada and internationally*. DFO Can. Sci. Advis. Sec. Res. Doc. 2012/039

144 Mr. Cormie, pp. 1169-1170, ll. 21-25, 1

While a community and expert engagement process will clearly be critical in more fully addressing knowledge gaps, writers such as Jager and Smith have highlighted there are at least three key steps necessary for bringing operations closer to the objective of sustainability:

> *(1) conduct research to identify which features of flow variation are essential for river health and to quantify these relationships[145], (2) develop valuation methods to assess the total value of river health and (3) develop optimal control softwares that combine water balance modelling with models that predict ecosystem responses to flow.[146]*

The importance of understanding the relationship between flow and aquatic resources also has been underlined by the Canadian Science Advisory Secretariat.[147]

In addition to recognized gaps in knowledge relating to flows and their effects on habitat, independent experts in this proceeding have highlighted core knowledge gaps relating to:

- the effects of compression of lake water levels on the health of wetlands and riparian habitats, and
- the effects of compression of lake water levels on erosion around Lake Winnipeg[148]

One independent expert has characterized the state of knowledge relating to wetlands an as trivial:

145For example, in a Hydro-electric operational context please see *Mid-Columbia Effects of RE5 Changes on Incubation and Early Rearing* Sturgeon. The overall objective is to model the effects of Revelstoke Dam discharges and ALR levels on velocity/depth patterns in the White Sturgeon egg deposition/incubation and early rearing area. The work will examine the usefulness of such techniques in describing both hydraulic properties of critical fish habitat and possible mitigation options, Columbia River Project Water Use Plan Columbia River White Sturgeon Management Plan Monitoring Program and Physical Works Annual Report: 2014. An interesting examples can be found in the work of the Grand River Conservation Authority in Ontario. The Authority has undertaken an Evaluation of Stream Flows Requirement of Species which involves dividing the river into reaches and understanding their characteristics, deciding the key species to protect, evaluating their flow, sediment, and prey requirements (ie life cycle preferences) and then aiming for a flow regime that provides those conditions in that reach. http://www.grandriver.ca/eflows/2WongEFlows.pdf

146 Henriette Jager & Brennan Smith, "Sustainable reservoir operation: can we generate hydropower and preserve ecosystem values?" (2008) River Research and Application 24 at p. 340.

147Given the uncertainty around key relationships between flow and aquatic resources, further scientific investigation of the ecosystem-scale changes that affect fisheries subject to flow alteration is recommended. The objective of this research should be to define ecological flow assessment criteria to better inform both fisheries management decisions and policy and guidance development. Canadian Science Advisory Secretariat, "Framework for Assessing the Ecological flow Requirements to Support Fisheries in Canada" *(2013)* at p 2. Given the challenges of analysis, it has suggested a multijurisdictional oversight committee and research chair could design research and monitoring programs to answer management questions that are sufficiently sophisticated and scientifically defensible Canadian Science Advisory Secretariat, "Framework for Assessing the Ecological flow Requirements to Support Fisheries in Canada" *(2013)* at pp 13/14.

148Suzek, Baird: "So how much sand is in the near shore environment, what is the geology like, what is the wave exposure like? But certainly in general, and this has been shown on the Great Lakes where there's been more scientific research, I think, than on Lake Winnipeg..." *LWR Transcript*, March 23, 2015, pp. 1413-1414, ll. 25, 1-5)

...it would be fair to say that the research levels in this province are relatively modest as compared to perhaps the Laurentian Great Lakes?"

*Dr. Goldsborough: I would go further. They are **trivial** in comparison to Laurentian Great Lakes.*[149]

There also is substantial uncertainty on the record with regard to the current robustness of the water resource system analysis of Manitoba Hydro. Evidence from independent witness Dr. McMahon has suggested that modifications may be required if Hydro is to appropriately:[150]

> investigate opportunities to improve LWR to mitigate future problems and meet forecasted/emerging needs
>
> meaningfully address interdependent and cumulative effects of climatological, hydrological, physical and operational changes during the term of the next licence
>
> maximize and equitably allocate the benefits of multipurpose regulation while minimizing basinwide flood risks, drought risks and environmental impacts

As part of a more robust community and scientific engagement process, Dr. McMahon has underscored the importance of transparency and enabling community, stakeholder and expert access to evolving system planning tools.[151]

Adaptive Management in the face of risk

There appears to be little doubt the core ecological principles related to natural flow are equally applicable to the planning and operational considerations related to Hydro operations.

However, as noted by the Canadian Science Advisory Secretariat and Jager and Smith, the singular operating characteristics of each Hydro structure coupled with significant uncertainty related to inflows, the value of hydropower and the response to ecological flows will present challenges in developing a more balanced analytic approach.[152]

Given the evolving state of knowledge and the high degree of uncertainty a robustly adaptive approach is likely to be required.[153]

149LWR Transcript, March 16, 2015, (p. 929, ll. 18-20) See also Dr. Goldsborough: There have been not many studies done. The Netley-Libau Marsh has frankly been the focus of our work. And prior to that, there had been almost nothing done on the Libau Marsh. So I think it's a safe statement to say we know very little about the coastal wetlands of Lake Winnipeg as compared to the ones on the Laurentian Lakes." (pp. 936-937, ll. 22-25, 1-7)

150In the long term, more comprehensive water resource system analysis capabilities will be needed to meaningfully address interdependent and cumulative effects of climatological, hydrological, physical and operational changes during the term of the next licence. Each of these changes has the potential to create significant tradeoffs between competing and complementary project purposes, require structural alterations, changes in operating rules, or some combination of all of these. These aspects of LWR will need to be considered in an integrated fashion in the formulation of a sustainable plan for system operations and to ensure that associated costs, benefits and environmental impacts are equitably allocated . *Hydrologic and Operational Models*, Prepared by: George F. McMahon, Ph.D., PE, D.WRE, PH 5-4 – 5-7. Manitoba Hydro has suggested during their March 12, 2015 discussion with CAC Manitoba that there system analysis capability was more robust than suggested by Dr. McMahon.

151McMahan, Ibid, 5-9

Robust Consideration of Alternatives

As daunting and novel as these tasks may appear in the Manitoba context, there are some intriguing examples of robust efforts to better balance economic, ecological and social issues in the context of regulated operations. In particular:

- Roughly two decades ago, the Glen Canyon EIS sought to improve downstream habitat through flow alterations while balancing reliability and economic concerns;

- Very recently, in Plan Ontario 2014, the IJC has presented its findings aimed at balancing a number of competing interests including wetland rehabilitation and hydro economics in the context of a regulated (compressed) lake.[154]

While both processes are notable for their focus on community inclusion, they also have some distinguishing characteristics related to the valuation approach adopted and the alternatives analysis employed.

Ilustrative Approach - The Glen Canyon Dam Adaptive Management

152Hydroelectric peaking (or „hydro peaking") is characterized by rapid changes in discharge to meet peak electricity demand, resulting in the alteration of hydrological characteristics of flow downstream (including magnitude, duration, timing, rate of change, and frequency of change in flow). Additionally, the rate(s) of change to discharge and river stage were not considered. We note that the basic ecological principles (i.e. the „natural flow paradigm") and methodologies discussed here still have application to these projects. However, these situations are highly complicated both ecologically and economically, and the associated issues are typically unique to each situation. Canadian Science Advisory Secretariat, "Framework for Assessing the Ecological flow Requirements to Support Fisheries in Canada" *(2013)* at p 14. See also Reservoir inflow, which depends on precipitation and runoff, was the main source of uncertainty in the water allocation problems reviewed here. Henriette Jager & Brennan Smith, "Sustainable reservoir operation: can we generate hydropower and preserve ecosystem values?" (2008) River Research and Application 24 at p 347 Fluctuations in the value of hydropower are a second source of uncertainty for optimizations that use a monetary currency. We believe that uncertainty associated with ecological responses to flow could be as great as that associated with reservoir inflows or hydropower markets. However, uncertainty in ecological responses to flow was considered in only a few of the studies we reviewed. (p. 348)

153See Alan Diduck and Patricia Fitzpatrick "Assessing Adaptive Management in the Keeyask EIS" (2013). See also Given the inherent uncertainty in many of the ecological flow methodologies described, the use of adaptive management based on long-term and follow-up monitoring (a process based on the Before/After/Control/Impact experimental design) with multiple control locations is recommended. Canadian Science Advisory Secretariat, "Framework for Assessing the Ecological flow Requirements to Support Fisheries in Canada" *(2013)* at p 2.

154International Joint Commission, "Lake Ontario St-Lawrence River Plan 2014: Protecting against extreme water levels, restoring wetlands and preparing for climate change" (2014). In the case of Plan Ontario, six interest areas were identified including navigation, municipal and industrial, water use, hydropower, recreation, coastal impacts and the environment. Economic performance indicators (for example, the value of additional hydropower energy produced) were approved. Quantitative environmental "performance indicators" also were used in its evaluation (for example, an index of reproductive success for the Black Tern). Their selection was based on the sensitivity of the indicator to changes in water levels and flows, the significance and representativeness of the indicator and the certainty in the research results. Experts and members of the public worked with the Study Board. They defined regulation plan objectives and then collaborated to create a computer evaluation model that measured how well alternative regulation plans met those objectives. To ensure that the regulation plans developed in the study could perform under a wide range of water supply conditions, plans were tested with stochastically-generated water supplies as well as the historical water supplies. The plans also were tested with four climate change scenarios. The framework has been used since 2006 to formulate and evaluate hundreds of alternative regulation plans, including Plans 2007, Bv7 and 2014. In addition, the approach will be used in the future to support adaptive management.

Program[155]

Background

The Glen Canyon Dam is a major water structure on the Colorado River, upstream of the Grand Canyon. From 1964 to 1991, the dam was operated solely on the basis of power production criteria. But over time, there were growing issues with the profound flow and ecosystem changes the dam had caused.

In particular, concerns were expressed related to the shift from a naturally sediment-laden river with seasonal flow fluctuations to more consistent, clearer, and colder flows, with associated changes in the composition of the aquatic ecosystem.

In 1989, the Secretary of the Interior directed the Bureau of Reclamation (which operates the dam) to conduct a study of the dam's environmental impacts.

Priority Development, Valuation and Scoping

The scoping process was initiated in early 1990. More than 17,000 comments were received during the scoping period.

Priority values

The EIS team consolidated and refined the public issues of concern, identifying the significant resources and associated issues to be analyzed in detail. These resources include: water, sediment, fish, vegetation, wildlife and habitat, endangered and other special status species, cultural resources, air quality, recreation, hydropower, and non-use value.

Further meetings were held with representatives from the cooperating agencies and public interest groups who provided comments on the criteria for development of reasonable alternatives for the EIS.

Alternatives Considered

Nine alternative methods of operating Glen Canyon Dam (including the No Action Alternative) were presented in the final EIS. The eight action alternatives were designed to provide a reasonable range of alternatives with respect to operation of the dam. One alternative would allow unrestricted fluctuations in flow (within the physical constraints of the power plant) to maximize power production, four would impose varying restrictions on fluctuations, and three others would provide steady flows on a monthly, seasonal, or annual basis.

Type of Research Conducted

Analysis was undertaken with regard to changes in flows and ramping rates and potential impacts upon downstream resources. A complete range of research flows was conducted from June 1990 to July 1991. These included high and low fluctuating flows with fast and slow up and down ramp rates.

Glen Canyon Environmental Studies Phase II identified cause and effect relationships between downramp rates and adverse impacts to canyon resources.

155Glen Canyon Record of Disposition, 1996.

Outcome

A 1996 Record of Decision set new operating parameters, including a requirement for scheduled high-flow releases designed to mimic natural processes such as rebuilding sandbars and restoring backwater habitats for endangered species.

Adaptive Management

The Record of Decision also established the Glen Canyon Dam Adaptive Management Program (http://www.usbr.gov/uc/rm/amp/), as a mechanism for planning and coordinating monitoring and research on the effects of the Glen Canyon Dam on upstream and downstream ecosystems.[156]

The Adaptive Management Program provides not only a new organizational *structure* but also a formal, collaborative, and rigorous science-based operating *process* for the Glen Canyon Dam. All of the program's research proposals, work products, and even the dam's management plan (revised every five years, with annual updates) are peer reviewed by independent experts. The process is transparent and accountable.

Considerations related to governance structure

It may be difficult to recommend a particular governance strategy until the issues have been better defined and public and stakeholder interests better understood. Once scoping has been completed and some consensus reached on the main issues to be discussed and decisions to be made, an ongoing governance structure might be chosen.

Some of the options for consideration may be:

1. Processes operated under existing institutional structures

- Model 1: Basin or Problem-Based Commission Established Under Existing Operating Agreements; e.g., river basin plans under EU Water Framework Directive[157]
- Model 2: Formal Interagency Committee Structure; e.g., Glen Canyon Dam Adaptive Management Program[158]

156The Adaptive Management Work Group is a federal advisory committee with membership appointed by the Secretary of Interior; its members are drawn from each of the cooperating agencies, Colorado River basin states, tribes, environmental groups, recreation interests, and contractors for federal power from Glen Canyon Dam.

157An EU Directive is a law that binds Member States in a particular context or to achieve a particular objective (Member States have the freedom to determine how this objective is achieved). Directives must normally be reflected in national laws to be in force. The EU's Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (Water Framework Directive) requires that Member States establish a "river basin management plan" to be established and updated every six years, as a basis for coordinated protection of surface and groundwater quality and quantity, and associated ecological systems. The plan must contain a detailed account of how the objectives set for the river basin (ecological status, quantitative status, chemical status and protected area objectives) are to be reached within the timescale required. See: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32000L0060

158The Glen Canyon Dam Adaptive Management Program's charter was established under the Grand Canyon Protection Act of 1992, Public Law 102-575, Sections 1802, 1804, and 1805, Federal Advisory Committee Act, as amended, 5 U.S.C. Appendix 2. See https://www.usbr.gov/uc/rm/amp/amwg/pdfs/amwg_charter.pdf

- Model 3: Permanent Water Management Boards Within Existing Agencies; California State Water Control Boards[159]; possibly also the French Agences de Bassins[160]

2. Standalone Basin or Problem-Based Commission

- e.g., Fraser Basin Council, BC[161]; Murray-Darling Basin Authority[162] (these examples have authority formally delegated by state/provincial/federal governments through standing agreements allowing the commission/authority to operate autonomously)

3. Crown Corporation

- e.g., SaskWater[163]; Tennessee Valley Authority[164]

159California's State and Regional Water Boards (one for each of nine regions based on major watersheds) are responsible for protecting California's water resources. California adopted a watershed-based approach to water resources management (Watershed Management Initiative, or WMI) about 10 years ago The system places heavy emphasis on stakeholder engagement. The goals of the WMI are to 1) use water quality to identify and prioritize water resource problems within individual watersheds; involve stakeholders to develop solutions; 2) better coordinate point source and nonpoint source regulatory efforts; establish working relationships between staff from different programs; and 2) better coordinate local, state and federal activities and programs, especially those relating to regulations and funding, to assist local watershed groups.

160See for example Lanfranchi, G. 2008. Evaluation of the water governance in the French river basin. Technical Synthesis. Paris: Paris Institute of Life, Food and Environmental Sciences. Office International de l'Eau.

161The Fraser Basin Council operates under a good-faith agreement signed in 1997 with major agencies, stakeholders, and citizens; see http://www.fraserbasin.bc.ca/_Library/Fraser_Basin_Council/charter_for_sustainability.pdf. See also Nowlan, Linda and Karen Bakker. 2007. Delegating Water Governance: Issues and Challenges in the BC Context. Paper for the BC Water Governance Project, a partnership of the Fraser Basin Council, the Ministry of the Environment, the Fraser Salmon and Watershed Program, Georgia Basin Living Rivers Program and Fisheries and Oceans Canada; available online at http://www.tonydorcey.ca/597/Posts/FBCwatergovernancefinal2.pdf

162Murray-Darling Basin Authority. 2014. Murray-Darling Basin water reforms: Framework for evaluating progress. Licensed from the Murray–Darling Basin Authority, under a Creative Commons Attribution 3.0 Australia Licence. Canberra City, ACT: Murray-Darling Basin Authority. The MDBA website provides extensive information about statutory authority and agency operations: http://www.mdba.gov.au.

163SaskWater is a provincial Crown corporation in Saskatchewan. It professional water and wastewater services to 63 communities, seven rural municipalities, 83 rural pipeline groups, 16 industrial and approximately 237 commercial and end user customers; see http://www.saskwater.com.

164The Tennessee Valley Authority is a US government corporation and the largest public power provider in the country. It was established by Congress in 1933 to address a wide range of environmental, economic, and technological issues, including the delivery of low-cost electricity and the management of natural resources. See http://www.tva.com/abouttva/index.htm

Part 4: The Common Law and our Obligation to the Natural Environment

A collective responsibility

A central Canadian value is the stewardship of the environment. The Supreme Court has held:

> *. . our common future, that of every Canadian community, depends on a healthy environment. . . . This Court has recognized that "(e)veryone is aware that* ***individually and collectively, we are responsible for preserving the natural environment*** *. . . environmental protection [has] emerged as a* ***fundamental value in Canadian society...*** *"*[165]

Is there an enforecable duty?

But what is the nature of that obligation? Is there an enforceable duty on government to act diligently to restore and protect? Should there be?

Questions such as these are important for those Manitobans who take the view that the Province has been too passive in the face of significant impacts from the CRD and Lake Winnipeg.

The Public Trust Doctrine

In the United States,[166] there is a well developed body of jurisprudence that imposes a duty on the state to:

- 'maintain the *purity and flow* of our waters for future generations *and* to assure that the waters of our land are put to *reasonable and beneficial* uses". (emphasis added)
- take the public interest into account before planning and allocating water resources[167]
- revisit or reconsider previous decisions if the impacts on the public trust uses had not been considered at the time or circumstances have changed since the initial decision was made.

As set out in Appendix 7, there has been a robust evolution of the US common law public trust doctrine (PTD) which parallels its entrenchment in a number of US constitutional and legislative provisions.

As the Hawaii Supreme Court held *In Re Water Use*, the doctrine is much more than a mere statement of values. It imposes a duty on the state and regulators to act proactively to protect and advance public rights in the resource:

> *In practical terms, this means that the burden ultimately lies with those seeking or approving such uses to justify them in light of the purposes protected by the trust. ... As such the Commission must not relegate itself to the role of a mere "umpire passively calling balls and strikes for adversaries appearing before it", but instead* ***must take the initiative*** *in considering, protecting and* ***advancing*** *public*

165 *British Columbia v Canadian Forest Products Ltd* 2004 SCC 38, [2004] 2 SCR 74, para 7

166 See Appendix ___.

167 The rights and benefits protected under the PTD are not absolute and must be balanced with the need for a regulated water use regime.

*rights in the resources at every stage of the planning and decision making process." ... Specifically, the public trust **compels** the state duly to consider the cumulative impact of existing and proposed diversions on trust purposes and to implement reasonable measures to mitigate this impact, including the use of alternative sources. In sum, the state may compromise public rights in the resource pursuant only to a decision made with a level of openness, diligence, and foresight commensurate with the high priority these rights command under the laws of our state.*[168] *(emphasis added)*

A foundation for the Recognition of the Public Trust in Canada

There are foundations for the recognition of the PTD in other Canadian legal traditions.[169] Many Indigenous legal traditions recognize a responsibility to all of Creation.

In the context of the recognition and affirmation of treaty and aboriginal rights, our Supreme Court has recognized a duty on the Crown to act diligently when it assumes discretionary control over a specific Aboriginal interest.[170] In the face of a pattern of mistakes and inaction that persisted for more than a decade, the Supreme Court observed that:

> *a persistent pattern of errors and indifference that substantially frustrates the purposes of a solemn promise may amount to a betrayal of the Crown's duty to act honourably in fulfilling its promise.*[171]

The public trust has been expressly recognized in one Canadian statute. Section 38(1) of Yukon's *Environment Act* articulates the public trust[172]:

> *Recognizing that the resources of the Yukon are the common heritage of the people of the Yukon including generations yet to come;*
>
> *Recognizing that the Government of the Yukon is the trustee of the public trust and is therefore responsible for the protection of the collective interest of the people of the Yukon in the quality of the natural environment.*
>
> *...*
>
> *38(1) The Government of the Yukon is the trustee of the public trust.*

168In Re Water Use Permit Applications, 9 P.3d 409.

169We note the concept of collective responsibility has robust support in a number of international documents. For example, please see Declaration of the United Nations Conference on the Human Environment, June 1972 Principle 4 Man has a **special responsibility** to safeguard and wisely manage the heritage of wildlife and its habitat, which are now gravely imperilled by a combination of adverse factors. Nature conservation, including wildlife, must therefore receive importance in planning for economic development. (emphasis added) See also the World Charter for Nature, 1982 . The Dublin Statement on Water and Sustainable Development - Adopted January 31, 1992 in Dublin, Ireland - International Conference on Water and the Environment

170*Manitoba Metis Federation Inc. v. Canada (Attorney General)*, 2013 SCC 14 (SCC), para 9.

171MMF, para 82. See also *R. v. Kokopenace*, 2013 ONCA 389 (Ont CA)

172See also the Quebec *Act to Affirm the Collective Nature of Water Resources and Provide for Increased Water Resource Protection*. Interestingly Article 10 of the NFA refers to minimization of damage, and reads: 10.1 Manitoba shall have regard to minimizing the destruction of wildlife by controlling the water levels and flows to the extent that it is practical to do so.

(2) The Government of the Yukon shall, subject to this Act or a schedule 1 enactment, conserve the natural environment in accordance with the public trust.

The Supreme Court and the Public Trust

A common law PTD has not yet been recognized in Canada. The leading decision is *British Columbia v Canadian Forest Products Ltd* (*Canfor*).[173] In that decision, the Court noted there was

> no reason to neglect the potential of the common law, if developed in a principled and incremental fashion, to assist in the realization of the fundamental value of environmental protection.[174]

The Court was speaking in the context of a claim for compensation for environmental damages. But it did offer extensive discussion of the PTD highlighting its roots in English law[175] and its robust development in the United States.[176]

Binnie, for the majority, left open the question of whether Crown owed a duty to the public:

> *It seems to me there is no legal barrier to the Crown suing for compensation as well as injunctive relief in a proper case on account of public nuisance, or negligence causing environmental damage to public lands, and perhaps other torts such as trespass, but there are clearly important and novel policy questions raised by such actions.* ***These include the Crown's potential liability for inactivity in the face of threats to the environment, the existence or non-existence of enforceable fiduciary duties owed to the public by the Crown in that regard, the limits to the role and function and remedies available to governments taking action on account of activity harmful to public enjoyment of public resources,*** *and the spectre of imposing on private interests an indeterminate liability for an indeterminate amount of money for ecological or environmental damage. (para 81)*

The Public Trust and LWR

In the context of the LWR/CRD dialogue, there are potential powerful ramifications from:

- the principle of responsibility to the environment acknowledged in both Indigenous legal traditions and *Canfor*
- the duty to act diligently flowing from the Honour of the Crown and (perhaps) the

1732004 SCC 38, [2004] 2 SCR 74

174Binnie for the majority, para 155.

175Since the time of de Bracton (mid 13th Century)it has been the case that public rights and jurisdiction over these cannot be separated from the Crown. This notion of the Crown as holder of inalienable "public rights" in the environment and certain common resources was accompanied by the procedural right of the Attorney General to sue for their protection representing the Crown as parens patriae. This is an important jurisdiction that should not be attenuated by a narrow judicial construction. (para 76)

176*British Columbia v Canadian Forest Products Ltd* 2004 SCC 38, [2004] 2 SCR 74, Binnie, J. for the majority, paras 77 - 80

common law PTD[177]

The most blunt usage of the PTD doctrine might be to compel government action in the face of adverse environmental developments.

But the PTD can also act as a powerful guide to a consensus driven effort to achieve greater balance between social, economic and ecological interests. Many jurisdictions in North America have looked to the PTD as a means to promote our collective commitment to the environment.

It is open to the Province of Manitoba to do the same.

177We note that in *In Davidson v Manitoba Hydro* (1999), Wright J stated that once a license is issued, the Water Power Act "does not infer a continuing or supervisory role for the Government…beyond perhaps an obligation to assure compliance with the terms of the license." (at para 34) However, that decision predated the *Canfor* decision and to our knowledge the PTD was not pled in Davidson.

Part 5: Gaps, Silos and Grandfathers

Gaps, Silos and Grandfathers

In this section, we present a brief discussion of gaps in Manitoba's approach to water power governance. In Appendix 5, we present a more detailed overview of the water governance scheme in Manitoba. In Appendix 8, we offer some preliminary views of legal questions arising from the *WPA* and *EA*.

Contributions of Hydro and the Province

Amid profound concerns in this forum regarding certain aspects of the operations and regulation of LWR and CRD, it is important to acknowledge areas where Hydro and the Province have demonstrated environmental leadership.

In many circles, the partnerships of Hydro with the Keeyask Cree Nations and the NCN is seen as a significant effort at reconciliation. Similarly, there were many innovative aspects to the environmental assessment presented by the Keeyask partnership during the recent EIS.

In other legislative contexts, the Province has made important legislative contributions with the potential to:

- protect instream flows and aquatic ecosystems[178]
- improve watershed planning[179]

The Province also has taken a keen interest in issues related to eutrophication and the reduction of phosphorous and nitrogen in Lake Winnipeg.

An analytically scathing critique

Although politely offered, perhaps the most scathing critique of the Provincial policy and legislative approach with regard to water power governance in this proceeding came from Manitoba Hydro. When questioned by the Board in terms of the need for a road map for the LWR license renewal, Hydro articulated issues related to:

- knowledge gaps[180]
- the need for advance stakeholder cooperation[181]

178 *The Water Rights Act* When deciding whether to grant a license to use water or develop proposed works, the Minister must consider "scientific and other information relating to the groundwater and water body levels, and the in-stream flows that are necessary to ensure that aquatic ecosystems are protected and maintained". (s. 9.1) The Minister may refuse to issue a license if the action authorized would negatively affect an aquatic ecosystem. (s. 9.1(2)) The Minister also has the authority to suspend or restrict the rights of a licensee if the water flow is insufficient to ensure that aquatic ecosystems are protected and maintained. The Minister's opinion must be "based on scientific information about protecting and maintaining an aquatic ecosystem of the type under construction". (s. 9.2) However, does s. 7.1 exempt certain Hydro operations from the Act?

179 *The Water Protection Act – S.* 4(a) gives the LG in C the authority to make regulations designating watersheds and requiring a water planning authority to develop a watershed plan. The watershed plan must identify issues relating to the protection, conservation or restoration of water, aquatic ecosystems and drinking water sources and contain objectives, policies and recommendations and recommendations on such things as the protection, conservation or restoration of water and aquatic ecosystems. (s. 16(1).

180 Cormie, LWR Transcripts, p. 1169, ll. 21-25

181 Cormie, LWR Transcripts, p. 1170, ll. 2-10

- consideration of how ATK fit within the licensing process[182]
- clarity in terms of compensation responsibilities under an alternative governance regime[183]

More powerfully though, Hydro expounded upon the apparent gap in environmental oversight. Suggesting that the the *Water Power Ac*t pertains chiefly to "administration of licenses under the Act", Hydro observed that there is nothing to be said in the WPA for

> *other issues, **environmental issues**…those **aren't addressed** in there*.[184]

Manitoba Hydro also noted the challenges of looking at LWR without considering the compounding effect of other projects. Noting the difficulty of separating the effects of LWR from Kelsey and CRD, Hydro adverted to the possibility of an "integrated licences project" which would look at the projects together.[185]

A policy absence in shoreline protection

Based on their experience in other North American jurisdictions, the independent witnesses and erosion experts, Baird & Associates, also noted a significant gap in terms of Provincial policies and regulations to manage shoreline hazards and guide new development:[186]

> *Compared with other Provincial and State jurisdictions with management responsibilities for the large freshwater lakes of North America, the Province of **Manitoba has limited policies** and regulations to manage shoreline hazards and guide new development. . . .In other jurisdictions the Provincial and State agencies develop legislation, policies and programmes to regulate shoreline development, identify and map shoreline hazards, and protect natural resources.*
> ....
>
> ***With the absence of senior government policies** to guide important management decisions along their shoreline, the RMVB recently developed their own Shoreline Management Plan (Baird, 2014). Moving forward, the RMVB model is one option that could be adopted elsewhere to map coastal hazards and develop comprehensive solutions to manage shorelines in Manitoba. An alternative or complimentary approach **would be enhancing the policy** and legislative framework of the Provincial government. The ultimate path forward should be determined by government in consultation with the stakeholders throughout the Province of Manitoba.[187]* (emphasis added)

182Cormie, LWR Transcripts, p. 1171, ll. 9-13
183Cormie, LWR Transcripts, pp. 1171-1171, ll. 14-25, 1-4
184Cormie, LWR Transcripts, p. 1170, ll. 11- 15
185Cormie, LWR Transcripts, pp. 1170-1171, ll. 16-25, 1-2
186Baird, Lake Winnipeg Erosion and Accretion Processes , A Compendium to the Lake Winnipeg Shoreline Management Handbook February 17, 2015
187Baird & Associates, " Lake Winnipeg Erosion and Accretion Processes: A Compendium to the Lake Winnipeg Shoreline Management Handbook" (February 2015) at p 3.0

Environmental Loopholes and Regulatory Blindspots

Given the comments of Hydro, the record of this proceeding and our examination of governance schemes in other jurisdictions, it would not be credible to deny the existence of an environmental loophole and a regulatory blindspot with regard to LWR and CRD.

At the risk of lapsing into rhetoric, it would be difficult not to conclude that the Province has failed to act diligently in its legislative and regulatory functions. How can it be that 39 years after the interim license, over a decade after the CEC report in Wuskwatim and four years after the initial Terms of Reference, we have such substantial knowledge gaps?

With regard to data:

- Why is there such a trivial state of research about wetlands in comparison to the Laurentian Great Lakes?
- Where is the ecological flow analysis?
- Where is the compilation of ATK and the support for the inclusive, holistic process requested by communities such as the TCN?

With regard to public process:

- Given the undoubted compounding effect of LWR/CRD why is there no integrated assessment?
- Given the alleged non-applicability of the *Environment Act*, why is this unusual review being undertaken by the CEC?
- What is the public participation process associated with the *Water Power Act*?

In terms of legislation:

- Where are the criteria for determining whether a project is exempted from Environmental oversight?
- Why have no remedial steps been taken to address the alleged non-applicability of the *Environment Act* to structures in existence prior to its passage?
- Where is recognition of the importance of ecological flow in the legislative scheme?
- Where is the recognition of the importance of balancing environmental, social and economic factors in making determinations with regard water power governance?

- Where is there legislative recognition of the need to look at the Nelson River watershed as a whole?

With regard to licensing and assessment?

- Where is the licensing protection for habitat?
- Was there an express determination that LWR and CRD are exempt from regulation prior to the issue of the TOR? If so, are there reasons for decision?

A somewhat unusual grandfather clause?

Grandfather clauses are not unknown in environmental legislation.[188] Indeed, a thin but captivating US legal literature offers a robust criticism of grandfather clauses on the grounds of:

- social inequity in that the historic costs of pollution are disproportionately borne by the poor[189]

- economical inefficiency in terms of the risks and incentives which flow from grandfathering[190]

In environmental assessment legislation, developments that were completed prior to the enactment of such legislation are often considered exempt from the environmental assessment regime. This is frequently done through the inclusion of a "grandfather clause" in the new legislation that explicitly exempts the projects from the new legal regime. In some cases, this provisions will contain a mechanism for bringing pre-existing developments under the new legislation.

For example, *The Mackenzie Valley Resource Management Act*[191], contains a grandfather clause, which provides an *explicit exemption*:

> *s. 157.1.Part 5* ***does not apply*** *in respect of any licence, permit or other authorization related to an undertaking that is the subject of a licence or permit issued* ***before June 22, 1984****, except a licence, permit or other authorization for an abandonment, decommissioning or other significant alteration of the project.* (emphasis added)

188A "grandfather clause" is a section of an Act that generally states that developments/licences/etc. (depending on the wording and the subject matter of the legislation) that existed before the enactment of the current piece of legislation are not required to comply with the standards and legal processes that are included in the current legal regime.

189Heidi Robertson, "If your Grandfather could pollute, so can you: Environmental "Grandfather Clauses" and their role in environmental inequality", 1995, Catholic University Law Review, 45. Robertson suggests that such clauses create virtual **"safe havens"** for existing polluting facilities. (134)

190Kaplow, *AN ECONOMIC ANALYSIS OF LEGAL TRANSITIONS*, Harvard Law Review, January 1986, No. 3, p. 513. This simultaneous consideration of risk and incentives leads to the conclusion that government transitional relief generally is undesirable. (615) See also Saul Levmore, *Changes, Anticipations, and Reparation*s, Columbia Law Review, Vol. 99, No. 7 (Nov., 1999), pp. 1657-1700 If new law is good law, then there is much to be said for encouraging both new law and the behavior it is meant to animate. (1662)

191Mackenzie Valley Resource Management Act, SC 1998, c 25.

In the TOR for this proceeding, there is a suggestion that

> *The Environment Act does not apply to the Lake Winnipeg Regulation project as it was completed before this legislation came into force.*[192]

Applying this reasoning, there would appear to be numerous hydro-electric generating stations built in the 1960s and 1970s that are exempted from environmental scrutiny. These would include the Grand Rapids Generating Station, Kelsey Generating Station, Laurie River Generating Station, and Long Spruce Generating Station.

Developments that are exempt from *The Environment Act* have likely never undergone an environmental assessment and are not required to comply with the reporting, mitigation, conservation and other monitoring activities that are usually required by an Environment Act Licence.

This is challenging from a public policy perspective especially given the controversy associated with the LWR and CRD.

Is LWR truly exempted from *the Environment Act?*

However, unlike some other statutes we have considered in Canada and the United States, there is no express provision in the *Environment Act* providing an exemption for projects developed prior to its proclamation. It is not clear what legal authority the Minister relied upon in concluding he had no jurisdiction.

Indeed, as set out in greater detail in Appendix 8, a robust argument could be presented that the Minister does have jurisdiction to license LWR under the Environment Act by virtue of s. 12(2) b). The section addresses existing projects without limits, terms or conditions. It provides:

> *(b) where* ***no existing limits, terms or conditions exist*** *by licence or regulation; the minister may require any person operating an* ***existing Class 3 developmen****t to file a proposal with the department, to be considered under this section* (emphasis added)

Under s. 4 of the *Classes of Development Regulation*, LWR would appear to fit the definition of a Class 3 development as

> Works resulting in modification to lake or river levels and affecting a water surface area greater than 200 km.

The meaning of the word “existing” under the *Environment Act* has not been judicially considered in Manitoba. The section recognizes there are “existing developments” for which there are “no existing limits, terms or conditions exist, by licence or regulation”.

192 TOR, p. 3.

A strong argument argument can be made that s. 12(2) gives the Minister the discretionary power to require the proponent of an existing development to file an *Environment Act* Proposal with the EAB if "no existing limits, terms or conditions exist by licence or regulation" for a development.

The Compounding Effect of the Water Power Act

While it is at least reasonably arguable that the Minister does have discretion under the *Environment Act* to assess and license the LWR, in the event that the jurisdiction does not exist, the question becomes whether there is any mechanism to enable assessment and review of LWR.

Could the legislature in its wisdom really have intended to exempt LWR from any meaningful environmental scrutiny? [193]

As detailed in Appendix 8, there is some language in the *WPA* that could be interpreted to enable the Minister responsible to impose licensing conditions aimed at environmental protection. The PCN has articulated a number of these arguments in their filing of March 31, 2015, so we will simply refer the reader to the Appendix if they wish to delve further into the arcane language under the *WPA*.

Returning to the Honour of the Crown and the Public Trust Doctrine

In this proceeding, we have heard the compelling suggestion by certain downstream communities that the effects of LWR are not stabilizing. We have heard as well of the desire of Manitoba Hydro to finalize the Interim License for the next 11 years without change in operating conditions.

An important consideration for all participants in this proceeding is whether the status quo is tolerable from a social and environmental perspective or whether some further environmental action should be considered?

As our community values evolve and we obtain mounting evidence of the impacts of human altered flows and climate change, it is reasonable to ask whether our environmental obligations and our duty to be diligent in fulfilling those obligations should evolve as well.

193Section 1(1) of the Act highlights the "intent of this Act is to develop and maintain an environmental protection and management system in Manitoba which will ensure that the environment is protected and maintained in such a manner as to sustain a high quality of life, including social and economic development, recreation and leisure for this and future generations, and in this regard"). Grandfathering appears to contradict this purpose.

Part 6: Achieving equity and balance in the watershed

Background

The purpose of this section is to draw from our review of the literature, selective jurisdictions and what we have heard - to propose some considerations for key principles, immediate and long term recommendations. The end goal is to create a systematic approach to water governance surrounding existing projects such as Lake Winnipeg and future developments.

For Lake Winnipeg, the systematic approach must recognize that it is the capstone feature of the hydrological system in Manitoba. Water governance in Manitoba must be capable of linking development, impacts, research and traditional knowledge. It must be capable of promoting adaptive management with an ideal goal of ecosystem health.

In outlining these preliminary thoughts, it is important to recall that we see this as an iterative process and document. We hope to provoke comment and dialogue. We expect to add further recommendations or make further changes based on your advice.

Our client intends to use this document to receive further feedback and develop its own final positions. Your comments are welcome.

Preliminary Key Principles – Substantive & Procedural Elements

Principle One- A public duty to protect the environment

The public duty to protect the environment refers to the Provincial and Federal governments' ongoing obligation to act as environmental stewards by protecting and monitoring our heritage of streams, lakes, wetlands, plants and animal habitats.[194]

Principle Two- Equitable distribution of environmental risk

The equitable distribution of environmental risk refers to the recognition that achieving 'equity' among and between all policy communities is also important.[195] This requires an acknowledgement that all Manitobans regardless of income, race or geographical location should be subject to the same level of environmental protection.[196] If and when that is not possible, criteria should be in place identity and respond to discrepancies.[197]

Principle Three – Sustainable Development

We recognize sustainable development as:

194See Part 4 on Common Law Duties which argues that coupled with the Honour of the Crown and Indigenous Legal Traditions, the Public Trust Doctrine could have potential powerful legal ramification. Also see existing recommendation including Ontario's Walkerton Commission of Inquiry Reports: “Finally, ensuring that source protection drinking water management. The Province has the ultimate responsibility for the safety of drinking water. If only makes sense that the provincial government would therefore assume the ultimate responsibility for the first critical step in the process.”

195For example, the Anishinaabe notion of equality means treating others with respect. Respect is owed to everything that has a spirit.

196This is consistent with the values and rights in s.15 equality rights in our *Charter of Rights and Freedoms.*

> a process of building towards futures that are desirable and viable on a single, limited planet where the possibilities for human wellbeing, social justice, and ecological stewardship are deeply entwined and where complexity and surprise and unavoidable.[198]

Ecological interests should be considered and balanced against spiritual, social and economic values and the interests of today and the future.

Principle Four – Adaptive Management

Adaptive management principles require decisions to be revisited on an ongoing basis and adapted as circumstances change from the initial decision. They also encourages regular review of the governance system and approval documents.

There should be a commitment to the timely elimination of grandfathering for projects having an ongoing effect on significant eco-system values.[199]

Principle Five - Transparency

Transparent decision making criteria could enable a fair comparison of economic, ecological and social values including, where appropriate, consideration of the economic consequences of environmental effects. This is especially important within the context of immense uncertainties.

Principle Six - Meaningful ongoing engagement

Policy, legislative, administrative and operational decisions should be based upon ongoing meaningful engagement with all interested parties. Information must be transparent, accessible and understandable for the general public.

Principle Seven- Consensus is valued

The achievement of consensus in addressing seemingly competing interests is a valuable objective which encourages meaningful ongoing engagement between and among policy communities. Differences of opinion are often understood to be oppositional or confrontational

197 It has been recognized that people living in poverty disproportionately living in close proximity to pollution. There is also growing recognition that Indigenous peoples in Canada and in Manitoba bear disproportionate share of environmental burdens. This issue cannot be separated from the issues of treaty and Aboriginal rights in section 35 of the Constitution Act, 1982. For more information, see: Alexander Miller, "From the Indian Act to the Far North Act: Environmental Racism in First Nations Communities in Ontario at p 17 available online: http://www.queensu.ca/ensc/undergraduate/courses/ensc501/pastprojects/Miller_ENSC501.pdf

198 Kyrke Gaudreau and Robert B. Gibson, "Framework for Sustainability- Based Assessment for the Keeyask Hydro Project" (November 2013) at p 5.

199As recommended in Bipole III and Keeyask, there should be effective oversight of the governance system and documents. The oversight should have clear mandate, independent authority, independent composition, adequate long term funding. It was also recommended in the Bipole III and Keeyask decisions that an environmental audit be carried out under the direction of the Manitoba Conservation and Water Stewardship by an independent third party to assess the success of the Environmental Protection Plan. Clean Environment Commission, Bipole III, at p 118.; Report on Public Hearing: Keeyask Generating Project (April 2014) at p 148.

however some have argued that this can be attributed to a difference of understanding, worldview or values.[200]

Principle Eight- Decisions based on Sound Western science and Traditional Knowledge

Decisions should be based in both Western scientific knowledge and Traditional Knowledge. Appropriate consideration should be given to the precautionary approach to uncertainty.[201]

Principle Nine- Weight to Western and Indigenous legal traditions

The legislative scheme should give appropriate consideration to both Western and Indigenous legal traditions. For example, the Clean Environment Commission could consider protocols from Indigenous legal traditions in its process or Terms of Reference by engaging with Elders who are respected in their communities.

Principle Ten- A Systems Approach

An integrated systems approach that uses natural boundaries, such as watersheds, should be the basis for water management. [202]

Principle Eleven- Reconciliation

Manitoba's recent apology to Pimicikamak recognized the negative impacts of hydro development to Indigenous people.[203] Future activities should be aimed at a reconciliation process with those experiencing historic and ongoing effects including Indigenous people as well as riparian landowners and resource users.

Principle Twelve- Cumulative Effects

Decision makers should seek to minimize the cumulative impacts of licenses and approvals

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200 This is explained by Basil Johnston "Some glean more from their observations, others less, but each one in proportion to his talents. What one person understands of what he sees or hears is not to be belittled, demeaned, or ridiculed. For how is anyone to know for certain that he is right and another, wrong? And if such a person were to say that another is wrong, it would be arrogant. Where differences in opinion occurred, men and women said Kitchi-Manitou has given me a different understanding: Basil Johnston, "Honour Earth Mother: Mino-Audjaudauh Mizzu-Kummik-Quae (Cape Croker, Ontario, Kegedonce Press, 2003) at p 148.

201 Principle 15 of the Rio Declaration recognizes that "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

202 The "systems approach" has been defined as: The Systems approach recognizes that 'systems' (people, things, cells, molecules etc) are interconnected and if the interconnections change, "the system may be greatly altered": Donella Meadows, "Thinking in Systems: A Primer" (2008) at 16.

203 During the apology, Premier Selinger stated the following: "*The effects are more than just those on land and water and on plants and animals,...We recognize that hydro development can affect the cultural identities of aboriginal peoples because of the close relationship of aboriginal peoples to the land and resources....Looking back at what has happened, and on the effects on aboriginal communities in Manitoba, I wish now on behalf of the Government of Manitoba to express my sincere apology to aboriginal peoples affected by hydro development,".:* http://indiancountrytodaymedianetwork.com/2015/02/04/40-years-manitoba-apologizes-first-nations-hydropower-dam-flooding-158995

while maximizing social and economic benefits.

Principle Thirteen- Water power governance should be linked to overall environmental protection

Coherent, efficient and integrative water governance frameworks are key. Efficiency means facilitating rather than impeding action.[204]

Potential Recommendations

Background

The community hearings held by the Clean Environment Commission revealed the need for more studies given the lack of baseline information and increasing uncertainty.[205] As recognized by many, including Manitoba Hydro, many knowledge gaps still exist.[206]

Although it is clear that much research is still required, the existing research and recommendations on Lake Winnipeg must be acknowledged. There is an extensive list of reports on Lake Winnipeg which propose a series of recommendations and plans to address the various aspects of the health of the Lake[207] The reports prepared by the intervenors, knowledge holders, experts, participants and presenters will add to the breath of research. It is unknown which if any of the existing recommendations have already been implemented.

While shelves are filled with reports and recommendations, many policy communities remain frustrated by a sense of exclusion. This sense of exclusion was voiced in most, if not all of the 17 community visits by the Clean Environment Commission.[208] The community visits by the Clean Environment Commission were an important first step in engaging policy communities surrounding Lake Winnipeg.

204Links should be drawn between water power legislation and licensing and other legal processes/legislation that are related and contribute to the overall system of environmental management and protection. Water licenses are only intended to cover a very small piece of the overall water regulation/protection scheme in Manitoba. Connections should be drawn to water management legislation, environmental assessment legislation, applicable federal legislation and recognized standards (ex. Dam Safety Requirements).

205 "Before a permanent license is granted, an impartial environmental impact study is needed to establish the actual effects of regulation…" (Nelson Gerrard, Selkirk, p. 14); "…the studies that are done are only limited to specific areas, project areas, which is real deceiving….a full blown audit has to be done for the whole Nelson River basin…" (Mike Sutherland, Peguis, p. 107); "…maybe a study should be done to see if the level of the lake went down a little bit, maybe the wetlands would come back and would help filter the nutrients…" (Clayton Bristow, Gimili, p. 93); "There should be shoreline land studies and monitoring." (Patricia Mitchell, Black River, p. 36).

206Mr Cormie indicated : "I believe that it is clear **when you come to specific areas there are gaps in our knowledge.** And I think rather than just dealing with those gaps and concerns on an ad hoc basis and hoping that that is sufficient to get us through the renewal process, that a broader perspective is looked at, and that there is a process laid out so that to the extent that there are gaps, and we talked about some of those today, that we get enough information so that when renewal comes up we've addressed those issues." [emphasis added]. The 2011 State of Lake Winnipeg Report identified the following area of knowledge gaps: algae toxins, biology, nutrients, physical and chemical characteristics of water, and hydrology: at p 164. Wetland research is another key deficiency.

207See Appendix 9

208See Appendix 1

Balancing Short Term and Long Term Recommendations

We recognize that some participants in this process are focused on achieving a modern balance for the new licensing process to be completed on or before 2026. Other participant may be focused on more immediate action. We have sought to identify potential recommendations which may be of interest to each of these perspectives.

We consider this a menu of options and are aware that not all options are mutually inclusive. The timeframes are admittedly aggressive. These preliminary recommendations should not be construed as an indication of the final position of our client.

Potential Immediate Recommendations Relating to LWR and Water Governance

Potential Immediate Recommendations

Recommendation	Who	What	When	Why
Recommendation One: Establish a Multi-party Lake Winnipeg Task Force	Minister of Conservation and Water Stewardship	Multi-party Lake Winnipeg Task Force to bring CEC LWR recommendations for public engagement	Within the next six months.	To engage those who are directly affected living around the Lake in scoping the issue(s) and allow the community to engage in developing a way forward. To replace certain ad hoc elements of research and recommendations by bringing voices together to create unified way forward
Recommendation Two: Regulate LWR under the *Environment Act*	Minister of Conservation and Water Stewardship	EIS Proposal of LWR to be filed under the Environment Act	Within three-five year	To address concerns relating to uncertainty, adaptive management and engagement
Recommendations Three: Determine whether Manitoba Hydro has Complied with LWR Interim License and Set	Minister of Conservation and Water Stewardship	A public statement about whether Manitoba Hydro has complied with the terms of the interim license and set out clear	Within one year	To highlight the importance of transparency in deliberations and to assist in future understanding of compliance.

Clear Expectations for the Future Licensing Process		expectations, responsibilities, and timelines for the future.		To outline a regulatory path or map. To better monitor and protect.
Recommendation Four: Clarify roles and responsibilities for water management in Manitoba	Minister of Conservation and Water Stewardship	Greater clarity about roles and responsibilities for water management in Manitoba	Within one-three years	To better link license to other regulatory processes It is strongly arguable that an environmental loophole exists with regard to older hydro-electric projects and modern assessment. To assist the public to understand roles and to enhance confidence in the commitment to good environmental regulation.
Recommendation Five: Instruct Manitoba Hydro to initiate plans to further develop its hydrological modelling capabilities with a view to transparent and accessible water flow model that can be shared with community and experts	Minister of Conservation and Water Stewardship	More robust hydrological model that would support the evaluation of alternative operating scenarios for Manitoba Hydro	Within two-three years	To provide a modern decision making tool that can be used by all parties taking part in the engagement process. To pilot the development of collaboration between hydro, experts and community
Recommendation Six: Clarify the role of Indigenous consultation relating to LWR and recognize and reaffirm treaty and Aboriginal rights	Minister of Conservation and Water Stewardship	Clarification and entrenchment of consultation with Indigenous peoples.	Within one to two years.	Improve deliberations. Recognize and affirm treaty and Aboriginal rights. Address sense of exclusion.

Immediate Recommendation 1- Establish a Multi-Party Lake Winnipeg Task Force

It is recommended that the Minister of Conservation and Water Stewardship establish a Multi-Party Lake Winnipeg Task Force within the next six months.[209]

Ideally, this Task Force should have representation from a Northern Indigenous community, a Southern Indigenous community, the Métis Nation, a water scientist, Conservation and Water Stewardship as well as an individual who has an understanding of water governance and management and is familiar with bridging the gap between Western and traditional knowledge.

The purpose of this Task Force **would not** be to create another Plan of Action or add to existing recommendations on the health of Lake Winnipeg. Rather, its purpose is two-fold.

- Bring the proposed recommendations from the CEC Hearing on LWR for meaningful public engagement throughout Manitoba to create a meaningful public strategy. The goal of this process would be to build, or rebuild, trust and foster productive working relationships among policy communities surrounding Lake Winnipeg.
- The Task Force would identify knowledge gaps and uncertainties based upon public engagement.

In preparation for its engagement process, the Task Force should consider the following questions:

- What do policy communities around Lake Winnipeg want the system to look like in the future? Based on what we already know, what do we need to get us there?
- How can we best integrate a broad range of criteria to create a more inclusive process?
- How, if at all, can consensus be achieved on what is the 'best operating regime'?
- Should benchmarks and operating rules be developed to measures different systems (such as Netley-Libau Marsh or fisheries[210])?
- Recognizing that some literature suggests that an examination of ecosystem services[211] can provide an effective tool for conservation and method to support effective resource management, how if at all should “natural capital” be valuated including ecosystem and cultural services?[212] How can we ensure this valuation

209According to s.5 of *The Environment Act*, the Minister has the authority to establish advisory committees.

210 For example, the Canadian Science Advisory recommends the development of flow requirements to better ensure sustainability of CRA fisheries. They indicate there is a need for improving studies of bio-physical relationships, including robust monitoring and evaluation. Consideration should be given to developing a framework for assessing the ecological flow requirements to support fisheries in the Lake Winnipeg watershed by creating a multi-disciplinary and multi-jurisdictional oversight committee and research chair who could design the research and monitoring programs: Canadian Science Advisory Secretariat, “Framework for Assessing the Ecological flow Requirements to Support Fisheries in Canada” *(2013)*.

211 “Ecosystem services are the benefits that people obtain, either directly or indirectly, from out ecological systems.”: Troy Bagdstad at p 3

212 The 2003 Millennium Ecosystem Assessment places ecosystem services into four categories: provisioning (food, fresh water, fuel, genetic resources), regulating (climate, disease, flood regulation), cultural (recreation, aesthetics), supporting services (soil formation and nutrient cycling).

considers the spiritual and cultural importance of the water?

The work of the Multi-party Task Force should be completed on an urgent basis and over a duration of approximately two months.[213] It should be properly resourced to fulfil its mandate and adequately engage policy communities around Lake Winnipeg. Together, the Task Force would decide a plan for *meaningful ongoing* engagement on a going forward basis.

Immediate Recommendations Two– Regulate LWR under the Environment Act

The Minister of Conservation and Water Stewardship should exercise his discretion under s. 12(2) of the *Environment Act* to require Manitoba Hydro to file an environmental act proposal (EAP) with the department as a Class 3 development and subsequently decide that an Environmental Impact Statement should be submitted.[214]

The development of an Environmental Impact Statement would allow Manitoba Hydro to engage in a more robust process for engagement of policy communities and knowledge development (both Western science and Traditional Knowledge).

As part of ongoing law reform, consideration should be given immediately to

- the definition for "existing development" under the *Environment Act*
- the inclusion of decision making criteria for when an existing development is considered for possible review

This should be completed within three to five years.

Immediate Recommendation Three– Determine whether Manitoba Hydro has Complied with LWR Interim License and Set Clear Expectations for the Future

Once a determination has been made, the Minister of Water Stewardship should immediately make a public statement about whether Manitoba Hydro has complied with the terms of the interim license and the basis for that determination. Clear expectations, responsibilities, and timelines for the future licensing process should be set out.

In the event the Minister finds the interim license has been complied with, consideration should be given:

- under s. 45 of *Water Power Regulation* 25/8 as to whether the final license should be extended for a period that does not run out to 2026.[215]
- to whether additional terms and conditions should (and could) be applied pursuant to s. 44 of *Water Power Regulation* 25/8 including:
    - enhanced monitoring and reporting as recommended in both the Bipole III and

213 A similar approach was implemented in the late 2003- 2004 when a series of chemical spills to air and water affected the Sarnia region in Ontario. In response, in April 2004 the Ontario Minister of the Environment struck an Industrial Pollution Action Team (IPAT) to respond to a series of chemical pollution spills to air and water.

214Environment Act, CCSM c E125 at s.12(4)

215This is particularly the case given the passage of time since the granting of the interim license, the undoubted effects of the interim license upon the water, peoples and lands of the Nelson River watershed and pressing and evolving environmental concerns relating to climate change and the health of the Lake Winnipeg and Nelson River watersheds

Keeyask hearings
    - a provision allowing for the incorporation of additional restrictions on the license in the event of an *Environment Act* review
    - a provision to amend the license in the event of a material change in economic, social or environmental circumstances
    - a provision to review the license every five years (including i.e. safety, effectiveness, conservation purpose etc.)

This should be completed within one year.

Immediate Recommendation Four– Clarify roles and responsibilities for water management in Manitoba

Greater clarity should be given by the Province in terms of the relationship between key legislative elements as well as administrative duties related to the *Water Protection Act,* the *Environment Act* and the *Water Power Act*. For example, consideration should be given to:

- creation of a legislative mechanism that allows the public to access reasons when a pre-existing development is being considered for possible review under s. 10(2), 11(6) and 12(2) of the *Environment Act*
- more express connections to other natural resource and environmental legislation (*Water Power Act, Forestry Act*, *Mining Act*, etc.).

This should be completed between one-three years.

Immediate Recommendation Five- Instruct Manitoba Hydro to initiate an open, transparent process to further develop its hydrological model

The Minister should instruct Manitoba Hydro to develop a hydrological model that would support the evaluation of alternative operating scenarios for Manitoba Hydro.[216]

This should be completed within two-three years.

Immediate Recommendation Six– Clarify the role of Indigenous consultation relating to LWR and recognize and reaffirm treaty and Aboriginal rights

The Minister should clarify the role of Indigenous consultation relating to LWR and reaffirm treaty and Aboriginal rights set out in section 35 of the *Constitution Act, 1982*[217].

The *Water Power Act* and Regulations do not contain any provisions requiring consultation of indigenous peoples.[218]

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216 See Part 3.

217 Constitution Act 1982 (UK), 1982, c 11 at s.35.

218 Since the Act was passed the rights of Aboriginal peoples have been recognized by Canada's constitution and the provincial Crown must provide meaningful consultation whenever a decision will adversely affect Aboriginal and treaty rights. Section 17 of the Manitoba Protection Act states that watershed management plans must be developed in consultation with Aboriginal bands within the area.

This should be completed within one to two years.

Potential Long Term Recommendations relating to LWR and Water Governance

Recommendation	Who	What	When	Why
Recommendation One – Modernize Manitoba's regulatory framework for water management	Minister of Conservation and Water Stewardship	Modernize water governance regime in Manitoba overall.	Within five - seven years	To bring the water governance regime in Manitoba to standards more consistent with good practice elsewhere in Canada and the world
Recommendation Two – Engagement	Minister of Conservation and Water Stewardship	Engage the public; First Nation governments and individuals; Métis Nation and individuals; affected industries; partnership between provincial, federal and international agencies; and all other interested parties in decision making about provincial water resource management	Within five years	Improves the quality of the deliberations and the prospects for success. Assists in addressing stated lack of confidence in state institutions. May assist in reducing distrust. Provides a voice to those who are directly affected.
Recommendation Three– Manage adaptively	Minister of Conservation and Water Stewardship	A structured framework for adaptive management should be provided to deal with uncertainty, monitoring and evaluating outcomes against objectives, and periodically adjusting management strategies to	Within five years	Acknowledges uncertain state of science and the need for operational evolution. Recognizes high risk and the need to learn and continual uncertainty. Continues to builds relationships. Maintains community, industry and

		improve outcomes		government engagement.

Long Term Recommendation One– Modernize Manitoba's regulatory framework for water management

Manitoba's water governance and policy framework is outdated and inconsistent with practices elsewhere in Canada and the world. The Minister of Conservation and Water Stewardship should modernize Manitoba's governance regime by considering the following:

a) Greater **coordination and clarity of the roles in its water governance** and legislative scheme. See the following examples from other jurisdictions:[219]

- BC's *Water Sustainability Act* creates "water objectives"-- regulations that set out goals related to water quality and quantity that must be considered by public officials when granting licenses or other instruments to land and resource users. Regulations can be made which set out water objectives for a stream, watershed, or other specified area in order to sustain water quality and quantity for specified uses or aquatic ecosystem health [s.43 (1)] The regulations can require public officers and decision makers to consider the objectives and impose conditions on any instrument they issue [s.42(2)]. The regulation may also require land or resource users to address the impacts of their projects on the objectives [43(1)(c)].

- Alberta's *Water Act* enables the Minister to create a provincial planning framework for water management [s.7] This framework must be made in consultation with the public and must include a strategy for the protection of the aquatic environment [s.7(2) and s.7(4)]. It may also include: water management principles; matters relating to the development of water conservation objectives; an outline of the processes for developing, implementing, reviewing and revising water management plans, including opportunities for local and regional involvement; and matters relating to integration of water management planning with land and other resources.

- FERC provides an excellent model for coordination of government agencies in the licensing process. The *Federal Power Act* requires FERC to consult with conservation agencies in setting licensing conditions. This must includes the US Fish and Wildlife Service (FWS) and National Marine Fisheries Service. Every license must include provisions designed in collaboration with FWS to protect fish and wildlife and mitigate damage to the environment. In addition, the water management plans set out by state and federal agencies like the Northwest Power and Conservation Council must be incorporated into the terms of the license.

- Oregon's Water Resources Commission sets policy for the state's Water Resources Department, which is the executive body responsible for administering all of the state's water. In this way the WRC sets out the policies that govern all decisions

219 In other jurisdictions the problem of uncoordinated legislation has been overcome by consolidating water laws and creating overaching water management plans and policies that inform all decisions affecting water.

and actions affecting water.

- Washington's *Water Resources Act* includes guidelines to direct the state's water policy. Key guidelines include: Promotion of balanced development of cost-effective and environmentally sound hydropower projects by a range of development interests; Protection of values associated with the state's rivers, including fish and wildlife populations and habitats, water quality and quantity, unique physical and botanical features, archeological sites, and scenic and recreational resources; and; Protection of the interests of the citizens regarding river-related economic development, municipal water, electric energy, flood control, recreation, and environmental integrity(RCW 90.54.800)

b) An **integrated watershed approach to cumulative effects monitoring** and follow-up that would include participation by different industrial users that impact the hydrological system.[220] This should also include the requirement to develop and maintain an inventory of the Province's water resources (both quality and quantity).

c) The application of the ***Water Protection Act*** **should be expanded to include Hydro operations**. The *Water Protection Act* includes a number of robust provisions to protect ecosystems, but it is not clear that these provisions apply to waterpower operations.

d)The development of a clear and well coordinated **process for scrutinizing license** applications, including

- criteria to assess previously unlicensed existing projects[221]
- opening licenses for review and amendment, and clarifying the process for re-licensing.[222]
- an express legislative authority to include the potential for extra potential short-term

220 In Northwest Territories, the Independent Environmental Monitoring Agency (IEMA) was created for BHP's Ekati Mine. It consists of a seven member board of directors, four of whom are appointed by Aboriginal organizations, with the three others being appointed jointed by BHP and the federal and territorial governments, in consultation with Aboriginal organizations. The IEMA conducts a review of the impacts on a yearly basis. See generally, CAC Manitoba Keeyask and Bipole III Recommendations on Adaptive Management.

221 Notwithstanding s. 18 of *Regulation* 25/88, the language of the *Water Power Act* provides relatively little guidance in terms of decision making criteria. There are competing views on the weight, if any, to be given to ecological, social and economic criteria. This is out of step with other jurisdictions which explicitly require decision makers to make certain considerations:

- The best example comes from FERC, which goes even further by enabling other government agencies to air their concerns and propose license conditions as part of the decision making process. FERC is also required to give equal consideration to power and non-power values to ensure that the license is the best use of the waterway and must consult with Indian tribes and federal and state agencies [16 USC 117(a)] When making licensing decisions FERC must consider:
  - power development; energy conservation; protection, mitigation of damage to, and enhancement of fish and wildlife; protection of recreational activities; and preservation of other aspects of environmental quality.
  - whether the project is the best use of waterpower development, the best adapted to the comprehensive development plan for the waterway, and adequately protects fish and wildlife and other beneficial uses
  - the extent to which the proposed project is consistent with the comprehensive conservation plans in place under federal or state authority;
  - the recommendations of Federal and State agencies affected by the project;

recommendation in licenses[223]
- establishing license conditions consistent with management plans[224]
- eliminating silos by making provision for the integrated review of operationally integrated facilities (i.e. CRD, LWR, Kelsey)

e) Incorporate the public trust doctrine into Manitoba's environmental and water resource legislation, including an obligation to actively protect, exercise ongoing supervisory control and revisit previous decisions in the face of change[225]

f) Identify a criteria for balancing economic, reliability, ecological and social values

h) Consider making express provision for ecological or environmental flows

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222 According to the *Water Power Regulation,* licenses can be in place for up to 50 years from the date of completion put forward in the interim license [s.45(1)]. Licenses should be adaptable to changes in climate and advances in science and water management. The regulations do not clearly require assessments to be done before a license can be renewed. It is also not clear whether conditions of the license can be amended or added. The regulations should be changed to provide clarity and expressly give authority to add and change conditions of the license. Statutes and regulations in other jurisdictions are explicit in the need for assessment and the criteria to be used:

- BC's *Water Sustainability Act* requires licenses to be reviewed every 30 years. Consideration must be given to changes in technology, environmental conditions, and best practices. Factors for the decision maker to consider include: the best available technology for water conservation; best practices in water use efficiency and conservation; any increase in knowledge with respect to stream flow; and the effects of climate change [s.23(6)]. If these factors substantially change the license, the decision maker can place new terms and conditions on the license [s. 23 (8)].
- In Oregon the *Hydroelectric Projects Code* gives the state's licensing body (the Water Resources Commission) authority to review the license conditions, make amendments, and add new conditions. The WRC must make certain considerations before granting the certificate renewal. The renewal can only be granted if in the Commission's judgement, the project is well adapted to the development and use of the water power involved. Under the renewed license, the WRC may prescribe conditions for the protection of life, health and property, for conservation or for other beneficial uses (including recreation), or for any other purpose in the public interest.

223One thing that might be considered is shorter term licenses such as in the Northwest Territories and BC.

224 There is no requirement that licenses under the *Water Power Act* include conditions based on the province's water management plans. Consequently it is unclear how license holders fit into the water management scheme. Considering Hydro's role in managing the province's water, the exclusion of Hydro could present a significant barrier to effective management. In other jurisdictions such as the US, water management plans are the starting point for placing conditions on licenses. There are many examples from other jurisdictions that Manitoba can draw from, including BC, Oregon, and FERC:

- In BC section 79 of the *Water Sustainability Act* will allow licenses to be varied by the Minister according to the requirements of Water Sustainability plans
- In the US section 10(a)(2) A of the *Federal Power Act* requires FERC to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.
- Section 401(d) of the *Clean Water Act* provides that state water quality certifying agency's certification shall become a condition of any federal license that authorizes construction or operation of the project
- Oregon: any hydro development activity must be consistent with the region's fish and wildlife program as adopted by the Pacific Northwest Electric Power and Conservation Planning Council.
- Oregon: No activity can be approved that will result in a net loss of wild game, fish, or recreational opportunities, unless acceptable mitigation measures are in place. The Commission must consult with other local, state, and federal agencies to determine what is acceptable mitigation.

225See the discussion of Public Trust in Part 4.

i) Allow for habitat and wildlife protection in licensing conditions[226]

j) More effective governance structures[227]

k) Acknowledge equal space for Indigenous Legal Traditions and Traditional Knowledge

l) Clarify role for Indigenous consultation and recognize and reaffirm treaty and Aboriginal Rights[228]

- Consideration should be given to whether the province has developed a clear process for meaningful consultation in which potentially affected groups and people can be heard and concerns addressed. Consultation with Indigenous people should be required on potential infringements on both groups and individuals. Examples from other jurisdictions may assist:
- In the Yukon, the Environmental and Socio-Economic Assessment Board (YESAB) carries out a consultation process on 'potentially significant effects' and recommends mitigative terms and conditions to decision bodies. The Board must also order compensation to be paid to a First Nation if the quality or quantity of its water is adversely affected.

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226 In the US section 10(j)(1) of the *Federal Power Act* requires FERC to include conditions based on recommendations submitted by federal and state fish and wildlife agencies pursuant to the *Fish and Wildlife Coordination Act*, Under these conditions license holders must "adequately and equitably protect, mitigate damages to, and enhance fish and wildlife (including related spawning grounds and habitat)" affected by the project.

Alberta's *Water Act* enables the Minister to create a provincial planning framework for water management [s.7] This framework must be made in consultation with the public and must include a strategy for the protection of the aquatic environment [s.7(2) and s.7(4)]. It may also include: water management principles; matters relating to the development of water conservation objectives; an outline of the processes for developing, implementing, reviewing and revising water management plans, including opportunities for local and regional involvement; and matters relating to integration of water management planning with land and other resources.

FERC provides an excellent model for coordination of government agencies in the licensing process. The *Federal Power Act* requires FERC to consult with conservation agencies in setting licensing conditions. This must includes the US Fish and Wildlife Service (FWS) and National Marine Fisheries Service. Every license must include provisions designed in collaboration with FWS to protect fish and wildlife and mitigate damage to the environment. In addition, the water management plans set out by state and federal agencies like the Northwest Power and Conservation Council must be incorporated into the terms of the license.

Oregon's Water Resources Commission sets policy for the state's Water Resources Department, which is the executive body responsible for administering all of the state's water. In this way the WRC sets out the policies that govern all decisions and actions affecting water.

227 While acknowledging the ongoing activities of the Lake Friendly Accord and Lake Friendly Stewards Alliance and in recognition of the advice of the ISD that an entity be created to help guide basin-wide management, the Minister should be advised that:

- steps should be taken to identify necessary next steps including options to be considered in terms of basin-wide management (for example, models from the *NWT, Columbia, Murray/Darlingford, IJC and Lake of the Woods)* as well as jurisdictional or other barriers towards the achievement of this objective.
- Consider opportunities associated with other watershed activities such as expansion of distributed storage and upstream storage opportunities.

228 Policies must recognize the emerging and evolving dialogue at the Supreme Court of Canada relating to Treaty and Aboriginal rights and the Honour of the Crown.

- In the Northwest Territories the *Mackenzie Valley Natural Resource Management Act* was designed to accommodate aboriginal rights, as well as traditional knowledge and laws. For example, s.60.1 stipulates that the Boards must consider "the importance of conservation to the well being and way of life of the aboriginal peoples of Canada... and any traditional knowledge and scientific knowledge that is made available to it."

This should be completed within five to seven years.

Long Term Recommendation Two– Create mechanism for engagement

Engage the public including: First Nation governments and individuals; Métis Nation and individuals; affected industries; partnership between provincial, federal and international agencies; and all other interested parties in decision making about provincial water resource management

Apart from s. 6 of Regulation 25/88 as it relates to interim licenses, the *Water Power Act* lacks explicit mechanisms for meaningful ongoing engagement. Provisions related to public comment, dealing with complaints and making documents publicly available should be modernized.[229] The Province should articulate and seek comment on proposed criteria for identifying policy communities, providing meaningful support and enabling meaningful engagement. It should also establish a process for dealing with complaints should be developed.

There is currently no designated body responsible for hearing complaints of people affected by licensing decisions. It is possible that a supervisory board such as the Manitoba Water Council could take on this role.[230]

The Province could initiate early activities relating to:

- issue scoping
- research priorities
- open access operating model development; and,
- core values and decision making criteria.

229 In the US applicants, for hydro licenses must make all of their materials available to the public for inspection, including maps, drawings, data, and any other information the Commission requires regarding the construction and operation of the licensed project. This information must include pertinent energy conservation, recreation, fish and wildlife, and other environmental information. FERC must also publish all of its decisions and reports and make them available to the public at a reasonable cost.

- During hearings FERC may admit as a party any representative of interested consumers or security holders, or any competitor of a party to such proceeding, or any other person whose participation in the proceeding may be in the public interest.
- In the Yukon, First Nations and indigenous people may apply to the Water Board to determine whether their rights are being infringed, whether they are entitled to compensation, and whether there is an alternative way to mitigate or avoid an adverse affect.

230 See example of the Fraser Basin Commission which has a permanent council to represent the varied interests in the basin, and serve as a framework for collaborative decision making.

Multiple examples can be found in other jurisdictions.[231]

A process should exist to enable members of the public to participate in water management decisions that affect them. The Water Power Regulation does not require consultation with the public or provide significant opportunities for members of the public to be heard. The regulation only provides that the public be given notice of an application, and that the Minister has discretion to call a public hearing [s.6(1) and (4)].

In this regard Manitoba lags behind other jurisdictions which have made the requirement for public consultation explicit in their legislation.[232] Manitoba's *Water Protection Act* requires management plans must also to be developed in consultation with municipal councils, any aboriginal bands within the area, and residents of the watershed area [s.17], but its application to water power licenses is unclear.

A more robust mechanism for engagement in Manitoba should be created within five years.

Long Term Recommendation Three– Manage adaptively

A structured framework for adaptive management should be provided to deal with uncertainty, monitoring and evaluating outcomes against objectives, and periodically adjusting management strategies to improve outcomes.[233]

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231 In the US, FERC is responsible for investigating complaints. (16 USC 825(e)) Under the Water Power Act, any person, complaining of anything done or omitted to be done by any license holder, may apply to the Commission by petition. The petition will be forwarded to the license holder who will be asked to satisfy the complaint or to answer it within a reasonable time.

Saskatchewan's Watershed Associations provide a good model of participation of various policy communities. Saskatchewan's *Watersheds Association Act*, enables local policy communities, municipal government, organizations and businesses, to form Associations in order to address issues of water use and conservation in their local watersheds. These Association are involved in local planning and the implementation of management plans. Manitoba's *Water Protection Act* contains a framework for watershed management, but it does not require public comment or participation.

BC's *Water Sustainability Act* mandates a public engagement process for developing water management plans [s.68, 73]

Alberta Water Act requires the development of water management plans to involve public participation [s.9 (2)(f)]

In Oregon the Water Resources Council must conduct a public hearing on any application for a preliminary permit or license for a major project

- In Oregon every application for the appropriation of water for hydropower must be subject to protest or remonstrance on behalf of the public from any person on the grounds that the proposed development would damage the use of the stream for other purposes, including propogation of fish, recreational, and aesthetic reasons.

232 For example, see BC Water Sustainability Act s.68, s.73; Alberta

233 The California Department of Fish and Wildlife defines an adaptive management approach as one that "provides a structured process that allows for taking action under uncertain conditions based on the best available science, closely monitoring and evaluating outcomes, and re-evaluating and adjusting decisions as more information is learned." (Source: http://www.dfg.ca.gov/erp/adaptive_management.asp) Section 38(5) of the Canadian Environmental Assessment Act states that "The results of follow-up programs may be used for implementing adaptive management measures or for improving the quality of future environmental assessments".

Some jurisdictions have embeded a requirement for adaptive management in law:[234]

- The *California Delta Reform Act* (*Water Code* §85052) defines adaptive management as "a framework and flexible decision-making process for ongoing knowledge acquisition, monitoring, and evaluation leading to continuous improvements in management planning and implementation of a project to achieve specified objectives."

- British Columbia's new Water Sustainability Act includes a requirement for review of license terms and conditions after 30 years of operation (S.23), to reflect use of best available technology for water use efficiency and conservation, the effects of climate change, the licensee's beneficial use of the water, and other factors.

A framework for adaptive management should be created within five years.

Other suggested reforms might include

- legislated requirements for developments that obtain a Water Power Act license to comply with water protection and other environmental standards
- legislated dam safety requirements and reviews (see BC Act and Yukon Act);
- decision-making criteria for water power licensing decisions (public interest, aboriginal input, environmental effects, sustainability, etc.);
- publicly available reasons for decisions
- creation of a consolidated water licensing registry or expansion of the existing public registry;
- Monitoring and Conservation Provisions in Water Power Act licenses. Regular and Public Reporting. This could only be a requirement for those Developments that would require an EA license if built today, but don't because pre-existing, don't have monitoring and reporting requirements under EA;

Lingering Questions

- How if at all do we measure spiritual and cultural trade-offs which are made as a result of economic development?

- Does the concept an environmental water entitlement as operated by the State of Victoria, Australia[235] have any utility for the current or future water power governance schemes in the Province of Manitoba?

234 See for example the

235As we understand the term, the concept of environmental water entitlements was to create the legal foundation for water to be set aside to maintain environmental values of rivers and streams. Environmental entitlements form part of the Environmental Water Reserve. They were intended to enable active management of water to meet specific environmental needs such as fish spawning triggers or maintaining critical habitat during drought. The objective of the Environmental Water Reserve is to preserve the environmental values and health of water ecosystems, including their biodiversity, ecological functioning and quality of water and other uses that depend on environmental condition.

- How we do deal with claims for compensation from Lake Winnipeg? Does shifting to a multi-purpose reservoir or a different governance structure relieve Hydro of the duty to compensate and mitigate?

- What weight should be given to consensus? How do we reach consensus while recognizing that differences of opinions are not confrontational? Who is the appropriate decision maker?
  - Government decider/stakeholder engagement
  - Stakeholders as decision makers
  - Co-management with Rights Holder

- What is the appropriate role for approaches such as:
  - Payment for ecosystem services.
  - Ecosystem service valuation (to provide the rationale for investment).
  - Funding ecosystem service–focused management through approaches such as that used by Bonneyville Power Authority

- What is the appropriate legislative vehicle to achieve change?
  - Overarching legislation (BC)
  - Environmental legislation
  - WPA
  - Some combination

- Does Manitoba require a designated body with institutional independence and expertise to be responsible for decision-making with respect to water power licenses?

Concluding remarks

The dialogue relating to Lake Winnipeg Regulation has been a painful and heated one for over 40 years. While sharp differences in opinions do exist, there is general agreement on the need for a inclusive, holistic, and modern balance for LWR governance.

This hearing presents a rare opportunity given the convergence with the RCEA and the existing climate for environmental law reform.

From modest and unusual roots, this proceeding has evolved into a process that has the potential to be a signal moment in Manitoba environmental deliberations.