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R. Collette, M. Hornbeck, K. Senenko

Clean Environment Commission Hearing on the Manitoba Hydro Lake Winnipeg Regulation Final License Approval – A Preliminary Survey of Churchill Resident's Concerns

Abstract

The Manitoba provincial government recently requested that the Manitoba Clean Environment Commission hold a hearing regarding the final licensing of the Lake Winnipeg Regulation. The final license would grant Manitoba Hydro authority over the system for an additional fifty years. A short interview was posed to residents of Churchill, Manitoba regarding their knowledge of the projects and the Clean Environment Commission hearing as well as their opinion on the projects and their impacts within Churchill. Researchers found that there was a general lack of awareness concerning all topics. However, most residents felt that the Churchill River Diversion and the Lake Winnipeg Regulation both affected lifestyle in Churchill in a negative manner and that Manitoba Hydro has not effectively mitigated the effects of the projects.

1.1 Introduction

The Manitoba Clean Environment Commission (CEC) was established under *The Environment Act* (1988) to provide Manitobans an opportunity to participate in the decision making process regarding the environment. On July 5, 2011, the Minister of Conservation, at the request of the Minister of Water Stewardship, requested that the CEC conduct a review regarding the licensing of Manitoba Hydro under the Lake Winnipeg regulation under The Water Power Act (CEC, 2011). This license is often termed the Lake Winnipeg Regulation (LWR).

Though the LWR is licensed independently under the act, the project is closely associated with the Churchill River Diversion (CRD). Both projects were undertaken by Manitoba Hydro at approximately the same time and contributed to increased output for the Nelson River generating stations. As a result, The Lake Winnipeg, Churchill and Nelson Rivers Study Board investigated the socioeconomic and environmental effects of both projects jointly in its report released in April 1975 (Manitoba Hydro, 2011). In addition, the two projects have been identified as interconnected by several First Nations groups within the province. York Factory First Nation, a group influenced by the rising water levels on the Nelson River, asserted that the community could not respond to the province's request for information on the LWR citing reasons for the collective impact of the two projects (INAC, 2010).

Figure 1. K. Senenko interviewing respondent.

Prior to construction, economic analysis took place to verify the cost-benefit of the project(s). However, an assessment of the socioeconomic and environmental impacts did not begin until 1973. As a result, agreements such as the Northern Flood Agreement were reached between the province, the federal government, Manitoba Hydro and the Northern Flood Committee (made up of the five First Nations groups affected by the projects) after project approval and construction (Manitoba Hydro, 2011). Other projects such as the Churchill River Enhancement Project (1998), including the construction of the rock weir on the Churchill River, were undertaken over twenty years later (Manitoba Hydro, 2010).

The process of public consultation has greatly evolved since the 1970's and the province is now required to engage in public consultation prior to granting approvals or licenses to projects with significant environmental impacts. With respect to Manitoba Hydro's final license request for the LWR the public consultation process will be undertaken through the CEC hearing (CEC, 2011).

Researchers conducted a survey of thirty-four residents of Churchill, where residents are defined as individuals who have lived in Churchill for one consecutive year or more, to determine their preliminary feelings towards the LWR final license. Based on reasons cited above, researchers expected the respondents to view the impacts of the LWR and the CRD as interconnected and significant to their community. Further to this, they expected that many residents would like the opportunity to comment on and/or participate in the upcoming hearing.

The waters of Lake Winnipeg flow north via the Nelson River and empty into the Hudson Bay. In 1970, Manitoba Hydro was granted a licence to regulate Lake Winnipeg outflows for power production purposes along the Nelson River. In conjunction with the CRD, the regulation allows Manitoba Hydro to increase water flows on the Nelson River to increase the production capacity of the Jenpeg, Kelsey, Kettle, Limestone and Longspruce Generating Stations. The licence stipulates that Manitoba Hydro must operate the control structures in such a manner so as to ensure that Lake Winnipeg levels remain between 216.7 m and 217.9 m above sea level.

The LWR project included the Jenpeg Generating Station and Control Structure, the removal of

Figure 2. Lake Winnipeg control structures and channels.

restrictions in existing channels and the excavation of new channels (2-Mile Channel, 8-Mile Channel, and the Ominawin Bypass Channel) to improve outflows from the lake, and a dam at the outlet of Kiskitto Lake to prevent water from backing up into that lake (see Figure 3). These works increased the maximum outflow capacity of the lake by up to 50 per cent, meaning that in high water periods, water can be passed out of the lake more quickly than prior to the LWR.

The Jenpeg Generating Station and Control Structure is located on the Upper Nelson River at Cross Lake. Jenpeg's primary purpose is to regulate the water outflow from Lake Winnipeg into the Nelson River. Its secondary function is to take advantage of a 7.3-m operating head (waterfall) at the site to produce electricity. The generating station's powerhouse and spillway provide the means of controlling the outflow from Lake Winnipeg.

2-Mile Channel increased the natural outlet at Warren Landing from Lake Winnipeg. The channel cuts across the narrowest point of land between the north end of Lake Winnipeg and Playgreen Lake about 10 km northwest of Warren Landing.

8-Mile Channel connects Playgreen Lake with the southernmost end of Kiskittogisu Lake. The channel increases the flow of water from Playgreen Lake.

The Ominawin Bypass Channel avoids natural constrictions in the Ominawin Channel and expands flow from Kiskittogisu Lake to the Nelson River (Manitoba Conservation, 2011).

The CRD uses a series of control structures to divert part of the Churchill River into the Burntwood and Nelson River systems to increase output at the generating stations on the Nelson River. Manitoba Hydro announced its plans to divert the Churchill River as a part of its overall northern development plan in 1966, and in 1972, Manitoba Hydro was granted an interim license to proceed with the diversion. Manitoba Hydro recently submitted a final license request to the Manitoba Conservation Environmental Assessment & Licensing Branch (2009). The Minister of Conservation has not requested the license be reviewed by the Manitoba CEC at the time of writing.

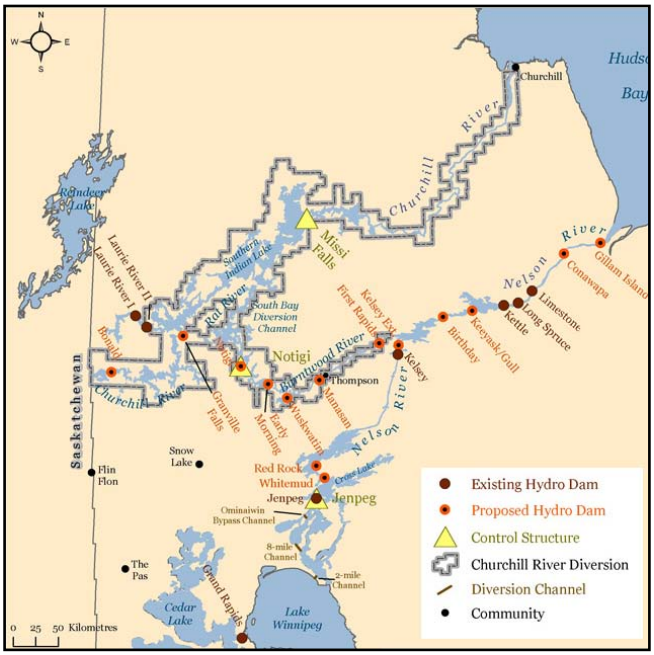

Figure 3. Churchill River Diversion map.

The CRD centers around Southern Indian Lake, a widening in the Churchill River. The diversion, including the Missi Falls Control Structure, the South Bay Diversion Channel and the Notigi Control Structure (see Figure 4), raised the level of Southern Indian Lake by three meters. Under the terms of the interim license, Manitoba Hydro is permitted to divert up to 850 m^3/s from the Churchill River into the Nelson River.

With the diversion system in operation, the flow of the Churchill River into the Hudson Bay was greatly reduced. As a result, Manitoba Hydro completed the Churchill River Enhancement Project to compensate for effects from the CRD. In 1998, a rock weir was constructed across the Churchill River to raise water levels in the river and create a lake that improves habitat for fish and recreational opportunities for local residents (Manitoba Hydro, 2010).

1.2 Methodology

Student researchers conducted interviews with Churchill residents, where residents were defined as individuals who have lived in Churchill for a period greater than one consecutive year within the past forty years, at local coffee shops, stores, businesses, etc. Respondents were provided with a gift voucher to the local coffee shop to thank them for their time.

A goal of thirty respondents was established by the research team. The preliminary interview questions used to verify respondent eligibility are provided as Appendix A.

Interviews were conducted as follows:

1. Researcher asked preliminary questions to verify the eligibility of the potential respondent
2. If the respondent was eligible and agreed to participate, the researcher provided respondent with background information (Appendix B)
3. Researcher asked respondent questions as provided
4. Respondents provided a response to each qualitative question as appropriate
5. Respondent was provided the opportunity to share further comments on their feelings towards the LWR and associated Hydro-development projects
6. Researcher provided respondent with gift voucher, the CEC's website address regarding this project, and email contact information for further comments or concerns regarding the survey

Materials

Data collection and analysis materials required for this project will include:

- Churchill resident contact information
- Forty $2.25 Coffee shop gift vouchers
- Six laminated background information and interview question cards
- Manitoba Clean Environment Commission website address and contact information slips
- Additional student researchers to aid research team interviewers
- Access to graphing and analysis tools included in programs such as MS Excel, MS PowerPoint and/or SPSS.

1.3 Results & Discussion

Though statistical analysis was not employed in this project, a number of specific indicators were drawn from the data. The following is a description of the associated interview questions and the data derived from the responses and comments provided by the respondents for each question.

Question three asked respondents how closely related they thought the LWR and the CRD projects are to one another. Based on the reasons cited above, the researchers anticipated that respondents would feel that the two projects were somewhat or completely related.

The interview results demonstrated that few respondents felt the projects were completely unrelated. In addition, nearly two thirds of the respondents felt that the projects were somewhat or completely related. Contrary to expectations, almost one-third of the respondents answered "neutral/unsure". However, researchers noted that none of the respondents who answered "neutral/unsure" had answered "completely unaware" to both questions assessing their prior knowledge of the CRD and the LWR projects.

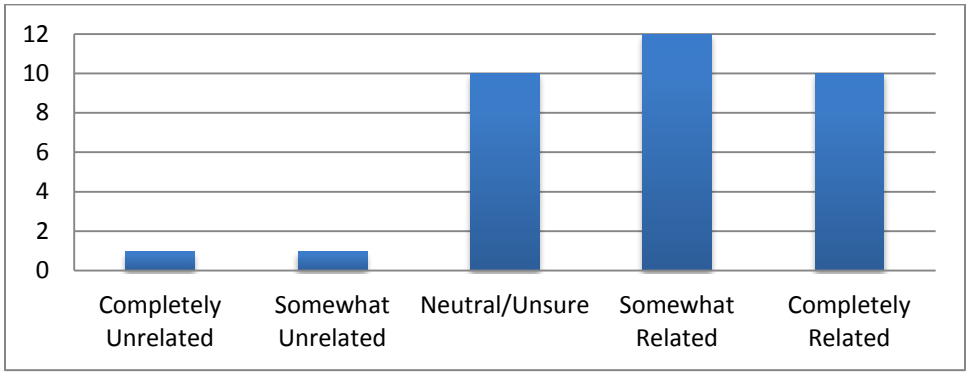

Figure 4. LWR and CRD relation.

Question four evaluated respondent awareness of the upcoming CEC hearing. As seen in Figure 6, almost sixty percent of respondents were completely unaware. Several factors may have contributed to this lack of awareness including the lack of newspaper or media delivery within the community. Researchers noted that this may be an area of improvement for the CEC. Comments provided by respondents indicated that Manitoba Hydro and the CEC should increase awareness among Manitoba residents potentially affected.

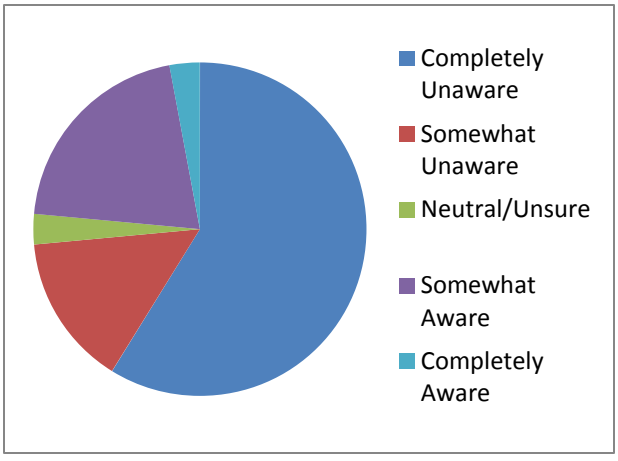

Figure 5. Awareness of CEC hearing.

Question six asked respondents to choose the most significant impact of the projects on Churchill. Many respondents felt multiple categories were equally significant and chose to list multiple categories together under the "other" option. Of the six predetermined categories, forty-seven percent of respondents chose recreational and commercial fishing as the

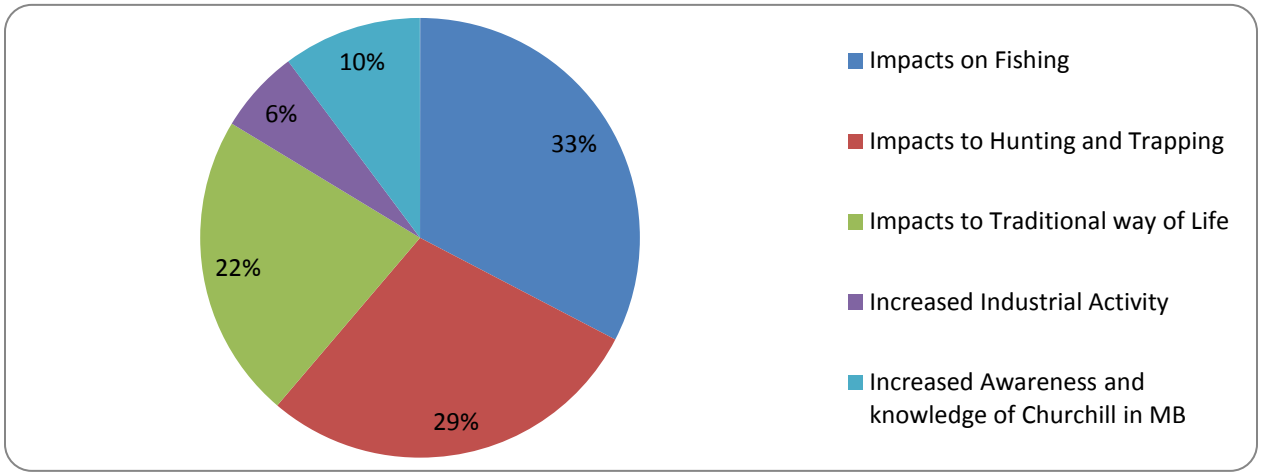

Figure 6. Significant impacts on Churchill.

most significant impacted area of Churchill. Forty-one percent chose hunting and trapping activities as the most significantly impacted. Comments provided by respondents indicated that fishing, hunting and trapping are valued highly as leisure activities.

Question seven evaluated the level of significance of these impacts on Churchill. Most respondents indicated that the projects had negatively impact the town due to reduced fishing and affected hunting grounds and trapping areas. In addition, comments indicated that the mitigation measures undertaken, including the rock weir constructed as a part of the Churchill River Enhancement Project, were not effective in raising water levels inland, were not a cost-effective means of mitigation due to maintenance costs, and that the biodiversity had not returned to the area.

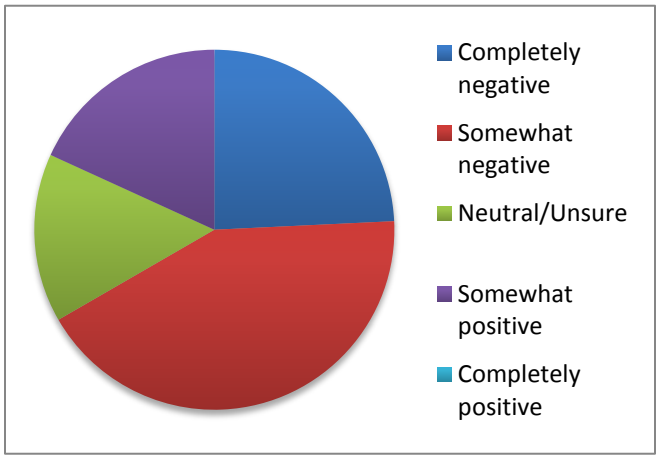

Figure 8. Impacts to Churchill.

Further to this, question nine asked respondents to evaluate the responsibility effectively taken by Manitoba Hydro regarding the impacts on these projects on Churchill. Figure 9 shows responses varied greatly among residents with at least two respondents in each category. Those respondents which responded as neutral/unsure of Manitoba Hydro's impacts on the community generally lived in Churchill for less than twenty years and/or had not heard of the projects prior to this time. As a result, researchers felt a lack of information and/or awareness was a major contributing factor. The category "some responsibility" had a total of ten respondents while "full responsibility" had four respondents. These individuals noted that Manitoba Hydro had built the rock weir, compensated those individuals with affected cabins, had built the marina and contributed additional funds to the town for community and cultural purposes. Generally, those respondents that have resided in Manitoba for more than twenty years and/or had provided further comment felt that Manitoba Hydro had made some level of effort.

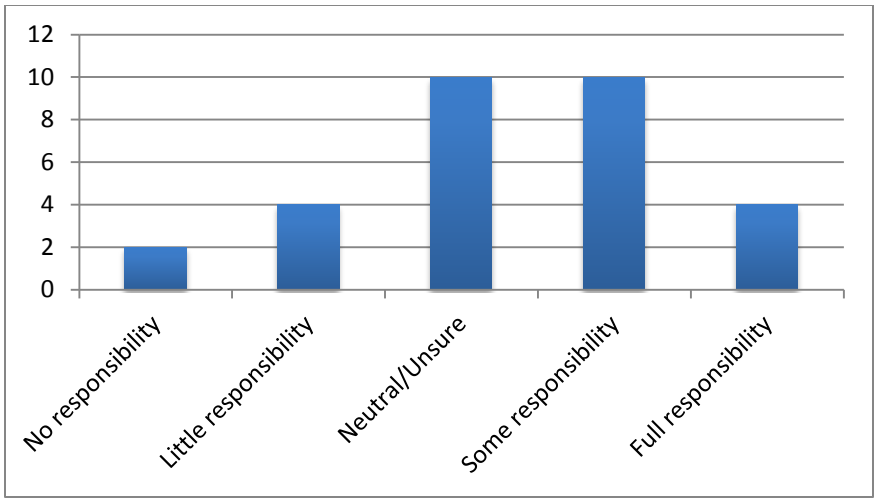

Figure 7. Responsibility effectively taken by Manitoba Hydro.

Impacts and benefits to Churchill and Manitoba as a whole were addressed in questions seven and eight. Prior to the survey, researchers had anticipated that respondents would generally identify the impacts of the LWR and CRD projects as negative for Churchill. Researchers also anticipated that respondents would generally identify the impacts of the projects as having a net positive benefit for Manitobans. Although the majority of respondents followed this pattern, researchers found a much wider range of responses than expected and a number of valuable comments.

As noted in Figure 8, none of the respondents felt the project had been completely positive for Churchill. In addition, many respondents responded as "neutral/unsure" citing a lack of information on the project. The respondents who felt the projects had a somewhat negative or somewhat positive impact on Churchill were of particular interest. Respondents that had cited a "somewhat negative" impact to Churchill generally referenced the impacts to fishing and hunting/trapping due to reduced water levels. However, these respondents did recognize the effort made by MB Hydro to mitigate the effects.

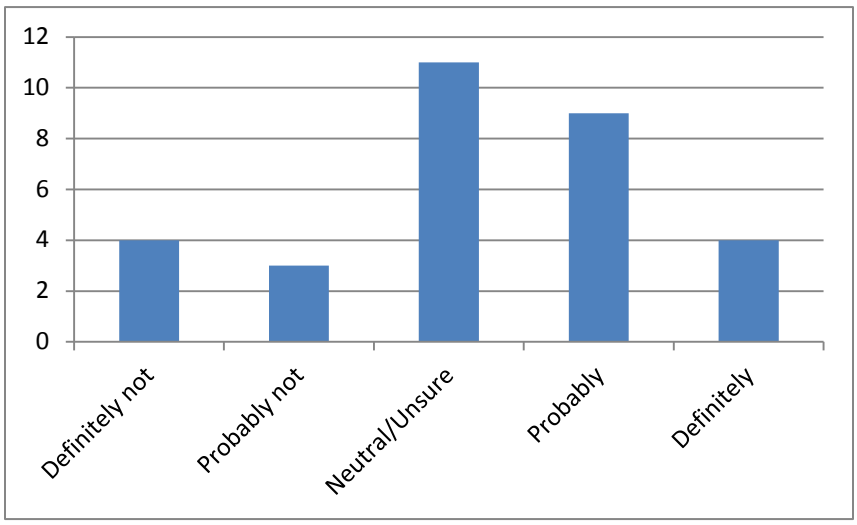

Figure 8. Should Manitoba Hydro receive the LWR final licence?

The responses regarding the net impact of the projects on all Manitobans demonstrated a relatively equal distribution between "somewhat negative", "neutral/unsure", and "somewhat positive" answers b, c and d. With this question the researchers had assumed most residents would identify the negative

impacts to Churchill while also realizing the benefits of the project for the province as a whole. The small distribution of responses found confirms our assumption. However, the comments provided by respondents also demonstrated that those respondents which felt the project had provided a net negative benefit to Manitobans were completely or somewhat aware of the project prior to this survey.

To evaluate respondents' opinion on the license itself, researchers asked respondents if they felt Manitoba Hydro should be granted the final LWR license. A total of eleven individuals responded as neutral/unsure. In this case, most of the respondents did not provide further comment on their response. When cross-referenced with question two, it was found that many of these respondents were not aware of the LWR prior to this survey. As such, researchers felt that the high number of respondents in this category can be attributed to a lack of information and/or awareness. Nine individuals felt that Manitoba Hydro should probably receive the license. However, few respondents in this category provided further comment. Six respondents felt that Manitoba Hydro should "definitely not" or "probably not" receive the final license. These respondents generally felt that a fifty-year license was too long and that environmental considerations will change substantially within this time period. Some respondents suggested that a shorter time period, such as ten years, would be more appropriate.

1.4 Sources of Error

Four primary sources of error existed in this study including the locations surveyed within Churchill, the demographic of respondents, the background of respondents and the abilities/impressions of the interviewers.

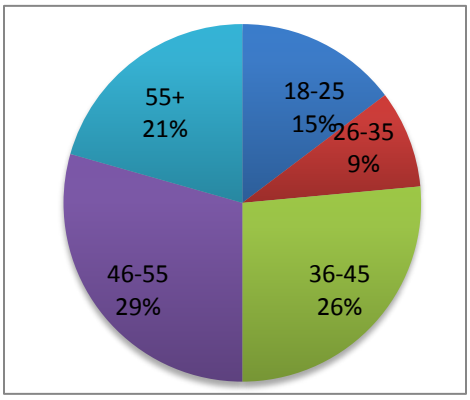

Figure 9. Age of respondents.

Due to little experience in the town of Churchill and safety concerns, residents were interviewed primarily on the main street of Churchill and within the town complex including the hospital, community centre and school. Businesses such as restaurants, tourist shops and home hardware stores were also visited. Due to this limited survey area, residents not able to leave their home or residents who do not frequent these areas would have been excluded. In particular, this may have excluded older residents which are within their home, a nursing home or patients at the hospital.

As seen in Figure 11, the demographic of respondents was relatively even across the age ranges we requested from respondents. However, the age of respondents were not accounted for above age 55. As noted above, the elderly population of Churchill may have been excluded from the survey due to the locations surveyed. Further analysis using more defined age cohorts may have shown gaps in our sample of respondents.

In question 14, respondents were asked to identify any and all backgrounds which applied including Status Indian, Metis, Dene, Inuit, Cree, Caucasian, Long-term resident of Churchill (10+ years) and Long-term resident of Manitoba (10+ years). This question was included to evaluate the backgrounds of respondents and evaluate their relationship with the community and land surrounding Churchill. As demonstrated in Table 1, the number of Caucasian respondents (15 respondents) far outweighed other groups. Researchers had aimed to interview a much larger proportion of residents know to have been affected by the projects such as the Dene or Metis (INAC, 2010). This lower proportion may have impacted the responses to questions regarding the impacts of the projects and their feelings towards them.

It should be noted however, that the number of First Nations groups including Status Indian, Metis, Dene, Inuit and Cree was a total of 14 respondents. The proportion of respondents within the First Nations groups was proportionate to the number of Caucasian respondents.

The appearance and approachability of interviewers and assistants may have impacted the success rate of interviewers where success rate is defined as the number of individuals approached vs. the number of respondents. All interviewers and assistants were under 30 years old, Caucasian and dressed similarly. Based on consultation with Churchill residents, the appearance of interviewers was generally that of southern tourists and researchers in the area. Due to the large number of these groups within the Churchill area, the resident vs. tourist mentality may have reduced the number of and variety of backgrounds of respondents.

In addition, the interviewers used for the survey had not visited Churchill prior to the survey. This lack of experience within the community would have inhibited the interviewers' ability to establish relationships with residents prior to the survey. This lack of familiarity may have impacted the depth of responses provided by respondents.

Table 1. Background of respondents.

Status Indian	Metis	Dene	Inuit	Cree	Caucasian	Long term residents of Churchill (10+ years)	Long term residents of Manitoba (10+ years)
4	3	1	3	3	15	20	19

1.5 Conclusion

The interviews conducted found that there was a general lack of awareness in Churchill regarding both the LWR and CRD projects as well as the upcoming CEC hearing. A lack of media sources such as a newspaper or local television stations(s) were cited as potential reasons. In addition, respondents indicated that information regarding the hearing required improved or other forms of distribution within the community. As many residents of Churchill do not have access to internet within their homes, their access to news sources and/or provincial media releases is limited.

Respondents indicated that the LWR and CRD projects were generally felt to have been a negative impact on Churchill due to its impacts on fishing, hunting and trapping. In other cases,

these impacts further impacted the traditional way of life in Churchill. Mitigation efforts such as the rock weir were cited as inadequate attempts due to the yearly maintenance required and reduced access to boating. However, many residents recognized the benefits of the funds received by the community from Manitoba Hydro each year.

With respect to the LWR final license, 80% of respondents did not object to the granting of the license. It should be noted however, that comments by respondents indicated that the length of the license should be re-examined as it was felt that many environmental factors may change over a fifty year period.

Though the impacts of the LWR do not directly influence the water levels on the Churchill River, the projects were seen as interconnected by 65% of respondents. As a result, researchers felt that further information distribution is required within Churchill to ensure residents are well-informed of the projects and the upcoming CEC hearing. In addition, the efficacy of mitigation measures should be re-evaluated by the CEC as a part of the final licensing hearing.5

Despite relatively low levels of awareness, 65% of respondents felt that the LWR and CRD projects are related and have had a negative impact on their community. They cited impacts to fishing, hunting and trapping activities as the most significantly impact activities. Though respondents generally agreed with the granting of the LWR final licence to Manitoba Hydro, comments provided by respondents indicated that further examination into the length of the license and the efficacy of mitigation measures is needed.

1.6 References

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1.7 Appendices

Appendix A: Survey

Interviewer Instructions

Be sure to greet all potential survey respondents with a warm smile and a handshake. Ask potential respondent the following preliminary interview questions to verify their eligibility to participate in the survey:

- Have you been a resident within Churchill for one consecutive year at any time in the past 40 years?
- Are you over 18 years of age?
- Would you be willing to participate in a short survey regarding Manitoba Hydro's license and associated project?

If the respondent replies "yes" to the above questions, proceed with the interview questions.

Begin to interview respondent in the order provided below. Be sure to speak slowly and articulate. For responses which require a qualitative response, please be sure to provide respondents an additional 2-3 seconds after they have finished speaking to ensure they've provided a complete answer.

Step 1: Hand respondent background information sheet. Read background information while allowing respondent to follow along.

Step 2: Advise respondent that survey questions and appropriate scales can be found on the back of the information sheet. They are welcome to follow along as the questions are read aloud to them. A second interviewer will record their responses.

Step 3: Ask interview questions as listed on the back of the background information sheet.

Step 4: Provide respondent appropriate time to answer all questions. Second interviewer will record the respondent's answers on the provided answer sheet. The second interviewer will confirm responses when required.

Step 5: Thank respondent for their time and provide them with coffee shop gift voucher and website and contact information slip for any additional comments or concerns.

Appendix B: Background Information and Interview Questions

Please see attached document.