

# Assessing impacts that matter to people: practical examples of assessing psycho-social impacts in environmental impact assessments

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## INTRODUCTION

Good impact assessments assess the impacts that really matter to people in a meaningful way. This is particularly true of psycho-social impacts, which are often less tangible and more difficult to measure than, for example, changes to the biophysical environment or the economy.

Psycho-social impacts encompass how people think about and experience the world around them. While psycho-social impact assessment is gaining traction and is increasing awareness of these impacts, it is not new for these impacts to occur, or even to be considered in environmental assessment. Many of these impacts have long been considered an important part of doing good social, health, or cultural impact assessment. An increased focus on psycho-social impacts simply emphasizes the importance of understanding, assessing, and mitigating some of the more difficult to quantify impacts on people.

The Mackenzie Valley Environmental Impact Review Board (the Board) is a co-management Board, which means that members are nominated equally by Indigenous Governments and by Federal or Territorial Government.<sup>1</sup> Co-management guarantees that the Board will be composed in part of people who can understand multiple perspectives and worldviews, including those of the Indigenous Peoples of the Mackenzie Valley. The Board has a clear mandate<sup>2</sup> to consider the impacts of projects on the well-being of residents and on the way of life of Indigenous Peoples when it conducts impact assessments. The Board carefully considers impacts on people and does so with a focus on well-being that aligns with many aspects of psycho-social impact assessment.

The composition, origins and legislative requirements of the Board mean that it has long considered psycho-social impacts in its assessments in a variety of ways. This paper will review three case studies of how the Board has understood, assessed, and mitigated psycho-social impacts in past assessments. There are valuable lessons for other organizations that may wish to improve how they consider psycho-social impacts within a larger assessment and aligning with their current processes.

## CASE STUDIES

### Case Study 1: Acceptability of a transmission line crossing sacred water<sup>3</sup>

In 2007, Dezé Energy Corp. proposed to expand the Taltson Twin Gorges hydroelectric plant and build a transmission line 700 km north to power three existing diamond mines (as described in Review Board 2010). The proposed project was within the traditional territory of the Łutsel K'e Dene First Nation.

From the beginning of the environmental assessment, it was clear that there were cultural concerns with the routing of the proposed transmission line. The preferred route would cross Desnethche (the Lockhart River) near Tsanku Theda (the Old Lady of the Falls). Members of Łutsel K'e Dene First Nation identified the river and falls as a powerful site of healing, strength, and wellness – a sacred area that must not be disturbed. People were concerned that disturbance in this area would ruin the sacred nature of the site, negatively affect transfer of cultural knowledge and way of life, and ultimately lead to

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<sup>1</sup> For more information on the Board, please visit <https://reviewboard.ca/>

<sup>2</sup> Described in the Mackenzie Valley Resource Management Act: <https://laws-lois.justice.gc.ca/eng/acts/m-0.2/>

<sup>3</sup> For more information on this environmental assessment, please visit <https://reviewboard.ca/registry/ea0708-007>

an increase in youth suicide rates because of the affects on culture. Many considered even discussing possible development in this area distressing, causing sorrow and stress. One youth said,

*You want to do something that takes something away from us that our ancestors have had since the beginning. We've been raised here. I don't know what else to say. I just hope that you will find it in your heart to just let us live the way we want to live.* Review Board 2009, p108

The Board acknowledged that the area is far more valuable than its practical utility, also holding an intrinsic and intangible cultural value. The Board accepted testimony of Elders not as individual views, but as expert, traditional knowledge about cultural impacts. This evidence was supported by the views of youth and adults as well. The Board concluded “[p]eople fear that if a transmission line crosses the Lockhart River, it will be a desecration that will reduce its sacred nature and cultural value, which will reduce their ability to transmit their heritage and traditional practices across generations...” (Review Board 2010, p106). The Board found there was no way for the project to follow the planned route without causing a significant adverse impact and wrote a measure stating that the transmission line cannot cross the Lockhart River.

### **Case Study 2: Trust and Anxiety about arsenic at Giant Mine<sup>4</sup>**

Giant Mine is a gold mine located next to Yellowknife, Ndilq̄, and Dettah (as described in Review Board 2013). Over 50 years, arsenic spread from emission stacks, dust, and surface runoff. Nearby Indigenous communities experienced the worst of the impacts, including deaths of children in the 1950s and many illnesses. After the mine went bankrupt, the site became the responsibility of the federal government. The precise extent of contamination was uncertain, which meant there was a lot of public concern. Ultimately, the remediation of the mine was sent to environmental assessment.

During the assessment, many people and groups raised their fears of arsenic exposure, both past and present; people weren't sure if or where it was safe to eat berries, tap trees for syrup, drink lake water, or swim. Many Indigenous people in this region rely on locally harvested fish, caribou, and berries. One local band counsellor described the concern of contaminated country foods: “We don't know it, but it is killing us slowly” (Review Board 2012b, p346). People spoke of worrying every day about health impacts on themselves, their children, and their community. Members of nearby Indigenous communities and the public clearly described how the mine had affected their physical health, but also their psychological health and well-being.<sup>5</sup> A government representative described the concerns as “psychologically pervasive and weighs on the mind” (Review Board 2012a, p372) of Indigenous people and Yellowknife residents. Although the developer did a health impact assessment, people did not trust its outcomes. One member of the public stated “Protect public health. Keep people safe. Don't make us live with the anxiety of the ‘what if’” (Review Board 2012a, p366). Another wrote, “...all residents of this community deserve to trust that our health and interests are looked after by the responsible entities, and that the land and water will not poison us.” (Erica Janes 2012, p1).

Ultimately, the Board found that the acceptance of the remediation depended on a high degree of trust, and that concerns about whether the project would be managed properly meant the remediation was likely to cause widespread anxiety and concern. To address these impacts, the Board required a health

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<sup>4</sup> For more information on this environmental assessment, please visit <https://reviewboard.ca/registry/ea0809-001>

<sup>5</sup> The Board also heard about the evidence of similar impacts of a uranium mine near Deline: “Analysis of collected oral histories showed that the majority of significant past and present health problems within the community continue to be strongly associated with perceived environmental threats. The perceptual link between exposure to mining activities and illness and death has affected people's sense of harmony with nature, which is a crucial component of their cultural identity.” (Review Board 2013 p106)

effect monitoring program in the three closest communities. This included requirements for reporting back on results in culturally appropriate ways, a quantitative human health risk assessment completed by an independent assessor, and an independent oversight body to help keep the public informed.

### **Case Study 3: Importance of Place and Future Aspirations of Lac de Gras<sup>6</sup>**

Diavik Diamond Mines Inc. operates a diamond mine on an island in Lac de Gras, which is a large, culturally important lake. In 2018, Diavik proposed putting mill tailings back into mined-out pits to avoid a costly and difficult expansion of the existing tailings facility (as described in Review Board 2020). During closure, these pits would be flooded and reconnected to the lake, which raised questions about the impacts of putting mill tailings in water that will ultimately be part of the lake.

During the environmental assessment, it became apparent that cultural and traditional use was a large concern. Indigenous groups wanted the area to be clean for future generations, and putting a waste product in the water did not fit with the Indigenous worldview of how everything is connected and how important clean water is. The Yellowknives Dene First Nation pointed out, “[t]ensions, fear, and angst can arise when development is not in alignment with cultural values and perspectives” (Review Board 2019, p47). Lac de Gras is an important source of food and water for traditional land use. As an Elder explained “...there’s a freezer and a bank over there for us” (Tłı̨chǫ Government 2019, p5). People were worried about whether the water would be safe for people, caribou, fish, and other wildlife. They wondered if putting mill tailings in the pits would cause people to avoid the area after the mine closed.

Though the developer insisted that water quality would meet drinking water standards, the Board heard that Indigenous land users would not feel safe drinking water or eating fish from the lake, and this would affect use of and relationship to the land. As Łutsel K’e Dene First Nation stated “...real or perceived socio-ecological impacts ...effectively alienate our members from continuing to practice our way of life in that area” (Łutsel K’e Dene First Nation 2019, p3). People were concerned that if their members stopped using the area, that would affect culture and transmission of knowledge between generations.

In its final decision, the Review Board required several actions from the developer to help build trust and support the future vision Indigenous communities had for use of the area.<sup>7</sup> First, it required the developer to work towards two different water quality objectives - one based in western science, and the other based on Traditional knowledge and engagement with communities. Second, to reduce uncertainty and increase confidence in the results, it required additional modeling and an independent review of the modelling methods and results. Finally, it required more effective engagement to communicate with Indigenous communities.

## **DISCUSSION**

As seen in the case studies above, psycho-social impacts can be difficult to quantify. Qualitative statements and personal perspectives of individuals can be all too easy to dismiss as unproven or isolated opinions. However, qualitative statements from the public and from Indigenous governments about how they believe they will be affected are important, because they represent real concerns that can constitute impacts, and are often voiced by people who are very knowledgeable about their community. Accepting these statements as real evidence of community impacts is a useful first step.

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<sup>6</sup> For more information on this environmental assessment, please visit <https://reviewboard.ca/registry/ea1819-01>

<sup>7</sup> In addition, the board wrote one measure to the government, requiring it to adaptively manage cultural impacts and develop well-being indicators.

A common thread in the case studies described above is the high level of public and Indigenous concern - about more than just the environmental or physical impacts of the project. In the case of the Taltson Hydroelectric expansion, it was focused – Łutsel K'e Dene First Nation found development in a specific location completely unacceptable due to a sacred site. In the case of the remediation of Giant Mine, it was loud and obvious – everyone was concerned because of the long-term health concerns from arsenic exposure. In the Diavik Mine amendment, it was subtle at first – initial concerns focused on water quality crystalized into concerns about the perception of the land and future land use aspirations.

The concerns raised reflected impacts that the public knew or believed would happen. Often, the same concerns were not raised by government or the developer. Whether this is because of worldview, knowledge of how their small community works, or different values, Indigenous groups and the public clearly described some of the psycho-social impacts they believed were likely. For example, in the Diavik Mine amendment case, the regulatory process, which often has more representation from government departments, identified primarily questions and concerns about water quality. When the project went to environmental assessment, there was funding to help Indigenous communities address capacity issues and participate in the process. This gave a voice to different concerns about culture, and concerns from the people who were most likely to be directly affected by the project. Hearing from as many people as possible, with a particular focus on the most-affected and on vulnerable populations, is key to understanding likely psycho-social impacts. Part of this includes giving people the information they need followed by an appropriate space to share their views. In addition, the assessment process itself should be designed and customized in a way to support community involvement and engagement.

Another common (and related) thread amongst the case studies is worldview and the importance of place, particularly the strong connection to the land felt by Indigenous Peoples. This can be seen particularly for the importance of Lac de Gras as a traditional use site as well as Desnethche and Tsanku Theda as sacred sites. The importance of these locations, at a cultural and community level, relate directly to the stress people felt and the potential impacts of the projects.

There is an inherent conflict to having a group with primarily one worldview running a process that assesses impacts on people who have a different worldview. This is one reason why it is critical to treat Indigenous Elders and knowledge holders as experts in their way of life and in how they will experience impacts, as the Board did in the hydroelectric expansion and transmission line case study near Desnethche and Tsanku Theda. This also needs to extend to understanding the significance of impacts, which may require a strong understanding of Indigenous culture and worldview, or a willingness to believe people of a different worldview when they tell you what the impacts will be. When there are different worldviews involved, it's particularly important to enter with an open mind and to listen closely and try to understand, rather than making assumptions about what you are hearing and how it fits into your worldview. In the cases described above, it was particularly powerful that many of those comments were made directly to the Board, the decision-maker with Indigenous representation, at public hearings held in directly affected communities. If an organization does not have this knowledge or expertise internally, it should consider partnerships with appropriate experts.

A challenge associated with the level of concern in all three cases is that this concern itself can have impacts before anything even happens with the development. Developers and assessors should consider how the assessment process can create social impacts and try to mitigate those impacts where possible. This increased stress could be seen in the Giant Mine remediation project, where a long simmering concern manifested more strongly as the environmental assessment focused attention on the issue. There may be ways to mitigate this on a case-by-case basis, such as bringing people into discussions about mitigation options and what would reduce the risk to an acceptable level. In addition, long-term

transparency and building of trust in the environmental assessment process and in the decision maker, in this case the Board may help.

Another shared challenge in these case studies was that the psycho-social issues discussed above were sometimes not fully fleshed out until later in the environmental assessment process. This can increase stress on the people trying to raise concerns about the topic and can make it harder for decision-makers. Starting information gathering on psycho-social impacts and sources of concern earlier in the assessment process would help. This could be accomplished through more detailed requirements to the developer to assess impacts on people, as well as more engagement from the decision-maker with potentially affected communities early on.

To summarize the discussion above, the following are useful actions for improving assessment of psycho-social impacts on people's well-being:

- Engage early and often with potentially affected people and communities
- Hear directly from the most-affected people, including vulnerable populations
- Create a safe and appropriate space for sharing
- Listen actively for sources of concern from the public and Indigenous Peoples
- Ask questions to understand an impact and why it matters
- Be flexible and adjust your process to better suit your audience
- Understand that the impacts people are describing are real
- Consider the impacts of the assessment itself, and the concern and anxiety it can cause
- Treat people and communities, especially in small, Indigenous, or tight-knit communities, as experts in their way of life and how they will experience impacts
- Ask affected people and communities for advice on how to reduce the impact
- If you don't have the expertise or knowledge, build partnerships or hire specialists to help you understand different cultural or social impacts, and different worldviews

In addition to continuing to follow these actions, the Board is currently working to improve its engagement and create more space for people to understand the project and the assessment process - to better help them participate in that process and share with the Board. In addition, the Board is working on improving its understanding of impacts on well-being from a holistic, systems approach – considering how the world and the impacts people experience are interrelated.

## **CONCLUSION**

A key part of learning about, characterizing, assessing, and mitigating psycho-social effects is hearing directly from affected people and communities. Impacts on people's well-being and way of life can be very personal and individual, and it is key to give people the information they need to understand the project, followed by the time and appropriate space for them to share their views. By listening carefully to the public and affected parties, you can learn about their aspirations, goals for the future, sense of place on the land, fears and sources of stress, and so on. They will tell you which psycho-social (and other) impacts they are particularly concerned about, and which risks are of greatest concern to them. Listening to concerns of potentially affected people and communities, and carefully assessing psycho-social impacts will improve the likelihood that such impacts are resolved or reduced. This will increase trust and satisfaction with the environmental assessment process and ultimately build confidence in environmental impact assessment decisions by meaningfully assessing impacts that matter most to people impacted by a development.

## DISCLAIMER

Please note that this paper describes my perspectives based on my experiences with the Board, but my views are not necessarily shared by the Board.

## REFERENCES

Erica Janes. 2012. Letter submission for the public hearings. Available at:

[https://reviewboard.ca/upload/project\\_document/EA0809-001\\_Letter\\_from\\_Erica\\_Janes.PDF](https://reviewboard.ca/upload/project_document/EA0809-001_Letter_from_Erica_Janes.PDF)

Łutsel K'e Dene First Nation. 2019. Response to Review Board Information Requests. Available at:

[https://reviewboard.ca/upload/project\\_document/LKDFN\\_Response%20to%20Review%20Board%20IRs\\_Jul%204%2C%202019.pdf](https://reviewboard.ca/upload/project_document/LKDFN_Response%20to%20Review%20Board%20IRs_Jul%204%2C%202019.pdf)

Review Board. 2009. Transcripts: Łutsel K'e Technical Session. Available at:

[https://reviewboard.ca/upload/project\\_document/EA0708-007\\_Transcripts\\_Lutselk\\_e\\_technical\\_session\\_Sept\\_29\\_09\\_.PDF](https://reviewboard.ca/upload/project_document/EA0708-007_Transcripts_Lutselk_e_technical_session_Sept_29_09_.PDF)

Review Board. 2010. Report of Environmental Assessment and Reasons for Decision: Dezé Energy Corporation, Taltson Hydroelectric Expansion Project. Available at:

[https://reviewboard.ca/upload/project\\_document/EA0708-007\\_Mackenzie\\_Valley\\_Review\\_Board\\_s\\_Report\\_of\\_Environmental\\_Assessment\\_for\\_Deze\\_Energy\\_Corp\\_Ltd\\_s\\_Taltson\\_Hydroelectric\\_Expansion\\_Project.PDF](https://reviewboard.ca/upload/project_document/EA0708-007_Mackenzie_Valley_Review_Board_s_Report_of_Environmental_Assessment_for_Deze_Energy_Corp_Ltd_s_Taltson_Hydroelectric_Expansion_Project.PDF)

Review Board. 2012a. Giant Mine Hearing Transcripts – September 11, 2012. Available at:

[https://reviewboard.ca/upload/project\\_document/EA0809-001\\_Giant\\_Mine\\_hearing\\_transcripts\\_-\\_September\\_11\\_2012.PDF](https://reviewboard.ca/upload/project_document/EA0809-001_Giant_Mine_hearing_transcripts_-_September_11_2012.PDF)

Review Board. 2012b. Giant Mine Hearing Transcripts – September 12, 2012. Available at:

[https://reviewboard.ca/upload/project\\_document/EA0809-001\\_Giant\\_Mine\\_hearing\\_transcript\\_-\\_September\\_12\\_2012.PDF](https://reviewboard.ca/upload/project_document/EA0809-001_Giant_Mine_hearing_transcript_-_September_12_2012.PDF)

Review Board. 2013. Report of Environmental Assessment and Reasons for Decision: Giant Mine Remediation Project. Available at: [https://reviewboard.ca/upload/project\\_document/EA0809-001\\_Giant\\_Report\\_of\\_Environmental\\_Assessment\\_June\\_20\\_2013.PDF](https://reviewboard.ca/upload/project_document/EA0809-001_Giant_Report_of_Environmental_Assessment_June_20_2013.PDF)

Review Board. 2019. Public Hearing Transcript – September 4, 2019. Available at:

[https://reviewboard.ca/upload/project\\_document/MVRB%20re%20DIAVIK%20COMMUNITY%20AND%20TECH%20%2009-04-2019.pdf](https://reviewboard.ca/upload/project_document/MVRB%20re%20DIAVIK%20COMMUNITY%20AND%20TECH%20%2009-04-2019.pdf)

Review Board. 2020. Report of Environmental Assessment and Reasons for Decision: Diavik Diamond Mines Inc, depositing PK into pits and underground . Available at:

<https://documents.reviewboard.ca/w/mvrb/PR196#!fragment//BQCwhgziBcwMYgK4DsDWszlQewE4BUBTADwBdoByCgSgBpltTCIBFRQ3AT0otokLC4EbDtyp8BQkAGU8pAELcASgFEAMioBqAQQByAYRW1SYAEbRS2ONWpA>

Tłı̄chq̄ Government. 2019. Tłı̄chq̄ Government Intervention. Available at:

[https://reviewboard.ca/upload/project\\_document/TG\\_Review%20Board\\_01August2019.pdf](https://reviewboard.ca/upload/project_document/TG_Review%20Board_01August2019.pdf)