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THE FUTURE

GLOBAL WATER INITIATIVE

ENGAGING COMMUNITIES AND INDIGENOUS RIGHTS-HOLDERS IN WATER-RELATED DECISION-MAKING FOR MINERAL PROCESSING

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Contents

Executive Summary

Water now represents one of the most significant risks facing the mineral exploration and mining sector. There are concerns about water availability, water quality, and the potential for conflict between water users in the vicinity of mining projects. Between 2000 - 2017, water-related issues were implicated in 58 percent of mining cases lodged with International Finance Corporation's Compliance Officer Ombudsman (CAO), an independent recourse mechanism that responds to complaints from project-affected communities. Such statistics provide context for why there is a need for greater community input to project design decisions that affect the water-related priorities of rightsholders and other stakeholders.

The research described in this report investigated approaches to community engagement used by mineral exploration and mining companies when options for water and tailings management are being considered. The objective was to understand the barriers that communities and Indigenous rights-holders face in engaging with exploration and mining companies on issues related to water management. The research is situated within the social considerations and stakeholder engagement theme of the CEEC Global Water Initiative's "Water Wheel."

Six semi-structured interviews were used to explore the perspectives of individuals with considerable experience in industry-community engagement. Respondents represented different regions of Canada and included individuals with heritage from four distinct Indigenous Nations and respondents who work for, or as consultants to, the mineral exploration and mining sector.

The majority of respondents felt that the most common approach to community engagement within the mineral exploration and mining sector was to meet regulatory requirements to *inform* the public about exploration or proposed mining projects. However, in Canada, where there is an increasing focus on the importance of Indigenous reconciliation, there is an expectation that companies will begin to adopt approaches to engagement that create opportunities for co-design, co-decision-making, and greater collaboration between companies and communities on issues of mutual interest.

In the area of water and tailings, interviewees pointed to tactics to support more effective engagement and collaborative management. Information on these ideas can be found in the "Advice" section (p.13-14), with additional ideas included in Appendix D. Respondents agreed there is a role for mineral processing engineers in community engagement, provided these individuals can build trust with holders of traditional knowledge and other citizen scientists and engage in a manner that makes specialized technical knowledge accessible to all.

Background and Objectives

CEEC International is an independent, globally recognized not-for-profit organisation funded by the mining industry under a member-sponsorship arrangement. Its core value proposition focuses on accelerating eco-innovation within the resources sector through targeted collaborations, thought leadership and action-oriented programs which aim to achieve measurable impact in energy, water, emissions, and tailings-driving environmental, social and governance (ESG) performance and operational excellence.

The Global Water Initiative (GWI) is a collective industry initiative under the umbrella of CEEC International which aims to address water-related challenges through collaboration and research. The scope of activities under the GWI has been refined over a multi-year period of engagement with CEEC members. Through these activities, a "Water Wheel" has been developed which describes leverage points needed to drive improvements in industry performance.

This can be problematic because in the initial stages of exploration, companies tend to shy away from detailed design discussions when judgements about potential project configurations are still being worked out. Knowing only around one in one thousand mineral discoveries is likely to become a producing mine[1] can create concern on the part of company representatives about engaging communities too early for fear of creating expectations about a project which may not move ahead.

There can also be a perception that community representatives do not have the technical knowledge to make an informed contribution to technical discussions.

Indeed, previous studies point to evidence to suggest that communities located in proximity to mineral discoveries are often not adequately consulted in design decisions.[2] As such, companies may miss opportunities to incorporate design elements that could create positive synergies with Indigenous groups, or they may make incorrect assumptions about the priorities of communities in the vicinity of their project which could lead to design decisions that are unlikely to obtain community support.

It is against this backdrop that this research project has been conceptualized. It is anticipated that a gap exists in understanding the barriers that communities and Indigenous rights-holders face in engaging with minerals processing engineers. This work seeks to better understand those gaps and to develop a scope of work that could be advanced in a subsequent phase.
There are three overarching questions guiding the work:

1. What barriers do communities and Indigenous rights-holders face when engaging with mining companies and technology providers around design choices as it relates to water and tailings management?

2. Where are there potential points of intersection for communities and mining companies to implement new technologies?

3. Describe positive case studies of where minerals processing engineers have successfully implemented new technologies in partnership with communities.

This initial phase has focussed on Canada, but it is envisaged that future work could incorporate comparisons with additional countries such as Australia or Chile as discussed in the section "Proposed Next Steps."

[1] In general terms, 500 – 1000 grassroots exploration projects will result in 100 targets for advanced exploration; 10 of which will qualify as development projects, and one of which will become a producing mine
[2] See Fraser, Bat-Erdene and Kunz (2019): https://sppga.ubc.ca/news/what-constitutes-good-input-to-mine-planning/

Introduction

In Canada, early engagement by exploration and mining companies with communities potentially affected by proposed mineral development is a regulatory requirement. In some provinces, such as British Columbia, the first jurisdiction within Canada to enact legislation implementing the United Nations Declaration on the Rights of Indigenous People (UNDRIP)[3], incorporating Indigenous rights to decision making has become a legal requirement. When taken together with increasing calls for local voices to be heard on decisions that affect communities and livelihoods, there is a strong expectation that companies will use engagement to facilitate improved company-community collaboration.

The International Association for Public Participation (IAP2) is the leading global community advancing the practice of public participation and community engagement. IAP2 developed a Spectrum of Engagement (Figure 1) which is used internationally to describe or select the level of participation that defines the public's role in any public participation process. The idea of moving along the spectrum is gaining acceptance but there are outstanding questions about the role stakeholders and rights-holders could–or should–play as water and tailings management are designed.

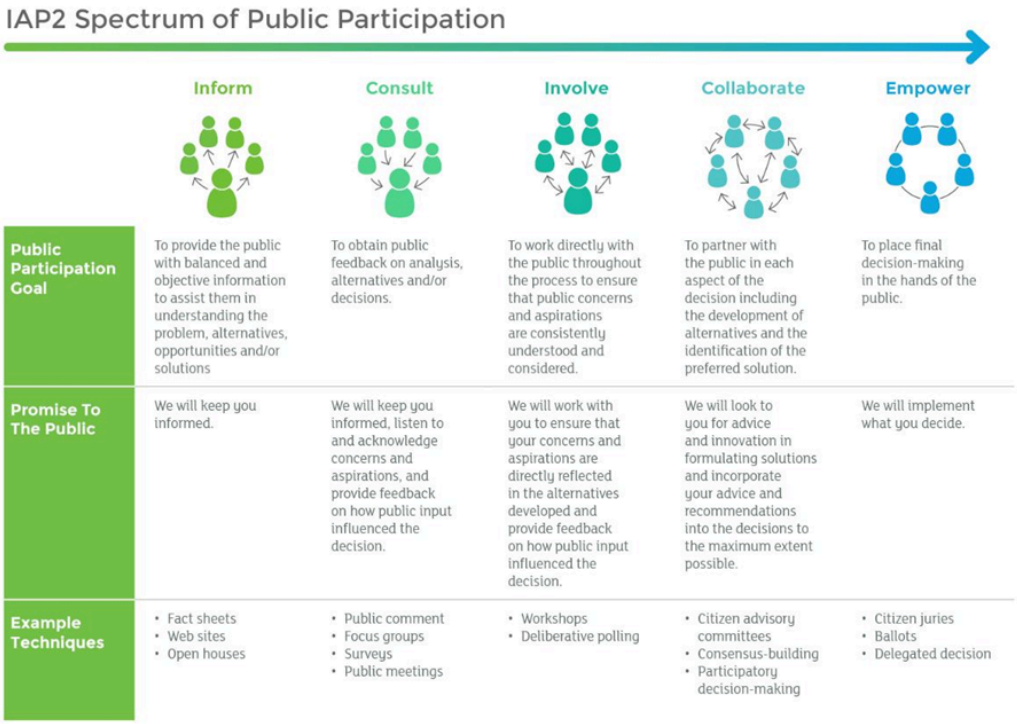

Figure 1 – International Association Spectrum of Engagement: International Association for Public Participation

[3] https://www.bcdripa.org/

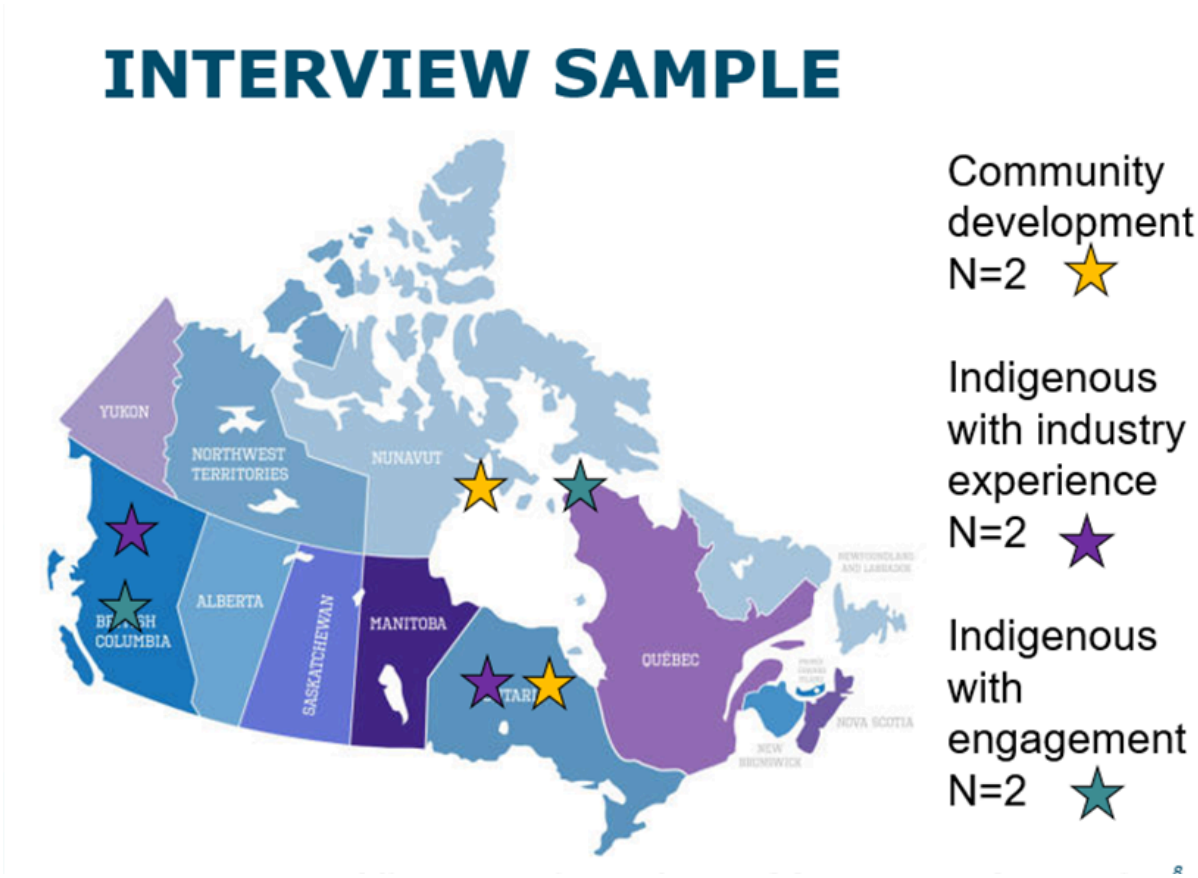

Figure 2 – Interviewees represented three minerals-rich jurisdictions within Canada. Each respondent has more than 20 years of experience in mining community relations.

Research Approach

The purpose of this research was to understand barriers to collaborative engagement on water and tailings management in the minerals sector in Canada. Interviews with experts provided the principal source of data. Members of the Mining Association of Canada's Towards Sustainable Mining[4] Communities of Interest (COI) Panel were approached for interviews. Participation in the COI was used as a proxy for mining company community leadership. Initial respondents offered suggestions for additional interviewees, a technique known as snowball sampling. An interview guide (included in Appendix A) was used to support data collection and analysis.

[4] Towards Sustainable Mining Body is the Mining Association of Canada's globally recognized sustainability program that supports mining companies in managing key environmental and social risks. https://mining.ca/towards-sustainable-mining/

The Findings

1. Water is a priority for all and is highly valued

Respondents were unanimous that when communities are confronted with mineral exploration or mining projects, water is a major concern. For Indigenous Peoples water has a spiritual and cultural value that is often not adequately recognized by industry representatives. It was noted that definitions of the value of water are important to improve communication and create opportunities to bridge traditional Indigenous knowledge and western science thereby enabling better water stewardship.

2.Context is important

Respondents stressed how critical it is for company representatives to understand each community's context. Every community is different and heterogeneous, sometimes with differing or competing priorities with community priorities often different than those of exploration or mining companies.

> *The community may be genuinely interested in seeing you, but you may not be the priority.*

> *Every community is different... companies come to communities wanting to fast-track projects. But they need to be willing to help the community understand the project, how it is going to affect the community.*

When community priorities differ from those of project developers frustration can arise for companies that are operating on strict timelines or have certain expectations around how decision making will take place. Company approaches in turn can frustrate communities.

In addition, the community's previous experience with exploration or mining companies may influence perceptions of new proposed development, whether this be for the same or a different operator. One of the communities represented in the research sample had a challenging time working with the mining company operating on the community's traditional lands. Another had a positive experience. The interview results were influenced by these previous relationships and respondents agreed that past experience sets expectations for the outcome of any future engagement.

> *A lot of First Nations don't speak the same sort of technical language or technical speak that goes into a regulatory application... They don't follow the same timelines, and they don't have the same kind of decision making.*

"[The company] just ticks the boxes so, in the end, they could do whatever they wanted. . . There's not a lot of trust. And trust is a difficult thing to get back once you've lost it."

versus

"What happened before [mine name] started, the company and the Indigenous government would meet, they would talk about what was happening, what they were doing, the different technical sessions and things like that. And then both parties would go to the communities and hold public meetings to talk about what was going on and answer questions. It was true engagement in that it wasn't just going in and telling people, it was going in and actually talking with them."

Community sensitivities may be formed by topical issues. For example, tailings safety following the Brumadinho tailings dam failure or current concerns around oil and gas pipelines in Canada. Both issues may influence conversations about the use of pipelines for water and tailings management.

There are also likely to be differences in how communities and companies view the land. Companies may think a proposed mine is in a remote region far from the community but for Indigenous people, accustomed to travelling the land, that distance may be considered right round the corner. Water protection in the region is therefore important and links to other priority issues such as food security, the ability to follow traditional pursuits such as hunting and gathering, in addition to environmental protection.

3. Lack of Trust

Low trust in mining is a global problem[5] with a lack of trust between the mining sector and resource-rich communities consistently noted as an impediment to effective engagement. Research conducted for the Mining Association of Canada suggests that trust levels in Canada are higher than the global average, however, Indigenous communities in Canada have historic reasons to worry about the power imbalance inherent in land use discussions. Respondents reminded us that relationships build trust and that the first step for good company-community relationships is to listen to what community representatives have to say rather than arriving in communities with set plans. It is also important to recognize that trust may have diverse ways of being created, represented, and maintained across cultures and regions.

> *There's not a lot of trust. And trust is a difficult thing to get back once you have lost it.*

Respondents suggested that trust is built by sharing bad news as well as good yet noted that company representatives are frequently not comfortable discussing things that have not gone according to plan.

> *[The company] was upfront. If there was bad news, they were upfront about it. If there was good news they were upfront about it. And so, by doing it that way, the company gained a lot of respect and trust with the communities.*

Another consideration in an industry where changes in personnel can be frequent—and where there may also be changes in ownership—is that trust can help to protect the company-community relationships during changes in the social chain of custody[6]. To be successful maintaining trust requires that there be a process in place to provide incoming personnel with an orientation to community engagement, including an introduction to community members and ensuring that promises made to communities are well documented and prioritized across the mining life cycle.

[5] *See research conducted by GlobeScan for ICMM: https://www.icmm.com/en-gb/research/mining-minerals/2023/understanding-perceptions-of-mining*

[6] *Social chain of custody – is used to refer to the idea that within the life of a mining project—from exploration to closure—there needs to be an approach (a social chain of custody) to mitigate the socio-political risk arising from corporate mergers, acquisitions and transitions, and from company personnel changes.*

4. There has been a historic failure by mining companies to meet community expectations

Another global challenge for the minerals industry is that there is a historic imbalance between the impacts of minerals exploration and mining, which communities bear, and the benefits, which tend to flow outside the region. This imbalance exacerbates low trust levels and means community expectations for well-being are not being met[7].

> *Communication is poor. There was a significant event, and it was a significant time later that we were informed. [The company] said, 'It's just too complicated for you. We are the experts.'*

To address this problem, Canadian regulators encourage the negotiation of impact benefit agreements (IBA) between resource companies and Indigenous Nations. These legally binding agreements detail the ways in which the company will distribute benefits—typically annual payments over the life of asset, as well as preferential hiring and contracting, and initiatives to promote community well being. Some communities have water management specified within their IBAs and/or land claim agreements. Formal agreements were viewed by respondents as a crucial tool for collaboration and trust building.

One respondent noted that since the mining company operating in the region had signed an IBA, engagement improved because it was specified within the IBA and included activities such as participatory water monitoring.

Another respondent felt that there had been a change over the past 10 to 15 years with respect to how Indigenous communities were engaged in mine permit applications, in large part driven by the recognition and the acceptance of UNDRIP and by legal court cases that are challenging established norms.

> *[In Canada] First Nations are proving to the courts and everybody else, things that people knew all along... Like a lot of the settling of this country was not done in a good way. So that's part of the reconciliation that needs to take place is how do we correct things?... The Crown is managing lands that don't belong to them, and the courts now are starting to prove that...*

[7] See the findings of the RMI 2022 report https://2022.responsibleminingindex.org/en/results/thematic/1453

5. Engagement needs to move along the spectrum

Engagement can be plotted on a spectrum (Figure 1) with respondents suggesting that many companies employ a reactive approach, seeking to inform communities of their business plans after being directed to do so by regulatory authorities or in response to community opposition. One respondent suggested that the level of engagement depends on how active, provocative, and demanding community members are, with another noting that engagement tends to be issue driven. It is also important to recognize that communities are heterogenous with different and sometimes competing interests: care must therefore be taken to understand community priorities before establishing an engagement plan.

> *We typically see companies wanting to see what is required by the regulatory agencies and then going through pro-forma steps to comply with those requirements around engagement. That doesn't always lead to optimal solutions.*

Respondents agreed that in Canada today there are no longer many companies at the poor end of engagement practice—a place where there is minimal or no engagement—but there was general agreement that the most common approach to engagement remains informing or consulting the community.

Companies were advised to start conversations with communities early and recognize that rigid engineering timelines are not conducive to trust building or collaborative partnerships.

One respondent felt that there has been a shift within some communities to a more proactive form of engagement, either by progressive companies or in some cases by the communities themselves.

> *"It's only in the last couple of years that you're starting to see Nations say, 'well, actually my decision making and how I make a decision and my laws look like this.' So, we're starting to see more Indigenous-led types of environmental assessments... And we're really starting to see engagement evolve from what was typically information sharing to how do we collaborate on an application. Like how do we meet in advance of the submission of an application to a regulator to make sure that we are affecting the project in a very positive way that represents the interests of the First Nations? So, I think it is innovative companies that are driving effective relationship development with First Nations."*

6. Community input to design decisions

Although the need for community input to design decisions was recognized by respondents, it was suggested there is a need to evolve traditional approaches to project development.

> *We [the collective – including industry, government, First Nations] are stepping out of our comfort zone right now. I see there being an opportunity for better collaboration on project development. I see a space and a role for Indigenous governments and decision making. But you've got these groups trying to fit into what is a very well-established approach to project development. We've got more than 100 years of doing things a certain way. So, we're trying to break that mould.*

Respondents felt that regardless of geographic jurisdiction, water and tailings management are the most relevant areas for community input. Respondents noted that it remains very unusual for exploration or junior companies to seek community input or request feedback on design options, however, one respondent commented,

"Another way that we've looked at it is if Nations were able to create engineering factors, or criteria, that could be considered in the design process, guidance on things like site selection criteria—which could involve engaging First Nations before a design gets to paper."

Respondents warned,

"It is not advisable to tell communities —as many companies do—that there is no need to worry because the facility will be well designed. It is much better and more effective to acknowledge concerns as legitimate and explain how the engineering and management systems can address those concerns."

Instead,

It is very important for the company to start by working to understand [community] needs and use that information to inform trade-off decisions. Design is complex but companies can bring ideas to the community, then redesign and demonstrate responsible performance.

On the importance of co-design, respondents highlighted that in Canada there is a growing expectation on the part of society that Indigenous groups will have the opportunity to be co-owners of new resource sector projects. It was also felt that recent changes in environmental impact assessment legislation in Ontario's Ring of Fire and in the federal government's reconciliation action plans, combined with changing mindsets, may also stimulate new approaches to co-design. Yet budget considerations can be a constraint.

> *... there is no incentive for engineers to consider more expensive or innovative (possibly unproven) technologies. Communities typically do not have engineering expert advice available to them. If options are presented by the company they tend to be straw dog type options, and, ultimately, the least cost option will be the one approved. Technical expertise has to be made available to the First Nations and a clear objective on what the outcome needs to be—should be—agreed upon upfront, for example, water quality for post mining.*

With the advent of new technologies for water and tailings management such as stacked filtered tailings, we were curious if our experts could identify any barriers to implementing new technologies. Concern about the reliability of new—unproven—technologies was noted. Respondents questioned if companies would consider more expensive options if they could stick with tried-and-true approaches? All respondents noted that a willingness to try something new will depend upon how much the various actors trust one another and how much information is shared as decisions are being made.

"The less involved you are in considering new technologies the more resistant you are to wanting to accept a new idea. If you don't have experience, you are going to be reserved."

"If the community trusts the company and trusts the regulatory process there will be a higher degree of willingness to risk trying a new technology."

Mineral processing engineers could play a role working with community representatives to explain technology options and the associated trade-offs, and to explore ways to incorporate traditional Indigenous knowledge into design decision. Key to success is the ability to make complex subjects accessible to all through the use of plain language and materials translated to local languages. Establishing technical working groups made up of community, company, and government agencies was mentioned as an effective way to build the capacity necessary for co-design and co-decision-making.

> *When thinking about companies, I think it is key that they realize that they may have more education, but they don't have our traditional knowledge. I think it is important to consider traditional knowledge, not just scientific knowledge.*

Respondent Advice

Throughout the interviews, respondents were asked about tactics that could be used to support more effective engagement and collaborative management in relation to water and tailings. We draw upon these to distill six key suggestions to guide CEEC members who may be seeking to engage more proactively in relation to water and tailings decisions:

1. Prioritise water

Consider water-related issues with respect and be prepared to do everything possible to protect water and to reframe mineral processing engineers' view of water from that of an input to a more holistic understanding of water.

"I think exposure to the different dimensions of water would be quite fascinating and would probably change how mineral processing engineers look at water."

2.Take time to build relationships

"Before pushing ahead, before starting negotiations and talking about water and tailings management, you need to work on a relationship-building exercise because [relationships] are the key to achieving positive results and a win-win situation for everybody."

3. Prepare for engagement

Learn about the community's experience with exploration and mining. Identify priorities the community has set for its future. Are there points of intersection with engineering needs? Then, find ways to incorporate community expertise and traditional knowledge.

"We're getting more and more First Nations experts in different areas... we've got young people that are becoming skilled... and opportunities create motivation."

4. Adopt a systematic approach

Good engagement requires an agreed-upon strategy, measurable objectives, and a staffing plan. Key deliverables include community-specific stakeholder "maps," a commitment log, and sufficient budget. The engagement plan should include activities that span the spectrum of engagement: there are likely to be different needs and opportunities at different points in time. One respondent pointed to the guidance offered by Call to Action #92 from the Truth and Reconciliation Report[8], noting,

"...company acceptance of the concept of Reconciliation and more specifically a corporate commitment to implementing Call to Action # 92 from the TRC is a major missing factor by most companies. It provides most of the guidance to developing and maintaining a respectful relationship with First Nation communities."

[8] https://nctr.ca/publications-and-reports/reports/

5. Choose the right people to engage and be clear about expectations

It is important to be clear in explaining technology options and the associated trade-offs, including where and how community input will shape decision-making to avoid expectations that cannot be met.

"You have to find the right group of people to go into the community on a regular basis. So that every step of the way, people understand what the company is going to be doing; so, they have built a relationship."

6. Leaders should help employees to understand the business imperative for engagement

Stakeholder engagement should not be siloed to a single department, instead it should involve employees across the company and needs to be a business priority. Employees can be the company's best ambassadors if they understand the business imperative and the desired outcomes of engagement. Some practical suggestions for achieving this include:

- Create a space for company personnel to volunteer within the community to help them get exposure to how the community views water.
- Provide opportunities for engineers and other technical teams to obtain some basic training in good practices for engagement and improve the relationships between social and technical teams within companies to build mutual respect.
- *"Go fishing or go talk to a spiritual leader and learn how that person views water ...the exposure to these different dimensions of water would be quite fascinating, and probably helpful—it might change how a mineral processing engineer looks at water: as a strategic resource not just an input."*
- Hiring environmental monitors from the local Indigenous nation can be a way to bridge the divide between traditional ways of knowing and science. Participatory water monitoring committees are another approach proven to build collaboration and trust.
- Providing company funding to communities to hire their own technical advisors (i.e. wherein the community has the freedom to choose who they will trust) is another tactic that can support capacity building and trust.
- Tripartite watershed councils such as those in place in Brazil offer another avenue for collaboration.

Proposed Next Steps

As CEEC advances its vision through the Global Water Initiative, we see a natural extension for subsequent phases of work. This could entail undertaking additional interviews with participants in other countries such as Australia and Chile to support CEEC members in understanding locally relevant priorities around water and mining, and differences in the legal/regulatory environment that can create different expectations for engagement. Subsequent phases could also entail structured dialogue with CEEC members to ensure that the evolving social and stakeholder engagement component of the "Water Wheel" delivers meaningful outcomes that recognize the realities of engineering practice.

Beyond the scope of this project, we see opportunities for CEEC to fill a gap in the current mining and exploration landscape globally. Although engineers play a crucial role in design choices that can directly impact water and surrounding communities, the interviews from this work indicate that community input to engineering decisions is often limited, which resonates with prior work that our team conducted in 2019[9]. As an organization with a strong technical grounding, CEEC is uniquely positioned to address this gap by upskilling its members on how to consider community priorities through responsible engagement practices during technology and process design decisions. This could be achieved in a number of ways such as creating a repository of resources on the CEEC website, running short-courses, and incorporating social perspectives into key technical conferences and event programming. There may also be opportunities to partner with universities to support training the next generation of engineers to appreciate the relevance of community-informed decision-making within technical projects. It is worth noting that the Code of Ethics and Guidelines on Professional Conduct from Engineers Australia explicitly requires engineers to "Engage responsibly with the community and other stakeholders" (Section 4.1) as part of their commitment to promoting sustainability.[10]

[9] https://sppga.ubc.ca/wp-content/uploads/sites/5/2019/12/Engaging-communities-of-interest-to-support-input-to-mine-design-A-research-report-October-2019.pdf
[10] https://www.engineersaustralia.org.au/sites/default/files/2022-08/code-ethics-guidelines-professional-conduct-2022.pdf

Conclusions

There are challenges to overcome to improve engagement and to support community input to water and tailings management. Perhaps most difficult for the mining industry is building trust in a sector that the public does not trust to act in the best interests of society. Respondents suggest effective community engagement is the foundation for trust building. Water is a priority issue for both communities and for personnel involved in mineral exploration and mining. This shared priority creates an opportunity for mineral processing engineers and other professionals to work more closely—and more effectively—with community representatives for water and tailings stewardship.

We conclude that there is a need for further work on how to overcome some of the barriers identified. We see an opportunity for CEEC to take a leadership role in building the skillsets and mindsets of minerals processing engineers such that they are attuned to adopting a more proactive role in incorporating community input into their design criteria.

About the Authors

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Nadja's work centres on identifying, modelling, and mitigating complex water and sustainability challenges within the industrial sector, with a focus on mining and resources. She also has a growing interest in applications of artificial intelligence (especially large language models) to enhance environmental governance and to assess and improve sustainability performance. Throughout her career, Nadja has gained applied experience through a variety of roles across sectors and companies, and brings a global perspective to her work, with fieldwork locations that have included Australia, Canada, Mongolia, Peru, and Ethiopia.

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Jocelyn's research and consulting focus is social risk and social responsibility in the international mining sector. She is particularly interested in investigating ways in which mining companies can collaborate with communities to deliver tangible social benefits that advance sustainable development. Jocelyn's experience includes work in Canada, the United States, the European Union, Mongolia, Peru, and Ethiopia. She currently sits on the Mining Association of Canada's Towards Sustainable Mining's Communities of Interest Panel and is a member of the international stakeholder advisory group for the Consolidated Mining Standards Initiative.

Appendix A: Interview Guide

1. To begin with, would you tell us a little about any past experience you are aware of that your community has had with exploration or proposed mining projects?
2. Focussing on your community, would you tell us a little about the community engagement practices that you have observed – or been involved with – when mining projects are proposed for the region in which you live?
3. In your experience, how would you describe the most common approach to community engagement within the mining sector?
4. Do you think that this the appropriate level of engagement? What would you like to see change?
5. In your experience, how likely would it be for an exploration or mining company to ask representatives of nearby communities for feedback on mine design decisions (for example, water management, tailings storage facilities, etc.)?
6. We sometimes hear of projects that are co-designed by mining companies and communities. What would co-design look like or mean to you?
7. To what extent are water and tailings management important topics for you and your community? Can you tell me why you say that?
8. How important is community engagement to shape decisions on the types of water and tailings technologies that are under consideration for use at a proposed mine?
9. How would you rate the average company's approach to engaging with local communities on issues related to mine water use and tailings management?
10. Do you think there are any points of intersection for communities and mining companies to implement new water and tailings technologies?
11. What do you think might be the barriers to implementing novel technologies for water management?
12. Mineral processing engineers focus on the efficient and sustainable extraction and processing of minerals from ore. This involves designing, optimizing, and managing the processes that separate valuable minerals from waste rock, ensuring maximum recovery and minimal environmental impact. They also oversee operations, troubleshoot issues, and contribute to the overall economic and environmental viability of mining projects. How do you think these professionals could contribute to better understanding of water technology options during the pre-feasibility stage of new mining/mineral projects? Are you aware of any situations where minerals processing engineers have successfully implemented new technologies in partnership with communities?
13. Our objective with this study is to provide insight to best practices in community engagement/consultation when mineral processing engineers are considering options for water and tailings management.Is there anything else you would like to add?

Appendix B: Resources

1. International Association for Public Participation - https://www.iap2.org/mpage/Home
2. International Finance Corporation (IFC) - Stakeholder engagement: A good practice handbook for companies doing business in emerging markets (2007)
3. ICMM - Stakeholder research toolkit and the - Understanding company community relations toolkit
4. Business for Social Responsibility - Five Step Approach to Stakeholder Engagement
5. Devonshire Initiative - Beyond Zero Harm Framework: A Participatory Process for Measuring Community Well-being (2016)
6. Network for Business Sustainability (NBS) - Community engagement guide: A getting started toolkit for exploration and development companies (2014)
7. Natural Resources Canada (NRCAN) - Exploration and mining guide for Aboriginal communities
8. Organization for Economic Cooperation and Development (OECD) - Due diligence guidance for meaningful stakeholder engagement in the extractive sector
9. Prospectors and Developers Association of Canada (PDAC) - E3Plus
10. Victoria Government Department of Sustainability and the Environment – Effective Engagement: building relationships with community and other stakeholders. Book 3: The engagement toolkit

Appendix C: Lexicon of Engagement Tactics to Support Collaboration

Definitions: Effective Engagement: Building Relationships with Communities and other Stakeholders. Book 3. (2005) Victoria Department of Sustainability and the Environment/IAP2/ Wikipedia

Community information/briefing/ dialogue sessions	Community events intended to provide project information and raise awareness about particular issues. Also called community forums or open houses: People can drop in and obtain information at their convenience. Usually, the open house includes display information and presentation material complimented by printed handout materials and the presence of project staff to meet with and answer people's questions one-on-one.
Community mapping/profiling	Intended to develop an understanding of the people in a geographical area or a specific community of interest. Profiles can illustrate the make-up of a community and could include information about the diversity within the community, their history, social and economic characteristics, how active people are (i.e. the groups and networks used) and what social and infrastructure services are provided.
Community visioning	A process to give residents, business owners, local institutions, and other stakeholders the opportunity to express ideas about the future of their community. Through a series of meetings, workshops, surveys, and growth-scenario comparisons facilitated by local leaders, participants create a community vision—a written statement that reflects the community's goals and priorities and describes how the community should look and feel in years to come.
Design charrettes/workshops	A multi-disciplinary workshop to facilitate open discussion between major stakeholders. A team of design experts meets with community groups to gather information on the issues that face the community. The charrette team then works together to find design solutions that will result in a clear, detailed, realistic vision for future development.
Formal agreements: MOUs, IBAs, Pas, CDAs	Agreements signed between communities of interest and the project proponent. The content and nature of the agreement varies depending upon the stakeholders engaged and the stage of the project. In general, agreements provide some form of recognition and/or compensation for the use of the land by the mining company.

Information handouts: “fact” sheets, newspaper inserts, newsletters	Produced by the proponent to deliver basic information about the proposed project. Can be disseminated via a local newspaper or mail drop. May include feedback opportunities and may outline opportunities for public involvement. Best practice is to translate materials into the local language(s).
Information repositories	Public place where project information is stored so that members of the community can access the information. Popular places for information repositories include public libraries, schools, city halls and Council offices. Typically, the repository should house all the project information appropriate for public access and act as a dispatch centre for project information. Provides publicly available documentation of decisions.
Inter-active models/virtual reality	A way to enable local stakeholders to “see” the project both surface and underground design considerations and option
Multi-year area based planning	Multi-year area-based (MYAB) planning in the mineral exploration/mining sector is the practice of authorizing exploration activities, typically for up to five years within identified activity area(s). Objectives of the approach include outlining the scope of work in a manner that facilitates meaningful discussion regarding possible impacts to Indigenous rights while reducing the administrative burden on communities; and improve communications with communities of interest; assist in cumulative effects assessments.
Participatory decision making	A process to enable participation in organizational decision-making.
Participatory monitoring	Participatory monitoring (also known as collaborative monitoring, community-based monitoring, locally based monitoring, or volunteer monitoring) is the regular collection of measurements or other kinds of data (monitoring), usually of natural resources and biodiversity, undertaken by local residents of the monitored area, who rely on local natural resources and thus have more local knowledge of those resources.
Prioritization matrix	A technique used to achieve consensus within a specific group of participants about an issue. The matrix helps rank problems or issues (usually generated through brainstorming or other techniques) by a particular criterion that is important to the project, as defined by the participants. A prioritization matrix can use whatever resources are available to create a table of issues and boxes for participants to cast their ‘votes’

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