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# Reversing the gaze: understanding how community members are negatively affected by impact assessment

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## ABSTRACT

This study addresses the persistent tensions in Impact Assessment (IA), which aim to balance public engagement with technical analysis. In this context, the IA process itself poses a significant risk to the individuals and communities involved in the impact assessment. The consequences of these risks, and whether they materialize, remain uncertain and depend on the specific context of each IA process. Drawing on the sociology of risk and broader IA literature, we present a case study of the Grassy Mountain Coal Project in southern Alberta, Canada. Instead of evaluating project-specific impacts within the IA process, we examine the impacts of the IA process on community members. By reversing our gaze, we aim to understand how IA processes impact communities and how these impacts manifest. Led by the results of the study, the impacts of the IA on community members are examined under three specific impact locations: (1) risk perceptions and anticipatory impacts, (2) procedural issues, and (3) community and regional conflicts. Our conclusions underscore the need to recognize these types of impact on communities and explore ways to minimize the costs of IA to communities.

## ARTICLE HISTORY

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Risk perception; community impacts; public engagement; coal mining; case study

## Introduction

Although weighing risks from project impacts is central to impact assessments (IA), the extent of these impacts can often involve the IA process itself. As individuals and communities engage in IA, this engagement is not cost free. IAs seek to transform the uncertainty inherent in industrial activity into risks with calculable probabilities of positive or negative outcomes (Weston 2004; Day et al. 2019). This goal creates tensions in balancing public engagement with technocratic analysis, thoroughness with efficiency, diverging risk perceptions, and conflicting priorities among government jurisdictions, industries, and communities. IAs are also known to inadequately account for the social nature of risk (Weston 2004). When science is prioritized, other forms of knowledge and value systems are often underrepresented (Kojola 2019).

Accordingly, this study explores how IA processes are a significant source of risk as IA processes can have consequences, both positive and negative, on individuals, communities, and society at large, with potential implications that may be felt long-term (Colvin et al. 2019). The consequences of these risks, or whether they manifest at all, are uncertain

and depend on the specific context of each IA process.

Drawing on the sociology of risk and the IA literature more broadly, this study presents a case study of the Grassy Mountain Coal Project in southern Alberta, Canada, to examine problems inherent in how IAs are undertaken, and the ways that IA processes themselves can generate risks. By reversing our gaze from project-specific to community-specific impacts, we aim to understand how IA processes impact communities and how these impacts manifest. More specifically, we ask the following questions. What impacts, if any, do IA processes themselves have on communities? How do these impacts occur, and what are the implications for individuals and communities?

## Literature review

### *Social impacts and the assessment of risk*

Industrial activity can have complex social impacts, including impacts on 'culture, community, power, place, identity, resilience and livelihoods' (Colvin et al. 2019, p. 41). While often less prioritized in IAs, these social impacts may be more important than environmental impacts for the people who live within the

surrounding region. Most IAs include some assessment of social impacts through social impact assessment (SIA), which may be separate or embedded in the larger IA (Burdge and Vanclay 1996; Vanclay 2020). Even when an SIA is included, they are often narrow in scope. They also tend to privilege quantifiable social impacts, such as economic effects, at the expense of less calculable impacts, such as cultural change, and the community and personal meanings ascribed to these impacts (Lockie 2001; Vanclay 2003). With few exceptions (e.g. Colvin et al. 2019), efforts to understand social impacts do not extend to the IA process itself.

Although the practice of SIA is limited, well-designed IA processes that include adequate consultation can have positive social impacts (Vanclay 2020). Bringing community members together to discuss proposals can strengthen social ties and increase community cohesion (Colvin et al. 2019; Vanclay 2020). In the Canadian context, consultations in the 1970s for the Mackenzie Valley Pipeline, known as the Berger Inquiry, is an oft-cited example of a well-designed consultation with positive impacts (Gamble 1978; Abele 2014). The assessment for this project included extensive and meaningful consultation with local communities, allowing concerns about broader issues to be identified, including Indigenous land claim issues. This was only possible because the Berger Inquiry was given the time and scope to explore concerns that extended well beyond technical matters. Perhaps most significantly, the Berger Report contributed to shifting the paradigm on Northern development, particularly the 'gap between the view of the North as a frontier and the reality that it was a homeland' (Abele 2014, p. 105). At the community level, while there was some conflict and social disruption during these consultations, participation in the Inquiry brought communities together and provided opportunities for Indigenous leadership (Abele 2014). On the other hand, when IAs are not well designed and implemented, the impacts of IAs can be detrimental to individuals, communities, and society. Below we distinguish three types or locations of impacts which can be detrimental to individuals, communities and societies, which include: (1) risk perceptions and anticipatory impacts, (2) procedural issues, and (3) conflict and contention.

### ***First impact location: risk perceptions and anticipatory impacts***

Anticipatory impacts refer to those that occur when a project is proposed (Barrow 2010; Colvin et al. 2019). According to Vanclay (2020, p. 127), 'unlike biophysical impacts which arguably only happen when construction starts, social impacts happen the moment there are rumours about a potential project.' For example,

there may be positive impacts if the project attracts other investments to the community; alternatively, others may leave if they are concerned about economic or cultural changes (Grubert and Skinner 2017). As risk analysis indicates, the acceptability of risk is directly proportional to the perceived benefits (Slovic 2000). As such, the mere proposal of a project can spur conflict between those in support and those opposed to the development or intensify existing divisions in communities (Baldwin and Rawstorne 2018; Colvin et al. 2019). While large-scale projects are likely to create conflict in any case (Barrow 2010), contextual factors, such as local culture, history, economic conditions, and how the project is communicated, can influence how the prospective project lands in the community (Grubert and Skinner 2017).

### ***Second impact location: procedural issues***

The mismatch between the techno-scientific assumptions that underpin IAs and the subjective reality of risk creates procedural issues (Weston 2004; Day et al. 2019). These challenges are articulated by scholars in various ways, including the need to combat beliefs that community members are naive, unpredictable, irrational or greedy (Moreira et al. 2022). In particular, knowledge generation and the sharing of information is a pervasive problem in IAs (Kojola 2019; Walker et al. 2019). When government and industry provide information, it is often couched in inaccessible technical language, which creates barriers to access and privileges participants from privileged social groups (Walker et al. 2019). Navigating technical information can be challenging and overwhelming for laypeople and requires time and resources to decipher (Weston 2004; Kojola 2019). Proponents may even deliberately make communication confusing to reduce participation and obscure the full risks associated with a project (Baker and Westman 2018). As Day et al. (2019, p. 3) state, 'complicated explanations, overuse of acronyms, simplifying assumptions and caveats are linguistic devices that may be employed to boost the scientific credibility of EA reports, distracting the reader from underlying uncertainties.'

While IAs generally include public participation, determining which members of the public have sufficient interest in the project to gain standing is another procedural challenge (Burdge and Vanclay 1996). For example, in a community with a large tourist or transient population, defining who is a community member can be unclear (Burdge and Vanclay 1996). Further, environmental impacts are seldom contained in discrete geographical areas, so surrounding communities may have legitimate claims for participation (Burdge and Vanclay 1996). When scientific rigour is used to justify the risk, rather than consensus or democratic processes, the role of consultation becomes unclear

(Burdge and Vanclay 1996; Lockie 2001; Barrow 2010). In some cases, consultation is not done in good faith and can be 'less about incorporating citizen views into planning and more concerned with legitimizing what has been planned' (Barrow 2010, p. 296). While IAs are meant to take politics out of the process, decisions about industrial development are ultimately political, not scientific, further confusing the issue in the eyes of the public (Weston 2004; da Silva et al. 2021).

Finally, procedural impacts are associated with defining the scope of an IA. While an overly narrow scope can leave out important issues, a more inclusive scope can become cumbersome and impractical (Winfield 2016; Puig et al. 2021). For example, issues around cumulative impacts or broader trends such as biodiversity loss and climate change are relevant but seldom adequately addressed in IAs (Winfield 2016; Wright and Doelle 2019). While IAs are processes specific to one project, these decisions have wide-ranging implications and become the site for deeper conversations about values and diverse visions for the future. However, these conversations are seldom included in IAs (Richardson 2005).

### **Third impact location: conflict and contention**

The third location for impacts involves tensions arising from the project proposal that intersect with procedural issues. According to Novek (1995, p. 157), IAs have taken 'on more of the characteristics of a public ritual in which opposing interests compete for attention and political advantage.' Even though the process itself can create or exacerbate tension, IAs are not designed to resolve conflict. Lockie states, 'Despite the aura of objectivity, technocratic rationality is ill-equipped to deal either with the competing interests, beliefs, values and aspirations that characterize complex social situations, or with the active participation of multiple stakeholders in working through these situations' (Lockie 2001, p. 279). Navigating a process that is unequipped to deal with conflict is challenging, particularly when projects are contentious (Lockie 2001; Weston 2004).

Conflict associated with IAs can have serious consequences, even when restrained (Barrow 2010). The formal IA process can cause divisions and exacerbate disagreement because of its adversarial structure (Booth and Skelton 2010; Weston 2004). In their case study of a wind energy facility in Tasmania, Colvin et al. (2019) observed numerous impacts, even though the project was ultimately not approved. The tensions generated by the proposed project escalated to personal attacks, boycotts, and strained relationships. These conflicts ultimately increased suspicion of outsiders, and decreased feelings of safety and trust, weakening community bonds and feelings of belonging (Colvin

et al. 2019). They also found implications for governments and institutions. Community members were displeased with their government's performance and felt disempowered to participate in local democracy. Frustrations with IAs can decrease trust in governments and institutions, which also makes participation in future IAs less likely (Colvin et al. 2019).

For individuals, the prospect of large-scale projects can be alternately distressing or hopeful. Deeply personal meanings are tied up with outcomes, beyond the quantifiable environmental and economic impacts, based on values and worldviews (Barrow 2010). Involvement in well-managed formal processes can increase people's knowledge of governance processes and leave participants feeling empowered and connected (Burdge and Vanclay 1996; Lockie 2001). Where these processes are not in place, however, individuals experience mental health impacts and stress which can begin at the project proposal stage (Baker and McLelland 2003; Wlodarczyk and Tennyson 2003). Engaging in the formal process can be taxing financially and emotionally, resulting in frustration and fatigue (Baker and McLelland 2003; Booth and Skelton 2011). Impacts on social cohesion and local democracy also have negative impacts on personal health and well-being (Browne and Leckey 2022).

After negative IA experiences, community members may be less willing to participate in future IAs, or may not be completely forthright in their submissions (Colvin et al. 2019). This is an essential challenge for governments and regulatory bodies because the IA process relies on community consultation for legitimacy and information gathering. If people do not see IAs as a legitimate way to address their concerns over a project, they will use other means, such as political protest or direct action (Parkins 2024). According to (Winfield 2016); p. 12), 'processes which are perceived to be trustworthy, procedurally just in their processes and distributively fair in the outcomes are not only likely to produce better decisions, but also to reduce the levels of political and legal conflict associated with decision-making over major resource and infrastructure undertakings.'

### **Study setting**

Given the potential for these detrimental impact locations, this case study focuses on the proposed Grassy Mountain Coal Project as a high-profile and highly contentious IA process. Located in both the Municipality of the Crowsnest Pass (CNP) and the Municipal District of Ranchland (Ranchland MD), this area of the Canadian Rocky Mountains is a culturally and ecologically important landscape in Southern Alberta.

The IA process for Grassy Mountain began in 2015 when Benga Mining applied to the Alberta Energy

Regulator (AER) for approval through joint provincial and federal regulatory process (Joint Review Panel JRP for Benga Mining's Grassy Mountain Coal Project 2021). The Grassy Mountain project met the criteria for a designated project under the *Canadian Environmental Assessment Act* (CEAA), partly because of the potential environmental impacts that trigger federal oversight (Impact Assessment Agency of Canada 2015). In addition to providing information to the regulators, Benga was required to undertake stakeholder engagement. They consulted directly with multiple First Nations and signed impact agreements with the Treaty 7 Nations of Káínai, Piikáni, and Siksika, and the Métis Nation of Alberta (Joint Review Panel JRP for Benga Mining's Grassy Mountain Coal Project 2021). Benga engaged with stakeholders in multiple ways, working directly with local municipal councils and hosting town halls for residents. The JRP released their recommendation against the mine in June of 2021 (Impact Assessment Agency of Canada 2021; Ho 2022) and through several appeals by the project proponent, in provincial and federal courts, the original recommendation against the mine was upheld. In 2023, under a new name, the company again submitted applications for work in the area. At the time of publishing this article, the status of this new application remains unresolved, but project proponents are seeking approval based on regulatory exemptions from a ban on coal mining in this region (von Scheel 2023).

### Research methods

To support this case study, data was collected through document analysis, key-informant interviews, and attendance at local events and webinars. The lead author on this paper grew up in the Crowsnest Pass. With this background, she was able to recruit widely for the study and quickly understand contextual dynamics, but is also a product of that context, bringing her identity and that of her family affiliations to the interviews, all of which required deep reflexivity throughout the research.

An initial list of interviewees was developed based on JRP records, news stories, and suggestions from research participants. Approved by university ethics (Pro00112950), participants were provided with an information sheet and consent form to review and sign before interviews commenced. Participants were also given a ten-dollar gift card as a token of appreciation for their participation. Interviews were in-person or online via Zoom and lasted between one to three hours. With participant consent, interviews were recorded and transcribed. As part of the data verification process, participants were given the opportunity to review transcribed interviews to check for accuracy. Between August 2021 and July 2022, 49 interviews

were conducted with subject matter experts (4), business owners (3), ranchers (5), and community members (6), elected officials (4), hearing participants (6), representatives from civil society organizations including local and provincial environmental organizations (8), residents with properties located adjacent to the mine site (4), and local organizers both for and against the mine (9).

Interview data were supplemented with an assessment of publicly available documents and files, including public documents related to the Impact Assessment, EIA guidelines and terms of reference, submissions to the AER and IAAC, Joint Review Panel (JRP) submission, other reports and documents related to the project, submissions to the Coal Policy Committee, mainstream and social media content and government press releases.

Interview data were analyzed through an inductive, open-coding process. Initial coding began during data collection. Coding schemes were further refined to reflect emerging themes during the interview process. This iterative process allowed for reflection on and responds to the major concerns of participants (Gibbs 2007; Linneberg and Korsgaard 2019). In this paper, we organize these key themes by the three locations of impact already described, drawing on indicative quotations from interviews for richness.

## Findings

### *First location of impact: risk perceptions and anticipatory impacts*

While some concerns were expressed about environmental impacts from mining, mine supporters also believed that the mine and a healthy ecosystem could co-exist. They emphasized the role of modern technology and mitigation strategies in addressing risks, particularly as the mine footprint would be physically small relative to the entire mountain range. Many had personal connections with mining and were proud of the industry's record of protecting the environment and remediating decommissioned mines. Further, supporters felt that the economic benefits outweighed the environmental costs. Rather than being a risk to the community, the mine was seen as solving the economic challenges plaguing the community since mining ceased forty years ago.

... many people perceive mining as a dirty and environmentally unclean process. Well, having worked in it, I'd say exactly the opposite is true. Teck mine spends a tremendous amount of money protecting the environment and making sure that the landscape is returned back to a habitat that's better than it was. So yes, we will temporarily scar the landscape. ... It's a long-term scar, but I think that's part of weighing that argument against the benefits. Business Owner 01

Those opposed believed that the environmental impacts of the mine would be devastating, contributing to climate change, air pollution, destruction of wildlife habitat, contamination of water, human health impacts, and visible scars on an iconic landscape. Selenium contamination of water courses was a major concern, as the headwaters of the Oldman River watershed are in the region. As one research participant succinctly stated, *it's the wrong project, in the wrong location, in the wrong century.* Hearing Participant 02

Although the focus of concern was often on the technical and quantifiable, participants were also concerned about the social impacts. For those in support of the mine, the decision not to allow the mine was seen to have negative cultural impacts, changing the nature of the community from a historical mining community to one based on tourism, captured in the following quote. *Recreational jobs that are minimum wage, you know, do not create stewards that help run your community. And that's what we require ... we need these good jobs that families can actually live on.* Community Organizer 01

In contrast, those opposed to the mine were very concerned about the social impacts if the mine did move forward. Many expressed concerns about the impacts on the burgeoning tourism industry and the demographic changes associated with an influx of mine workers.

I think that you would probably have far less people moving here to participate in a community, more people moving here for a job. So, they're not necessarily going to be volunteering at the food bank, they're not going to be even necessarily spending their money, apart from some rent. ... So, I think it would be a drastic loss of what has gained momentum over the last 20 years here. Business Owner 02

The prospect of these social changes caused anxiety in community members. For example,

I know it's still considered a mining community, so many people are employed ... with Teck, but having active mining happening here in the Pass, was just not, that wasn't the environment we wanted to live in and just filled us with a lot of grief and anxiety. Hearing Participant 03

Due to the range in risk perceptions, impacts emerged simply because of the project proposal. Tensions arose between individuals and groups who perceived the risks and benefits of the mine differently. Interviewees relayed stories of people who moved away from the community in anticipation of the mine, and how the proposal attracted some investment but scared away others.

### **Second location of impact: procedural issues**

Participants generally felt the IA process was procedurally fair. Anyone could participate in the formal procedure and make online submissions. Most also thought it was adequately rigorous, given the amount of time and volume of information included. Despite the perceived fairness, however, research participants raised numerous procedural issues.

Navigating the process was confusing and time-consuming, particularly for people with limited technical skills or internet access. Communication from the government about the project was limited, so people had to seek out information online or through other sources, and some did not have the time or resources. The public hearings took place over several weeks, and many did not have time to attend, even if they had the inclination. Understanding the process required reviewing many documents, including Benga's extensive and often revised EIA. Several research participants felt that Benga's long EIA was an unreasonably large data dump where specific information was exceedingly difficult to locate. *It was really difficult to find a lot of that information, and that information also has a lot of jargon in it, has hundreds and thousands of pages to read, so how do you filter through all of that?* Business Owner 03

Some groups used lawyers to help with their submissions and hired external experts to help with the technical information, which is expensive. As a result, people and organizations with resources and an understanding of the process could participate more fully and therefore have their perspectives represented. Although it is possible to apply for financial remuneration for participating in IAs, in this case from both the federal and provincial regulators, the process for doing so is complicated, and many of those whose applications were accepted were not reimbursed until months after the hearings were over.

I think it wasn't easy for people to get organized, get your ducks in a row, your experts in place and find funding for them. ... I volunteer my time, and many of these other people volunteer their time. And you know, the people we are working against, that's their day job, they're paid to be there and do that. And so, it's kind of like David and Goliath in that respect. Community Organization 09

Even when information was available, understanding the potential impacts required a high degree of scientific literacy, which was intimidating and alienated some participants. Both sides looked for scientific data or hired experts to validate claims, but where people accessed information depended on perspectives on the mine and where people placed their trust. Those in support of the mines trusted the

information from industry sources and expressed distrust for information from environmental organizations. One interviewee stated, *the only thing that separates people from who want the mine from the people who don't is that the people who want the mine, believe the company, that they can mitigate any negative effects* (Hearing Participant 05). Mine opponents looked to academic studies, expert reports, environmental non-profit organizations, and in some cases hired experts to generate independent analyses. Because of the historical and ongoing mining in the region, many people could also draw from their personal or local knowledge of mining to make sense of Benga's plans.

If I look at selenium, for example, because that's probably one of the most controversial, and you do have the mine saying, 'yes, we can do this [mitigate]' And you know, other people going, no, you can't. You look at a bunch of things, you rely on credible, independent, third-party research, which was the group that we hired to actually do that analysis. There's actually a lot of documented, you know, scientific evidence out there from places that have had similar types of coal mining in similar terrains. You know, we looked, for example, at a lot of Teck's data, because Teck is in virtually the same geographic strata that they're talking about using here, they have been mining in that area for like, 25 years. So, what's been their experience? ... Their last experiment killed all the fish in the Fording River. Community Organization 07

Participants also had concerns about representation and who had standing. Many felt that certain voices were prioritized. Some thought there was not enough local participation, particularly from grassroots Indigenous nation members, outside of Chiefs and Councils. Mine proponents felt that there was too much emphasis on lay information, and in their appeal to the Alberta Court of Queen's Bench, they argued that the joint review panel gave too much credit to the experts brought in by the community (Ho 2022). Some supporters felt similarly:

... the big groups were groups from away, and we felt like that they weren't really speaking for people in the Crowsnest Pass, that they were, you know, sort of imposing their values and beliefs and whatever positions on us. ... as we were listening to the weeks and weeks and weeks of that hearing, that there were a lot of people speaking about us that weren't us. Community Member 02

Combined, procedural issues created barriers to accessing the IA process, which was frustrating and disempowering for community members.

### **Third location of impact: community and regional conflicts**

This section provides findings that document conflicts within the community and region versus conflicts that

originate from outside of the region. Within the region, conflicting perspectives on the mine, the prolonged and frustrating process, and contextual factors combined to polarize communities and create conflict. Diverse and often conflicting scientific and technical conclusions on various issues contributed to polarization, leading to conflicts over whose perspectives were most valid. For example, there were conflicting perspectives on the economic impacts, the quality of the coal, and the efficacy of Benga's selenium mitigation strategy.

... people pick a particular position, and then cherry pick the information that supports that, and, and refuse to look at the weight of evidence that's available, that might help them come to another conclusion. And a good example is, you know, the contention that Grassy Mountain was going to produce this cornucopia of jobs, and that this was going to be the huge economic boon for the Crowsnest Pass. And yet, you know, the literature, based on research done by some folks at the University of Vancouver, looked at three metallurgical coal mining communities in BC, and came to the exact opposite conclusion based on, you know, a very rigorous review of the promises made about royalties and rents, and, and benefits to the community. Subject Matter Expert 01

These contradictions played out in the hearings, where mine opponents questioned claims made in Benga's EIA. For example, they challenged Benga's approach to analyzing fugitive dust (airborne particles from the mining process) and the impacts of wind speeds on dust dispersal (IAAC 2020). The assumptions used in modelling can make a large difference in the resulting estimates of fugitive dust dispersal. While Benga's consultants asserted that they used industry-standard models, consultants supporting environmental groups countered that these models do not reflect the latest best practices (IAAC 2020a). Benga also used wind speed averages that may not account for extreme wind conditions that are relatively common in the area (IAAC 2020a). Residents spoke about their personal experiences with the wind in the area, which they did not see captured in the EIA; a wind must be experienced to be fully understood. Benga's models assumed that winter snowpack would reduce or eliminate dust in the winter months, but residents noted that Chinook wind conditions regularly melt snowpack in even the most severe winters (IAAC, 2020a; Joint Review Panel (JRP) for Benga Mining's Grassy Mountain Coal Project (2021). This issue was a factor in the JRP decision, although the panel acknowledged a lack of consensus on the appropriate methodology for measuring dust in these cases (Joint Review Panel JRP for Benga Mining's Grassy Mountain Coal Project 2021).

Trust in government and industry actors affected people's perceptions. For example, some saw Benga's investments into the community as indications of good corporate citizenship, while others saw cynical

attempts to manipulate locals and gain social licence to operate. For instance:

... you have to look at what they've already done for the community. They own the property where the golf course was that they needed for their purposes. And, you know, they didn't terminate the lease and say go get yourself another golf course, the money they spent keeping the community whole. And I'm sure you've been up to the golf course and seen what's there, we could have never afforded to put a project like up there. So, to me, that speaks to the integrity of the company. Business Owner 01  
This positive view of the mine proponent contrasts with others who observe a cynical ploy - an incredibly arrogant company that just figured they can get away with this and build golf courses and make everybody happy and put in this little coal mine, and nobody's gonna notice. Business Owner 02

The project, and the process, also created divisions between communities in the region. The CNP municipal council was strongly in support, while Ranchland MD was against the mine, which put pressure on the working relationships of municipal councils. Participants expressed feelings of betrayal and abandonment by the government and the rest of Alberta. In the CNP, many participants expressed resentment toward landowners and ranchers, though not all ranchers were in opposition. This resentment was based on the notion that ranchers and landowners outside of the CNP are well-off compared to the economically struggling people in the CNP and do not have the same economic stake in the mine's approval. Further, many felt that ranchers' opposition to the mine was hypocritical, given the environmental impact of cows on the landscape.

What's unfortunate to me is we never, we never protest against factory farming. We never protest against the Picture Butte Cattle feedlots where, you know, there's enough manure produced by if you had a city of 5 million. We don't go out and say, hey, look, you guys are, and they are, the biggest polluters. By the way, agriculture is the biggest polluters, not the coal industry, by any means. We don't go out and say to them, you can't put up your feedlots because we know it's necessary. And we know that they're going to do things to control their manure. Community Organizer 02

Both supporters and opponents of the mine expressed frustration with municipal councils in Pincher Creek and Crowsnest Pass. Participants felt their municipal representatives did not engage with the process adequately, did not consult citizens, did not allow space for alternative points of view, or did not provide leadership to bring various sides together. Some research participants had empathy for councilors, understanding the ongoing pressing concerns already facing rural municipalities. Further, navigating the process took resources and experience councilors did not have.

... [council is] certainly ill-equipped to manage a major project once the ball gets rolling, or manage the community's interests, once a project gets rolling. So, when I when I say the performance was appalling, maybe that's understandable, under the circumstances ... this whole process was so far beyond them. Community Member 01

Within the region, the IA process also took a toll on the mental health and well-being of community members. The perceived stakes were high, for those who supported and opposed the project alike. Further, the process took a long time and was difficult to navigate. Participants experienced fatigue, frustration and anxiety as they anticipated the implications of the decision, navigated the process and contended with conflict. Weakening community cohesion was felt on a personal level, increasing anxiety.

I started to feel a sense of my peace being threatened and disrupted by the project, and also, by a growing awareness of how divisive this issue was in the community, and just made me really anxious. We had so much anxiety as this thing became more and more real. Hearing Participant 03

Interviewees shared experiences of personal attacks and altercations in public and private spaces because of opposing views on the project. Numerous interviewees discussed damage to personal property, such as vehicles being vandalized. The atmosphere on social media, where much of the discussion played out, was particularly acrimonious. The conflict damaged relationships within families, among friends, and in professional circles. The volatility connected to the mine discussions decreased feelings of safety in the community and even affected some people's willingness to participate in interviews for this study. Others expressed discomfort with answering particular questions and were uncomfortable being seen with the researcher.

Within the region, lines between insiders and outsiders were drawn more firmly. There was a sense that newcomers did not understand the nature of the community and its history and should not be able to speak for the community. Even some long-term residents who did not support the mine felt unwelcome in certain spaces. Several participants who had migrated to the community wondered if previous feelings of community belonging were false. They began questioning their place in the community and previous feelings of connection.

... I really felt a deep sense of real dismay ... I came into the community with open arms, and wanted to embrace this community. I almost felt at that moment like I'd been wearing blinders. And that there was suddenly this realization that no matter what you think, no matter how much you think you belong, you really don't belong. Hearing Participant 03



The polarization and community divisions continued after the IA processes ended, partly because people were unhappy with the decision and partly because of the perception that the process to arrive at a decision was unfair. One participant joked, *the only thing that I think is going to save this community is if we have another disaster* [referring to the numerous mining and natural disasters the community has weathered, such as the Hillcrest Mine disaster of 1914 and the Frank Slide of 1903]. (Community Member 010). Some speculated that the community's polarisation and the resulting breakdown of relationships would be difficult to heal and likely have long-term implications. As one interviewee stated, *I think a lot of that has caused forever damage between families, friends, and community.* (Rancher 01).

Beyond the region, as awareness of the mine grew and people engaged with the IA process, the mine became increasingly controversial, creating conflict and exacerbating existing political divisions. External influences, such as the provincial political climate, increasing media attention, and province-wide activism regarding the mine, worsened local tensions. Opponents of the mine felt supported, while those in support of the mine felt betrayed and attacked.

... when the provincial-wide lobby against coal started, that's when the divisions in the community started to become firmed up, and division started ... the social media and everything there, all that contributed to it. So, I think leading up to the hearing, it was under the table, but sort of under, you know, an undercurrent, but became very mainstream afterwards. Community Member 15

The COVID-19 pandemic also played a role in how the process was received. Pandemic restrictions moved the hearings online, which gave some people more access but posed barriers for others. People had more time to observe and participate in the process, which influenced the level of participation in both the formal process and informal activity surrounding it. Tensions in the community were already heightened because of controversies over COVID-19 health mandates and vaccines. Individuals were more isolated than usual, contributing to division and impacts on community cohesion. Further, the pandemic created an increase in recreational users in the mountains, so more people in the province were aware of the area and had forged personal connections to the region.

... we were just inundated with vicious emails and phone calls. And, you know, the, the level of animosity in this was like something I've never seen before. And I think the pandemic obviously a lot to do with that, but we have to as politicians and government, try and find a way to rebuild that trust in our institutions and those regulatory processes, and I'm not sure where it was lost. Elected Official 04

I think the pandemic had more people at home, gave them a little bit more time to, you know, hear some of these things that weren't necessarily true, and unfortunately, a meaningful number of Albertans has allowed other people to make up their minds for them. Subject Matter Expert 02

The IA damaged trust in provincial institutions. Some participants entered the process with distrust for the AER and the IA process in Alberta. This was particularly evident among opponents of the mine, in part because of previous experiences with IAs and the perceived pro-industry bent of the provincial government. As one interviewee stated ... *industry is in charge, they got the fox guarding the henhouse, so to speak* (Community Organization 09). After the decision, both those who agreed and disagreed with the outcome expressed decreased trust in government and regulatory institutions. Many thought the outcome was predetermined, suffered from provincial or federal government interference, or that the panel was biased because it was appointed under the previous left-leaning New Democrat government. Others felt the right decision was made because of the hard work of the people and organizations who dedicated considerable time and resources to participate, despite a broken IA system. When a final decision is made at the political level, as was the case here, waters are muddied about the role of consultation in the IA process, further undermining public trust.

... it pretty well destroys my faith in the competence of the regulatory process, ... and in the ability to make a considered intelligent decision. And validates, you know, what I've seen, personally, historically, in the way this system has operated in Alberta, increasingly, is that it's very easily politicized. Community Member 01

Research participants were left with the impression that advocacy and political influence are more likely to affect the outcome of IA than participation in the formal process. While some participants gained skills and experience with the IAs, most felt disempowered. For some, the experience meant they would be less likely to participate in the future. Others suggested they would get involved earlier but be more likely to focus on strategies outside the formal process.

## Discussion

This case reveals the damages to communities when IA processes become a battleground for competing visions. After the Grassy Mountain IA process, communities were left weaker, relationships were damaged, and by all indications, these rifts will be difficult to heal. While the process did bring some people together, in most cases, a coming together of local people occurred despite the process rather than because of it. For example, before the decision, individuals and

organizations collaborated to coordinate efforts against the mine, and after the decision, others united in objecting to the outcome. Due to the adversarial nature of the process, there were few opportunities to build on potential areas of common ground. In this case, concern for the environment and the local economic situation were important to participants on both sides of the debate, but the process only emphasized the differences.

Not all of the tension, however, can be attributed directly to this project. Like other rural places and small towns, the region has undergone significant changes in recent decades. According to Halseth and Ryser (2017, p. 3), ‘accelerating change has been a defining attribute of rural and small town places around the world.’ The resulting shifts in population and the economy can lead to conflicts (Halseth and Ryser 2017). In this case, conflicting risk perceptions related to a range of issues have emerged, underpinned by competing worldviews and value systems. For example, conflicts between motorized and non-motorized users of the backcountry, supporters of industry versus supporters of tourism, external environmental organizations versus local residents, and between people who could trace their roots to the area for generations vs those who had migrated more recently (Jaremko 2016, Van Assche et al. 2021; Van Der Marel et al. 2020). While such differences can co-exist or even be complementary, the charged nature of the Grassy Mountain conversation polarized the community and exacerbated tensions. Contextual factors also contributed to polarization, such as distrust of the provincial government of the day and entrenched political views. A legacy of coal production and enduring support for coal towns appears to be a common element of coal towns (e.g. Grubert and Skinner 2017) and contributes to ongoing debates around climate policy and energy transition. These contextual factors interact with local history, culture and geography to further polarize political views on this project.

Similar to Colvin et al. (2019) findings in Tasmania, the Grassy Mountain IA reduced trust in the regulatory process. Reduced legitimacy of IA processes is a problem for governments as they adapt to new challenges like climate change and energy transitions (Colvin et al. 2019). This is particularly true in the context of broader environmental challenges such as climate change and ongoing biodiversity loss. Further, public trust in the regulatory process is important for industries like coal for metal production that seek ongoing public support in the face of a growing climate crisis. The legitimacy of environmental decision-making processes is thus crucial, as the potential impacts of these decisions have implications at all levels of society and

for generations to come (Weston 2004; Larsen 2016; Day et al. 2019).

Some authors argue that people tend to rely on data from sources they personally find credible (Weston 2004; Whyte and Crease 2010). It is also well established in risk research that experts are not immune to the same biases as those of the general public (Slovic 2000). Through confirmation bias, people selectively believe science and data from sources they trust and which validate their position or viewpoint. As is the case in other studies, the availability of multiple scientific perspectives supported conflicting points of view and contributed to controversy (Richardson 2005). This is demonstrated well in the debate around wind and dust, where Benga’s scientists, environmental organizations, and locals with personal experience all had valid perspectives on the impact of local wind conditions on dust dispersal. All intervenors utilized scientific and technical information to support their claims, yet this science-based debate increased division rather than resolving it.

This technical approach to IA is common, yet it is at odds with how people evaluated the mine proposal. While an assessment of risks and benefits was important, participants were concerned about other issues such as cultural changes, reflecting concerns about the evolution of the community from one based on natural resource extraction to an amenity-based economy. When community members expressed passion or emotion, their arguments tended to be dismissed. These dismissals of community concerns are indicative of noted fallacies about communities and community concerns as being naïve and irrational (Moreira et al. 2022). Accordingly, participants worried that scientific or technical arguments were the only valid assessment of the project, even where underlying motivations may have been personal or subjective. This heavy emphasis on scientific and technical assessments thus obscured deeper social meanings and devalued the social factors that are important to people, contributing to polarization.

Because IAs are focused on technical issues related to a single project, they are not well equipped to deal with broader social conversations (Lockie 2001) or macro-environmental issues (Smart et al. 2014). The Grassy Mountain IA became a *de facto* location for conversations about the region’s future, economic diversification options, and the viability of the tourism industry. This ‘scope-creep’ was caused in part by a lack of alternatives for discussing and debating broader land use issues in the region. Interviewees mentioned a need for more community-level vision and leadership, and venues to explore visions and strategies for the future. Local municipalities were mired in other challenges, however, and lacked the

resources or vision to provide leadership on economic diversification or had limited support from other levels of government. Van Assche et al. (2021) found that the Crowsnest Pass suffers from weak governance institutions and requires more support from other levels of government for its development. This is consistent with research on rural and resource-dependent communities which are undergoing ongoing change in reaction to shifting pressures and opportunities, but where traces of previous economies persist (Halseth and Ryser 2017). These changes, and the imperative to move toward more diverse and resilient economies, are complicated and small communities seldom have the capacity to navigate them (Mitchell and O'Neill 2016; Halseth and Ryser 2017).

## Conclusion

The Grassy Mountain case provides an important opportunity to examine impacts generated by IAs, partly because the project proposal was relatively high-profile across the province, but was ultimately denied approval. Nothing materially changed in the community, i.e. there was no mine before, and there is no mine now. However, the anticipatory impacts of the prospect of the project, and the real impacts of the process itself, left scars in the community that will not be quickly healed. Although other authors have identified similar kinds anticipatory impacts and procedural challenges that are divisive for communities involved in IA, this study draws together a series of impact locations that reflect significant cumulative challenges at the local and regional scale. As illustrated by this study, a highly technical IA offers the illusion of objectivity and rationality, but decisions about industrial development are fundamentally influenced by value judgements, political and economic considerations. Scientific and technical analysis is important in making accurate predictions but is not necessarily definitive, nor is technical information the only legitimate basis for decision making. Within this context of divisive politics and multiple sources of scientific evidence, a key challenge for IA moving forward involves greater awareness of, and a deeper engagement with, community members. We echo the call from other scholars (Moreira et al. 2022) who seek substantial change in how community engagement is undertaken. This includes engagement approaches that make use of dialogue and deliberative techniques in small-group settings that address specific issues with an emphasis on collaboration and mutual learning.

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