Today is a Different Day:
Exploring First Nations Emergency Preparedness in the Province of Alberta, Canada

By

Nathan Polard-Yopek

A thesis submitted in partial fulfillment of the requirements for the degree of

Master of Arts

In

Human Geography

Department of Earth and Atmospheric Sciences

University of Alberta

Abstract

First Nations in Canada bear disproportionate risk posed by environmental hazards. Existing literature indicates that colonization and systemic underinvestment in First Nations have historically led to low levels of preparedness. As climate change is causing the impacts of environmental hazards to grow in size, severity, and frequency – there is a critical need to examine if First Nations are prepared for hazards. This exploratory study aimed to explore First Nations preparedness by identifying the factors that positively and negatively influence First Nations preparedness in Alberta. Research data was collected using semi-structured interviews with key informants. Key informants were selected for their closeness and expertise in First Nations emergency management. Inductive and deductive coding techniques were employed to identify the strengths and challenges to First Nations preparedness. Challenges were identified from location, the lack of resources in many communities, and with communication. A key challenge for First Nations is managing knowledge and capacity challenges including the over reliance on individuals for emergency preparedness, dealing with burnout and turnover, and insufficient support from local leadership. Strengths for First Nations were strong hazardscape understanding, knowledge from past experiences, and support and empowerment from the provincial government and the Treaty organizations. A key strength to highlight are knowledgeable and capable First Nations individuals and teams improving preparedness for their communities. This study found that First Nations in Alberta are prepared for environmental hazards despite the challenges they face. The findings of this study are important because they show how as First Nations self-determination in preparedness increases, their resilience to environmental hazards increases.

Preface

This thesis is an original work by Nathan Polard-Yopek.

The research project, of which this thesis is a part, received research ethics approval from the University of Alberta Research Ethics Board,
Project Name “Exploring First Nations Emergency Preparedness in Alberta, Canada”,
Pro00105441, March 2, 2021.

Dedication

To Randy

We should all be so lucky that our parents last words to us are

I'm proud of you

I love you

I'll love you forever Dad, see you out there

Randel Yopek

February 8th 1956 ~ December 7th 2019

Acknowledgements

I would like to begin by thanking my Mom, Dad, and the participants who agreed to be a part of this study. Without your knowledge, kindness, expertise, and truth – this project would not be.

I want to offer my appreciation and thanks to the primary funder for this research project, Natural Resources Canada. Thank you for supporting Indigenous disaster risk reduction research, and for allowing me to pursue a post-secondary research project with First Nations, it helped me feel closer to my people and I am grateful for this experience.

To the INDSPIRE program, your support over the years of my Masters helped keep me warm, alive, and stress free – your program is wonderful, and you are a magnificent empowerment tool for all aspiring Indigenous scholars across Canada, thank you so very much.

To my partner Hannah – You are the reason I was able to finish. Your love, strength, mentorship, advice, and unconditional support keeps my fire perpetually stoked and I can't wait for whatever the future holds for us next, together. I love you. I particularly want to thank you for keeping me at equal times calm when I wanted to over-react, and then amped-up when I struggled to take a step forward. Thank you for being the first sound board for all good and bad ideas – and for making me feel good about putting the work in and supporting me completely when I needed to stop working entirely. Thank you for always understanding me, you mean a lot to me – a lot a lot a lot.

To my intrepid editor Dr. Gabriel Maracle – I will be forever grateful that you stepped into my life and immediately stepped up to be a voice of First Nations wisdom and guidance – your touch on this project is very important to me. To have such a magnificent First Nations scholar oversee and guide a passage of this work to make sure it could reach completion was a gift, and I am honoured that you wanted to be a part of this thesis. Mahsi Cho.

To the First Nations Wildfire Evacuation Partnership and the Human Dimensions of Natural Hazards Research Group – particularly Dr. Henok Workeye Asfaw and Maia Foster-Sanchez – thank you for your expertise, patience, and guidance. Henok, you helped me become a competent researcher. Maia, you made me believe right at the start that I could do this - Thank you both.

To my academic co-conspirators and stalwart writing friends Jared Groten and Jeff Quirk - It has been a privilege and a pleasure to share the same spaces with you brilliant fellows. I love playing

academic with you - bouncing ideas, playing cards, and showing off our stunning prose passages to each other. Thanks for helping keep this thing fun.

A special thank you to Dr. Simon Lambert – Simon it has been my pleasure to be able to get to know such a powerhouse Māori scholar in the field of Indigenous emergency management and disaster research. It has been even better making a good friend who can show you the ropes of the professional game while giving good tips and lending a helpful ear for the academic one. I look forward to the next shady pub, far flung streetcorner watering hole, or prestigious institution we find ourselves at. We can make any stop the cutting edge of knowledge production on Indigenous emergency management.

My eternal gratitude to Dr. Alberto Reyes – Berto, thank you for everything you've done for me. Since I came back to school determined to make something of myself you have been a champion in my corner from the moment I met you. I am forever grateful that you saw something in me, mentored me, took me on a wild research adventure, stuck with me wherever my head was at, and even told me you wouldn't be my supervisor. You knew that I should be doing something else, and we should all be so lucky to have people in our life that understand us and can give us advice that will see us at our best. You're my hero Berto.

Penultimately - a profound thanks to the Chair of my defence Dr. Thomas Chacko and the members of my supervisory committee, for waiting for me at the finish line. What a ride. To Dr. Jeff Birchall, I really appreciate you making time to help me across an eclectic and scattered thesis timeline. Your insights were instrumental to completing this thesis, and you were a pleasure to learn from and work with. Thank you.

And finally – To Dr. Tara McGee. Tara: No one could ever hope for a better supervisor. You were eager and told me I had potential the very first time I walked into your office with an idea. You have been a kind, understanding, and perfectly challenging supervisor. I have grown so much as a scholar and a professional under your guidance and I will remember my time under your tutelage with the highest of regard. Most important to me is your unbelievable heart. Thank you, thank you, thank you for the kindness and understanding you showed me when I lost my father right at the beginning of this journey. Without your incredible compassion I would not have succeeded, and you mean the world to me for taking care of me through that loss. I hope that I made you proud. Thank you for everything.

Table of Contents

List of Figures

List of Tables

Chapter One: Introduction

Welcome to my thesis dear reader. My Name is Nathan Polard-Yopek and I am Denesųłiné. My Grandmother Mary-Jane Adam was from Fond du Lac. My mother was born in Uranium City, Saskatchewan, and my father in Drumheller, Alberta. I am of mixed ancestry, and like many of us I have a diverse background. My mother is First Nations and Italian, while my father was Czech and German. My mother taught me that I was 'a Native' and more specifically, Dene, but encouraged me to explore what being Native would mean for myself, and let me define how important my Indigeneity should be in my own life. My parents raised me across western Canada in the provinces of Alberta and British Columbia. As I open this research project with a slice of self-location, I wanted to share a part of who I am and where I came from, because it was part of the reason why I undertook this research. I believe it to be more than a foreword, and worthy of inclusion here because it is truly a part of the research process; conducting social science is an inherently personal and connective experience. The data for this project was collected with me sharing a similar introduction and my own reasons to undertake this endeavour to the participants of this project. Who I am and where I am coming from played a part in how I interpreted and analyzed the results and I feel it only fair to give you, dear reader, the same experience.

At its core, this project seeks to explore how well prepared First Nations are for environmental hazards. Over my time in University, I became deeply interested in the natural world and the dangers the processes it creates can have for those living on the land. I also had to come to terms and decide how I wanted my journey to connect and reconnect with the First Nations aspect of my life. The best way I thought to do that now sits before you. I benefited greatly from my First Nations heritage, and this heritage was core to my mother's experience growing up. I wanted to understand her more and give back to the nebulous collective of First Nations people across the country who I also did not understand. So, I sought to engage in research that would leverage my interests, my talents, and my will to help people who some would call my own, yet I had never had the opportunity to be a part of. So let us now begin, together.

Environmental hazards, such as wildfires and flooding, are occurring more often, growing in size and severity, and the risk of these events becoming disasters and threatening communities is higher than ever before (Doberstein et al., 2019; Tymstra et al., 2020). Examining grey literature on First Nations preparedness in Canada paints a bleak picture of First Nations emergency

preparedness and the role of the federal government. The Office of the Auditor General's report on Emergency Management on Reserves (2013) found that overall levels of preparedness in First Nations communities were low across Canada, and that government programs designed to improve emergency management in First Nations were not providing adequate support. The Auditor General's Report (2013) also explains that First Nations are responsible for creating, implementing, and reviewing their own emergency plans, but indicated that they lack the resources and capacity to achieve this. The Library of Parliament (2015) reviewed the Auditor General's report to provide an in-depth study of First Nations emergency management policy issues. The Library of Parliament's report expressed concern of First Nations communities ability to recover from repeated environmental hazards and disaster events due to increasing frequency and insufficient preparedness. Five years after the Auditor General's report, The Standing Committee on Indigenous and Northern Affairs (INAN) released their report From the Ashes: Reimagining Fire Safety and Emergency Management in Indigenous Communities (2018) to the House of Commons that reiterated that levels of preparedness remained low due a lack of funding, exclusion of First Nations from coordination activities, and that First Nations expertise and culture were not taken into account when responding and preparing for emergency events. These successive reports highlight that there is a critical need to explore First Nations preparedness, and to uncover what factors are influencing preparedness.

While emergency preparedness may consider various typologies of emergencies, this study focuses on environmental hazards, rather than other emergencies like suicides, addictions, or pandemics. There are a host of factors that contribute to First Nations being more vulnerable to environmental hazards than other communities in Canada. An environmental hazard in this study includes wildfire, flood, and other events which can cause widespread impacts. Many First Nation communities are in isolated or remote landscapes that create challenging transportation and communication situations that make timely hazard response difficult, and are located in or near forests prone to burning (Christianson, 2015). First Nations are the fastest growing demographic in Canada, are disproportionately affected by climate change, chronically under supported in terms of infrastructure, and limited in their ability to access culturally appropriate services in health, transportation, employment, and education opportunities (Office of the Auditor General of Canada, 2022). Systemic underinvestment and a legacy of neglect from governments has led to poverty and other socio-economic challenges for First Nations, and often means that hazard

management falls lower on the priority list for First Nations communities (Christianson, 2015; Doberstein et al. 2019; McGee, 2021). These vulnerabilities, combined with environmental hazards such as wildfire and flooding events becoming what Tedim et al. (2018) and Doberstein et al. (2019) describe as the 'new normal', indicate that continuing to employ inadequate and reactive fire and flood management strategies is no longer tenable. While these aspects increase the vulnerability of First Nations, they are still able to engage in emergency management. McGee (2021) notes that despite their increased vulnerability, First Nations have demonstrated a capacity to respond effectively to disasters despite their lack of resources. To improve upon their lack of resources and support, the Auditor General's 2013 report included a variety of recommendations to the agencies that are responsible for assisting First Nations hazard management (Collier, 2015). While those recommendations were agreed upon by the respective agencies to whom they were issued, further research is needed to uncover if First Nations are better prepared (Collier, 2015).

1.1 Overview of Emergency Management in Canada

Emergency management in Canada is based on four pillars: prevention and mitigation, preparedness, response, and recovery (Public Safety Canada, 2017). The first two pillars are the proactive phases of emergency management. Prevention and mitigation are grouped together as a single pillar. Prevention refers to deterring or avoiding new or existing risks, and mitigation focuses on reducing the impacts of disasters, and reducing the financial costs of disaster response and recovery (Public Safety Canada, 2017). Preparedness involves planning, training, and reviewing emergency management processes prior to an emergency to improve response and aid recovery by reducing the impacts of events (Public Safety Canada, 2017). Emergencies are managed at the local level first, so most of the onus of preparing is on local communities' leaders and individuals, with regional and national assistance called in once local capacity is exceeded (Public Safety Canada, 2017). The final two pillars of emergency management are the reactive phases. Response refers to the skills and resources needed to manage the impacts of an emergency (e.g. firefighting). Recovery after a hazard event can be described as either returning to a pre-disaster state or building up more resilient communities, where recovery from the impacts of an event creates an improved pre-disaster state for the next hazard event.

The Government of Canada employs an all-hazards approach to ensure that emergency management can account for both natural and human induced hazards which cause disasters

(Public Safety Canada, 2017). This approach not only calls for plans that are 'ready for anything' but also to recognize and integrate common emergency management elements across all hazard types to build an emergency management regime, and then fill in the gaps with the specific skills and resources needed for each unique hazard (Public Safety Canada, 2017). By using this approach, Canadian emergency management agencies hope to bolster the resilience of all jurisdictions to all hazards that may occur and make emergency management efforts more effective.

Canada takes guidance and derives many of its national emergency management policies through engagement with the international community. Canada has committed to the United Nations Sendai Framework for Disaster Risk Reduction 2030, which is a global framework that seeks to improve member states' emergency management. Much of Canada's emergency management regime is designed and implemented to mirror the language and priorities as set out by the United Nations Office for Disaster Risk Reduction (UNDRR) (Public Safety Canada, 2019). Foundational to this commitment, outside of helping define national policy and programming, is meeting international Disaster Risk Reduction (DRR) goals, which encourages Canada to employ a 'whole of society' approach. This approach seeks to engage, incorporate, and leverage knowledge from a vast array of emergency management partners to strengthen the resilience of every group in Canada (Public Safety Canada, 2019). Understanding government focus on the whole-of-society approach is important because it helps guide Canada's engagement and policy with First Nations on emergency management.

1.2 First Nations Emergency Management Considerations

Indigenous Services Canada (ISC) is responsible for the provision of emergency services for on-reserve First Nations in Canada.[1] In Alberta, ISC signed a ten-year service agreement with Alberta Emergency Management Agency (AEMA) in 2015 to act as the primary emergency services provider for First Nations in the province. In North America, evacuation is the preferred course of action to protect people from most environmental hazards (Asfaw et al., 2019; Christianson et al., 2019). The remoteness of many First Nations communities is challenging to

[1] While many First Nations individuals consider themselves to live in a community and not on a 'reserve' it is important to note 'on-reserve' is a legal term and links to *The Indian Act* (1876). First Nations, such as self-governing Nations or individuals who live in a municipality are covered by other federal departments such as Public Safety Canada (PSC) and Crown and Northern Indigenous Affairs Canada (CIRNAC).

prepare for, and usually the course of action is an evacuation, despite desires to stay and defend. Thus, the planning and training for evacuation features heavily in preparedness understanding. For example, in regards to wildfire, it is estimated that approximately 80% of Indigenous Peoples in Canada live near, or in, forests that burn frequently; as a result, thousands of Indigenous Peoples are evacuated every year (Asfaw et al., 2019). Flooding is the most common natural hazard in Canada, and some communities in flood prone regions face evacuation every year (Doberstein, 2019). An example of this chronic problem is Kashechewan First Nation in Ontario, Canada which has been evacuated twelve times between 2004 and 2019 due to spring flooding (Khalafzai et al., 2019). First Nations communities are more likely to be evacuated than non-Indigenous communities (Office of the Auditor General of Canada, 2022). Evacuations can be called in response due to real or perceived threat, and can be either mandatory or voluntary (Asfaw et al., 2019). When faced with the threat of a disaster it is the responsibility of First Nations leadership, (often a Chief and Council, a Tribal Council, or Hereditary Chief) to call for an evacuation and notify the government of this decision (Collier, 2015; Asfaw et al., 2019). While the call for evacuation is the responsibility of the First Nation, Indigenous Services Canada (ISC) is responsible for coordinating hazard response with the First Nation (Collier, 2015). However, ISC's reliance on third party service providers and weak definitions of roles and responsibilities between service providers, federal and provincial agencies, and the First Nation in question has been highlighted as an area of weakness leading to First Nations facing challenges in emergency management. (Collier, 2015; INAN, 2018).

1.3 Research Aim and Objectives

The aim of this research is to explore First Nations environmental hazard preparedness in Alberta. The objectives of this study are to:

1: Identify the challenges (factors that negatively influence) First Nations preparedness in Alberta; and,

2: Identify the strengths (factors that positively influence) First Nations preparedness in Alberta.

1.4 Organization of Thesis

This thesis is organized as follows. Chapter 2 discusses the relevant literature that is foundational to the study, including the theoretical framework that guided study design and data analysis as well as the key concepts and relevant existing academic literature for a study on First Nations preparedness. Chapter 3 describes the methodology for this research study. It begins with an outline of the rationale for study design before shifting to a breakdown of the research process. The chapter continues with successive sections on ethics, power, reflexivity, limitations and rigour. The results of this study are broken down into two separate chapters. Chapter 4 describes the challenges to First Nations preparedness, with chapter 5 describing First Nations preparedness strengths. Together these results chapters uncover the factors that positively and negatively influence First Nations preparedness in Alberta. Chapter 6 is a discussion of how the results of this research study relate to the relevant disaster and emergency management literature relating to Indigenous Peoples, and First Nations specifically. Chapter 7 is the conclusion of the thesis. It begins with a summary of the research findings and then shifts to a reflection of the study aim of exploring First Nations preparedness in Alberta. Next, recommendations for both future research and for policy makers and practitioners are presented. The thesis closes with the final thoughts of the author reflecting on this experience.

Chapter 2: Literature Review

The chapter begins with an explanation of the theoretical framework that guided this research. Next, the chapter describes the key concepts within the study: vulnerability, resilience, and preparedness. As this project aims to explore the strengths and challenges in preparedness for First Nations in Alberta, understanding the resilience literature is important to uncover strengths, and likewise, understanding how vulnerability is shaped and influenced can inform our understanding of challenges affecting preparedness. It then reviews the literature related to Indigenous peoples' preparedness.

2.1 Theoretical Framework

When designing and carrying out a qualitative research project, it is important to state what philosophical assumptions, worldviews, and theoretical perspectives influence the research project (Creswell, 2007). This section outlines and describes the theoretical perspectives that formed the theoretical framework for this study. They are social constructivism, critical theory and decolonization.

Social construction holds that an individual creates their understanding of the world around them, based on their subjective interpretation of their experiences (Creswell, 2007). Creswell (2007) notes the importance of how those subjective views and meanings are affected by social interactions with others, and influenced by the historical and cultural norms that occur in those individuals' lives. Based on this worldview the researcher is guided to understand the diversity and complexity of views that inform a given context and/or issue under investigation and rely as much as possible on participants' views of the situation (Creswell, 2007). The social construction approach was appropriate for this study which aims to explore the broad question of First Nations preparedness in Alberta from the perspectives of the study participants.

This project also employs a theoretical framework derived from critical theory incorporating an interpretive lens of decolonization. Theoretical frameworks provide a pervasive lens or perspective on all aspects of a qualitative research project to frame action and aid in interpretation and understanding (Creswell, 2007; Kovach 2009). Leach and Rivera (2022) note that Critical Theory and associated interpretive lenses are not often employed in emergency management and disaster research. Indeed, Leach and Rivera (2022) present the case that critical theory should be

considered more often in these areas of research, specifically describing the role critical theory can play when the research engages with certain groups and populations, such as Indigenous Peoples. Critical theory involves giving power to those traditionally disenfranchised, understanding and acknowledging other ways of knowing and being, and noting how certain systems or knowledges are privileged over others (Creswell, 2007). For this study critical theory is appropriate and helpful for exploring First Nations experiences. Critical theory allows the researcher to focus First Nations experiences relative to themselves, and not exclusively in comparison to white counterparts, aids in understanding and incorporating their experiences and knowledge during analysis of their data and is a helpful tool to show how my methods and intentions are aligned with particular ways of knowing (Kovach, 2009; Leach & Rivera 2022).

In order to best understand how this project employs and defines decolonization, it is useful to provide an explanation of the ongoing impacts of colonialism and describe what colonization has meant to this author and how it has affected Alberta, Canada. Generally speaking, there are two types of colonization, external and internal (Tuck & Yang, 2012). The external form is concerned with the extraction and expropriation of natural resources away from the colonized to the home of the colonizer (Tuck & Yang, 2012). Internal colonization is concerned with the management of a given land's people, flora, and fauna by a ruling colonizer on the same land. It is characterized by the various modes of control that management entails, including exclusion of the colonized from society through increased incarceration rates, low education attainment levels, separation of families from each other, their homes, and lands (Tuck & Yang, 2012). Considering the study area of Alberta, Canada we must consider the settler colonial context in the province; for in Alberta, Canada, both forms of colonialism occur and the combined form is termed Settler Colonialism.

Tuck & Yang (2012, page 5) aptly describe Settler Colonialism - "The horizons of the settler colonial nation state are total and require a mode of total appropriation of Indigenous life and land[2] rather than the selective expropriation of profit producing fragments." As the colonizer settler ventures into an area with the intention of making a new home and insisting upon their own settler sovereignty, the land becomes the primary concern and tools for making that future a reality will

[2] In this context, land means land, water, everything above and below them – the most valuable contents and required resources of any place. (Tuck & Yang, 2012)

be deployed (Tuck & Yang, 2012). In this way, settlers arrive in a territory planning various nodes of possible control, all vying to carve out a piece of a 'brave new world'. This is a necessity because often there are still people in these new lands who had been living harmoniously on the land, with the earth, a part of nature itself and they would see it - some of them since time immemorial – which presents a troubling problem for the profiteering and adventurous settlers. Across its settler colonial history to its settler colonial present, the nation-state of Canada employs various modes of control as described by Wolfe (2006), Kovach (2009), and Tuck and Yang (2012). Examples of these modes of control include low participation in education, over-representation in incarceration, and the forced relocation of communities to remote and isolated parcels of land. These tools preclude Indigenous Peoples from freedom, a share of the wealth exploited from the land, and improves the ability of the colonizer to remove Indigenous Peoples power over their lands, lives, language, and culture. The most nefarious tool that was employed to ensure settler control is that of genocide.

Patrick Wolfe (2006) argues that the settler colonial project is a structure, not a single event, and over time the colonizer must come to terms with the colonized. Wolfe (2006) describes how settler colonialism destroys to replace, not just through directly liquidating individuals (which occurs anyway), but more often through systematic, structured pogroms. Replacement was deemed the most appropriate for Canada's Indian problem.[3] The early leaders of the nascent nation told the fearful few who had taken up residence in the land now known as Canada that it would be a gentle kindness to help along the removal of the indigeneity of a person; to kill the Indian and save the human[4] Canadians need only to "remove the Indian from the child"[5]. The most terrible, efficient employment of Canadian replacement policy for First Nations is no better exemplified than with the conditions that created this author. In Canada, there is a period known as the 'Sixties Scoop'. Building from the Indian Residential School experiment of abducting youth and young adults, the Scoop was a new spin on the program. The Scoop sought to target even younger First Nations children. The need for change in genocide tactic no doubt came from a lack of effectiveness from the settler point of view, as the Indian Residential School process often broke the human or killed it alongside the Indian. Thus, the brave new strategy of simply taking babies

[3] Duncan Cambell Scott - "I want to get rid of the Indian Problem" (National Archives of Canada, 2020)
[4] Richard Pratt - "Kill the Indian in him, and save the man." (From Wolfe, 2006)
[5] Direct quote by one John A. McDonald, a particularly racist settler.

from First Nations Mothers was rolled out. What better way to enact the cruel systematic replacement of Indigeneity than to simply take a baby as near to birth as possible? As these First Nations children could be raised completely removed from culture, language, and land, this Canadian policy could create in one generation a completely non-Indigenous person and sever their offspring from communities, lands, and language; a savage punishment for the crime of being born Indigenous. This experience, like so many others, is the story of my mother and I, and we are a living citation of attempted genocide through replacement employed in Canada.

When considering how such policies could be palatable to the settler population, replacement is often vetted through popular narratives of the disappearing or dying Indian. Readers and watchers are told and shown tales that settlers are noble inheritors of the land, as seen in movies and prose like The Last of the Mohicans, Dances with Wolves, and Pocahontas (Wolfe, 2006; Kovach, 2009; Tuck & Yang, 2012). This mysticism and exoticism, a tool used often by Western colonial powers as described by Said (1977) in his work *Orientalism*, relegates Indigenous Peoples to become a foregone conclusion in the march of White history, attempting to disappear the Indian even as they persist in the present. By positioning settlers as rightful heirs to a land no longer in use by the disappearing savage, the brutal business of genocide is softened, and replacement can be made into laws, and weaved throughout policy and programming – an effect which reverberates today. Indeed, these are but a few examples of the many steps taken to position North American settlers as the inheritors of the land from the paradoxical vanishing noble savage, whose uncivilised corporeal forms ever presently plagued the coveted Canadian territory.

Clearly, there are many ways to describe colonialism, and the description provided here is not meant to be exhaustive, but I believe it reflects both the author's context and can illustrate how colonialism has underpinned Indigenous-non-Indigenous relationships in Canada for the purposes of this study. This process is helpful as we progress to our definition of decolonization, as Tuck & Yang (2012) note that decolonization will take on different forms based on the colonization present. With colonialism in this study's context described, we now shift to how decolonization can be defined in this study, and how it has shaped this work.

For Memmi (1957) and Fanon (1961), early progenitors of modern decolonial thought, true reconciliation for Indigenous Peoples from the colonial project is a future that cannot be known,

as it removes settler authority on the land and posits to "change the order of the world"[6] where Indigenous Peoples are free from the iron collar[7] and chains of colonization, no longer to be replaced by the settler. In this way we can understand decolonization as a distinct mechanism that insists upon its own end, as Tuck and Yang (2012) describe how when decolonization is made to be a metaphor it reinforces settler control, rather than reversing it. For Kovach, (2009, Page 85) "The purpose of decolonization is to create space in everyday life, research, academia, and society for an Indigenous perspective without it being neglected, shunted aside, mocked, or dismissed." With these definitions we see that decolonization cannot be simply invoked to ensure that new work is made appropriate or culturally sensitive. It is not philanthropic, it is not a vehicle for saviours seeking the end of Indigenous suffering, it is not a simple struggle against oppression, it is not western liberation (Kovach, 2009; Tuck & Yang, 2012).

Given the harm that the misappropriation or problematic employment of decolonization can cause, it is important to state how this project employs decolonization. Decolonization requires the repatriation of Indigenous land and life. It is not a metonym for social justice, it is the return of Indigenous Peoples sovereign Rights, Title, and Jurisdiction over their lands and their people (Tuck & Yang, 2012). For Tuck & Yang (2012) any form of decolonization that does not lead to this end, makes decolonization a metaphor that subverts that goal, and further aids in settler colonial replacement of Indigenous Peoples on the land. To ensure that theory can be unsettled and decolonial, Kovach (2009) calls for empowering Indigenous voices, both those of the researchers and the research partner. Decolonizing involves making sure the process is not extractive, and seeks to empower the Indigenous participants, while allowing an Indigenous researcher to employ novel Indigenous methodologies, study designs, reporting styles, literary techniques, and author reflexivity and self-location within the research process (Kovach, 2009). The act of decolonizing cannot be easily grafted into other theories and frameworks, like social justice and many critical theories, if it is to be used it must be used with a specific intent and goal and should note how it relates to what decolonization requires. (Kovach, 2009; Tuck & Yang, 2012).

[6] Frantz Fanon (1961) *The Wretched of the Earth* – "Decolonization, which sets out to change the order of the world, is clearly an agenda for total disorder."

[7] Albert Memmi (1957) *The Colonizer and the Colonized* – "The colonial situation, by its own internal inevitability, brings on revolt. For the colonial condition cannot be adjusted to; like an iron collar, it can only be broken."

Given the strong critique of how the academic and professional world can easily misappropriate decolonization, I must be clear on the intention of decolonization in this study, to ensure it is not incorporated as a metaphor or superficially. The primary purpose of this research is to explore to what extent First Nations are prepared for environmental hazards. The objective of this study is to serve communities and First Nations individuals rather than being extractive to add only to literature for the good of the academic realm, or to advance my own career and goals. This research is decolonizing through understanding, interpretation, intention, and delivery. This research is decolonizing though creating space for First Nations in community to comment on the system that concerns them and provide a platform for others to learn from their experiences and lived realities[8]. This research is decolonizing due to my focus on strengths, which moves away from the traditional views and ways of reporting on Indigenous Peoples and their issues strictly from a perspective of inherent and increased vulnerability and focusing more on what strengths exist and what change that bolsters these strengths are needed. Indeed, while this research includes conceptualizations of vulnerability, a form of decolonization is through the framing of results – using the term challenges rather than weaknesses helps to decolonize the understanding of First Nations as vulnerable, weak, or in need of rescue (Kovach, 2012). With a focus on empowering First Nations this study will then hopefully help them affect change through their own capacity and identify what barriers and challenges stand in the way of them implementing such changes for themselves. This project does not seek to inform pathways that could absolve settler colonial governments or academic institutions for their past mistreatment of Indigenous Peoples. Rather, the project seeks to expand understanding on how First Nations in Alberta prepare for hazards from an Indigenous informed perspective and promote the ability of First Nations ability to practice self determination and ownership of their land, thus engaging in decolonization that is not inappropriate.

This project was organized and supervised in a normative western academic structure and its design, execution, and future defense are firmly rooted in western academic tradition. By employing a critical theoretical framework of decolonization, I have endeavoured to employ an

[8] Lived Reality is a common term employed by First Nations advocates in Canada. This term is useful given the social construction that informs this study, as it is a way to invoke social construction in everyday life and give weight to the experiences of those often marginalized or disempowered. In long form, lived reality can be understood to mean that an individual or group cannot question the legitimacy of another individual or groups personal understanding of their own surroundings and experiences, and how that history has shaped the present, and how they feel in a given moment.

Indigenous methodology and study design. In this way, this project carves out space in a predominantly colonial academic institution and within the literary discourse on emergency management and disaster research to increase the visibility and validity of First Nations lived realities. Focusing further on the research process, in order to decolonize the traditional academic space and associated knowledge generation practices, this thesis employs multiple techniques that incorporate narrative, story, and self-location which allows me to insert a modicum of Indigenous methodology into this work.

Kovach (2009) describes a myriad of ways in which decolonization can occur, and this research definitively falls under the bracket of what Kovach terms 'walking in two worlds'. Walking in two worlds acknowledges that a researcher often navigates the non-Indigenous world of the academy and western schools of thought and instruction, while bringing their own Indigenous ways of knowing and being and generating knowledge. For me, this research receives support and structure through traditional academic theory and practices, but also is informed by my efforts to decolonize with intention. Fundamentally, engaging in the research process represents the privileged position western institutions and ideologies have on academia, theory, and knowledge production. I find myself walking between these two worlds. One of privilege and power, and one I am less familiar with - due to being a first-generation product of cultural genocide. The son of a mother stolen in the Sixties Scoop, this other world of my own Dene ways of knowing and being, informed by desires to learn, understand, and give back to a community, culture, and language I have never known, for it was stolen from me before I was even born. I have endeavoured to navigate these two worlds with my heart and mind respecting First Nation ways of knowing and believing that the privileged and powerful world of academia may give something of value through me to First Nations people. I have sought to integrate these worlds together to create something more. I have sought to critique the problematic and incorporate support from both worlds into a single research project, and in this way, I hope to decolonize my research.

2.2 Key Concepts

This section describes the key concepts that are foundational to this study. First, key concepts of vulnerability, resilience, and preparedness are described. United Nations terminology is used to describe these key concepts as employing UNDRR terminology helps build comparability between emergency management studies and matches with Canadas' own Disaster Risk Reduction (DRR) definitions (Lacroix, 2012; Kelman, 2018). In addition to these three key concepts, factors that may influence preparedness are identified and helped inform the data collection and analysis process.

2.2.1 Vulnerability

Vulnerability has been defined as the physical, social, economic, and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards (UNDRR, 2009). However, vulnerability is not a simple concept in emergency management and disaster research, for if vulnerability was easily defined, it would be easy to mitigate and address (Paton & Johnston 2001). The complexity within any assessment of vulnerability must explore the relationships in a group or area or individual, and the related environmental, social, psychological and hazard characteristics present (Paton & Johnston 2001). This understanding of vulnerability is key as this project considers Indigenous Peoples who face disproportionately higher amounts of risk of loss to hazards. There are macro factors that influence this high risk which include colonization, poverty, and chronic health issues. There are also emergency management specific issues that exacerbate the risk such as: inability to generate surplus capital (and lack of own source revenues) to match the increasing costs of allocating resources and services to remote and impoverished communities; remoteness of traditional territories in relation to urban centres (capacity hubs) which increases their distance from resources for disaster response; delayed or incomplete reimbursement from government; and navigating the psychosocial challenges of engaging in partnerships with the same powers that sought to remove Indigenous Peoples from history and from the land (Lambert; 2014; Christianson et al., 2019; Khalafzai et al., 2021). It must be said though that this increased vulnerability does not automatically mean Indigenous peoples are unable to cope, are unskilled, or in need of rescuing. On the contrary Indigenous Peoples have shown incredible strength despite attempts to remove from the landscape, and that they have a tenacity to endure.

Indigenous endurance is a decolonizing concept that helps to locate vulnerability in research that considers Indigenous Peoples without over-representing problematic narratives of 'at-risking' Indigenous Peoples as in constant need of reprieve or saviours (Tuck & Yang 2012). Endurance is described as a precursor to resilience, where Indigenous Peoples endure the effects of disasters to persist rather than to engage in preparedness for recovery or building back better (Durie, 2005; Lambert, 2014). For Lambert (2022), Indigenous endurance is a more apt term than resilience for many Indigenous communities do not "bounce back" as effectively as non-Indigenous communities, but rather endure the effects of emergencies and disasters before attempting to return to a pre-disaster state. Endurance recognizes the strength and longevity of Indigenous communities to use their available capacity and resources to endure an event until outside help arrives or they can cope on their own, regardless of their vulnerability. However, engaging in preparedness and recovery are often a struggle for Indigenous communities as they grapple and contend with a series of issues, and the lack of preparedness creates increased vulnerability to future hazards (Paton & Johnston, 2001).

Lambert's law (2022) is a useful decolonizing lens to further conceptualize vulnerability in relation to Indigenous Peoples, as it includes considerations for ways in which Indigenous Peoples can manage their vulnerabilities on their own. Lambert's (2022) paper "Indigenous Societies and Disasters" proposes a sociological law that relates hazards to Indigenous communities through two aspects. The first aspect that Lambert states is that should any given disaster affect an area, if there is an Indigenous community or population in that space, they will be disproportionately negatively affected by said disaster, or more vulnerable to loss from the risk that hazard presents. Second, Lambert proposes that for a given Indigenous community or population to recover and be able to prepare effectively for future events, there needs to be some level of self determination possible for the Indigenous community or population (Lambert, 2022). Indeed, Lambert (2022) argues that rate of recovery and resilience scales proportionally to the level of self determination present in a given Indigenous place. Thus, Lambert's law helps describe how there are systemic and legacy challenges that will create ever-present vulnerabilities for First Nations in Canada and provides an avenue to explore how preparedness can work to mitigate or eliminate these vulnerabilities. Adger and colleagues (2005) describe vulnerability as a build-up or erosion of resilience, both before and after disasters occur. Considering this idea there is a need to understand resilience to offset the inherent disproportionate vulnerability of First Nations.

2.2.2 Resilience

There are many different definitions of resilience, especially given resilience's varying function across multiple disciplines and streams of literature (Berkes & Ross, 2013). The UNDRR (2009) broadly defines resilience as the ability of a system, community, or society exposed to hazards to resist, absorb, accommodate, adapt to, transform, and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management. This definition is very complex, as it attempts to capture the many functions and ways of understanding resilience and is helpful to use as a starting point for exploring what resilience means for this study. Berkes and Ross (2013) note the consistent trend of resilience definitions to incorporate the adaptive capacity of systems, individuals, communities, corporations, and ecosystems in the face of change, and focus on the ability to develop capacity to thrive in an environment characterized by change as a key component of resilience. **Adaptive capacity** is the capacity of actors in a system to influence resilience and often works through social networks.

As this study is concerned with First Nations, I sought literature that incorporated holistic understanding to work with information that may be more culturally appropriate, and working with material that incorporates understanding of agency and self-organizing aids in the decolonial aspect of this research project. Additionally, literature of resilience that could apply to place-based communities and account for how the health of the community is closely related to the health of the land are particularly relevant for work with Indigenous partners (Paton & Johnston, 2001; Berkes & Ross, 2013). These are important factors to consider, as the failure to accommodate for social and cultural diversity can negatively influence preparedness and resilience (Cutter et al., 2008). Berkes and Ross (2013) describe how self-organising appears to activate capacities already inherent in a community, and the agency to engage in preparedness is a key way to enhance community resilience. Paton and Johnston (2001) note that conceptualisations of resilience should also consider the possibility of positive growth and the management of resources, as the idea of 'bouncing back' (returning to a pre-disaster state) requires safeguarding existing environment and resources and ensuring members have the resources, capacities, and capabilities to effectively engage in emergency management.

Based on the literature reviewed thus far and following the guidance and recommendations of Berkes and Ross (2013) for creating an integrated concept of resilience, I propose a definition of

resilience specific for this study. Resilience for this study can be defined as the capacity to employ and enact preparedness and either resist change and maintain a pre-disaster state, or promote growth for positive change, while minimizing the impact of negative change as brought on by the onset of destructive change caused by hazards**.** As hazards often represent destructive changes to a given environment, this understanding of resilience is important for this study as it hones in on resilience from a perspective of capacity to expect, predict, and respond to change, which closely mirrors definitions of preparedness, to be discussed in the following section. In this way resilience reflects the degree to which a First Nation community is capable of self-organization and to what extent that community can build capacity for learning, adaptation and engage in preparedness (Adger et al., 2005).

2.2.3 Preparedness

Preparedness efforts include protective actions (Lindell & Perry, 2012) taken in advance to ensure that resources (e.g. equipment and personnel) for responding to an emergency are in place or readily available, and that those tasked with emergency management have the necessary capacity (e.g. skills and contact lists) to cope with the changes brought on by hazards (Paton, 2003; Sutton & Tierney, 2006). The United Nations Office for Disaster Risk Reduction (UNDRR, 2009) defines preparedness as the knowledge and capacities developed by governments, response and recovery organizations, communities, and individuals to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters. Studying preparedness as an approach to dealing with environmental hazards includes understanding processes of planning, training, exercising, and acquiring the resources to engage in those activities, and is driven by two main objectives: hazard assessment and risk reduction (Perry & Lindell, 2003). Hazard assessment is not only identifying threats that have affected the community in the past but also employing knowledge and technology to identify new or emergent threats (Perry & Lindell, 2003). Disaster risk reduction involves an examination of what is needed to decrease danger and identify the resources needed to implement those actions (Perry & Lindell, 2003; Sutton & Tierney, 2006; Khan, 2012; Paton, 2019). For Cutter and colleagues (2008) preparedness is seen as a developmental process that informs a resilience perspective, and that preparedness is built over time, and needs to be exercised consistently. This idea is supported by the work of Perry and Lindell (2003) and Hemond and Robert (2012) who describe preparedness as a never-ending process. Effective preparedness must contain an element of sustainability and longevity to be

successful and promote resilience. As vulnerability, resources, and structures change over time and given that performance skills and capacity for emergency management disappear when not exercised, planning and training are all critical factors to consider as continual processes in order to establish and maintain emergency preparedness (Perry & Lindell, 2003).

Evacuation and the decisions to evacuate feature strongly when studying preparedness. This is because while the evacuation itself is part of the response phase, planning for evacuations (e.g. securing vehicles, planning routes, choosing host communities, and preparing lists of high-risk individuals), training of personnel, and planning for the allocation of resources before, during, and after a hazard event are all preparedness activities (UNDRR, 2009). McCaffrey (2015) notes that the most successful preparedness programs consider local and cultural values, and no single plan should be used in all areas, which highlights the importance of community specific plans. Given the infrequent, unpredictable nature of hazards, sustaining preparedness over time is essential for resilience, and the lack of preparedness creates vulnerability to future hazards (Paton & Johnston, 2001; Paton, 2003).

When communicating risk information to encourage protective actions, Lindell and Perry (2012) identify the time between hazards, 'the continuing hazard phase,' as the best temporal space to engage in long-term hazard adjustments. These adjustments include conducting strategic analysis of community capabilities and vulnerabilities, the context of the community, and understanding community risk perception (Lindell & Perry, 2012). Important aspects for communication include investigating communication flow during escalation and emergency response phases, communication channels, communication sources, adaptive capacity in the use of informal communication networks, after action reporting, transparency, and finally, community trust in emergency management teams' expertise (Lindell & Perry, 2012). While these aspects cover the network aspect of communicating information, it is also important to consider hazard specific information.

Paton's (2003) work on preparedness highlights the importance of **hazard knowledge** and how it influences a person's motivations to prepare, the formation of intentions to prepare, and then the conversion of intentions to preparedness actions. Sutton and Tierney (2006) talk about the importance of making plans, and that unless plans are trained, practiced, and improved upon, those engaging in emergency management will not be prepared. It is important to note that risk

awareness alone does not trigger preparedness, and that other factors are important to consider when examining preparedness and the factors that influence it (Paton & Johnston 2001, McGee & Russel 2003; Patton, 2003). Paton and Johnston (2001) found the link between information provision and preparedness tenuous, and that it is more important that risk and hazard information provided to a group be appropriately and effectively targeted to that audience specifically. An effect of this phenomenon is that for effective messaging to increase preparedness, work must involve identifying vulnerability factors and then defining the relationship those factors have with hazard effects. (Paton & Johnston, 2001). This is one of the reasons why the **hazardscape** concept is useful for this study. Hazardscape can be understood as a dynamic concept which reflects the physical susceptibility of a place and vulnerability of human life and assets to various hazards in a given context (Khan, 2012). Hazardscape represents process behaviours along with place and people characteristics. It is useful for work with First Nations as Khan (2012) describes how a hazardscape represents the ecological perspective of hazards and consequent risks, which build through intricate relationships between human beings and the environment in a particular spatial-temporal context. Incorporation of concepts that match to First Nations world view and community value (e.g. holistic, place based, community relationships) are useful to ensure relevance to the partners invited to participate in the study.

Moving on from the ways in which information is shared and what knowledge is most relevant for preparedness, it is important to understand how individuals and communities decide to prepare. Inherently, the decision to prepare is a psychological choice individuals and communities have to make. McCaffrey and colleagues (2020) describe two main pathways of evaluation following risk communication and hazard knowledge considerations - response efficacy and self-efficacy. **Response efficacy** is the perceived effectiveness of a given action to mitigate risk, the belief that an action will work and is the right fit encourages that action being selected (McCaffrey et al. 2020). Simply, we can think of response efficacy as knowledge of what to do or use, who to call, or where to find something. **Self-efficacy** is more nuanced, it refers to one's belief to actually implement activities (McCaffrey et al. 2020). Self-efficacy is the measure of an individual or communities' estimation of what they are capable of doing, their ability to absorb information, and their ability to act and manage hazard impacts (Berkes & Ross 2013). Self-efficacy is a key concept as it determines how people feel, think, motivate themselves and behave; these beliefs produce diverse effects that all influence preparedness (Bandura, 1994). The most effective way of creating

a strong sense of efficacy is through mastery experiences, that is to say consistent engagement, investment, and practice in preparedness (Bandura, 1994). Adaptive capacity (section 2.2.2.) can also be considered as a component of self efficacy, showcasing one of the linkages between preparedness and resilience.

Perceived capacity is an important term for this study and can be defined as a term that considers both pathways of evaluation, taking self-efficacy and response efficacy into account together. It is important that First Nations both have the knowledge of what to do and the capacity to engage on that knowledge. It is important to consider the pathways together because the number and quality of action plans and the amount of effort and perseverance invested in protective actions are strongly dependent on perceived capacity (Paton & Johnston, 2001). For Kanakis (2016), improving perceived capacity is a key component to encourage preparedness, as just being aware of risks and perceiving being vulnerable to hazards might not be enough to trigger engagement in protective actions from hazards. It also is useful to help distinguish between perceived capacity (knowledge and confidence to act) with objective capacity. Objective capacity is the facts of the amounts of resources, time, skills and equipment on hand to engage in preparedness. In this way we can consider preparedness from two streams of thought - is there a lack of physical tangible resources to prepare, or is there a lack of belief that one can prepare successfully. Indeed, the lack of resources should not preclude one from engaging in protective actions but if one has both no resources and no belief in oneself – vulnerability is both created and exacerbated. Perceived capacity then rises in importance and is valuable for places where objective capacity is limited or lacking, such as many First Nations communities and territories. The primary aspect of perceived capacity to manage such low objective capacity contexts is the ability to engage with whatever resources are on hand, and lead to the development of novel solutions in a time of crisis commonly known as adaptability.

Adaptation is also important for preparedness. Nelson and colleagues (2007, p. 397) define adaptation as "the decision-making process(es) and action(s) undertaken to maintain the capacity of a community in dealing with existing or future anticipated change(s) without experiencing substantial functional or structural changes while sustaining growth." Adger and colleagues (2005) found that the diversity of adaptations, promotion of strong local cohesion and mechanisms for collective action all enhance resilience that can guide preparedness. Son et al. (2020) found that **improvisation** was critical for resilience in situations where quick adaptations are required under

pressure. Indeed, when exploring First Nations preparedness, examples of improvisation and adaptation in response to unpredictable emergency events may be an indicator that effective preparedness has taken place, especially given that First Nations may have little or no levels of other forms of preparedness. Perceived capacity and adaptation can provide enough preparedness to adequately respond or at least minimize impacts of hazards (Cutter et al., 2008). It is important to acknowledge that any preparedness system cannot cover all possible scenarios and may not be implemented as planned, which means investigating adaptive capacity is critical to understand how effective preparedness is in a given place (Son et al. 2020).).

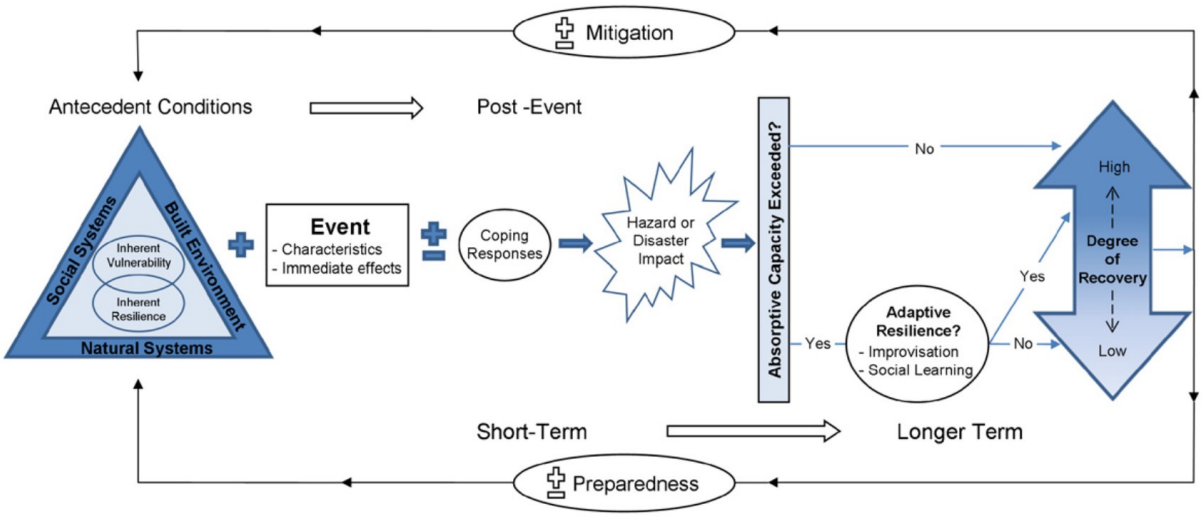
Moving from the psychological factors that influence preparedness, it is important to consider how communities learn from **past experiences**. The literature on the effects that past experiences have on preparedness is mixed. Many studies have identified how past experiences may improve preparedness, encouraged more preparedness activities, and lead to improved preparedness for communities (Epp et al., 1998; McGee and Russel, 2003; Cutter et al., 2008; Bihari and Ryan, 2012; Becker et al., 2017; Ejeta, 2018; Khalafzai et al. 2020). Hemond and Robert (2012) also found that there is a positive relationship between past experiences and preparedness in vulnerable communities, with vulnerability influenced by factors such as poverty, community location, and lack of resources. However, studies by McGee et al. (2009), López-Marrero and Tschakert (2011), and McCaffrey et al. (2020) found that past experiences are not enough to influence preparedness.

Indeed, in their literature review on mitigation and preparedness, McAffrey et al. (2020) noted the mixed results in the literature but offered that there are key indicators surrounding past experiences that may increase the likelihood social learning will occur. **Social learning** occurs when beneficial impromptu actions are formalized into institutional policy for handling future events and is particularly important because individual memory is subject to decay over time. Manifestations of social learning include policy making and pre-event preparedness improvements. (Cutter et al. 2008). Social learning can also be distinguished from common 'lessons learned' exercises in this way - if one engages in a review post-event and does not change practice or inform updates to policies, those lessons learned do not benefit preparedness (McAffrey et al. 2020). Further, Adger and colleagues (2005) found that if social learning occurs, there is a greater likelihood that mitigation and preparedness are improved, and both Cutter et al. (2008) and McAffrey et al. (2020) note that experiencing a higher frequency of events increases the likelihood that social learning will occur.

The knowledge and capacities developed over time by First Nations are also important factors that influence preparedness. Based on the work reviewed thus far regarding preparedness, approaching preparedness with considerations from a temporal, multi-variable, place informed dynamic perspective is appropriate for this study. This **Indigenous Knowledge** perspective will improve the ability to investigate preparedness from a decolonial perspective and help uncover other factors that impede or prevent preparedness (negatively influence) and those factors that facilitate and sustain hazard preparedness (positively influence). It is important to have a First Nations lens for this study as it allows for conceptualizations of study data to integrate and include the experiences and voices of Indigenous Peoples and communities.

The Disaster Resilience of Place model (Figure 1) developed by Cutter et al (2008) is a useful model for linking together the key concepts for this study, and for identifying factors that positively and negatively influence preparedness of First Nations in Alberta.

Figure 1. Schematic representation of the disaster resilience of place (D.R.O.P.) model. (Cutter et al., 2008).



First, the antecedent conditions reveal the inherent vulnerability and resilience of a place before a hazard event occurs. Next, the place where the hazard event occurs uses their coping responses: the knowledge and capacities and resources to manage a hazard. The impacts of the hazard event then become apparent. If the capacity to withstand the effects of a hazard (absorptive capacity) are not exceeded, the degree of recovery will be high. However, when absorptive capacity is exceeded, adaptive resilience may occur. **Adaptive Resilience** is a process which involves leveraging improvisation (impromptu actions to aid in recovery) and social learning

(Cutter et al., 2008). When improvisation and social learning take place, they directly alter the inherent resilience of a place and are an important function for resilience in low-capacity places (Cutter et al., 2008). Additionally, if adaptive resilience occurs, there may be a high degree of recovery; whereas if adaptive resilience does not occur, a low degree of recovery is expected. This model is useful for this study because it highlights how the presence or lack of adaptations and social learning can contribute to adaptive resilience which are clear indicators of influential preparedness factors (Cutter et al., 2008). Other aspects of the model that are useful to consider. Examining antecedent conditions (inherent vulnerability and inherent resilience) from an Indigenous perspective, chiefly - in what ways does First Nations disproportionate vulnerability and risk of loss from hazards affect preparedness, and are there inherent resilience strength factors in First Nations that may affect preparedness? It is also important to investigate First Nations' coping responses, both their resources and perceived capacity.

In addition to the D.R.O.P. model, there are community level concepts that are relevant for this study. Paton and Johnston (2001) found that resilience and preparedness are best bolstered through **community empowerment**, which is a key factor to consider and investigate. The approaches most effective for community empowerment are participation, enhancing perceived control, facilitating community identification of problems, and developing strategies to solve and contain problems in ways consistent with the needs, systems, and values of a given community (Paton & Johnston, 2001). When considering the sustainability of these approaches, a consensus approach to decision making is recommended as once a basis for empowerment is established, the collective efficacy of a community increases, and that can be a good indicator for preparedness (Paton & Johnston, 2001).

2.3 Existing Academic Literature on Indigenous Peoples' Preparedness

There is limited international research on Indigenous Peoples preparedness for environmental hazards. The existing international literature focused on examining how Indigenous knowledge affects preparedness and how it can positively impact resilience and improve prevention and mitigation. Mapara (2017) examined the effect traditional knowledge and cultural practices could have on empowering Indigenous communities to more effectively prepare and increase resilience, and found that incorporation of Indigenous knowledge systems did empower Zimbabweans, and was also an effective way to further decolonization for those peoples. Mandiopera and colleagues

(2023) also found similar results working the Umzingwane people in Zimbabwe (whom were not among the peoples mentioned in Mapara's study), while Kumari and colleagues (2020) found similar evidence that documentation and incorporation of traditional knowledge improved preparedness and mitigation for communities in India. Work by Davidson and colleagues (2024), covering performing arts primarily in Australia with reference to other international events, has shown incorporation of Indigenous knowledge can also extend to employ art and dance and other cultural activities as tools that can positively bolster preparedness, and specifically noted the benefit for Indigenous Peoples.

In Canada, there is limited academic research and literature that focuses on First Nations preparedness for hazards. Epp et al. (1998) investigated wildfire and flood preparedness for three First Nations in Manitoba and found that there were weaknesses in their preparedness. Examples of the weaknesses included lack of well-developed plans; communication difficulties between agencies, local authorities, and community members; and a lack of timely information from service providers that led to chaos, confusion, and delay which negatively impacted the First Nations emergency experiences. As part of the First Nations Wildfire Evacuation Partnership (FNWEP), Asfaw et al. (2019) found that the preparedness of Sandy Lake First Nation at the time of their wildfire evacuation in 2011 was weak, as the community lacked an evacuation plan. Low levels of preparedness resulted in some Elders not taking essential items with them, and having a negative experience through not having caregivers or family members to support them during the evacuation (Asfaw et al., 2019). Mottershead et al. (2020) described how the Dene Tha' First Nation community of Tache' faced similar problems of low levels of preparedness that negatively affected their 2012 evacuation due to wildfire smoke, including lacking a community-specific evacuation plan and access to timely information from media outlets. This Canadian literature primarily describes weaknesses in preparedness and negative impacts of low levels of preparedness. The exception is the study by Mottershead et al (2020), which identified the importance of support personnel and leadership in preparedness. This study will build on this existing literature by exploring in detail factors that increase and decrease preparedness of First Nations.

Chapter 2 Summary

This chapter presented the theoretical framework that guided this research, grounded in social constructivism, critical theory and decolonization. Focus then shifted to an overview of the key concepts of vulnerability, resilience, and preparedness that are foundational for this study. The key concepts that supported construction of the interview guides and informed data analysis were presented and described. Last, the existing academic literature on Indigenous preparedness was reviewed. The existing literature indicates that there is a need to investigate the factors affecting First Nations preparedness further.

Chapter 3: Methods

This chapter describes the methods used to design and carry out this project. First, I will begin with a description of my study design. Then I will describe the research process I undertook to collect and analyse my data. The final sections of the chapter discuss the ethical considerations of this research along with commentary on power, reflexivity, and limitations. This chapter concludes with the steps I undertook in order to ensure quality and rigour of the study.

3.1 Study Design

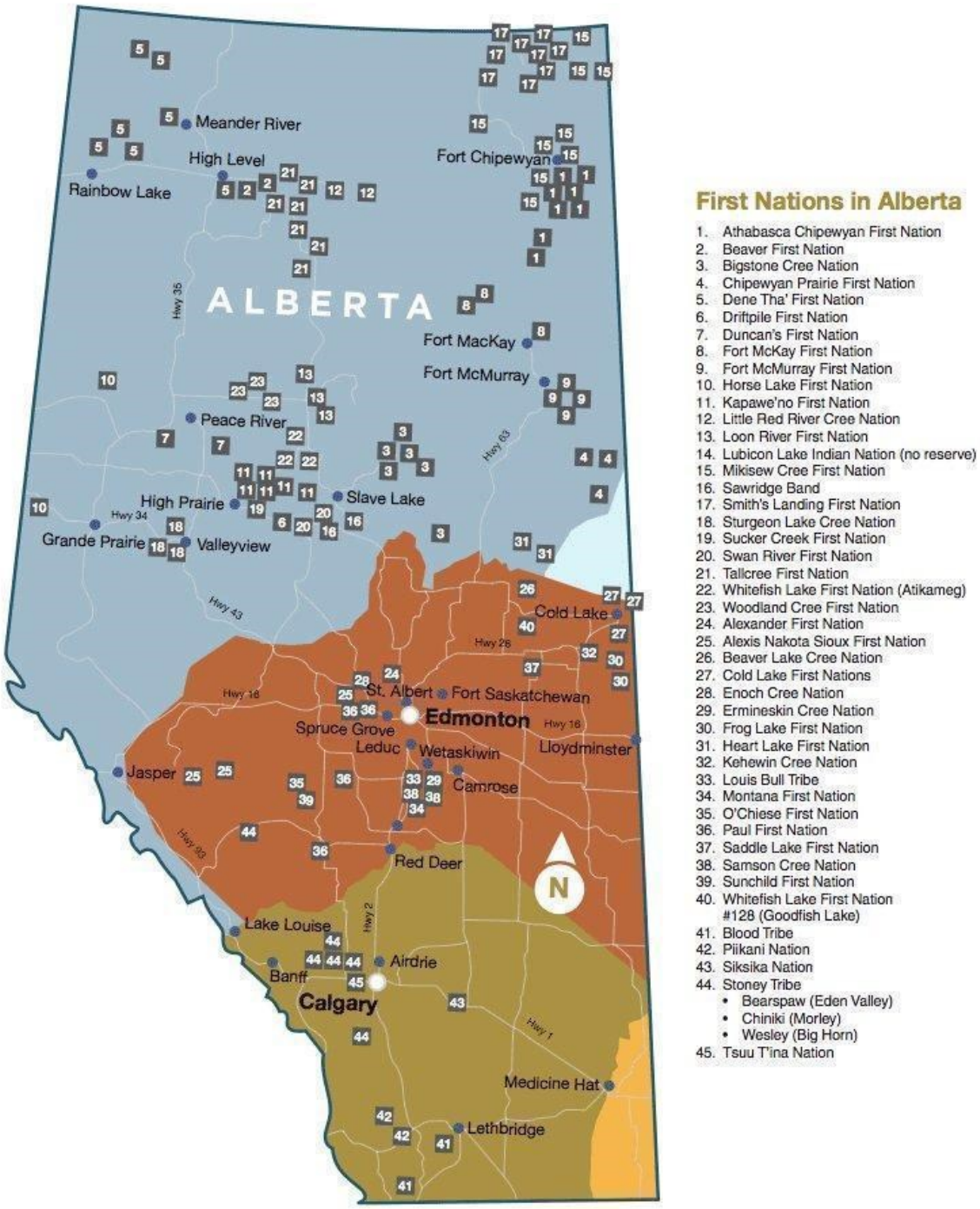
The project is a qualitative study of First Nation emergency preparedness in the province of Alberta, Canada. Qualitative research is concerned with producing nuanced or deeper understanding from rich and complex data (Bloomberg & Volpe, 2018). The dataset for this research comprises a series of conversations with individuals, who spoke about their lived realities with emergency preparedness. Analysis of these narratives forms the crux of this research study, making qualitative methods that support 'narrative analysis' an appropriate study design to employ (Creswell et al., 2007). The framework of this qualitative project is an exploratory case study and utilizes a cross-sectional design, meaning that the data and results from the study relate to the time of data collection, March to August 2021 (Creswell et al., 2007). A cross-sectional design was chosen because the goal of this project is to explore the levels of Alberta First Nations hazard preparedness at one point in time, and identify what factors are positively and negatively affecting preparedness. An exploratory case study is an appropriate design since the boundary chosen (the province of Alberta) matches the jurisdictional boundary of the current emergency management service provision agreement for First Nations in Alberta, and any recommendations from the results of this study will be relevant to this jurisdiction (Baxter & Jack, 2008; Bryman et al., 2012). As the case study boundary is large, using exploratory techniques that do not require an exhaustive engagement with the context and individuals within the boundary is preferred (Malterud et al., 2016). This trade-off is sufficient as the techniques chosen for this project may provide new information and challenge current understandings of an issue (Malterud et al., 2016), which in this project is the limited understanding of First Nations preparedness in Alberta. A case study completed within one or more communities would typically involve collection of more data using fieldwork and other methods. This type of case study was not possible for this study because this

project was completed during the COVID pandemic, when all First Nations in Canada had closed their borders to protect the health of their residents.

3.2 Study Area

This study is concerned with examining First Nation preparedness in the province of Alberta. Figure 2 shows the First Nations in Alberta. Dene Tha' First Nation is a partner in this research project and their communities are located with the numerical boxes labelled 5 in the top left corner of the map of Alberta (Figure 2). Emergency managers from the three numbered Treaty organizations (6,7, and 8) participated in this study. While there are five Treaty boundaries that are present within the borders that define the province of Alberta, there are only three treaties that have a significant population presence and communities in the province: Treaties 6, 7, and 8. Treaty 8 area covers northern Alberta and is shown in blue/grey, Treaty 6 covers central Alberta centred around Edmonton and Treaty 7 in the south centred around Calgary is shown in gold.

Figure 2 First Nations in Alberta. (From Alberta School Councils' Association (ASCA))



First Nations in Alberta

1. Athabasca Chipewyan First Nation
2. Beaver First Nation
3. Bigstone Cree Nation
4. Chipewyan Prairie First Nation
5. Dene Tha' First Nation
6. Driftpile First Nation
7. Duncan's First Nation
8. Fort McKay First Nation
9. Fort McMurray First Nation
10. Horse Lake First Nation
11. Kapawe'no First Nation
12. Little Red River Cree Nation
13. Loon River First Nation
14. Lubicon Lake Indian Nation (no reserve)
15. Mikisew Cree First Nation
16. Sawridge Band
17. Smith's Landing First Nation
18. Sturgeon Lake Cree Nation
19. Sucker Creek First Nation
20. Swan River First Nation
21. Tallcree First Nation
22. Whitefish Lake First Nation (Atikameg)
23. Woodland Cree First Nation
24. Alexander First Nation
25. Alexis Nakota Sioux First Nation
26. Beaver Lake Cree Nation
27. Cold Lake First Nations
28. Enoch Cree Nation
29. Ermineskin Cree Nation
30. Frog Lake First Nation
31. Heart Lake First Nation
32. Kehewin Cree Nation
33. Louis Bull Tribe
34. Montana First Nation
35. O'Chiese First Nation
36. Paul First Nation
37. Saddle Lake First Nation
38. Samson Cree Nation
39. Sunchild First Nation
40. Whitefish Lake First Nation #128 (Goodfish Lake)
41. Blood Tribe
42. Piikani Nation
43. Siksika Nation
44. Stoney Tribe
    - Bearspaw (Eden Valley)
    - Chiniki (Morley)
    - Wesley (Big Horn)
45. Tsuu T'ina Nation

3.3 Research Process

This section will cover the methods that were employed throughout the research process to collect, analyse, and interpret the data. First, we will cover the key informant technique, followed by a description of the sampling strategy and participant recruitment employed to understand the partners whose narratives comprise the dataset. Next, the method used for data collection, the semi-structured interview, will be described. This sub-section concludes with an overview and discussion of my data analysis process.

3.3.1 Key Informant Technique

In order to collect data effectively and efficiently, the key informant technique was deemed the most appropriate. This technique is useful for exploring a single aspect of a larger setting rather than a larger aspect of a group as a whole, such as investigating each pillar of each First Nation emergency management, in each community within the province (Tremblay, 2003). The primary advantage of the key informant technique is the amount of high-quality data and can be achieved in a relatively short period of time, especially when data collection is made difficult by a large study area, as with this project. (Marshall, 1996; Tremblay, 2003). For my purposes this technique enabled me to examine First Nations preparedness in Alberta by using key informant interviews during the COVID-19 pandemic, when entry into First Nations communities was prohibited and gaining access to a large number of individuals would be very difficult.

Many of the key informants in this study are Indigenous, and often spoke from two-worlds; one of their professional affiliations and experiences and the other from their lived experiences as members of their Nations, or as leaders within their Nations. Additionally, due to the sensitive nature of some of the topics that were covered, confidentiality has been preserved in some cases as requested by the key informants during the revisitation process described in section 3.8, and certain quotes contain square brackets around places and names of individuals for this function.

3.3.2 Sampling Strategy and Participant Recruitment

Key informants were purposively selected for their specialised knowledge of the issue under study (Tremblay, 2003). From the initial cohort (Noted by IC in the Group heading in Table 1), snowball sampling was used to recruit additional participants (Hay, 2010).

Table 1 List of key informants who participated in this study

Group	Name	Role
Alberta Emergency Management Agency (AEMA) IC	Fran Byers	Manager, First Nations Field Office
AEMA	Winston Delorme	First Nations Field Officer, Regional Municipality of Wood Buffalo
Assembly of First Nations (AFN) IC	David Diabo	Special Advisor on Emergency Services
Canadian Red Cross	Reynold Medicine-Traveller	Senior Advisor Indigenous Peoples, Alberta
Consultant IC	Ken Letander	Advisor on Emergency Management
Consultant IC	Key Informant	An Emergency Manager from Treaty 8
Dene Tha' First Nation (DTFN)	Andrea Godin	Director of Emergency Management
DTFN IC	Linda Semansha	Emergency Management Deputy, Chateh
DTFN IC	Stephen Ahnassay	Emergency Management Deputy, Bushe River
DTFN	Tina Yakineah	Community Health Representative, Meander River (Taché)
Town of High Level	Crystal McAteer	Mayor
Treaty 7 IC	Buddy Dixon	Emergency Management Coordinator

When creating my initial cohort and when vetting candidates identified via snowball sampling, I relied on the criteria for strong key informants from Marshall's (1996) seminal work on the key informant technique. The criteria were as follows: Key informants should have a formal **role in the community** that exposes them to the kind of information being sought by the researcher. In addition to having access to the information desired, a key informant should have absorbed and represent the **knowledge** in question well. A key informant should have a **willingness** to communicate their knowledge to the interviewer. Finally, a key informant should be able to **communicate** their knowledge effectively and intelligibly to the interviewer (Marshall, 1996).

Participants were recruited from government, non-government agencies, Treaty organizations, and Dene Tha' First Nation. For example, of the numbered Treaties that occupy the province, Treaties 6, 7, and 8 contain the most First Nations communities in the province of Alberta, so I recruited key informants from within these three Treaty organizations. Employees from the AEMA gave me a good perspective of the services and priorities from the primary emergency services provider for First Nations. A participant from the Canadian Red Cross was recruited to give the perspective of a non-governmental agency that often assists First Nations. Gathering informants that could provide their knowledge from various regional and professional contexts across the province, helped me to gain confidence that I was getting a good overview of First Nations preparedness in the province at the time of data collection.

Regarding recruitment of government key informants, provision for First Nations emergency management is under the management portfolio of Indigenous Services Canada (ISC). However, ISC prefers to act as a funding body and negotiates agreements for direct service provision with other external agencies, such as provincial management agencies or the Canadian Red Cross, through negotiated agreements and memoranda of understanding (Collier, 2015). In Alberta, First Nations emergency management is handled by the Alberta Emergency Management Agency (AEMA). AEMA operates under the guidance of a ten-year emergency management service agreement between the province and the federal government that was signed in 2015 (Collier, 2015). Due to their direct involvement with First Nations emergency management, field officers from AEMA were recruited for participation in this project. I was unable to interview anyone from ISC as they declined to be involved in this project, stating their preference to act only as a funding body handling reimbursement, and that any information that they would be willing to share on this project would come from their publicly available information online.

It was important to learn about preparedness from the perspective of emergency management personnel within at least one First Nation community, rather than only seek out information from aggregators across government and First Nation organizations. The established relationship between Dene Tha' First Nation and my supervisor Dr. Tara McGee from their past work together in the First Nations Wildfire Evacuation Partnership played a critical role in securing Dene Tha's participation in this study, particularly due to the restrictions of the COVID-19 pandemic. Dene Tha' First Nation has been engaged in ongoing efforts to improve emergency preparedness following their experiences during their 2012 wildfire evacuation of the Meander River (Taché) community (Mottershead et al., 2020). In 2019 the Chuckegg Creek wildfire forced the evacuation of all three major communities of the Nation: Chateh, Meander River (Tache'), and Bushe River. Dene Tha's experience of dealing with multiple hazard profiles combined with the opportunity to explore how First Nations communities work alongside government and other agencies made Dene Tha' an excellent community partner for this study. Permission to approach and recruit individuals for this project was given during a meeting between myself, my supervisor Dr. Tara McGee, and Chief James Ahnassay of Dene Tha'. The Director of emergency management for the entire Nation and individuals involved in emergency management from each community were interviewed.

A representative from the Assembly of First Nations (AFN) was recruited to participate in this study as the AFN is the primary political advocacy group for all First Nations in Canada. The key informant could speak about their experience advocating for First Nations emergency management and share their knowledge of the challenges and strengths First Nations have had historically. Additionally, the AFN provided a much-needed national point of view, which was important given the complicated jurisdictional nature of First Nations emergency management, and lack of participation from ISC. The Canadian Red Cross supports First Nations emergency management through service agreements with ISC and partnerships with individual First Nations, thus, a representative from the Red Cross in Alberta was recruited. Emergency management in Canada makes use of mutual aid agreements where the cooperation of multiple communities and organizations can engage in the sharing of resources due the vast tracts of land that the country has at risk to hazards, and the costs of storing and maintaining equipment. With these mutual aid agreements in mind, and based on the secured partnership of Dene Tha' First Nation, the nearby municipality of High Level and council members of Mackenzie County, which neighbours Dene Tha's three communities, were also recruited for this project.

3.3.3 Data Collection: Semi-Structured Interviews

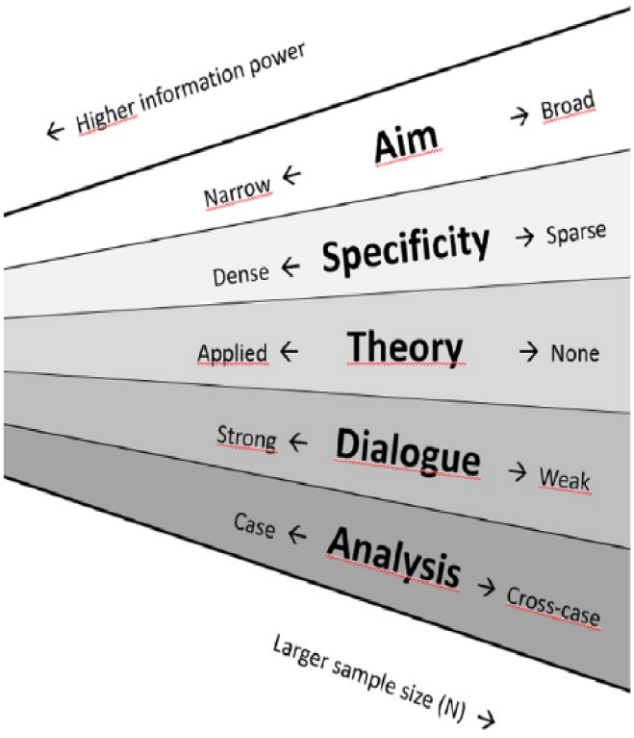
Semi-structured interviews were used for this study because they are the preferred method for carrying out the key informant technique (Marshall, 1996; Tremblay, 2003). All except one of the interviews were completed online via zoom, and one was completed over the phone. In-person interviews were not possible since data collection occurred during the COVID-19 pandemic. All Zoom interviews were recorded by the platform and the phone interview was recorded via a handheld recording device. Hanna (2012) provides insight on how to utilize online interviewing as a tool when in-person interviews are not possible, and argues that they remain a valid and often necessary (as in this case) option. Deakin and Wakefield (2014) and Seitz (2016) provided guidance on the challenges one may encounter while engaging in online interviews. Care was taken to ensure that both the interviewer and participant had a quiet space to meet to minimize disruptions (Deakin & Wakefield, 2014; Seitz, 2016). I invited all participants to meet before the interview by phone to introduce myself, provide information about the project and interview. Not all participants utilized the pre-interview call format, with seven agreeing, and the other five instead proceeded to participate in the online interview after being approached via email. The pre-interview calls ranged from a few minutes to many hours over several days. These calls helped to build trust and rapport before the interview, and in one case it was only after engaging in a series of pre-interview calls that the participant agreed to be interviewed. The interviews ranged from approximately thirty minutes for the shortest to well over two hours for the longest.

The semi-structured interviews worked well with my First Nations key informants. For my people, the Denesųłiné, and many other First Nations across the province, storytelling, experience sharing, and verbal communication are both powerful and the traditional way of sharing knowledge. The conversational semi-structured style was beneficial as open conversation likely encouraged First Nations key informants to share knowledge in their own way and create a more comfortable environment. This is an important aspect of leveraging social construction within the study, as allowing space for broad questions allowed key informants to fill in the answers while acknowledging their experiences and expertise (Creswell, 2007). The interviews were conducted using a semi-structured interview guide. While using an interview guide helped me to explore the aspects of First Nations preparedness identified as important in the existing academic literature, using the semi-structured style allowed room for the conversation to develop naturally and cover topics and experiences I may not have foreseen. Three sets of interview guides were generated,

one for government participants, one for First Nations participants, and one for the Mackenzie County and Town of High-Level participants. Appendix 1 contains the interview guides.

While using semi-structured interviews, conversation is designed to allow free thought and idea generation, however, to preserve high quality of data it is important to keep the conversation firmly rooted on the topic on hand (Tremblay, 2003). Staying on topic was an additional challenge I faced which stems from a cultural norm that exists among Indigenous peoples. As a youth asking for knowledge from individuals who are elders, it is considered incredibly disrespectful, if not completely taboo, to interrupt while they share their knowledge with you. For example, one of my interviews is much longer than my average length because it was difficult to interrupt the speaker for fear of being disrespectful to the elder. This was an issue when a respondent would begin to digress from the preparedness topic into other areas. Tremblay (2003) suggests that as the interviewer, I should intervene in order to keep the data collection on point, however, that was simply not something I was willing to do, not only for fear of potentially losing the participant, but also because quite simply I was affording my participant the respect that they deserved. In order to preserve data quality in my study, screening of the interview data took place during data analysis to assure that only relevant information was included in my analysis.

Figure 3. Information Power from Malterud et al., 2016.



The concept of information power helped determine the number of participants in the study, and guide when to cease data collection and move towards analysis. Information power (Figure 3) shown to the left, highlights the five criteria that can be employed to help determine if the number of participants in a study is sufficient to capture high quality data. Information power is a concept that states that the higher the quality of data within the information a sample holds, relevant for the actual study, the lower the number of participants is needed (Malterud et al., 2016).

The concept of using a logical and pragmatic model for determining sample size and 'saturation' in qualitative studies are in line with the findings and recommendations of Low (2019) and Braun and Clarke (2021). Both studies critique the concept of sample saturation and come to the same conclusion that alternative methods, such as information power, that are logical, pragmatic, well documented, and explained by the researcher are better guides and judges for qualitative studies than the common "no new information" statement derived from grounded theory methodologies (Low, 2019; Braun & Clarke, 2021).

To explain further, data can be considered to have strong information power if the aim of the research is narrow, on a specific topic, based on or supported by existing theory, is provided by an individual who is well versed and communicative and the level of analysis is a case study rather than multiple cases (Malterud et al., 2016). For this study, effort was taken so that each key informant was matched to the criteria more to the left of the information power spectrum as seen in Figure 3. This process was helpful given the large spatial area of the study area, having a robust method to determine participant size was deemed of high importance.

Using the above rationale to ensure that my information power was strong, and thus had high quality key informants, producing high quality data was one factor that helped me to decide when to cease data collection, and move to in depth analysis (Malterud et al., 2016). The second factor that helped me decide when to cease collection was with closeness to the data, noting when information became repetitive, or began to paint a common picture of the issue being explored (Guest et al., 2006; and Muellmann et al., 2021).

3.3.4 Data Analysis: Qualitative Coding Process

The data analysis process started with having the interviews professionally transcribed. I then listened to the interviews while reviewing the transcripts to ensure accuracy, and to familiarize myself with the data. The transcriptions were then imported for analysis and coded using NVivo. When coding the interview data, both inductive and deductive coding methods were utilized (Hsieh & Shannon, 2005). To sort data initially, I used a deductive method, and then engaged in three phases of inductive coding: emergent pattern analysis, cross case comparison analysis, and a storyline analysis (Bloomberg & Volpe, 2018). I engaged in these three inductive phases iteratively and cyclically to develop a narrative framework to help present the results of this study. Generating meaning inductively from the data to create a narrative was useful to understand the antecedent

(previous or pre-existing) emergency management conditions that shape the lived reality of individuals in this study (Creswell, 2007).

The initial sorting stage of coding was directed content analysis, a deductive coding method to initially sort data effectively (Hsieh & Shannon, 2005). This directed content analysis method was appropriate given that while understanding First Nations preparedness needs further exploration and development, there is ample literature on emergency preparedness in general to work from as a starting point. Guided by my review of literature and identification of key concepts, an initial grouping of theme "buckets" (broad, general codes in NVivo to sort the interview data into) were created. The initial coding framework buckets can be found in appendix 2 and included a potential bucket of "No fit yet" for any relevant data that did not fit into the initial groupings. Working through each interview and sorting all the data, no data was added to the no fit yet bucket, and thus it was removed. The fact that no new themes needed to be created after the broad initial buckets gave me confidence to begin the inductive stage of coding, working directly with the data to parse out nuanced sub codes and begin the narrative framework process.

Inductive coding involved three phases. In the first phase of inductive coding, I spent time grouping together emergent patterns focussing on areas with high concentration of responses (Bloomberg & Volpe, 2019). During this process I was able to sort, merge and validate the parent codes, and begin to rigorously refine the dataset. This process allowed me to re-sort weakly coded data for a better fit in other theme groups and note what codes were starting to relate to one another. As part of the separation of the data I had to classify data as either positive or negative factors that influence First Nations preparedness. Given the need to assign interpretive values (e.g.: good vs bad) to the data, it is important to describe the criterion for the evaluation.

The first criterion comes from the project's literature review; positive and negative value assignment is clearly influenced from this review. The second aspect of evaluation comes from the theoretical framework of decolonization that is pervasive throughout the study, which provides a helpful lens to assign positive and negative values. For example, a factor that involves the empowerment of First Nations voices so that their knowledge might inform the literature being generated about and around them would be considered positive. In the same vein, if a given factor improves First Nations self-determination in an area, improves their sovereignty within their traditional territory, or protects First Nations ways of knowing and being they would be considered

positive. Examples of a negative value would be data that reinforces settler colonial control, supports systems that encourage replacement of First Nations people, restricts First Nations freedom on the land, or removes agency from First Nations in running their own programs. The final aspect for assigning positive and negative values is the extension of agency to the participants within the study. Indeed, part of decolonization is the respect of input from First Nations, and as key informants in this study, their subjective realities also give weight to the analysis. While I am the one who has the final say on what I have deemed to be positive and negative, I have a duty to report their words faithfully and honestly, and I have striven to hear and understand what the key informants have viewed as positive and negative. All together, I feel that the methods of assigning value to what is positively and negatively affecting First Nations preparedness has been done faithfully across the entire research project.

The second phase of coding was completed by identifying significant patterns among the findings, making use of description and interpretation, allowing for further integration of codes into relevant groupings, and cross comparing the codes with the rest of the data set (Bloomberg & Volpe, 2018). In this study 'significance' can be defined as something that is important, meaningful, or potentially useful relating to First Nations preparedness (Bloomberg & Volpe, 2018). While coding data I would ask questions of my data, guided by Bloomberg and Volpe (2018) to identify significant codes. These questions included: How solid and consistent is this code? How do they relate to the existing literature? How useful are they for informing policy and practice? Sorting and refining codes based on these questions cause what Bloomberg and Volpe (2018) term the 'pulse' of the data to emerge; this pulse could be thought of a defining characteristic of the data that helps to generate a focal point for understanding the results of the project.

The third inductive phase of coding was to take the pulse of the data and the associated significant factors and uncover the framework to best report on the findings. For Bloomberg and Volpe (2018) this process involves answering the questions 'What is the story being told behind this data? What is the best way to present that information?' For me, the process of understanding the 'story' of the data was useful. I continued to repeat each phase of my data analysis cyclically and iteratively, until reaching the point where my narrative analysis was complete.

Coding the data in this narrative way was a very effective structure for my analysis. I was able to examine each key informant's interview and think about the story that was being conveyed and compare that to the story that was emerging from data analysis. This process involved repeated use of negative case analysis, which "involves a largely inductive process of constantly revising a hypothesis by comparing it with all interview texts until it accounts for all known cases" (Baxter & Eyles, 1997; page 515). Through this process I was able to effectively distill down elements of each key informant's story from complex text rich data to core themes or ideas, and then engage with comparing these core ideas across the whole data set to get a picture of the state of First Nations preparedness in Alberta, and identify what factors were influencing preparedness (Creswell et al., 2007). The narrative analysis process was very useful as it merged data that I had originally thought to be separate codes into a single powerful theme – for example, initial separate codes of communication and adaptability were better placed as sub-codes within a larger theme of self-determination in emergency management for First Nations in the province – which, as it happens, was the pulse of the data. After many rounds of this process, I was able to code the data to finer and finer points until all my data had been sorted and I felt that the themes were robust, well defined, and supported by the interview data.

3.4 Ethics

This research involves human participants and therefore ethical clearance was gained from the University of Alberta Research Ethics Board. Each participant was able to define how they would like to be referred to in this study, and were given the option to remain confidential, or to have segments of their data not included. One key informant chose to remain confidential for this study. Participants were given two full weeks to retract any or all their interview data. Participants were provided with the list of interview questions prior to their interview. All participants either consented individually or were granted permission from their respective agency heads to participate in this study. Due to restrictions in place for managing COVID-19, participants verbally consented to participate in this project, instead of signing and returning a copy of the consent form.

Reflecting on how this study would involve social interactions with persons of Indigenous ancestry it is critical to improve upon the negative legacy of conducting research with Indigenous communities (Leeuw et al., 2012). One of the ways in which this research sought to empower the First Nations who participated in this research was by encouraging the community participants to

direct, or design aspects of the project. For example, Chief James Ahnassay of Dene Tha' First Nation inquired about the possibility of locating and interviewing individuals who may be able to help Dene Tha' gain more information and take action regarding the Hutch Lake Dam. This structure is up-river from their traditional territory and is of important cultural and ceremonial significance to Dene Tha' and the people wished to gain more information regarding this structure and the potential impacts a breach or sudden flooding may have for Dene Tha'. Thus, an interview guide and a series of investigative phone calls were held with the town of High Level and Mackenzie County officials to gain more information for Dene Tha' regarding Hutch Lake Dam, and also the relationship that existed between the First Nation and the neighboring municipality.

The results of this line of inquiry directly benefited Dene Tha' First Nation, as the relevant information regarding the dam and its features were directly reported to the director of emergency management for Dene Tha' First Nation. The Hutch Lake Dam is a backflow reservoir that redirects large amounts of floodwater back upstream from where it comes from. The walls of the earthen dam structure are incredibly high given the relative risk in the area, it would require a monumentally large flooding event in the range in a 1/10000-year event to result in overtopping the structure. Mackenzie county officials gave permission to have their contact details shared with the Nation to communicate about the risk should further inquiry be necessary. In this way the research project was able to incorporate the immediate needs of the Nation and report back to them with results without having to wait for the final publication of the thesis.

Decolonizing the methods and outputs of the research is to ensure that the work done throughout this study is not extractive. It is more in line with the First Nations ways of sharing knowledge from across the region and reporting back on it faithfully so that it can be useful to those who partnered with me. In this way, participating in this research project should benefit my partners. I plan to give back to those First Nations and other Indigenous Peoples who engaged with me, and once my thesis is approved, I will write up a summary report and offer to give a presentation to share with any of my partners. This is so that they can see what the key takeaways from the research are and offer to spend time with them if they would like to consider how to act upon the findings in further partnership.

3.5 Power

I acknowledge that as the researcher I have power and control over the research design, during the interviews and in the interpretation of the results. In order to be mindful of the inherent power imbalance relationship that exists between a researcher and research participant, I approached my interviews as a student learning from an expert. In that sense I was able to surrender power to the key informants during the interview as they were knowledge holders, and thus deserved my respect and attention, as I sought them out and they responded to my request for information. As a First Nations man this is an intrinsic aspect of the youth and elder relationships that is a pillar of my own culture that I could take and apply to this research project. Understanding that in some cases I would not be able to report on each interaction fully, I strove to interpret the results, and maintain the voice of key informants faithfully and in good conscience (Baxter & Eyles, 1997). Throughout the results chapters, in accordance with the decolonization approach, I present direct quotes which allow key informants to represent themselves and their own stories (Kovach, 2009). By employing quotes at the outset and throughout a section or a chapter, I allow the reader to see the types of stories and knowledge that the key informants shared with me. The most useful tool employed to manage power relations I believe was my ability to rapidly build rapport with every participant. I hope that my ability to help create a collaborative, cooperative, and comfortable environment served to ease any difficulties that might have been present due to any power imbalances.

3.6 Reflexivity

Reflexivity is critical to this study. Many of my interview participants responded positively to the fact that I am Denesųłiné. While not all the key informants in this study are Indigenous, the fact that they work in or with First Nations meant that Indigeneity undoubtedly played a role in the conversation. I was unable to spend as much time building trust and rapport with my contacts as I would have liked, due to limitations caused by COVID-19, yet a vast majority of any challenges from this lack of trust building time was alleviated by my First Nations ancestry. During the rapport and trust building calls I made prior to the recorded interviews, I would inquire about their roles and what got them into emergency management, and often I was asked similar questions, which created a space of shared understanding. I opened this thesis with an example of the sharing that occurred during my conversations with key informants, so that the readers could see into how this project was undertaken. During that process I always revealed my Indigenous

heritage, as it is important to me, and a catalyst for undertaking this project. I do not think that my heritage negatively impacts the study, but rather it has a positive effect and allowed me to rapidly build rapport based on similarities shared from First Nations ancestry.

I do feel that my Indigeneity made the research process more difficult at times during the data collection stages. When going through certain events and recollections with key informants I would have to take breaks to collect myself during certain interviews where participants told stories of hardships relating to First Nations lived experiences. To cope with this, the breaks consisted of connecting with the key informants to pause the interview and check in with each other and our emotions to continue, and then resume the interview. During the resumption of interviews, I made sure to re-collect myself and insert myself back into the interview being aware of my compromised emotional state. No interviews had to stop completely. These breaks were responded to well by key informants when they occurred, and we were able to return to the interview quickly. I feel that some of the informants also appreciated the moments to reflect before returning to the interview.

The process of narrative coding that occurred during data analysis was a helpful process for practicing reflexivity. As key informants came from different backgrounds and represented different groups, I was mindful of the potential biases that each key informant may have, as well as my own. As an Indigenous person, it would have been easy for me to view any information provided by agents of any Canadian government with mistrust. This is clearly not the case, and I have endeavoured to report on the information based on what was reported to me by the key informants. An example of this process, I confirmed information provided by the provincial government key informants about how they are helping to prepare First Nations, by asking First Nations participants how the provincial government was affecting their preparedness.

It was important for me to provide a safe and collaborative research environment to respect the partnership with my Indigenous participants. Decolonizing research can take many forms, and by nature does not have a standard model or practice for what it is; in this way it is an extension of the author and their interaction with the data and research method and presentation. (Thambinathan & Kinsella, 2021). I hope that my reflections here have helped position myself accordingly within the research project, and allowed me to showcase how I have made attempts to

go through this process ensuring that I respect and provide care and compassion to the First Nations key informants (Kovach, 2009).

3.7 Limitations

Examining a phenomenon via a case study design has implications on study transferability and generalization. While this study is focused on Alberta and thus most useful to First Nations in the province, Baxter and Eyles (1997) comment how shared experiences or similar contexts can foster understanding and usefulness outside of the primary context being investigated. In this way I believe there is potential for other Indigenous Peoples, including the Métis and Inuit, along with First Nations groups from other provinces and territories to benefit from the outcomes of this study. A critical aspect of this research is the relationship between government, third-party agencies and First Nations communities. The research is most relevant to the parties who participated in this study and their agencies and organizations, however, both government and third-party groups not directly represented in this study may still find useful information for improving their relationship with Indigenous Peoples.

Another limitation of this study could be the number of participants given the size of the study area, and the fact that I did not engage directly with all 54 First Nations communities in the province. While any work with First Nations should endeavour to be as distinct to each First Nation in the study area as possible, engaging directly with every First Nation community in the province was beyond the scope of this research and would have been untenable given First Nations were in the midst of dealing with the COVID-19 Pandemic.

3.8 Rigour

Rigour can be defined as how one evaluates a body of work to decide if it is worthy of attention (Baxter & Eyles, 1997). Baxter and Eyles (1997) describe how to ensure rigour within a study through proper documentation of methods and discussion surrounding rationale for the choices made throughout the study. They state that the validity of qualitative research depends on "the reason, consistency and honesty of the theorist" (Baxter & Eyles, 1997; 510). This section describes the techniques and choices I made throughout the research process to ensure rigour.

Validation of rigour can be drawn from the logical construction of the study, and the choice of participants to achieve the aim of the study. While it would have been ideal to conduct

interviews with as many First Nations in Alberta as possible, this was not possible due to the Covid-19 pandemic. However, Baxter and Eyles (1997) caution that one must not mistake representation for validity. Care was taken to ensure that there was representation of viewpoints from across the province and to ensure that the majority of key informants were First Nations. The First Nations key informants that occupy roles in emergency management bring both their professional and personal knowledge and experience with hazards and emergency management from their own home communities and Nations. Alongside personal experience, direct partnership with a First Nation and their communities, the inclusion of representatives from Treaties 6, 7, and 8 along with the inclusion of a representative from the national advocacy group, the AFN, gives me confidence that adequate representation of First Nations for an exploratory study was achieved. It is my hope that being honest about the lack of exhaustive distinct engagement with each First Nation in the province of Alberta does not render the results of this study unusable, or unworthy of attention. I hope that those who read it find it useful and are satisfied with the level of rigour presented herein, and I am open to any follow-ups from those First Nations who feel that this research design completely missed the mark of their lived reality, and presents results which are unfaithful or harmful to them.

During data analysis I employed techniques that help to ensure rigour. During the early stages of data analysis, I engaged in peer debriefing (Baxter & Eyles, 1997) with a postdoctoral researcher in my research team, Dr. Henok Asfaw. A selection of interviews from three different key informants: a First Nations emergency manager, a manager from government, and a consultant's interview transcripts were provided to Dr. Asfaw who coded the documents and compared his coding to my coding. This process gave me confidence in the coding work I had begun with and was currently engaged in as the codes were similar, and most importantly significant codes were identified by Dr. Asfaw as well as myself. Another technique I employed was negative case analysis which allowed me to test each possible factor across the rest of the dataset which hopefully ensures each theme and factor identified are robust (Baxter & Eyles, 1997).

When presenting the results of the study, the use of verbatim quotes is a key aspect that enhances rigour (Baxter & Eyles, 1997). Direct quotations from interview participants are used throughout this thesis and were chosen in order to explain the key findings. In order to not misrepresent meaning or create a situation wherein a direct quote could create a grievance with an interview partner following the conclusion of the interviews I made sure to ask participants if they

wanted any of their statements to not be attributed directly. This process was made quick and efficient due to the rapport that was created with each key informant. This process of revisiting is important not only to ensure rigour, but also is an essential component of trust between myself and my interview partner, especially when the interview participant would share their thoughts and opinions on issues surrounding sensitive topics (Baxter & Eyles, 1997). Many key informants specifically requested to remain confidential when reporting on a specific situation or when commenting on specific individuals, when otherwise they would have consented to be referred to by name for their other accounts in the study. Many respondents would consent to speaking on a sensitive topic only with the assurance that they would be consulted if a direct quotation would make it into the final report. Baxter and Eyles (1997) state that it is important to make these types of trade-offs explicit when choosing to use or not use direct quotations or provide direct attribution to a controversial statement, especially when necessary to provide protection to my interview partners. It is far more important to take the extra care to include the sensitive data than to avoid the extra work involved with revisitation.

Chapter 3 Summary

This chapter outlined the rationale behind the research methods. It began with an overview of the study design choices, and described the study area. An in-depth description of the research process followed, which covered the key informant technique, sampling strategies and participant recruitment, the semi-structured interview and data analysis techniques. The following sections covered ethics and power considerations, study rigour, and how I was reflexive during my research. Next, the results are broken into two chapters, to answer each of the two objectives in this study. Chapter four presents the challenges that negatively affect First Nations preparedness in the province of Alberta. Chapter five is on the strengths that positively affect First Nations preparedness in the province of Alberta.

Chapter 4:
Challenges to the Preparedness of First Nations in Alberta

This chapter describes the four key challenges key informants identified as negatively affecting First Nations' preparedness in Alberta. It is broken down into four sections describing challenges related to: location, resources, knowledge and capacity, and communication.

4.1 Location Challenges

Key informants identified First Nations communities' location presents challenges that negatively affect First Nations' preparedness. Isolated, fly-in, or boat access only communities were noted by both the communities and the agencies assisting them to be particularly difficult to prepare for, due to the high cost and coordination required to bring supplies in or evacuate people during a serious event. Isolation and/or remoteness create communication challenges that make preparing for rapidly evolving on-set hazard events difficult. Other non-location specific communication challenges are covered in section 4.4. Many individuals lack cell phones in remote areas, and even if they do have them, cell and internet service is often limited or not present. Key informants from both First Nations communities and organizations as well the AEMA stated that it was harder to prepare for communities spread out over a large remote area, which means that it takes more time and resources to locate and evacuate individuals. Key informants were concerned with the lack of building redundancy in First Nations, as one key informant stated:

> *"A lot of Nations use their community centres or their rec centres, hockey arena, schools, as an evacuation muster point. But if those places are the ones that are in danger, I think that might throw a wrench into things of where do we put the people? Where do we send everybody?"*

Transportation in isolated and remote communities is a challenge for community preparedness. In remote communities many people lack personal vehicles, so organizing a large number of buses or alternative transportation during an evacuation was identified as an obstacle to community preparedness. Key informants explained that if enough remote communities and municipalities are threatened at the same time by a large hazardous event, there is a drain on regional resources, such as vehicle rentals, hotel room space, and access to provincial support, as competition for aid rises. This situation creates a challenge for First Nation preparedness as resources that are normally

available, like a fleet of buses, can be reduced to a single bus, or no buses at all. In communities that have road access, there may only be one road into the community, which becomes critical infrastructure. If that single access route is threatened, the risk posed to the community increases significantly. When forced to use back roads or industry roads to evacuate, the quality of the roads become a challenge to prepare for, especially when using larger vehicles, like buses, for evacuation. Often the communities will have to rely on outside partners, service providers, or industry to maintain these roads. This reliance can lead to uncertainty of the effectiveness of certain evacuation routes, hindering the ability of First Nation communities to effectively prepare for evacuation. Linda Semansha, Emergency Management Deputy for Chateh, Dene Tha' First Nation shared their experience with trying to prepare for an evacuation while dealing with single road access challenges during a wildfire in Dene Tha' First Nation.

> *"When we were dealing with the Chuckegg wildfire […] the only access to get out of the community was to use a gravel road which is maintained by the High Level County, the County of Mackenzie. And I guess we could say we were lucky at that time because it didn't rain. If it had rained it would have been worse, but getting transportation to the community was a big problem. In the community we only have buses. We have vans but some of them were being used already so we were down to one bus, one van. So, we had to bring in another bus that had to go from High Level to Meander and then Zama and then through the dirt road to Chateh to pick up some of our members. […] We were just going to have to figure out how we were going to get them out of there. […] And the worst thing is we don't have an evacuation route to get out of the community especially Chateh. […] I have been trying to figure out how we could do it because the route that I had planned on using is also an oil company road so we just have to work with the oil company if they're on board with maintaining it, then that's fine. But during flood seasons that road is not a good road."*

As the risk of a large flooding or fire event increases, some First Nation communities may not be prepared enough to handle these events on their own. When discussing the preparedness of First Nations communities, key informants identified that small or more remote communities simply do not have the resources or capacity to manage a large wildfire or flood event. Key informants often paired their comments on location challenges with comments regarding resources challenges. The lack of resources is always a concern for many First Nation communities as most communities

heavily rely on government funding to operate. David Diabo, Special Advisor for Emergency Services with the AFN, emphasized this point when he said:

> *"It's always a question of funding, right? The First Nations come from a historical place of disadvantage. They're reliant on the government for their funding, because the government suppresses economic development for First Nations. […] there's no own-source revenue, so they can't pay for anything. They have to take out of their core funding if they want to do any new development."*

4.2 Resource Challenges

One Key Informant talked about the consistent, overbearing weight that the lack of resources places on First Nations communities, and how the current system keeps First Nations beholden to the federal and provincial governments tasked with empowering them. They stated:

> *"[…] if you're a cyclical community based on funding, it's almost like you're bound to fail in a sense. As if your condition, environment, and elements change based on a grant system, and if you don't get that money, you can have an up and down cycle of your programme that may say, […] we don't have staffing, or resourcing, or training. But if the feds look at it and go, well, you know what, let's subcontract that to a provincial entity and they're going to do it for you, you may not like it or get any value from it, but we're going to have to do it anyway, it may not hit the target. It'll [hit on] the best practices: capacity, delivery, and a checkmark, and satisfy the agreement for other entities to go back, but it won't lend itself to a better result. It's not self-determining."*

Resource challenges were often discussed in broad general terms by key informants, since First Nations are often lacking money in multiple areas at the same time. Common resource shortfalls that were brought up involved equipment, training, and funding for salaries of qualified individuals. During interviews when key informants talked about how lacking resources would negatively affect First Nations preparedness, they would begin by commenting broadly before going into specific details and examples. Thus, this section is broken down in a similar fashion. First, a general overview on how the lack of resources negatively affects preparedness in First Nations, followed by individual sections on the two largest themes: a lack of funding for preparedness personnel; and resource allocation concerns.

4.2.1 The General Lack of Funding for First Nations

Many key informants saw a lack of funding for preparedness activities as a challenge to First Nations' ability to not only create, but also maintain the capacity to effectively prepare for hazards. Training was highlighted as a key aspect when dealing with the challenge of scarce resources by Buddy Dixon, the Emergency Management Coordinator for Treaty 7:

> *"The biggest barrier is always funding. You can be totally prepared for any emergency, but if you don't have the equipment, the training, or the capacity, it doesn't do anything. If you have equipment there but you're not trained to use the equipment, it's rendered useless, almost. So, I think that's one of our biggest barriers and our biggest challenges right now, just ensuring we have funding for equipment and making sure we can have funding for the resources and the trainings that come along with those to operate."*

An example of how many areas in emergency preparedness are affected by a lack of funding was described by Stephen Ahnassay, Emergency Management Deputy, Bushe River. When asked what their community needs from the government, he laughed and said, *"Big blank cheque."* He continued:

> *"I don't know, you have to have safeguards too, so monies don't get abused. […]* [get additional people to] *come in different communities and be available to help train the different groups and like any workshops, training. Always helpful. More people* [from other agencies] *too for whatever it is you might need, Health people, [...], fire people, or we're buying all the safety gear. […] For fire we need a chopper. And then we need fire fighting equipment. But we won't be using it all the time. We need [access to] the stuff, but only when we need it type thing. We can't store it, it's too expensive. Some of the things, it's not practical to spend lots of money on it just waiting around for an emergency. But knowing where to get it is important."*

4.2.2 Resource Allocation Concerns

When key informants discussed their views on the challenges surrounding the resources available to First Nations, some informants brought forth their concerns regarding how funding was being allocated, and the lack of transparency in transactions between Indigenous Service Canada (ISC) and service providers like AEMA. One key informant spoke about the lack of transparency on how money earmarked for First Nations in the province of Alberta, for all pillars

of emergency management - including preparedness, may not always be spent on First Nations despite the 10-year agreement for the provision of emergency management services signed between ISC and AEMA.

> *"[…] when they signed that agreement, Alberta got a certain amount of millions of dollars to offer training to First Nations. And I had been to one of their forums, and it was a little upsetting to see the provincial officers handling everything for First Nations. It's the First Nations Emergency Management Forum, yet it was being run by the province, they're not First Nations. And it was funded by the federal government. So, the challenge always comes down to the money, right? Who has it, who doesn't, who wants it? The government wants it because it's millions of dollars. What they did was they signed for so many millions, and what they did was they added a 3% escalator. So, every year it went up 3%. So, that's money in the bank for the province. And whether they spend it or not is a different story. We don't know where the funding's gone, or what they're buying with it, or who they're giving the funding to, because they can give it to municipalities just as easily as they can give it to First Nations. And if they can fund the First Nations' proposals for emergency management, they could just as easily fund one for a municipality using First Nations money, and nobody would know the difference. […] there's agreements that say this is what we're going to do with it. But is the federal government actually going to investigate to see where all the pennies went? No, they never do."*

The concern that funding earmarked for First Nations emergency preparedness was not reaching First Nations was echoed by another key informant. According to this key informant, the amount of money the province receives has not been translated into improved knowledge and capacity for First Nations.

> *"One I mentioned is the resources to be able to do all of that. Now you're going to begin to rely on people like AEMA. And I'm not going to criticize them. But they have the relationships* [ten-year service provision agreement] *with ISC to say how we would like to work with Indigenous communities. If that job is done, you and I won't be having this conversation. Everybody would be properly trained and everything. They would have all the capacity and everything. Like I'm saying, I don't want to bash them or anything. It's that. They do come out and they do work, but it's basically it. It's probably looking at disaster*

management assistance. Those kinds of things, and looking at what would be eligible and what would be not eligible in terms of recovery, the more of staying on that policy. But in terms of training and all of that, I haven't seen it. It could be happening, but I haven't seen it. And it could just stay within that department, doesn't go anywhere else. Otherwise, we'd have a lot of trained volunteers from their programme."

Notwithstanding concerns regarding the lack of transparency on how money is managed by the province, one key informant raised concerns regarding the absorption of funding before it makes its way directly into the hands of First Nation communities, and how the economic reality of many First Nations makes it difficult to not only afford upfront costs but find it also difficult to budget for the maintenance of programmes and retention of skilled individuals.

"On the structural resourcing of it I would say that they're [First Nations] *not well funded to what they can do better based on resourcing […] that says you have to apply and work within the cycle of grants, funding, arrangements, reporting. That's all fine and dandy. That's the cycle of the First Nation communities. But are we getting sufficient funding at the local level when there's so much absorption? If you've had a federal fund here, that* [is some percent of] *source funding and as it trickles down through governments, entities, provincial agreements and it gets to the local level, and if you're lucky you're getting 25 to 28 cents on the dollar. And if somebody came out and said, you got a million dollars to go build a firehall, put in a couple of units, get turnout gear, get your training, just in that one profession, you'd go, man that's not enough between insurance, O&M* [Operation and Management]*, practice upkeep, all these elements that come with the tooling of it. And then you have to apply to do it again next year, not so much to create the structure, but to maintain. And even if you did that, do you have all the right tools to do the job?"*

The key informant further explained how funding challenges often cascade throughout the community and have negative impacts leading to a myriad of issues like housing shortages and overcrowding and lack of employment opportunities. As social and economic crises develop in communities, it becomes hard for First Nations to engage in mitigation activities like FireSMART or conducting environmental risk assessments. Focus is often spent putting limited resources and planning expertise towards preventing suicides, managing overcrowding and unsafe living conditions, and dealing with substance abuse well before engaging in preparedness activities.

Resource concerns were not only confined to the path of a dollar from the federal to the provincial government, as First Nations are concerned about other community level financing as well. When faced with preparedness resource challenges, First Nation communities often seek funding from other sources, like NGOs, or explore local partnerships and resource sharing. One such example was described by a key informant, who talked about the relationship between the Bigstone Cree and the municipality of Wabasca. These communities worked together to create regional evacuation plans, highlighting a beneficial partnership that can repair traditionally fractured relationships. However, these partnerships also expose communities to be taken advantage of, as there is money available to First Nations that non-Indigenous municipalities can now access. One local emergency manager from Dene Tha' voiced their concern over the approval of a project between their community and the neighboring municipality of High Level in northern Alberta because they felt that their community and First Nation as a whole were being taken advantage of due to the plans to co-fund a facility in High Level, and that High Level may not be the safest place for a First Nations evacuation centre:

> *"[High Level is] using some of our funds to build this big facility that they would utilize more than our Nation. […] It's just an evacuation centre* [for Dene Tha'] *but it'll also be used as a recreational centre so I think that's the catch. […] there's a lot of racism going on with High Level and I don't understand why our leadership did that."*

4.2.3 Funding for Preparedness Personnel

Key informants identified the lack of adequate funding for preparedness personnel as a challenge. For many, the most important thing a First Nation needs is a fully supported full-time emergency manager, and they talked about the importance of the position being a paid one, and ideally funding would sustain an entire emergency team in First Nation communities. For one key informant, this was the most important factor affecting preparedness.

> *"What does a community need? A community needs to have a full-time person as a director of emergency management, and have an emergency management committee, so they can work together on a constant basis to keep the plan updated."*

Key informants stressed that preparedness was more than a one-time creation of a plan; the maintenance of existing resources, maintaining relationships, engaging in mitigation and recovery and consistent revision and updating of plans is a full-time job. A key informant from Treaty 8

described how not having a full-time paid Director of Emergency Management (DEM) negatively affects First Nation community's capacity to engage in preparedness activities:

> *"For example, there's a gap in funding for a director of emergency management, one of the gaps we found is that it doesn't provide constant, consistent funding from Indigenous Services Canada for those programmes. […]. They do it voluntarily. And over a 25-year span of my other profession, I have witnessed the revolving door, for lack of a better term, in building capacity in the communities without a paid position. […] we have to have these directors of emergency management in a position that enumerates them in some way, shape, or form. Because […] it takes a lot of time to do all the things we talked about, […] Writing grants, other aspects of preparedness, all the levels of training that's required from public information officers, to elected officials, to basic emergency management, to any emergency management structure. Someone's got to extend the invitation. Somebody's got to talk about protocols, processes, getting Elders, getting caterers, getting meetings, locations put in place. And that's just for one course. Then we got to do it for ten, or twelve, or whatever the applications are, and then you want to exercise. Where does that manpower come from? Or the knowledge base that when I look at communities and I go, okay, elected officials are in a paid position, administrators are in a paid position, all the managers and the director is in a paid position. All our staff are in a paid position. […] Like I say, it's almost a gaping hole that's not seen."*

There is also a need for funding of other roles involved in preparedness such as volunteer and professional firefighters, skilled trades people, and health care workers. These positions aid whoever is responsible for emergency management and community preparedness by lending expertise when engaging in planning for how the community would respond during a hazard event. In addition to supporting mitigation activities, these individuals help spread risk awareness, work with the most vulnerable people in their communities, and help build contact lists and build relationships. Dene Tha's Director of Emergency Management noted that in the past, there was a lack of interest in these roles, which led to a lack of volunteer firefighters. However, in recent years wildfires are occurring more often and community interest in volunteer firefighting has risen, but there is no funding to pay for training. Winton Delorme, a Field Officer with the AEMA, talked about how the situation like the one experienced by Dene Tha' was common in their area of the province (the regional Municipality of Wood Buffalo) as well. They commented on the lack of

redundancy for emergency management roles, First Nations having to over rely on their emergency management individuals.

> *"You can put people in the roles, you're in charge of this, this is what you're going to do, this is all training and mock tabletops, all this stuff, but, Nathan, I can tell you this, when it comes to the real thing, it affects people differently. People can sit there and say, yes, I know my role, I'm going to do this, but as soon as something happens, it may affect them and then they're not able to do that role. So then, you have to find somebody to do that role. Or somebody's affected, like having family evacuated. They have people that are in the emergency management team, but as soon as you evacuate a community, things change. Why? Because I have to go. What do you mean, you've got to go? I've got to go because I've got to go get my kids, I've got to go do this, I've got to go do that. So now, you've lost a part of your team. That's just the way that it goes. You can't get mad at it, you can't punish people for that. That's just people. That's how they deal with it. So, when we do the training, we always say to them, we're going to train individual A, but we want to train individual B, C, and D in the same role, just in case. Some Nations have the capacity to do that, and a lot of them don't have that capacity, to train four or five in the same role. So, it goes back to the resources. Do they have enough resources?"*

4.3 Knowledge and Capacity Challenges

When looking at the level of knowledge and capacity for engaging effectively in emergency preparedness, there is often a lack of knowledgeable and/or experienced individuals in both leading and supporting roles. One key informant spoke about the challenges in locating and retaining skilled individuals for all four pillars of First Nations emergency management, including preparedness.

> *"If you talk about First Nations specifically, their challenge and their issue is one of capacity of knowledge. You can have the people, but are they the right people? Do they have the right knowledge?" [...] it takes a long time to really become familiar with emergency management, because there's a lot of information that you have to be aware of all the time when you talk about emergency management. There's all kinds of aspects to it. So, if you're talking about any one of the 114 remote First Nation communities in Canada, how many of them can say, yes, we've got an experienced EM coordinator here who knows all this stuff.*

[…] There's a few now, I know that there's quite a bit that work at different levels of government, or private organisations, or provincial organisations. But they don't all work for First Nations. […] It's tough. You want them all to be able to understand this stuff, to be able to operate at this level. […] You want them to be able to participate and contribute. But a lot of times they just can't because it's such a comprehensive and complicated area to function in, that it's just not possible for some of the communities."

When interview participants spoke about knowledge and capacity factors that negatively affect First Nations communities when engaging in preparedness, three themes were most prominent: over reliance on individuals; burnout; and local leadership issues.

4.3.1 Over Reliance on Individuals

For many First Nations, there is often only one person engaged in emergency management, and these roles and responsibilities are often done on top of another full-time position. Key informants identified that adding another full-time job like emergency manager onto another role, and leaving this person without support is a challenge for First Nations preparedness. The Director of emergency management from Dene Tha' First Nation, Andrea Godin, who is also a member of council, talked about the challenges of occupying two critical roles for her Nation.

"It's quite challenging. I love challenge, I do love challenge, however I have to maintain that balance, because as DEM (Director of Emergency Management)*, I have to take charge. Take the lead, coordinate, delegate, keep the team moving forward. Being assertive as much as possible. However, when it comes to being a leader, I do have to keep that balance. To be compassionate to my people and to provide as much information compassionately as possible, so that I'm not going out to them in a dictator type of leadership. I'm being informative as much as possible."*

She spoke about how she felt she was able to succeed at both her roles. When other issues arise, she has to meet them as well, but a person only has so much time in a day and pressure can mount very fast, especially during hazard season.

"Then a lot of the calls that I do get are from the females, from other females in the community, because I'm the only leader that's female on the term right now. The majority of the time, the females are very frustrated. They want someone to listen to them. That takes up a lot of my time as well, but I try to keep that balance. I don't want to rush through any phone

call or any conversation that I have. I give time where it's needed to anyone that's reaching out to me. However, at the same time, if I'm getting multiple phone calls, text messages, or emails coming at me, expecting my quick response, and I do give quick responses. I always have to remind myself with every phone call, email, or text, am I a leader or am I a DEM? I always have to identify that before I respond."

A key informant from Treaty 7 talked about how only one Nation out of five in the Treaty territory has a dedicated director of emergency management. They described how the other Nations in Treaty 7 have the role and responsibility put on people who are forced to work multiple roles, which in turn negatively affects emergency preparedness.

"That would be Siksika. So, the rest of our Nations, the Directors of Emergency Management wear multiple hats. So, they're either the fire chiefs or involved in some other capacity with the Nation as their main role, and the emergency management part is stuff that's done in tandem with their day-to-day duties. So, that's been the struggle, I think, really preventing the preparedness and moving the emergency management work along. There's no real capacity to do that full time. That's a full-time job, right, Director of Emergency Management, and if you want your Nation to flourish and be prepared, you need somebody focusing on that 24/7. And only one of our Nations is doing it, and they're at the top right now. They're setting the standard for the rest of our Nations to build into that. Where, the other ones are worrying about public works. They're worrying about the fire department. They're worrying about operations within the Nation. And emergency management is just there, and they're moving it along but it's not getting done at a solid pace."

Leaders and fire professionals are not the only people being asked to handle multiple roles. Often, health workers are called in to become emergency managers for their communities. One such individual from Dene Tha' - Tina Yakineah, Community Health Representative, and former Emergency Management Deputy, Meander River, spoke about the multiple roles she must work for her community. She spoke about how her full-time job was being the community health representative (CHR) and then discussed how many other roles are falling to her:

"I wasn't here for the 2012 [wildfire]*, but was here for the Chuckegg wildfire. So, this one was a big experience for me. I didn't have help, so I was kind of a one-man show for the community. Driving around, there was a lot to take care of."*

Occupying multiple roles is an issue not solely related to emergency management in First Nations. However, it becomes an even bigger issue when all a community's emergency management falls to one person, when in reality it is a job for a team. A key informant shared his experience from Treaty 7 where community leadership was too occupied with other matters to take emergency management training to support their volunteer DEMs, despite interest and noting the importance. This scenario creates over-reliance on the other individuals who become responsible for emergency management. In Dene Tha', one community manager shared their experience in this situation, where local leadership put all the responsibility on them. They noted how their faith in their ability to do a good job might mask how much time and energy needs to be devoted to emergency management.

> *"I know one time we did all of the training stuff done over at [AEMA] that the field officers provide. There is training. There is different trainings like our leadership training which is mainly for Chief and Council and then there's emergency management training, the basic emergency management training. And then there's the social services training, the receptions centre training, the EOC training… So, there's different ones and then when we did the leadership training they participate. All of them* [Local Leaders] *participated. But then when it was over our field officer asked the leaders, okay, now what will you do if an emergency happens and three of them said, oh, we don't have to worry. [the key informant] will take care of us. And he said, no, [the key informant] can't take care of 2500 of you."*

Ken Letander, Advisor on Emergency Management spoke about the challenges they see from their work in Alberta and other provinces arises from not having enough support staff for tasks like records management and having some personnel redundancy in the EM teams:

> *"When we talk about the terms of the business aspect that needs to happen, […] The bigger concern is the transformation of knowledge and where that information is stored and how it's stored. And so, I would say records management is probably a challenge for many communities, especially if the structure isn't necessarily being followed, but it could be implemented. It's just how it's followed, how it's categorised and what digital or physical cabinet it sits in. And the succession planning I think it sets folks back. And again, I would probably say the organisation structure of the disaster emergency management in the community. If it's one person that has a team or it's one person who doesn't have a team, it's*

certainly probably more of a challenge to juggle all the different roles and deliver the quality because you have so many other deliverables you have to deliver on a daily basis to everyone."

One key informant from Treaty 8 described how the over reliance on volunteers and persons forced to handle multiple roles negatively affects preparedness, and leads to burnout and turnover:

"You can only imagine that the impact to the delivery of a service, how much time it takes to do mitigation, planning, response, and recovery. And especially if they have an event or an issue in the community. And there's numerous contributing factors to the hills and valleys and the impact, whether it be budgets, whether it be elections, whether it be staffing rotation, retirements, all these things. The communities are very much aware of the natural risks around them. They live it, they hunt it, they gather in it, they forge from it, they trap in it, they lived it. And they see the cycles of what the animals are doing, doing their migration. What they see and feel are potential risks. But they're not sitting at the band office or with the director of emergency management going, you got to put this in your plan, because it's the time for that individual is a voluntary process, like I said at the outset. And the action, that's not there, he or she is not doing this from 8:30 to 4:30 every day. They're doing it off the corner of their desk going, I've been volun-told by leadership, administrator, or committee that I'm doing this. And I think you see that burnout, doesn't matter in what profession."

4.3.2 Burnout and Turnover

Burnout was reported by a majority of key informants as negatively affecting the preparedness of First Nations communities in Alberta. Emergency management by its nature is an unpredictable and stressful job. The DEM for Dene Tha' worked through several environmental hazard events and noted how challenging the position is:

"My personal experiences, there are several that I've been involved in. Numerous floods, numerous fire emergencies, I've been in a few emergency disaster trainings, along with other team leads. Personally, it's very strenuous. It's a lot of stress, personally. A lot of time away from home, dedication, commitment to the Nation itself and also to the evacuees that we have to remove from emergencies."

Another emergency manager described the weight of the responsibility of making sure Elders and high-risk individuals are cared for, and how important it is to also take care of the emergency

managers:

> *"With wildfires I have to make sure all my community's members are out and I will be the last one leaving, and that's the same thing when I was trying to get my Elders and my chronic patients out of the community. The first thing one elder asked me was - when I was leaving? And I said I can't because I have to look after the ones that are left behind. And he says, okay, you have to make sure you take care of yourself. And there is always somebody that takes care of me when I'm dealing with an emergency. I always have somebody that makes sure that I have something to eat because I always forget about myself."*

Another key informant also found that emergency managers were compromising their health and wellbeing in order to get the job done. They explained that due to lack of resources and dedicated emergency managers, burnout is more likely as the scale of the job can overwhelm people during an event.

> *"I think that's a cycle that you see that if you did enough research, you drill down into it and find that, yes, a lot of people had given so much that their own personal health is affected. Yes, I know selfcare and for the people that are involved in emergency management, knowing what your limitations are, your resources. And it's like having a threat to a community and you build an emergency plan. And you go, it's never going to happen, we're doing this for nothing. Then you have a large event happen and you go, okay, now we have to evacuate. Well, how do we do that? What's our plan? What's our budget? Where are we going? How we getting there? How are we going to feed, let's use 500 people from our community for a week? Oh, it doesn't last a week? It's going on for two weeks? How long do we stay out? How do we get paid? How do we feed people, dress them, personal needs, clothing, language, traditional meals, ceremony, and so on; And then when people get burnt out, where do they get help if they've left their community? And how do you get a backup? So that becomes a training or a planning process that you can put in place if you identify that."*

In Alberta, First Nations usually evacuate in the event of a wildfire or other hazard. One key informant from AEMA described how evacuations are very stressful for everyone in the community:

> *"The hardest time in an evacuation is the first 24 hours, the first 72 hours. The first 72 hours is the hardest times for everybody. It's hard on the director of emergency management,*

it's hard on the emergency management team, it's hard on the Chief and Council, it's hard on the people, it's hard on Nation members. It's hard on everybody the first 72 hours, because you're being evacuated from your community. You're being evacuated from your bubble, […] It creates a lot of mental health and health issues."

The director of First Nation emergency management from AEMA recalled how one emergency manager was overwhelmed managing an event. "*Not everybody can go 24/7 for three or four days."* Thankfully, in this case there was a replacement available, but emergency management can rapidly burn people out, and replacements may not always be available.

4.3.3 Insufficient Support and Interference from Local Leadership

Most key informants felt that inadequate support from local leadership could be the biggest hindrance to emergency preparedness in First Nations communities, and for some key informants it was. Key informants described instances of conflict between community and government emergency managers and local leaders which negatively affected preparedness. One key informant described the complicated interaction of politics interfering with emergency management:

"Politics do. Yes, politics do. They always do. It doesn't matter if you're at a First Nation level or if you're at a municipality or if you're at provincial government, there's always politics that interfere in that. And I'm not saying interfere in a negative way or a positive way. They just interfere. It could be both. I've dealt with some Chief and Councils that are very good at emergency management, they let their team do their job. And then, there are other ones that don't. They just come right in there and they want to run the show. But that's just the way it goes, and you have to learn to adapt and you have to learn to deal with it."

A key informant from Treaty 7 described how important it is for Chief and Council and emergency managers to be on the same page and support each other to be prepared to face hazards:

"[Emergency managers] *are there to make sure that our leaderships are given the information they needed. But leadership comes in with other things on their mind, and don't fully understand the situation that's happening. So, there is some time spent bringing them up to speed and bringing that awareness to them of why things are happening and who's doing check in, who's leading this kind of work, or who's responsible for certain work on the Nation. So, that hinders, because we're trying to train at the beginning of an emergency when we should just be rolling right out and everybody understanding their roles and responsibilities.*

That is definitely not a bad thing, but it's just sometimes when you wear too many hats, some stuff gets put to the side. You don't partake in the trainings as much as you should, or read, maybe, the emails or some of the planning that's happening because you're prioritizing your other stuff. Sometimes disasters aren't a priority until they're happening."

One key informant explained that some leaders may be supportive while others may not and how some members of Chief and Council do support emergency management, others do not meaningfully engage in training or participate in preparedness activities. Another key informant stressed how important it was to build a stable team environment in community of emergency managers that includes support and engagement from the Chief and Council:

"Yes, get as many people on board as a team player. One person can't be a "my emergency my way type approach". If anybody asks me, it's team. Keep practising, train as much as you can on a regular basis, that way you're always ready pretty much. As a team you're strongest. I can't do it all by myself. […] Biggest things, get as many people trained up and then approach it as a group, as a team approach. Then that's a lot stronger. We have three communities. So, there's different groups. We have to treat everybody the same. One community will say you're treating the other community better than my community type thing. Well, no, we want everybody safe, we want everybody dealt with. Everybody's important. It's ongoing and you have to keep working at it."

Key informants explained how nepotism and/or cronyism negatively affect preparedness. There were examples shared of Council members who have installed individuals with no prior training and experience into emergency management positions, at the expense of experienced and trained individuals, because of their close relationship to either councillors or a Chief. Key informants explained how important the emergency managers positions are for their communities and that nepotism and cronyism negatively affect trust in leadership, resilience, and preparedness of the community. One key informant lamented that individuals with knowledge and capacity would be pushed aside, weakening a community's resilience to hazards since individuals with the knowledge and capacity to effectively prepare are not included in decision making or planning. This key informant noted how local leaders may see environmental hazard events as an opportunity to secure political power and enhance election bids:

"There are people in communities that have lots of knowledge, and I always bring it up.

Rely on those people that have the knowledge. But there are times where those people that have knowledge are not included in any of that decision-making. That's just the way it goes. Sometimes a Chief and Council will make the decision. Even though the director of emergency management has a handle on things, Chief and Council make a decision. And it may affect everything. There are a lot of things that happen. For example, election year, things change when there's an election year. Some people, they giggle about it, and I'm like, no, it's a reality. Election year, you're going to see more of the Chief and Council there at a disaster because it may affect the outcome of the next election."

Some of the key informants in this study were not confident in some First Nations' emergency management teams, and were critical of those band councils that were not providing sufficient support to their communities' emergency managers. One key informant shared a powerful reminder that the job of emergency manager and the roles of Chiefs and councillors are not so different. There is a responsibility to care for and protect your people. Councillors and Chiefs who view hazards as a political vehicle, or emergency management positions an opportunity to steal paychecks for friends and family would do well to listen and respect this Elders' words:

"At the same time, it's an event, who are the leadership in those seats for? Who put them in there? They are the same people that are being affected. It's not just a political thing, but it's a responsibility. Like in Siksika when I got onto Chief and Council, my mother told me, back in 2007 when I first got on, and she said, today is a different day. Now the whole Nation are your children so you need to look after them. You need to use the Nation's funds to look after them and talk to them and be with them. It's the same across the Nations, across the region in the different cultures."

4.4 Communication Challenges

Key informants identified two communication challenges as negatively affecting First Nations' preparedness. First, key informants identified the difficulty of creating and putting out messaging that encourages protective actions. The second challenge was the lack of culturally relevant emergency management systems for First Nations.

4.4.1 Messaging Challenges

Key informants identified that individuals in First Nations communities may be lacking in preparedness due to ineffective messaging that does not lead to, support, or encourage action:

"It's communication. How do we get that messaging out? How do we prepare our members that they're in a flood plain, there's a wildfire coming? I think one of the things we struggle with is just getting that communication out. Having people leave their homes is also pretty tough. As being Indigenous and within Treaty 7 and all First Nations, it's tough to leave your home. That's your home. A lot of people grow up in those same homes they live in nowadays, and it's tough to leave, especially in an emergency. Or, they just don't understand the severity of the situation on why they have to leave. I think now we're doing a lot better in that communication of, here's the emergency. Here's the situation. This is why you have to leave and things like that, and having something set up for them. Some of our Nations, also translating and having a translator, or having documents translated into the languages is pretty beneficial for our Elders who speak the language fluently and understand it. So, it's a little more of a comfort thing when they know that they understand the process."

Most key informants agreed that the communication of emergency preparedness services for Indigenous Peoples should be improved. One key informant talked about how First Nations still enjoy and thrive in their traditional ways of life, and this has an effect on how First Nations need to prepare, and what areas are deemed a priority when creating an emergency response plan. There was concern that certain emergency management practices do not include enough focus on the safety and protection of traditional lifestyles or place enough consideration on the protection of the natural environment. One key informant felt that the impacts to the environment including fishing, hunting, gathering, or how to protect people living out on the land on traplines were not being considered enough in hazard planning. One key informant from Treaty 8 explained how the rules and regulations that go into best preparedness practices are sometimes at odds with traditional First Nations' ways of life. Key informants reiterated and agreed that to improve preparedness there needs to be emergency services that are culturally appropriate, relevant, and distinct to each First Nation, that are created, managed, and supported by individuals from those First Nation communities.

4.4.2 Insufficient Culturally Appropriate Systems

Key informants felt that emergency services provided to First Nations, especially in the past, were not culturally appropriate. David Diabo described how the lack of culturally appropriate emergency management services was a major catalyst for change in First Nations emergency preparedness:

"*First Nations are more prepared now than they were in 2013 because they've taken control of their own emergency management regimes. One of the things that we pushed at AFN for First Nations was that […] the training that they were getting from the regional organisations, like the emergency management organisations, was blanket training or blanket service that wasn't actually appropriate for First Nations. It's appropriate for non-First Nations because they don't necessarily ascribe to their own individuality. They live in a city, and they're all people from the city. When it comes to the services, they all take the same services. For First Nations it's different. They come from a place of disadvantage. They speak different languages, they have different culture, they have different land, they have different hazardscapes. So naturally any training that's going to be given to them has to reflect all of these, we'll say, requirements.*"

A key informant from Treaty 8 talked about how the federal government was able to transfer resources, power, and responsibility for First Nations emergency management to the province of Alberta. This key informant described how the federal government did not believe that First Nations had enough capacity to effectively manage their own regimes, thus, that responsibility and the associated funding should go to the province. This issue highlights the reinforced dependency on government, and how negative an applied top-down non-Indigenous way of knowing, creating, and implementing emergency services in First Nations' communities can be. The key informant emphasized how important it is for First Nations to be preparing in ways that are culturally appropriate:

"What people got to understand is that we're not any other non-Aboriginal jurisdiction. We are who we are. Yes, it has an impact. There's so many things that people can say, […] like why would it matter what kind of an emergency management structure you want to use? Or you got to play in the same sandbox as we do, or we got to train you and assimilate you into what everybody else is doing. Well, that's been going on for years, and where are we at?"

Many key informants were clear that they did not reject emergency management best practices totally, or that they were opposed to working with government agencies. Instead, their concerns were about the creation, design, and implementation of services. Key informants described how those processes should be done in consultation with the First Nations receiving the service, and with distinct consideration to the First Nations experience with the on-going traumas of

colonialism, and how that trauma applies and intersects with emergency management regimes. One key informant said about best practices: *"No, I wouldn't say don't work well. I think they are not totally considered from the viewpoint of the First Nations perspective."* There were concerns about how standardized emergency management structures that contain numerous processes, chains of command, and protocols can seem daunting and overly complicated, and viewed as not user friendly. As one emergency manager joked about their community's emergency response plan: *"that big binder? It's made for the writer"*. Another key informant, an emergency manager from Treaty 8, commented on the varying levels of complexity inherent with an all-hazards approach to emergency management. In Alberta, The Incident Command System (ICS) is an international standardized command, control, and coordination structure which has been further adapted to be an all-hazards approach to fit with Canadian policy for emergency management. This system is utilized by AEMA, the primary service provider for emergency services for First Nations in Alberta. The key informant from Treaty 8 explained that even when you have people who comprehend the dominant models of emergency management, like the ICS, and are otherwise well versed in the complicated bureaucratic reality that First Nations emergency management occupies within the provincial and federal governments in Canada; there are other factors that put First Nations at odds with the ICS:

> *"It's that, for lack of a better term, that non-Aboriginal way as opposed to the traditional way, […] But at the same time, it can be very complex to the people that just want simplicity. And in a lot of ways, by no way, means, am I suggesting that we're a simple people, but we live a traditional way with traditional laws and off the land which gives us so much bounty, and which we're thankful for. […] And those are the things about this element of emergency planning, is it can be very complicated, or you can simplify it to the degree that it's user-friendly and people understand it. Not minimising anybody that has a Master's or a doctorate, or an Elder that's lived his life off the land. It's about saving those lives of people that you know."*

An aspect of this service provision mismatch is directly related to the ICS. A key informant raised concern about how the nomenclature and verbiage that are inherent to this standardized program is not a good fit for First Nations consumption as an end-user. For example, when speaking about the cultural sensitivity aspect of the words 'command' and 'control', one key informant explained how these words can be problematic, and went further into issues with the

top-down chain of command approach, with one person in charge and a series of people below the main manager. It is possible that these types of non-culturally compliant structures will not create the best outcomes for First Nations, leading to not engaging in or ineffective preparedness.

> *"[…] when you put in a definition, programme, a deliverable that says command, what does that do to the colonial structure or community? […] But it's just that knowing the respect, the culture, the trauma, the impact of command or I'm in control. [Based on] this agreement that gives us or you an opportunity to be part of this. Well, that's not the way the communities are. And as a consequence of that, does it hinder it? Not on the surface per se, but as you walk away from a community, an organisation, or a structure, they may well sit there and go, that wasn't overly respectful. […] And if you get that feedback and give them the opportunity to give positive feedback, you may [not agree with it] or a programme, or a province, or a federal government may not like it. But at the same time, did you take the time to respect the community, learn, get educated and knowledge about what's actually going to work for them? Are you just going to assume that this is 'if it's working for me, it's going to work for them' kind of mentality? […] So, it does take time, it does take respect, it does take knowledge, it does take teaching, it does take a concerning heart. So, when you have processes that don't work and you've been delivering the same programme for ten years, you think at some point you would've stopped and taken inventory of what's not working."*

This key informant noted that there needs to be care and consideration on the effect language may have on an individual, due to the potential triggers and trauma that can affect a person who has survived a traumatic experience like abuse in the Indian Residential School system or being forcibly removed from their communities and Mothers in the Sixties Scoop. Whenever this potential trigger event coincides with an environmental hazard that is also a stressful event, the results can be devastating not only to the emergency manager, but also to the ability of the community to effectively prepare, respond, and recover if the emergency management personnel are affected. There is a need for cultural sensitivity to be applied to the emergency management nomenclature and regimes of 'command and control', as one key informant spoke at length on this topic:

> *"[…] the degree of terminology and command, incident command. And if you look at someone that's been abused or traumatised, last thing they want to have done is be controlled.*

And until you identify how they (a First Nation person) *deal with that, you can create a lot of trigger points of emotion for people when you start doing things with good intent. But you may offend somebody based on their own traumatic experience, which may cause a trigger, an event. So many other nuances that you wouldn't think would've happened. And you don't see them again for a year or two and they go, this opened up a whole kettle of worms for me."*

Despite concerns regarding limited resources (Section 4.2) and varying levels of capacity (Section 4.3) across First Nations, it remains critical that emergency services continue to be provided, and improved upon. Key informants stressed that effective preparedness will be achieved when First Nations have control of their emergency management regimes, and having plans and systems that are co-developed in consultation with First Nations so that they are culturally appropriate and effective. One key informant stressed that there will be challenges along this process without the support and empowerment from government:

"It needs to be done on the inclusion, it needs to be done with respect, it needs to be done with protocol and process. And it's going to be some time in the sense of the lens of what do the First Nations actually want, need, and can utilise to make it a user-friendly process for them. […] And who knows better how to manage First Nations emergency management than First Nations? We're the only ones that know what's good for us. The government can't tell us that. That's what colonialism is. It's what they've been doing for hundreds of years."

Chapter 4 Summary

This chapter explored the challenges key informants identified and described as negatively affecting First Nations preparedness in Alberta. The first theme presented were the challenges relating to First Nations' community location. Next, the results moved into presenting the major themes that negatively affected preparedness, which were broken down into three categories: resource challenges, knowledge and capacity challenges, and communication challenges. Within these themes a further eight factors outside of location were identified as negatively affecting preparedness: the general lack of funding for First Nations, resource allocation concerns, funding for preparedness personnel, over reliance on individuals, burnout and turnover, insufficient support and interference from local leadership, communication and messaging challenges, and insufficient culturally appropriate and co-developed systems. The following chapter is a continuation of the results of this study, presenting the strengths in preparedness for First Nations in Alberta.

Chapter 5:
Strengths in Emergency Preparedness of First Nations in Alberta

This chapter describes the strengths key informants identified as positively affecting First Nations' hazard preparedness in the Province of Alberta, Canada. The four themes in this chapter are Strong hazardscape understanding, knowledge from past experiences, First Nations ownership of their own emergency management regimes, and provincial agency support and empowerment.

5.1 Strong Hazardscape Understanding

Key informants reported that one of the strengths of First Nations in Alberta was a good understanding of their respective hazardscapes. A field officer from AEMA noted that overall risk awareness for wildfire was very high. The Director of First Nation Emergency Management for AEMA said that the agency had put a lot of effort into their messaging to improve awareness.

> *"Risk Awareness. I would rate it as very high. We do a lot of phone calls and training and communications with the communities prior to any hazard season, just to make sure that they are fully aware, and they have their teams in place."*

The emergency management team in Dene Tha' First Nation understands their hazardscape and how it affects their preparedness. The DEM from Dene Tha' felt that her Nation was confident in managing seasonal flooding and knew right away when the 2021 flood event was larger than normal for them, so they utilized their plans and escalated to gathering assistance quickly in order to effectively manage the situation. The plans put into place by Dene Tha' were bolstered by leveraging support from youth who were eager to protect their home community from the floods, as they were able to step in to work with the flood protection systems being deployed when outside agency personnel were called away from Dene Tha' to respond to the British Columbia wildfires.

Another emergency manager for Dene Tha' echoed their director's confidence with floods, and also exhibited strong knowledge of their hazardscape. He noted the serious risk that fire posed to the communities of Dene Tha' even after dealing with multiple large fire events in the recent decade.

> *"Yes, over the years we had a number of floods, mainly in Chateh. It's a bigger settlement. It's more of a shallow lake between the hills, in a lake basin type area. And then at times*

depending how has fast the spring thaw. The rivers go north. So, the southern portion have a lot of snow. Thaw fast, then there's a log jam type thing with the ice because it's not moving fast enough. You go further north, then you start finding out, it's quick. Then it backs up, that's when we have floods. Called a 50-year flood, but the one year it happened twice close together. That was a little bit different. I would say well there's danger but it's not as high risk. We're able to keep people safe, just hope you got the jump on from getting flooded. That's how I looked at it. Get all your stuff out and move. But the fire was a big one. That was dangerous. […] The flood is different. I think flood, you can move people easily. It's not as […] it's not as dangerous as the fire […]. Fire, that one's crazy."

When preparing for evacuations due to hazards, Dene Tha' focuses on keeping up to date information for the most at-risk individuals within the communities so they can be prioritized in an evacuation.

Speaking about the First Nations in Treaty 7, the director of emergency management for the Treaty organization explained that the individual First Nations knew which threats were the most important to prepare for based on their strong knowledge of their own land.

"Wildfire is about the number one risk for the Treaty 7 Nations. With our Nations out west around the Tsuut'ina and Stoney Nations, it's a lot of forest. It's the Rocky Mountains, so a lot of trees and things like that. And our southern Nations, our Blackfoot Nations, they are into the prairies and a lot of the grass fires we have. So that's probably one of the main concerns and one of the things that is on top of everyone's mind in early spring through, I guess they call it fire season. That is one thing that is a common emergency that the Nations are dealing with. […] I think the wildfire and flood awareness is pretty top of mind for our Nations. They're pretty prepared for any incidents. […] now it's becoming more front of mind for our Nations. With climate change and things going on, disasters and emergencies happening more often, our Nations are paying attention and understand that this is a key piece to making sure that our Nations can be prepared. And if anything was to happen, we can definitely minimize damages."

One key informant from Treaty 8 shared his views on why the many Nations that live in the province have high levels of risk awareness based on traditional, generational understanding of their hazardscapes.

"As the teachings come from Elders and stories and oral teachings, you know that people were nomadic. You know that people went through seasons. They hunted, they travelled. […] So, I would say they're very much aware. […] There's a lot of natural indicators that have been in place for millennia, where tens of thousands of years of living, probably on Turtle Island, that our great-great-forefathers have lived through. That when people even look at the behaviours of animals, bears and squirrels and numerous other things, and even migration patterns, or fire, or the impacts of a fire. Or putting up a dam in another province or another jurisdiction that affects 600 miles down the way on the river, the impact of pollution, drainage, delta flooding, drought. […] So, the knowledge of the First Nation communities is very high."

5.2 Knowledge from Past Experiences and Social Learning

Key informants explained that improved levels of preparedness in First Nations in Alberta is due in part to their past experiences with hazards. One key informant spoke at length about this strength, and expanded on this factor; for him, the actual lived experience of the event is the most important factor for preparedness. Through experience, he described how regional relationships, such as First Nations working with each other or First Nations working with municipalities, help prepare for the next wave of hazards. When these regional relationships and lessons learned start to take shape, First Nations become more aware of their strengths and potential gaps that they need to work on. Transforming these past experiences into new policies and processes, shows how social learning (Section 2.2.3) has improved First Nations preparedness. Winston Delorme from AEMA described how this has taken place in the region where he works:

"Let's look at it, […] you go back to the Horse River Wildfire in RMWB (Regional Municipality of Wood Buffalo)*. So now all the Indigenous communities, the First Nations* (lists all of the First Nations in the area) *[…], because of this experience, now they're prepared, now they're looking at* [fire preparedness]*. And in some sense, there's even the municipal government that's trying to work with them. […] There is an Indigenous relationship regime they've set up. […] When you look at that happening there, now these guys are a lot more getting educated and building strategies that would relate to what they're doing. They could be prepared, so they could have their own response and recovery and approach […]. They want that involvement. And then they want to take the bull by the horns because of their experience. […] They get to create that awareness and that knowledge to be able to respond*

and say, this is what we would like to do. It's like, okay, […] there's opportunities to come out of events. […] When we have lost all this in a wildfire, but now where do we go from here? […] now you know, you got a plan for what you are going to do. And then now they realise that they only have one way in and one way out. But in some cases, they have alternate sites to build maybe temporary shelters within their own lands."

A key informant from Treaty 7 recalled how the negative previous experience with managing 2013 Alberta floods helped shape his Nations' preparedness moving forward to the present day:

"Speaking as a Stoney Nation member and not as an emergency manager, in Stoney, when the flood first happened, everyone was so quick to come out. We had the province come. We had Red Cross come. We had the supporting communities come in to help. Which was great, we needed that. But there was so much chaos. There was no communication, and it wasn't a constant message, so everyone was telling us, you're going here, you're going there, and then it was just scattered. I think that was one big lesson we learned from then, there's got to be that consistent messaging. We've got to have that muster point where everybody goes in. We've got to build a database to say who's coming in, who's affected, where are they? So just that loss of communication and, I think, rushing in too fast. But I think, at the time, my Nation, we weren't 100% prepared and disasters weren't front of mind, really, for us. It took that event to really say, we need to really be prepared. And as we started going through that recovery through '13, we began to start prepping and preparing for something further in the future. We're at a point now where if something was to happen like that, we would be more better off."

The Chuckegg Creek wildfire experience created opportunities for regional cooperation between Dene Tha' First Nation and the Town of High Level. One key informant from Dene Tha' First Nation described about how multiple fires threatened Dene Tha' communities and improved the Nation's preparedness, and led to support on joint infrastructure projects like sewers and water lines:

"That's really maybe what the disaster did improve, relationships within the region. Before it was you against me type thing. A little bit of a barrier there but by the end, humans are humans, […] In terms of emergency, we had all those things happening the last few years, it made Dene Tha' more prepared in pulling all the people together and getting ready for

working with Town High Level or regional efforts. Big time. We know when there's some help nearby with Town High Level and Rainbow Lake. We had more joint efforts. […] Fire protection too. We have an agreement with Town High Level and then there's more efforts happening. But the fire was a big one, that was crazy. Sometimes risky for the community at large. But Chuckegg, that was a huge one. […] it did improve our preparedness, overall. There's more people involved, there's more training between as well with new people."

A field officer from AEMA described how managing a large-scale environmental hazard can bring First Nations and non-First Nations municipalities together, improve their relationship, and improve preparedness. The example they shared related to the evacuation experiences of Bigstone Cree First Nation and the hamlet of Wabasca in Northern Alberta, and how regional efforts for preparedness can be improved in this way.

"There's one community that surrounds a municipality, and they had evacuation and there were two separate evacuations, the evacuation of the Nations and the evacuation of the municipality, of the hamlet, and they were not on the same page. They weren't even close to being on the same page. And we took it upon ourselves, after that event, to work with those communities, the municipality and the Nation, for them to work together. And you know what? Today, five years later, almost six years later, they work together now, compared to five years ago, they'd never worked together. They have meetings together, they do updates together, they do training together. It's come a long way."

5.3 First Nations Self-Determination in Emergency Management Regimes

First Nations in Alberta have improved their level of preparedness by taking ownership of emergency preparedness activities; by establishing knowledgeable and capable emergency management teams; strong navigation of communication networks; and effective management of resources streams. For one key informant, building up First Nations ability to self-govern and regulate and implement their own emergency services was the most important step to improve preparedness and fix the inadequacies of the existing emergency management systems in place in the province of Alberta:

"*[…] the Treaties have their own sovereignty. They have known ability to govern or create governance, to create constitution, […] And what I'm getting feedback on is that holy man, this programme's been in existence for 32 years and we're still in the same spot. How*

can we change it? Yes, someone's not pumping the brakes and evaluating the programming federally, provincially. And if they're not going to do it then the Chiefs are saying, okay, let's do it ourselves."

5.3.1 Knowledgeable and Capable Emergency Management Teams

One of the factors improving preparedness in Alberta's First Nations are the knowledgeable and capable emergency management teams working in First Nations. Talking about their confidence to manage and prepare for events, key informants cited their emergency management teams as one of, if not the most, important aspect of their Nations' preparedness. The emergency management coordinator from Treaty 7 talked about the strength of the emergency managers across the territory.

"I think right now the DEMs that are currently in place on our Nations are very experienced and have a lot of knowledge. So, they're really planning and prepping the Nations right now. I think that's the biggest thing is now bringing emergency management awareness to leadership and to the Nation, saying these things are important. And bringing more of a focus to things that could happen, and keeping them more mindful. I think that's the biggest thing we have going right now."

Key informants explained that the teams across the province provide leadership that promotes awareness, builds trust, and aids in capacity building. They also train volunteers who can then go on to manage events successfully. One such emergency manager in Dene Tha' described their experience:

"Well, some of the members that are on the emergency management team have actually been doing this a long time, so they know what they're doing. They know, I need to go this person. If I need to bring in help, I need to go to that person. Linda has a lot of information. She is my supervisor, so she's my go-to all the time about whether I needed help with this or whether it be 'what do I do' kind of thing. So, she's always my go-to person. She has a lot of knowledge. She's been doing this a very long time. I often go to her. […] I do have confidence in our emergency management, and they do have some individuals that are on the team that have been doing this for a long time, so I'm confident that they would know what to do."

Notwithstanding the ability of part-time managers to do a good job, the emergence of full-time emergency managers indicates greater capacity, reduces an over reliance on individuals (Section

4.3.1), and creates a strong sense of self-efficacy. All of these factors lead to better preparedness. A key informant from Treaty 7 echoed that they were seeing the same growing capacity across the Nations in the Treaty territory. A key informant from AEMA talked about how the First Nations teams across the province have targeted common challenges and concerns that occur during an evacuation event as a focus for creating future plans and updating existing ones:

> *"Medications are always an issue, but the community health centres with their doctors in place manage to get everyone the meds that they need. If there's a chance where people can't leave with pets, there's usually one or two people that don't evacuate. They stay behind to ensure the community is safe and they take it upon themselves to make sure that the dogs are fed and looked after, the pets are fed and look after and released if there's a threat. Any chance that the fire's going to come through and take everybody out, they will release the pets."*

Having knowledgeable and capable emergency managers helps maintain readiness through training and workshops. Key informants described how communities are moving towards community specific tailored plans, taking advantage of newly available funding (section 5.4.3) to create and implement emergency and evacuation plans. However, like many other operations across the province this process was interrupted due to COVID-19. Despite the challenges of the pandemic, the emergency management team in Dene Tha' First Nation was actively working through it to encourage preparedness activities, such as sharing information with community members during lockdown and continuing to work on emergency plans. Preparedness and capacity are further bolstered when emergency managers are creating and running their own exercises and reviews. First Nations completing after action reports (AARs) was mentioned by many informants as a key aid in preparedness for future events. AARs highlight what went wrong and what went well when an event has ended. By improving areas of weakness and encouraging and supporting areas of strength, future plans can be bolstered in anticipation of the next hazard.

Adaptability was an often-cited positive trait of capable team leaders and members. First Nation emergency managers are often volunteers who have to be creative with limited resources, and can problem solve from experience occupying multiple roles. David Diabo, Special Advisor for Emergency Services for the Assembly of First Nations, spoke about how he views the future for First Nations with his idea of 'A=R=S: Adaptation equals Resilience equals Sustainability'. From the key informant interviews it was clear that one of the most important positive factors of First

Nations preparedness was how adaptable First Nations were in the province.

"Adaptation equals resilience equals sustainability. So, the faster we adapt to our current situation, the more resilience we're going to have going forward, and as we go forward with all this resilience or learned knowledge, the more sustainable we become. So, adaptation equals resilience equals sustainability."

Indeed, David explained that being resilient and prepared is not about having everything accounted for, but being adaptable:

"It's not always about having the written plan, or the capacity there. I mean you might have some really smart people who know just how to take care of stuff. They might know that you have to isolate somebody so nobody else gets sick. And then send a message out to say, well, we have people that are sick here, we don't want anybody else to catch it. What do we do? They know how to reach out. You don't necessarily have to have all the equipment, but it helps when you respond to have the equipment. […] I mean you could also say that, yes, we rely on traditional medicines, or traditional knowledge. And you could. That's a form of preparedness. But it might not be acceptable in contemporary processes."

This lived reality of emergency management in First Nations would naturally create adaptable individuals as they are exposed to multiple scenarios and must juggle numerous responsibilities in any given event. Key informants identified clearly defining roles and responsibilities as a major factor contributing to the strength of First Nations emergency management teams. The DEM for Dene Tha' commented on how having a strong, consistent team well-versed in their roles and responsibilities led to a rapid, successful deployment that was able to minimize the risk, and prevent losses.

> *"I think the current strength would be having consistent team leads. When an emergency occurs, the team leads that I have know exactly what to do, rather than me having to coordinate and then do an on-the-spot training. That's what I find was the biggest strength. When our emergency occurred on June 19th, all I had to do was bring up my phone, let them know that I'm calling an emergency operations team together. We came together and I said, this is your role. Understand it? Yes, I do. They knew exactly what to do, so within a matter of 12 hours, we were able to have our evacuation plan in place. Everything that needed to happen happened within twelve hours, because we had seven hours. At 1:30 we gave our*

notice to the impacted zones, […]. We have our community zoned out. So, in our Zone Four and Five […] we informed the evacuees, the residents there, that the water's rapidly increasing and to be prepared for 72 hours' worth of stuff that they need, should we remove them from their homes. By 7:00 the next morning, six and a half hours, it had flooded. So, we were able to activate our plan quickly and then we started removing people from impacted zones."

Many key informants talked about how the most experienced and long-term members of emergency management teams build trust with both their leadership and in the communities. While some First Nations in the province find that support from their local leadership is a challenge (section 4.3.3), key informants indicated that in Treaty 7 the capacity and effectiveness of the emergency management teams is supported by their collective leadership through what they termed their 'peacetime emergency plan'. When a hazard threatens the First Nations in Treaty 7, the Chief and Council surrenders power to the emergency management teams to provide them with the relevant authority and signing power to enact upon plans and manage response to an event. The director of emergency management from Treaty 7 described the process:

"[Each Nation] does them a bit different, but from my experiences the leadership themselves has stepped back when an emergency is involved, and let the directors and the teams take over. But the Chiefs and the Councillors and everyone else is still at the table and still has an awareness of what's going on. Some of our leaders have actually taken some of the ICS training, so they understand how that works. Some of our leaders are actually part of the emergency management teams. They're constantly looped in with the process. […] Like when COVID came around, they called states of emergencies, each Nation, and they let the day-to-day operations go to the Directors of Emergency Management or the emergency management team to handle those emergencies."

Key informants often cited how strong teams were helping to build capacity inside their communities and then translate capacity regionally through their hazard experiences and how coming together was improving collective preparedness This help through mutual aid, even without official documentation, helps the surrounding First Nations maintain resilience despite limited resources. A good example of this process is reflected in Treaty 7.

"Siksika has already offered saying, hey, we have all this equipment. If you need us, let

us know. We're not going to come there and take over the situation. We'll come drop it off. If you need help, tell me what my role and responsibility is, and that's what I'll do, and I'll take your direction. Instead of coming in saying, hey, this is us. Let's do it. It's, here's our equipment. We'll drop it off and let us know what else you need. Do you need us to provide capacity, manpower? We'll do it. Just tell us what you need. So, there's already been those conversations within our Nations of supporting one another in time of a disaster. […] I think lately now it's been the wildfires. One thing I've noticed, I think a big thing was Siksika actually hosted a table top exercise around wildfire with the surrounding communities that border all around the Nation. And they went through that communication of who's doing what? Who are we talking to? Who's responsible for what? And trying to build that communication capacity with one another, whether it's the fire chiefs or the DEMs from those municipalities, to make sure that nothing is being overlooked."

5.3.2 Strong Navigation of Communication Networks

One of the factors that emerged was First Nations emergency managers effectively managing communication networks to act upon their preparedness. This aspect of communication is best conceptualized as the networks that First Nations community managers employ when reaching out for assistance from service providers or other partners, and differs from the communication challenges described in section 4.4, such as emergency management messaging to community members or the lack of culturally relevant emergency management systems. During interviews, First Nation emergency managers reported having good relationships with the individuals they communicated with from both government and outside agencies. A strong example of the effectiveness of managing communication networks came from Dene Tha' First Nation. Andrea Godin, the Director of Emergency Management from Dene Tha' described how important it was to be able to gather all the relevant stakeholders into group calls and how that improved the event management process. Andrea used the knowledge of the correct contacts to ensure rapid collection of relevant parties to leverage a strong evacuation response, and also noted that a positive relationship with the RCMP helped keep the evacuation process quick, efficient and reduce conflict. Success in this situation was achieved in large part because of the preparedness of the emergency manager to know who to call, and who needed to be present in the meetings, which led to reduced stress and frustration with timelines:

"I guess having the pressure relieved, and the frustrations not so much there. If I didn't have Indigenous Services involved right from the beginning, I would have been very, very frustrated with the timeline of response. It has happened before where we would be waiting on response for two or three days and it would take a lot longer. Like I said, Zoom is a really good resource right now to use, to have them participate directly with us. Then having the local RCMP involved right from the beginning as well, so they knew exactly what was going on, when we needed them. They gave me direct contact information, so any time that there was reluctance from the evacuees to get out of the danger zones, we would call them up and tell them, 'we need your help'."

First Nations are also increasing their support networks to include neighboring non-Indigenous communities, with a focus on regional preparedness to improve response and resilience to future events. One key informant talked about the importance of knowing how to navigate for champions of emergency management and knowing who to contact to secure resources and how important it is to know who to reach out to get training for the maintenance of capacity.

"Find the right people and then ask questions. There's no such thing as a dumb question. I guess if you're unsure, or don't know, there's people out there who have experience or some training on different areas to advise you. Other times we put up those emergency sessions because there are people interested in going to those workshops or training. That helps. Once you have the training, you can pass it on at your local level. But just knowing what's out there is a big deal. Who to contact initially to get the message out. […] it's something you have to practise on a regular basis and keep training or else you get rusty."

Key informants reported that First Nations emergency managers understand the importance of making connections and building trust before an event, and understand the importance of contact lists, with lots of options should one of the options be unavailable. As the nature of environmental hazards is one of unpredictability, preparing a list of both primary and secondary contacts to create redundancy measures in contact lists is an invaluable resource. Rapid approvals during the event due to strong communication channels led to positive outcomes, demonstrating growing confidence in knowing what you need and how important it is to get it quickly. Understanding that managing a hazard as well as you can in the first 72 hours shows a good understanding of the timelines that should be targeted in order to have a successful response, and underscores the level

of preparedness in First Nations. Key informants explained that First Nations have a good understanding of the limitations of their remote communications and work well with their field officers who act as a liaison to outside communication networks. When primary communications like landlines or internet go down during an event, a text message to their field officers can help bridge the gap to communicating with outside assistance they may not have otherwise have access to. An emergency manager from Treaty 8 described how the Nations in Treaty 8 know how to prioritize who to contact when an event occurs, and how to best utilize their contacts list.

> *"I am simply a coordinator of resourcing. So, if they want consultants, they want the AEMA, they're having an event and they want somebody from our office to say, okay, because of my background, my knowledge base, we should be doing this, this, and that. And with the understanding and the clarity of ISC having a contract with the province is still in place. Treaty 8 is not a replacement process for that agreement. That's in place and there's people that have commitments, obligations, the contracts to fulfil. […] it's very much a local determination by leadership and administration."*

5.3.3 Effective Management of Resources

The final theme that came from the interviews that highlights how First Nations are taking control of their emergency management regimes and improving their preparedness was through effective management of available resources. Key informants explained that there has been a steady increase of funding available from the federal government for emergency management in First Nations communities. Key informants stated that First Nations in Alberta appear to have a good understanding of what resources they have available and what outside help is needed, and most communities know how far they can stretch their limited resources before they need outside assistance. First Nations classified as on-reserve apply for funding through ISC's Emergency Management Assistance Program (EMAP). Funding through EMAP is proposal driven, so First Nations have differing experiences with how much funding they receive from the program. However, despite this, it was noted how First Nations were aware of these programs and have been using them in different ways. For instance, one First Nation mentioned that money for emergency management was no longer a concern due to their team leads having strong proposal writing skills and leveraging their Nation's good connections with their federal counterparts. Whereas another key informant still views funding as an issue that requires more attention.

"I think that's our biggest barrier right now is just funding. I think that's why some of our Nations are beginning to think of, instead of all of us applying for one pot, let's apply for different pots. You get the truck and I'll get the hauler."

The variance in access to available funding highlights in one way how and where First Nations in the province fall along a spectrum of preparedness. While some First Nations lack capacity or access to enough funding to meaningfully prepare for hazards, the majority in the province were described as versatile and adaptive, underscoring how their effective management of resources helps make them more prepared. One key informant described how the less prepared First Nations were working on improvement:

"They're prepping and they're preparing. Some of our Nations are smaller, so they don't have as big of a fire department as some. Some of their emergency services aren't as vast as some of the larger Nations, and they rely on that mutual aid or some of those surrounding communities to come in and provide assistance. And they've recognized that, and now they're trying to build that capacity up so they can handle a lot of the situations to a certain point, then, if that outside help is there, they'll definitely have to call on it. But they're trying to build enough capacity where they can handle majority of the smaller disasters."

Key informants noted building the capacity to effectively manage and prepare for environmental hazards is a priority for First Nations in Alberta, especially from the standpoint of being able to manage what they can given their knowledge of the situation despite limited resources.

"I think on some of our Nations, they are. At this point in time, some of the Nations do have the resources and capacity to handle a lot of the emergencies that may arise. And some are now just in the process of building those resources to make sure that they can handle it. So, some of them are already in place to handle it and we have a couple Nations that are now just beginning to build that capacity and those resources. So, hopefully within the next little while here, they should be able to have that equipment, the training, and the capacity they need to be prepared for anything."

One informant noted how communities have shown good judgement when they realize they are unable to manage an event, and know when it is time to escalate to asking for assistance; they described how understanding your own communities' limitations is one form of preparedness. The

idea that communities were confident to manage what they can, and that having any amount of preparedness is better than having none featured heavily in the interviews.

> *"That's better prepared, right. Nothing's going to be perfect, if it was perfect, we wouldn't have jobs if we were perfect, […] There are some other Nations that just don't have the resources and they just said, basically, we're out of here, we have to go, and can't chose to stay and defend their community. Nothing happened to their community, but that's a situation where they don't have enough resources. They don't have the capacity, and they just say, we're out of here, we've got to go. We have no choice but to go. For the safety of our people."*

While some First Nations are limited to managing what they can before having to rely on outside help, there are also Nations that exhibit a high level of preparedness. A key informant from Treaty 7 described the tremendous growth in regional capacity building and resource sharing within the territory, effectively utilizing their regional resources. Importantly, their hazardscape understanding (section 5.1) has led to preparing for specific response focus areas which reduce the number of wasted resources. Overall, the emergency management response in Treaty 7 appears to be sound and effective, and these First Nations, especially Siksika, are well prepared.

> *"I think that's a big thing that Siksika has done is be able to build that relationship with the rural community to make sure that the damage can be contained and limited as much as possible, evacuation is great, is being able to be handled. Another thing is the Blackfoot Confederacy down here, which is our Blackfoot Nations within Treaty 7, have already begun collaborating around wildfire equipment, around wildfire training and sharing some of that. So, if there was ever an incident in any one of those Blackfoot Nations, they can hook up equipment and haul it over there. If those Nations require manpower, anything, then the other Blackfoot Nations would be able to supply that. […] And our G4, which is our Stoney and Tsuut'ina are building that as well. We were looking at maybe doing it all as a whole, but Stoney and Tsuut'ina are more of bush fire, not as much prairie fire. Some of the equipment is totally different and wouldn't work in some situations. But I think the biggest thing now is we've been able to create that capacity where now our DEMs and Nations can have a space to talk and share ideas and share resources and begin to build those relationships a little stronger with one another."*

One of the ways First Nations are adapting effectively to their resource concerns is through improving their ability to effectively recoup costs through the established reimbursement system. When preparing for and responding to events, money is either secured through grants or reimbursement. Because the majority of costs are incurred responding to an event, it is crucial to ensure that First Nations are reimbursed fully so that they are not crippled financially and therefore unable to prepare for future events. The Director of Emergency Management from AEMA reported that there has been a large emphasis placed on coaching and preparing First Nations to keep track of their costs:

> *"Because everything is built on reimbursement. If we're not sure or the communities aren't sure, or if it's a large dollar amount, we'll have the communities send an email to Indigenous Services Canada requesting approval so that they don't end up with a lot of expenses that aren't recoverable. They keep very good records. Because of course, with the evacuations it usually comes at a cost, which ISC does reimburse them for. So, they're really good at tracking those costs."*

Key informants described how First Nations are effectively managing their available resources – consistently referring to Nations' adaptability despite limited resources. Recalling First Nations location challenges (section 4.1) and resource challenges (section 4.2) key informants noted that First Nations managers are adept at managing situations despite these challenges because they have a good understanding of their hazardscape (section 5.1) and strong individuals and teams to lead them though events (Section 5.3.1). One key informant highlighted the adaptability and resilience to succeed despite challenges:

> *"It's probably not a barrier, it's a challenge because we're going to deal with it, so we have to get it done. Because the barrier is the other thing, but the challenges, we got to do it. Maybe the Indigenous communities around us, our brothers and sisters around us may help us. If we don't have the resources, then the DEMs that are out there should be there trying to obtain that information. Where can we get free support? But again, if you don't have the resources then [its tough] But still, you can plan and prepare. You can train your people. If you don't have the infrastructure yet, then at least you can train the people."*

The notion that First Nations are well prepared despite limited resources in Alberta is also supported from the perspective of AEMA, and that their main function is to fill those gaps.

"I would say probably 90% of the Alberta First Nations are well-prepared, and they have the staffing to deal with it. The others either lack support as far as their leadership goes or resources in the community. But should that happen, we've got our field officers that are on the ground, and we'll be up there to assist them."

5.4 Support and Empowerment from Organizations and Agencies

Support and empowerment from various organizations and agencies in Alberta is a major positive factor affecting First Nations preparedness. While there are many organizations such as St. John Ambulance and The Canadian Red Cross operating in the province, key informants indicated that the main agencies and organizations bolstering First Nations resilience through improving preparedness are the Treaty organizations and the AEMA.

5.4.1 Treaty Organization Capacity Building

Each of the numbered treaty organizations in Alberta have a coordinator that assists their constituent First Nations in emergency management. While these coordinators are not a service replacement for the services First Nations are to receive via AEMA through its agreement with ISC, each coordinator works with their Nations in different ways. This section describes some of the preparedness work that is being done by the three numbered Treaty organizations for their respective constituent First Nations.

The emergency management coordinator in Treaty 7 described how each Nation in Treaty territory does a good job individually, which allows the Treaty organization to focus on other areas to improve capacity and aid in preparedness.

"There's a lot of stuff going on that's really good individually. What we're trying to do now with it in Treaty 7 is try to make it a little more collective and resource share with one another. And resource share some of our equipment, as well. And if there's any money being spent on equipment and time and resources, it's staying within Treaty 7. It's not going to an outside agency or an outside manufacturer or company to come in and do it. We're trying to build something within Treaty 7 right now where we can help each other. [...] I know some of our Nations have done table top exercises with the surrounding rural municipalities for wildfire. So, we are more just making sure if they need something we're the gofers, I guess. If some of our Nations need more information around wildfire, wildfire training, equipment and things like that, they reach out to our office and say, look, this is where we need help. Do you

know anybody? Do you know we can go about to get it? That's where we join in."

Treaty 7 is not only acting as a mediator for services but are also creating and planning reports designed to help the Nations better prepare.

> *"We went through a whole environmental scan in the first year, and we've actually created a pretty handy report, laying out and identifying all the hazards, the risks, the preparedness, and things like that for the Nations. […] now we're trying to do a scan within Treaty 7 just to see what are our strengths, what are our weaknesses, and how can we build and make sure our Nation and Treaty 7 is resilient to anything coming forth in the future."*

The organization has worked to bring together the emergency managers from the various First Nations and created a strong network between the Nations based on regular meetings, keeping each other informed. The work of Treaty 7 is addressing key challenges, such as burnout, by increasing cooperation and coordination and facilitating a space for First Nations to create redundancy for emergency managers.

> *"That was expressed by some of our DEMs, of burnout, or someone to replace, in the event that they need to step away. And that's a discussion we're having now amongst all of our DEMs, of who can fill in for who when? So, we are working on that right now, sharing each other, I guess. If that makes sense, So, our DEM from Stoney can go and assist, whether he's filling in for our DEM in Tsuut'ina or providing assistance to our DEM in Tsuut'ina is where we're trying to work to now, to build more of a team effort."*

When asked about regional efforts the key informant talked about the future of cooperation with the other Treaty organizations in the province:

> *"We've just begun having these conversations this year. But that has been something we've thought about, that once we build something we can definitely share it. There are similar individuals in Treaty 6 and Treaty 8, in my role, so we would definitely begin having conversations with them and sharing, this is how we're doing it and building it. Here at Treaty 7, we only have a small number of Nations. We have five Nations that we have to work within, actually seven if you include the three bands with the Stoney. But if you go up to Treaty 6 and Treaty 8, they're a lot larger and have a lot more communities in Nation. So, I think that's a bonus for us, we're a lot smaller, so it's easy for us to gather our six DEMs in one room,*

rather than trying to do all 100, like [others] would do, or who their representatives are."

Regarding Treaty 6, one key informant talked about how his work was geared towards improving capacity in areas that compliment emergency managers, like indicating where grants and other monies may be available to support Nations engaging in their own evacuation planning or other emergency planning. Outside of the sourcing of funding opportunities the key informant talked about how he helps Nations in Treaty 6 by working on a series of templates and organizing a speaker series that aim to increase the knowledge base and improve the capacity of the Nations in Treaty 6.

> *"Some of the tools that I've heard that will complement the capacity, the theory part, is developing some documents like roles and responsibilities, a contact list, […] Who's your government contact? Who's the fire chief of your municipality? Those types of things. So, if the primary disaster emergency manager is occupied doing something else, they can say look at that form and call this person. They can action that out versus being the lead for everything. Yes, so there's those project management templates, process templates, communication templates. […] But one thing I do stress to them is we will build. We will put it out there. You can manipulate the template how you see fit. It's not a one size fits all. It's a start and you can manipulate it. And if you like it, then you like it, then run with it. And so, we don't put in too much context. It's not too authoritative. And so, they know that they have that room to work and interpret them and use them how they see fit at the end of the day. And that's really what we want is them to see those documents as something that they have the involvement to create the content that goes into those processes."*

Speaking about some of the work in Treaty 8, one emergency manager talked about how the work that the organization does helps keep the process of emergency management going, especially when some Nations feel like challenges are overwhelming the ability of Nations to engage in the emergency management process.

> *"[The] office in Treaty 8 applies resourcing for the Nations. Give them our options at, what do they want. […] jurisdictionally, each First Nation has its own ability to declare a state of local emergency, to create an emergency process, to do that. […] All these other elements that then come to the forefront and go, you know what, we've got our lives to live as well. So just a little bit of… pump the brakes a little bit. […] And I understand it takes time. I*

understand it takes resources. […] But you can't go with the mindset of well, it didn't work. Well, why didn't it work? I've done a gap analysis here, a survey, and lord knows, our communities have been surveyed to death. So many ways, but we're now learning in so many ways that the data will allow us to create advocacy, it'll allow us to tell a story. It'll allow us to negotiate certain elements. So, it's becoming a tool of a positive resource. It's such a cycle. Emergency management, it's like a living document that it could or should, whether it be the mitigation, the planning, training, exercising, response, and recovery. And then just going through that cycle again. […] once you have an event, you need to start rebuilding your emergency management structure in some way, shape, or form."

5.4.2 Provincial Government Support and Empowerment

While First Nations are increasingly taking an active role in their emergency preparedness, key informants also noted how the AEMA is an important source of support and empowerment. Throughout the key informant interviews it became clear that there has been a recent shift towards support and empowerment from both federal and provincial governments in how they are committed to working for and with First Nations in emergency management service provision. Key informants from AEMA explained that the next service agreement will be made with First Nations input. AEMA has confidence that they will be renewed when the agreement comes up for renegotiation because *"the services [they] provide have been proven to be successful."* A key informant explained how the province has a commitment to their advisory role, and are focused on empowerment and support.

"It's really hard for us to go in and say step back because it is their community, and we only advise. We don't take over any event. Depending on the field officer and the relationship they have in the communities, we might be able to talk to the Chief and Council in regard to their role and whatnot. Otherwise, we could find somebody in the community. Either a relative on the committee that is related to any of the leadership and work with them and try and find the best way to make sure that they follow the roles that they're supposed to do during emergency and let the team do their roles."

Key informants from both the province of Alberta and First Nations highlighted how communication channels from AEMA have been instrumental in improving preparedness and showing a commitment to empowerment of First Nations. AEMA is very clear about the

boundaries of their services, and how it is important for the organization to educate Indigenous individuals on this boundary so that individuals will receive the best care without confusion and leading to conflict or other issues.

> *"Indigenous Services Canada is very clear that we only support on-reserve members. Anybody off-reserve needs to go through their municipality that they're residing in. It takes a lot, both on the municipal side and on the First Nations side to be able to relay that information because the people always think if I go home, I'll be taken care of. But that's not so much the case. They are part of that municipality. So, it's just more or less the education. It's always a struggle. It's never cut and dry and it's never easy because it's somebody's aunt, uncle, brother, sister, whatever. You're dealing with the personal issues as well as the professional ones."*

Clearly outlining where the AEMA will step in and support the communities helps them plan and decide where their own focus areas should lie. However, as First Nations are growing in capacity and learning how to best navigate new challenges in emergency management, it is important that the province fills in the gaps that arise during events. An example is that individual level preparedness has been identified as a weakness in many First Nation communities (section 4.4.1). During the 2019 Chuckegg Creek wildfire, AEMA found that people were evacuating without critical medications and even day to day essentials. The manager of the First Nations Field Office at AEMA identified that gap and remediated it to great success.

> *"[…] we had some of the Slave Lake communities in there. But we found that they evacuated so quickly that there wasn't a lot of time to pack personal needs. So, I went to Indigenous Services Canada with an idea to fund a programme where we set up in the conference unit in one of the hotels a mini store per se to provide all of the personal needs that they needed. Depends diapers, all that kind of stuff that you don't bring with you. And so, we purchased that. We set up the store and then the hotel coordinators, we gave them the list that we had, went around, provided lists to every room. They filled out what their needs were. We filled bags and then the hotel coordinators brought the stuff back. So, it worked out really well."*

When a similar situation occurred with Dene Tha' First Nation during their evacuation from the wildfire, a key informant from the Nation spoke about the benefits of this support:

"Well, I think they helped a lot with a lot of the funding that was received for each community. Some of that was a lot of supplies. A lot of that was to help our community members, especially those that, at the time, needed essential things. They really helped in that area. And I know a lot of the information that was received, overall, it was very helpful."

Other gaps they help fill include working with animal shelters for animals left behind, and health officials for medications that people may need after evacuation. One role the field officers held that was noted to be helpful was acting as a liaison with other provincial and federal and private networks for community resource requests. An example of this help was the acquisition and subsequent deployment of large-scale equipment such as mobile sprinkler systems to protect property. AEMA places a high priority on protecting the most vulnerable individuals, with those at high risk receiving preparedness assistance:

"We don't really focus on the areas; it's more focusing on high-risk individuals. A lot of times, they'll go to high-risk individuals first. Say there's an evacuation of a Nation, well in advance, if there's, say, a threat of a wildfire coming, most of the time it's not the wildfire itself, most of the time it's smoke. So, your high-risk individuals will tend to be evacuated out of the community due to smoke reasons, because it's too thick, lots of people are asthmatic, repertory issues, elderly, those kinds of things, you're a high-risk person, we're going to get you out of the community well in advance. Because as much as people get stressed about the wildfire, a lot of people get more stressed about smoke, because if they're not able to see, they're not able to see what's going on around them, smoke has a tendency to cause a lot more health issues than people talk about. It causes lots of unwanted stress, the smoke does."

AEMA has identified reimbursement as a key focus area for improvement in order to ensure First Nation communities do not have to take monies from their core funding as a result of an emergency event. Key informants from AEMA were cognizant that if certain processes and receipts were not covered properly, and submitted to ISC correctly, other areas of the community may suffer from the drain in resources, and they were adamant that they wanted to protect the communities they worked with.

"[…] we tell the DEM, and finance and the chief and council we'll say, we can have this in 24 hours, do you want it, yes or no? Here's the cost of it, you're going to have to pay for it upfront. So, the DEM says, yes, good to go, bring it. […] And you send it up, and the bill

comes, they pay for it, but they get reimbursed for that stuff, because you have to build a business case, when you want to order something, and a lot of people don't build that business case and it's very difficult at the end. So that's another function that we do, a support system that we do, building business cases. Because if they spend $1 million on an event, we try very hard to try and get that $1 million back for them. And that's why we're there, to support them, say no, you need to document this, you need to do this, you need to do that, this is the reason why, because ISC's going to look for this, or ISC's going to look for that, so you need to have this all documented and build a business case."

Past working relationships are being leveraged for improving communication in First Nations' communities, as many First Nation emergency managers have worked for AEMA or ISC in the past. When asked about the relationships between their Nations and their provincial and federal counterparts a key informant stated:

"I think they've been good. Some of our DEMs actually were part of AEMA in the past. Some of our DEMs were actually with Indigenous Services at the province. So, they have connections and those relationships that they've built, and I guess they've used them to help build capacity within their Nations. Specifically on their direct relationships now, I don't know much on, but I know some of the DEMs have backgrounds within some of those agencies."

Fran Byers, Manager of the First Nations Field Office from AEMA described some of the struggles other provinces face with regards to Indigenous emergency management, and noted how AEMA leverages its good relationship with ISC to work towards providing a complete support package focussing on engagement so that things are not happening without consultation and ensuring that First Nations in the province get a *"provincial and federal support team. […] because we have a good relationship with ISC, it really closes the loop on anything that could fall apart."* Such open and responsive communication channels aid in having after action reports which are critical for maintaining and improving preparedness. The director talked about seeing good results when conducting their post event after action reports, citing how effective the field officers are across the province.

"Well, normally we debrief with all the communities after an event. And we haven't had too many incidences where there was like a fail on their part or on our part. Because we have a field officer in the community that is evacuating and a field officer normally in the area

where they're being received. We support them at both ends."

In section 5.3.2 First Nations' emergency managers reported how much they appreciated the increased level of involvement from government in their meetings, and having Ministers and other government personnel on hand to answer questions and secure rapid approval for expenses. By participating in workspaces that were created and run by First Nations and not taking control over meetings is a good practice for reducing colonial policies and helps build a relationship of trust and reciprocity that improves First Nations capacity.

Key informants from AEMA described how the agency is developing a First Nation led team that will be deployed to help other First Nations prepare and respond to hazards. The most important aspect of this program is that it is being created with consultation and input from the First Nations themselves.

> *"We're in the process of developing a First Nation emergency support team. And what that is, is it would be other First Nation communities trained to be able to deploy and assist other First Nation communities. And we're just in the engagement process with the representatives from Chief and Council on that perspective. Of course, our teams go up. If we need more than one field officer, we have the ability to deploy multiple field officers in both regional and municipalities."*

The positive effects of field officers and their support of preparedness and empowerment while working for First Nations communities is the most dominant theme surrounding provincial support coming from the First Nation key informants. AEMA and their field officers were commended on the provision of timely and consistent hazard messaging which has helped First Nations manage their events more effectively. AEMA ensures that communication is delivered through multiple channels like phone calls, emails, training, and an app that focuses on communicating prior to events to increase awareness. Since the vast majority of First Nations emergency managers are volunteers or fully employed in a different position and doing the emergency management job on a part-time basis, having a notice for when to switch into their emergency manager role is critical for an effective response. The app that sends information is directly tied into the provincial operations centre, and the agency maintains an online community specific engagement space that keeps the communities linked into the province on a peer-to-peer basis. Moreover, even if a First Nation community is not directly affected, AEMA keeps communities informed of what is

happening in neighboring municipalities so that should a situation develop that affects their communities, they will not be left unprepared. Winston Delorme, AEMA Field Officer, described how the field officers focus on empowerment:

> *"[…] we just go to the Nations, so we deal with the emergency management team that it has, or the director of emergency management, and deal with them. We give the support and allow the Nation to empower themselves. We don't come in there and take over and say, we're running the show. We don't do that. We go there and we work with them and we give them guidance, we give them support. We're a go-between, them and ISC, Indigenous Services Canada, and the province. We truly try to empower the Nation to do it on their own, but we just stand beside them and help them. They go door-to-door and do the evacuation notices, they do everything. Like I say, we're just there as a support and to keep them on track, help keep them on the right track."*

The AEMA field officers are strong one-on-one agents working for the communities. As many of the emergency managers in First Nations communities are volunteers and have varying levels of expertise the AEMA field officers monitor their work levels and help manage burnout (see section 4.3.2).

The support and empowerment coming from the AEMA and how important it is to some volunteer emergency managers was described by one key informant from Dene Tha' First Nation. When speaking about her rapid introduction into becoming her community's emergency manager during the Chuckegg Creek wildfire, Tina Yakineah, talked about the support she received. Both her community and the AEMA field officers provided confidence and helped create a positive, supportive environment during a stressful event:

> "*It was being put in that situation, actually. I didn't have training prior to that, so the Director of Emergency Management, who was actually my boss at the time, had kept in contact with me. So, I was her go-to for information out here. I think the most important pieces of information I received was a lot of it came from her, a lot of her knowledge that I really tried to pick her brain and say, what do I need to do here? But she also had a team of people that she worked with, as well, that I talked to about what do I need to do here? Because, like I said, I had no prior training to this, none, so going into it not knowing what I needed to do, but just using what I had and what I could come up with. AEMA really helped. They did a*

wonderful job helping me and coaching me and guiding me in what I needed to do. So, they were a lot of support and they gave me a lot of information."

Field officers also locate community members who can provide support when primary volunteers need reprieve. AEMA has good personnel redundancy by ensuring that a single field officer is not overworked so that communities get the best possible level of support. Field officers provide logistical support, outsourcing personnel, procuring equipment, and coordinating regional efforts. The job of helping create personnel redundancy is a strong asset to First Nation communities, especially when large scale events rapidly overcome the capacity of a community. By staying in close contact, working side by side with First Nation communities, field officers are the best proxy for an emergency manager for smaller, isolated communities who are likely to have less resources and capacity for emergency management.

"We phone them and say, how's the water going? The water's rising, we're thinking about moving the high-risk individuals to higher ground or moving them out of town and then, a Nation will decide if they're going to declare a SOLE or not, a State of Local Emergency. That's totally up to them, and we go and assist them. A lot of times, most times, we're right there by the side of the director of emergency management, work with them on the plans. We need some tents. Okay, I've got a connection to get some tents. Or some portable showers. We did that last year, in Garden River, when they were evacuating their community and we had the connections to bring up 12 pump trucks for their camp. And a lot of times, those Nations don't have that resource, they don't have that connection, so that's what we do. We have those connections and we're able to phone. We call the provincial operations centre and say, we need this, this and that, how long can we get this? And they go, we can have it in 24 hours."

Aside from concept training directly related to emergency preparedness, training also involves building business cases to ensure a First Nation can get as close to full reimbursement as they can. Due to the majority of costs for emergency management being incurred in response to an event, it is crucial to ensure that First Nations are fully reimbursed so that they are not burdened financially and therefore unable to prepare for future events.

"So, for example, one of the Nations wanted some Tiger Dams for flooding that they have every spring, and I said, build a business case and get a quote from the supplier, get a quote from them and send it on to Indigenous Services Canada with a business case. And they did,

and within four days they got it approved. So that's what we do a lot, we work with the Nation but we also work for them."

The province values the training they provide for First Nations. When discussing the mock exercises that are run for First Nations, one key informant stressed how important the based on real life scenarios are, as they improved preparedness by working on events that have actually occurred which mimic the chaos of a real event. When talking about the strengths of the generic plans that First Nations communities receive from AEMA, Fran Byers said:

"Well, it's only as good as the effort they put into it. And we find that once we do the training on emergency social services and we do a mock disaster, they do end up putting more effort into it and realising that they also need donation coordinators, housing coordinators, all kinds of different things, pets. And so, then they normally strengthen their plans up that way."

The key informants from AEMA emphasized that their generic plans intentionally only contained the most necessary information and are meant to be adapted by First Nation communities for their own use. It is clear that there is a commitment to improvement, and that when combined with First Nations' adaptability improved preparedness is here to stay.

We do AARs after an evacuation or after an incident. […] what went right, what went wrong, what could we do next time, […] Do we need more training, do we need more of this, or what do we need? It's not putting blame on anybody; we don't put blame. Chief and council don't put blame on the them, we don't put blame on a committee. We just want to see what [First Nations teams] can do next time to make it a lot easier. And a lot of the times, at the beginning of the incident, they're bringing it up and say, our communication wasn't very good at the beginning of the incident. But it got better. […] the first 72 hours, everybody expects everything to happen right now, when you evacuate a community. Right now. We've got to have food, water, shelter, we're going to have it right now. But that's not the reality. […] You're going to have your hiccups in that 72 hours, you're going to have your communication hiccups, you're going to have your resource hiccups. You're going to have those, and you've just got to learn to adapt. And I can tell you this, Nathan, 100% of the Nations in Alberta have a very, very good track record of adapting to situations. They just adapt. We're doing this now. […] They know how to adapt. They've been adapting for many, many, many years. What's going to change now?"

Chapter 5 Summary

This chapter describes the factors identified as strengths or having positive influences on preparedness. First, the strong hazardscape understanding of First Nations in Alberta was explored. Next, how knowledge gained from past experiences was driving improvements in preparedness in First Nations was described. Then the results moved into reporting on the two strongest factors that contribute positively to preparedness in First Nations: the emergency of First Nations taking ownership of their own emergency management regimes, and the support and empowerment from organizations and agencies for increased self-determination. The major factors that were explored in First Nations taking ownership of their own emergency management regimes were: knowledgeable and capable emergency management teams, strong navigation of communication networks, and the effective management of resources streams. When exploring how agencies across the province of Alberta are supporting and empowering First Nations, the major partners and their influences were described. These supports included: AEMA and their field officers, and the numbered Treaty organizations present in the province – Treaties 6, 7, and 8.

Chapter 6: Discussion

This chapter discusses the results from this study and how it relates to relevant academic literature and provides a reflection on the results as they relate to the theoretical underpinnings of the study. It identifies where the results of this study confirm the results of existing research, and points out and discusses findings which are new and where novel contributions to the literature are made. The study's two objectives sought to identify the factors that negatively and positively affect preparedness in First Nations communities in Alberta. Section 6.1 discusses factors that negatively influence preparedness as reported in chapter 4, and section 6.2 discusses factors positively influence preparedness as reported in chapter 5. Section 6.3 will reflect on the results in relation to critical theory and decolonization.

6.1 Factors that Negatively Influence Preparedness

This study found that remote and/or isolated communities are at an increased risk for loss from hazards and require additional resources to effectively prepare for emergencies, which is consistent with the existing research literature (Kapucu et al. 2013; Mew et al. 2017; Asfaw et al. 2019; Christianson et al. 2019; Khalafzai et al. 2020; Mottershead et al. 2020; Lambert 2022). The finding that government underfunding poses a barrier to preparedness for First Nations has also been found in other studies (Scharbach & Waldram 2016; Christianson et al. 2019; Mottershead et al. 2020). The need for additional funding for support personnel for First Nations emergency managers has also been identified by others (Asfaw et al. 2019; Mew et al. 2017; and Yumagalova et al. 2021). Importantly, key informants in this study often linked isolation and the lack of funding as critical interrelated factors that negatively affect preparedness. The linkage between isolation and lacking resources in First Nations communities was also found by Christianson et al. (2019), Asfaw et al. (2019), and Khalafzai et al. (2020). This may be the first study to identify that money earmarked for First Nations emergency preparedness may not be making its way directly into the hands of First Nations communities. The failure of a proper and transparent funding apparatus further exacerbates the challenges these communities face when preparing and erodes trust between First Nations and their emergency management partners and service providers.

The results of this study identified how emergency services that lacked First Nations co-development, are not provided in First Nations languages, and did not adequately incorporate First Nations' ways of knowing, acting, and being, made engaging in preparedness difficult. Key

informants identified the importance of the co-creation or their own development of plans for increased preparedness for First Nations. This is consistent with research by Paton and Buergelt (2012) who found that by not including communities in planning, and not considering psychological and social diversity, emergency management regimes will have a negative effect on preparedness. The results of this study found that there is still work to be done in Alberta to ensure that every First Nation receives emergency services that are tailor made to each specific First Nation and their unique hazardscapes, and leadership structures. This result is supported by Asfaw et al. (2020) who also found that emergency management systems did not address the needs of Indigenous Elders. This study found that the Incident Command System (ICS) can be problematic for First Nations end-users. This finding is consistent with the findings of other researchers examining the ICS (Mew et al. 2017; Hurlbert 2018; Sithole et al. 2019; Son et al. 2019; and Yumagalova et al. 2021). The results of this study show that emergency managers are over relied upon, which makes them often overworked and under-supported in many First Nations communities. This finding is consistent with the review of emergency management in Northern Ontario First Nations by Mew and colleagues (2017), who also found that high levels of burnout and turnover is common for those engaging in emergency management for their communities.

This study may be the first to identify that First Nations leaders can negatively influence their community's preparedness. The results of this study show when there is insufficient support or direct negative interference from local leaders, emergency managers and support staff can feel overwhelmed and undermined, and preparedness will suffer as a result. The findings of this study underscore the important role local leadership plays for the preparedness of their communities. Son et al. (2020) describe how important trust and cooperation between emergency management decision makers is for resilience. Christianson et al. (2019) and Mottershead et al. (2020) both found that local leaders were a significant positive factor for emergency preparedness. While this may be the first study to find that First Nations Leaders can have a significant negative impact on their Nations preparedness, the results of this study should not be considered a refutation of their findings, but rather showcase how important it is that local leaders act in a way to positively affect preparedness. Given the ever-present and systemic challenges First Nations face in emergency management, it is critical that local leadership amplify preparedness for increased resilience, rather than attenuate preparedness due to inadequate and/or inexperienced leadership.

6.2 Factors that Positively Influence Preparedness

The results of this study indicate that First Nations in Alberta have a mastery over their respective hazardscapes. High risk awareness, hazardscape understanding (risk-based approaches, place-based knowledge) were all identified as contributing positively to preparedness. These findings are consistent with the work of other researchers; López-Marrero and Tschakert (2011) and Kelman et al. (2012) who found that incorporating local knowledge improved preparedness and Khalafzai et al. (2020) who identified local place-based knowledge and experiences lead to higher risk perception that positively affects preparedness. The results of this study illustrated how First Nations hazardscape mastery informs other factors such as planning evacuation routes, troubleshooting transportation options, locating high-risk individuals and at-risk critical infrastructure. This finding is an important new contribution to the literature to show that advancements are being made in First Nations that have historically had challenges with transportation, as described in the work of Christianson et al. (2019). This knowledge is key to minimizing impacts through rapid response and effective resource allocation, especially for First Nations dealing with chronic underfunding and other limited resources such as support personnel.

This study found that First Nations in Alberta use social learning to increase their levels of preparedness, primarily through past experiences with increasingly frequent and severe environmental hazard events. This finding is consistent with work done by Khalafzai et al. (2020) who found that this type of social learning due to repeated flooding in Kashechewan First Nation in Ontario had a positive effect on preparedness and adaptive capacity. The positive effects of social learning are being amplified and actioned by the emergency managers in the First Nations in Alberta.

A new contribution to the literature is the positive benefit of First Nations self-determination in their emergency management regimes. In Alberta, First Nations have clearly shown that they are engaging in preparedness activities that are rooted in their own self-determination for emergency management. This finding was supported by First Nations running their own training programs, planning for and managing response activities, leveraging their hazardscape knowledge, building and navigating complex communication networks, and effective use of the resource streams available to them. These factors all had positive effects on preparedness and increased First Nations levels of perceived capacity and adaptive capacity.

Additionally, this study found that the knowledgeable and capable teams increased the presence of community-specific plans, with clearly defined roles and responsibilities. This finding is a good indicator that preparedness is improving after previous studies which argue that culturally relevant and community specific plans are needed to improve preparedness (Clark, 2018; Asfaw et al. 2019; and Mottershead et al. 2020). This study identified the positive effect of First Nations completing their own After-Action Reports (AARs) (Section 5.3) and other tools for review and revision of plans and actions to codify the practices that were most effective, and relevant to their communities, instead of relying on service providers. Practicing successful adaptation, leading to codifying changes in roles and responsibilities and dealing with challenges for improvement in standard operating procedures increases resilience to future events, which confirms the recommendations made by Savoia and colleagues in their (2012) review of AAR's.

This study may be the first to find a positive relationship between government agencies and their communication with First Nations' emergency managers, and the positive effect it has on preparedness. Key informants noted how the improvements in relationships between government agencies and their representatives and communities increased timely information sharing through clearer communication channels with First Nations' emergency managers. This finding contrasts with the results of Asfaw et al. (2019) and Christianson et al. (2019) who found that insufficient information sharing from government, un-timely site-specific information, and a lack of clear protocols contributed to lacking preparedness. This contrast in findings is likely due to the combined effects of changes in government mandates and priorities for spending from both the provincial and federal governments as a result of service providers and policy makers learning from the experiences from increasingly severe and frequent hazard events brought on by climate change. This finding is important as strong relationships are critical when considering that First Nations must work with multiple partners across government and 3rd party service providers for effective training and capacity building for lasting preparedness, and showcases the positive benefit government and other agencies can have as advocated for by Yumagalova et al. (2021).

Another new contribution to the literature is the finding that the support and empowerment of Treaty organizations and the provincial government for First Nations as an important factor that positively affects the preparedness of First Nations in Alberta. This support was chiefly provided by the numbered Treaty organizations present in the province, and from the provincial emergency services provider, the AEMA. Non-government affiliated key informants reported positive

relationships with both federal (Section 5.3.2) and provincial (Section 5.4.2) partners. These positive appraisals were not without concerns, like fiscal transparency, and not producing more trained personnel (Section 4.2.2); however, when it came to relationships and reimbursement, key informants praised the support and empowerment for First Nations to increase their self determination. These strong relationships are key to the improving preparedness levels in First Nations communities, as it allows for managers in First Nations to be more adaptive to changes in resources and circumstances, provide correct information and timely services to community members. Considering the ongoing challenges that the lack of resources and isolation cause First Nations, improvements in preparedness are not possible without the continued support and empowerment by government (Epp et al., 1998).

6.3 Reflections on Critical Theory & Decolonization

Reflecting on the findings of this study and recalling the theoretical underpinnings of critical theory and decolonization (section 2.1); what are the implications for the realization of self-determination in emergency management for First Nations in Alberta? This study has identified First Nations preparedness is positively influenced by increased self-determination. Is it then logical to hypothesize that if First Nations were to be handed full responsibility over emergency services in their own communities that preparedness would flourish, and First Nations will be empowered to pursue further decolonial goals? This answer for this author is no, and I would urge caution in following this line of thought and posit instead that it is irresponsible to absolve Canada of its responsibilities to First Nations by moving too quickly towards such a massive transformation in the emergency management paradigm. While this study is clear that moves towards self-determination are improving preparedness, it is also clear that many under supported and under resourced First Nations still rely on Canada to uphold their end of Treaty. Canada owes much to First Nations, and to rush towards the end of that relationship would aid the settler colonial project rather than diminish it.

Given this caution, the results of this study should be conceptualized with more nuance and care – while engaging in self-determination is key for decolonization, some degree of engagement with Canada must remain to ensure a safe and sustainable transition of control. Canada has a strong responsibility to provide emergency services for First Nations, and also has a responsibility to empower and support the building of sustainable capacity so that eventually

direct funding and control of emergency management can go to First Nations.[9] In Alberta, the results of this study show that continued support and empowerment of First Nations will support building the requisite capacity to be self-determining in emergency management. How then can First Nations take the results of this study and move forward in a good way, considering the potential harm of disentanglement too quickly from Canada? Understanding this challenges that the careful navigation of negotiating the transformation of power for Indigenous Peoples within a settler colonial context can be better understood studying Dennison's (2017) work on entanglement. Entanglement helps to conceptualize the battle for sovereignty that takes place between the colonizer and the colonised, how Indigenous Peoples' future requires deepening relationships with existing colonial structures to lead to a positive end, and this process must be navigated very carefully (Dennison, 2017). Dennison's (2017) work clearly demonstrates that there is a need for Indigenous Peoples to fully understand the consequences of entanglement and how negotiating sovereignty with settler colonial states is more about making sure it is done is a sustainable way for future success, rather than a rush to remove the relationship entirely. Returning to the context in Alberta, the idea that First Nations can make moves towards full self-determination in emergency management is a noble decolonial end that must be supported with careful negotiations between First Nations and Canada. Much like how we can understand preparedness as a process without end, so to can we consider moves to sovereignty and self-determination. Given the settler colonial setting in Canada, moves towards sustainable First Nations self-determination will require constant action and considerable engagement through a system of negotiated compromises (Dennison, 2017). This transformation will be decolonial and empowering when the relationship is one that leaves First Nations in a position to succeed sustainably in culturally appropriate and fiscally stable ways.

Chapter 6 Summary

This chapter discussed how the results of this study relate to the relevant academic literature and provided a reflection on First Nations self-determination in emergency management as it relates to the theoretical underpinnings of the research, critical theory and decolonization. The next chapter provides a conclusion to this thesis and recommendations for future research, policy, and practices that may improve First Nations preparedness in Alberta and beyond.

[9] See the *Department of Indigenous Services Act* 2017.

Chapter 7: Conclusion

The final chapter contains a summary of the findings of this research, and a reflection back on the research aim. The chapter also includes recommendations for future research and for those working closely with First Nations and emergency preparedness. The chapter will conclude with a short reflection of my final thoughts from the experience of conducting this study.

7.1 Summary of Research Findings

This study set out to explore First Nations environmental hazard preparedness and the objectives were to identify what factors positively and negatively influence preparedness. This study contributes to disaster and emergency management research by identifying the challenges and strengths that influence the preparedness of First Nations in the Province of Alberta.

The challenges identified focused on the difficult situation First Nations face due to location issues such as remoteness and **isolation** creating an increased need for resources and expertise. These location challenges are compounded by the chronic underinvestment in First Nations communities, and lack of transparency in where money allocated for First Nations is ending up. This **lack of funding** to support sustainability in emergency management, creates gaps in the ability of First Nations to pay for emergency managers, their support personnel and critical equipment and expertise. One of the key capacity challenges identified was the lack of **culturally relevant systems** that are co-developed and made to fit First Nations distinct needs. This study also found that **insufficient support from local leaders** negatively impacts preparedness. Examples from this study included the appearance of leadership at the onset of an event without having the time or will to engage in training; newly elected leaders, who are not familiar with emergency management, relieving experienced personnel from important positions, and replacing them with inexperienced persons in positions of importance or authority. Given that local leaders are such a key resource for First Nations, having them engaged positively must be a priority. Considering these challenges and without urgent investments and changes in these key supports, there is an **over reliance on individuals** to perform emergency management duties for their communities, leading to burnout and turnover often leaving communities without their champions in emergency management when they need them most.

The strengths identified in this study showcased the myriad of ways that First Nations in Alberta are building their own capacity to engage in preparedness and increase their own resilience. The major strengths included the emergence and support for First Nations taking ownership over their emergency management regimes and engaging in **self-determination in emergency management.** Given the legacy of colonization and the impacts it has had on First Nations, it was very encouraging to find that **Provincial Agency and Organization Support and Empowerment** was a positive factor identified. These agencies and organizations focused on building First Nations' capacity to self-manage and have control which is a key transformational strength that positively impacted preparedness. First Nations in Alberta were found to have **capable and adaptable teams** that provided leadership and expertise. These teams are helping First Nations to engage in effective improvisation and resource management which is incredibly important given the challenges they face. First Nations are leveraging their **hazardscape mastery** - including high risk perception and their Indigenous knowledge that encourage protective actions. They are also engaging in **social learning** - the ability to take lessons learned from past experiences and codify them into practice for the present and future, which is important for further improving preparedness. Table 2 below summarizes the factors identified as negatively and positively influencing First Nations preparedness in the province of Alberta.

Table 2 Factors that influence First Nations emergency preparedness in Alberta

Factors that Negatively Influence First Nations Preparedness	**Factors that Positively Influence First Nations Preparedness**
Isolation	Hazardscape Mastery
Lack of Funding	Social Learning
Lack of Culturally Relevant Systems	Self Determination (In Emergency Management Regimes)
Over Reliance on Individuals	Capability and Adaptability
Interference and Insufficient Support from Local Leadership	Provincial Agency and Organization Support and Empowerment

7.2 Reflections on the Study Aim

If I were to answer the question “Are First Nations in Alberta prepared?” - I would say yes: First Nations are prepared for environmental hazards despite the challenges they face. The strengths identified in this study that are positively influencing preparedness for First Nations in Alberta outweigh the challenges that were identified. For example, negative factors like isolation and the lack of funding are mitigated by the positive factors of hazardscape mastery and effective management of resource streams employed by the capable individuals within First Nations. The lack of culturally relevant systems and services are managed through increased First Nations self-determination and capacity building allowing them more freedom and authority to develop, maintain, and run their own emergency management programs. This study is the first to identify the problematic and negative influence that insufficient support and interference from local leadership can have for preparedness in First Nations. However, this study also found that having leaders who actively engage in training and know how to cede authority and work together in partnership, focusing support on empowering and placing trust in capable emergency managers or working in tandem where capable, all work to attenuate the negative impacts problematic First Nations leadership can have. Given these considerations I feel that I, and I hope that you as well dear reader, leave this study more informed of the state of First Nations preparedness in Alberta from the time of data collection in 2021, and look to the future with a hopeful eye. If the results that were found in this study in Alberta hold true, the future is bright. First Nations exercising more control over their lands and generating more capacity to build sustainable preparedness that is effective will bolster their resilience. As O’Brien and colleagues (2010) state ‘resilience is a process without end’ and this idea accurately describes what function being prepared plays, as being prepared is not a solid state - constantly and consistently engaging in preparedness is what keeps resilience ever changing. Preparedness is most useful if it exists in perpetuity; preparedness is not a one-time action plan or exercise, it is best thought of as a continuum that consistently feeds back into resilience. Constantly engaging in preparedness at whatever capacity level will have positive results - any level of preparedness is better than not engaging in preparedness at all. Reflecting on the results of this study, my own assessment is that the best way for First Nations to build their capacity is to constantly engage in whatever preparedness they can and that this is most effective when efforts are grounded in improvements in their self-determination. It is in this spirit that I present the following recommendations.

7.3 Recommendations

The recommendations build on the results of this project and provide recommendations for both future research and for policy makers and practitioners. The aim of this research was to explore First Nations preparedness in Alberta, and as such this study has not only contributed to the understanding of preparedness of First Nations in a scholarly way but can also provide recommendations for other avenues of inquiry to build the collection of knowledge around First Nations disaster research and help inform policy and practice for decision makers.

7.3.1 Recommendations for Future Research

The next step from this study would involve interviewing representatives from many First Nations in Alberta to confirm the findings of this study. As mentioned in section 3.3 this study was completed during the COVID-19 pandemic, which meant travel to First Nations was not possible at that time. Next, it would be valuable to conduct research in other provinces/territories in Canada to explore if the factors identified in this study in Alberta apply in other jurisdictions. Further research is needed to examine the level of preparedness of First Nations nationwide. Additional studies across the country would provide a robust overview of the strengths and challenges that affect preparedness, allowing for the most effective allocation of limited resources to ensure that First Nations can be prepared for future hazards.

Another valuable study would be to identify First Nations which have successfully navigated emergency and disaster events and explore what factors of their capabilities led to a successful outcome for the community. Improving and increasing the number of strength-based studies will undoubtedly aid in empowering First Nations and decolonize the research space. All future research involving First Nations should benefit them in some way. This study found that when government agencies and other service providers engage with First Nations and act in a way that empowers First Nations self-determination to lead the care and control of their own emergency management regimes, preparedness is created, maintained, and improved. Further research could examine the relationship between service providers and First Nations including education techniques, collaboration techniques, and the experiences of First Nations, from volunteers to professionals engaging with the larger apparatus of support structures that exist around them. This type of phenomenological study could provide valuable insight into what factors affect First

Nations volunteers, especially given the need to mitigate or eliminate the negatives caused by over-reliance on individuals in First Nations, as found in this study.

This study captures a moment in time from when the data was collected – however many respondents made a connection to the recent past where they felt their preparedness was weak or non-existent, and that it has improved over time to a point where they felt confident in their preparedness now. Further research that takes a longer temporal approach to see how the factors identified in this study change over time and what other factors influence preparedness of First Nations in the future is recommended.

7.3.2 Recommendations for Policy-Makers and Practitioners

This study found that a full-time paid emergency management position within a First Nation community is critical for preparedness. Government agencies and services providers like the AEMA should prioritize funding and supporting these full-time paid positions. Having a dedicated paid position will aid in the ongoing updating and communication between community members, their leadership, and federal and provincial governments. The need for full-time emergency managers in First Nations communities has also been advocated by other researchers (Asfaw et al., 2019; Christianson et al., 2019; Mottershead et al., 2020; McGee, 2021). This study found that provincial government and Treaty organization support and empowerment is significant in building capacity for First Nations to improve their own emergency management regimes. Indeed, as Lambert (2022) argues, preparedness and resilience will always be higher when Indigenous communities practice higher levels of self determination, and all future external support should first and foremost identify how their aid can strengthen First Nations control over their own emergency management regimes.

It is imperative that these full-time emergency managers also receive adequate support in order to manage the chaotic, stressful, and periodically time intensive workloads that are intrinsic to the position of emergency management coordinator or disaster manager. This is critical as even moving from a volunteer or ad-hoc basis to a full-time paid role will likely result in over reliance on said individual. The results of this study show that it is critical to reduce over-reliance on individuals to engage in emergency management in First Nations communities as the growth of preparedness in a community can be undone if the champions engaging in building capacity and partnerships are left unsupported or cut out of decision making due to, burnout or negative political

interference. These supported managers and their teams will be able to deliver the most effective tools for increased preparedness such as training that focuses on scenarios and successful actions and improvisations gained through lived experiences. Any work to modify or change the lack of culturally relevant systems should be useful for First Nations as end-users of these systems instead of relying on standardized programs that have been shown to be at best not a great fit, and at worst ineffective.

It is clear though that support needs to go further than just funding a single position. In addition to supporting a dedicated full time-paid position every effort should be made to support other team members, and making support from external agencies or government readily accessible and available to First Nations communities. In this study there were examples of First Nations that do have more than one individual working in emergency management which helped increase preparedness. Governments, NGOs and other agencies working with First Nations should make it a priority to support and empower existing capacity wherever it is present. Expanding on the strengths of existing capable teams allows First Nations to develop, deploy, and train systems for their own emergency management regimes that will increase preparedness and bolster resilience to hazards.

One of the best ways these groups can help empower existing capacity is to work with local teams and engage in a comprehensive review and update of dominant and/or best practice emergency management regimes and programs. This study identified that the systems, programmes, and regimes put in place also need to be culturally relevant to the end-user, and co-developed, to promote the likelihood of protective actions. Key informants interviewed in this study noted that updating commonly employed systems like the Incident Command System (ICS) should be a priority, considering the problematic if not outright harmful language and verbiage common to the ICS, compounded by the generational traumas survived by many First Nations individuals. This finding suggests that these systems as currently employed may be harmful to First Nations working under the system. This finding is supported by Kelman et al. (2012) who found that vulnerability reduction and capacity building have the best potential for achieving successful disaster risk reduction. As there are over 600 First Nations communities in Canada, with varying levels of capacity, identifying the best practices for creating distinct solutions for their unique hazardscapes could help accelerate the capacity building process. Looking forward there needs to be improved models and updated systems for managing hazards in First Nations

communities, so that the processes and language fit the lived reality of First Nations people as end-users.

A recommendation for First Nations leaders and practitioners to consider is that those persons identified for emergency management positions, hopefully a dedicated and funded full-time emergency management position, is that this position in community needs to be separate from the elected local leadership structures. This separation of duties will allow the emergency manager to build trust, not only with community members but with their own leadership, and let local leaders focus on their other community priorities. Full-time emergency managers in First Nations communities will serve as a key buffer and mediator between leadership, community members, government, police, and private sector partners. With this role separation an emergency manager can attenuate the negative interference and amplify the positive influence of local leadership during an emergency event, realizing that local leaders will invariably have some effect on emergency management in their communities. This emergency management position will act as a conduit for knowledge, building long term relationships and trust with outside actors, such as government and the private sector, and make it easier to maintain the resilience that is growing in a community. Building partnerships and educating local leaders will mitigate the negative effect rotating elected leaders may have on emergency management regimes. A key finding from this study supporting the separation of emergency management in First Nations communities from elected positions was the difficulty in maintaining capacity in communities. Once elected it could take a year or more for an individual to gain competency, then a year or two later potentially that person is gone, and communities' resilience and preparedness suffers for it.

A core element of the recommendations provided in this conclusion directly tie into increasing the level of self determination of First Nations communities. From having dedicated managers that can make the resilience of their community their full-time focus, to redesigning and co-developing new systems that best fit each community's experience, First Nations can shape their emergency management regimes to provide the best level of care for their people. First Nations individuals will always be the best placed to manage their unique hazardscapes and challenges, providing the most culturally relevant and caring services for their own people. Connecting First Nations communities existing strengths and ways of knowing with their emergency management partners will produce the best results and lead to increased resilience through effective and culturally relevant preparedness activities. Building on local knowledge and capabilities in this way allows

First Nations communities to become "disaster smart" which allows them to effectively anticipate and be adaptable to future hazards, creating resilience to environmental hazards through effective preparedness (Sithole et al. 2019).

7.4 Final Thoughts

As I conclude this research project, I want to draw attention to the importance of supporting and maintaining strong emergency management leadership in First Nation communities. I would implore those who have power and agency in First Nations emergency management to support the empowerment of capable teams and mitigate the negative impact inadequate leadership can have. Supporting the knowledgeable and capable champions for emergency management that are present in the community will bolster resilience by allowing preparedness to flourish. This is a sensitive topic and should not be viewed as an indictment of First Nations leaders sabotaging their own communities. Rather, as one key informant described, *"there's always politics that interfere"* Thus, this challenge is one that is critical to highlight. Emergency managers and leaders should be aware of the consequences of amplifying negative interference over positive interference when lives, land, and the future of their shared communities are at stake. As Reynold Medicine-Traveller taught me from the teachings of his mother when he became a leader for his community – *"today is a different day. Now the whole Nation are your children so you need to look after them."*

Considering this important teaching, it is important to look towards the strengths that have been identified in this study. First Nations have shown the ability, passion, and will to be more prepared for hazards. They know their lands, their people, and the hazards they face. The challenge now is to continue to build up this capacity and create a sustainable space for preparedness to grow and become interwoven in the fabric of the community. The environmental hazards First Nations will face every year are becoming inevitable. We may not know what the hazard future holds, but First Nations leaders and champions can prepare today to become ready for tomorrow. If we raise each other up and face the future united, First Nations will triumph.

Mahsi cho (thank you very much) for reading,

Nathan

References

Adger, W. N., Hughes, T. P., Folke, C., Carpenter, S. R., & Rockström, J. (2005). Social-Ecological Resilience to Coastal Disasters. *Science*, *309*(5737), 1036–1039. https://doi.org/10.1126/science.1112122

Asfaw, H. W., First Nation, S. L., McGee, T. K., & Christianson, A. C. (2019). A qualitative study exploring barriers and facilitators of effective service delivery for Indigenous wildfire hazard evacuees during their stay in host communities. *International Journal of Disaster Risk Reduction*, *41*, 101300. https://doi.org/10.1016/j.ijdrr.2019.101300

Asfaw, H. W., McGee, T. K., & Christianson, A. C. (2020). Indigenous Elders' Experiences, Vulnerabilities and Coping during Hazard Evacuation: The Case of the 2011 Sandy Lake First Nation Wildfire Evacuation. *Society & Natural Resources*, *0*(0), 1–19. https://doi.org/10.1080/08941920.2020.1745976

Bandura, A. (1994). Self-efficacy. In V. S. Ramachaudran (Ed.), Encyclopedia of human behavior (Vol. 4, pp. 71-81). New York: Academic Press. (Reprinted in H. Friedman [Ed.], Encyclopedia of mental health. San Diego: Academic Press, 1998).

Baxter, P., & Jack, S. (2008). Qualitative Case Study Methodology: Study Design and Implementation for Novice Researchers. *The Qualitative Report*. https://doi.org/10.46743/2160-3715/2008.1573

Becker, J. S., Paton, D., Johnston, D. M., Ronan, K. R., & McClure, J. (2017). The role of prior experience in informing and motivating earthquake preparedness. *International Journal of Disaster Risk Reduction*, *22*, 179–193. https://doi.org/10.1016/j.ijdrr.2017.03.006

Berkes, F., & Ross, H. (2013). Community Resilience: Toward an Integrated Approach. *Society & Natural Resources*, *26*(1), 5–20. https://doi.org/10.1080/08941920.2012.736605

Bihari, & Ryan. (2012). *Influence of social capital on community preparedness for wildfires | Elsevier Enhanced Reader*. https://doi.org/10.1016/j.landurbplan.2012.03.011

Bloomberg, L. D., & Volpe, M. (2018). *Completing Your Qualitative Dissertation: A Road Map From Beginning to End*. SAGE Publications.

Braun, V., & Clarke, V. (2021). To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative Research in Sport, Exercise and Health*, *13*(2), 201–216. https://doi.org/10.1080/2159676X.2019.1704846

Bryman, A., Bryman, D. of S. S. A., Bell, E., Bell, P. of P. P. E. A., & Teevan, J. J. (2012). *Social Research Methods*. Oxford University Press.

Burke, E. (1976). Frantz Fanon's "The Wretched of the Earth." *Daedalus*, *105*(1), 127–135.

Chinhoyi University of Technology, & Mapara, J. (2017). Indigenous ways of disaster preparedness in Zimbabwe: Lessons from living Heritage. DANDE Journal of Social Sciences and Communication, 2(1), 80–93. https://doi.org/10.15641/dande.v2i1.28

Christianson, A. (2015). Social science research on Indigenous wildfire management in the 21st century and future research needs. *International Journal of Wildland Fire*, *24*(2), 190–200. https://doi.org/10.1071/WF13048

Christianson, A. C., McGee, T. K., & Whitefish Lake First Nation 459. (2019). Wildfire evacuation experiences of band members of Whitefish Lake First Nation 459, Alberta, Canada. *Natural Hazards*, *98*(1), 9–29. https://doi.org/10.1007/s11069-018-3556-9

Clark, T. D. (2018). *Rebuilding Resilient Indigenous Communities: Executive Summary*. https://doi.org/10.13140/RG.2.2.24556.00644

Collier, B. (2015). *Emergency Management on First Nations Reserves*. *2015*, 16.

Creswell, J. W., Hanson, W. E., Clark Plano, V. L., & Morales, A. (2007). Qualitative Research Designs: Selection and Implementation. *The Counseling Psychologist*, *35*(2), 236–264. https://doi.org/10.1177/0011000006287390

Cutter, S. L., Barnes, L., Berry, M., Burton, C., Evans, E., Tate, E., & Webb, J. (2008). A place-based model for understanding community resilience to natural disasters. *Global Environmental Change*, *18*(4), 598–606. https://doi.org/10.1016/j.gloenvcha.2008.07.013

Davidson, Jane W., S. Woodland, H. Grehan, S. Pengelly, and L, Hassall (2024) "Moving Beyond Recovery and Reconstruction: Imagining Extreme Event Preparedness Through Performing Arts" in Del Favero, D., Thurow, S., Ostwald, M. J., & Frohne, U. (Eds.). (2024). Climate Disaster Preparedness: Reimagining Extreme Events through Art and Technology. Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-56114-6

Deakin, H., & Wakefield, K. (2014). Skype interviewing: Reflections of two PhD researchers. *Qualitative Research*, *14*(5), 603–616. https://doi.org/10.1177/1468794113488126

Dennison, J. (2017). Entangled sovereignties: The Osage Nation's interconnections with governmental and corporate authorities. American Ethnologist, 44(4), 684–696. https://doi.org/10.1111/amet.12566

Doberstein, B., Fitzgibbons, J., & Mitchell, C. (2019). Protect, accommodate, retreat or avoid (PARA): Canadian community options for flood disaster risk reduction and flood resilience. *Natural Hazards*, *98*(1), 31–50. https://doi.org/10.1007/s11069-018-3529-z

Durie, M. (2005). Nga Tai Matatu: Tides of Maori Endurance. *OUP Catalogue*. https://ideas.repec.org//b/oxp/obooks/9780195584684.html

Ejeta, L. T. (2018). Community's Emergency Preparedness for Flood Hazards in Dire-dawa Town, Ethiopia: A Qualitative Study. *PLoS Currents*. https://doi.org/10.1371/currents.dis.3843ad9fc823c8c853970148b350750c

Epp, D., Haque, C. E., & Peers, B. (1998). *Emergency Preparedness and First Nation Communities in Manitoba*. 47.

Facing History & Ourselves. (2020, July 28). *"Until There Is Not a Single Indian in Canada" | Facing History & Ourselves*. https://www.facinghistory.org/en-ca/resource-library/until-there-not-single-indian-canada Footnote Citing National Archives of Canada, Record Group 10, vol. 6810, file 470-2-3, vol. 7, 55 (L-3) and 63 (N-3)

Government of Canada. (2013). *Chapter 6—Emergency Management on Reserves*.

Government of Canada, O. of the A. G. of C. (2022, November 15). *Report 8—Emergency Management in First Nations Communities—Indigenous Services Canada*. https://www.oag-bvg.gc.ca/internet/English/parl_oag_202211_08_e_44154.html

Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. *Field Methods*, *18*(1), 59–82. https://doi.org/10.1177/1525822X05279903

Hanna, P. (2012). Using internet technologies (such as Skype) as a research medium: A research note. *Qualitative Research*, *12*(2), 239–242. https://doi.org/10.1177/1468794111426607

Hay, I. (2010). *Qualitative Research Methods in Human Geography*. Oxford University Press.

Hémond, Y., & Robert, B. (2012). Preparedness: The state of the art and future prospects. *Disaster Prevention and Management: An International Journal*, *21*(4), 404–417. https://doi.org/10.1108/09653561211256125

Hsieh, H.-F., & Shannon, S. E. (2005). Three Approaches to Qualitative Content Analysis. *Qualitative Health Research*, *15*(9), 1277–1288. https://doi.org/10.1177/1049732305276687

Hurlbert, M. (2018). The challenge of integrated flood risk governance: Case studies in Alberta and Saskatchewan, Canada. *International Journal of River Basin Management*, *16*(3), 287–297. https://doi.org/10.1080/15715124.2018.1439495

Kanakis, K. (2016). *Preparing for disaster: Preparedness in a flood and cyclone prone community*. *31*(2), 7.

Kapucu, N., Hawkins, C. V., & Rivera, F. I. (2013). Disaster Preparedness and Resilience for Rural Communities: Disaster Preparedness and Resilience. *Risk, Hazards & Crisis in Public Policy*, *4*(4), 215–233. https://doi.org/10.1002/rhc3.12043

Kelman, I. (2018). Lost for Words Amongst Disaster Risk Science Vocabulary? *International Journal of Disaster Risk Science*, *9*(3), 281–291. https://doi.org/10.1007/s13753-018-0188-3

Kelman, I., Mercer, J., & Gaillard, J. (2012). Indigenous knowledge and disaster risk reduction. *Geography*, *97*(1), 12–21. https://doi.org/10.1080/00167487.2012.12094332

Khalafzai, M.-A. K., McGee, T. K., & Parlee, B. (2019). Flooding in the James Bay region of Northern Ontario, Canada: Learning from traditional knowledge of Kashechewan First Nation. *International Journal of Disaster Risk Reduction*, *36*, 101100. https://doi.org/10.1016/j.ijdrr.2019.101100

Khalafzai, M.-A. K., McGee, T. K., & Parlee, B. (2020). Frequent Flooding and Perceived Adaptive Capacity of Subarctic Kashechewan First Nation, Canada. *ARCTIC*, *73*(4), 433–449. https://doi.org/10.14430/arctic71586

Khalafzai, M.-A. K., McGee, T. K., & Parlee, B. (2021). Spring flooding and recurring evacuations of Kashechewan First Nation, northern Ontario, Canada. *International Journal of Disaster Risk Reduction*, *63*, 102443. https://doi.org/10.1016/j.ijdrr.2021.102443

Khan, S. (2012). Disasters: Contributions of hazardscape and gaps in response practices. *Natural Hazards and Earth System Sciences*, *12*(12), 3775–3787. https://doi.org/10.5194/nhess-12-3775-2012

Kovach, M. (2010). *Indigenous Methodologies: Characteristics, Conversations, and Contexts*. University of Toronto Press.

Kumari, R., Mawdkhap, L. L., Sinha, S., & Singh, S. (2020). Folklore and Indigenous Knowledge for Sustainable Living: A Case Study of Disaster Preparedness and Management.

Lacroix, J., Laplaine, R., Canada, Translation Bureau, Terminology Standardization Directorate, Canada, & Public Safety Canada. (2012). *Vocabulaire de la gestion des urgences*. Direction de la normalisation terminologique, Bureau de la traduction = Terminology Standardization Directorate, Translation Bureau. https://central.bac-lac.gc.ca/.item?id=S52-2-281-2012-2&op=pdf&app=Library

Lambert, S. (2014). *Indigenous Peoples and urban disaster: Māori responses to the 2010-12 Christchurch earthquakes*. *18*(1).

Lambert, S. (2022). Indigenous Societies and Disasters. In M. Walter, T. Kukutai, A. A. Gonzales, & R. Henry (Eds.), *The Oxford Handbook of Indigenous Sociology*. Oxford University Press. https://doi.org/10.1093/oxfordhb/9780197528778.013.40

Leach, K., & Rivera, J. D. (2022). Dismantling power asymmetries in disaster and emergency management research: Another argument for the application of critical theory. *Risk, Hazards & Crisis in Public Policy*, *13*(4), 337–355. https://doi.org/10.1002/rhc3.12243

Leeuw, S. de, Cameron, E. S., & Greenwood, M. L. (2012). Participatory and community-based research, Indigenous geographies, and the spaces of friendship: A critical engagement: A critical engagement. *The Canadian Geographer / Le Géographe Canadien*, *56*(2), 180–194. https://doi.org/10.1111/j.1541-0064.2012.00434.x

Lindell, M. K., & Perry, R. W. (2012). The Protective Action Decision Model: Theoretical Modifications and Additional Evidence. *Risk Analysis*, *32*(4), 616–632. https://doi.org/10.1111/j.1539-6924.2011.01647.x

López-Marrero, T., & Tschakert, P. (2011). From theory to practice: Building more resilient communities in flood-prone areas. *Environment and Urbanization*, *23*(1), 229–249. https://doi.org/10.1177/0956247810396055

Low, J. (2019). A Pragmatic Definition of the Concept of Theoretical Saturation. *Sociological Focus*, *52*(2), 131–139. https://doi.org/10.1080/00380237.2018.1544514

Malterud, K., Siersma, V. D., & Guassora, A. D. (2016). Sample Size in Qualitative Interview Studies: Guided by Information Power. *Qualitative Health Research*, *26*(13), 1753–1760. https://doi.org/10.1177/1049732315617444

Mandiopera, W. D., Ndlovu, T., & Kai, G. (2023). Indigenous knowledge systems and drought preparedness in rural Umzingwane in Zimbabwe. International Journal of Disaster Risk Reduction, 99, 104128. https://doi.org/10.1016/j.ijdrr.2023.104128

Marshall, M. (1996). The key informant technique. *Family Practice*, *13*(1), 92–97. https://doi.org/10.1093/fampra/13.1.92

McCaffrey, S. (2015). Community Wildfire Preparedness: A Global State-of-the-Knowledge Summary of Social Science Research. *Current Forestry Reports*, *1*(2), 81–90. https://doi.org/10.1007/s40725-015-0015-7

McCaffrey, S., McGee, T. K., Coughlan, M., & Tedim, F. (2020). 8 - Understanding wildfire mitigation and preparedness in the context of extreme wildfires and disasters: Social science contributions to understanding human response to wildfire. In F. Tedim, V. Leone, & T. K. McGee (Eds.), *Extreme Wildfire Events and Disasters* (pp. 155–174). Elsevier. https://doi.org/10.1016/B978-0-12-815721-3.00008-4

McGee, T. K. (2021). Evacuating First Nations during wildfires in Canada. *Fire Safety Journal*, *120*, 103120. https://doi.org/10.1016/j.firesaf.2020.103120

McGee, T. K., McFarlane, B. L., & Varghese, J. (2009). An Examination of the Influence of Hazard Experience on Wildfire Risk Perceptions and Adoption of Mitigation Measures. *Society & Natural Resources*, *22*(4), 308–323. https://doi.org/10.1080/08941920801910765

McGee, T. K., & Russell, S. (2003). "It's just a natural way of life…" an investigation of wildfire preparedness in rural Australia. *Global Environmental Change Part B: Environmental Hazards*, *5*(1), 1–12. https://doi.org/10.1016/j.hazards.2003.04.001

Memmi, A. (1957). Portrait du colonisé. *Esprit (1940-)*, *250 (5)*, 790–810.

Mew, E. J., Ritchie, S. D., VanderBurgh, D., Beardy, J. L., Gordon, J., Fortune, M., Mamakwa, S., & Orkin, A. M. (2017). An environmental scan of emergency response systems and services in remote First Nations communities in Northern Ontario. *International Journal of Circumpolar Health*, *76*(1), 1320208. https://doi.org/10.1080/22423982.2017.1320208

Mihychuk, H. M. (2018). *FROM THE ASHES: REIMAGINING FIRE SAFETY AND EMERGENCY MANAGEMENT IN INDIGENOUS COMMUNITIES*. 54.

Mottershead, K. D., McGee, T. K., & Christianson, A. (2020). Evacuating a First Nation Due to Wildfire Smoke: The Case of Dene Tha' First Nation. *International Journal of Disaster Risk Science*, *11*(3), 274–286. https://doi.org/10.1007/s13753-020-00281-y

Muellmann, S., Brand, T., Jürgens, D., Gansefort, D., & Zeeb, H. (2021). How many key informants are enough? Analysing the validity of the community readiness assessment. *BMC Research Notes*, *14*(1), 85. https://doi.org/10.1186/s13104-021-05497-9

Nelson, D. R., Adger, W. N., & Brown, K. (2007). *Adaptation to Environmental Change: Contributions of a Resilience Framework*. 28.

O'Brien, G., O'Keefe, P., Gadema, Z., & Swords, J. (2010). Approaching disaster management through social learning. *Disaster Prevention and Management: An International Journal*, *19*(4), 498–508. https://doi.org/10.1108/09653561011070402

Paton, D. (2003). Disaster preparedness: A social-cognitive perspective. *Disaster Prevention and Management: An International Journal*, *12*(3), 210–216. https://doi.org/10.1108/09653560310480686

Paton, D. (2019). Disaster risk reduction: Psychological perspectives on preparedness. *Australian Journal of Psychology*, *71*(4), 327–341. https://doi.org/10.1111/ajpy.12237

Paton, D., & Buergelt, P. T. (2012). *COMMUNITY ENGAGEMENT AND WILDFIRE PREPAREDNESS: THE INFLUENCE OF COMMUNITY DIVERSITY*. 24.

Paton, D., & Johnston, D. (2001). Disasters and communities: Vulnerability, resilience and preparedness. *Disaster Prevention and Management: An International Journal*, *10*(4), 270–277. https://doi.org/10.1108/EUM0000000005930

Perry, R. W., & Lindell, M. K. (2003). Preparedness for Emergency Response: Guidelines for the Emergency Planning Process. *Disasters*, *27*(4), 336–350. https://doi.org/10.1111/j.0361-3666.2003.00237.x

Public Safety Canada. (2017). *An Emergency Management Framework for Canada: Ministers Responsible for Emergency Management.* https://www.deslibris.ca/ID/10090805

Public Safety Canada. (2019, March 2). *Emergency Management Strategy for Canada: Toward a Resilient 2030*. https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/mrgncy-mngmnt-strtgy/index-en.aspx

Said, E. W. (1977). Orientalism. *The Georgia Review*, *31*(1), 162–206.

Savoia, E., Agboola, F., & Biddinger, P. D. (2012). Use of After Action Reports (AARs) to Promote Organizational and Systems Learning in Emergency Preparedness. *International Journal of Environmental Research and Public Health*, *9*(8), 2949–2963. https://doi.org/10.3390/ijerph9082949

Scharbach, J., & Waldram, J. B. (2016). Asking for a Disaster: Being "At Risk" in the Emergency Evacuation of a Northern Canadian Aboriginal Community. *Human Organization*, *75*(1), 59–70.

Seitz, S. (2016). Pixilated partnerships, overcoming obstacles in qualitative interviews via Skype: A research note. *Qualitative Research*, *16*(2), 229–235. https://doi.org/10.1177/1468794115577011

Sithole, B., Campion, O. B., & Hunter-Xenie, H. (2019). Hazard-smart remote communities in Northern Australia: Community-led preparedness. *AUSTRALIAN JOURNAL OF EMERGENCY MANAGEMENT*. https://search.informit.org/doi/abs/10.3316/agispt.20190304007304

Son, C., Sasangohar, F., Neville, T., Peres, S. C., & Moon, J. (2020). Investigating resilience in emergency management: An integrative review of literature. *Applied Ergonomics*, *87*, 103114. https://doi.org/10.1016/j.apergo.2020.103114

Sutton, J., & Tierney, K. (2006). *Disaster Preparedness: Concepts, Guidance, and Research*.

Tedim, F., Leone, V., Amraoui, M., Bouillon, C., Coughlan, M. R., Delogu, G. M., Fernandes, P. M., Ferreira, C., McCaffrey, S., McGee, T. K., Parente, J., Paton, D., Pereira, M. G., Ribeiro, L. M., Viegas, D. X., & Xanthopoulos, G. (2018). Defining Extreme Wildfire Events: Difficulties, Challenges, and Impacts. *Fire*, *1*(1), 9. https://doi.org/10.3390/fire1010009

Thambinathan, V., & Kinsella, E. A. (2021). Decolonizing Methodologies in Qualitative Research: Creating Spaces for Transformative Praxis. *International Journal of Qualitative Methods*, *20*, 160940692110147. https://doi.org/10.1177/16094069211014766

Tremblay, M.-A. (2003). *The Key Informant Technique: A Non-Ethnographic Application*. 11.

Tuck, E., & Yang, K. W. (2012). *Decolonization is not a metaphor*.

Tymstra, C., Stocks, B. J., Cai, X., & Flannigan, M. D. (2020). Wildfire management in Canada: Review, challenges and opportunities. *Progress in Disaster Science*, *5*, 100045. https://doi.org/10.1016/j.pdisas.2019.100045

Wolfe, P. (2006). Settler colonialism and the elimination of the native. *Journal of Genocide Research*, *8*(4), 387–409. https://doi.org/10.1080/14623520601056240

Yumagulova, L., Phibbs, S., Kenney, C. M., Yellow Old Woman-Munro, D., Christianson, A. C., McGee, T. K., & Whitehair, R. (2021). The role of disaster volunteering in Indigenous communities. *Environmental Hazards*, *20*(1), 45–62. https://doi.org/10.1080/17477891.2019.1657791

Appendices

Appendix 1: Interview guides

Interview Guide A: Government & Agency Emergency Managers

Preamble: [Thank you for agreeing to speak with me today, this interview is part of my research project about preparedness. By preparedness, I am referring to "the knowledge and capacities that allows a person or a community to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters."

Introduction

1. Could you please describe your main role at [government agency]?

Risk Awareness

2. How would you rate the level of community wildfire risk awareness in the FN communities in your jurisdiction? (What influences high/low awareness?) [variation amongst communities?]
    a. Does your agency communicate with communities about wildfire risk? [if so, how, and to whom?] [If not, which agency does this?]
3. How would you rate the level of community flood risk awareness in the FN communities in your jurisdiction? (What influences high/low awareness?) [variation amongst communities?]
    a. Does your agency communicate with communities about flood risk? [if so, how?] [If not, which agency does this?]

Preparedness

4. Do you think that First Nations communities in the Wildland Urban Interface (WUI) are well prepared for wildfire, flood, and other hazard events? (Why/why not?)
    a. What factors help First Nations communities to be prepared?
    b. What factors hinder preparedness of First Nations?
5. Does your agency provide information to FN communities about preparedness? If so, how?
6. Can you describe what sort of resources are in place to help support First Nation Communities' preparedness?

Evacuations

7. Does your agency assist First Nations to develop evacuation plans? If so, can you describe how your agency does this?
    a. What are First Nations' responsibilities?
8. [For AEMA participants] AEMA has in the past provided communities with a generic evacuation plan, what are the strengths and weaknesses of your generic evacuation plan?
9. What kind of feedback have you received from FN about their evacuation experiences with your agency?
10. What are the key components for an effective evacuation plan?
11. What does a community need in order to create a strong evacuation plan for themselves?
12. What should be considered when updating an evacuation plan?
    a. How often should it be updated?

Final Questions

13. Can you share any specific examples of challenges or victories you have had while working with FN communities?
14. For my research project I am reading as many reports and policy documents as I can about FN preparedness. Could I please get a copy of the materials that you provide to FN communities? Are there any other documents that you think I should read to help me get a better picture of FN preparedness? May I also have a copy of the evacuation plan you would provide a community should they require one?

Interview Guide B: Dene Tha' Emergency Managers

Preamble: [Thank you for agreeing to speak with me today, this interview is part of my exploration of First Nation' preparedness. I am excited to explore community level preparedness and see if I can translate that knowledge beyond to help multiple communities. I define preparedness as "the knowledge and capacities that allows a person or community to effectively anticipate, respond to and recover from the impacts of likely, imminent or current disasters."

Introduction

15. Could you tell me about your personal experiences with natural hazards in the community?
16. Could you please describe your role and responsibilities within the community?
17. How prepared do you think your community is for a flood, fire, or other hazard event?

Risk Awareness

18. What natural hazards are a high risk to your community? [Why?]

Wildfire & Floods

19. Have previous wildfire experiences affected your community's preparedness? [If yes] How? [If no] Why not?
20. Have previous flood experiences affected your community's preparedness? [If yes] How? [If no] Why not?

Preparedness

21. How well do you think this community is prepared for a fire or flood emergency?
22. Does the community have an emergency plan? [If yes – What is included?]
    a. [If yes] When were your emergency plans last updated? [How often?]
    b. In your opinion, what are the strengths and weaknesses of your evacuation plan?
23. How do you engage with your community on preparedness?
    a. What strategies do you have to increase engagement and action to improve community preparedness?
24. What resources are available to be used in the event of an emergency, inside or outside of the community?
    a. Are the resources available adequate for your preparedness activities?
25. Does your community [or Dene Tha'] receive any sort of support (ex. information, financial, training) from any government agencies or organizations as part of your fire and flood preparedness activities?
    a. [If yes] Could you describe?
    b. [If no] Would you and your community benefit from additional support from outside agencies or organizations? [If yes] How?
    c. [If yes] What resources are most valuable to you to ensure that your community stays well prepared for wildfire and flooding?
26. How has information from government and emergency agencies been communicated to you during a hazard event?
    a. [If poor] How would you like to receive hazard information?
    b. What information is most important to you during a hazard event?
27. Can you describe any lessons you have learned from working with government agencies and other organizations with respect to your preparedness? [provincial/federal government]

a. What recommendations would you give to other less experienced FN communities about working with government and agencies?

b. What recommendations in general would you share regarding community preparedness?

28. What could Dene Tha' First Nation be doing better to improve your community preparedness?

29. What could government do better to improve your community preparedness?

a. Federal government?

b. What about the provincial government?

c. Any other agencies or organizations you want to talk about in the same manner?

Final Question

30. For my research project I am reading as many reports and policy documents as I can about FN preparedness. Could I please get a copy of the materials that you guide your preparedness activities? Are there any other documents that you think I should read to help me get a better picture of FN preparedness? May I also have a copy of your evacuation plan?

Interview Guide C: Mackenzie County Managers and Officials

Preamble: My partners on this project are Dene Tha' First Nation. While the main focus is on preparedness, Dene Tha' has indicated that the Hutch Lake Dam is a significant risk to the area downstream that is host to a number of Dene Tha' homes and an ancestral gathering location. I have a few questions on this specific issue.

Introduction

31. Could please tell me about your role and responsibilities with Mackenzie County?

32. Could you tell me about your experiences with wildfires and flooding in the county?

Concerning Dene Tha' First Nation

33. Could you please tell me about your experiences with Dene Tha' First Nation?

34. Have you worked with Dene Tha' First Nation on preparedness?

a. [If yes] Could you describe how you work together? [fire and flood focus if prompted]

b. [If No] Would you be interested in forming a partnership with Dene Tha'?

Hutch Lake Dam

35. Could you tell me about Hutch Lake Dam?
36. To your knowledge does the Hutch Lake Dam have any early warning measures that would alert the relevant authorities and agencies in the event that the structure becomes compromised?
    a. If it does, how could Dene Tha' First Nation become a part of that warning system?
    b. If it does not, would it be possible to create one?
37. Have any hazard assessments been completed on the Dam?
    c. Who is responsible for these hazard assessments, and how could Dene Tha' First Nation access this information?

Appendix 2: Initial Coding Framework

Communication: Data that deals with communication, for example language barriers or how hazard information is provided to communities.

- Field Officers, Language Barriers, Province to First Nation.

Resources: Data about resources including financial, personnel, 3rd party organizations, the lack thereof, anything to deal with reimbursement from the federal government, and the sharing of resources between any stakeholders.

- Infrastructure and Facilities, Provincial Support to FN, Reimbursement, Sharing of Resources

Risk Awareness and Perception: For data that deals with risk awareness and perception to Fire and flood as they are the primary natural hazards of concern to FN in the Province of Alberta.

Expertise and Knowledge: This code deals with local knowledge, expert knowledge, growing community capacity, data dealing with training, and communities EM teams.

- Roles and Responsibilities, Personnel Redundancy, Training.

Relationships and Trust: A code bucket for data that deals with the relationships at play that affect preparedness in FN, whether they are between the FN community members or between FN and the province, the province, and the Federal government, etc.

- Community Strength and Resilience, Municipality FN, Province Community, RCMP FN, Province Federal.

Experiences: This code is broad as it will contain all data that deals with both personal and professional experiences, with the focus being on past experience as a learning tool and experience "growing pains" as FN take more control over their EM regimes, different challenges and problems arise.

- Previous experience as learning tool, Growing pains/Challenges.

Perceived Capacity: This code serves as a bucket for data relating to how certain groups or stakeholders perceive FN preparedness in the province, as well as service provider perceived efficacy at influencing preparedness.

- FN Self perception, Province Perception of FN, Service provider self perception.

Plans and Planning: This code bucket will contain data that mentions preparing, planning, strategies, evacuation plans. This code will likely contain info that moves towards Challenges/Strengths in Emergency Management parent codes, but I would like to see it all together and gauge how its being referred to first.

- Decision to evacuate, Stay and Defend, Tracking Community members, Evacuation Routes, Hosts and Shelter.

Psychological: This is for data that directly deals with the psychological impacts of hazards, EM and dealing with the government. For example, the emotional and physical toll of burnout

managing a hazard event or issues surrounding the trauma of residential school or the sixties scoop with government models and nomenclature surrounding concepts of "command and control" which are highly prevalent in EM.

- Burnout, Trauma and Triggers

Transportation: This code is for any data that deal with transportation, like the plans and planning parent code this one will likely be broken down and merged across other codes, but I would like to see how transportation is viewed in totality, for example is it situation (One road) and location (remote, Fly-in) concerns, or is it service provider issues (North Peace Tribal Council, CAF) that are more prevalent?

- Remoteness and Isolation, Providers, Road Blocks.

The Service Agreement and Jurisdictional Issues: This is a code for any data that directly refers to the service agreement between the Federal government (ISC) and The GOA and the executors of the agreement (AEMA) for the provision of EM services to First Nations in Alberta. Also, a bucket for issues that this complicated bureaucratic reality creates for FN's.