Climate Resilience Planning with Vulnerable Communities: A Case Study of Engagement and Citizenship in Edmonton, Alberta

by

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Abstract

Municipal governments are playing key roles in the development of climate adaptation and resilience policies and are increasingly incorporating participatory approaches into policy development processes. However, confusion and assumptions about the definition of resilience, as well as related goals, makes it difficult for citizens and municipal representatives to collaborate effectively for climate adaptation and resilience planning. This is a particular concern for vulnerable and disadvantaged populations, as they are not often able to participate in developing climate adaptation and resilience approaches, yet are most at risk of the impacts of climate change. To date, there has been limited research examining how community and municipal perspectives of resilience compare and contrast, and how this might affect climate resilience planning in more vulnerable and dynamic neighbourhoods. There has additionally been little research on vulnerable and marginalized perspectives of their experiences with civic engagement in relation to municipal initiatives of climate change preparedness. This qualitative case study, situated in Edmonton, Alberta, Canada, investigates how citizens within vulnerable and complex neighbourhoods understand resilience and civic engagement, as well as what support might be needed to increase climate change resilience in specific communities. With the use of interviews and focus groups, this research was conducted within two vulnerable and diverse neighbourhoods in Edmonton in the context of the municipality developing and implementing a climate adaptation and resilience strategy, and engaging neighbourhoods in building climate resilience plans to address their needs.

Research findings from the first study show that municipal employees and community members have different perspectives of resilience; technical and scientific approaches

were mostly emphasized by the municipality, while community participants discussed a plethora of issues that needed to be addressed to build resilience related to social challenges and marginalization. This study underlines the need for municipalities to take into consideration citizen's experiences within their specific communities and find innovative ways to combine social and community development efforts with climate resilience planning. In the second study, with the use of scholarship on climate justice and engagement, I focused on generating knowledge of the ways in which vulnerable communities articulate climate resilience in relation to their encounters of risk within local neighbourhoods and the patterns of exclusion which shape these experiences. Research participants articulated their exclusion from resilience planning at a variety of scales. Importantly this consisted of their exclusion from policy development and decision-making, but also included concerns about their ability to access and influence urban geographies. In this way, participants readily connected conversations about climate resilience to processes of urban planning and development in their neighbourhoods. This research points to the need for a broader conversation to be had about citizen's ability to shape their city and how the most vulnerable groups should be included in building both social and climate resilience that considers their values, experiences, and concerns within their city and communities.

Preface

This research evolved over the course of two years through connections made with the City of Edmonton; during this time there were some initial plans for conducting my thesis research alongside the city, however these were substantially revised. I worked with the City of Edmonton as a Sustainability Scholar from May to August 2018 assisting in identifying communities and collaborators for climate resilience planning and exploring opportunities, needs, and challenges of a community based adaptation approach in Edmonton. The City of Edmonton aims to engage neighbourhoods throughout Edmonton to build their own climate resilience plans as one of the goals of their climate adaptation and resilience strategy. Initially, the hope was to pilot the development of community climate resilience plans in three to five different neighbourhoods in Edmonton before finishing the municipal climate adaptation and resilience strategy; my thesis research was going to overlap with this process. Specifically, my research was going to involve examining the collaborative process between municipal administration, community leaders, and citizens while climate resilience plans were developed in the pilot neighbourhoods. My objectives were to:

1. Examine how citizens, local communities, and municipal employees construct meanings of adaptation and resilience in the context of collaborative climate change planning.
2. Investigate how municipal employees and citizens construct concepts of community and participation during the development of participatory climate adaptation plans and policies.
3. Identify the benefits and challenges of collaborative adaptation and

resilience planning between citizens and municipal administration.

However, community engagement for the development of neighbourhood climate resilience planning was put on hold in order to move the overall strategy to Edmonton's City Council in a more expedited manner. The City of Edmonton's plan is to still develop pilot climate resilience plans in some neighbourhoods and use this for neighbourhoods all over the City of Edmonton. Clear steps are now being taken with the goal of starting the development of community climate resilience planning at the end of January 2020; this will be discussed more thoroughly in the context section of Chapter One.

Due to the altered timeline, I changed the scope of my project to focus on how a municipality might engage vulnerable and disadvantaged neighbourhoods. I selected this focus out of a personal research interest and also in response to the literature on community climate resilience planning, which emphasizes the importance of making sure vulnerable and disadvantaged communities are resilient to climate impacts and are included in related decision making.

For this thesis, I obtained research ethics approval from the University of Alberta Research Ethics Board 1, No. 00083558, January 2, 2019.

Dedication

This research is dedicated to those that continuously strive to include vulnerable and marginalized peoples into decision making around environmental issues and constantly apply a justice lens in the work they do.

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I want to acknowledge that this research was conducted in Amiskwacîwâskahikan (Edmonton) on Treaty 6 Territory, which is a traditional gathering place for diverse Indigenous peoples including the Cree, Blackfoot, Métis, Nakota Sioux, Iroquois, Dene, Ojibway/Saulteaux/Anishinaabe, Inuit, and many others.

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Chapter One: Introduction

As the 'city' is increasingly recognized as a critical scale and site for addressing environmental risks and impacts, municipal governments are taking up key roles in the development of climate adaptation strategies and policies (Bahadur & Tanner, 2014; Preston et al., 2011; Reckien et al., 2018). Within these urban contexts, citizen involvement is acknowledged as crucial for developing effective policy, especially since climate change is a complex, rapid, and uncertain issue with local impacts, which cannot be addressed by government alone (Archer et al., 2014; Blue, 2016; Bulkeley, 2013).

That being said, populations facing existing social vulnerabilities and inequities, who are often affected by climate change the most, are very rarely involved in making decisions on these issues (Mearns & Norton, 2010; Phadke et al., 2015). As economic inequity and social injustice will amplify how climate impacts are experienced at the local level (Fünfgeld & McEnvoy, 2014), attention should be paid to preparing marginalized and vulnerable communities for climatic impacts and hazards.

Community based adaptation (CBA) is one form of adaptation that is meant to focus climate resilience efforts on local communities' experiences and needs, especially for the most vulnerable and disadvantaged populations. CBA is recognized as a way to make sure local communities (such as neighbourhoods) are resilient to potential local impacts and have the resources to withstand climatic hazards and related issues (Archer et al., 2014). As the literature on community climate resilience planning emphasizes the importance of making sure vulnerable and disadvantaged communities are resilient to climate impacts, and are included in related decision making (Clarke et al., 2019; McNamara & Buggy, 2017; Phadke et al., 2015), it is important to understand how a

municipality might engage vulnerable and disadvantaged populations in developing community-specific climate resilience plans. However, little research has explored the engagement process between municipalities and vulnerable populations when collaborating for climate adaptation and resilience planning at the neighbourhood level. Identifying specific issues and challenges when municipal staff and residents of marginalized or vulnerable communities collaborate for climate preparedness would be beneficial.

To that end, my research examines municipal-community engagement as it relates to climate change preparedness and how municipalities are able to develop and deliver public engagement plans for adaptation. This research uses a case study within Edmonton, Alberta, the northern most metropolis in Canada. Edmonton has recently developed, and is currently implementing, a climate adaptation and resilience strategy. As part of this process, the city plans to engage its neighbourhoods in building neighbourhood-level climate resilience plans (City of Edmonton, 2018, p. 29). This presents a timely opportunity to explore perspectives and considerations for citizen engagement within vulnerable neighbourhoods in order to best prepare all citizens for climate change impacts and hazards.

Research Purpose and Objectives

The purpose of my research is to bring to light the potential challenges of community based approaches to climate resilience planning in vulnerable and complex urban neighbourhoods, and to identify opportunities for more robust forms of climate adaptation and resilience planning at the community level. Therefore, my research critically investigates the dynamics of engagement between government and civil society,

as well as the challenges associated, and stakeholders' meanings of resilience, adaptation, participation, and community, particularly as articulated by members of vulnerable and disadvantaged neighbourhoods.

The objectives of my research are to: 1) examine the development of Edmonton's climate change adaptation strategy and related policies; 2) investigate neighbourhood understandings and opportunities for climate resilience, focusing on two inner city neighbourhoods with diverse populations and high levels of poverty and homelessness; 3) explore the relationship between the city and these neighbourhoods in relation to engagement, resilience, and climate change preparedness.

Drawing upon the theoretical perspectives of climate justice, and a social constructionist analysis of environmental risk governance, climate resilience planning, and citizen participation, my research critically investigates the dynamics of engagement between government and civil society, the challenges associated, and stakeholders' meanings of resilience, adaptation, participation, and community. I utilize an inductive qualitative case study methodology to carry out this research; methods employed were focus groups and semi-structured interviews.

This introductory chapter will include an overview of key issues and concepts important for this research, theoretical perspectives that guide this research, the methodology and methods used, and the municipal and neighbourhood context to situate the study. Reflections on my social location, as well as a brief overview of the following chapters will additionally be discussed.

Overview of Issues and Concepts

Climate Change

Climate change refers to changes in atmospheric conditions over long periods of time. There is unequivocal evidence that the earth's climate is changing and can be attributed to increases in greenhouse gas (GHG) emissions and changes in land use. Climate scientists strongly agree that GHG emissions have increased since the late 1800s causing an increase in global temperatures of approximately 1.1 degrees Celsius (°C) driven largely by economic and population growth (Cook et al., 2016; Earth Science Communication Team, 2019; Intergovernmental Panel on Climate Change [IPCC], 2014a;). The highest proportion of this warming has occurred in the past 35 years, mainly due to the global dependence on fossil fuels, and is projected to continue in the coming centuries even if global GHG emissions are significantly reduced. Global climate change is causing warming of atmospheric and ocean temperatures, melting ice sheets and glacial retreat, an increase in sea level rise, ocean acidification, and increases in the frequency and intensity of extreme weather events (Earth Science Communication Team, 2019; IPCC, 2014a). In North America, climate change is altering seasonal activities and migration patterns and will continue increasing stresses to water, crop yields, economic activities, and to urban and rural areas in general (IPCC, 2014a; Romero-Lankao et al., 2014). Environment and Climate Change Canada (ECCC, 2016) has reported that extreme weather events, as well as changes to temperature, precipitation, and snow/ice cover, are already occurring and estimates that average warming in Canada is two times that of the global average.

While mitigation measures, specifically reducing greenhouse gas (GHG) emissions, are important given the recent past and current rates of emission reductions, adaptation is now considered a crucial aspect of "solving" the climate crisis and minimizing potential risks and impacts (IPCC, 2014a, 2018; Petheram et al., 2010; Pielke et al. 2007). The Paris Climate Agreement (21st Conference of the Parties) agrees and argues for a global goal to be established "on adaptation of enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change" (United Nations Framework Convention on Climate Change [UNFCCC], 2015, Article 7, 443-444).

There is still much uncertainty and disagreement about how best to address climate change as it is a highly complex physical and social phenomenon, global in scope, rapid in nature, and impacts many interconnected systems (Bulkeley, 2013). While mitigation efforts, such as reducing carbon emissions are deemed necessary, slow progress in this regard has led to increasing awareness that citizens, communities, cities, and countries need to become more prepared for climate impacts (Moser & Boykoff, 2013). My research is specifically focused on adaptation and resilience planning.

Climate Change Adaptation and Resilience

The Intergovernmental Panel on Climate Change (IPCC, 2014b) defines climate adaptation as "the process of adjustment to actual or expected climate and its effects" (p. 5). In human systems, adaptation seeks to decrease present and future vulnerabilities to climate change with the use of a variety of resources, expertise, procedures, technologies, and administrative support (Heifetz et al., 2009). While physical, technical, environmental, economic, political, and institutional measures are needed for effective

adaptation, social and cultural aspects of adaptation are also deemed essential (Barnett, 2010; Wamsler, 2014).

Since the mid-1990s, more research has focused on the relationship between cities and climate change, as municipalities are now recognized as essential actors in globally responding to climate change (Bulkeley, 2013; The World Bank, 2010). Within governing bodies, planners are paying increasing attention to adaptation needs, policies and strategies, particularly at the municipal level (Romero-Lankao, 2014). Municipalities are also crucial for emergency and disaster preparedness, as municipalities are the local government body most able to respond to local emergencies and disasters and typically respond to over 90% of emergencies (Juillet & Koji, 2013).

Focus has been on providing support and resources to developing countries and cities due to their low adaptive capacity and high vulnerability to climate change. There is often an assumption that developed countries and cities don't need as much support due to seemingly less severe weather extremes, in some cases, and having more resources to prepare for climatic impacts without additional help. This assumption has been questioned given increasing climatic extremes and resulting impacts in recent years in North America and Europe (Moser & Ekstrom, 2010). Examples of devastating storms include Hurricane Katrina in 2005, known to be the most catastrophic natural disaster in the United States, causing fatalities of almost 2000 people and costing approximately $108 billion (Karl et al., 2009). Closer to home, the 2013 flooding in southern Alberta caused over 100,000 people to be displaced, and cost close to $6 billion (Pomeroy, Stewart, & Whitefield, 2016). These natural disasters demonstrate some of the major challenges communities may face if not prepared for climatic impacts, as well as the

important role local government plays in climate adaptation, disaster management, and citizen's resilience (IPCC, 2014b; Moser & Boykoff, 2013). It is also becoming increasingly apparent that even in developed countries, certain citizens and communities are vulnerable or disadvantaged due to class, gender, ethnicity, or age and may face increased challenges that require more resources, skills, or government help. For example, when Hurricane Katrina hit New Orleans there were extreme inequalities of race and class as evidenced by the way citizens were unequally able to handle Katrina's challenges, and in how the municipality handled this situation. For instance, the mayor issued a mandatory evacuation order without providing more options for people without private vehicles. Additionally, poorer residents had many challenges reestablishing themselves in New Orleans after the disaster due to fewer opportunities and increased housing prices during recovery (Steinberg & Shields, 2008). Cities have a role in making sure their most vulnerable citizens are able to adapt and be resilient to climate change (Vale, 2014).

Vulnerability is a concept that typically goes hand in hand with adaptation, in that adaptation has often been built on reducing vulnerability. It is important to note though that reducing vulnerability is not the only way to achieve climate change adaptation and it is not the same thing as building resilience (Alverson & Zommers, 2018). Vulnerability can be defined as the degree to which "geophysical, biological, and socioeconomic systems are susceptible to, or unable to cope with, adverse impacts of climate change" (Alverson & Zommers, 2018, p. xix). Some literature additionally links vulnerability to issues of justice in that inequity and injustice are forms of vulnerability that can

exacerbate how climate change impacts are experienced at a local level (Fünfgeld & McEnvoy, 2014; Lindley et al., 2011).

The concept of resilience is also germane to this study. It has been used to refer to a variety of issues and research areas including climate change adaptation, but also to disaster preparedness, sustainable economic growth, community building, community capacity, and food security (Alverson & Zommers, 2018; Cretney, 2016). The connection between community resilience and climate resilience is important for this research, which includes how community relationships and connections can be beneficial for effective disaster preparedness and climate adaptation planning. Resilience in relation to climate adaptation is often seen as an outcome of adaptation planning and actions. Resilience as defined by the IPCC (2014b) is:

> The capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation. (p. 5)

Community resilience often refers to the ability of localized (either geographical or social) groups to respond, cope, and adapt to changes through collective actions (Berkes & Ross, 2013; Magis, 2010), such as communities that have shared circumstances to join their experiences and networks together to overcome challenges and deal with future events (Gunderson, 2010; Norris et al., 2008). Research in this area concludes that strong social ties and relationships are crucial for resilience or adaptive capacity (Adger, 2003). Resilience, particularly in urban contexts, focuses on the formal and informal interactions between citizens, social organizations, and governing bodies (Tyler & Moench, 2012).

Combining community and climate resilience planning "give[s] more room to community voices [and] can reshape the definition of climate-related problems and hence solutions to them, in such a way that urban governance becomes more inclusive, transparent, and accountable" (Archer et al., 2014, p. 347).

Adaptive capacity is an important concept for understanding resilience (Alverson & Zommers, 2018) and refers to "the ability of city governors, businesses and residents, and associated structures and systems to prepare for and moderate potential harm from climate change hazards and exploit any emerging opportunities" with the use of resources, information, stakeholders, institutions, and effective governance structures (Carter et al., 2015, p. 6). Adaptive capacity highlights the need to respond to crises, but also to reduce potential impacts of future events (Berkes & Ross, 2013). While resilience is often referred to as "bouncing back" to a pre-disaster or emergency condition, moving forward is often preferred and is an important part of reducing risk and vulnerability to increase adaptive capacity (Adger et al., 2005; Vallance, 2011). Adaptive capacity specifically includes five types of capital assets – social, human, physical, natural, financial – all of which are important to maintain and leverage for resilience (Ellis, 2000; Nelson et al., 2005; Smit & Wandel, 2006).

CBA combines climate and community resilience and recognizes that local communities and citizens should be key players in the development of climate change policies and activities that affect them (Ayers & Huq, 2013; Ensor & Berger, 2009; Warrick, 2009), and works to build on local communities' skills, networks, cultural norms, and local knowledge (Ayers & Forsyth, 2009). CBA can be defined as the "participatory identification and implementation of community-based development

activities that strengthen the capacity of local people to adapt to climate change, and building on communities' expressed needs and perceptions to address local development concerns which underlie vulnerability" (Archer et al., 2014, p. 346; see also Ayers & Forsyth, 2009; Reid et al., 2009). Many researchers recognize that CBA is a beneficial way to involve local citizens in decision-making in urban settings (Archer et al, 2014) and can also create opportunities for capacity development and technical learning among citizens (Hay & Mimura, 2013; Richmond & Sovacool, 2012). Moreover, CBA focuses on increasing the participation of disadvantaged and marginalized populations with the recognition that these populations are often the most at risk of climate impacts and are often excluded from climate adaptation and resilience planning and decision making (Forsyth, 2013; Phadke et al. 2015). Understanding CBA is important for this research as the City of Edmonton aims to enact a CBA approach by developing climate resilience plans in neighbourhoods across Edmonton (City of Edmonton, 2018, p. 29).

Citizen involvement is acknowledged as crucial for developing effective policy (Archer et al., 2014). Examining the process of citizen engagement and how it relates to climate change adaptation, particularly for vulnerable communities, can help to identify and understand the interrelatedness of citizen engagement, policy, and practice. My research explores the diversity of meanings of resilience and how challenges may arise if these differences remain unaddressed when collaborating to build climate resilience plans, specifically for vulnerable and disadvantaged citizens, at the neighbourhood level in a city.

Throughout this research, I will use the terms resilience and community climate resilience instead of climate adaptation and community based adaptation, as the City of Edmonton is using the term resilience when referring to citizens' and communities' climate preparedness, and because it is a term used in the literature on climate issues and also in reference to social development, community connectedness, disaster preparedness, and other related topics.

The definitions of terms and concepts laid out here are starting points for this research; however, part of this research was to identify and assess how diverse citizens, municipal administrators, and community leaders understand these terms in their own contexts and how these perspectives might compare and contrast. Thus, the definitions discussed here are not used rigidly in this research, but serve as a foundation to work from.

Theoretical Guidance

This research incorporates the theoretical perspectives of climate justice, as well as social constructionism to examine the potential process of collaboration between city employees and citizens in vulnerable and diverse neighbourhoods. These theoretical perspectives are described as follows.

Climate Justice

This research uses a climate justice lens to examine relationships and potential collaborations between municipal administrators and community members of vulnerable and marginalized neighbourhoods for climate resilience planning. Climate justice emerged from an environmental justice approach, which will first be described. Environmental justice is both a social movement and a research area. As an American

social movement, environmental justice can be traced back to either the Love Canal disaster in Niagara Falls, New York in 1978 (Buzzelli, 2008) or the protests in 1982 regarding the disposal of highly toxic PCB-tainted waste in a North Carolina landfill situated in a poor, mostly African-American community (Schlosberg & Collins, 2014). These disasters and protests brought together both the environmental and civil rights movements with tracings of other movements including the labour and anti-toxics movements (Agyeman, 2005; Cole & Foster, 2001). Environmental discourse before the 1960s was "primarily a White, middle-class mobilization," which highlighted issues such as wildlife preservation and outdoor recreation (Taylor, 2000, p. 556). The environmental justice movement instead focuses on inequities related to gender, ethnicity, and class in relationship to environmental issues. An environmental justice approach questions the fairness in the distribution of living standards, quality of life, and negative environmental impacts (Buzzelli, 2008). This approach suggests that disadvantaged groups, particularly communities with lower socio-economic status (SES), based on indicators such as income, wealth, and ethnicity, often face social and health challenges, and are also affected by environmental hazards more than others (Buzzelli, 2008). For example, Hamilton (1995) states that commercial waste facilities in the United States at the time were located close to geographical communities with significantly higher populations of racial minorities, demonstrating that groups with preexisting marginalization often have lower living standards and face more potential environmental harm. The movement in the United States aimed to raise awareness and change the distribution of negative impacts; this movement has gained support at community and policy levels (Haluza-DeLay, 2007).

Similarly, environmental justice and equity are now considered essential in government policy and research in the United Kingdom (Bulkeley & Walker, 2005). In Canada, however, there has been less of a specific environmental justice movement and there has been little policy development. Environmental justice research shows more nuanced, but still clear, signs of environmental injustice including more environmental hazards in neighbourhoods with single parents, as well as residents with low education or low income (Buzzelli & Jerrett, 2003, 2007). Environmental injustice in the Canadian context also includes concerns of hazards on Indigenous lands such as oil spills or contaminated drinking water. For example, in 2005 the water supply of the Cree community of Kashechewan in Northern Ontario was contaminated; raw sewage was pumped into the drinking water of this community causing an E. coli outbreak. About 1,900 residents were temporarily evacuated (Buzzelli, 2008). Indigenous rights and other issues are important to consider for environmental justice work; however, little, although growing, research and policy support exists in Canada (HaluzaDelay, 2007).

While an environmental justice approach focuses on minimizing the negative environmental effects on marginalized and disadvantaged populations, other crucial aspects include democratic participation, ecological citizenship, and the inclusion of people in decision-making on these issues (Buzzelli, 2008). In a multi-method study regarding health and a specific landfill in Hamilton, Ontario residents were less concerned about the potential environmental and health issues than they were about not being included in the planning processes regarding the landfill (Elliott et al., 1993; Eyles et al., 1993). Closer to home, the Alberta Climate Dialogue (ABCD) was an initiative that took place from 2010 to 2016 to explore citizens' opportunities and roles in climate

change and energy efficiency decision making. Many participants that took part in these deliberations valued the opportunity to provide input on issues that are of government importance and affect the general public (MacKinnon et al., 2018). These examples demonstrate the desire of local communities to be a part of decision making that affects them. Thus, the importance of inclusive, democratic decision making has been incorporated into an environmental justice lens.

A justice approach is additionally important in the development of climate change policies, as all policies have specific justice implications regarding who may benefit and who won't from the policies (Klinsky & Dowlatabadi, 2009). Researchers taking a justice approach to environmental and climate policies often find that marginalized groups are frequently excluded from policy decisions including climate adaptation and resilience planning (Huq & Khan, 2006; Phadke et al., 2015; Thomas & Twyman, 2005). This approach argues for a focus on the most vulnerable groups, or those with the least amount of resources, in order for climate change decision making to be more inclusive (Singer, 2002, 2006).

Climate justice, as a branch of environmental justice discourse, takes the position that there are inequities regarding nations and people who are responsible for causing global warming, as well as inequities in the distribution of perceived and potential climate change impacts (United Nations Development Programme [UNDP], 2007). For climate adaptation, this approach emphasizes the importance of focusing on the lives and livelihoods of those that are, or will likely be, affected by climate change the most, but have contributed the least to its causes (Mearns & Norton, 2010). Climate justice aims to develop just climate adaptation planning tools and strategies (Schlosberg & Collins,

2014). One aspect of climate justice discourse includes the use of grassroots movements that focus on local impacts and experiences, community voices, equitable climate change strategies, inequitable vulnerabilities, and the importance of community led initiatives for climate change planning (Schlosberg & Collins, 2014). A climate justice approach is beneficial for this particular research as it: 1) elevates the essentiality of citizen participation and inclusion, particularly for those that are marginalized, disadvantaged, or excluded from decision making; 2) provides opportunities to address other sectors and areas of work including social and spatial inequities; and, 3) draws linkages between ethnicity, class, gender, health, and social justice issues in a particular framework (Buzzelli, 2008; Mearns & Norton; 2010). This allows for the leveraging of a variety of priorities in relation to inequity (Buzzelli, 2008; Mearns & Norton; 2010; Taylor, 2000). Climate justice is a beneficial theoretical framework for my examination of municipal relationships with diverse neighbourhoods and vulnerable community members. Throughout my research I ask what should be considered when taking a climate justice lens to adaptation and resilience planning for vulnerable and diverse neighbourhoods in an urban setting? This theoretical framework will help to understand how the City of Edmonton is engaging and prioritizing the needs of vulnerable populations and what gaps might exist.

Social Constructionism

Social constructionism is a theoretical framework developed as a way to understand the nature of reality. Berger and Luckmann (1996), the main influencers of this theoretical approach, examined the nature and construction of knowledge by investigating how knowledge emerges and how its significance evolves in society.

Central to the theory of constructionism is the view that knowledge is created by individuals' interactions with others in society (Schwandt, 2003; Young & Collin, 2004). In this sense, humans begin to understand their world, as well as their own meanings and knowledge through watching others act and interact with others, as well as acting and interacting themselves (Berger & Luckmann, 1996; Glabin, 2014). The meanings people form about the world develop over time within different social and community contexts (Dickerson & Zimmerman, 1996). Murphy (1994) acknowledges that, "interests, values, conflict and power – in short, the social – shape our conceptions of reality and influence its formation" (p. 969). This approach additionally recognizes that there is not just one way to understand and identify an issue and work towards solving it (Blue, 2016).

Social construction can be useful for critically examining science and environmental issues. Science plays a crucial role in investigating environmental issues, such as the degradation of ecosystems and the nature of climate change (IPCC, 2014b; Karnilowicz et al., 2014; Liberatore, 1995). It is highly important in environmental and scientific research to have knowledge of actual and potential environmental impacts, as well as knowledge of technical characteristics and possible effects of certain activities (Liberatore, 1995). That being said, issues such as climate change are highly complex and uncertain, thus there is no one way to model, project, and examine climate change for improved mitigation and adaptation planning (Bulkeley, 2013; Yearley, 2009), and there is always a selection and interpretation of evidence (Liberatore, 1995). Even when data and climate projections have been identified and seem scientifically uncontroversial, the complexity of issues can still affect planning and policy decisions and such data may be used in a variety of ways by policy makers; in this sense "scientists in different social

contexts and countries may look at data from different perspectives, perspectives that are influenced by - among other things - concerns regarding the implications and uses of evidence for policy purposes" (Liberatore, 1995, p. 61). Thus environmental issues and risks are not always straightforward and solutions are not always obvious. Examining these processes from a social constructionist and interpretive perspective encourages critical reflection of values and assumptions (Blue, 2016).

Social constructionism is beneficial in examining climate resilience and adaptation planning; for example, Vale (2014) argues that the understanding of a resilient city and recovery from a disaster is socially constructed. When deciding how to identify and plan for resilience in a city, assumptions are made about "who counts as 'the city'? (And who decides who counts as 'the city'?)" (Vale, 2014, p. 197). Similarly, one of the biggest challenges of adaptation is identifying who and what is vulnerable, and whose right and responsibility it is to decide who and what is vulnerable (Adger et al., 2009). It is therefore important to investigate who makes decisions about resilience within a city, and who is excluded from resilience planning and city building. This can bring to light dominant (and subordinate) narratives, what symbols determine the progress of resilience and how political authorities prioritize certain investments over others (Vale, 2014). Smit and Wandel (2006) argue that examining the how and why of decision making for adaptation planning is important in understanding how governance structures, processes, and mechanisms can affect the process and policy decisions for adaptation. Agrawal et al. (2009) additionally argue that it is important to understand the role of institutions in climate change and how these roles affect policy processes, discussions, and decisions. As there are many different ways to examine and understand climate change, the ways

issues are approached can influence the kinds of responses that are appropriate and the specific groups included in responses (Blue, 2016).

A social constructionist approach is also beneficial for understanding collaborative and participatory approaches. Since this research aims to investigate how city employees, social organizations, and community members can collaborate for effective climate preparedness, a social constructionist approach can help to examine participatory approaches, different views between groups, and how certain perspectives are included or excluded from decisions (Karnilowicz et al., 2014). A constructionist perspective acknowledges that different people have diverse skills, knowledge, and expertise, which tend to differ based on peoples' diverse backgrounds. Varied knowledge and expertise can lead to collaborative and beneficial policy decisions and solutions (Irwin, 1995; Irwin & Wynne, 1996; Pielke Jr., 2007; Stilgoe et al., 2006). A beneficial aspect of collaborative approaches are their ability to facilitate social learning about a variety of issues and solutions, not just those supported by dominant institutions or one specific community (Blue, 2016). This can open up public discussions to include different possibilities, alternative questions, and marginalized perspectives (Stirling, 2008), even though they can also lead "to debates or controversies over the nature of the problem and the changes that can be made" (Guay & Hamel, 2015, p. 215).

A social constructionist perspective also helps to shed light on the use of public engagement in government processes and how government authorities have the potential to shape or construct the ways citizens are able to participate in certain issues. For example, in a case study on Alberta's Industrial Heartland, Masuda et al. (2008) found that public engagement was used to drive economic and development goals instead of

allowing citizens to speak about concerns they wanted to discuss; community engagement was therefore used to "narrow the scope of governance and exclude alternative perspectives" (p. 377). In addition, governments often initiate citizen involvement in public issues or political matters, where citizens are engaged in formalized processes based on particular issues (Jones & Irwin, 2013). Public engagement may therefore be highly restricted, where government leaders are predominantly in control and citizens can only participate in ways previously decided (Irwin & Wynne, 1996). This top down view of public engagement can shape or construct the ways citizens are able to participate in decision making. Social relationships and power dynamics, for example between municipal employees and community members, play a role in the ways issues are framed and how decisions are made (Blue, 2016). This is noteworthy, as municipal administration or planners are often the ones to initiate engagement in climate adaptation planning (Moser & Pike, 2015; Satterthwaite, 2011), just as the City of Edmonton is initiating adaptation and resilience planning in neighbourhoods. Examining how participation is shaped and incorporated into citywide climate adaptation strategies is thus important.

Since this research also takes a climate justice approach, it is important to understand the ways diverse, marginalized, and disadvantaged groups can be involved in, or are excluded from, decision making processes; a constructionist approach can help to understand how planning processes can be more participatory instead of determined and controlled by government bodies (Karnilowicz et al., 2014). A social construction approach enables an examination of how decisions are made, who is involved (and not involved), what approaches are used (and not used) and how these decisions impact

resilience in a city and for specific groups within a city. Social constructionism is also beneficial alongside climate justice, as it aims to bring to light perspectives and understandings that might be excluded, and how engagement might be narrowed, particularly in relation to formal and technocratic constructions of problems and solutions. A social constructionist approach can help to investigate opportunities for planning processes to embrace the voices of participants and stakeholders instead of be predetermined by a top down planning process. Investigating the dominant perspectives and how to provide room for marginalized views can be done through a social constructionist perspective and is important for a social justice approach.

Context

City of Edmonton, Neighbourhoods of Focus, and History

The City of Edmonton, the provincial capital of Alberta, is situated within the Canadian prairies. With a metropolitan population of 1.3 million people, Edmonton is the 6th largest metropolitan region in the country (Statistics Canada, 2017) and is known as the gateway to northern Alberta's oil sands and the Canadian North (Vander Ploeg, 2008). From 2011 to 2016 the population of the Edmonton-city region grew by 13.9%, the second highest provincial growth rate for a municipality, next to Calgary, and well above the national growth rate of 5.0% (Statistics Canada, 2017). The region is expected to double in the next 30 years (Edmonton Metropolitan Region Board, 2019).

Within the City of Edmonton, I focus this research on two specific areas, namely the Boyle Street and McCauley neighbourhoods, which are east and northeast of Edmonton's current downtown. These neighbourhoods were chosen based on their historical significance in Edmonton's urban development and growth, their cultural,

social, and economic diversity, and their large presence of vulnerable and disadvantaged populations. In this section, I will describe the location, demographics, and a brief history of both neighbourhoods.

The Boyle Street neighbourhood is located directly east of Edmonton's downtown. Its parameters extend from 97 Street (west) to 92 Street (east) and the LRT tracks (north of the 103A Avenue) to the top of the North Saskatchewan River Valley at Grierson Hill and Rowland Road (south), then extends northeast on Jasper Avenue until 84 Street, where 84 street meets the LRT tracks. The McCauley neighbourhood is located directly north of the Boyle Street neighbourhood and is northeast of Edmonton's current downtown. McCauley is bounded by 111 Avenue/Norwood Boulevard (to the north), 101 Street (to the west) and the LRT line, as well as the old Canadian National Railway (CNR) right of way (on the south east sides); see Figure 1 and Figure 2 for images of both neighbourhoods.

Boyle Street is the third most densely populated neighbourhood in Edmonton, with a total population of 6,740 people (City of Edmonton, 2016a). The majority of residents live in apartment or condo buildings (84%) or collective residences/institutions (10%). Most of the occupied dwelling units in Boyle Street are rented (69%), while only 8% are owned (City of Edmonton, 2016a).[1] Furthermore, Boyle Street is a culturally diverse community with many Chinese (12%), Black (9%), and First Nations, Métis, and Inuit (FNMI) residents (12%), as well as other newcomers (University of Alberta Libraries, 2019); over half of Boyle Street's residents are visible minority groups (55%). Many residents of Boyle Street are low income, with 21% earning less than $30,000 a year.

[1] Percentages of non-respondents for each question from the 2016 Municipal Consensus are not included.

McCauley's total population is 4,799 people, with apartment/condos comprising 41%, single detached houses comprising 40%, and institutions and collective residences making up 10% of dwelling units in the McCauley area. Dwelling units in McCauley are mostly rented (61%) with 17% owned (City of Edmonton, 2016b). Ethnic demographics of McCauley are quite diverse with 62% of this neighbourhood consisting of visible minority groups, including Black (6%), Chinese (17%), FNMI (15%), and Southeast Asian (12%) (University of Alberta Libraries, 2019). Many of McCauley's residents have a household income of less than $30,000 a year (23%), and there are many transient and vulnerable populations that either live in or access services in this area. See Table 1 for both Boyle Street and McCauley neighbourhood demographics.

Figure 1

Placement of the Boyle Street and McCauley Neighbourhoods in Edmonton

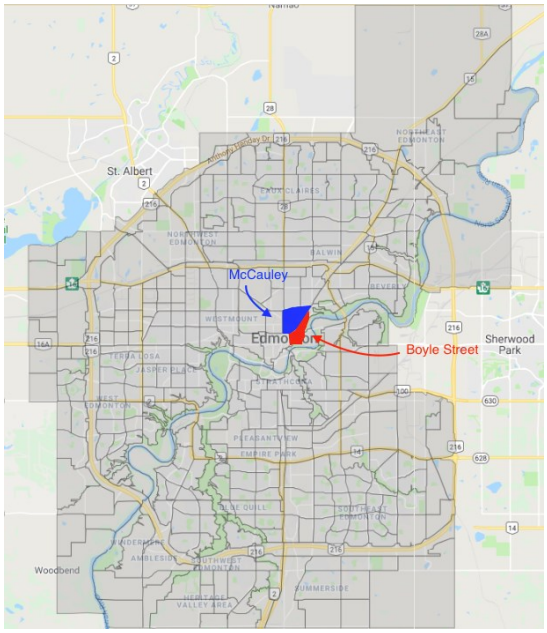

Figure 2

Close Up Image of the Boyle Street and McCauley Neighbourhoods

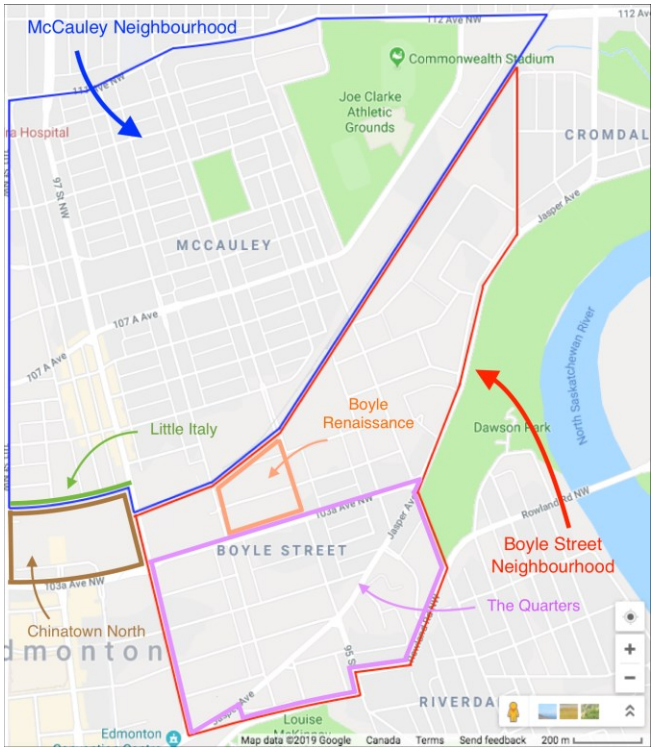

Table 1

Boyle Street and McCauley Neighbourhood Profiles

	Boyle Street	McCauley	City of Edmonton
Total Population	6,740	4,799	899,447
Ethnicity - Total Visible Minority Population including FNMI [a] (2011)	55%	62%	37%
Black	9%	6%	4%
Chinese	12%	17%	6%
FNMI	12%	15%	7%
Southeast Asian	4%	12%	2%
Household Income (2016)			
Less than $30,000	21%	23%	8%
$30,000 to less than $60,000	12%	9%	12%
$60,000 to less than $100,000	8%	6%	13%
More than $100,000	5%	3%	18%
Population by Age Range (2016)			
0 - 14	4%	6%	13%
15 - 29	13%	10%	15%
30 - 44	16%	16%	17%
45 - 64	21%	23%	20%
65 - 85+	15%	12%	11%
Dwelling Unit Structure Type (2016)			
Single Detached House	4%	40%	49%
Apartment/Condo	84%	41%	32%
Institution/Collective Residence	10%	10%	2%

Note. All data was taken from the 2016 Municipal Census (City of Edmonton, 2016a, City of Edmonton, 2016b, City of Edmonton, 2016c) except ethnicity data; the 2019 Census does not have data available for household income and dwelling unit structure type, thus 2016 Census data was used. Ethnicity data was taken from the 2011 National Household Survey (University of Alberta Libraries, 2019). Only most significant visible ethnic minorities groups, and only three dwelling unit structure types (single detached houses, apartments/condos and institution/collective residences) from these neighbourhoods are included. Percentages of non-respondents for each question are not included.

[a] FNMI refers to: First Nations, Métis & Inuit.

As various transient and disadvantaged groups often reside in or come to these neighbourhoods, Boyle Street and McCauley encompass a variety of important social service organizations for people experiencing poverty, homelessness, or marginalization. These services often blend into both areas, thus populations often move from neighbourhood to neighbourhood to access services. As it is important to prepare vulnerable populations for potential climatic impacts and hazards (Phadke et al., 2015), these neighbourhood populations, low income, and large variety of ethnic minorities makes it crucial to increase preparedness and resilience in case of climate impacts, or weather variability.

Currently, McCauley is predominately residential, but includes some commercial spaces, two of which are commercially and culturally significant for both the McCauley and Boyle Street neighbourhoods. These are Little Italy and Chinatown, which straddle both neighbourhoods. Little Italy started as an Italian Village or settlement area and runs along 95 Street. Edmonton's Chinatown consists of two parts: Chinatown South and Chinatown North. Chinatown South is the older part and is often recognized by the Harbin Gate, which characterized the area from 1987, as a symbol of the friendship between Harbin, China and Edmonton, until it was removed in November 2017 for the expansion of the LRT line. Chinatown North blends into 107 Avenue, which runs east to west along the northern boundary of Chinatown and Little Italy (Edmonton Historical Board, 2019). In the McCauley neighbourhood, another notable feature is 96th street, referred to as "Church Street," as it is comprised of different churches representing various faith groups (City of Edmonton, 2014; Edmonton Historical Board, 2019).

The Boyle Street and McCauley neighbourhoods are additionally significant in Edmonton's history. Edmonton was first incorporated as a town in 1892. In 1904, Edmonton became a city and a year later became the capital of Alberta. Edmonton's population and the significance of its downtown core ebbed and flowed throughout its history. Boyle Street began as Edmonton's original downtown while the current downtown was under Hudson Bay's Reserve (HBR) land (Tingley, 2009). Boyle Street, along with the McCauley neighbourhood, became prominent commercial and residential areas. These neighbourhoods were comprised of a mix of businesses, churches, ethnic groups, and institutions, and became districts where newcomers such as Jewish, Chinese, and Ukrainian immigrants first arrived.

After WWII, as people moved out of the area and development increased in the current downtown, Boyle Street and McCauley was largely ignored and these neighbourhoods became seen as troubled areas. Critical social service agencies increased, while many residences and businesses disappeared (Tingley, 2009). These became areas comprised of many surface parking lots, infrastructure inadequate for new development, crime, crowded rooming houses, as well as environmental contamination due to past industrial use (City of Edmonton, 2011). Characteristic of this area additionally included many low-income, unemployed, and homeless citizens, as well as single-family dwellings.

In the 1970s, many civic leaders began to see Edmonton and Calgary as 'big league' cities that could be "centers of commerce and culture, from which ambitious people would no longer have to move to central Canada in order to be 'movers and shakers' on the national stage" (Whitson & Macintosh, 1993, p. 229). This was in part

due to the development of the oil sands in Northern Alberta, characterized as "the second largest oil reserve in the world" (Taft, 2012, p. 8), and a resource-led economic boom. Thus, Edmonton was "reimagined" as a global leader and became an economic and cultural center in Canada.

Collapse of oil prices in the 1980s and a global economic recession was followed by government cutbacks in Alberta, which led to decline of Edmonton's downtown core, along with others cities across North America. Many businesses relocated to the edges of Edmonton, where development was relatively stronger. At this point, crime and homelessness increased in the downtown core, contributing to lower property values. The image of Edmonton as a hub for commerce faded and by the mid-1990s, Edmonton was not high on the national list of vibrant cities or key in the global economy (Scherer, 2016). Since that time, Edmonton has been pursuing ways to reignite growth and development (Scherer, 2016). In the McCauley and Boyle Street neighbourhoods, there have been attempts at renewal. In 1994, a Neighbourhood Improvement Plan was developed for McCauley, which received upgraded parks, playgrounds, and schools, as well as new sidewalks and signage (Edmonton Historical Board, 2019). In 2010 City Council approved a strategy to revitalize the area again, which included façade improvement projects, as well as enhancing areas such as 106 Avenue in Chinatown and the area just north on 95 street in Little Italy to increase development. Similarly in Boyle Street, there have been attempts at revitalization. In 2006, a visioning process with the use of public consultation was conducted to "revitalize" the area (City Planning Branch, 2017). However, there were some major concerns about the visioning and redevelopment of the area, with some saying that certain marginalized groups were excluded from

participating in the visioning of this area, and that this was, in reality, a gentrification project aimed at removing the poor and working class people from this neighbourhood to further develop Edmonton's prospering downtown (Granzow & Dean, 2008). The vision for the area was approved by City Council in September, 2006; this area was then renamed The Quarters Downtown. The Quarters Downtown fits within the broader Boyle Street neighbourhood, extending from 97 Street to 92 Street and 103A Avenue to the top of the North Saskatchewan River Valley (see Figure 2 for image). Another special planning area within this space is the Boyle Renaissance, which is directly adjacent to The Quarters Downtown (between 95 Street and 96 Street, and from 103A Avenue north to the LRT tracks), which aims to incorporate affordable and lower cost market housing with integrated community facilities and services (City of Edmonton, 2011).

More recently, controversy increased again with regards to the building of a large arena and entertainment district beside the Boyle Street neighbourhood and what that might mean for vulnerable people that live or access services in the area. Especially controversial was the use of public funds to build this $606.5 million arena and surrounding district, when it may, in the future, displace the most marginalized groups and services in the area (Pratap, 2016; Scherer, 2016).

Edmonton continues to develop strategies and policies to bring economic and cultural vibrancy back into the city. This includes development of new climate change policies and actions.

Edmonton Climate Change Policies

Edmonton's City Council established an initiative on Energy Transition and Climate Resilience in 2015 to decrease greenhouse gas emissions and prepare Edmonton

for the impacts of climate change. In August 2015, City Council approved the Community Energy Transition Strategy, which aims to reduce GHG emissions in Edmonton by setting 12 general courses of action; actions have been taken to further this policy since its approval.

In 2016, Edmonton administration started the development of a climate adaptation and resilience strategy, which is now called Climate Resilient Edmonton: Adaptation Strategy and Action Plan (ASAP), and was presented to City Council in November, 2018 (City of Edmonton, 2018). This strategy takes a strong science and evidence based approach, and is characterized by three phases: investigation, direction setting, and taking action. The investigation stage included conducting an Edmonton-specific climate risk and vulnerability assessment to understand Edmonton's changing climate over the past 100 years, and what to expect in the future. The scientific assessment and climate change projections were centered on four themes: temperature, precipitation, weather extremes, and ecosystems. Researchers conducting these assessments found that temperature highs that have rarely been experienced in the past will likely be experienced more frequently. These changes have health and safety implications as the population is not used to extreme heat, and are particularly concerning for seniors, children, and homeless individuals. Fewer evenings below freezing during the winter will also increase the likelihood of drought conditions and bug infestations in the summer months. More variability and extremes of hot and cold temperatures can additionally be expected. Edmonton needs to prepare for drier summers, wetter winters, and heavier rainfall events. Edmonton is additionally expecting more frequent and severe weather events; while climate models do not predict specific extreme weather events, wildfires, freezing rain,

high winds, and lightning do appear to be increasing in frequency. Furthermore, a warmer and dryer climate will likely cause ecological change; by the 2050s, Edmonton's climate will likely support a grassland ecosystem instead of the current boreal/aspen parkland ecosystem (City of Edmonton, 2018).

Edmonton's ASAP is currently being implemented, which includes 18 specific "actions" for adapting to climate change. Costs for hiring expert staff and contractors were proposed in the 2019-2022 operating budget, but these costs were categorized as "unfunded," meaning that City Council would have to find or reallocate funds from elsewhere in the budget for these actions to move forward (Parsons, 2018). Actions are still moving forward; however, some of these are difficult to develop and continue due to lack of funding.

Part of the implementation of ASAP aims to make sure citizens and communities are resilient to climate change. One of the City of Edmonton's goals is to work with citizens in their neighbourhoods to build climate resilience plans to help citizens identify their risks and vulnerabilities, increase resilience to climate change, and participate in collective activities to maintain the safety of their neighbourhoods and communities. Community climate resilience planning is outlined in Action 6 in Edmonton's ASAP (City of Edmonton, 2018, p. 29). As mentioned in the preface, I worked as a sustainability scholar for the City of Edmonton from May 2018 to August 2018, assisting with the identification of communities and collaborators for climate resilience planning. While the initial plan was to develop a pilot project to engage a few neighbourhoods in community based climate resilience planning to inform citywide neighbourhood plans, this was postponed due to time and financial restrictions. The City of Edmonton aims to

still develop a pilot to build climate resilience plans in some neighbourhoods and use this process to develop plans for neighbourhoods throughout Edmonton. Clear steps are now being taken for neighbourhood level resilience planning. For example, City of Edmonton staff members developed a neighbourhood level climate adaptation seminar series in November 2019 for neighbourhood organizations. They also put together a reference team, or advisory group, of internal and external specialists to guide the development of community workshops on climate adaptation and resilience with the goal of starting most of this planning at the end of January 2020.

The key drivers of this policy included the City of Edmonton Charter Regulation, which requires the city to have an adaptation plan. A climate adaptation and resilience strategy was also required in order for the City of Edmonton to join the Compact of Mayors, which is a group of hundreds of cities worldwide that pledged to reduce greenhouse gas emissions and adapt to climate change. An adaptation strategy is also mandated through the Federation of Canadian Municipalities (FCM's) Big City Mayors' Caucus, which the City of Edmonton is part of. Additionally, this strategy fulfills adaptation commitments that were stated in the Edmonton Declaration developed during the Change for Climate Global Mayors Summit and endorsed by over 3,000 cities (City of Edmonton, 2018).

Methodology and Methods

In this study I utilized an inductive qualitative case study framework. A case study approach with an embedded, single-case design (Yin, 2014) was utilized to develop an in depth understanding of climate resilience and adaptation planning in Edmonton in relation to two inner city neighbourhoods. An embedded, single-case design involves the

examination of a particular case (the City of Edmonton) with embedded units of analysis (such as city administration/representative perspectives, as well as perspectives of participants living, working, and participating in two neighbourhoods of interest). This design can be beneficial for investigating the complexity of, and multiple factors influencing, a case in its real world context (Yin, 2017). Methods used for this research included semi-structured interviews and focus groups. See Appendices A through F for recruitment scripts, information sheets, and question guides for interviews and focus groups.

Semi-structured Interviews

Interviews were conducted to help understand the perspectives of municipal administration, representatives, and community organizations with regards to resilience, community, and participation. Interviews were also used to understand how the City of Edmonton and organizations could support citizens and communities in climate change preparedness for the Boyle Street and McCauley neighbourhoods.

Participants were recruited using purposeful sampling for information-rich cases (Mayan, 2009); maximum variation sampling was utilized in order to receive a diverse understanding of participant views from a wide variety of demographics and backgrounds within the Boyle Street and McCauley neighbourhoods (Patton, 2002). Snowball sampling was also used to make sure key community members and leaders were identified for interviews (Patton, 2002).

Interviews (n=15) were semi-structured with the use of open-ended questions and general topic areas in order to allow conversations to evolve and adapt (Hoonaard, 2015). Participants included employees and representatives of the City of Edmonton that were

directly involved in developing and implementing the climate change adaptation and resilience strategy, or had experience working within the Boyle Street and McCauley neighbourhoods (*n*=6). Interviews were also conducted with representatives or leaders of nongovernmental organizations (NGOs) that worked with community members of the Boyle Street and McCauley neighbourhoods (*n*=9); some of these participants live in these neighbourhoods alongside working in these neighbourhoods. This was an appropriate sample size, as qualitative research aims to recruit individuals with the most knowledge about particular phenomena. All interviews were conducted in person, were between 30 minutes and 130 minutes and were audio-recorded and transcribed verbatim for data-analysis purposes (Lune & Berg, 2017).

Focus groups

In addition to interviews, focus groups were conducted to gain a broader understanding of what resilience, community, and participation means from the perspectives of community members and those working directly in the area, and how municipalities and organizations can support these neighbourhoods to increase community climate preparedness. Three focus groups were conducted with community members that live, work, or participate in activities in the Boyle Street or McCauley neighbourhoods. As focus groups typically consist of participants with shared experiences (Morgan, 1997), purposeful sampling was conducted in order for each focus group to include people that share common experiences within the neighbourhoods. Two focus groups were conducted with community members that access services or participate in activities at non-profit organizations in the Boyle Street and McCauley neighbourhoods (*n*=11; *n*=7); participants from these focus groups were comprised of

community members that participate in activities in both neighbourhoods. The third focus group (*n*=6) consisted of small business owners and developers with projects in these areas. Focus groups were all approximately 100 minutes in duration and were audio-recorded and transcribed verbatim (Kitzinger, 1995).

Focus groups were an optimal data collection tool for this research, as they are typically used if the interactions between group members are the center of the data generation, as well as the analysis (Kitzinger, 1995; Mayan, 2009). That perspective aligns with this study's social constructionism theoretical framework, which argues that people construct meanings about their worlds through their relations, actions, and interactions with others (Galbin, 2014; Berger & Luckmann, 1996).

Data Analysis

All data (focus groups and interviews) were compared within, as well as across data sets (Patton, 1990). The knowledge and meanings constructed by citizens and city administration regarding community, participation, resilience, and adaptation was compared to search for patterns and similarities, as well as conflicts and disagreements (Eisenhardt & Graebner, 2007). Analysis included the use of qualitative content analysis, which is the data-analytic process of identifying, coding, and categorizing data into patterns (Lune & Berg, 2017; Mayan, 2009). Qualitative content analysis is an appropriate data analysis tool to identify meanings and patterns in interviews and focus groups (Lune & Berg, 2017). In the data analysis of the focus groups, I also looked at the interactions between participants and their process of coming to certain conclusions collaboratively (Kitzinger, 1995).

When starting to analyze the data, I read and reread all of my data including highlighting noteworthy parts and "memoing", which is the process of "writing preliminary analytic notes about the data" (Mayan, 2009, p. 89). I then read my data again to conduct more systematic coding, which consists of identifying persistent "critical links" between the collected data and their explanation of meanings (Charmaz, 2001). Specifically, a code is "a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data" (Saldaña, 2016, p. 4). After coding, I reread all data again, this time grouping highlighted words and codes into a few main categories to ensure meaningful but manageable data (Creswell & Creswell, 2018; Mayan, 2009). Data in each category was then assessed numerous times to make sure each category and all data in each category was suitable. Categories and sub-categories were then fully established, summarized, and examined for internal, as well as external homogeneity. Categories were then grouped together to be presented separately into the two papers presented below (chapter 2 on resilience and chapter 3 on exclusion). It is important to note that qualitative content analysis is an iterative process, thus codes and categories changed throughout the process in order to reflect the data appropriately.

Ethical Considerations

Some of the ethical considerations for this research included informed consent and social group dynamics. Informed consent was obtained from each participant prior to each one on one interview, as well as before each focus group. At the beginning of each focus group and interview, I went through an information sheet and informed consent form for all participants to sign. These forms included an explanation of the research

topic and purpose, as well as the participant's ability to withdraw from the study at anytime; information sheets also included how the data from focus groups and interviews will be used, as well as benefits and risks of participation. Information sheets for interviews explained that these conversations would be kept confidential. Regarding focus groups, I discussed with participants that their participation could not be entirely confidential, as other participants were present and part of the discussion (Kitzinger, 1995); however, I encouraged all participants to keep the comments shared during focus groups to themselves.

As I was working with diverse citizens in their neighbourhoods, it was important to be mindful "of the fears that a research participant has by virtue of his or her precarious personal or social position" which may place various constraints on a person in a social setting because of the "community to which one belongs" (Hoonaard, 2015, p. 58). I aimed to mitigate this by encouraging everyone to be respectful, explaining that everyone's views and opinions are valid, and working to facilitate equal participation from all participants. I additionally provided opportunities for one-on-one member check-ins for participants to talk freely to myself as a researcher if they had concerns (Mayan, 2009). These check-ins were mostly done at the beginning and end of focus groups and throughout the interviews; there were no specific concerns with the process of interviews or focus groups.

Reflections on Social Location

The position and relationship between a researcher, the area of research, and the community being studied can impact the research process and outcomes, thus it is important for me to be cognizant of my background and reflect on my research and

personal perspectives (Berger, 2015). Social location specifically refers to the position a person or group has in society, which is influenced by aspects such as gender, ethnicity, and class (Taylor, 2000). Reflecting on my social location is particularly important for this research that brings an environmental and climate justice approach, as well as a social constructionist lens, which acknowledge that people construct meanings in relation to each other and that people understand the characteristics of problems based on their own background, position in society, and links between collective identities (Taylor, 2000).

I am a University-educated, coloured female Canadian. My cultural background as a visible minority and my family's experiences as newcomers has made me more aware of challenges that people face based on skin color and other social differences. Personally I have faced discrimination and marginalization based on my skin colour, even though I was born and raised in Canada. These experiences and my family's background have strongly influenced the concepts of inclusivity and social justice that I value in my research (Buzzelli, 2008). I recognize that many minority groups feel socially isolated or excluded and may not have the same opportunities as others. I personally feel that my background and experiences have made me more perceptive to some challenges faced by minority groups. However, I recognize that I have been provided with many more privileges than those facing strong marginalization or disadvantage.

In addition, I was raised in a small town – Whitecourt, Alberta – which relies heavily on the oil and gas industry, as well as forestry. I therefore understand some of the complex challenges associated with climate-related issues, economic diversification, and

concerns many people have with provincial and federal policy changes. While I strongly believe in the importance of reducing greenhouse gas emissions and creating awareness, I also recognize the importance of understanding people's situations and needs. I believe my personal experiences of navigating these complex situations in my own communities have helped in climate-related discussions. My understanding of environmental degradation and climate change was deepened during my Bachelor of Arts in Psychology degree from The King's University in Edmonton and I have been passionate about focusing on these issues since then.

I have also volunteered and worked with vulnerable communities in social service agencies for the past nine years to engage with and provide services to community members in need. This has helped me gain insight into working with these groups and how best to engage them in complex issues such as climate change and resilience planning. As an educated female, as well as a visible ethnic minority, I believe that I was able to connect and identify with many of my participants, including those with more education, those working in a municipal setting and those with diverse backgrounds within the vulnerable communities I engaged; all participants appeared to be comfortable sharing their perspectives with me.

Summary and Outline of Following Chapters

This chapter included an overview of key issues and concepts important for this research, theoretical perspectives that guide this research, the methodology and methods used, and the municipal and neighbourhood context to situate the study. Reflections on my social location are included. In the following chapters, I examine how adaptation and resilience are understood in relation to vulnerable inner city neighbourhoods in the City

of Edmonton, and the benefits, challenges, and considerations for collaboration between citizens and municipal administration for climate preparedness. In Chapter 2, Understanding Resilience, I analyze data collected from 15 semi-structured interviews with employees and representatives from the City of Edmonton, as well as individuals associated with community based organizations in the two neighbourhoods of focus. Analysis also includes data from three focus groups conducted with individuals that attend or access services at social service organizations in the area, as well as with small business owners and developers that work in these neighbourhoods. In this chapter, I compare and contrast community members' and city participants' perspectives of resilience and potential opportunities, as well as challenges, of differing perspectives.

In Chapter Three, Citizen Perspectives of Exclusion, I use the same data to investigate community members' perspectives of exclusion in their city and community, as well as from policy development and decision making. In this chapter, I discuss how participants readily connected conversations about climate resilience to processes of urban planning and development in their neighbourhoods. Interviewees expressed feeling excluded from policy development and decision making, as well as from spaces and places within the city. In Chapter 4, Conclusions, I provide a summary and final analysis of this research and it's contributions to the literature.

Chapter Two: Understanding Resilience: A Case Study of Municipal and Community Perspectives on Climate Change Resilience and Adaptation

Municipal governments are playing key roles in the development of climate adaptation and resilience policies and are increasingly incorporating community based planning and participatory approaches into policy development processes. However, confusion and assumptions about the definition of resilience, as well as related goals, makes it difficult for citizens and municipal representatives to collaborate effectively for climate adaptation and resilience planning (Fünfgeld & McEnvoy, 2014; Lama et al, 2017; Matarrita-Cascante et al., 2017). This is a particular concern for vulnerable and disadvantaged populations, as they are not often part of developing climate adaptation and resilience approaches, yet are most at risk of the impacts and hazards of climate change (Mearns & Norton, 2010; Phadke et al., 2015). To date, there has been limited research examining how community and municipal perspectives of resilience compare and contrast, and how this might affect climate resilience planning in more vulnerable and dynamic neighbourhoods (see for example, Adger, 2000; Fünfgeld & McEnvoy, 2014).

This article aims to contribute to this literature using a case study situated in Edmonton, Alberta, Canada. The City of Edmonton has recently developed a climate adaptation and resilience strategy and is in the process of implementing it; one of their goals is to engage neighbourhoods across Edmonton in building neighbourhood climate resilience plans (City of Edmonton, 2018a, p. 29). As vulnerable populations are at the most risk of climatic impacts, in this research I examine how the City of Edmonton's approach to engaging neighbourhoods in climate resilience are aligned with Edmonton initiatives to address other forms of vulnerability (such as poverty and marginalization).

Furthermore, I investigate how some of the most vulnerable and complex neighbourhoods within Edmonton understand resilience and what support might be needed to increase social and climate resilience during the development of a comprehensive climate adaptation strategy.

I focus on two neighbourhoods in close proximity to Edmonton's downtown. These are two of the oldest and most socially, culturally and economically diverse neighbourhoods in Edmonton and are currently facing significant development pressures. In addition, the relationship between the City of Edmonton and these neighbourhoods is strained due to how engagement and redevelopment activities have been conducted in the past and present (Granzow & Dean, 2008). Moreover, many social service agencies operate in this area to address inner city challenges. All of these aspects make for an interesting case study to examine perspectives of resilience in relation to social and climatic challenges.

My interest in this research came from working with the City of Edmonton as a Sustainability Scholar[1] from May to August 2018, assisting in identifying communities and collaborators for climate resilience planning and exploring opportunities, needs, and challenges of a community based adaptation approach in Edmonton. This was conducted during the development of the city's climate adaptation and resilience strategy. During this process, I learned about the ongoing planning and implementation of this citywide strategy, as well as participated in events and meetings on climate resilience planning. This helped me build connections with participants and informed some of the questions I asked during interviews and focus groups.

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[1] The Sustainability Scholars program connects University of Alberta graduate students with organizations and businesses in Edmonton and area to work on applied research projects related to sustainability. For more information visit: https://www.ualberta.ca/sustainability/experiential/sustainability-scholars

The aims of this research are to bring to light the potential challenges of community based approaches to climate resilience planning in vulnerable and complex neighbourhoods in urban settings, as well as identify opportunities for more robust forms of resilience planning at the community level. I will begin by providing an overview of academic scholarship exploring adaptation, resilience, policy, and community based approaches to climate resilience. The next sections will include the context of the City of Edmonton's relevant strategies and inner city neighbourhoods, as well as an overview of methodology. Key findings and discussion will then be addressed, along with concluding comments.

Adaptation, Resilience, and Community Based Approaches

Climate adaptation is defined by the Intergovernmental Panel on Climate Change (IPCC) as "the process of adjustment to actual or expected climate and its effects" (IPCC, 2014, p. 5) with the use of various resources, research, expertise, technologies, and support (Heifetz et al., 2009). Fünfgeld and McEvoy (2014) argue that this definition suggests that adaptation isn't a fixed and concrete concept but requires interpretation, flexibility, and the ability to tailor activities to different contexts. That being said, climate change has predominantly been interpreted as a "scientific construction … a global scale environmental problem caused by the universal physical properties of greenhouse gases" (Demeritt, 2001, p. 307). Organizations and frameworks such as the UNFCCC international climate change framework on adaptation typically take a scientifically, technologically, and environmentally driven approach, thus adaptation policy often prioritizes adaptation measures such as early warning systems and infrastructure upgrades where there are higher levels of certainty in the approaches (Ayers & Dodman, 2010).

Climate adaptation interventions are therefore often "stand-alone" instead of aligned with other agendas to alleviate poverty and address other vulnerabilities through social development policies and practices (Ayers & Dodman, 2010). Hence, a techno-scientific approach responds to climate adaptation in a limited way without considering underlying social drivers of vulnerability, including social and development needs (Ayers & Dodman, 2010; Nightingale et al., 2019).

There is growing recognition that climate adaptation planning needs to include a social dimension (Carter et al., 2015). This involves the importance of bringing in stakeholders to focus on social and developmental issues such as marginalization and poverty. Social development researchers argue that risks from natural disasters and hazards are often linked to social, economic, and political factors, as opposed to just the severity of physical events such as extreme weather events (Ayers & Dodman, 2010; Nightingale et al., 2019; Wisner et al., 2004). Vulnerability to climate change is inseparable from social and community contexts thus shouldn't just take a techno-scientific approach (Wisner et al., 2004). Vulnerability can be defined as the degree to which "geophysical, biological, and socioeconomic systems are susceptible to, or unable to cope with, adverse impacts of climate change" (Alverson & Zommers, 2018, p. xix). Some literature links vulnerability to issues of justice and equity, suggesting that inequity and injustice are forms of vulnerability that can exacerbate how climate change impacts are experienced at a local level (Fünfgeld & McEnvoy, 2014; Lindley et al., 2011).

While scientific risk assessments can generally estimate the levels of climate hazards, developing environmental policies involves normative decisions; scientific risk assessments are still tangled up in norms and values (Shackley & Wynne, 1996; Wynne,

1996). Policy makers make specific choices when deciding how to increase resilience in cities or communities. For example, in relation to planning for recovery from a disaster and aiming to build a resilient city, Vale (2014) argues that assumptions are made about "who counts as 'the city?' (And who decides who counts as 'the city')" (p. 197). It is important to critically investigate who makes decisions about resilience and adaptation within a city and who is excluded; this can bring to light the dominant and subordinate narratives and how political authorities prioritize certain investments over others (Blue, 2016; Vale, 2014). Some scholars demand transparency of the norms and values that influence techno-scientific approaches. This can make space for alternative forms of expertise, including the knowledge, experience, and values of communities. Collaboration with the public on climatic issues can create opportunities for evaluating the boundaries of policy and the unspoken assumptions of resilience and adaptation approaches (Chilvers, & Kearnes, 2015; Wynne, 1996).

A participatory approach recognizes that expertise for adaptation and reducing vulnerability must come from local communities and their knowledge of locally appropriate solutions to climatic hazards and impacts (Ayers & Forsyth, 2009). Citizens often have a wide range of knowledge and expertise, and their diverse perspectives may lead to important questions and solutions that administrative staff or scientists may not think of (Stilgoe et al., 2006; Wynne, 1996). For example, citizens' knowledge of their local environments can help map disaster risks (Satterthwaite, 2011) and reduce exposure and vulnerability to climate change (Anguelovski & Carmin, 2011; Dodman & Mitlin, 2011). The inclusion and participation of civil society in climate adaptation and resilience planning is increasing in recent years, as climate change is recognized as a complex

physical and social phenomenon that is global in scope, rapid in nature, and impacts many interconnected systems (Bulkeley, 2013; Moser & Pike, 2015; Revi et al., 2014). Inclusive decision making is particularly important for addressing inequality and marginalization of climate adaptation and resilience planning (Blue, 2016; Vale, 2014).

In its most basic form, resilience typically describes how to approach and deal with change (Matarrita-Cascante et al., 2017), particularly the ability to "bounce back" and return to equilibrium, as opposed to breaking from stress or pressure (Norris et al., 2008). Initially, emphasis was placed on ecological systems, which emerged from the physical and natural sciences. This approach informed the application of resilience thinking to human systems (Walker & Cooper, 2011), which focuses on resisting disturbances and maintaining system stability (Folke, 2006). This perspective has been criticized for maintaining the status quo (Klein et al., 2003) instead of examining structures and systems and making changes to address social and community development needs (Ayers & Dodman, 2010). Criticism has also been directed towards the focus on managed, technocratic, and engineered solutions, as opposed to preparedness, social learning, building capacity, or enhancing social justice (Fainstein, 2014; Manyena, 2006; McEntire et al., 2002). These criticisms have resulted in the emergence of the concept social resilience (Adger, 2000; Brand & Jax, 2007; Davidson, 2010), which aims to pay attention to "power relations, politics, and culture" (Rival, 2009, p. 296), as well as socio-economic, psychological and ethical components of resilience (Adger, 2000; Cumming et al., 2005).

Community resilience, a subfield of social resilience, has been gaining traction in community development, as well as climate adaptation literature, which refers to the

ability of localized groups (either geographical or social) to respond, cope, and adapt to changes through their joined actions (Berkes & Ross, 2013; Magis, 2010). When communities with shared circumstances combine their experiences and networks to overcome present or future challenges, this can result in strengthened resilience (Gunderson, 2010; Norris et al., 2008). The notion of community resilience is useful to this study, as the City of Edmonton is focusing on the neighbourhood and community scale to address citizens' needs in relation to climate adaptation. Research shows that strong social ties and relationships are essential for increasing resilience (Adger, 2003; Berkes & Ross, 2013), as well as communities' willingness to take responsibility and control of their own development by building strategic responses to enact change (Wilson, 2012). Resources are also crucial, including human, cultural, social, political, and financial resources (Magis, 2010); there is often a limit to what communities can do unless specific information, resources, and finances are available (Fenton et al., 2014, Regmi & Star, 2014, Spires et al., 2014).

Community resilience is being applied to a variety of discourses, including public policy, city planning, and management, as a way to address the unequal responses to changes caused by social, economic, and political processes (Platts-Fowler & Robinson, 2016). Municipal plans and strategies increasingly state the need to create resilient communities and cities not just in response to environmental challenges, but as a way to support vulnerable and marginalized people and alleviate inequality (Platts-Fowler & Robinson, 2016). The diverse needs and challenges of local communities require approaches to policy and planning that are community-centered and context specific (Drolet, 2012; Matarrita-Cascante et al., 2017). That being said, since resilience has been

used to describe biophysical, sociocultural, technical, and economic components (Adger, 2000; Matarrita-Cascante et al., 2017), the term is still often used in conflicting and contradictory ways, making it difficult for stakeholders to identify shared meanings and work together to build resilience (Alexander, 2013; Matarrita-Cascante, 2017).

Community climate resilience aims to focus on the challenges of climate change in relation to existing community and social issues, including urban poverty, housing affordability, and socioeconomic inequality. This approach is based on the premise that climate change will disproportionately affect socioeconomically disadvantaged groups and that capacity to adapt to climatic impacts or hazards is much lower for those already struggling with issues of poverty, housing, and marginalization (Fünfgeld & McEnvoy, 2014). This understanding of community resilience within climate adaptation planning is promising for addressing the needs of diverse communities with high proportions of vulnerable community members. That being said, community resilience and participation does not automatically address inequity and social justice issues unless clear decisions are made to focus on these issues (Blue et al., 2019; Vale, 2014). Friend & Moench (2013) argue for a critical approach to resilience that addresses issues of power and equity.

Communities should have the opportunity to direct community resilience planning to make sure their specific needs and values are addressed (Drolet, 2012; Matarrita-Cascante et al., 2017). Little research has examined citizen, municipal, and social service agency perspectives of resilience, how they compare and contrast, and how differing perspectives and relationships between stakeholders might affect climate resilience planning in more vulnerable or dynamic neighbourhoods (Adger, 2000; Fünfgeld & McEnvoy, 2014). To address this gap in the literature, I examine municipal

perspectives of resilience as well as those of citizens within vulnerable and dynamic neighbourhoods in the City of Edmonton, how perspectives compare and contrast, and how this may affect climate resilience planning in this setting.

Context

The City of Edmonton is the capital of Alberta and is also the northern most and the sixth largest metropolis (pop. 1.3 million) in Canada (Statistics Canada, 2017). The Edmonton Metropolitan Region is a gateway to the oil sands, other industrial development in northern Alberta, and to the Canadian North (Vander Ploeg, 2008). Alberta is known for its heavy reliance on the oil and gas industry, which is linked to the province having the highest greenhouse gas (GHG) emissions per capita in Canada (Environment and Climate Change Canada, 2018). It also has the largest percentage of people in Canada that don't believe the planet is warming due to human activity (Mildenberger et al., 2016). The Alberta Climate Dialogue (ABCD), an initiative that ran from 2010 to 2016, explored how citizens can become more informed about climate change and engaged in decision-making. In Edmonton and Calgary, opportunities were developed for citizens to become more aware of climate change and energy efficiency, as well as participate publically in policy decisions (Hanson & Kahane, 2018). Edmonton is continuing to educate and prepare citizens for potential climatic impacts, as well as develop actions towards decreasing greenhouse gas emissions.

Particularly related to this research, in November 2018 the City of Edmonton completed its climate adaptation and resilience strategy, called Climate Resilience Edmonton: Adaptation Strategy and Action Plan (City of Edmonton, 2018a) and is currently in the process of implementing it. Part of the implementation aims to include

engaging neighbourhoods across the city in building community climate resilience plans and help them prepare for potential climatic hazards, emergencies, and disasters (City of Edmonton, 2018a, p. 29). The city is planning to pilot this in a few neighbourhoods and then encourage and support other neighbourhoods to build their own community climate resilience plans. This presents an opportunity to examine meanings of resilience utilized in the city's climate resilience policy and in light of planned engagement with citizens when developing community resilience plans.

The City of Edmonton is also in the process of reviewing and improving public engagement and reducing vulnerability in the city. In 2014 the Council Initiative on Public Engagement was initiated in response to the general dissatisfaction with the way the city was conducting engagement. The public was especially critical that public engagement was often used to simply "inform" citizens about what the city was doing instead of asking citizen's opinions and incorporating public feedback. The Council Initiative on Public Engagement developed a roadmap and new framework for public engagement, which was finalized in April 2017 and has the potential for generating innovative approaches to involve citizens in climate resilience planning (City of Edmonton, 2017). However, concerns still exist that the city's engagement initiatives will not move beyond the status quo (Segin, 2018).

Another relevant initiative within the city is End Poverty Edmonton (EPE), which has a long-term goal of eliminating poverty within a generation and a short-term goal of lifting 10,000 people out of poverty in 5 years (End Poverty Edmonton, 2015). In 2017, EPE became a Community Development Corporation with partners all across Edmonton taking the lead on different actions to address poverty. While this work is promising,

much of their focus since being established is still on developing an adequate governance structure, which has slowed progress on addressing poverty. In 2017, Edmonton also established an Inner City Wellness Plan called RECOVER (City of Edmonton, 2019), which focused on five inner city neighbourhoods. This plan recognized that issues of homelessness and poverty are concentrated in the inner city and that tensions exist between community groups within these neighbourhoods (including neighbourhood residents, businesses, social service agencies, and transient populations). RECOVER aimed to improve urban wellness for all neighbourhood residents and participants through collaborative community building. While innovative methods were used, mobilization towards RECOVER's goals diminished without sufficient funding or follow-up. Initiatives such as End Poverty Edmonton and RECOVER discuss resilience in relation to ending poverty, marginalization, and discrimination; however, the concept of resilience is used differently in relation to climate adaptation, which takes a more technical and scientific approach (discussed below).

Understanding climate resilience in relation to the complexity of inner city neighbourhoods can be useful in developing resilience plans for the most marginalized and diverse neighbourhoods. However, many of these efforts are isolated from climate resilience and adaptation planning even though research shows that a community climate resilience approach provides an opportunity for climate change adaptation to address social and community challenges together for combined social and climate resilience (Ayers & Dodman, 2010; Fünfgeld & McEnvoy, 2014).

The two neighbourhoods I focus on in this research are Boyle Street and McCauley, which are adjacent to each other and are respectively situated east and

northeast of Edmonton's downtown. Boyle Street and McCauley are some of the oldest neighbourhoods in the City of Edmonton and are significant parts of Edmonton's urban history (Tingley, 2009). I selected these neighbourhoods for three main reasons. First, these neighbourhoods are socially, culturally, and economically diverse. Approximately 55% of Boyle Street and 62% of McCauley residents are visible minority groups (University of Alberta Libraries, 2019). This includes Chinese (12%; 17%), Black (9%; 6%), and First Nations, Métis, and Inuit (FNMI) residents (12%; 15%) (University of Alberta Libraries, 2019). Many residents are low income, with 21% of community members in Boyle Street, and 23% of community members in McCauley earning less than $30,000 a year (City of Edmonton, 2016a; City of Edmonton, 2016b). There are also commercial and culturally significant spaces within these neighbourhoods that draw in cultural groups and shopping at many local businesses. This includes Chinatown and Little Italy that straddle both of these neighbourhoods. Second, these neighbourhoods have become known as degraded and troubled areas, which include infrastructure inadequate for new development, crowded rooming houses, surface parking lots, crime, high rates of poverty, social issues, and environmental contamination due to past industrial use (Edmonton Historical Board, 2019). Boyle Street and McCauley also host many important social service organizations for people experiencing poverty, homelessness, and marginalization, thus various transient and disadvantaged groups reside in or come to these communities. Third, there have been many redevelopment pressures on these neighbourhoods due to their proximity to the downtown core and the views of the North Saskatchewan River. New builds and improved neighbourhood planning have been encouraged for revitalization purposes (City Planning Branch, 2017).

While public consultation was conducted as part of visioning processes of these neighbourhoods (City Planning Branch, 2017), there were major concerns about the engagement process and proposed redevelopment of the area. Many people argued that certain marginalized groups were excluded from participating in the visioning of these areas, and that these "gentrification" projects will force out the poor and working classes in order to further develop Edmonton's prospering downtown (Granzow & Dean, 2008). More recently, there has also been controversy over the building of an arena and entertainment district beside the Boyle Street neighbourhood and the impacts on vulnerable people that live or access services in the area. Specifically, $606.5 million of public funds were used to build an arena and surrounding district that may displace the most marginalized groups and services in the area (Scherer, 2016). Consequently, redevelopment pressures in these neighbourhoods have increased tensions between community groups and the municipality. All these aspects make for an interesting case study for examining the range of perspectives on resilience in relation to Edmonton's initiatives to address climate change, vulnerability, poverty, and public engagement.

Methodology and Methods

I used a qualitative case study with an embedded, single-case design (Yin, 2017) to develop an in depth understanding of the City of Edmonton's approach to climate adaptation and resilience, and as well as citizens' perspectives on this topic from two inner city neighbourhoods. An embedded, single-case study can be useful for examining the complexity of and multiple factors influencing a case in its real world context (Yin, 2017). While case studies do not allow for particular generalizations to be formed for a larger population, they can help to inform the relationship between particular concepts,

events, or perspectives (Yin, 2014). This case study examines municipal and neighbourhood complexity in relation to resilience planning, and can help inform the way municipalities can develop more robust forms of resilience planning at the community level. Methods employed included focus groups and semi-structured interviews.

Three focus groups were conducted with community members residing, working, and/or participating in activities in these neighbourhoods or surrounding areas. Focus groups typically consist of participants with shared experiences (Morgan, 1997), thus these were comprised of people with commonalities in the neighbourhoods. One focus group (n=6) consisted of small business owners and developers working in these neighbourhoods; some of these participants live in the neighbourhoods as well. The other two focus groups were conducted in non-profit organizations situated in the Boyle and McCauley neighbourhoods. Participants of these two focus groups (n=11; n=7) were individuals attending or accessing services there; many of these participants are low income and live in this area or are not housed, but identify with these neighbourhoods.

Semi-structured interviews (Creswell & Creswell, 2018) were conducted with employees and representatives of the City of Edmonton (n=6) that were directly involved in developing and implementing the climate adaptation and resilience strategy, or have experience working with citizens in the Boyle Street and McCauley neighbourhoods. Interviews were also conducted with representatives from some of the community based organizations in the area (n= 9).

I used qualitative content analysis to analyze the data in order to identify meanings, patterns, assumptions, and themes (Lune & Berg, 2017). Analysis included the process of identifying, coding, and categorizing data into patterns (Lune & Berg 2017).

Since data analysis is an iterative process, codes, categories, and themes changed throughout the process to appropriately reflect the data collected (Mayan 2009).

In the sections below I will use the term *municipal perspectives* or *municipal participants* to refer to city employees and representatives; the term *community perspectives* or *community participants* will be used to refer to those living, working, or participating in activities in the Boyle Street or McCauley areas. The term *participants* will be used to refer to everyone that participated in this study either in focus groups, or interviews. *Community members* will be used to refer to people that live, work, or participate in activities in these two neighbourhoods, including those not directly involved in this study.

Findings and Discussion

In this research I asked participants similar questions using similar language; however, city and community participants interpreted resilience quite differently. In the section below I discuss municipal perspectives, the development of the climate adaptation strategy, its timeline, and how this affected the opportunity for preliminary engagement in climate resilience planning. In the following section, I discuss community perspectives and relate these findings to the literature.

Climate Adaptation Strategy and City Perspectives on Resilience

The City of Edmonton's staff, as well as the climate resilience strategy document, described scientific and technical perspectives, as well as public participation, as necessary for a robust climate resilience policy and action plan. However, a techno-scientific approach was emphasized more strongly, with less emphasis on public engagement and participation. The strategy document specifically states using a "science

and evidence based approach" (City of Edmonton, 2018a, p. 9), and a large part of developing the strategy included vulnerability and risk assessments with the use of climate science projections of changing temperatures, precipitation, weather extremes, and ecosystems in the next 80 years. There was also a strong focus on technical and infrastructure fixes to address climate change. It is unclear why this techno-scientific approach was taken; however, literature suggests that this is often a default for environmental policy making (Blue, 2016; Nightingale et al., 2019). In addition, the Edmonton Declaration, which resulted from the IPCC Cities and Climate Change Science Conference in March 2018, requested the global scientific community to advance its efforts in supporting evidence-based climate policies and action in cities; the City of Edmonton's climate adaptation and resilience strategy, in part, aimed to align with this declaration (City of Edmonton, 2018a).

Public engagement was discussed in the climate adaptation strategy document as important for citizen perspectives to be incorporated into adaptation and resilience planning, but this seemed to be a lower priority in the process that took place. When public engagement was conducted in relation to the strategy, it was often used to "raise awareness among the public" (City of Edmonton, 2018, Message from the City of Edmonton's environmental advisory committee, para. 3), and "inform citizen's about the strategy's development" (City of Edmonton, 2018a, p. 14). This approach was used despite the City of Edmonton previously being critiqued by the public for using engagement only to inform citizens. In fact, informing is often considered the lowest form of engagement within the field of engagement; for example the International Association for Public Participation (IAP2) has developed a spectrum of engagement,

which includes informing as the lowest level, while consulting, involving, collaboration, and empowerment represent consecutively higher levels of engagement (IAP2, 2014). Many Edmonton citizens have been frustrated with the city's use of engagement to just inform the public, the lack of transparency in engagement processes, and for not incorporating citizen perspectives into decisions (Segin, 2018). Engagement was also used to "further define a vision for a climate resilient Edmonton" (City of Edmonton, 2018, p. 10). Although citizens were able to help develop a vision for Edmonton, this is a limited use of citizen input (Ayers & Dodman, 2010), as citizens were only able to participate in a narrow way predetermined by city administration, instead of having more opportunity to participate in developing the strategy itself.

The City of Edmonton additionally aims to work with citizens to build climate resilience plans in their neighbourhoods (City of Edmonton, 2018, p. 29). Initially, administration was aiming to pilot community climate resilience planning in three to five different neighbourhoods, in order to test the process and gather input before finalizing the municipal climate adaptation and resilience strategy. This also had the potential for developing a guide for other neighbourhoods to build their own climate resilience plans to address community concerns, perspectives, and values. However, the strategy timeline became compressed due to the vulnerability and risk assessment taking six months longer than intended and City Council debating the budget for a significant amount of time in December, 2018. This meant that administration had to present the strategy to City Council in November instead of December, and thus the strategy had to be complete by September to meet the internal deadline. This resulted in there being less time to engage the public; thus, the pilot for building neighbourhood climate resilience plans in a few

neighbourhoods was put off until after the strategy was presented to City Council. The City of Edmonton still intends to develop a pilot project and use this as a template for neighbourhoods across Edmonton; however, it has been a year since the strategy was finalized and the pilot has yet to be conducted; the new goal is to start most of this planning at the end of January 2020. This type of situation is also described in the literature, where public engagement or addressing community concerns is often stifled due to short timelines when developing strategies and policies (Yang & Callahan, 2007).

Due to issues such as those described above, adaptation policy often prioritizes measures that are scientifically and technologically driven, such as infrastructure upgrades or early warning upgrades, which are associated with higher levels of certainty to increase resilience or capacity to adapt (Ayers & Dodman, 2010). As often noted in the literature, the value of an evidence-based approach frequently has to do with legitimacy and authority, not just in the evidence itself. Hilgartner (2000) argues that scientific advice holds a sort of cultural authority that is often assumed as unproblematic, decontextualized, and a firm reality, instead of problematized with many decisions and choices that go into developing a scientific planning tool (See also Irwin & Wynne, 1996; Pielke Jr., 2007). When a strictly techno-scientific approach to climate adaptation is used, adaptation frameworks respond to climate adaptation in a very narrow way, without considering underlying social drivers of vulnerability (Ayers & Dodman, 2010), or how economic inequality and social injustice can amplify climate impacts and hazards experienced at the community level (Fünfgeld & McEnvoy, 2014).

Even when city employees and representatives discussed resilience and adaptation for more vulnerable and diverse neighbourhoods, narrow techno-scientific responses were mostly emphasized. For example, when I asked municipal participants how the climate adaptation and resilience strategy could help to increase the resilience of vulnerable neighbourhoods such as Boyle Street and McCauley, one interviewee stated that the city was first trying to understand the main climate risks (temperature, precipitation, weather extremes, and ecosystems) in relation to each Edmonton neighbourhood:

> What we're working on right now [is] … understanding the four big climate change risks [in] each neighbourhood. So [we] … already mapped … neighbourhoods for flooding. Okay. Well we're in the process of doing that now from a heat perspective. So who currently has urban heat island issues? So that we can help identify … where interventions are needed, like priority interventions. So we're looking at it from heat, we're looking at it from an extreme weather perspective and also from a shifting ecosystem perspective. (Municipal Staff Member, INT 2)

This interviewee felt that climate resilience at a neighbourhood level should address the scientific projections of each area. They did not discuss other vulnerabilities that may be present in these diverse neighbourhoods, such as social or demographic marginalization that can exacerbate climate hazards (Ayers & Dodman, 2010; Fünfgeld & McEnvoy, 2014).

Another city interviewee discussed the importance of designing neighbourhoods using a technical and scientific planning lens for climate resilience:

> Every new home and every new neighbourhood needs to be built with intensive storm water management in home design, in neighbourhood design, road design, park design … how we rebuilt cities is going to [include] … a bunch of science … engineering science, it's soil science … in terms of how people want to live. (Municipal Staff Member, INT 4)

This participant valued the importance of scientific and technical approaches to climate resilience at both community and household levels. Both of these city employees emphasized the importance of a scientific lens for climate resilience planning even at the community level, without talking about potential complications when working in vulnerable communities. One respondent described their reason for using a techno-scientific lens, which involved wanting the municipality and its strategy to remain credible by having evaluative criteria based on expert reviewed literature.

A scientific lens can be useful due to the level of certainty it can provide for adapting a system (Ayers & Dodman, 2010); however, this also becomes detrimental to vulnerable populations that may need more time and resources even if this process is less certain. City employees and representatives did discuss the importance of focusing on vulnerable characteristics of neighbourhoods, such as socioeconomic characteristics to make sure all neighbourhoods are resilient, but there was less emphasis on this perspective. When city employees and representatives discussed neighbourhood level resilience for vulnerable or low-income neighbourhoods, there was less certainty about how to address this, and was discussed as something to consider after preparing for infrastructure upgrades and technical climate risk assessments. This is similarly seen in the literature where a major focus of climate adaptation policies is still on climate

projections, vulnerability assessments, and infrastructure upgrades, even though public engagement is deemed important for complex and uncertain issues such as climate adaptation (Moser & Pike, 2015; Revi et al., 2014). In a global assessment of municipal climate adaptation plans, Araos et al. (2016) found that less than half of municipal governments reported engaging with stakeholders and citizens. Shi et al. (2016) additionally found that only a small proportion of municipalities engaged communities, neighbourhoods, or social advocacy groups in climate adaptation planning. In cases where cities did involve citizens, it was typically during the development of vulnerability assessments as opposed to the designing or framing of adaptation strategies (Shi et al., 2016). Araos et al. (2016) state that due to the lack of citizen engagement, the needs of the most vulnerable and disadvantaged groups seem inadequately incorporated into climate adaptation plans. The City of Edmonton similarly does not seem to be considering many of the values, knowledge, and concerns of the most vulnerable communities for climate resilience planning, and are instead focusing mostly on a techno-scientific policy approach.

Community Perspectives on Resilience

Community participants talked about resilience in relation to the struggles that community members face daily. This includes the challenges of navigating government systems, not feeling valued, having their community spaces moved or torn down due to redevelopment projects, and lacking the resource needed to build stronger communities. Participants felt that resilience was a constant struggle to maintain, which often lead to resistance to redevelopment, “taking back” control, or advocating for their communities. These will be discussed below. An approach to climate resilience should therefore

recognize the everyday challenges and marginalization faced by community members, and work to address these issues alongside climate resilience.

Many community participants talked about resilience in relation to the struggles of navigating systems and systemic barriers that pose challenges to the most vulnerable and marginalized groups. Often government systems are not set up in a way that meets community members' needs or that community members are comfortable with. Some participants described experiences they've had with authorities and institutions, such as the police, schools, hospitals, and the justice system, as "traumatic". One participant who regularly visits a social service agency in the area said: "you're not going to get no justice from the court to do it, sometimes you have to go do something else. I'm sorry but that's how the system is" (Social Service Agency Participant, FG1, Respondent 2). Social service agency representatives explained that their role was often to help community members build resilience by increasing their capacity to navigate these complex systems and systemic barriers on their own. A social service agency representative stated:

> [The hope is for community members to] deal with the barriers that people experience in systems or in their own lives … [and] have the tools and skills to navigate the human systems that are out there that create challenges for people. (Social Service Agency Provider, INT 14)

Another social service agency worker similarly said that "[resilience is] really about building agency and capacity to overcome [their] own challenges in a world where the systems aren't necessarily set up in a way that our [people] can access them" (Social Service Agency Provider, INT 11). In this sense, resilience meant building capacity for vulnerable populations to navigate government systems and address systemic barriers.

Resilience was also discussed in terms of feeling welcome in a community, feeling passionate about a neighbourhood or group, building connections and having opportunities to participate. However, these concepts of resilience were often contrasted with some of the challenges that participants face in these neighbourhoods, especially in relation to redevelopment. One main challenge participants talked about was that municipal decision makers and developers did not always value the people and spaces that were in these neighbourhoods. Some participants felt that the city often promises to uphold a shared community vision by creating more open green spaces, parks, or social housing, but approves redevelopment that undermines those plans, which sometimes leads to tearing down community spaces or displacing people. This has led to participants at times feeling "betrayed" by the city and wanting to invest in their community but feeling like they are not able to. In light of the challenges, one participant stated:

> You want to be able to have the feeling like you get to invest in your community and that it will matter. And for me, as a young person … I'm looking for that. I want to be able to live in a community that I can give to and receive from for many years. And in a community like this that's kind of up in the air. It doesn't feel very stable. (Small Business Owner and Community Resident, FG3, Respondent 6)

This participant felt that promises from the city were not always kept and that participation from community members was not always able to facilitate positive change in the community for the community.

Many participants expressed the opinion that municipal administration and developers do not appreciate the community members that are currently in the

neighbourhoods, and instead are developing spaces for future residents. For community interviewees, resilience meant focusing on building a sense of community that is inclusive and welcoming for those currently in the neighbourhoods. One participant mentioned: “[sometimes] it’s like we don’t exist … [so we want] to say hey we’re here. And we want to grow community for the people that are here. Not just people that are going to buy condos in 20 years” (CBO Representative and Community Resident, INT 10). Another participant similarly stated:

> Finding a way to make sure all of those people are living a happy and healthy life in an inclusive way is what is going to make this difference. That’s the key … The people in this neighbourhood, the game changers, have an opportunity to do something really incredible, if we work with what exists here. (Small Business Owner, FG3, Respondent 4)

Both participants discussed the importance of working with the spaces and people that are here now, instead of focusing on redeveloping the space for others in the future. Because of this, resilience meant pushing back, “resisting”, or “taking back” ownership of spaces. For example, during one of the focus groups when participants were talking about the city tearing down buildings that community members felt were important to the area, one participant stated: “the fact that this neighbourhood is still here and there's any buildings standing is, to me, resilience. Because I think there’s been as much effort made for them not to be here as to be here” (Small Business Developer, FG3, Respondent 1). Participants felt that resilience meant resisting the tearing down of spaces that participants valued. Some community groups felt that challenging large-scale growth and

development helps to foster community belonging and a sense of ownership of place, which increases resilience.

Schlosberg et al. (2017) similarly found their participants discussed resilience in relation to their daily lives and struggles more than was found in local governments' adaptation strategy and policy documents. This created a disconnection between communities' concerns and values and what was provided through local government policy. Duff (2017) additionally argues for researchers and policy makers to consider the inclusion of individuals in urban spaces and decision making in relation to their everyday lived experiences. My findings, as well as those in the literature, point to the value of participatory and collaborative decision-making. Collaborative techniques should incorporate the everyday experiences and realities of vulnerable groups, as well as minority and neglected perspectives to effectively address the needs of citizens (Abdel-Monem et al., 2010; Carolan, 2006). Good public engagement should address all citizens' understandings, experiences, and needs; this is often missed in top-down processes that don't facilitate the level of detail of incorporating urban experience into engagement for policies or strategies (Healey, 1997; Maginn, 2016; Morello-Frosch et al., 2011).

It should be noted that literature on community and climate resilience is often discussed within the context of considerable change and large system disruption, as opposed to small everyday changes that communities are constantly undergoing (Matarrita-Cascante et al., 2017; Zautra et al., 2008). While it is important to fit within conceptual frameworks of resilience in the literature, it is interesting that community members from these neighbourhoods talked about resilience based on their daily lives.

Understanding different perspectives of resilience can be beneficial for effective resilience planning that align with diverse citizen's concerns, needs, and values.

Another finding from this research involved the importance of resources for improving the quality of life and increasing engagement and resilience of vulnerable community members. Community members don't often feel like there are enough resources or specific considerations for them to be involved in community activities to increase resilience. While there are challenges with providing more resources to specific neighbourhoods when there are neighbourhoods throughout a city, some participants felt that these areas were suffering due to lack of resources. One participant gave a specific example by tying a lack of resilience to under resourcing as well as barriers to resilience:

> [Resilience means] improv[ing] the quality of their lives. And improv[ing] the economic viability of their lives … In order to actually reach them … there are about, I would say three times as many factors as in a regular neighbourhood. If we're going to spend money we can't spend it on this extremely expensive program that's used by fewer people. Right. Because we're trying to serve a whole city … People keep wanting [these neighbourhoods] to fix themselves but they keep under resourcing and then saying see that proves that you're a bunch of dysfunctional so and so's who can't fix themselves … I understand completely how under resourcing destroys community initiatives … If you look at what the barriers are in [these neighbourhoods], they aren't just the barriers of ignorance, as they are maybe in the general population, or indifference. They're also the barriers of communication, the barriers of community building, the barriers of

> empowering an individual. (CBO Representative and Community Resident, INT 12)

Interviewees felt that more resources are needed to increase resilience and remove barriers within these neighbourhoods. This is also discussed in the literature, where adequate time and resources are needed to effectively address climate resilience in diverse and vulnerable communities (Phadke et al., 2015). Often there is a limit to what communities can achieve without specific information, resources and finances for activities to increase resilience (Fenton et al. 2014; Regmi & Star, 2014; Spires et al. 2014). The quotation above also discusses the importance of examining other barriers to participation. Neighbourhoods such as these are complex, with diverse needs and concerns that must be addressed alongside, or before focusing on climate resilience.

The above interviewee also stated: "you have to start way further back in the community building machine," as you can't jump into issues of climate change and increase resilience to climate impacts, without addressing other challenges within these neighbourhoods (CBO Representative and Community Resident, INT 12). This demonstrates the importance of developing a climate resilience approach that factors in neighbourhood complexity. In order to effectively address climate change resilience planning in neighbourhoods such as these, community challenges must be addressed alongside climate change in order to effectively increase resilience in these neighbourhoods holistically. Socioeconomic resilience must be incorporated into climate resilience planning, as they cannot be separated (Ayers & Dodman, 2010; Wisner et al., 2004). In this sense, a context-based approach to climate resilience planning should be used, and policy approaches should be flexible to address the values, needs, and concerns

of particular communities beyond addressing climate change alone (Adhikari & Taylor, 2012; Matarrita-Cascante et al., 2017).

The City of Edmonton's approach to community climate resilience planning does not include examining the everyday experiences of resilience (or lack of resilience) in particular neighbourhoods and how to incorporate building social resilience alongside climate resilience. Such conflicting meanings of resilience and divergent aims of resilience planning could pose challenges when city employees aim to collaborate with community members in these neighbourhoods to increase resilience (Allen, 2003). Moreover, the city's approach narrows policy options and makes their policy potentially irrelevant, or even damaging to more vulnerable and complex communities that may need more support or resources, and more of a focus on a combination of strengthening social and climate resilience together (Schlosberg et al., 2017).

Conclusion

A qualitative case study was carried out in the City of Edmonton, Alberta during the development and implementation of a climate adaptation and resilience strategy. One of the city's strategy goals is to engage neighbourhoods across Edmonton in building community climate resilience plans (City of Edmonton, 2018a, p. 29). The purpose of this research was to examine how the City of Edmonton's approach to engaging neighbourhoods in climate resilience can be appropriate for vulnerable and marginalized communities, and how community members of some of the most vulnerable and complex neighbourhoods within Edmonton understand resilience and what support might be needed to increase resilience. I focused on two neighbourhoods in close proximity to Edmonton's downtown that are socially, culturally, and economically diverse, facing

significant development pressures, and where many vulnerable and marginalized community members reside.

This research found that a techno-scientific approach was emphasized by the City of Edmonton's climate adaptation and resilience strategy, its development process, as well as during interviews with city employees and representatives. In comparison, community participants focused more on social resilience as important for climate resilience. In particular, community participants felt that resilience meant being able to navigate systemic barriers and government systems that pose challenges to the most vulnerable and marginalized community members. Resilience was also discussed in light of redevelopment; resilience meant building a "sense of community" and caring for what is in these neighbourhoods instead of trying to change and redevelop them. An approach to climate resilience planning should therefore recognize the marginalization and everyday challenges community members face, the need for more resources for community building activities, and an opportunity to increase social and climate resilience together.

This research brings to light three major considerations. First, if climate change is framed strictly as a science-based public issue, this can limit the ways the public can engage in an issue and shield institutions from scrutiny (Blue, 2016; Wynne, 1996). A strictly techno-scientific approach initiated by government bodies may cause a fundamental oversight in the way policy approaches and opportunities for engagement are framed and limited, as well as where time and money are invested. Such a techno-scientific approach can narrow the concept of resilience to exclude social and community challenges of systemic barriers (Ayers & Dodman, 2010). The City of

Edmonton is aiming to use a community based approach to climate resilience; however, public participation and a community based approach does not automatically address inequity and social justice issues unless clear decisions are made to focus on these issues (Blue et al., 2019; Vale, 2014). MacKinnon and Derickson (2012) argue that government bodies, expert knowledge, and those in power too often define resilience without considering other perspectives. Such an approach runs the risk of excluding the most vulnerable groups from tailoring climate resilience planning to address their specific concerns (Taylor, 2014). As the city uses specific definitions of resilience and adaptation (City of Edmonton, 2018b), and is using a "science and evidence based approach" for climate adaptation and resilience planning (City of Edmonton, 2018a, p. 9) this limits opportunities for flexibility and innovative approaches to address varying understandings of resilience. It is important to critically investigate who has the power in policy making, who is able to participate in resilience planning, and what issues are included (Vale, 2014).

Second, this research demonstrates the importance of considering peoples' daily struggles and the complexity of their communities to strengthen resilience. Community based approaches to climate adaptation and resilience planning should not be conducted in separation from daily challenges and struggles that diverse and vulnerable communities face. Without investigating and understanding people's day-to-day experiences, local government plans might not adequately address community challenges, concerns, and values (Schlosberg et al., 2017). More citizen engagement is encouraged to understand community complexity and context-specific values, needs, and concerns, with the goal of addressing these for more effective resilience.

Third, this research brings to light the importance of a combined social and climate resilience policy approach to bring diverse and neglected perspectives to the forefront to increase resilience of the most vulnerable citizens. As economic inequity and social injustice will amplify how climate impacts are experienced at the community level (Fünfgeld & McEnvoy, 2014), attention needs to be paid to social and community development alongside techno-scientific climate adaptation approaches (Ayers & Dodman, 2010). Consideration is being paid to this integration in developing countries (Ayers & Dodman, 2010; Revi et al., 2014); however, vulnerable groups are still present in developed countries and are at risk of amplified climate impacts (Moser & Ekstrom, 2010; Steinberg & Shields, 2008). Local governments have a responsibility to make sure their most vulnerable citizens are able to adapt and be resilient to climate change (Vale, 2014), which will likely require more resources, time, skills, or government help (Phadke et al., 2015; Steinberg & Shields, 2008). While the City of Edmonton has initiatives that aim to address complex issues, such as poverty and community cohesion, these often operate in isolation from each other instead of combining efforts to address social and climate resilience together so as to best assist the most vulnerable communities. Integration of social and climate-related urban initiatives can be a useful way to address community and social challenges alongside climate resilience planning. Fünfgeld & McEnvoy (2014), for example, argue that:

> [a] community resilience frame provides an opportunity for policy makers to refocus the climate change debate and policy on the persistent social problems of our time [such as] economic inequality, social injustice, and a lack of community cohesion … The community resilience frame implicitly seems to state that climate change

> provides both a potential threat to the viability of communities as well as an opportunity for improving the way communities function through socially and economically focused adaptation. (p. 613)

Climate resilience planning at the community and neighbourhood level provides an opportunity to strengthen communities and address context-specific challenges.

This research demonstrates the diversity of meanings for resilience; conflict can arise if these differences remain unaddressed when building community climate resilience plans at the neighbourhood level (Fünfgeld & McEnvoy, 2014). This study also underlines the importance of municipalities listening to and understanding community members' daily concerns, experiences, and challenges. In particular, local governments need to acknowledge the different values, resources, and needs of diverse and vulnerable communities with respect to resilience. Municipalities should explore innovative ways to combine social and community development efforts with climate resilience planning to address climatic impacts alongside social and community challenges.

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Chapter Three: Citizen Perspectives of Exclusion in Relation to Urban Engagement and Climate Resilience Planning

Municipal governments are increasingly developing climate resilience policies, with the use of technocratic and top down approaches consisting of infrastructure upgrades and biophysical changes (Blue, 2016; Nightingale et al., 2019). There is growing criticism that this approach alone does not adequately support the most vulnerable populations, and provides little opportunity for citizens to voice their specific values, needs, and concerns to increase resilience to climate change. Researchers are beginning to see the value in participatory and collaborative climate change approaches to adequately increase citizen resilience (Archer et al., 2014; Reckien et al., 2018). Urban climate justice researchers additionally argue that cities have a role in making sure their most vulnerable citizens are able to adapt and be resilient to climate change, while also providing specific opportunities for these groups to be included in decision making (Phadke et al., 2015; Vale, 2014). That being said, little research focuses on investigating citizen perspectives of resilience and urban engagement to identify ways municipalities can effectively engage vulnerable communities in climate resilience planning (Adger, 2000; Fünfgeld & McEnvoy, 2014).

The aim of this research is to investigate climate resilience and adaptation efforts in vulnerable and diverse neighbourhoods. I sought to engage community members from these neighbourhoods and create space for them to explore their perspectives of exclusion in their communities and decision making, as well as how this relates to climate resilience planning. In this way, this research seeks to fill a gap in the literature on climate resilience in cities by generating knowledge of the ways in which vulnerable communities articulate climate resilience in relation to their encounters of risk within

local neighbourhoods and the patterns of exclusion, which shape these experiences. This research aims to identify ways that municipalities should consider engaging vulnerable communities in climate resilience planning, and how this can be conducted at the community level.

Drawing on theoretical understandings of climate justice and civic engagement, I conducted a qualitative case study situated in Edmonton, Alberta, Canada focused on two vulnerable and diverse neighbourhoods. This case study was conducted within the context of ongoing policy-development and planning within the City of Edmonton where the municipal government continues to work on developing and implementing a climate adaptation and resilience strategy. An important, if yet unattended aspect of this policy, involves intentions for engaging neighbourhoods in building climate resilience plans to address community needs (City of Edmonton, 2018, p. 29). In this sense, my research is situated within a context of municipal citizen engagement, but provides a parallel and critical account of citizenship, which looks beyond the bounded nature of the municipality's climate strategy.

The neighbourhoods I focused on are situated closely to Edmonton's downtown, are socially, culturally, and economically diverse with many inner city challenges, and are facing significant development pressures. Redevelopment has caused vulnerable community groups to be displaced and disregarded, and has strained relationships between city employees and community members. In this research I examine the perceptions, concerns, values, and challenges expressed by community members in these neighbourhoods in order to understand how city and community collaboration for climate resilience and adaptation planning can become mutually beneficial.

I will first provide an overview of the context and methodology grounding this study. I will then explore some of the relevant academic scholarship on participation in climate adaptation and urban planning, as well as climate justice in resilience planning. I will then discuss key findings in relation to exclusion, as well as bring in the literature and provide concluding comments.

Context

The City of Edmonton is the capital of Alberta and the northern most and sixth largest metropolitan area (pop. 1.3 million) in Canada (Statistics Canada, 2017). The Edmonton Metropolitan Region is an access point to the oil sands and other industrial development of northern Alberta, and is a major transportation hub to Canada's far north (Vander Ploeg, 2008).

In this research I focus on the Boyle Street and McCauley neighbourhoods, which are adjacent to each other and respectively situated east and northeast of Edmonton's downtown. These inner city neighbourhoods are significant to Edmonton's urban history (Tingley, 2009) and are socially, culturally, and economically diverse. Over half of these neighbourhoods' populations consist of visible minorities (University of Alberta Libraries, 2019). Twenty-one percent of the population of Boyle Street and twenty-three percent of McCauley earn less than $30,000 a year (City of Edmonton, 2016a; City of Edmonton, 2016b), much above the city average (eight percent). Various transient and disadvantaged groups experiencing poverty, homelessness, and marginalization live in or come to these communities for the services offered by many non-profit organizations. In recent years, there have been development pressures on these neighbourhoods due to their close proximity to Edmonton's downtown and the North Saskatchewan River

valley. Long-term degradation of built infrastructure has encouraged improved neighbourhood planning and development. While public consultation was conducted to create a vision for these areas (City Planning Branch, 2017), there have been major concerns raised by the public that marginalized groups were excluded from these engagement activities, and that new developments were aimed at removing the poor and working classes from these areas. Some feel these "revitalization" projects were masked as "gentrification" (Granzow & Dean, 2008). The most contentious development, perhaps, was the recent construction of a large arena and surrounding entertainment district beside the Boyle Street neighbourhood (Scherer, 2016); there are major concerns that this district will cause displacement of the most vulnerable people that live or access services in the area. This redevelopment has increased tensions between community groups and the municipality.

The City of Edmonton is in the process of implementing their climate adaptation and resilience strategy, which was presented to City Council in November, 2018. One of the goals of this strategy is to engage citizens across the city in building community climate resilience plans to prepare their neighbourhoods for potential climatic hazards, emergencies, and disasters (City of Edmonton, 2018, p. 29). The city is planning to pilot their approach in a few neighbourhoods, then encourage and support other neighbourhoods to build their own community climate resilience plans. With this in mind, I wanted to understand vulnerable community members' perspectives of adaptation and resilience within their neighbourhoods in order to see how the City of Edmonton's approach could best address the most vulnerable communities.

Methodology and Methods

I employed a qualitative case study approach, as a case study can be useful for examining the multiple factors influencing a particular area in its real world context (Yin, 2017). Methods of data collection included both focus groups and semi-structured interviews. A total of three focus groups were conducted to examine participants' shared experiences (Morgan, 1997); these involved people who live, work, and/or participate in activities in these neighbourhoods. Two of the focus groups were conducted in non-profit organizations within these neighbourhoods. Individuals that participated were those attending or accessing services at these organizations (n=11; n=7); many of these participants are low income and live in this area or do not have a home, but still identify with these neighbourhoods and come to the areas often. The other focus group was comprised of small business owners and developers that work in these neighbourhoods (n=6); some of these participants also live in these neighbourhoods. Semi-structured interviews (Creswell & Creswell, 2018) were also conducted with individuals from some of the community based organizations in the area (n=9); some of these participants live in the area as well. Employees and representatives of the City of Edmonton that are working on climate adaptation and resilience planning, or have experience working with citizens in the Boyle Street and McCauley neighbourhoods were additionally interviewed (n=6).

Urban Engagement, Resilience Planning, and Climate Justice

Participatory approaches to climate adaptation and resilience, particularly at the local level, are becoming more common and acknowledged as highly important for effective climate change adaptation and resilience planning (Revi et al., 2014; Satterthwaite, 2011). For example, in the Intergovernmental Panel on Climate Change

(IPCC) Fifth Assessment Report (Revi et al., 2014), citizen participation is reported to offer rich resources and knowledge, as well as strengthen the ability for adaptation to prepare for future climate risks in urban settings. Climate adaptation is defined by the IPCC as, "the process of adjustment to actual or expected climate and its effects" (IPCC, 2014, p. 5); a variety of resources, research, expertise, technologies, and support are used in comprehensive adaptation planning (Heifetz et al., 2009). Resilience is defined as the capacity of "social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation" (IPCC, 2014, p. 5). In urban contexts in particular, resilience focuses on formal and informal interactions between citizens, social organizations, and governing bodies (Tyler & Moench, 2012). A participatory approach to climate adaptation and resilience planning recognizes that local communities and their knowledge of locally appropriate solutions to climatic hazards and impacts can contribute on-the-ground expertise in reducing vulnerability (Ayers & Forsyth, 2009). For example, citizens can help map disaster risks due to their knowledge of local situations and environments (Satterthwaite, 2011), thus help to reduce exposure and vulnerability (Anguelovski & Carmin, 2011; Dodman & Mitlin, 2011). The inclusion and participation of civil society in the governance of climate adaptation and resilience is increasingly recognized as essential since climate change is a complex and multi-level issue (Moser & Pike, 2015; Revi et al., 2014).

Involvement of citizens in climate adaptation and resilience is part of an overall trend towards participatory decision making and deliberation that has been occurring in

western democracies since the 1960s (Head, 2007; Chambers, 2003). This shift was influenced, in part, by a democratic, rights-based perspective, which asserts that citizens should be able to participate in decisions that affect their lives (Chambers, 2003). This push towards the inclusion of publics in research and planning compliments work on urban citizenship. Isin (2000), for example, argues that the role of citizenship is expanding and transforming cities to include social "norms, practices, meanings and identities," as opposed to citizenship only being shaped by legal rights (p. 5). Healey (1997), a major proponent of collaborative planning, argues for the democratization of rights to urban planning, where citizens should be able to deliberate in order to come to decisions around issues that affect them in their city, as opposed to technocratic expert led urban planning. Citizens are therefore acknowledged as highly important in shaping their city, including their city's resilience (Harvey, 2009). Public participation can play a crucial role in developing the identity of a city and shaping collective responses to potential risks such as climate change (De Souza Briggs, 2008; McClay & McAllister, 2014; Sharp, 2012).

The 'right to the city' is an important concept in relation to shaping the character and organization of a city (Harvey, 2012); some scholars argue that city inhabitants shape their city through norms, practices, values, and habits (Merrifield, 2011). However, not all inhabitants within a city are able to participate equally or enjoy their city to the same extent as others (Vasudevan, 2015). Some scholars argue that the right to the city needs to specifically involve the inclusion of excluded groups into urban life and how they can more fully participate in urban governance, policies, and spatial planning (Kuymulu 2013; Merrifield 2011). In an examination of how marginalized city dwellers, particularly

homeless individuals, embody the right to the city, Duff (2017) argues that it is important to focus on individuals' everyday lives and experiences, as marginalized individuals' "daily lives are framed by their putative exclusion from the city" (p. 516). This includes the struggle to occupy public space and discuss social and political opinions and concerns publically (Duff, 2017; Vasudevan, 2015). Thus, it is important to examine how vulnerable communities are included, and excluded from shaping and participating in their city.

This is also important in relation to climate change adaptation and resilience planning, as climate change risks and impacts can be exacerbated due to social vulnerability (Arthurson & Baum, 2015). While climate adaptation often focuses on technical fixes, such as new infrastructures or biophysical changes, there is growing criticism that this approach supports the status quo, or doesn't alone address social justice issues (Adger et al., 2009; Boyd, 2017; Nightingale et al., 2019; O'Brien & Selboe, 2015). Some scholars are arguing for the development of climate research agendas and policy that interlinks social vulnerability, including social inclusion and exclusion, to extreme weather events and other climate related issues (Arthurson & Baum, 2015). Chu and Michael (2019) found that many vulnerable migrants were often invisible in climate resilience planning, or were explicitly removed from cities through force or inequitable policies. In this sense, experience of environmental marginalization was attributed to a lack of recognition of citizenship rights and tied to exclusion in urban planning and policy. Such research strongly advocates for the importance of bringing a climate justice lens to cities (Chu & Michael, 2019; Phadke et al., 2015).

A climate justice approach recognizes that populations already facing social vulnerabilities and inequity are often affected by climate change the most even though they have contributed the least to its causes (Mearns & Norton, 2010; Shi et al., 2016). One of the goals of climate justice is to minimize negative climate impacts faced by marginalized and disadvantaged populations and to distribute benefits and disadvantages of adaptation across a city for those with varying levels of capacity, socioeconomic status, and political influence (Anguelovski et al., 2016; Satterthwaite, 2013; Shi et al., 2016). Climate justice also acknowledges the importance of democratic participation and the inclusion of people in decision making (Buzzelli, 2008; Shi et al., 2016).

When taking a justice approach to climate policies, scholars have found that marginalized groups are often excluded from policy decisions (Huq & Khan, 2006; Phadke et al., 2015; Thomas & Twyman, 2005) in which diverse interests, values, and priorities are not often acknowledged or considered (Anguelovski et al., 2014; Blue, 2016; Chu et al., 2016). Participants included in climate policy decisions are often those with higher education, those working for municipal organizations, or representatives of larger environmental agencies (Phadke et al., 2015), as opposed to the most vulnerable groups, or those with the least amount of resources (Singer, 2002, 2006).

Furthermore, when participatory approaches are used, it is sometimes assumed that these are automatically inclusive and just; however, some scholars contest this assumption (Blue et al., 2019; Few et al., 2007). Participation, particularly when voluntary, doesn't by itself guarantee that everyone will participate equally and that the process will be socially just (Purcell, 2006; Raco, 2000; Rowe & Frewer, 2000). In addition, social justice, as a concept, is not clearly linked to public participation, thus

can't be assumed unless adequate responsiveness is paid to make these processes just (Blue et al., 2019). Archer and Dodman (2015) also found that programs and initiatives that were used to build capacity of civil society to increase climate resilience and adaptation didn't often critically examine issues of power and justice. Specific attention should therefore be paid to issues of power, including: who decides who should be involved in participatory processes, how public issues are defined, and how citizens are able to participate in these issues (Blue et al., 2019; Vale, 2014). This can bring to light the dominant (and not dominant) narratives, and how governing authorities prioritize certain assets over others (Blue, 2016; Vale, 2014).

Climate justice is a particularly useful framework for considering climate resilience policies and engagement sessions where municipal practitioners are initiating climate resilience planning in communities and neighbourhoods; this approach can help to identify what might need to be considered for vulnerable and diverse neighbourhoods in an urban context in regards to climate adaptation and resilience planning. I aim to use this approach to understand how the City of Edmonton is engaging and prioritizing the needs of vulnerable and marginalized populations and what gaps there might be.

Findings

With the use of focus groups and interviews on engagement and resilience, a major theme that developed was exclusion, which was interpreted and discussed in varied and nuanced ways by community members that live, work, and participate in activities in the Boyle Street and McCauley neighbourhoods. Most data was taken from neighbourhood interviewees; however, some municipal employees and representatives additionally described their perspectives on exclusion within these neighbourhoods.

While climate adaptation and resilience was the focus of this research, many interviewees discussed resilience in relation to the challenges specific to these neighbourhoods and focused on social exclusion from policy and city planning. Interviewees find that vulnerable individuals and community organizations are often excluded from mainstream policies and decision making, as well as from spaces and places mostly due to redevelopment. This creates a strain in the relationship between the city and these neighbourhoods. Some participants discussed how to build more inclusive policy decisions and spaces in relation to city planning, as well as in climate and social resilience.

Exclusion from Policies and Decision Making

Many research participants expressed the view that government systems, including policies and programs, are not often set up to think about vulnerable populations at the forefront. Often, government systems focus on assisting the 'average' citizen, or a high proportion of citizens, but neglect the most vulnerable, which creates challenges for community members that may require more resources and time to build resilience, if they aren't receiving proper support. For example, one participant stated:

> Climate change is going to impact me but it's going to impact me in a very minimal way compared to somebody who doesn't have housing, a job, insurance you know, or relatively good health. And our whole system's designed around people like you and me who are quote unquote … 'normal'. Right. That's the whole point of the system … that's challenging because often we're not of those groups but we're trying to decide, make decisions for them. (Social Service Agency Provider, INT 14)

This participant finds that government systems often focus on designing policies and interventions for the majority, without considering the needs of populations without, for example, housing or good health. This respondent additionally adds that people in government or other stakeholders with power are often the ones making decisions for vulnerable communities without always understanding what resources might benefit them, or asking those communities what their needs and values are. Another participant feels that urban planning and other government practices often focus on businesses' needs. While this is not necessarily negative in itself, businesses often have access to resources that might be more challenging for other populations to access, thus some participants argued that the focus should be on people that need more support, which is not often considered:

> Businesses have strong advocates, are able to access politicians, bureaucrats, systems very easily … [but] how does it impact those who are most vulnerable? The homeless, people with disabilities and accessibility and mobility issues, women, newcomers … so if you're developing an emergency management policy … it's great to have that for the mainstream population … [but] what do we do with somebody who accesses a shelter at night …? What do we do with somebody who doesn't have access to the internet in their house or doesn't have a mobile phone? … Emergency responses never really take [these issues] into account. (Social Service Agency Provider, INT 8)

Interviewees identified two reasons why vulnerable populations are often excluded from policy and planning decisions: first, there is no mandated procedure for policy makers to actively include vulnerable persons in policies and interventions, and, second, access

issues create barriers to participation. Respondents found that city practitioners or policy makers aren't required to consider the needs of people with socioeconomic vulnerabilities in the development of policies or citywide programs. Some participants stated that if the needs of vulnerable populations are considered, they are often still "neglected," or treated as an "afterthought," or thought about "last." As a solution, one participant suggested that there should be a "vulnerable persons analysis" of all policies before they are implemented to make sure that the needs of low-income families, ethnic minority groups, people experiencing homelessness, and other vulnerable communities are considered as part of a policy process instead of after. An analysis like this would bring the needs of vulnerable communities to the forefront, and provide opportunities for practitioners to ask these groups, as well as organizations working with these groups, about their needs and perspectives, which can then be incorporated into policies and programs before they are developed.

Issues of access were additionally discussed as a reason why community members were excluded. This includes language comprehension, unsuitable engagement approaches, and under resourcing. In addition to difficulties with English language proficiency for some community members, interviewees felt that government bodies and institutions often use technical language that is inaccessible to many people in these neighbourhoods. The following two statements elucidate this point, drawing first on an interview statement from a social service provider, and then from a focus group conversation with local small business owners:

> Often the information isn't in itself accessible. Right? What [is] climate resiliency? … It's not within their kind of language. Now, they can talk about

> how they deal with problems like weather. You could get a lot of good information but you have to know kind of how to have that conversation. And you have to build the trust to have that conversation in the first place. (Social Service Agency Provider, INT 14)

> Part of the issue of interacting with the city is access. Sure you can go in and talk to the urban planning department … And learn and interact. But only if you are financially able to take the day off of work and only if you have a highly intelligent understanding of the system. Most people don't. You have to be able to know the words and the language of what's going on at the government level and that's not known in these communit[ies]… [Even when a government engagement session is conducted, it is often] meaningless to the community because it doesn't have relevance to their needs – [the needs of] the day-to-day people – like the ones who are actually going to be impacted. (Small Business Owner and Community Resident, FG3, Respondent 6)

The interviewee that made the first statement mentioned the challenge of talking about topics such as climate change or resilience since these are not areas or concepts often known by these communities. Understanding how to have these conversations with community members, developing appropriate word choices and examples, as well as building trust with these communities, are essential for having conversations about complex social and technical issues. In the second statement, this focus group participant discussed the challenge of inaccessible language and the time consuming nature of learning about or participating in government matters. It can be difficult for community

members to participate in issues that affect them because of the inability to navigate the language used, as well as the challenge of taking a day off work due to inconvenient participation times. Others involved in this focus group agreed, while also discussing their frustration with engagement session invitations and public participation policies. This participant additionally stated that when engagements are conducted they are often irrelevant to community member's needs and values. In this sense, it is important for governing authorities to use locally appropriate language and address risks within the everyday contexts and particular knowledge systems of local communities.

Similarly, the ways people are consulted are not always accessible to certain groups causing challenges for inclusive public participation sessions. For example, one participant recognized that many people in these neighbourhoods can be "difficult to access populations" and "you can't communicate with them under normal channels," such as calling community members into a room, showing them a PowerPoint presentation, asking them a bunch of questions, and using common focus groups techniques (Social Service Agency Provider, INT 7). This participant stated that such approaches are just "not reasonable". Another participant mentioned that sometimes when city employees or consultants choose the location of an engagement session, it excludes people that don't feel comfortable in that specific space: "[when] saying oh we're going to have a climate engagement at [one specific neighbourhood centre], everyone is welcome. That's only going to hit … one or two percent of people that live in this area" (CBO Representative and Community Resident, INT 10). Effective engagement methods and spaces are both important in order for people to feel comfortable participating in engagement activities. These are important considerations

for climate resilience planning in neighbourhoods; engagement methods need to be flexible, and engagement sessions may need to be hosted in a variety of places, and at different times to reach diverse community members.

Research participants additionally discussed how they often feel excluded from decision making, even when public engagement or consultation is conducted in these neighbourhoods. Participants find that even when an extensive amount of consultation has been conducted, most community input is not incorporated into changes or decisions for these neighbourhoods. For example, a community resident said:

> All of the policies really deter participation and make all consultation feel like lip service. I mean I was told by one of the developers at the beginning of the [redevelopment in Boyle Street]… at a consultation and he was just like it's going through, it doesn't matter what you guys do, it's going through... yeah like there's no desire to participate at that level anymore. (CBO Representative and Community Resident, INT 10)

This respondent, as well as others felt like consultation was just "lip service," or "checking boxes" meaning that engagement sessions were often conducted without incorporating feedback into community visions or plans. Another community resident additionally stated that there appears to be "a lot of policy from the top down but no one is listening to the people here" (CBO Representative and Community Resident, INT 12). Many participants described this as frustrating and time consuming and don't feel that it is beneficial to participate in public engagement sessions because opinions aren't valued. Another participant described similar challenges within their community organization, feeling like their organization, as a whole, was not provided with opportunities to

participate in discussions and decision making even when decisions affected their organization and community members:

> [We were frustrated with] the way communication happened and didn't happen the way decisions were made. And then… the [organization] was excluded from any of the discussions… It was something that was so damaging to the relationship between the city and the community organization and probably the community in general… will take some time hopefully to rebuild that trust. (CBO Member and Community Resident, INT 15)

In this sense, participants often feel excluded from decision-making due to a lack of engagement, or even with the use of plenty of engagement.

In addition, community members in these neighbourhoods don't often feel like there are enough resources or specific considerations for them to be involved in community activities and policy decisions. While there are challenges with providing more resources for one neighbourhood, since there are many diverse neighbourhoods across Edmonton, some communities and areas tend to suffer due to under resourcing. One participant for example, stated:

> People keep wanting [these neighbourhoods] to fix [themselves]. But they keep under resourcing and then saying see that proves that you're a bunch of dysfunctional so and so's who can't fix themselves… I understand completely how under resourcing destroys community initiatives. (CBO Representative and Community Resident, INT 12)

Some participants talked about how more resources in these neighbourhoods could increase inclusivity and resilience, as well as provide more effective opportunities for

community members to participate in decision making. This is challenging, since it can be difficult to justify using more resources for a few neighbourhoods, when there are many diverse communities within a city. However, due to lack of resources, participants voiced that many community members are unable to participate and are, in this sense, excluded.

Exclusion from Space

Many participants that either live, work, or participate in activities in the Boyle Street and McCauley neighbourhoods discussed how they often feel excluded from spaces or places within these neighbourhoods. Two main ways respondents felt excluded from space was that visioning and redevelopment of a neighbourhood often excludes community members, and that community members feel like the City of Edmonton often makes changes to community spaces without understanding them. Some participants talked about the importance of creating more inclusive policy, planning, and spaces by having a broader and deeper conversation with regards to historical, and current marginalization, and how to develop stronger inclusion in the future.

Some research respondents used words such as “gentrify,” “pushed out,” or “displaced” to describe how community members feel towards redevelopment and feeling unwelcome in their neighbourhoods. They feel that the needs and concerns of more vulnerable groups are often ignored, while money is instead going to the wealthy. For example when talking to focus group participants that attend a social service agency within the Boyle Street and McCauley areas, one person commented:

> What I don’t get is they are building all [new buildings]. You see the rich is getting richer, you see, and they don’t really care about the low income people …

> like if I had millions and millions I would give back to the community … they don't care about the poor or the low income … the richer is getting richer and … when [my] rent is high, I sacrifice huge … The rent keeps going up all the time. The groceries go up. It's getting tougher for people to live … Well if they stop putting, pumping millions into these high-rises, more condos or whatever … Start caring about the homeless or putting some money to the low income. But that's not happening. Yeah they're getting richer. (Social Service Agency Participant, FG1, Respondent 5)

Other focus group participants were in agreement, as they find it expensive to live, while luxury condominiums are being built in the area. Another respondent added to this conversation by questioning the use of tearing down old buildings to build expensive, newer ones. They felt that if old buildings are torn down, "then where are those people going to go?" (Social Service Agency Participant, FG1, Respondent 2). Participants feel excluded from their own community spaces due to redevelopment that focuses on future residents.

When envisioning the future of these neighbourhoods and how they could be developed, community members often felt excluded from imagining the future of these neighbourhoods and were not often included within neighbourhood visioning sessions. For example, one interviewee stated: "we heard from the consultants that they brought in from [another city] was imagine there's nothing here... the community – it's like we don't exist" (CBO Representative and Community Resident, INT 10). Similarly, another community resident discussed the views of some of the developers in the area:

> He said this area is a tabula rasa. It's a blank slate. And we're going to – we're going to draw something beautiful on it... What [would] you think when someone comes in your neighborhood and says there's nothing here… It's a blank slate, you people don't matter. (CBO Representative and Community Resident, INT 12)

These participants felt that they were not imagined as part of the future of these neighbourhoods, as if they don't exist or don't matter. A social service agency representative additionally felt that development did not include their agency or the community members that attend the organization in the vision of these neighbourhoods:

> [New development plans] envisioned this area without [this social service agency and these community members]. So, if you look at the drawings, if you look at the kind of the grand scheme of it, the conversations around it, it doesn't say you know an area for everyone, it's an area for high-end condos. It's not mixed residential it's, it's luxury. (Social Service Agency Provider, INT 14)

Many participants that live, work, or participant in activities in these neighbourhoods find that redevelopment excludes those that spend time there or call this area home, in order to make room for wealthier businesses and potential residents. It is important to note that employees or representatives of the City of Edmonton that were interviewed specifically stated that their intention was not to gentrify the area, or push people out. By contrast, many people within these neighbourhoods maintain that gentrification is occurring and that municipal employees and developers are responsible for these changes. Such a difference in opinion has created tensions between the city and these communities.

The second way community members feel excluded is when the municipality makes changes to, or demolishes buildings and spaces that community members find

valuable. Many participants argue that the city lacks an understanding of community spaces and their purposes, but still makes decisions regarding the demolition or changing of spaces. This lack of understanding of community space is especially crucial when factoring in the power and decision making authority city officials and staff have to decide on changes in communities. Decisions that fail to include community perspectives sometimes lead to negative ramifications in the community that can be detrimental to community members and community building opportunities. For example, during a focus group with small businesses and developers in the area, part of the conversation focused on the city not understanding community spaces, thus not valuing them as such. The quotations below are part of a conversation of two different respondents in dialogue with each other, but in agreement with the other focus group participants:

> Right now the city has begun to scrap historical value or use of spaces … When they identified that [specific] building and that lot as a good acquisition of materials … the planners had no idea that it was a cultural hub in the community. They [identified] it as a low-income property in the area that they wanted, and not the ramifications that went along with that. And that will have a decade long ramification, as it was a community centre. (Small Business Owner and Community Resident, FG3, Respondent 6)
>
> [Y]ou make those decisions if you – if you dismiss the dignity of a low income, affordable house or a rooming house, then it's very easy to dismiss and tear down. (Small Business Developer, FG3, Respondent 1)

Even city representatives and employees recognize that they don't always understand community spaces before making decisions about them, which can lead to residents

feeling excluded from space. One municipal staff member tied the exclusion of space and decision making to resilience and feeling a sense of belonging in a neighbourhood:

> The city… bought it and we displaced the people living there and we tore it down and the community is like you're just tearing down - these are friendly to us - they're our friendly buildings. We see them as part of our neighbourhood. We don't see them in the same critical eyes that you do. This isn't a cruddy stucco building to me - this is where Bill lives... So when you start dramatically changing the landscape in such a way that maybe suits other people's tastes, people with a higher socioeconomic status - right like what is the Armature? Who does that speak to? That's designed for people who say things like 'pedestrian oriented'... If you feel excluded and you have nowhere to go, and there is no support and you don't belong, then yea, you're probably less resilient… you're not feeling like it's your place anymore. (Municipal Staff Member, INT 3)

This interviewee explains that when spaces in a neighbourhood change to bring in different demographics, some community members may feel excluded from their spaces and making decisions regarding these spaces. This quote additionally reveals the negative effect that differing city and community perspectives of space have on feelings of inclusion, as well as resilience. In this sense, resilience can potentially be increased in a community if members feel included in spaces and decision making that affects them. While city staff do have knowledge of the negative impacts that decision making can have when not including community's perspectives, this knowledge often stems from past decision making that led to community outcries or resistance to redevelopment. Participants felt that those who make decisions about neighbourhood spaces, such as city

employees, should get to know those spaces and how community members interact within them before making decisions about them.

Some participants also talked about the importance of creating more inclusivity by having a broader and deeper conversation to make sure vulnerable or marginalized community members are able to meaningfully participate in decisions that affect them and their community spaces. A broader conversation is needed to think about difficulties that vulnerable groups have had in history, how they are treated in conversations and spaces now, and how vulnerable groups should be included in the future. Participants felt that all people matter and specific strategies for inclusion are necessary, which starts with a deeper conversation:

> I think the city feels very strongly that [social service organizations and these community members] should be here, but there's a moral kind of, ethical kind of conversation to be had around reconciliation and how much as a society are we willing to spend on [luxury and entertainment] and how much are we willing to spend on those who are most impacted by colonization, residential schools, poverty, homelessness. You know what – that's a very uncomfortable conversation to have. (Social Service Agency Provider, INT 14)

> That is a much bigger conversation and we can't ignore that. We can't just say these people don't exist [because] there's a hotel here. So now fuck off and find somewhere else. You can't just say now you need to go away because you're scaring people. That's the part of the bigger conversation. (Small Business Owner, FG3, Respondent 4)

These participants discussed the importance of having a broader conversation to address underlying issues of displacement and lack of care for marginalized groups. The respondent of the first quotation, for example, talked about deeper underlying issues including colonization and residential schools; additionally another participant felt that gentrifying space and pushing people out was "like the new colonialism" (CBO Representative and Community Resident, INT 10). It is highly important to think about what it means to spend more money and time on redevelopment projects for wealthier citizens, or average citizens, instead of for groups that have been historically, as well as are currently, marginalized. This brings to light a broader context of historical marginalization that some participants still feel exists today in a different way that still causes marginalization. Having a deeper conversation to address these issues could provide an opportunity for the inclusion of voices and perspectives that have often been disregarded and neglected.

This is important in the context of resilience, because many participants talked about resilience as being able to overcome marginalization and resisting undesired changes in their neighbourhoods. While the City of Edmonton is focusing on resilience planning in the context of climate change and often uses a technical or science based approach, participants felt that social, historical, and community issues could and should be factored into resilience planning when conducted at the community level. Because of this, specific resources, time, and training might be needed to address social resilience and underlying community challenges alongside climate resilience. While City of Edmonton staff did not state addressing social issues within their climate resilience approach, community participants felt that community and social resilience should really

be addressed in order for climate resilience planning to be effective in these neighbourhoods.

Discussion/Conclusion

The specific aim of this research was to assess climate resilience and adaptation efforts in vulnerable and diverse neighbourhoods. I aimed to engage participants and create space for them to explore their perspectives of exclusion in their communities and decision making, as well as how this relates to climate resilience planning. A qualitative case study was carried out in the City of Edmonton, Alberta within the context of ongoing policy development and implementation of a climate adaptation and resilience strategy. One of the city's strategy goals is to engage neighbourhoods across Edmonton in building community climate resilience plans (City of Edmonton, 2018, p. 29), thus the goal of this research was to explore community climate resilience planning in vulnerable communities. I focused on two neighbourhoods that are in close proximity to Edmonton's downtown, are socially, culturally, and economically diverse, with many inner city challenges, and are facing significant development pressures.

Although I asked participants about climate resilience and adaptation in vulnerable and diverse neighbourhoods, they were typically concerned about the ways they were excluded in spaces and in decision making in general within their city. Research participants articulated their exclusion from resilience planning at a variety of scales. Importantly this consisted of their exclusion from policy development and decision-making, subjects well-documented in the literature (Few et al., 2007), but also further articulated concerns about their ability to access and influence urban geographies.

In this way, participants readily connected conversations about climate resilience to processes of urban planning and development in their neighbourhoods.

Participants in this research recognize that exclusion has to do with there being no mandated procedure for including vulnerable persons in policies and interventions, as well as because of reasons of access, such as inadequate use of accessible language, unsuitable engagement approaches, and not incorporating input into government decision making processes, as well as under resourcing. Exclusion was also discussed in relation to feeling excluded from redevelopment and visioning of a neighbourhood, as well as through the municipality making changes to community spaces without understanding them. The importance of a broader and deeper conversation in regards to historical, and current marginalization was also discussed to develop stronger inclusion in policy, planning, and city spaces. This fits within a broader desire to be included in shaping a city that fits community values, needs, and views of social and climate resilience. These will be discussed below in relation to the literature and implications for policy and climate resilience planning in vulnerable neighbourhoods in urban settings.

While exclusion in urban settings is not new in the literature (Attoh, 2011; Duff, 2017; Kuymulu, 2013; Merrifield, 2011), participants described exclusion in nuanced and varied ways. One participant suggested that using a “vulnerable persons analysis” could help municipal employees specifically consider the needs and values of the most vulnerable in urban policy decisions. Some literature recognizes that social inclusion in relation to inequality require complex policy solutions: robust policy should be developed that cuts across areas that seem like separate policy domains in order to consider the inclusion of the most vulnerable in different areas of urban life (Arthurson & Baum,

2015). Literature or policies that have a social justice focus aim to consider the needs of the most vulnerable at the forefront; however, such an approach is not typically taken within city planning and in climate resilience frameworks (Duff, 2017; Nightingale et al., 2019). My findings suggest that an assessment such as a "vulnerable persons analysis" may be able to cut across policy domains to specifically include vulnerable populations in various aspects of city living, such as urban development, climate resilience and neighbourhood planning.

Regarding inaccessible language and the way engagements are conducted, participants found that the use of technical language and engagement techniques often posed difficulties for community members to participate in policy decisions. This is important in regards to inclusion; without specific strategies to develop language that relates and makes sense to participants, people may feel excluded from the details of decision making. Complementary to this, Schlosberg et al., (2017) found that their participants discussed resilience in relation to their daily lives, as opposed to considering resilience in a technical or scientific light; it is important for governing authorities to use locally appropriate language and address risks within the everyday contexts and particular knowledge systems of local communities. While this is in part about accessible language, it is also about how risks (and their solutions) are construed; it is important to address risks within every day contexts and knowledge of local communities (Stilgoe et al., 2006). Language is important to consider, as it is a powerful force for influencing the way risks are understood and addressed. For example, language, and the framing of an issue can influence the direction of climate adaptation to take a technocratic and scientific

approach, or an approach that values reconciliation and social justice (Cameron et al., 2015).

Exclusion was also discussed in relation to public engagement. Participation was conducted to develop visions of these neighbourhoods; however, participants felt that community input was not often incorporated into neighbourhood planning decisions. While deliberation and engagement can be used to identify citizens' perspectives and needs, sometimes public participation is used to generate political legitimacy as opposed to influencing the decision making process (Head, 2007; Urbinati & Waren, 2008). At times, governments may retain control over engagement processes and thus limit the way participants can provide input into decisions and policies (McCann, 2001; Piccolella, 2013). In this research, as well as in the literature, participatory approaches are not automatically inclusive and just; not everyone is able to participate equally in decision making thus decisions don't always incorporate vulnerable populations' needs, concerns, and values (Blue et al., 2019; Few et al., 2007; Purcell, 2006; Raco, 2000; Rowe & Frewer, 2000). Participants talked about their concerns with the use of participatory approaches in climate resilience due to the lack of inclusion in past engagement and decision making processes. Thus a more inclusive approach to climate resilience may need to push participatory approaches further to examine issues of power, who decides who is included, how citizens are able to participate in these issues, as well as include transparency in climate resilience decision making (Blue et al., 2019; Vale, 2014).

A lack of resources was also discussed as part of the reason communities felt excluded, or unable to effectively participate in climate resilience planning. This is similarly seen in the literature where vulnerable groups with few resources are typically

excluded from climate policy decisions, while participants with higher education and more resources can more easily participate (Phadke et al., 2015; Singer, 2002, 2006). Providing more resources for a few neighbourhoods in need can be difficult to justify when a municipality aims to develop climate resilience plans in all neighbourhoods; however, it should be recognized that certain groups might require more resources to effectively participate in resilience planning. A lack of resources can suppress inclusion and participation; more resources should be provided for communities in need.

In addition, participants talked about a disconnect between the vision and values city employees and community members have. For example, a municipal staff member mentioned that city employees have torn down neighbourhood buildings and displaced those that lived there. While the city didn't see value in these spaces, people in these communities valued them. One city employee stated during an interview that residents in the areas have told staff that "we see [these buildings] as part of our neighbourhood. We don't see them in the same critical eyes that you do" (Municipal Staff Member, INT 3). This research points to the importance of finding innovative ways for cities to recognize community values and bring them into visioning processes for these neighbourhoods to increase social and climate resilience. This is related to a concept in engagement literature called "upstreaming," in which researchers argue for public engagement to be brought into earlier stages of the policy process to bring diverse forms of public knowledge and perspectives to the forefront (Wilsdon & Willis, 2004). It's recognized that normative values and moral choices factor into policy and decision making processes, in which those with more power and control often make decisions for vulnerable populations (Blue et al., 2019; McCann, 2001; Piccolella, 2013). Thus,

"upstreaming" engagement to earlier in policy and decision making processes can more effectively bring community values, concerns, and perspectives into this process (Wilsdon & Willis, 2004). For climate resilience planning, this means bringing more diverse perspectives into the development of a climate adaptation and resilience strategy, instead of receiving feedback after its development, and only with respect to developing climate resilience plans in the ways laid out by the municipality.

Participants also linked exclusion to a lack of resilience in relation to historical marginalization and how a broader conversation is needed to build reconciliation and address gentrification that was argued as the "new colonialism." In this sense, a broader conversation is needed to take a deeper look at exclusion and marginalization in cities to develop strong inclusive city planning practices and climate resilience policies. Adaptation and resilience can have certain connotations regarding marginalization and assimilation; adaptation and resilience planning should be inclusive, as well as culturally and socially appropriate (Bose, 2017; Golden et al., 2015).

Furthermore, this research shows that a focus on social, historical, and community challenges should be factored into climate resilience planning. Participants want to be included in the shaping of their city and communities but ultimately feel excluded from such processes. While not all city inhabitants are able to participate equally in the shaping of their city, or can enjoy their city in the same way as others (Vasudevan, 2015), some scholars argue that excluded groups need to be more fully included in urban governance, policies, and spatial planning (Kuymulu 2013; Merrifield 2011). Harvey (2012), for example, argues that communities have a right to determine and shape their space, as well as should be able to occupy, live, and make use of space. One of the real values of this is

being able to fulfill oneself in city and community spaces. Through participation in the city, people can overcome isolation and community challenges by fulfilling oneself through community and city spaces. Participants felt that they had a lack of voice in articulating the design and vision of their city and neighbourhoods, thus were unable to participate in imagining their city's future. This relates to both city planning, as well as making decisions to increase social and climate resilience at the neighbourhood level.

A disconnect between municipal and community members' values is also apparent in relation to key municipal strategies. Many municipal strategies encourage sustainability and resilience in relation to redevelopment, densification, and infrastructure upgrades, including in Edmonton's downtown communities. The new Edmonton City Plan (City of Edmonton, 2019), embedded with the city's strategic documents, focuses on downtown revitalization, infill, and LRT development, and aims to capture economic growth and capacity for one million more people in more sustainable and resilient ways. From this approach, city "growth" comes across as inevitable, inherently positive, and able to increase urban resilience and sustainability for everyone. This phenomenon has been theorized in the literature with the argument that urban politics and city visions are often dominated by an economic growth agenda and vested elite interests, labelled the "growth machine" even though many individuals and groups object to the costs of growth, as it often only benefits the elite few while neglecting the rest of citizens (Logan & Molotch, 1987). In this research, community participants talked about development, gentrification, and municipal visions, as detrimental to, and exclusionary of, community members' values and spaces in their neighbourhoods. Community respondents also discussed resilience from a more nuanced justice perspective rooted in community

experiences and locality. In this sense, community members are questioning the city's development-focused vision of resilience, meaning that the city and these communities are operating with two different visions of resilience. The city is not simply excluding voices from technocratic climate planning, but is actively advocating a mode of resilience that is in contrast with social and community resilience valued by marginalized and vulnerable community members. Engagement that the city has conducted on these issues can be read as an attempt to build trust and support for their vision of growth, which is presented as able to increase urban resilience as good for everyone, without opening up their visions of sustainable growth and economic development to scrutiny (Logan & Molotch, 1987). This "boosts" the image and quality of the city through positivity of economic growth and development. As municipal authorities are those with decision making power, the public often has little say in changing such a growth-positive vision and influencing the decision making process (Head, 2007; McCann, 2001; Piccolella, 2013; Urbinati & Waren, 2008). Due to this, community views of resilience may become disregarded and unheard within climate resilience, urban development, and municipal sustainability projects.

Community perspectives challenge the approach that the City of Edmonton is taking for resilience planning related to both urban planning and climate adaptation. The city does not have a specific strategy to include marginalized groups in these processes; however, feeling excluded in shaping the city may make it more difficult for these community members to participate in increasing the climate resilience of their neighbourhoods. The use of the theoretical perspectives of the 'right to the city' alongside a climate justice and participatory lens is beneficial as it is just as much an invitation for

communities to shape their cities through participation and place making, as it is a definition (Harvey, 2012).

Importantly, this research brings to light the connection between climate resilience and processes of urban planning and development in citizens' neighbourhoods. These perspectives point to how exclusion and risk are being exacerbated within the discourse of progressive climate policy and resilience that encourage urban development and growth. Thus, there is a need for a broader conversation to be had around differing understandings of resilience and how the most vulnerable groups can shape their city and be included in building social and climate resilience that considers community values, experiences, and concerns within publics' city and neighbourhoods.

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Chapter Four: Conclusion

The purpose of this research was to identify opportunities and challenges for a community based approach to climate adaptation and resilience planning through an examination of the perspectives and relationships between municipal employees and two vulnerable and dynamic neighbourhoods in Edmonton, Alberta. Little research has investigated the engagement process between municipalities and vulnerable populations for neighbourhood level climate adaptation and resilience planning, thus this research aimed to examine considerations and challenges when municipal staff and residents of marginalized and vulnerable neighbourhoods collaborate for climate preparedness and resilience. This is important, as vulnerable and disadvantaged populations are often most at risk of climate impacts and hazards, but are not often part of making climate adaptation and resilience decisions in their communities and cities (Mearns & Norton, 2010; Phadke et al., 2015). Since cities across the world are addressing climate adaptation through the development of policies, strategies, and public participation (Bahadur & Tanner, 2014; Preston et al., 2011; Reckien et al., 2018), it is important to critically evaluate efforts to increase resilience and make sure engagement with communities is appropriate and effective. This research focuses on the challenges and opportunities of community based approaches to climate preparedness with diverse and vulnerable neighbourhoods. This study was situated within the City of Edmonton during the development and implementation of a climate adaptation and resilience strategy; one of the municipality's goals is to engage citizens in building community climate resilience plans for their neighbourhoods (City of Edmonton, 2018). This provided me with an opportunity to examine potential opportunities, challenges, and needs for possible climate resilience

planning approaches in two of Edmonton's vulnerable and diverse inner city neighbourhoods – Boyle Street and McCauley.

More specifically, the objectives of this study were to: 1) examine the development of Edmonton's climate adaptation strategy and related urban policies; 2) investigate neighbourhood understandings and opportunities for climate resilience, focusing on two inner city neighbourhoods; 3) explore the relationship between the city and these neighbourhoods in relation to engagement, resilience, and climate change preparedness.

To achieve these objectives, I used climate justice and social constructionism as theoretical perspectives to inform an understanding of environmental governance, climate resilience planning, and public participation. Utilizing an inductive qualitative case study methodology, the perspectives of municipal employees and representatives, as well as community groups within two inner city neighbourhoods in Edmonton was investigated through focus groups and semi-structured interviews.

In the next sections, I will discuss a summary of findings, the use of theoretical perspectives, suggestions for future research, and concluding remarks.

Summary of Findings

In general, this research demonstrates that climate adaptation and resilience planning cannot be conducted at the community or neighbourhood level in isolation from an understanding of community complexity and the lived experiences of citizens. In the two inner city neighbourhoods that were the focal point of this research, I found that the social challenges a community or neighbourhood faces are inseparable from climate resilience planning.

In Chapter Two: Understanding Resilience, I investigated resilience from the perspectives of community participants, as well as municipal representatives and employees. Community participants that live, work, or participate in activities in the Boyle Street and McCauley neighbourhoods understand resilience as the ability to work through daily struggles. This includes navigating government systems, facing the redevelopment of community spaces, and advocating for resources to build stronger communities. Participants feel that resilience has to do with feeling welcome in a community and having opportunities to participate; however, feeling resilient was a constant struggle for many, thus resilience had to do with community members advocating for their communities, or resisting changes initiated by the municipality or developers. Community members also discussed resilience in relation to past and present day marginalization, and the prevalent socioeconomic vulnerability within these areas. Community participants therefore focused on community and social resilience in relation to overcoming daily challenges. In contrast, the City of Edmonton's climate adaptation and resilience strategy document, and interviews with city employees and representatives, framed resilience from a techno-scientific perspective, with a focus on infrastructure upgrades and evidence based planning. While this approach can be useful for providing a higher level of certainty to increase resilience (Ayers & Dodman, 2010), underlying drivers of vulnerability, or issues of inequality and social justice are more likely to go unconsidered (Ayers & Dodman, 2010; Fünfgeld & McEnvoy, 2014). My research paper highlights the importance of having an approach to climate resilience that recognizes the marginalization and everyday challenges faced by some citizens, and that addresses such challenges alongside climate resilience. Social and community challenges

should therefore be considered within a climate resilience framework at the neighbourhood level.

In Chapter Three: Citizen Perspectives of Exclusion, I analyze community members' in-depth understanding of their experiences of exclusion from municipal decision making, why they feel excluded, and their suggestions for improved participation in climate resilience planning, particularly for marginalized individuals. Conversations about climate resilience were discussed in relation to larger processes of city planning and policy development in general. While participants discussed more tangible challenges of exclusion in decision making and spaces, such as inaccessible opportunities for engagement, or lack of resources, exclusion was also discussed in relation to a broader desire to shape one's city to fit community values and perspectives. Furthermore, the city's understanding of resilience and sustainability, as it relates to urban growth and economic development, contrasts with community member perspectives that development and gentrification are detrimental to and exclude community members' values and spaces, which research participants stated affect the resilience of community members. This demonstrates that the city is actively advocating an approach to urban resilience that is in contrast with social and community resilience valued by marginalized and vulnerable community groups. For inclusive climate resilience planning, it is crucial to make sure community members' views of resilience and exclusion are not disregarded and unheard in the process of developing climate resilience plans at the neighbourhood level.

Community members felt that a broader and deeper conversation was needed to address historical and current marginalization in order to develop stronger inclusiveness

in policy, planning, and city spaces. This research makes the case for understanding citizen exclusion from urban spaces and improve decision making to best address climate resilience at the community and neighbourhood level. While the City of Edmonton is not considering climate resilience in relation to broader city planning, community building, and citizen exclusion, this research suggests that the direction of climate resilience planning should include a broader understanding of resilience that involves community members' ability to shape community space and participate in decision making. This is important alongside citizen's frustration with Edmonton's engagement practices; more inclusive and open dialogue is needed for participants to feel welcome to discuss community, social, and climate concerns, with confidence that perspectives and concerns will be taken seriously and addressed appropriately. Urban redevelopment practices were similarly discussed as conflicting with participant needs and notions of resilience. Specifically, community participants feel that the municipality undervalues and disregards community member's opinions and spaces, while justifying economic growth and urban development as important for the sustainability and resilience of the city. Thus this research points to the difficulties of differing values of resilience and the effects on the most vulnerable citizens.

Significance of Research

Little research has focused on how community and municipal perspectives of resilience compare and contrast and how varying perspectives might affect climate resilience planning in vulnerable and dynamic neighbourhoods (Adger, 2000; Fünfgeld & McEnvoy, 2014). This is particularly concerning, as vulnerable and disadvantaged populations are not often part of climate adaptation and resilience decisions, yet are most

at risk of the impacts and hazards of climate change (Mearns & Norton, 2010; Phadke et al., 2015). I aimed to contribute to the literature, using a qualitative case study by focusing on the ability for vulnerable and marginalized citizens to participate, define, and make essential contributions to resilience planning through their perspectives and values. My research brought to light the limitations of techno-scientific fixes made in response to abstracted and predefined notions of climate change. These scientifically, technologically, and environmentally driven approaches to adaptation policy often undermine specific community and social needs, even though there are opportunities to develop a joint agenda to address community needs alongside climate resilience at the community level (Ayers & Dodman, 2010). Importantly, I found that climate resilience planning couldn't be abstracted from challenges citizens face within their neighbourhoods and cities. This relates to larger municipal processes such as redevelopment and city engagement strategies and practices.

Research findings regarding redevelopment are significant in that many cities operate with an economic growth agenda and assume that economic growth is positive and can contribute to urban resilience and sustainability (Logan & Molotch, 1987). This can be detrimental to the most vulnerable and marginalized community members that may be affected by urban development and gentrification, especially if municipalities are advocating an approach to resilience that is in contrast to social and community resilience valued by vulnerable community members. This research brings to light the importance of investigating implications of redevelopment and differing perspectives of resilience, and the affects on the most vulnerable and marginalized groups.

The City of Edmonton's climate resilience planning is also interesting in relation to their engagement policies, history of engagement, and goals for public participation in the future. The City of Edmonton has been critiqued in the past for using engagement only to "inform" citizens (Segin, 2018), which is considered the lowest level of engagement on a 5-tiered spectrum developed by the International Association for Public Participation (IAP2, 2014). With the hopes of better engaging citizens and communities in decision making within their city, the City of Edmonton released a Council Initiative on Public Engagement in 2017 that includes a spectrum of, from lowest to highest, advise (consult), refine (involve), create (collaborate), and decide (empower) (City of Edmonton, 2017). This provides room for creative and varied levels of engagement, as well as an opportunity for city staff to be more transparent with the intentions of public engagement in the city. It is important to note that inform is purposely removed from this spectrum, with the understanding that public involvement should go beyond informing citizens. That being said, when public engagement was conducted in relation to the climate adaptation and resilience strategy, it was primarily used to "raise awareness among the public" (City of Edmonton, 2018, Message from the City of Edmonton's environmental advisory committee, para. 3), and "inform citizen's about the strategy's development" (City of Edmonton, 2018, p. 14). While the Council Initiative on Public Engagement aims to modify the way citizen involvement is conducted with the hopes of more meaningful engagement, this has yet to change with respect to Edmonton's climate resilience planning. A lack of meaningful engagement may lead to a missed opportunity to provide the most vulnerable communities with effective support and address their perspectives, values, and concerns. This research speaks to a gap in the city's different

policy approaches, specifically regarding Edmonton's initiatives on public engagement and the climate adaptation and resilience strategy, as different meanings of engagement were discussed in each policy. Climate adaptation and resilience policies should have inclusive engagement strategies that provide opportunities for more involved public engagement. For example, "upstreaming" engagement to earlier in the process of policy development and municipal decision making has the opportunity to bring community values, concerns, and perspectives more effectively into this process (Wilsdon & Willis, 2004). For climate resilience planning, this means bringing diverse perspectives into the direct development of a climate adaptation and resilience strategy, instead of citizens providing minimal feedback defined by municipal authorities on a finished strategy. This research contributes to the literature by bringing to light different city approaches to engagement and the importance of thorough engagement strategies to better include citizens, especially vulnerable groups that have had negative experiences of engagement.

In summary, this thesis research points to the need for climate adaptation and resilience planning to include opportunities to tackle community and social challenges alongside climate impacts. Additionally this study brings to light the difficulty in abstracting the perspectives that citizens have about broader municipal processes, such as redevelopment and city engagement practices, from climate resilience planning. All of this speaks to the importance of opening up climate resilience planning to explore inclusion, social and community challenges, different meanings of resilience, and the shaping of cities and communities more broadly.

Theoretical Perspectives

Climate justice and social constructionism were useful theoretical perspectives for this study in relation to vulnerable community members, how perspectives of resilience may differ between stakeholders, and suggestions for inclusive, collaborative climate resilience planning between a municipality and vulnerable neighbourhoods. These theoretical underpinnings will be discussed below.

This research uses a climate justice lens with the understanding that vulnerable and disadvantaged groups typically contribute the least to climate change, are often the most affected by climatic impacts, and are not typically involved in making decisions on the issues that affect them (Mearns & Norton, 2010). This lens helps to expand the conversation of climate resilience to include a broader understanding of equity and city planning practices (Fünfgeld & McEnvoy, 2014). Research participants from the neighbourhoods of interest aligned with a climate justice approach. They felt that more thought and effort should go into addressing social injustice present at the community and city level in order to effectively increase climate adaptation and resilience. A justice perspective was discussed by participants in more nuanced ways rooted in community and locality when community members discussed the negative impacts of economic development, gentrification, and experiences of public engagement. A climate justice framework can be useful for bringing vulnerable groups' perspectives, concerns, and needs to the forefront (Mearns & Norton, 2010). Many cities separate policies and efforts for addressing social injustice and community needs (such as poverty and social isolation) from climate adaptation processes; a climate justice framework creates the opportunity to involve actors addressing social and spatial inequities within conversations

about and initiatives on climate adaptation and resilience (Buzzelli, 2008; Mearns & Norton; 2010; Schlosberg & Collins, 2014; Taylor, 2000). Hence, a climate justice approach can combine social and climate resilience goals so as to best assist the most vulnerable communities. Furthermore, a justice perspective may be useful for examining, more thoroughly, the implications of engagement, urban planning, and climate resilience strategies on vulnerable and marginalized community members. Such a perspective can especially be useful in examining how these policies may shape each other and be leveraged for the benefits of the most vulnerable.

Social constructionism is a theoretical approach that helps to unpack different perspectives of resilience and encourage critical reflection of values and assumptions (Blue, 2016). Using a social constructionist perspective for this research helped to create space for investigating multiple understandings of risk and resilience by questioning dominant perspectives, such as techno-scientific and economic growth approaches to resilience. This approach made room for neglected perspectives of resilience related to community spaces and decision making and helped to bring more nuanced and holistic understandings of resilience to climate adaptation planning that incorporates the perspectives and concerns of diverse neighbourhoods. This theoretical approach helped to reveal the difficulties of collaborative climate resilience planning when stakeholders have different views, particularly when one group holds power and control over the climate resilience planning process. City employees mostly had a preference for techno-scientific and evidence-based approaches, while participants from these communities discussed resilience in relation to their daily struggles to increase resilience due to inequality, marginalization, and redevelopment. Social constructionism acknowledges that power

dynamics and social relationships play a role in framing issues and developing solutions to address them (Blue, 2016). Critical evaluation of dominant perspectives can allow room for marginalized perspectives, alternative questions, and different possibilities to be brought into the conversation (Stirling, 2008). This research demonstrates the value of considering differing approaches, especially since the City of Edmonton and community members had different conceptual understandings of resilience; non-dominant and marginalized perspectives are still important to consider and should be valued. Municipalities should similarly consider the values and assumptions that go into climate resilience planning to determine who makes decisions about resilience, who is included and excluded from climate resilience and city planning, and how to tailor climate resilience planning to diverse community needs and inclusivity (Vale, 2014). In this sense, a constructionist approach can help to develop more participatory planning processes instead of being determined and controlled by government bodies (Karnilowicz et al., 2014). Investigating the dominant perspectives and how to provide room for marginalized perspectives can be done through a social constructionist perspective and is important for a social and climate justice approach.

Areas for Future Research

This study points to future research opportunities. First, I had initially intended to focus my thesis research on investigating the City of Edmonton's approach to climate resilience and adaptation during neighbourhood level participation. The city had planned to pilot the development of neighbourhood climate resilience plans in three to five neighbourhoods over the summer of 2018. I was initially planning to critically examine how citizens and municipal administration interact and collaborate during the

development of these plans. Due to policy timeline changes, this pilot was postponed and I was unable to examine the collaborative process and development of resilience plans. As community based and participatory approaches are being used increasingly in climate resilience and adaptation at the local level (Revi et al., 2014; Satterthwaite, 2011), it would be useful to examine the actual process of climate resilience planning when local governments and citizens collaborate to create climate resilience plans, especially to facilitate engagement with marginalized populations.

Second, my research findings align with the literature demonstrating the need for more integrated approaches to address social and community challenges alongside climate resilience and preparedness (Ayers & Dodman, 2010; Fünfgeld & McEnvoy, 2014). Future research could explore examples where the integration of social and climate resilience at the city and neighbourhood level is being used to increase climate resilience while improving community cohesion and well being (Fünfgeld & McEnvoy, 2014). Studies of this nature have been carried out in developing countries (e.g., Ayers & Dodman, 2010), but there is a need for more research on the integration of social and climate resilience in developed countries and cities as well (Steinberg & Shields, 2008). There additionally needs to be more collaboration between academics and government bodies to better integrate a social and community development focus with climate adaptation and resilience planning. As discussed, there is literature on the importance of integrating development and social challenges in climate resilience planning, but this is not always translated to municipal planning and policy (Phadke et al., 2015). More collaboration between academics and government bodies may allow for innovative

approaches to be used to integrate social and community development with climate resilience planning and strategic policy.

Third, my findings speak to an opportunity to explore the right to the city more thoroughly in how it relates to resilience, as well as the shaping of spaces and decision making for the most vulnerable communities (Duff, 2017; Harvey, 2012). In this study, climate resilience was discussed in relation to shaping and participating in spaces and decision making, thus increasing climate resilience planning should be considered in relation to broader city planning, community building, and exclusion. There is a need to more extensively explore how the right to the city, shaping spaces and places, and feeling fulfilled in one's city relates to climate resilience planning.

While implications from this study cannot necessarily be applied to other communities or cities due to the highly contextualized cases of these neighbourhoods, this research speaks to the complex challenges a community faces as inseparable from climate resilience planning. When municipalities or organizations conduct community level climate resilience planning, specific community challenges, concerns, and experiences should be addressed for holistic approaches to climate resilience.

Concluding Remarks

This research suggests a reorientation in the way climate adaptation and resilience planning should be conducted for vulnerable populations and community groups. While climate adaptation and resilience planning often takes a technical and scientific approach (Blue, 2016; Nightingale et al., 2019), it is important to connect climate resilience and adaptation with social and community challenges including inequality, historical marginalization, and injustice (Fünfgeld & McEnvoy, 2014); community and social

challenges should be addressed before, or alongside plans to tackle climate hazards and impacts.

The city's understanding of resilience and sustainability, as it relates to urban growth and economic development, contrasts with community member perspectives that development and gentrification are detrimental to and exclude community members' values and spaces. For inclusive climate resilience planning, it is imperative to make sure vulnerable and disadvantaged views of resilience are not disregarded and unheard in the process of developing climate resilience plans at the neighbourhood level.

Community members felt that a broader and deeper conversation was needed to address historical and current marginalization in order to develop stronger inclusiveness in policy, planning, and city spaces. While the City of Edmonton is not considering climate resilience in relation to broader city planning, community building, and citizen exclusion, this research suggests that the direction of climate resilience planning should include a broader understanding of resilience that involves community members' ability to shape community space and participate in a deeper conversation for improved decision making. More inclusive and open dialogue is needed for participants to feel welcome to have broader conversations related to community, social, and climate concerns, with confidence that perspectives and concerns will be taken seriously and addressed appropriately in municipal policy and planning.

This research contributes to the literature by determining ways that community members and municipal administration perceive resilience, but also connects resilience and adaptation planning to broader city processes and inclusion of vulnerable and marginalized citizens within their cities, neighbourhoods, and other community groups.

New directions of climate resilience should include citizen perspectives and values of inclusive resilience practices, but should also involve the participation of vulnerable groups in the shaping of their neighbourhoods, city spaces, and policies. This thesis research points to the need for climate adaptation and resilience planning to include opportunities to tackle community and social challenges alongside climate impacts to make sure climate resilience planning does not exclude the most vulnerable and marginalized groups in urban settings. All of this speaks to the importance of opening up climate resilience planning to explore inclusion, social and community challenges, different meanings of resilience, and the shaping of cities and communities more broadly.

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Appendices

Appendix A: Participant Recruitment Script for Interviews

My name is Ashley Roszko and I am currently taking my Master of Arts in Community Engagement through the Faculty of Extension at the University of Alberta.

I would like to invite you to participate in a research project on community based climate resilience planning. I would like to learn more about the perspectives that citizens, community organizations, municipal employees, and representatives have with regards to resilience, community, and participation, as well as how organizations or the City of Edmonton can support citizens and communities in climate change preparedness for the Boyle Street and McCauley neighbourhoods and surrounding area. I am interested in this topic because the City of Edmonton is developing and implementing a Climate Change Adaptation and Resilience Strategy. My research aims to provide insight into how municipalities, citizens, and community organizations can collaborate for climate preparedness.

I am inviting you to take part in this research by participating in an interview on resilience, community, and participation, with regards to climate change. The information gathered during the interview will be used for my Master's thesis research. The interview will be approximately 45 to 90 minutes, and will be audio recorded or transcribed. I will ask you about your involvement with resilience, or climate resilience, specifically in the City of Edmonton, or the Boyle Street and McCauley neighbourhoods and surrounding area. I will also ask about your perspectives on community, resilience, and participation for neighbourhood climate resilience planning, as well as how organizations and the City of Edmonton can support these neighbourhoods in resilience planning. Participation will be completely voluntary and you will have the right to withdraw from the study or refuse to answer any questions.

Please let me know if you would like more information or have any questions regarding this study before deciding if you are interested in participating. You are welcome to see the information letter as well as the questions, which are open-ended and may vary slightly, as I would like this to be a conversation.

Appendix B: Participant Recruitment Script for Focus Groups

My name is Ashley and I am currently taking a Master of Arts in Community Engagement at the University of Alberta. I would like to invite you to participate in a group discussion on resilience, community, and participation for the Boyle Street and McCauley neighbourhoods.

Purpose of Research: The City of Edmonton is developing a Climate Change Adaptation and Resilience Strategy, and part of the implementation of this strategy will likely include community and neighbourhood based resilience. I am doing research to understand the perspectives that community members, community organizations, municipal employees, and representatives have on community, resilience, and participation, as well as how municipalities can work with citizens and communities for effective climate resilience planning in the Boyle Street and McCauley areas.

This group discussion should take approximately 90 minutes. If you have any questions, please email ashley.roszko@ualberta.ca

Appendix C: Information Sheet for Interviews

Title of Research Project:
Preparing for climate change through community based adaptation: Examining the meanings of participation, community, adaptation, and resilience in a socially, economically, and culturally diverse neighbourhood in Edmonton, Alberta
Thesis for Master of Arts

Topic:
The topic I am interested in is community based climate resilience planning. I would like to learn more about the perspectives of citizens, community organizations, municipal employees, and representatives regarding resilience, community, and participation. I would also like to learn how the City of Edmonton and community organizations can support citizens in climate change preparedness for the Boyle Street and McCauley neighbourhoods and surrounding area. I am interested in this topic because the City of Edmonton just developed and is in the process of implementing a Climate Change Adaptation and Resilience Strategy[1]. I am inviting you to take part in this research by participating in an interview on resilience, community, and participation, which includes resilience to climate change. The information gathered during the interview will be used for my Master's thesis research.

Definition of Resilience and Climate Resilience:
The City of Edmonton defines resilience as: "the capacity of a system to survive and thrive under changing conditions, and to maintain its functions during change"[2]. Climate resilience specifically includes coping with gradual, as well as sudden, and severe, weather events, trends, or disturbances. Climate resilience also puts a greater emphasis on how communities can prepare for potential impacts and changes.

Area of Focus:
My research is focused on the Boyle Street and McCauley neighbourhoods, which are east and northeast of Edmonton's downtown.

Methods:
Participants will be interviewed for approximately 45 to 90 minutes. The interview will be audio recorded, transcribed, and analyzed.

Use of your Information:
The information collected during interviews will be used for a Master's thesis and will potentially be used for journal articles, developed into a report, and/or presented at conferences. Transcripts and audio recordings from this interview will be stored on a password-secure computer and/or locked in a filing cabinet in a secure office for a minimum of five years following the completion of the research. This will enable us to

[1] https://www.edmonton.ca/city_government/documents/Climate_Resilient_Edmonton.pdf
[2] https://www.edmonton.ca/city_government/environmental_stewardship/climate-change-faq.aspx

refer to the data if needed. When appropriate, the data will be destroyed by the researcher, or supervisors.

Confidentiality:
Your name or identifying information will not be included in the interview transcripts and will not be used when the researcher presents her research, both written and verbal. However, we do not guarantee anonymity, as we will have a small sample of participants from certain organizations. But, only the researcher and two supervisors will have access to the recordings and transcripts from your interview; these will not be public.

Benefits:
There will be no direct benefits to participants; however, this research provides an opportunity for you to share your views and participate in resilience planning in your city and communities. Findings will be shared with city employees, participants, and organizations in the hopes that this research can help citizens, municipal government employees, and representatives collaborate for climate resilience in Edmonton.

Risks:
We cannot guarantee that information shared in this interview will be fully anonymous. We, however, aim to take out identifying information from interviews to help protect your anonymity. Feel free to ask us any questions that you have before, during, or after the interview; if you would like to speak to someone after the interview, you may contact the researcher or supervisors.

Additionally, as interviews may last up to 90 minutes, it is possible that you may feel tired during, or after, the interview. I will provide you with an opportunity for a break every half an hour, if you would like one, and you can take as much time as you need to answer a question, or can refrain from answering any questions if you would prefer.

Voluntary Participation and Withdrawal from the Study:
You have the right to refuse this invitation to participate, as well as the right to decline answering any of the questions asked during the interview. You are also free to stop the interview at any time or request that we withdraw your information (transcripts, audio recording) up until two weeks after the interview is conducted. You have the right to withdraw from the research project without providing any reason, and without consequences. If you decide that you want some part, or all, of your interview withdrawn from the study, please contact me within two weeks after your interview; the audio recording and any transcripts that have been made will then be destroyed immediately.

Thank you very much for taking part in this study.

The plan for this study has been reviewed for its adherence to ethical guidelines by Research Ethics Board 1 at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615.

Appendix D: Information Sheet for Focus Groups

Title of Research Project:
Preparing for climate change through community based adaptation: Examining the meanings of participation, community, adaptation, and resilience in a socially, economically, and culturally diverse neighbourhood in Edmonton, Alberta
Thesis for Master of Arts

Topic:
The topic I am interested in is community based climate resilience planning. I would like to learn more about the perspectives of citizens, community organizations, municipal employees, and representatives regarding resilience, community, and participation. I would also like to learn how the City of Edmonton and community organizations can support citizens in climate change preparedness for the Boyle Street and McCauley neighbourhoods and surrounding area. I am interested in this topic because the City of Edmonton has just finished developing, and is now implementing, a Climate Change Adaptation and Resilience Strategy[1]. I am inviting you to take part in this research by participating in a group discussion on resilience, community and participation, which includes resilience to climate change. The information gathered during the group discussion will be used for my Master's thesis research.

Definition of Resilience and Climate Resilience:
A basic definition of resilience is for anyone to be able to handle any challenges they may face. The City of Edmonton defines resilience as: "the capacity of a system to survive and thrive under changing conditions, and to maintain its functions during change"[2]. Climate resilience specifically includes coping with gradual, as well as sudden, and severe, weather events, or trends. Climate resilience also puts a greater emphasis on how communities can prepare for potential impacts and changes.

Area of Focus:
My research is focused on the Boyle Street and McCauley neighbourhoods, which are east and northeast of Edmonton's downtown.

Methods:
Participants will take part in a group discussion, with around 6-8 other participants for approximately 60-90 minutes. The group discussion will be audio recorded, transcribed, and analyzed.

Use of your Information:
The information collected during interviews will be used for a Master's thesis and will potentially be used for journal articles, developed into a report, and/or presented at conferences. Transcripts and audio recordings from this group discussion will be stored on a password-secure computer and/or locked in a filing cabinet in a secure office for a

[1] https://www.edmonton.ca/city_government/documents/Climate_Resilient_Edmonton.pdf
[2] https://www.edmonton.ca/city_government/environmental_stewardship/climate-change-faq.aspx

minimum of five years following the completion of the research. This will enable us to refer to the data if needed. When appropriate, the data will be destroyed by the researcher, or supervisors.

Confidentiality:
Your name and identifying information will be removed from transcripts and will not be used when the researcher presents her research, both written and verbal. Only the researcher and two supervisors will have access to the recordings and transcripts from the group discussion. We, however, do not guarantee anonymity or confidentiality, as this is a group discussion with other participants that can share your answers outside of the group discussion. It is also possible that someone outside the group discussion can identify you based on your answers. ***We, however, encourage all participants to keep everything shared during this group discussion to themselves, so that all participants feel comfortable sharing their perspectives on the topic.***

Benefits:
There will be no direct benefits to participants; however, this research provides an opportunity for you to share your views and participate in resilience planning in your city and communities. Findings will be shared with city employees, participants, and organizations in the hopes that this research can help citizens, municipal government employees, and representatives collaborate for climate resilience in Edmonton.

Risks:
It is possible that information you share in this group discussion will be shared outside of this group. It is also possible that people outside this group discussion will be able to identify you, thus the researcher and supervisors cannot guarantee total anonymity. We, however, aim to take out identifying information from focus groups to help protect your anonymity. Feel free to ask us any questions that you have before, during, or after the group discussion. Additionally, feel free to get up and move around as you need to, and you can take as much time as you need to answer a question, or can refrain from answering any questions.

Voluntary Participation and Withdrawal from the Study:
You have the right to refuse this invitation to participate, as well as the right to decline answering any of the questions asked during the group discussion without providing any reason, and without consequences. You are also free to leave the group discussion at any time. However, we cannot withdraw the information you already contributed to the group discussion if you do decide to leave, as we cannot be sure that we are removing your answers and not another participant's answers.

Thank you very much for taking part in this study.

This study has been reviewed for its adherence to ethical guidelines by Research Ethics Board 1 at the University of Alberta. For questions regarding ethical conduct of research, contact the Research Ethics Office at (780) 492-2615.

Appendix E: Semi-Structured Interview Guide

Preparing for climate change using community based adaptation: Examining the meanings of participation, community, adaptation, and resilience in a socially, economically, and culturally diverse neighbourhood in Edmonton, Alberta

This protocol outlines a means of exploring these topics by fostering conversation. Flexibility should be given to participants to pursue these topics using their own terms and ideas. Questions should be used to guide conversation as opposed to generate forced and rigid responses; not all questions need to be asked. Interviews should take between 60 and 90 minutes.

Researcher should describe in detail what this research is about and what we aim to accomplish in interviews. Go through Information Sheet and Informed Consent Form.

Pre-Interview Checklist:

- ☐ Introduce myself
- ☐ Introduce project
- ☐ Go through information sheet and consent form
- ☐ If permission is given, begin recording

Interview Questions:

1. What is the name of the organization you work for and what is your role?

Resilience/Community Resilience

2. What do you think your role is in increasing the resilience of citizens and communities in Edmonton? How have you been involved in resilience planning in the Edmonton community?
3. What might a resilient community look like? How do you know if a community is resilient? (Do you think of communities as geographical? Based on common interest? Both?)

Climate Adaptation and Resilience Strategy (most of these questions are for municipal employees or representatives)

4. Can you talk a little bit about the Climate Change Adaptation and Resilience Strategy and what it is trying to accomplish, as well as timelines of the strategy/what stage the strategy is in now? What motivated the formation of this strategy? What is their (the interviewee's) role in its development?
5. How might this strategy help increase climate resilience in Edmonton communities?
6. Why might engaging citizens in climate resilience and adaptation planning be important? What are citizens'/communities' roles in climate adaptation and resilience planning?
7. What steps should the city take to increase the participation of citizens in climate resilience planning? Are these incorporated in the city's action plan?
8. Does the strategy address vulnerable or disadvantaged citizens? How about cultural or economic diversity?

Boyle Street and McCauley Neighbourhoods

9. My research is focused on two particular neighbourhoods in Edmonton, which are Boyle Street and McCauley. Do you have a role in this area of the city? How would you describe the Boyle Street and McCauley areas?
10. What do you think resilience means for community members in the Boyle Street and McCauley neighbourhoods? Are Boyle Street and McCauley resilient and how can they be more resilient? Are there challenges?
11. How do you think the city, or the organization you are a part of, is, or could be, supporting the Boyle Street and McCauley communities to be resilient? (If talking to a community organization, ask them how they think the city is or is not supporting the resilience of people in this area.)
12. What do you think climate resilience planning should include in the Boyle Street and McCauley neighbourhoods?
13. How do you think the Climate Change Adaptation and Resilience Strategy could help to increase the resilience of vulnerable neighbourhoods such as Boyle Street and McCauley (should specific considerations be taken for more vulnerable neighbourhoods like these)?

Boyle Street/The Quarters redevelopment

14. Boyle Street is going through some redevelopment and revitalization… Can you speak a bit about this? / What are your thoughts on redevelopment in the Boyle Street and McCauley areas?
15. Why do you think the city decided to start building here and renewing the area?
16. Do you think redevelopment is/will (or is not/will not) help increase the resilience of people living and participating in activities in this area? Why or why not?

The Neighbourhoods and Climate Resilience

17. If there was an extreme weather event in the area, how do you think community organizations/the city can play a role in increasing climate resilience for community members (for example, if there was an extreme weather emergency)?
18. How do you think your organization could be supported (by the municipality or other) to help people in the area if there was an extreme weather event, or other emergency? (If talking to community based organizations.)
19. Can you recommend any other organizations, CBO staff, city employees or representatives that would be beneficial to talk to about resilience and/or climate resilience in the Boyle Street and McCauley neighbourhoods?
20. Is there anything else you would like to add on the topic of community resilience, climate change, participation, and community?

Appendix F: Focus Group Guide

Preparing for climate change using community based adaptation: Examining the meanings of participation, community, adaptation, and resilience in a socially, economically, and culturally diverse neighbourhood in Edmonton, Alberta

This protocol outlines a means of exploring these topics by fostering group conversations. Flexibility should be given to groups to pursue these topics using their own terms and ideas. Questions should be used to guide conversation as opposed to generate forced and rigid responses; not all questions need to be asked. Focus groups should take no longer than two hours, but aim for 90 minutes.

Researcher should describe in detail what this research is about and what we aim to accomplish in interviews. Go through Information Sheet and Informed Consent Form. Mention that everyone in focus groups should be treated with respect and there are no silly questions or responses.

Pre-Focus Group Checklist:

- ☐ Introduce myself
- ☐ Introduce project
- ☐ Go through information sheet and consent form
- ☐ Explain that everyone in group conversation should be treated with respect and there are no silly questions or responses
- ☐ Discuss definition of resilience/climate resilience
- ☐ If permission is given, begin recording

Focus Group Questions

1. Get people to introduce themselves. How are you involved in the Boyle Street and McCauley neighbourhoods and/or surrounding area? (live/work/participate in activities there?) And what do you like/don't like about this area?

Resilience/Community Resilience

2. I started by talking about a basic definition of resilience (refer to definition in information sheet), but I would like you to add to it. What are some things you think of when you think of resilience and being resilient?
3. Are there certain practices in place to make sure your businesses/organization are inclusive? Examples? Challenges? How might this relate to/affect resilience?

Boyle Street and McCauley Neighbourhoods

4. How would you describe the Boyle Street and McCauley neighbourhoods?
5. What do you think resilience means for community members in the Boyle Street and McCauley neighbourhoods? Are Boyle Street and McCauley resilient and how can they be more resilient? Are there challenges?
6. How do you think the City of Edmonton, social service agencies, and community based organizations could/should work with citizens to increase the resilience of the Boyle Street and McCauley?
7. What challenges do you think there might be when community members and the municipality try to work together?

8. There has been some redevelopment happening in the Boyle Street area, such as new buildings being built etc. (think of the ICE district as an example). What are your thoughts on redevelopment in the Boyle Street and McCauley areas? Do you think this will (or will not) help increase the resilience of people living and participating in activities in this area? Why or why not?
9. If there was an extreme weather disaster or emergency in the area (such as flooding, like what Calgary, or High River experienced, or fires, like Fort McMurray experienced), where would you go? What kinds of support do you think you might need or how could organizations in the area help support people facing an emergency?
10. What do you think the future of this community might look like? What do you hope it might look like in the future?

Climate Change Adaptation and Resilience Strategy

11. The City of Edmonton has just finished developing a strategy to increase Edmonton's resilience to climate change and impacts that we might face like droughts, hail, flooding, and tornados. How do you think the city's strategy could or should help increase the resilience of citizens and communities?
12. What do you think climate resilience planning should include in the Boyle Street and McCauley neighbourhoods?