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Arctic Entrance:

Opening the door to alternative trajectories for Indigenous housing through a decolonizing of planning practice

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Acknowledgements

Summary

Indigenous communities across Canada are facing a crisis in housing. In response, new and innovative designs, policies, and programs are being developed in attempt to shift away from harmful colonial-imposed models to ones that advance autonomy, healthy living, and cultural revitalization. This important shift has sparked debate and speculation about what a reclaiming or "decolonization" of planning looks like in practice. To explore what this emergent planning paradigm means in the context of rural, remote, and northern Indigenous communities, I interviewed experts working in or with Indigenous communities across Canada and Alaska, USA, in addition to undertaking case study and action research with the First Nation of Na-cho Nyäk Dun in Yukon, Canada. In contributing to established principles of good planning with Indigenous communities, my research suggests that a decolonized approach to housing planning is one that is inclusive off all community groups, integrates multiple objectives and needs, is sensitive to the surrounding landscape, builds on past work, sparks creativity and innovation, enables better understanding of both possibilities and trade-offs, and creates tangible and immediate change on the ground while acting with a long-term focus. My findings also suggests that there are particular planning considerations that should be taken into account when working in the north, and that planning as a practice should be reflexively critiqued, rethought, and transformed if it is to serve in support of communities in their self-determined transformation.

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"Housing is only one aspect at the end of the day. It is frustrating for me that we only focus on one thing, when, from my perspective - housing is a part and parcel of life, we know we need it, I'm not trying to devalue that part - but the main focus should be people. If you focus on people, a lot of these issues that are out there do go away, and housing is one of them." (Nelson Lepine)

1 Introduction

Indigenous[1] communities across Canada are facing a housing crisis, characterized by a severe shortage, underfunding, and poor quality, ageing, and unhealthy structures. These challenges are further exacerbated in the north, where housing is affected by buildings inappropriate to the harsh environment, high costs of materials and transport, and the effects of climate change. It is apparent that conventional models of planning and housing are failing Indigenous communities across Canada, and the resultant housing crisis will not be resolved by building more dwelling units if the same approaches are kept. Thus, there is a knowledge gap and research need for generating an understanding of how to avoid repeating and perpetuating the same detrimental models.

However, in recent years there has been a resurgent interest and energy towards reimagining built forms that embody cultural values, and many Indigenous communities across Canada and indeed the globe are leading the way in creating buildings and community plans that are both innovative and culturally grounded. While there has been comparably less progress in the past with regards to housing in northern Canada, researchers, planners, and locals alike are experimenting, inventing, imagining, and creating housing design and policy that are creative and adaptive to the unique needs of diverse peoples. These resurgent and insurgent practices in housing and planning seek both to unsettle and redress the harms and power structures of colonialism, as well as envision a better future for the next generations.

As communities endeavour to spark positive transformation, build better houses, revitalize cultural traditions and language, and create healthier places for citizens to live, all while contending with the pervasive hangover of colonialism, there is significant debate and speculation about what such a planning approach might look like that can meaningfully address and advance these needs and aspirations in tandem.

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[1] A note on terminology employed in this thesis: '*Indigenous*', '*Indigenous Peoples*', '*Indigenous communities*' and '*Indigeneity*' are used as collective terms to refer to the original peoples and their descendants of North America, including First Nations, Inuit, and Métis. This is the most popular and widely accepted term used in Canada. The terms '*Métis*', '*Inuit*' and '*First Nations*' fall under the umbrella terms of Aboriginal and Indigenous in the case of Canada, referring to the three distinct groups formally recognized in the Canadian Constitution. The term '*Aboriginal*' and '*Aboriginal Peoples*', is the legal collective noun used in Canada's 'Constitution Act 1982' and refers to the original peoples and their descendants in North America, however some Indigenous groups prefer not to be called this and it is becoming less widely employed outside of legal lexicon. The term '*Indian*' refers to the legal identity of an Indigenous person who is registered under the 'Indian Act' – but aside from this specific legal context, the term in Canada is outdated and may be considered offensive and derogatory. For more information on terminology and definitions, see Indigenous Peoples: A Guide to Terminology.

A number of planners and planning theorists advocate for a decolonization of planning, to actively redress the colonial systems of dominance and work towards a model of planning that serves the community in meaningful and culturally appropriate ways (Porter, 1973; Cook, 2013; Monk, 2006; Sandercock, 2004; Jojola, 2008; Matunga, 2013; Prusak et al., 2015; McCartney et al., 2016; Erfan & Hemphill, 2013; Wilson, 2018).

Thus, in this thesis research project, I ask: moving forward, how can planning approaches to community housing in northern Canada be decolonized? In order to help break down what a decolonization of planning means in practice, I also ask: What are the roles and responsibilities of outsiders and locals in progressing decolonization in planning? What might be the key dimensions or criteria for planning housing in this way? What are the particular dimensions that should be taken into consideration for planning housing in the north? And, how can these considerations be integrated into planning practice and community decision-making processes?

While this thesis does not attempt to define what an ultimate decolonized planning approach should entail, the findings may in some small ways offer insight and suggestions on how to decolonize planning approaches, particularly in northern housing. In seeking to 'open the door' to an understanding of a decolonized planning approach to housing planning and policy in rural, remote, and northern Indigenous communities, I explore what alternative trajectories for planning might look like in two ways: first, by speaking with housing experts and practitioners working across Canada and Alaska to learn about their experiences, reflections, and lessons learned; and second, learning from action research and case study research with the First Nation of Na-cho Nyäk Dun (NND) in Yukon, Canada. To understand the broader meanings and implications of the findings, and their contribution to a decolonization of planning practice, I considered the data in terms of theory on decolonization and Indigenous planning, supplemented by concepts in systems thinking, comprehensive planning, sustainability, and Arctic urbanism. In particular, I used Laura Mannell, Frank Palermo, and Crispin Smith's (2013) six principles of good planning for First Nations communities both as a framework for examining the findings through a planning lens, as well as to in turn contribute and augment these principles as they apply to northern housing.

1.1 Thesis Structure

While housing planning and policy are far from new topics in the field of planning research and theory, they are lacking in their understanding of and sensitivity to Indigenous contexts, as well as rural, remote, and northern geographies. Thus, I begin this thesis by presenting theory on Indigenous and decolonizing planning, supplemented by concepts in Arctic urbanism, systems thinking, comprehensive planning, and sustainability. In order to better understand the recent advancements in approaches to housing planning and design by and with Indigenous communities, I then review salient literature on the housing crisis, followed by academic and grey literature exploring diverse approaches in culturally appropriate and

northern housing, planning, and design. I proceed to explain how I chose to approach this field methodologically, in consideration of Indigenous research methodologies, reflective practice, and approaches to engaging with experts and collaborating with NND. To understand and illustrate the context of housing challenges and future directions in Canada, I then present a background and history of housing in Indigenous communities and in the north. I follow this by presenting a historical, geographical, social, and planning overview of NND, to provide myself and the reader a context for the community I understand to be a case study in researching Indigenous and decolonized planning approaches in the north.

With an established theoretical approach, understanding of the broader planning conversations around Indigenous and decolonized housing and planning, methodology for gathering research in this field, and armed with a background knowledge of the context of housing in Indigenous communities across Canada and NND more specifically, I proceed to present the findings of analysed data. In an analytical framework informed by Mannell et al.'s (2013) principles of good planning, here I put my interview data into dialogue with theoretical understandings and tangible community realities and objectives shared by NND, with the aim of gaining insight into what decolonized housing planning practices mean and look like in practice. I then discuss how my findings contribute to the principles of good planning, and help progress an understanding of a decolonization of planning practice, in northern housing but also more generally. Finally, I conclude by summarizing what my thesis may contribute to the debates and speculations around what a reclaiming or "decolonization" of planning looks like in practice, and I offer some suggestions on areas of future research.

2 Theory

2.1 Theoretical Framework

Mannell et al. (2013) argue strongly that there is an urgent need for planning in every Indigenous community. Thus, in endeavoring to conceptualize and contribute to better understandings of planning practice around housing in the context of northern First Nations communities, I have drawn from theory decolonizing and Indigenous planning. Given Indigenous and decolonizing planning theory's emphasis on sensitivity to place, I have brought in theory on Arctic urbanism to enhance an understanding in a northern context. Furthermore, Indigenous and decolonizing planning theory seeks to understand the connections and relationality between different parts in a holistic way, and thus I considered systems thinking, including notions of comprehensive planning and sustainable development.

2.2 Decolonizing and Indigenous Planning

The most common complaint about planning is that its efforts, cumulating in strategies, plans, and reports, often end up on shelves collecting dust, with no real impact on the community (Mannell et al., 2013).

However, planning has also shown that it can be detrimental and destructive for Indigenous communities. According to Erfan and Hemphill (2013), "what most planners were not taught in school is that planning has been an apparatus of colonization in Canada" (p.18). The public, as well as planners themselves, have become increasingly aware of the potential for plans to either fail to solve problems, or create problems worse than those they had been designed to solve (Schön, 1983). Libby Porter (2010) further argues that if land was fundamental for the success of colonization in creating new territories through securing imperial state rule and generating economic growth, then land use planning was the principal instrument for that control. In the context of settler states, including Canada, this means that planning has been, and remains to be, integrally involved in dispossession through locally specific colonizing processes (ibid). Cook (2008) explains that this largely due to the fact that for many decades, planning for Indigenous communities has been controlled by federal agencies as well as external and non-Indigenous engineers and planners. Jojola (2008) adds that these external practitioners subsumed local voices and largely used approaches to community development that were more attuned to mainstream urban environments.

This "state" or "expert" driven planning model continues to have mixed results and consequences for communities (Cook, 2008). Housing too has been a significant site where colonization policies of civilizing and assimilating Indigenous peoples played out (Monk, 2006). The imposition of housing programs and policies served to fix people on the land in particular ways, creating economic subjects of the Indigenous inhabitants and the home itself representing a new economic relationship with the land, as a single-family unit on an individual allotment. These processes altered how families lived together, how communities organized themselves, and how decisions impacting those communities were made (ibid). Given the continued impacts of colonialism and politically lingering colonial mentality and governmentality, Sandercock (2004) argues that it makes sense to talk about planning in the context of an unresolved post-colonial condition. Indeed, Monk (2006) contends that reframing the problem as one of governance and colonialism pursued and resisted through housing opens up possibilities and spaces for action, by putting focus and value on what Indigenous communities themselves are doing to address housing and other challenges.

Mannell et al. (2013) argue that "planning" for Indigenous communities is neither a new idea nor an imported one. As a future-seeking endeavour, Walker and Matunga (2013) explain that "planning" is not owned by the West, nor by its theorists and practitioners. Prior to colonization, Indigenous societies were actively engaged in planning their communities according to their own traditions and sets of practices (Jojola, 2008; Matunga, 2013). In the contemporary, Indigenous communities are challenging Canada's colonial past, reclaiming systems of knowledge in order to advance self-reliant communities and sovereignty (Cook, 2013). They are actively undertaking comprehensive community planning and development initiatives to address their challenges, through preserving languages and cultural practices,

rebuilding governance and education systems, investing in community health and wellness, enacting sustainable resource management, building self-reliant economies, and working to improve housing and infrastructure (ibid). These planning and development ventures necessarily implicate the history, theory, education, and practice of Western and Indigenous planning, causing Cook (2013) to question the role of planning moving forward, including: How can planners redress a history of Western planning practice and transition to a planning culture that is more culturally respectful and responsive? How can planning grow beyond a linear system of rationalization embedded in Western values and thinking? (ibid).

Seeking to answer such questions, "Indigenous Planning" is emerging as a paradigm in the context of contemporary planning that reclaims historic, contemporary, and future-oriented planning approaches of Indigenous communities, across Western settler states (Prusak, Walker, & Innes, 2015). Porter (2010) asks: "If planning is a producer of place, what does it claim is worth producing and how is this particular view of the world continually mediated and reconstituted?" (p.16). Given that planning, as a dominating cultural practice, has marginalizing and oppressing effects on upon the rights and lives of Indigenous peoples, it is crucial that planning research then look for ways to unsettle and undo this dominance (ibid). Indigenous planning theory uncovers mechanisms for altering this dynamic of asymmetrical power relations and marginalization of alternate worldviews, focusing on the emancipatory potential of planning and its ability to be an instrument of hope (McCartney et al., 2016). Jojola (2008) describes Indigenous planning as both an approach to community planning and an ideological movement, and what distinguishes it from mainstream planning is "its reformulation of planning approaches in a manner that incorporates traditional knowledge and cultural identity" (p.42). Mutunga (2013) recognizes that the central tenets of Indigenous planning are community/kinship and place based. Literature of Indigenous planning is complemented by a larger body of work on "planning with Indigenous communities", and combined this scholarship seeks to advance an understanding of how to more effectively undertake community planning in and by Indigenous communities (ibid).

Also emergent in discussions of planning's relationship with communities are the concepts of "Indigenizing" and "decolonizing" planning (Erfan & Hemphill, 2013). Each community has unique traditions and relationships, and thus *doing* Indigenous planning means to be in tune with these and sensitive to the unique local context (ibid). Mutunga (2013) agrees that "to do Indigenous planning requires that it be done in/at the place with the people of that place" (p.5). The role of Indigenizing the process should be in the prerogative of the local community planner (Erfan & Hemphill, 2013). In turn, the role of the non-Indigenous or external planner, should be as an active ally by decolonizing the process, reversing the power relations so that the planner is fully in service of the local community. This might mean: challenging their own tendencies to talk too much, or to privilege a bureaucratic or reporting requirement over what is culturally appropriate or relevant at a given stage in the planning process (ibid).

This so-called "decolonization" of the role that planning plays in either perpetuating or breaking unequal power dynamics requires a critical reflexivity on the part of the planner, argues McCartney et al. (2016). This 'dark side' of planning, or its entanglement in practices of social control and mobilisation of political rationality, can be reduced if their positionality is reflexively acknowledged (Huxley, 2002). Indeed, if planners seek to understand how power relations work to shape the planning process, they may be more equipped to improve the quality of their analysis and empower citizen and community action (Forester, 1982).

Mannell et al. (2013) present two fundamental ideas about planning with Indigenous communities that apply to the process, product, and the ensuing action: planning must be community-based and comprehensive. They propose six major principles for conducting good community-based and comprehensive planning in First Nations communities: engage a broad cross-section of the community; engage youth; value local and traditional knowledge as well as outside ideas; reflect on the past and present; connect the physical and social; and establish a united direction for the future. In terms of the community-based approach to planning, Mannell et al. also outline six elements that refer to the benefits of genuine community involvement, as well as provide the basis for measuring whether or not a plan is actually community based. These elements expect that a community-based planning process? will: establish awareness, build community, develop capacity, raise expectations, voice opinions, and nurture creativity (ibid). You could ask if Mannell's principles are sufficient to decolonize planning and if these principles resonate with what experts and locals point to as central for indigenous planning.

2.3 Arctic Urbanism

Arctic landscapes and communities appear to be changing faster than anywhere else (Larsen & Hemmersam, 2018). In addition to the challenges related to a shifting climate and low ecological resilience, Arctic populations are also finding themselves in an emerging geopolitical centre, as the region is being increasingly becoming sites of resource extraction speculation and global flows of capital, trade, and people (ibid). This rapid development, driven by resource expansion and high birth rates, is imposing intense and urgent pressures on regional and city planning (Sheppard & White, 2017). Cities and settlement across the Canadian Arctic thus continue to grow, but often with little reflection or debate on what spatial or social forms this might take (ibid).

The nature of human infiltration, or settler encroachment, throughout the 20th century in the Canadian north engendered an Arctic urbanism that was driven by externalities: climactic and technical challenges, economic or military impetus, and the imperative for efficiency (Sheppard & White, 2017). In this stage of rapid community development, there was not enough time to develop the gradual exchange between a person and their environment so as to create a local culture or style, and thus a contemporary northern vernacular has failed to materialize that coherently responds to the unique climactic, logistic, and socio-

cultural realities of the diverse peoples who live there (ibid). While the move towards self-determination has led to an increased desire by Indigenous peoples to develop building forms that both in their function and aesthetic embody their traditional cultural values, this work has been for the most part limited to the community level (community centres, schools, cultural infrastructure) and there has been comparably limited progress towards developing examples of culturally appropriate housing (Semple, 2013).

According to Larsen and Hemmersam (2018), it is important to advance an understanding of the Arctic not only as diverse, conflictual, and narrated, but also as continually evolving and speculative landscapes that will emerge in multiple forms. In northern communities that have large Indigenous populations, the failures of design of buildings and communities appear to have occurred not only because they did not address the traditional cultures of the north, but also because they have not been adaptive and creative about what an emerging northern culture might be (Semple, 2013). Without returning completely to pre-settlement ways of life, Sheppard and White (2017) contend that the 21st century presents an opportunity to engage such future thinking, including addressing the shifting intersections between traditional and contemporary northern life. The hybrids and negotiations between traditional and contemporary life combined with future thinking and planning offer a powerful landscape of potential for the future of the north and its people. Sheppard and White (2017) explain: "By fostering respect for evolving cultures and their needs, urban design and planning could become catalysts of empowerment, consolidation, and reinforcement" (p.40).

In order to conceptualize and illustrate some of the possible approaches to developing culturally appropriate and sustainable housing and planning in the north, I elaborate on elements of systems thinking, comprehensive planning, sustainable development, decolonizing planning, and Indigenous planning.

2.4 Housing as a System

In theoretically characterizing the "problems" of housing, it becomes evident that they cannot be considered in isolation. Schön (1983) contends that planners (or any other managerial profession) do not deal with problems that are independent of each other, but rather with dynamic situations that consist of complex systems of changing problems that interact with one another. Gibb and Marsh (2019) advocate for taking a systems thinking approach to housing policy and strategy development. Systems thinking focuses on the interrelationships between the elements of a system, working across multiple perspectives and contending with the reality of different interests across the system (ibid).

Challenges with housing arise because the housing sector is a complex system, explain Gibb and Marsh (2019). Such complexity creates wicked problems that are difficult to characterize and respond to, which further complicates mobilizing knowledge and subsequent action. The complexity also stems from the fact that housing is interdependent with other major systems, such as transportation, education, and social security (ibid). In fact, Wishart (2013) argues that there are few places where the crucial interdependencies

between home, hearth, and household are as apparent as in the circumpolar north – and indeed they are vital for human habitation in this harsh region.

Andersen (2013) contends that dwellings should not be considered as unitary structures, but rather as 'systems of settings'. That is to say, an alternative to the hegemonic paradigm might include an understanding of 'a home' as an entire cultural landscape, where activities are dispersed across several geographic settings rather than confined under a roof divided functionally specific rooms. Andersen further explains: "If colonial enumerators are needed to break people into bounded households in order to lend a sense of focus to their analysis of human relationships, it seems that many contemporary researchers are equally inclined to see social activity as entangled within walls, roofs and thresholds" (p.266). Knotsch and Kinnon (2011) explain that housing affects every aspect of life, from and school to family and social relationships, which in turn impacts the individual's mental, spiritual, and physical health and wellbeing. This indicates that housing then ought not to be considered as a stand-alone sector or topic. Monk (2006) further illustrates housing's interconnectedness and complexity:

> "Housing is a nexus connecting inhabitants to social, environmental, economic, political sites. It is a site of personal space and of community interactions; it embodies economic concerns associated with affordability and construction; it is a site of decision-making and authority legitimating between occupants; and it is the site of one of the most basic human-environment interactions." (p.112)

These arguments may be summarized by Andy Moorhouse, former President of the Kativik Municipal Housing Bureau: "Housing is not the only issue, but all issues relate to housing" (Knotsch & Kinnon, 2011, p.1). Wilson (2018) contends that the housing crisis is not a building problem, but a systems problem – thus any solution must address the whole system within which housing is embedded, from education to social welfare to food sovereignty. . The house is a powerful cultural tool and must be considered as part of a complex network of community assets (McCartney, 2016). Housing systems should not be reduced to merely the creation of shelter or isolated dwelling units (ibid). Thus, just building a bunch of houses is not going to solve the housing crisis, and in fact it can actually contribute to it if it perpetuates the same models that currently exist (Wilson, 2018).

There is not, however, one single approach to housing systems and systems thinking, rather systems analysis encompasses multiple approaches that are applied in diverse fields (Gibb & Marsh, 2019). Rather, they argue that the utility or value of systems thinking comes from adopting a systems perspective more generally: "If we take a systems perspective to our diagnosis of empirical, policy and practice questions, then we possess tools and modes of thinking that will encourage better analysis and might help avoid errors that arise from siloed thinking and too much focus on individual elements or nodes rather than the interconnectedness and emergent properties of the system" (Gibb & Marsh, 2019, p.17). The following

sections outline a couple of different approaches that have adopted the philosophy of thinking in systems in the realm of planning and housing.

2.4.1 Comprehensive Planning

The research of Mannell at al (2013) describes an evolving planning model and approach to practice, based on planning efforts in First Nations communities across Canada. Planning is an opportunity to build and positively transform a community, but in order for it to reach its potential and affect real change, there are a few essential elements that must be included in the process, product, and ensuing action. They argue that for planning to be successful in First Nations communities, it must be community-based, comprehensive, and lead to action (ibid). They explain that "comprehensive planning is not just about considering all sectors in a community. More fundamentally it is about seeing the community as a whole, across departments, agencies, budgets, and personalities. It is health, recreation, education, environment, economics, infrastructure – all at the same time" (Mannell et al., 2013, p.113).

This means that it cannot be a side-project, or belong to one department; rather, a comprehensive approach must see a community whole, identify gaps, consider local and global contexts, and think long-term but lead to immediate action. While there is no shortage of planning activities that take place within First Nation communities – from health plans to land use plans to economic development plans - what is often missing is the connection between these initiatives. Approaching planning comprehensively means that these connections are identified, thus enabling coordination and collaboration across departmental boundaries (Mannell et al., 2013). Pulla (2012) agrees that engagement efforts should focus on instilling a "process approach", bringing in more people to more parts of the process to help ensure that all parts can come together as best as possible. Mannell et al. (2013) call for planning praxis in the context of Indigenous communities to be comprehensive, working across and between different sectors and aspects of community life, whether they be cultural, social, economic, environmental, or spiritual. There is thus a need for planning approaches that can comprehend, bring together, and move forward these many dimensions in a system.

2.4.2 Sustainability

Harivel and Anderson (2008) contend that sustainability principles provide the context for and are at the heart of comprehensive community planning. Sustainability is also a potentially useful lens for conceptualizing the multi-dimensional nature of housing, and in understanding the breadth and interrelatedness of those dimensions, more comprehensive planning might be enabled. In general, sustainable housing entails the provision of healthy, affordable, flexible, and environmentally conscious housing that is appropriate both for the occupants and the climate in which it is constructed (Semple, 2013). For Indigenous communities across Canada, there is an increasing recognition that sustainability also

includes the housing design that is culturally appropriate to the needs of the users (ibid). The multi-faceted nature of both sustainable development as a concept and of housing by nature, and the reality that housing is integral to urban sustainability, have underpinned the need to evaluate and plan housing development from the perspective of sustainability (Vehbi et al., 2010). Current research on housing sustainability covers broad spectra of environmental (ex. energy efficiency, water consumption), social (ex. livable communities, occupant health), and economic (ex. affordability, durability, cost-benefit analysis) concerns (Nicol & Knoepfel, 2014). Vehbi et al. (2010) also argue that sustainable housing should not just be merely about meeting basic needs, but should also improve livability and quality of life in terms of those environmental, social, and economic aspects. Furthermore, sustainability objectives in housing can only be achieved if they are taken into account at all stages of the process, from the construction to long-term use to eventual disposal and recycling (ibid).

Though providing shelter is the main function of housing within a complex system, it also has important implications for many other domains, including energy supply, water provision, investment, and human mobility (Nicol & Knoepfel, 2014). In response to emerging environmental and social issues, it is tempting to focus only on the dwelling and attempt to increase its durability and performance; however it is crucial to recognize that dwelling are built within settlements, and the spatial arrangement of those settlements has significant impacts both directly on the environment and indirectly with costs to the household (Saville-Smith et al., 2005). The housing environment then should be safeguarded from deteriorating such that it diminishes the ability of future generations to meet their housing needs (Vehbi et al., 2010). This notion is echoed by Jojola (2008) who contends that a fundamental facet of Indigenous planning approaches is an understanding of the ability of land to sustainably maintain a population into the future.

3 Literature Review

3.1 Understanding the Housing Crisis

Across the Canadian north, the housing needs of residents is one of the most significant and pressing issues facing communities today (Semple, 2013). A number of studies have drawn attention to the significance of housing issues of Indigenous peoples in Canada, including in the north. Knotcsh and Kinnon (2011) note that repeated throughout reports written on northern housing is the lack of adequate housing and overcrowding, and the social challenges that accompany these. However, Shelagh McCartney, Jeffrey Herskovits, and Lara Hintelmann (2020) argue that even the way these housing issues are measured - often through universal metrics of adequacy, affordability, and suitability - is problematic, because it misses the multiple dimensions and causes of issues such as overcrowding.

The extensive work of Julia Christensen (2012, 2013, 2016; Christensen et al., 2017) explores the dimensions of socio-cultural change that have impacted Indigenous peoples' sense of home and belonging

in the north, and the ways in which uneven and fragmented social, institutional, and economic geographies result in vulnerabilities to homelessness. The work of Marie Baron, Mylène Riva, and Christopher Fletcher (2019) on the social determinants of health associated with healthy ageing amongst Inuit communities points to housing overcrowding as being directly associated with poorer respiratory health, poorer well-being, and chronic stress. A doctoral dissertation by Sylvia Olsen (2016) provides a history of on-reserve housing programs since 1930, uncovering the ways in which the federal government agencies responsible for Indigenous peoples created and oversaw a failed housing system on reserves across the country, and whose decisions were responsible for impoverishing Indigenous peoples and communities. A report by the Canadian Polar Commission (2014) presents housing-related research advances, knowledge gaps and research opportunities across the Yukon, Northwest Territories, Nunavut, Nunavik, and Nunatsiavut. A research study by Marleen Morris, Julia Good, and Greg Halseth (2020) finds that the majority of housing stock in non-metropolitan communities across Canada's provinces is in a poor state and thus is a key constraint on community wellbeing and economic development.

3.2 Culturally Appropriate Housing and Planning

3.2.1 International

In the context of the United States, a report by Blosser et al. (2014) as part of the Sustainable Native Communities Collaborative highlights 17 case study projects that exemplify an emerging transformation in tribal housing, noting that tribal housing projects are increasingly connected to heritage, culture, and nature. In Australia, a study by John Minnery, Michelle Manicaros, and Michael Lindfield (2000) develops a model of best practice to evaluate remote area Indigenous housing provision, and determine that some elements of best practice include a flexible approach to funding, addressing the constraints of land title, skill transfer and capacity building, linking local needs with what companies develop and supply, and enabling effective maintenance. A design framework was developed by researchers at Australian Housing and Urban Research Institute (AHURI) in collaboration with three remote Indigenous communities, ultimately recommending six integrated dimensions: culturally responsive design, eco-efficiency, healthy living practices, housing-related training and employment, life-cycle costing of projects, and innovation in procurement, ownership and construction systems (Fien et al., 2008).

In New Zealand, a number of resources have been developed to conceptualize what Māori planning and housing principles might look like, and support the development of culturally-appropriate developments. Ki te Hau Kāinga is a design guide that specifically addresses Māori housing solutions (Hoskins, Te Nana, Rhodes, Guy, & Sage, 2002). The principle question behind the development of the design guide was: in considering that state-imposed housing has fallen well short of ideal housing solutions for Māori, what then constitutes an appropriate Māori housing solution? (ibid). A study by Jade Kake and Jacqueline Paul

(2018) builds on this by evaluating the spatial application of Māori design principles such as Te Aranga to assess actual versus anticipated social outcomes, with an understanding that Māori design principles have the potential to significantly impact future neighbourhood regeneration and housing developments.

3.2.2 Canada

Designing and building homes that better meet the needs of Indigenous communities is a growing area of interest and research (BC Housing, 2018). Indeed, numerous studies and projects have been undertaken in recent years to this effect. Below I draw attention to the most relevant.

Early studies of this subject carried out by various federal government agencies focused predominately on Inuit communities, and demonstrated that Euro-Canadian housing models do not meet the needs of Inuit families (Semple, 2013). Peter Dawson (1995, 2001, 2003, 2006, 2008) has undertaken a number of studies to this effect, echoing the findings of other northern research by identifying that Euro-Canadian forms of housing are incompatible with the social structure of Inuit families, and recommending that designing houses to meet the cultural needs of their occupants is essential for lowering maintenance costs and improving standards of living.

From a review of literature, numerous research projects have drawn attention to the need for housing, in design, policy, and assessment, to articulate the culture, needs, and values of the community in order to break from colonial approaches and progress wellbeing (Larcombe et al., 2020; McCartney, Herskovitz, & Hintelmann, 2020; Centre for Indigenous Environmental Resources, 2004; Deane & Smoke, 2010). Furthermore, a number of recent studies and reports in British Columbia have identified considerations that decision-makers should take into account when planning for housing, in particular that housing approaches need to encompass multiple objectives and social, cultural, economic, and cultural factors in parallel (Butler et al., 2017; BC Housing, 2018; Coastal First Nations Great Bear Initiative, 2017; Hildebrand, 2020; Fineblit, 2015; Taylor, 2011). Recent years have also seen a number of community-based design and prototype projects undertaken, endeavoring to realize cultural-appropriateness within architectural design and built form. (MacTavish et al, 2012; Jacobs, 2002; EcoTrust Canada, 2015; Wong 2011a, 2011b)

3.3 Northern Housing and Planning

Recent studies and projects have also examined innovation in housing in the north, and made recommendations for improving housing policy, programs, and strategy. Drawing from four successful and innovative case studies of northern housing initiatives, Pulla's (2012) report suggests that effective northern housing strategies partnerships, programs, and policies that support and involve northerners, are respectful of and relevant to northern lifestyles, traditions, and cultures, and are consistent with the long-

term goals of sustainable development. A paper by Erik Borre Nilsen (2005) argues that though the emerging movement towards more community-based and collaborative planning approaches in northern Canada is a positive direction, it requires a more precise focus on place conceptualization to ensure sensitivity to context in meaningfully and appropriately addressed. Under direction from the Nunatsiavut Government, Goldhar, Bell, and Sheldon (2013) undertook an extensive literature review to develop an understanding of the risks posed by a changing climate, and to review best practices in sustainable, climate change adapted, housing design and community planning in the Canadian north. A doctoral dissertation by Susane Havelka (2018) explores the rise in a self-built hybrid vernacular amongst Inuit at Clyde River, Nunavut, creating mobile structures that incorporate both local and imported technologies and materials, in response to ill-suited government-imposed housing. A major multi-year pan-northern research project currently underway is "At Home in the North", comprising an interdisciplinary partnership that endeavours to understand the meaning of home across northern community and regional contexts, advance a contextually- and culturally-relevant understanding of the northern housing continuum (At Home in the North, 2021).

A number of recent events were also convened to discuss challenges in housing across the north, and develop recommendations for practices and policy, including the 2019 Northern Policy Hackathon in Inuvik, northwest Territories, and the Northern Housing Forum hosted by Polar Knowledge Canada in 2018 in Yellowknife, northwest Territories. The aims of these events were to develop innovative recommendations for provincial, territorial, and federal policies to ensure that housing meets the needs of northerners in the coming decades, and share best practices and enhance collaboration on holistic approaches to northern housing challenges ("Northern Policy Hackathon", 2019a, 2019b; Stratos Inc., 2018; "Northern Housing Forum", 2019). Additionally, over the past several years a number of projects have been designed and implemented that attempt to address the design of culturally appropriate housing for northern and remote Indigenous communities (Semple, 2013). These projects aimed to both improve energy performance of northern housing and develop housing designs that were more responsive to the cultural needs of northern Indigenous communities (see CMHC, 2007; CCHRC, 2010; Atkins, 2018a, 2018b).

Despite these reports, observations, and promising examples, Semple (2013) argues that on a broader scale there has been relatively little progress in planning and building for unique housing needs of northern peoples in terms of culturally appropriate housing, as evidenced in the ways that the same ill-suited models continue to be produced.

4 Methodology

4.1 Reflective Practice and Learning from Others

In an attempt to explore and contribute to the evolving approaches to planning practice in First Nations communities, this research has undertaken a "reflective practice" as a method for learning from the work that others have done in the field. The fundamental aim of action research is to improve practice rather than improve knowledge, and as a result has been adopted by a number of professions as a means of enhancing professional development through reflection and research (Townsend, 2014). This establishes a close relationship between action research and Schön's concept of reflective practice (ibid). This approach sees practice, reflection, and learning as a continuous interdependent loop (Schön, 1983). This means than in their work, the practitioner allows themselves to be surprised, puzzled, or confused about an uncertain situation, then reflects on the phenomena and on their prior understandings of theory and technique that informed their behaviour, and then carries out an experiment which serves to generate both new understandings and a change in the situation (ibid). Mannell et al. (2013) explain that "community planning relies on work in the field; ideas, methods, and tools are tested and refined based on experience on the ground. These refinements are then incorporated into practice through plan development and plan implementation." (p.114). The cyclical approach to learning, practice, and reflection can lead to new discoveries and improvements (ibid).

Some theorists have suggested that there are two forms of research on practice: one conducted by practitioners themselves with the aim of enhancing professional development; and another conducted by professional researchers in order to produce rigorous generalizable 'findings' about practice (see Hammer & Schifter, 2001; Hiebert, Gallimore & Stigler, 2002). As neither professional researcher nor working practitioner, I aim to take a reflective practice and action research approach that perhaps offers some insight on both forms. Thus, I apply this approach to the practices of others: gathering the challenges and lessons-learned from practitioners and the case study of NND, and extending them to the broader implications for planning practice in northern Indigenous contexts. All of the participants recruited for interview undertook some form of reflection-in-practice or action research in their own right, questioning the taken-for-grantedness of different challenges within the fields of housing and community planning, and experimenting to develop action-oriented new solutions or understandings. It is for this that a reflective practice approach is used, to bring in the reflections, learnings, and approaches of diverse professionals and experts who have worked in the field into dialogue with one another and with theory, with the aim of contributing to the ever-emerging understandings of Indigenous community planning in rural and northern Canada.

4.2 Consideration of Indigenous Research Methodologies

Shawn Wilson's (2008) book *Research is Ceremony: Indigenous Research Methods* describes a research paradigm that is shared by Indigenous scholars in Canada and Australia, and shows how it might be put into practice. Wilson explains that relationality is a critical component of Indigenous ontology and epistemology, including relationships with the environment and land. The author goes on to discuss that 'Indigenous' can be understood as being born of its context and environment, and thus to create something from an Indigenous perspective means creating it from the environment and land that it sits on (Wilson, 2008, p.88).

Building off this, Wilson (2008) also contends that in an Indigenous research paradigm is the recognition that everything is connected to everything else, and that an important aspect of research is to bring awareness to and increase those connections and build relationships. Those relationships also include the environment, land, and ancestors. The author also upholds that the elements of an Indigenous research paradigm can be seen as a circle, where no part can be compartmentalized or separate from any other part, including the researcher themselves. The circle is found throughout Indigenous societies, their architecture, and governance – like a foundational platform or cultural framework: structurally egalitarian, relational, and supporting inclusion and wholeness. Relating this foundational concept to research, the author then discusses how relationality can be put into practice through the choice of research topics, methods of data collection and analysis, and form of presentation (ibid).

In consideration of Indigenous research methodologies, I sought out theory that reflected elements of relationality and sensitivity to place and context. I discussed in the theoretical section that housing is not a stand-alone sector, but rather integrated within complex systems at many scales. Thus, an attempt at decolonization and integration of an Indigenous research paradigm might consider that to understand sense of home requires looking beyond the activities and behaviours contained within a specific dwelling. This understanding of relationality within an Indigenous research paradigm also calls for research approaches that can consider many factors in tandem, as well as the connections between them, as with systems-thinking and comprehensive planning. Furthermore, the notion of 'relational accountability' also stood out as an important principle for both conceptualizing and conducting research with Indigenous communities. For Wilson (2008), this principle "means that the methodology needs to be based in a community context (be relational) and has to demonstrate respect, reciprocity and responsibility (be accountable as it is put into action)" (p.99).

It should be noted that I am not in a position to carry through a fully-fledged Indigenous research approach, or to undertake 'research as ceremony', as Wilson's (2008) paradigm upholds. Rather the above is to acknowledge an awareness of the ideals of the research paradigm. Learning from the teachings of Indigenous research methodologies helped guide me in building and managing a research relationship with

NND. I had the great privilege to learn from several staff members in the community's government and development corporation who shared their experiences and hopes for their community with me, and in return I endeavoured to have a reciprocal relationship by contributing in a research capacity where they identified there was a need.

4.3 Researcher Positionality

It is important to recognize that as a researcher, my positionality not only shapes my own research, but also influences how I interpret and understand the research, opinions, or experiences of others. Just as McCartney et al. (2016) and Huxley (2002) call for an ongoing reflexivity on the part of the planner if they are to break from colonial planning systems and systems of dominance and social control that they perpetuate, then so too in planning research there is a need for the research to examine oneself and the research relationship (Hsiung, 2010). In conducting research on a subject that impacts Indigenous people, I recognize the importance of acknowledging my position in relation to this work. I am a white settler and conducted this research while living on Treaty 8 territory, on the traditional lands of the Dane-zaa people in what is now known as northeast British Columbia, Canada. While researching housing and asking people about housing in their own communities or communities they worked in, I recognize that my conception of housing is based in my own privileged experience of housing as something safe and comfortable, as a home. I have past experience working in local government and private sector consulting, and have witnessed first-hand the unintended harms that can result from poor quality planning. The driver for undertaking research on this subject was a genuine interest in and passion for housing, infrastructure, and wellbeing in Indigenous communities, and a desire to improve my chosen field of practice of community planning.

4.4 Research with Experts

In my position as a masters' student undertaking research, I understood 'experts' as being people who had experience on-the-ground in and with Indigenous communities. Though some of the participants I interviewed or had informal discussions with had extensive education in the field of planning, institutional qualification or credentials was not the determining factor in determining if someone counted as an 'expert' for my research purposes. People are experts in their own experiences (Wilde, 2020). Because I was asking participants to reflect on the challenges, successes, and lessons learned through their work, experience was the essential grounding for expertise. While some might consider someone with a masters' level education an expert in their particular field, I considered the people I spoke with both at NND and practitioners across Canada, as the 'experts', and their knowledge as 'expert knowledge'. This differentiated them from me, a non-expert by this definition.

4.4.1 Qualitative Research interviews

In order to realize a Reflective Practice approach and learn from the practices of others, the qualitative research interview was selected as a research method to gain insight from the perspectives of the practitioners into planning in the context of rural, remote, and northern Indigenous communities. The qualitative interview focuses on informants' opinions and views on the world, and the aim of the research interview is to produce and expand knowledge about a specific topic (Kvale, 2007). The style of the interview was semi-structured, where I developed an interview guide with a standard set of questions, but opened up space for the participants to describe their experiences, thoughts, and opinions in their own words. Thus, even though the interview is flexible, it is still planned and carried out with a particular purpose (ibid). The interview guide can be found in Appendix 1.

The purpose of the interviews was to gain a deeper understanding and bring together the insights of experts from diverse backgrounds who have worked with different Indigenous communities across Canada and Alaska, USA, with the aim of uncovering and comparing the emerging considerations and dimensions of housing and community planning.

Phillips & Johns (2012) explain that when seeking critical insight and honest opinions from interviewees, the interview location is an important facilitator. However, because of the COVID-19 global pandemic, in-person interviews were not possible. Instead, I undertook all interviews over online videoconferencing software, including Zoom and Microsoft Teams. This was both an advantage and a disadvantage. On one hand, it enabled me to access and speak with experts from across the country and north American Arctic; however, it also made a natural flow of conversation more challenging, because of intermittent connectivity issues and the awkwardness of speaking to a screen rather than a person. Kvale (2007) explains that the semi-structured interview is a conversation, which can be open or closed, and Rapley (2001) adds that interviews are inherently sites of social interaction, where the process of question and answering is designed to be relatively fluid and dynamic. In this way, the data obtained are highly dependent on and emerge from the specific local interactional context that is produced through the conversation and identity work between the interviewer and interviewee (Rapley, 2001). Thus, while the video-conferenced interviews enabled access to a greater geographic breadth of participants, it also potentially affected the nature of data obtained.

4.4.2 Ethics and Consent

The interviews were conducted with a formal consent process, which was approved by the *Norsk Senter for Forskningsdata* (NSD). The participants were provided with a consent form in advance of the interview which described the purpose of the project, what participation in the interviews would involve, how their data would be used and stored, and their rights. By signing the consent form, participants agreed to participate in the interview and have their data processed until the end of the project. The participants could

also optionally choose to agree to have the interview recorded, to request to review any text that contained their name or quotes attributed to them prior to publication, and to have recognisable information about themselves published in the thesis (such as name, occupation, and location of previous or current work). In order to securely handle and store sensitive information, such as the recordings of the interviews, the data was anonymised and stored on a secure server. All participants agreed to be named within this thesis.

4.4.3 Interview Participants

Interview participants were recruited from within my own network, from recommendations and suggestions of people within that network, as well as practitioners discovered through the literature review. In total, six people agreed to participate in interviews, representing a geographic breadth and diversity in professional experience working with housing and community planning. While all have different backgrounds, geographies, and jobs, what was common amongst them was their commitment to continually understanding and improving their chosen area of practice, which could be seen as a form of research in action or reflective practice. The following table describes the interview participants.

Table 1 – Description of expert interview participants

Name	Location of Work	Experience and Expertise
Aaron Cooke	Alaska, USA	o Architect, project manager, and researcher at Cold Climate Housing Research Centre (CCHRC)
Stacey Fritz	Alaska, USA	o Project Manager, Anthropologist, Communications coordinator at Cold Climate Housing Research Centre (CCHRC) o Formerly at Bureau of Land Management (USA federal agency), Arctic District Office
Lynn Jacobs	Quebec, Canada	o Co-led Kanata Healthy Housing Project and Kanata Sustainable Neighbourhood Project in Kahnawá:ke, Quebec o Director of Environmental Protection, Mohawk Council of Kahnawá:ke
Nelson Lepine	Yukon, Canada	o 25+ years working in housing sector o 11 years working with a Yukon First Nation government o Technical advisor to regional Assembly of First Nations (AFN) in Yukon o Chair of Grey Mountain Housing Society
Shelagh McCartney	Ontario & Northwest Territories, Canada	o Director at Together Design Lab o Licensed architect and urban planner o Associate professor at Ryerson University
Anthony Persaud	British Columbia, Canada	o Director of Indigenous Home-Land Initiative, EcoTrust Canada

4.4.4 Interview Analysis

In order to prepare for a written analysis, I took inspiration from the meaning condensation method articulated by Steinar Kvale (2007) as a way of organizing the data and engaging with it in attempt to

interpret its themes and meanings. This method undertakes to organize, analyze, thematize and code the data in a way that enables a deeper interpretation of the patterns and meanings. I adapted this method to organize and compare the challenges, successes, and lessons learned shared by the practitioners interviewed. After synthesizing all of the themes from the interviews together, I summarized and described the main findings and brought them into dialogue with insights gained on the community of NND as well as with theory on Arctic urbanism, systems thinking, and decolonial and Indigenous planning, in order to extract meaning and understand both their broader and local implications. I elaborate on this in the Analysis section of the thesis, but first I will present the methods for research with NND followed by in-depth background on the community.

4.5 Research with Community

4.5.1 Participatory Action Research

In thinking about how to develop a research project with the First Nation of Na-cho Näk Dun, I was interested in approaching the process as a reciprocal partnership rather than coming in with a pre-established research project. Saija et al. (2017) understand action research as accepting the challenge to be an internal part of a collective learning process, sharing without imposing one's expertise. Kemmis, McTaggart, and Nixon (2014) confirms that while action research takes many forms, what is common amongst them is their rejection of conventional research approaches where the external expert enters a setting to record and represent what is happening, and instead upholding that the participants own the way of doing research.

One of the results of having a reciprocal partnership approach to research with NND was that it was not necessarily possible nor desirable to impose my relatively rigid external parameters that came with writing a "thesis project" on what made sense for the community. That is to say, while there was a shared interest in expanding knowledge around housing in their community, NND has their own timelines, capacity realities, changing needs, and developing projects that inform and drive how things are done. In the interest of having a more meaningful participatory action research approach that fostered opportunities for collective learning and reciprocity, the nature of my research involvement with NND was dynamic as opportunities to learn and contribute arose and circumstances changed on the ground. Furthermore, the research was also shaped by the continuation of the global COVID-19 pandemic not making it possible to visit in-person or do any on-the-ground fieldwork. Thus, while there is no final cumulative product coming specifically from research with NND, I had the opportunity to observe community decision-making and government-to-government negotiation processes in real-time, learn about community nuances and complexities from highly experienced and knowledgeable staff, and in return sharing my expertise in a number of smaller different ways, such as developing a Request for Proposals evaluation matrix,

developing qualitative housing survey questions, and investigating home-ownership programs in other communities. Furthermore, action research is concerned with an inherently 'practical' form of research, prioritizing beneficial change over knowledge production (Townsend, 2014). Thus, I endeavoured to contribute with tools and resources that the NND government could use in their work and future projects, and thus the knowledge and learnings but not the products of this collaboration are included within this thesis.

Building off of social theorist Jürgen Habermas' (1987, 1996) concepts of 'communicative action' and 'communicative space', Kemmis et al. (2014) further add that one of the most important things that happens in critical participatory action research is simply that participants get together and talk about their work and lives, exploring how things are going and whether there are things about their current situation that might need reconsidering or changing. When approached in accordance with principles of communicative action, such conversation opens up a particular kind of respectful 'communicative space' between participants. Participation in this sense means striving for mutual understanding of one another's points of view and unforced consensus about what to do as concerns, understandings, and conditions are explored (ibid).

It is for this that the relationship between myself and NND grew over the course of several months of informal phone calls and conversations, in order to arrive collectively at an area of shared concern and interest as the focus of research. However, this was an unforced process, and we called these conversations "exploring research opportunities" to illustrate the spirit of the meetings. There was no formal agenda on my part, rather using the conversations as a space to build better mutual understanding – on NND's side, to better understand what research capacity or expertise I could potentially offer; and on my side, better understanding the context and priorities of the community, which ultimately served to inform my research topic and process. This process eventually led to a more formal research collaboration agreement on the topic of sustainable northern community housing and related planning considerations, policies, and programs, but which still maintained large degree of variability and flexibility to adapt based on changing circumstances. Approval to collaborate on research was done by a NND Chief and Council resolution, and a subsequent research agreement was signed between myself and NND outlining principles for research and conditions for access.

4.5.2 Case Study Methodology

In learning from NND through a process of action research, I also considered the community as a case study for northern Indigenous communities. In particular, I found NND to be a case of the challenges northern communities experienced with housing, including grappling with shortages and state-imposed and southern-designed structures. However, NND is also a case of the transformative shift towards community-

led and visionary planning. Yin (1981) explains that it is relevant to use a case study when "an empirical inquiry must examine a contemporary phenomenon in its real-life context, especially when the boundaries between phenomenon and context are not clearly evident" (p.98). For instance, the housing crisis may be seen as a phenomenon that broadly affects many Indigenous communities across Canada, however this phenomenon plays out in specific places – to individuals and communities with distinct histories, cultures, geographies, and governance structures. Additionally, the transformative shift in Indigenous communities reclaiming planning practices to advance self-determination and community wellbeing may be a phenomenon, but it is enacted very differently in different places according to their unique context. Thus, in exploring the phenomena or ideas emerging in the field of Indigenous planning, particularly in northern housing, I drew on conversations over the past ten months with NND staff who shared experiences, knowledge, and aspirations. I also drew on community planning documents and reports shared by NND. The aim of the case study approach was to relate my findings from literature and interviews to their occurrence within a particular context.

5 Background

5.1 Canada's North and Housing

In Canada, the north is the country's fastest-growing region per-capita in the country (Sheppard & White, 2017). More than 115,000 people now live in the cities and settlements north of the 60th parallel in Canada, and apart from the three capitals (Whitehorse pop. 25,000, Yellowknife pop. 19,000, Iqaluit pop. 7,000), the territories still predominately consist of small, dispersed communities. This rapid development, driven by resource expansion and high birth rates, is imposing intense and urgent pressures on regional and city planning (ibid). There is a significant housing shortage in Canada's north, which is put under pressure by increasing demand for units from a growing population and economic development activity (Zanasi & Pomeroy, 2013; Pulla, 2012). Severe climate, a short building season, the small and isolated communities, climate change, and limited and ageing support infrastructure add additional dimensions of complexity to the housing crisis (MacTavish et al., 2012; "Northern Housing Forum", 2019). Construction, maintenance, and operation of housing is also very expensive due to costs associated with construction logistics, building materials, transportation, repairs and utilities, and seasonal energy demands - thus affecting housing affordability (Canadian Polar Commission, 2014). northern housing issues are further exacerbated by the effects of climate change, for instance with permafrost thaw causing irreparable damage to housing and other community infrastructure ("Northern Housing Forum", 2019).

These costs and shortages mean that the private market housing in the north is often competitive and inflated, and furthermore tends to be concentrated in regional or urbanizing centres (Christensen, 2017; Canadian Polar Commission, 2014). Despite the strong demand for shelter, many regions are unable to

support a for-profit housing market due to small populations, high unemployment, and reliance on government subsidies not allowing for economies of scale necessary for private sector investment in affordable housing developments and associated cost-effective infrastructure (Pulla, 2012). Smaller communities tend to be more reliant on publicly subsidized housing options, but in both small and large communities the demand for public and subsidized housing far exceeds the supply (Christensen et al., 2017). The combination of unaffordability on the private market and limited quantity of public housing units has been identified as a critical factor in the incidence of homelessness in Canada's north (Christensen et al., 2017). While homelessness in the Canadian north is often understood as an issue faced by larger urban centres, many northerners experiencing homelessness actually originate from small, rural settlement communities (Christensen et al., 2017). A 2019 report revealed an overrepresentation of Indigenous peoples experiencing homelessness, with 82% of homeless people in Whitehorse self-identifying as Indigenous, despite being only 23% of the population (Brant & Irwin-Gibson, 2019; Yukon Bureau of Statistics, 2016).

On top of the challenges of housing shortages and unaffordability, the quality of much of the currently available housing stock is severely lacking. Penikett (2017) describes that for much of recent history, "the north listened while the south talked" (p.5). Housing in Indigenous communities in the far north has been dominated by designs, standards, and construction practices created for and utilized in urbanized 'southern' parts of Canada, in addition to having a design process that did not account for traditional knowledge or decision-making processes (Semple, 2013). The government's focus was based on quantitative service delivery. The legacy of this approach perpetuates in an understanding that the success of a community development project should be measured in housing units or community infrastructure built, rather than according to quality or cultural relevance of space or northern urban form (ibid).

In Canada's northern regions, a significant portion of the existing housing stock was designed by outsiders according to southern and Eurocentric perspectives and standards, and as a result they often did not meet the needs of northern residents, were ill-suited to climactic conditions, were not properly weatherized, and were devoid of any cultural significance to what First Nations' have typically placed in their homes (Canadian Polar Commission, 2014; Pulla, 2012; MacTavish et al., 2012). Indeed, housing programs post-WWII did not attempt to integrate the unique elements of northern cultures or the specific climactic demands of the northern environment (Pulla, 2012), and welfare-state planners had a vested interest in delivering specific types of 'cost-effective' and centrally manufactured dwellings to their northern clients, despite knowing very well that they did not always suit local needs (Dawson, 2008). Not only did northern planning and urbanism fail to adapt to these realities, but it went so far as to be complicit in suppressing Indigenous cultures and ways of life (Sheppard & White, 2017). Planning and housing

delivery in the 20th Century was employed as a social engineering project, to bring the Indigenous peoples of Canada's north into the "modern world" and compel them to embrace southern practices (ibid).

5.2 Indigenous Communities and Housing

The housing landscape for Indigenous communities is shaped by inadequate and inconsistent funding, restrictive government policies, lack of home ownership, and culturally inappropriate design (MacTavish et al., 2012). This chronic housing need can be situated within the overall context of colonialism, where Indigenous homemaking practices were disrupted through displacement from ancestral lands, family separation, exclusionary socio-spatial structures across generations (Christensen, 2016). The provision of modern housing for Indigenous peoples in Canada's north was part of a broader strategy of centralizing, settling, and cultural assimilation (Christensen, 2016). A standard housing regime that characterized Indigenous peoples as homogenous and needing to be changed was rolled out throughout Canada, imposing a rigid urban structure and housing forms that were entirely ignorant to local culture, ways of living, and geography (McCartney, 2016). One of the underlying issues in the context of northern Canada is that everything was built to be temporary (McCartney, 2017). Canadian state colonialism has for generations made housing a site of conflict for Indigenous peoples across the country and forced assimilation by stripping the physical environment that communities live in of all connections to culture and place. The Indian Act was established and operated with the goal that Indigenous Peoples' would assimilate with the general population of Canada and settle in suburban and urban areas of the country (ibid).

The federal, provincial, and territorial arrangements for the design and delivery of housing have evolved over time (Pulla, 2012). The Indian Act was enacted shortly after Confederation 1866 with the aim of absorbing and assimilating every single Indigenous person into the body politic of Canada (McCartney, 2016). After the Second World War, the Canadian Government was largely able to increase its presence in the north through its housing and settlement policies – developed to apply social welfare to the territories and integrate northern peoples. Since the mid 20th Century, the federal government played the predominant role in developing, administering, and funding northern housing programs (Christensen et al., 2017). Prior to self-governance which began in the mid 1990s for most Yukon First Nations, band councils were locked into funding arrangements with the federal government (via the Canada Mortgage and Housing Corporation (CMHC) and the Department of Indian Affairs[2]) (MacTavish et al., 2012). With declining

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[2] The first Indian Department was first created by the British in 1755, and responsibility was transferred to the colonies upon confederation in 1867. In 1966 this government arm became known as Department of Indian Affairs and Northern Development or the "DIA". From 2011-2015 it was called Aboriginal Affairs and Northern Development Canada (AANDC) and then Indigenous and Northern Affairs Canada (INAC) from 2015-2017. In 2017, INAC was split into two new departments, Crown-Indigenous and Northern Affairs Canada (CIRNAC) and Indigenous Services Canada (ISC).

levels of funding and a dense web of restrictions on their use of capital and operating funds, communities had difficulty asserting meaningful control over their housing programs (ibid).

A majority of housing provided in Indigenous communities was set up to be owned and managed by the community government or band council. Without the responsibilities inherent in home ownership, individuals living in band housing had neither the knowledge nor incentive to maintain their allocated houses, which was compounded by a lack of sufficient funds for maintenance by the band council (Mactavish et al., 2012). These factors in combination with overcrowding due to existing shortages had led to accelerated deterioration and the need for more repairs and upgrades (Pulla, 2012; Christensen et al., 2017). Compromised construction, insufficient maintenance, and overcrowding yield increased moisture in the interior space and subsequent mould growth - accelerating the spread of viruses and bacteria and resulting in disproportionately high prevalence of illnesses such as tuberculosis and asthma (MacTavish et al., 2012). Additionally, a lack of capacity within the community in terms of skilled and experienced housing managers, planners, technicians, and other skilled labour has meant that the cost of housing has increased due to inefficient operations and outsourcing of contractors. This leads to a further missed opportunity for community economic development, in local training, labour, and income (ibid). Housing and physical living conditions have also been linked as a major factor in the relative poor health status of Indigenous peoples as compared with the Canadian population as a whole (Drossos, 2003). Given all these factors, many First Nations communities across Canada have become socially and psychologically detached from their homes (MacTavish et al., 2012).

6 Case Study: First Nation of Na-cho Nyäk Dun Housing System

6.1 Self-Governance and Housing

Self-governance is now in operation for the majority of Yukon First Nations. Decades of land claims negotiations in Yukon culminated in the Umbrella Final Agreement (UFA) in 1993, which was the framework structure for subsequent Final Agreements and Self-Government Agreements (SGA) negotiated with Individual First Nations (Castillo et al., 2020). It is the SGA that enables Nations who have signed and ratified their individual Final Agreements to determine who is a citizen, pass their own laws, and design and deliver programs and services for their members. To date, Final Agreements have been negotiated with 11 out of the 14 Yukon First Nations, and the First Nation of Na-Cho Nyak Dun was amongst the first to sign a Final Agreement in 1995 (ibid). Under the land claims agreement, the First Nation of Na-Cho Nyäk Dun (NND) now owns 4,739.68 square kilometres of Settlement Lands, including parcels in and adjacent to the town of Mayo (First Nation of Na-Cho Nyäk Dun, 2021).

Self-Governing Indigenous Governments (SGIG) in the Yukon have thus been in care, control, and management of housing for over 20 years. Through a Programs and Services Transfer Agreement (PSTA), the responsibility for housing, social services, and health was gradually transferred from the Government of Canada to the First Nations (INAC, 2008). This gives Yukon First Nation governments law-making authority and program responsibility over housing on land-claim and settlement lands ("Northern Policy Hackathon", 2019b). This differs from First Nations without land claims or self-government agreements in Yukon and elsewhere in Canada, where the federal Government has jurisdiction over housing on-reserve and the First Nation is responsible for housing delivery ("Northern Policy Hackathon", 2019b).

6.2 Historical Context

The First Nation of Na-Cho Nyäk Dun (NND) is the most northernly community of the northern Tutchone language and cultural group, and today resides primarily in the town of Mayo at the confluence of the Mayo and Stewart rivers. The Stewart River's traditional name is Na Cho Nyak, meaning Big River, and its drainage is the heart of NND traditional territory (Gotthardt, 2006). Historically, their lifestyle required them to live and travel throughout their traditional territory at various times of the year, to fish, hunt, and gather food (First Nation of Na-Cho Nyäk Dun, 2021). Traditional camps were usually located near waterways, and a network of storage caches, trails, fish camps, trapline cabins, lookouts, and burial sites encompasses the entire territory, demonstrating their deep connection to the land (Peter et al., 2006).

Gold was first discovered in the Stewart River in 1883, and the Town of Mayo was established in 1903 as an influx of prospectors advanced and settled in the region (Peter et al., 2006; Bleiler, 2006). The town developed to become a service centre for significant mining in the area – with sternwheelers travelling the Stewart to bring silver, zinc, and lead ores to Whitehorse (Village of Mayo, n.d.). In 1915 the NND people were asked to pick a permanent village site – the site chosen was two miles below Mayo on the banks of the Stewart, which today is known as the "Old Village", where memories and some buildings still exist (Peter et al., 2006). A flood in 1936 destroyed many buildings including the church where school was held, and as a consequence many children were sent to school in Mayo or the residential school in Carcross, the Chooutla Indian Residential School nearly 500km to the south (ibid.). The Mayo Indian band, as it was then known, were later forced to relocate by the federal government from the Old Village to a parcel of land 'set aside' for them on the eastern side of the town of Mayo, which is characterized by poor ground conditions (First Nation of Na-cho Nyäk Dun, 2014). In 1950, an all-weather road was completed linking Whitehorse with Mayo (Village of mayo, n.d.). The rapidly growing mining industry, residential schools, missionaries, and the Indian Act dramatically transformed the social, economic, and cultural life of NND people – however, traditional knowledge and skills continue to be passed on through stories, arts, and day-to-day living, as well as the modern self-government process (Peter et al., 2006.)

6.3 Overview of Community and Housing

The First Nation of Na-cho Nyäk Dun have a total membership of just over 600, with the majority living in and around Mayo, and others living elsewhere in Yukon and beyond (First Nation of Na-Cho Nyäk Dun, 2014). The average population of the Village of Mayo is 423, approximately half of whom are NND citizens (Village of Mayo, n.d.). The Nation currently has a housing stock of approximately 105 houses, the majority of which are on Settlement Land, but also with a number outside Settlement Land within the Village of Mayo (First Nation of Na-cho Nyäk Dun, 2014). Most of the houses are smaller three and four bedroom homes, and are in need of substantial repair or replacement (ibid). The Nation has two main residential subdivisions – the southeast subdivision located east of the Mayo townsite, and the more recently acquired C6 subdivision across the river from Mayo (First Nation of Na-cho Nyäk Dun, 2008; Hennessey et al., 2012). The majority of current housing stock is located in or adjacent to the Village of Mayo, but there is a growing number of houses being constructed on the C6 (First Nation of Na-cho Nyäk Dun, 2014).

Figure 1 - Village of Mayo and surrounding area. C6 subdivision pictured in yellow polygon; southeast subdivision in red polygon. From Google Maps, by Google

The majority of current housing is located in the southeast subdivision, which is an area with permafrost and groundwater issues (First Nation of Na-cho Nyäk Dun, 2008). This eastern side of Mayo is swampy, and the cold winters result in significant frost heave and shifting, which in turn affects the structures built on this land by cracking walls, damaging foundations, destroying porches, breaking water lines, and generally increasing maintenance costs (First Nation of Na-cho Nyäk Dun, 2014). As a result, homes there are built above ground leading to challenges with heating (First Nation of Na-cho Nyäk Dun, 2008). Excessive moisture and mould growth have been reported in the houses in this subdivision (Hennessey et al., 2012). The unfavourable ground conditions in the southeast subdivision have created a situation where the ongoing infrastructure and maintenance costs are unsustainable (First Nation of Na-cho Nyäk Dun, 2015).

The C6 site was one of the parcels selected by NND as part of the finalization of the land claims process (Village of Mayo, 2016). The site also has favourable ground conditions and is less prone to the

impacts of weather (First Nation of Na-cho Nyäk Dun, 2014). This area is the site of the new NND government offices, and there are plans to develop new residential housing and (Village of Mayo, 2016). Currently 65 housing units are scheduled for development in the NND C6 subdivision by 2030, providing significant additional residential development for the citizens of NND (Hennessey et al., 2012; Village of Mayo, 2016). Due to the nature of the housing and land in the southeast subdivision, NND has indicated that it is its long-term intention to relocate citizens currently in the Mayo east area to C6 over time (Village of Mayo, 2016). The houses located on C6 are generally higher quality than those in the Village, as the ground conditions are better and the buildings are newer (First Nation of Na-cho Nyäk Dun, 2014).

Figure 2 - First Nation of Na-cho Nyäk Dun administration building on the corner of C6 site, overlooking Village of Mayo. First Nation of Na-cho Nyäk Dun Facebook page.

In addition to the challenges associated with the age of the housing stock, other pressing issues for NND include: a housing shortage, with more requests for housing than there are units available; and considerable renovation work needed on existing stock, and limited reserve funds for maintenance and eventual replacement (First Nation of Na-cho Nyäk Dun, 2008). NND has a large inventory of social housing, which is fully subsidized and there is currently no charge for individuals living in NND housing (First Nation of Na-cho Nyäk Dun, 2014). In its current state, NND's housing situation cannot be maintained without a major budget increase. Maintaining and growing it in its current operation is not financially sustainable, and the lack of ownership opportunities prevents NND citizens from building equity and wealth while remaining on settlement lands (ibid). Planning and housing was identified as one of the top five infrastructure priorities for NND in their 2015-2025 Capital Plan (First Nation of Na-cho Nyäk Dun, 2015). It has been identified as a critical need to address financial and capacity concerns for keeping up existing housing stock and creating new units to meet evolving needs. Recent planning efforts have included a Housing Policy developed in 2008 with updates and amendments in 2020 and 2021, and a Housing Strategy developed in 2014. NND is also currently undertaking a housing needs assessment and a major capital and community plan focused on the C6 area.

7 Analysis

7.1 Analytical Framework

This section contains an analysis of the data gathered from interviews with six housing experts, as well insights and experiences shared by staff and learned from community documents of the First Nation of Nacho Nyäk Dun. In an effort to bring a planning perspective to the realm of northern Indigenous housing, I draw on Laura Mannell, Frank Palermo, and Crispin Smith's (2013) six principles of good planning as a lens to examining the expert interview data and case study. The principles represent notions of how to conduct good planning, making the process, product, and action community-based and comprehensive (ibid). However, none of the case studies that formed the basis of evidence for these principles were located in Canada's Territories (Nunavut, Northwest Territories, and Yukon).

In this analytical framework structured through the lens of planning principles, I put the data gathered from expert interviews and participatory action research with the First Nation of NND into dialogue with theories on decolonizing northern housing. I selected five of the principles of good planning which were most relevant for the analysis, namely: engage a broad cross-section of the community; value local and traditional knowledge as well as outside ideas; reflect on the past and present; and connect the physical and social; and establish a united direction for the future.

However, some additional dimensions emerged from the interviews, participatory action research with NND, and literature that are not covered by the planning principles. Thus, taking direction and inspiration from these areas I created two additional categories to frame the analysis: lessons from the north - dimensions of northern living and building; and role of the planner. In the analysis, I interrogate how well the planning principles resonate in a Canadian northern and sub-Arctic context. To aid in this analysis, I draw on theory of Arctic Urbanism as well as lessons and insights from the participatory action research with the community of NND, who acts as a case study for northern First Nations communities as well as informing my research process.

In addition to extending the planning principles further north, the analysis will also point them more specifically towards the subject of housing. The data collected from interviews with experts working with housing in non-northern Indigenous communities will support this. Through this approach, I examine the socio-cultural, economic, and environmental dimensions of sustainable housing designs, programs, and policies of northern and Indigenous communities. Community planning relies on work on the ground, where ideas, methods, and tools are tested and then refined based on experience (Mannell et al., 2013). Thus, in the analysis I aim to explore what refinements and improvements might be taken into consideration for community planning practice in the combined context of the Canadian north, in First Nations communities, and in the sector of housing.

7.2 Analysis 1: Dimensions of Planning Housing in Rural, Remote, and Northern Indigenous Communities

7.2.1 Engage a broad cross-section of the community

Mannell et al.'s (2013) first principle of good planning is to engage a broad cross-section of the community, to ensure a collective awareness of planning, and thus build redundancy into the planning process such that it becomes a shared responsibility across individuals, departments, and elected officials. Being actively involved and intentionally empowered through the process of planning, building, and governing housing was a vital aspect of a successful community housing regime according to all experts interviewed. While the need for community involved planning is clear, there remains much debate on what is considered adequate community engagement (Mannell et al., 2013). Larsen and Hemmersam (2018) agree, adding that in endeavouring to engage future thinking and planning in the development of the north, acting transdisciplinary with communities, groups, and individuals is critical. The interview participants and NND discussed what community involved planning around housing means to them.

In a few of the interviews, experts raised the importance of interdisciplinarity and engaging the whole community. From the perspective of Fritz, to be able to address and communicate buildability challenges from the beginning means having everyone at the table from an interdisciplinary perspective – not just a lead architect, but also the builders, engineers, and other professions involved in the process. This is so that when they are doing a design charette or other method of co-design, they should be able to talk about what is possible, and understand who wants what, and what the overall constraints are from the very beginning. McCartney adds that when you talk about housing with a community, the first people who show up to a community meeting are the plumbers, electricians, carpenters, builders, and housing managers – and there is a need to expand beyond just those people who put houses together to an entire community discussion. This means moving out into the broader community and talking with people about housing as a social venture, not just the building of a house; for instance, how housing affects the culture of a family, and how to house this better. It is in this discussion that the richness emerges, including in governance and design. The practice of engaging the voices of diverse community members and stakeholders, both in a multidisciplinary and demographic sense, agrees with Pulla (2012) who contends that community engagement should instill a process approach that brings in more people to more parts of the process to help ensure that all parts can come together as best as possible. The inclusion of a broad cross-section of the community from different "walks of life" ensures that a plan will represent the many important perspectives (Mannell et al., 2013), or what Fritz calls "procedural justice". This means that there is a need to talk to the women, talk to the children, talk to the people who actually spend most of the time in those houses, according to Fritz; as well as groups often overlooked such as youth and Elders, adds McCartney.

An important aspect of this dialogue with the broader community is to consider how it is done. One participant explains that "We need […] to be interviewing people about what they want in a housing design away from all the power structures." (Stacey Fritz).

For instance, a Western model of a townhall meeting, in terms of people presenting different data to an audience with an opportunity for questions and input in front of everybody, may get very different results than more intimate, respectful, and empowering methods, explains McCartney. Fritz gives the example that in large meetings, the quiet shy young woman may not feel comfortable speaking up and say whether a housing design is going to suit her needs and realities, in terms of cooking, cleaning, processing, and childcare. Rather, part of this planning principle means that a community-based approach should enable everyone in the community to have their voice heard in a supportive environment (Mannell et al., 2013). This involves promoting dialogue and creative solutions to challenging problems by providing a more inclusive forum for discussion, negotiation, compromise, and building understanding (ibid).

While there are a diversity of needs and opinions within any given community, at the same time community members frequently share similar opinions but may be hesitant to share them for fear of being chastised, especially if talking on a sensitive topic (Mannell et al., 2013). Fritz explains that there are a lot of things in housing design that people are embarrassed to talk about. For example, some people may not want hidden bedrooms at the end of a long dark hallway, where for example sexual abuse could occur unnoticed. Some people may want a more open design, for a variety of personal or practical reasons. In one community, residents requested an octagonal shaped home where all the bedrooms faced the main living room.

Design charettes are a frequently used method for community co-design, but McCartney notes that because of the way they are set up, the power dynamics are off. While there might not be a way to fully Indigenize a charette, their organization actively engages in these types of discussions with their First Nation partners. This echoes Erfan and Hemphill's (2013) contention that it is not appropriate for the external planner to "Indigenize" the process, but rather tailoring a process to be in tune with the unique local context and culture should come from within the community. In this researcher's approach, the space for this dialogue and adaptation to occur was created, thus better ensuring that the planning process was in service of the community, rather than the reverse.

McCartney shares that in their experience one methodology that has proven to be a very democratic way to have feedback given and gathered from a wide variety of people is the sharing circle, which is a traditional methodology used by many First Nations. In this method, people sit or stand in a circle, and one after another going around the circle people get the chance to share their thoughts. It is an interesting way of giving everyone the same chance to speak, because if someone is in the circle they have to share and

cannot opt out, and it is not constantly directed back to a leader or facilitator. This may be one way of decolonizing the planning and engagement process, by challenging the planner (or facilitator's) tendency to talk too much or steer the process in a way that suits their agenda rather than the needs of the community (Erfan & Hemphill, 2013). However, Erfan and Hemphill (2013) also suggest caution in this regard, that it is disrespectful to assume that Indigenous communities all follow the same protocols and will respond to the same planning approaches, and the external planner should not impose what they think are appropriate Indigenous practices or methodologies.

In explaining the need for engaging a broad cross-section of the community, Mannell et al. (2013) explain that a plan cannot be the Chief's direction, the staff's hopes, or a Councilor's pet project, or else it will lack the necessary momentum to stay alive. Furthermore, it is not enough that a plan comes from the community; it must be understood, championed, and appropriated by the community (ibid). McCartney shares a story of how they experienced the community choosing its own housing policy resulted in the policy being a success. One day in one of their partner communities, an incident happened with regards to housing and people were talking about what they should do about it. Then someone posted a picture on their community Facebook group of a page from their Indigenous language translated housing policy with the comment "didn't we decide that this is what we were going to do when this happened?". This incident indicates that the housing policy was working, that it was living and breathing, in that it was acceptable to the community and people were using it. Canada Mortgage and Housing Corporation (CMHC) requires that communities create a housing policy in order to access funding for housing, and often this results in a report that sits on a shelf that lawyers put together with a generic template that says "insert First Nation name here". The idea of simply producing a "report on a shelf" is the most common complaint about planning (Mannell et al., 2013). McCartney's story exemplifies the way in which the community's housing policy was effective because it was championed and upheld by the community. Furthermore, developing living community planning processes in such a way is also part of the decolonization process, because it privileges what is important and relevant for the community rather than a bureaucratic or reporting requirement, for instance as dictated by CMHC funding requirements (Erfan & Hemphill, 2013).

NND is working towards updating their housing policy that it is more relevant and actionable in the community. One of their challenges in the past has been that some of the policies were rarely or only inconsistently applied, and thus was not a living document in the community. Another challenge was that the decision-making authority, such as allocating housing, was assigned to Chief and Council, and thus there was sometimes a community perception of favouritism in this process. In moving to depoliticize the housing policy in the eyes of the community, the new housing policy proposes to create a Housing Authority composed of a citizen board who would be responsible for all decisions around housing. Furthermore, the Housing Authority would have established decision-making processes and criteria as well

as their own Terms of Reference in order to make all government-related housing processes more consistent, transparent, and legitimate.

These experiences shared by the experts speaks to the way that a circular concept for community engagement, or an approach that is intentionally relational, structurally egalitarian, and supportive of inclusion and wholeness as described by Wilson (2008), is important. Wilson discusses putting this relationality into practice in research, and their notions could be extended to the form of planning research that occurs through community engagement. The experts interviewed described creating engagement spaces attempt to bring in the community's different "walks of life", enabling all of those voices to be heard equally and safely, and finally the resultant plan being reflective of the community's voices and upholds what is important to them as well as being presented in a relevant format, such as in their own language.

7.2.2 Value local and traditional knowledge as well as outside ideas

Hybrid Spaces

Mannell et al.'s (2013) third principle of good planning is to value local and traditional knowledge as well as outside ideas. This means that a planning process must incorporate local ideas, build on local knowledge, and develop local skills, and at the same time be open to new ideas, knowledge, and experience from an outside perspective (ibid). In the context of transformation in the north, this principle relates to the way that the shifting intersections between traditional and contemporary life emerge as new hybrid forms. Sheppard and White (2017) understand this phenomenon as future thinking for the north, in that holding space for the negotiations between 'traditional' and 'contemporary' life in community planning and design can create opportunities for empowerment. This process may well fall within Prusak et al. (2015) proffer of "Indigenous Planning", as an emergent paradigm in the context of contemporary planning that seeks to reclaim historic, contemporary, and future-oriented planning approaches of Indigenous communities.

Part of this process of future thinking and hybridization of local and traditional knowledge with outside ideas involves developing new housing solutions that are culturally appropriate to the local needs of the community. However, what 'culturally appropriate' looks like for each community, or indeed each unique individual, is less clear. One of the experts explains that "We're in a time of amazing change, and there's not consensus on how traditional or modern anyone wants to live, whether it be north of 60 or not" (Aaron Cooke). This change described by Cooke echoes Larsen and Hemmersam's (2018) understanding of the Arctic as not only diverse, conflictual, and narrated, in that traditional or modern conceptions of identity and cultural belonging are far from unanimous - but also that the Arctic is emerging as speculative and in many forms, as hybrid identities, lifestyles, and structures are continuously created, appropriated and reinvented. It is a colonial idea that everyone is better off in a bungalow house with a white picket fence

just like anywhere else in the world – however Cooke also warns that it can cause trouble by presupposing what level of traditional life people want to live and assume that that is a unanimous, consensual decision in any community. Indeed, they argue that broad sweeping programs based on speculations of what a traditional or modern home should look like does not fit reality, because people live along a spectrum; they may hunt seals all day and play Xbox all night.

Connection as empowerment

Another dimension of this planning principle is that "by being open to new ideas and connecting them to what is happening locally, communities are better able to identify and celebrate the special qualities that make them unique as well as recognize new possibilities" (Mannell et al., 2013). Cooke explains that connecting rural and remote Arctic communities to the Internet has been transformational in this regard, in that communities are no longer solely reliant on state television for information from the outside world, rather everyone can access information how and when they want it. They give the example that people can now binge watch a whole show on tiny homes in some hipster town in the Pacific northwest and realize that if they build these in their community, they could build a lot more of them. As a result, their organization has been getting many more requests for projects like this, purely based on exposure to media that was not there before for remote communities. They go on to reflect that it is empowering for communities to be able to access the information and media they want, and as a result leadership now has the tools and knowledge to consider whether a housing option will work for them, and their suite of services gets larger, rather than being dependant on whoever is coming out to market to them. This resonates with Mannell et al.'s (2013) planning principle, that connecting outside with local and traditional ideas results in communities having more tools and knowledge to achieve something extraordinary. Cooke elaborates:

> "If you have more options, you start thinking that you can design your own option. In that way, I think [that a major success is] creating an environment where young leaders from rural areas know that the 3-bedroom government house isn't their only option, that they can do other creative, neat things. It doesn't need to be something that someone from a research centre has come up with, just to know that there's a lot of ways to 'skin that cat' is helpful for young people that are looking at the same row of government houses all the way down the street that look exactly the same and are failing in exactly the same way. That diversity of approach means that creative young people in rural areas have a place to start."

These reflections reinforce that accessibility to knowledge is a crucial aspect to fostering innovation and improvements for communities. In particular, this points to how addressing the digital divide by linking rural and remote communities with high-speed internet access has direct and indirect impacts on the informed decision-making on the betterment of housing options in those communities. This increased

access to information and exposure to outside ideas may also contribute to Larsen and Hemmersam's (2018) understanding that the Arctic is a diverse and perpetually emerging landscape, as creative people recognize and enact different possibilities in their communities. As these ideas are appropriated and reimagined by communities, they also advance new hybrid forms that are based in evolving cultural needs as well as being adaptive to what Semple (2013) describes as "an emerging northern culture".

While the advent of internet access in rural and remote Arctic communities may be spurring hybrid innovation on a new scale and in different forms, the practice of incorporating local and imported materials and designs in order to better respond to local needs and aspirations is not a new phenomenon in the north. The emerging hybrids between outside ideas and local adaptation in the north is echoed examples shared by Andersen (2013) as well as Fritz. Fritz explains that because of the great difficulty of transporting building materials in the remote Arctic, people have had to be very resourceful – for example, taking materials from DEW line sites and repurposing them to build hunting cabins. Andersen (2013) gives the example of rectangular log cabins adopted by Indigenous peoples in Arctic Canada, which are often denigrated as a borderline case of 'pure' vernacular architecture in the north, and illustrative of cultural assimilation through adoption of settler 'boxed' architecture; but an alternate view might consider all forms of shelter tailored from local material, where differences in design imply different ways of approaching the same problem, then this does not make these dwellings any less creative or woven into the social setting. Indeed, both of these cases speak to the way that new hybrid forms emerge by adapting traditional functions and local needs with imported materials or designs, spurred by necessity, resourcefulness, creativity. This phenomenon is also documented by Havelka's (2018) research in the Canadian Eastern Arctic, where they noted that in response to ill-suited housing Inuit communities have produced a new generation of self-built, mobile dwellings that incorporate both local and imported technologies and materials in a hybrid vernacular.

7.2.3 Reflection on the past and present

Mannell et al. (2013) explain that though planning is about the future, it relies on information from the past and present to understand what a community is about and how it got to be in its current situation. Gathering and consolidating this information provides a basis for determining where the community should go next (ibid). Walker and Matunga (2013) add that Indigenous planning "has a future orientation that will be fully informed by the past, and by how that past has formed the present" (p.15). In starting a bold and visionary planning process for community and neighbourhood planning, NND is embracing this principle by making the focus of the first phase of this project to understand and recalibrate "where we were and where we are now". This means reviewing and revisiting former plans, previous Elder's meetings, and General Assembly

(GA)[3] resolutions, and before taking them to the next level by building in healthy living concepts, regenerative and healing concepts, energy sovereignty, improved infrastructure, and extensive additional community engagement. Before beginning any new planning, NND is asking for a complete summary and analysis of these historical and past documents, followed by a couple of new community meetings that ask: this is what we heard back in 2007, 2010, and 2016 (for example), what do we think now? Developing a strong understanding of past and current information is specifically intended to be the foundation for future planning at NND. Fritz expressed almost an identical sentiment, explaining that planners and other external partners working with communities should come in as prepared as possible, being able to say "here's what I've learned from everything that's been said in the past: do you still agree with this? Has it changed?", rather than placing the burden of educating them on community members and being the 50th person to show up and ask the same questions and gather the same information that was already shared.

Part of understanding how communities got to be in their current situation means looking at the colonial history of housing. In many ways, the design and construction of housing in the north is based on southern models that have been transplanted, and do not reflect the climate or unique cultural context of northern peoples (Semple, 2013). Indeed, this is a pattern across Canada, where First Nations communities have frequently had to settle for standardized solutions designed for another context – whether that is prefabricated houses, subdivision patterns, housing policies, or band governance structures – despite the very different physical, social, cultural, and population characteristics of the places where they are applied (Mannell et al., 2013). This stems in part from a misconception that neighbouring or related remote Indigenous communities are the same, but in fact all have very specific histories, differing environmental contexts, as well as distinct individuals, explains Fritz. Lepine explains that trying to generalize a housing program often does not go over well within a community. Another participant added:

> "The truth is, in the Arctic and the sub-Arctic, it's such a large region with such a large amount of different cultures and histories and physical parameters, that's part of the reason we're in the mess we're in was because there was a time when people thought that one housing model would be suitable for the entire north." (Aaron Cooke)

Erfan and Hemphill (2013) attest that each community has unique traditions, histories, and relationships, and thus any attempt at doing Indigenous planning means being attuned and sensitive to the unique local context. Thus, developing a solid understanding of the current realities and challenges of a community is a vital starting point for planning for the future. Cooke shared an insight from their engagement process:

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[3] General Assembly (GA): It is a tradition for Yukon First Nations to hold annual General Assemblies, where citizens gather to discuss governmental affairs, set priorities for the future, and socialize.

people do not always know what they want, but they definitely know what they don't want, they know what is not working in their communities – so talking about what the challenges are with existing housing is a starting point. Jacobs explained that it is critical to gain a good picture of community members' needs, as well as what their main concerns are around housing. It is for this reason that NND is undertaking a housing needs assessment that goes beyond population data, income, and currently available and projected housing units. Rather, their vision for the project is first to assess the gaps in order to better understand the challenges of their current situation, and then to gather community members' stories and experiences with housing as a foundation for beginning discussions about priorities and objectives.

Understanding strengths and issues

Furthermore, Mannell et al. (2013) explain that part of this planning principle requires identifying and reflecting upon a community's strengths and issues, and their root causes, in order to develop an understanding of what can be built upon and what needs to be changed. Compiling, organizing, and synthesizing data on strengths and issues is essential in the planning process, providing a useful baseline reference to help inform or reinforce particular directions or actions (ibid). Many communities hope to reclaim autonomy over housing and make the design and construction processes as community-based as possible. Communities in the north face an additional layer of complexity in this undertaking, given factors such as high cost of transportation, energy, and building materials, shortage of specialized labourers, a short construction season, and severe climate (Senate Canada, 2015). Thus, extending this planning practice to a northern context might mean identifying the practical capabilities and capacities of a given community to implement and manage different aspects of a housing project, in order to understand what is possible and plan accordingly. Jacobs explains that any housing project must be very practical in terms of what the needs are, as well as what can practically be done. This aligns with Jojola's (2008) understanding of comprehensive planning as being based on an inventory approach - that is, "what can you do with the resources you currently have" (p.43). Jacobs adds that it is crucial at the early planning stages to develop an understanding of how the systems being proposed will work within the context of the community's needs and capabilities – for example, finding out what kind of contractors are available and capable of building the proposed homes.

> "Having this amazing vision is one thing, and it's really important to have the vision and the passion and the […] cultural connection for the rationale for doing these projects, which is what we had. But also making sure that that vision is aligned with the needs and the practical capabilities of the community to implement them." (Lynn Jacobs)

Fritz agrees that it is critical to evaluate and understand the community's resources as far as people. They explained that their organization is currently exploring ways to address this information gathering process

in a more systematic way by developing a "capacity checklist", so that there is a way to understand the baseline capabilities and limitations within any given community they partner with, and develop solutions accordingly. They add that in addition to people resources, this information gathering on local capabilities should include evaluating the logistics, in terms of all the ways that housing parts reach a community. This might include asking questions such as: what kind of materials can get there? how do supplies get there? What are the transport dependencies? If heavy or large parts or supplies are being brought in, is there heavy equipment available in the community to move them? They assert that it does not matter how great a house is if you cannot get it to the community. People have shared stories of someone buying a house, it gets dropped off in their community by barge, and then there is no way to move it to the site.   In the case of NND, an example shared is that when lumber, materials, and supplies are delivered to the community for the purpose of housing construction, there is no safe place to store the materials to protect against weather damage or theft. They reflected that in the past, there was a pattern of implementing plans in a piecemeal rather than in a logical sequential order, often as a result of external pressures.

Cooke shared an example of an innovative prototype they are currently in the process of developing for a particular community that exemplified this idea, identifying and working around their community partner's crucial capacity gaps and building upon their strengths. This community wanted to use an all-local crew to construct the unit and had the labour workforce available, but they were missing a plumber. Due to their remoteness, it is astronomically expensive to bring in an external plumber. The solution co-developed with the community was to take out the part that costs the most money and they did not have a skilled technician for, while still keeping as jobs as possible in the community. They are doing this by building a kitchen and bathroom in a shipping container in their research lab, which they will then ship out as a whole module to the community, and then this container gets "plugged in like a flash drive" and the rest of the house is built around it conventionally.

7.2.4 Connect the physical and social

Mannell et al.'s (2013) fifth principle of good planning is to embrace and connect both the physical and social components of a community. They argue that the physical and social structures of a community are intrinsically linked and should not be considered in isolation from one another in planning: "the layout of houses, roads, services, and facilities influence the health, happiness, safety, and well-being of its residents" (p.135). This notion can be extended to planning for housing, and concepts from systems-thinking may help support identifying and building on the interlinkages between physical organization and structures, and social impacts and outcomes. This also relates Wilson's (2008) understanding of an Indigenous research paradigm, that everything is connected to everything else and thus research has an important role to bring awareness to those connections and increase their relationship.

Housing systems

All of the expert interview participants emphasised that housing in Indigenous communities was not just about having four walls and a roof. Rather, the planning, construction, and occupation of a house had to encompass and integrate many more social, cultural, economic, and environmental objectives and considerations in order to be considered successful. These success factors include employment, capacity building, economic development, fostering independence, relationship with the land, empowering local supply chains, healthy lifestyles, ecological sustainability, and more. Connecting the social as well as economic impact to housing is vital, advocates Lepine. Too often people focus only on housing, which is important, but the main focus should be people. NND also emphasized that there needs to be an integrated approach to housing - smart planning to create a spectrum of housing that meets multiple objectives, from energy to climate adaptation to life cycle costing.

Persaud contends that one of the problems with the way that communities are planning for housing is that they are trying to emulate the ways that housing is developed in non-Indigenous communities, namely: find land, make it serviceable, come up with housing plans, find a contractor, build the house. Pulla (2012) echoes this sentiment, explaining that when new housing is made available in the north, it is often regulated on specific building lines and with site development geared according to the demands of modern servicing rather than the actual needs of the local residents. What is missing in this, explains Persaud, is understanding the ways in which those where those houses are being placed have significance to peoples' connection to the land, how houses that are being built are being supportive of the various types of wellbeing that different Indigenous peoples want and need in relation to their cultural and economic needs within those structures, how the entire process integrates where materials are coming from and who is building the houses.

Lepine contends that as First Nation governments start creating a path for independence, housing is just one aspect of this change. That is to say, that housing is not a standalone component of community development, but rather part of a bigger system of transformation. Indeed, Semple (2013) highlights that it is not possible to meaningfully address community and housing needs without seeing how all the systems work together. For buildings, for example, this might mean understanding that buildings operate as a system, with all of the components interacting with and affecting each other. For communities, this might mean understanding how layout, density and spatial organization impacts transportation and efficient use of technologies and infrastructure (ibid). Semple (2013) further argues that effective design for truly northern communities requires an integration of ideas, including location, climate, technology, and culture. In their organization's work, Persaud aims to conceptualize an 'ecosystems-based approach' to housing. In this, the biggest lesson they've learned is with planning: thinking about all of the moving pieces, all of the integral parts of a system that come into play, making sure you're not missing any of the pieces. Though

inevitably some pieces do get missed, it is important to approach it with a comprehensive planning approach and doing adequate preliminary research before jumping into anything.

Living systems and housing as landscape

Just as housing was a site for the deployment of colonialism, transforming it into an asset that is appropriate, relevant, and meaningful for the occupant gives it potential to become a site of engagement in decolonization efforts (Monk, 2006). With this transformative potential in mind, Cook (2013) asks, what then does an approach to planning that is culturally appropriate, learning-based, capacity-driven, socially just, deliberate and creative look like in practice? NND and the experts interviewed discussed various ways that they were undertaking future thinking in this regard, seeking to advance culturally appropriate solutions that blended local and traditional qualities with new possibilities. Thus, a decolonized planning lens might understand housing as more than just a dwelling unit, and systems thinking can help conceptualize this broader definition of home as what Andersen (2013) calls a "system of settings". A few of the experts interviewed reinforced that culturally appropriate housing is as much about the built structure as it is about its surrounding environment. Persaud explains: "Culturally appropriate housing is not just in the built environment; It's in the land as well, it's in where those houses are situated" (Anthony Persaud). This directly reflects Andersen's (2013) contention that the concept of 'home' in an Arctic context is a system of settings and an entire cultural landscape, rather than bounded unitary structures, as well as McCartney's (2016) argument that housing systems should not be reduced to merely the creation of shelter or isolated dwelling units.

Imposed settlement and development patterns, including housing, was a means through which settlers attempted to reorganize Indigenous societies into something more like that of the colonizers, according to their values and norms (Monk, 2006). Indeed, the gridded streets and suburban-style three-bedroom houses that were constructed across the Canadian sub-Arctic are predicated on a normative preference for nuclear families and maximizing private space, which has imposed a physical manifestation of colonialism on countless communities (McCartney 2016). Thus, Fritz underscores that understanding the design of a community means not only looking at the houses, but also the orientation and settlement pattern – then asking the community, is this how you would have done it? Or is there a more natural or practical spatial organization to how you would have wanted your houses situated? They explain that it is for this reason that in their work, they do not only ask people about housing specifically, but also prompt people to envision what they would want if they had their dream community. Mannell et al. (2013) add that an essential part of the community planning process should be to determine what areas should be protected and where future development should occur.

Jacobs shared an example of the way culturally appropriate design connects to neighbourhood and community-level planning in their home community of Kahnawake. In their community, people prefer to live in close proximity to their family members and relatives, so families have tended to live and build in that organic way. However, the contemporary conventional way of allocating property and land in their community has no family-orientation principles: members become eligible for a quarter acre at a certain age, and are allocated a plot of land wherever it is available. The consequence is that the traditional family closeness is lost. In their sustainable neighbourhood concept (see Jacobs, 2002), they planned to allocate lots in such a way as to allow people in the future to have access to the lots adjacent to their family members. They also planned to create lots that were slightly larger so that they could potentially accommodate two homes in the future. They wanted to re-integrate a lot of different community cultural concepts that have been a part of their culture for generations – but have been challenging to implement because of the way lots are allocated currently in the conventional system - into the neighbourhood concept. For instance, one of these concepts includes bringing back the idea of shared resources, such as a neighbourhood tool shed, or shared garden areas where people can garden in common.

This future thinking on culturally appropriate housing as being linked with the land, spatial organization, and surrounding environment is one that resonates with NND's approach to future residential development on the C6 parcel. In a similar fashion to what Jacobs tried to advance in their project, NND envisions that their future residential neighbourhood will be designed around facilitating community living and relationship-building, where lots would be arranged around spaces for cultural practice, amenities that promote healing and healthy living, shared facilities, walking and recreation, and space for children. This is a marked shift towards integrating the physical dwellings of housing with the social and cultural landscape and surrounding environment. This vision of ensuring future residential development as designed around community life first resonates with Sheppard and White (2017), who attest that the 21st century presents an opportunity to better integrate the built form with the public realm, as well as address the shifting intersections between traditional and contemporary northern life. Furthermore, NND citizens identified the C6 parcel as an area where future development should occur because of the historical and cultural significance of the site. The site is on a bluff overlooking the Stewart River and Village of Mayo, and is the site on an old village and cemetery (First Nation of Na-cho Nyäk Dun, 2008). In fact, some Elders expressed that they were very pleased that the community would grow here because it felt like "moving back home".

With their pilot project, Jacobs explained that they did not just plan a series of houses, they designed an entire system. While ultimately their neighbourhood concept was not implemented, the underlying philosophy behind it was that:

"It's not just about a house, it's about your whole surrounding, your home, your surroundings, the place where you live, the land. That's something we tried to incorporate, and something my family has tried to incorporate into our living place. It's not just the home, it's the whole surrounding, and how you work with the land." (Lynn Jacobs)

They added that systems-based approach involves thinking beyond just the structures we live in to thinking about our living systems, and that far from being only a lofty ideal, it can be something tangible that individuals implement in their own lives:

"We try to work with the land as sustainably as possible, to be more sustainable ourselves in our living systems. Not everybody can do those things within the place that they live, but everybody can implement something beyond just the structure of the house that you live in - how you live your life, it's your lifestyle that is important in the concepts we were trying to promote." (Lynn Jacobs)

This ethos of considering housing as integrated with social and ecological dimensions is one echoed by NND, in their visionary thinking around the future planning of residential developments in their community. They are envisioning a net-zero neighbourhood founded on regenerative design concepts and creative and holistic living. They want the neighbourhood design to consider community healing, relationship-building, communal spaces, and recreational spaces based on the wants and needs of the community. They are also highly conscious of the impacts of climate change including permafrost thaw and wildfires, learning from the lessons of other Yukon communities, and want the future neighbourhood design to account for sensitive areas.

Tools for systematic thinking

Persaud also explained that all of these things are often thought about, but it is very challenging for communities to consider all of them in tandem, in a system. All of these different considerations and pieces and challenges can be overwhelming to take on all at the same time, and a few participants shared different ideas about how much complexity might be approached. McCartney suggests looking for that piece that you can begin to work with, to provide a sense that you can actually work on something as interconnected as housing, which connects with education, labour force, food security, holistic health, and more. By working in this one layer, it is then important to approach it inter-disciplinarily so that the other pieces can then be taken into account. Persaud adds that it is also a matter of creating space within communities and administrations to think about housing ecosystems and long-term and integrated housing planning – for instance through a dedicated job position where it is that person's role to think and plan long-term and systemically regarding housing.

Fritz is working on developing a decision-making matrix for their organization, in order to have a systematic process similar to an Environmental Impact Assessment for identifying and weighing as many relevant factors within a community setting as possible, including: what is the need and purpose of a proposed action, what are the baseline conditions that will be affected, what are various alternatives, what are all the effects of each alternative, then weighing all of these impacts to determine which alternative is the best. This includes a checklist of sorts, to ensure that outcomes across areas such as local labour, specialized labour, affordability, durability, maintainability, community capacity and transportation logistics are accounted for in the planning process. This approach is in line with Gibb and Marsh (2019), who explain that one way that systems thinking can be applied fruitfully to housing strategy and policy development is by developing a checklist approach that keeps these important ideas at the forefront when in engaging in interventions that seek to leverage housing outcomes across a complex system. Indeed, they further argue that while there is value in adopting a systems perspective in general, there is also a need to demand more of systems thinking and move beyond the reliance on heuristic tools towards an application of these principles in operational empirical models (ibid). Developing a form of systematic checklist, evaluative framework, or decision-making matrix may be one way to operationalize systems thinking into an empirical and practicable method.

Value-added outcomes

This leads to some kind of consensus between the case study and interview participants that the development of housing should intentionally have multiple value-added outcomes. Additionally, one of the key recommendations from the 2018 'Northern Housing Forum' asserted that "housing programs should align with public investments in job creation, skills training, transit, early learning, healthcare, and cultural and recreational infrastructure" ("Northern Housing Forum", 2019). If the output is only a house, then the true potential for community benefit is not realized. Persaud explains that it is for this reason that their organization has reoriented their approach in the past five years, so that they are focusing much more on process rather than only product. A process-oriented approach to housing resonates with Vehbi et al.'s (2010) contention that sustainable housing should not just be about about meeting shelter needs, but should also improve livability and quality of life in terms of environmental, social, and economic aspects. In Indigenous communities across Canada, it is not uncommon that ready-to-move housing is brought into the community from across the province while skilled community members sit jobless at home (Mannell et al., 2013).

For Lepine, the most important thing is to keep money in the community, benefit citizens, and give citizens an opportunity to get into the trades. Some people might say that barging in prefabricated modules is the best way to meet housing need – but that does not provide any local employment, and in fact it actively takes away the small amount of cash jobs that are available in some communities, explains Fritz. Cooke

agrees, that they wouldn't be doing the community a favour by pre-building the whole house and shipping the completed unit out there, because in many cases there are not enough local jobs so those additional opportunities with construction are important. They add: "Because if you only build one prototype and it just sits there and no one knows how it was built, then we haven't really accomplished our goals" (Aaron Cooke, 39:11). Indeed, Persaud argues that finding those ways to connect opportunities to housing is a really important form of community consultation. A comprehensive approach seeks to identify and build upon these potential value-added connections, thinking broadly about how one project or program can address as many issues as possible (Mannell et al., 2013).

Capacity building

One approach to thinking about how one project (for example, building a house) can address multiple issues or objectives (for example, unemployment, supporting individuals with barriers, and housing shortage) is through capacity building and involvement in the building process. Having direct involvement in the building process by the future residents and community is important for building knowledge and skills, as well as to foster a sense of pride and belonging. A few of the experts interviewed reflected on the ways that being directly part of the building process has deep impacts on those individuals. Jacobs explains that "people feel empowered by being able to actually build a part of their home, or somebody else's home and learn how to do it for themselves. So that was an important component of both [sustainable housing pilot] projects". Cooke added that "If we know how we live, and we're involved in the construction of our own home, then it's more likely to suit us".

They go on to explain that people think differently when they know something is not going to be done for them, and that they have a lot to offer – but that does not mean that they do not need help. In a recent project in Mountain Village, Alaska, their organization built 6 homes for individuals who were homeless, but required that the future resident or a member of their family be part of the work crew. The purpose was so that they could understand the technologies that were going in the house that may be different than what was in public housing, but also so that those involved had a pride of place and pride of working with their own hand. Cooke believes that this is a really valuable model. In a similar project, Lepine developed a program for building tiny homes where the future residents were part of the crew building their own homes, and those of their neighbours. All of the individuals involved were on social assistance and faced many barriers to housing. They explain that the project was ultimately about building life skills to help individuals move forward, not about building tiny houses. Individuals who have barriers may not have the tools to make decisions or the capacity for dealing with unprecedented events – and one of those major barriers is housing:

"In terms of the change of those individuals, one of the barriers of a person moving forward is housing. Because if you're couch surfing, you're not going to look at helping yourself as an individual if you've got to look for a place to sleep every night." (Nelson Lepine)

Other barriers include food (i.e. it is difficult to help yourself if you are looking for food every night) and transportation (i.e. if you cannot get to the house where food is). Lepine asks, how can we expect an individual who has lost some of the basic life skills we take for granted to function if they do not have access to these basic foundations – food, transportation, and housing? Some might see providing these basics as enabling people, but in reality, it is necessary to eliminate these foundational barriers for those individuals to be successful, because then they can focus on their healing path. Thus, for housing to achieve social impact or outcomes, it must encompass and advance these foundational pieces for individuals.

When discussing empowerment through involvement in the building process, a few other interview participants also discussed how this process was critical to building knowledge and skills – for everything from site preparation and construction techniques to project management and inventory. Jacobs shares how this process worked in their sustainable housing pilot project in Kahnawake. During construction, the project team invited people to spend the day and help out installing straw bales. Volunteers showed up from the community and from all over Montreal to help out and participate. They kept a list of interested volunteers and penciled them into a schedule over the course of the bale installation process. Most days during the construction, volunteers came to learn and help, and some came back regularly because they wanted to learn how to build their own house. When they built their own straw-bale house (the second project), the local high-school carpentry class students came to learn about the method and work with them. Volunteers also came and helped with their house because they wanted to learn about it, and so a lot of sweat equity went into this project as well. To their knowledge, no other straw bale homes have been built in their community since, although there were people from outside the community who built straw bale homes after participating or learning about their project. Through this process, a pool of interested people grew within the community who communicated with one another and worked on different types of sustainable housing projects – including off grid homes, and even a house built with tires. As planning projects are implemented, there should be the opportunity for diverse skills to be developed, including fundraising, project management, design, and construction (Mannell et al., 2013). A community-based approach, such as this one, ensured that community members developed the skills, knowledge, and awareness to be a force for action and change (ibid), as can be seen in the way that volunteers used their newfound skills and knowledge to incorporate in their own lives.

Cooke shares how they make this capacity-building process an integral part of how they develop projects with communities: When a community approaches their organization about designing and building a house

for them, the design expert talks to them about how they might create a demonstration house that is suitable and adapted to their community. Throughout the winter they work on designing the house, draft drawings, send it out to bid, and put in on a barge for delivery. At sea-ice break-up, they send two instructors out to the community, everyone else has to be local. They then do inventory with the local work crew, meet with the future homeowner, and live out in the community for 6-8 weeks and build together. In the second year, if the community likes the home and wants to scale up and build more, the instructors just come at the beginning of the building process, and then return a couple of times over the season to do inspections, rather than managing the process on the ground for the full 8 weeks. By the third year, the community "graduates", so the instructors do not need to show up at all and the local workforce builds as many houses as they can afford or need on their own.

NND has been exploring developing something akin to a "Habitat for Humanity" model for housing. This model is based on establishing an affordable mortgage geared to income, combined with the future residents volunteering a set number of hours in the construction of their own or another's house. This model is intended to bridge a gap for low-income families and households and create an opportunity for them to purchase their own home. Recognizing that the cost of housing in the north may make home ownership unattainable for many of their citizens, NND wants to develop a model that reduces barriers to explore their options and access different types of ownership around housing based on a 'hand up' rather than a 'hand out'.

All of the projects described share an approach that upheld the need to have the project outcome be more than just a house, but rather also advance multiple community benefits and address many issues at once, to make the house a broader force for transformation.

7.2.5 Establish a united direction for the future

Deliberation

Another one of Mannell et al.'s (2013) six planning principles is that establishing a vision is essential, recognizing the enduring values and beliefs that a community wishes to maintain despite constant future change. A vision is based on what community members believe to be fundamental truths about the quality of life, with the purpose of uniting various groups, coordinating action, informing planning processes, setting a united direction, and inspiring focused change. Importantly, developing a vision should also be a creative, challenging, and exploratory process that involves "taking risks, questioning the current state of affairs, and taking the community's eyes away from the past and focusing them on the future" (Mannell et al., 2013, p.137).

Augmenting the notion of the planning principle of developing a united direction in a community, my research suggests that this does not and should not necessarily equate to consensus amongst the individuals within that community, nor does it mean that deliberation ends once the vision is established. Furthermore, building on the idea that vision development should be a challenging and exploratory process, there may be a need to critically examine some of the take-for-granted ideas and ideals that may form a vision in the case of certain expectations around a 'northern way of life'. Indeed, part of the visioning process when it comes to housing may be a balancing act between an individual's unique wants and needs and developing a cohesive and equitable program for an entire community. Lepine explained that deciding which housing options are appropriate for a given community is difficult, because every person is different, and their wants and needs are different.

NND has expressed that one of their community's immediate needs with regards to housing planning was to address the needs of individuals in the community, as opposed to a standardized 'one-size-fits-all' approach. They stressed that housing is individualized, and thus it was important to find a way to take individual hopes and dreams and integrate them into a diverse housing program – in order to accommodate the multitude of different pathways to housing over a person's lifetime. They want to move away from developing a housing model that that recreates and perpetuates Department of Indian Affairs (DIA) imposed systems of dependency in a standardized approach, and towards a more individualized model based on citizens' needs, creating an environment that allows people to explore their options and reduce barriers to access the type of housing they want. NND is working to be able to provide this type of enabling environment through the planning process, which means balancing the possibility for individualization within a consistent overall program.

A few of the experts interviewed also reflected on the way individualization, or ability for individuals to exercise agency over their homes, in choosing them or aspects of them, and having their voices heard and listened to in decision-making processes, was an important theme in their work. For Cooke, after energy and energy poverty: "The second biggest challenge is voice - being able to choose your own path in housing, and decide what you want, and what suits your physical environment and your culture, and your daily life". This echoes NND's objective of build *with* the community, rather than only *for* them, so that citizens develop agency and a sense of pride over their homes. Cooke added that in their housing projects, they like to know who's going to be in the home before they start – even if it's public housing – so that they can work directly with the future resident of the home. Lepine enacted this approach in their work too, so that once a planned new-build house was assigned to an individual, that individual was brought in to participate in choosing the layout, picking colours, carpets, laminate flooring, cabinets, siding, and shingles. Reflecting on the significance of the ability to choose, they add that "those little small things made them feel like they owned the home, even though they didn't". Cooke agrees that individuals having

meaningful choice over their surroundings and spaces should be an integral part of any housing planning process: "Houses work better when they are asked for, instead of forced upon, and when they involve the occupant before they're designed". McCartney also shares this perspective, adding:

> "For instance, in housing if we're designing a new house paradigm, say at the end of our entire two-year process, we might wind up designing the exact same house that is in community right now, but there will be a major difference: it will have been actively chosen, and a community actively making a choice is worth a lot. Rather than it being dropped down from outer-space and being told this is what you're going to live in."

This can be a balancing act though, explains Lepine, between wants and needs, and it is a matter of sitting down with the individual and together figuring out what will work for them at that point in time. Indeed, this process of deliberation over wants and needs could be part of the challenging and creative aspects of defining a vision within planning processes. One aspect of involving people in the process of determining their own housing, and shifting away from a system of provision and dependence, is having people understand and make informed choices about the trade-offs, compromises, cost-benefits, and other considerations at play. This can be a complicated process, considering the interconnected economic, social, and environmental implications of those choices. NND staff relayed that it is important to consider how integrate individual wants and needs with other community goals and considerations. Introducing the concept of sustainability to the challenging and exploratory components of vision-making may enhance an understanding of the connections but also the trade-offs between the different factors for long-term housing solutions.

In working towards their goal of increasing quality housing stock and living opportunities in the C6 subdivision, NND had several new-builds constructed in this area. These new homes are quite large and have tall ceilings, and while it remains unclear if the large footprint of the houses is actually meeting the needs of the community, they are also very costly to heat in the winter, making them difficult to maintain for low-income households (First Nation of Na-cho Nyäk Dun, 2014). Lepine explains that while many individuals may want the extra space in a home, they do not need it, and it comes with a cost. Their approach to this process is to sit down with the individual and show them the pros and cons of different options and components. This practice is important, they explain, because everyone wants the big house – but the reality is that these large units cost a lot of money both in capital costs and operations and maintenance, because of their significant heating and power demands. Fritz advocates that when considering affordability, do not plan on a 3000 square foot house or "McMansion", nor a tiny house either, but rather plan on a moderate reasonable size house suited to the household.

Another dimension of this debate is that while large footprint homes can be a large financial burden on the occupant, they may also be in contradiction to what the environment can provide. Ecosystems, especially in the north, are not set up to support large populations or people living spread out in resource-demanding lifestyles (Sheppard & White, 2017). Indeed, what Canadians and Americans waste the most is space, particularly outdoor space, highlights Whitehorse-based architect Jack Kobayashi, a problem which is only made worse in the north. In the north, nature grows slowly and has to be nurtured, so when it is damaged or altered, there are significant long-term effects (ibid). An interpretation of a 'northern way of life' is often equated to the ability to have a single-family house on a 2- or 3-acre lot, yet this idea contributes to urban sprawl, dependency on motor vehicles, and significant greenhouse gas emissions (Semple, 2013). Ecosystems, particularly in the north, are not set up for everyone to live on an acreage and yet have all the amenities of living in an urban society – this contradicts what the environment can provide (Sheppard & White, 2017). While a large fully serviced dwelling on a large plot of plan may be desirable for many reasons, it comes with long-term economic and environmental costs, particularly in the north where housing operations costs are already high and the ecosystem has limited capacity to support large populations or people spread out (ibid). One participant elaborates:

> "One thing that is a problem, is that people think that we want our communities to be sustainable, and we want to stay here in our traditional lands, and we want nice houses, and we want houses as big as we see Americans living in – well that's not going to happen, because there's nothing sustainable about that." (Stacey Fritz)

In the city of Whitehorse, Yukon, for example, ongoing attempts to bring higher density into the community have been met with pushback, that this type of development 'does not reflect the northern way of life' (Semple, 2013). In this context, Semple argues that the so-called 'northern way of life' means having the ability to have a fully serviced single-family house on two or three acres so that sense of 'wildness' of the north can be experienced at home. However, this notion contributes to significant sprawl, motor-vehicle dependency, and significant greenhouse gas emissions (ibid). This sensitivity to the ability of the land to sustainably maintain a population into the future is one that is often overlooked in conventional Western planning, but is fundamental in Indigenous planning approaches, explains Jojola (2008). In land-based communities, including Indigenous communities, land tenure is characterized by long and sustained patterns of ownership over successive generations, thus becoming the embodiment of communities of people whose intent was to sustain the productivity and integrity of the land for future generations. Given this legacy of land tenure, it becomes apparent how Indigenous worldviews evolved that embodied values that are essential for attaining a balanced and symmetrical interrelationship between people and the natural ecosystems they occupy (ibid).

Lepine explains that wants and needs are two different things, and that community governments have to try to take a balanced approach in creating some type of housing standard for individuals, which is never going to be successful unless there is a certain level of acceptance from the community of the trade-offs that form the standards within housing programs. Such standards should guide the housing design process so such that acceptable environmental, economic, and social outcomes are part of the housing process. Supporting the individual and community to understand and have the information to decide what trade-offs are acceptable and desirable for them is one way of building a level of acceptance around the trade-offs that form housing standards. If a government administration is creating any kind of housing program, it is crucial to go to the community to have a conversation around it, and build understanding and support before proceeding.

Thus, the challenging, creative, and exploratory processes of visioning in planning housing in the north should include conversations around all the facets of sustainability, in particular critically questioning and deliberating on preconceived notions of what the ideal northern lifestyle looks like. Such deliberation around the trade-offs and impacts associated with different options is critical for generating understanding and support around any vision or unified direction for housing.

Situating immediate action within the future vision

While developing a vision and united direction for what the future can and should be is necessary, Mannell et al. (2013) also understand that planning also has to affect real and immediate change. The tension between big picture forward-thinking multi-phase planning and addressing the housing crisis now is one experienced by NND. As a result, NND is exploring ways of ensuring an integrated and holistic approach to planning and engagement, while at the same time prioritizing the community's needs on the ground in real time. This dynamic of community planning needing to address urgent issues such as the housing shortage while also aligning a long-term direction is one experienced and negotiated in Indigenous communities across Canada and the north American Arctic. Indeed, many First Nations in Canada frequently exist in a crisis-driven and reactive state – balancing limited resources with an overwhelming array of urgent daily issues, including housing shortages, health problems, poverty, and unemployment (Mannell et al., 2013). Fritz adds that this issue is constantly overwhelming for communities, because the need is almost incalculable.

Most of the experts interviewed agreed that many of the ways that the housing shortage is addressed can actually serve to perpetuate the housing crisis. Persaud explains that "because [the communities] are in such a state of exigency all the time in relation to housing, they're forced into continuously creating stop-gap solutions". Community decision-makers are in a difficult position, in that the extreme need for housing combined with limited capacity and budgetary resources, which puts pressure on lowering the quality of

homes, explain Lepine and Cooke. These quick and efficient solutions might meet an immediate need, but the lower quality means that they have a shorter lifespan, and that is "part of that vicious cycle that doesn't allow communities to think long-term about housing" (Anthony Persaud). Despite these limitations and circumstances, Lepine argues that there is still a need to try to develop solutions that will meaningfully address the gaps rather than only provide a temporary 'Band-aid'. Speaking to the context of the north, Pulla (2012) agrees that too often, housing programs and policy-makers react to the need instead of planning for it. The result is that the same problems with housing are reproduced generation after generation, because planning is not done properly (ibid). Fritz asserts: "There's no easy answer there. But providing really crappy housing, we know that's not the answer". McCartney agrees, advocating that the paradigm of the building temporary housing and infrastructure has to change, because those ostensibly temporary solutions are the only ones still there decades later. Thus, there is a need to align short term action with long-term understanding:

> "That is one of the key things when we're talking about working with First Nations communities and long-term planning. Even when working in the short-term, it has to be done with a lens that it is going to be long-term. It's not perfect, but it's going to be there long-term." (Shelagh McCartney)

When asked about how they approached meeting short term need versus undertaking long-term planning, Persaud explained that it was a bit of both: you have to satisfy immediate needs while you plan for the long-term. NND also expressed that there is a desire to develop creative solutions in order to do more with the resources they have, in order to address both immediate needs and long-term needs, as well as how to transition between the two. This is echoed in Mannell et al. (2013), who contend that in taking a comprehensive approach to planning, thinking long term is equally important as immediate action. McCartney reiterated this closely, explaining that their approach in research partnership with Indigenous communities was to immediately begin building housing while simultaneously developing long term plans – that these were two concurrent processes that should iteratively inform one another, rather than being two distinct phases, one's completion a precondition for the next. In fact, they add that it can be acutely harmful to engage people in long-term discussions if they do not see tangible change on the ground:

> "I do think you do damage, psychologically, engaging people in discussions about the long-term and then they see absolutely nothing change on the ground. So if you look at our projects, you'll actually see that we are engaging in this discussion, while we're actually building something." (Shelagh McCartney)

> "We feel it's really important to bring money for on-the-ground change, while engaging in [long-term] discussions. To us it goes hand-in-hand. […] The amount of damage you can do by having

really long-term discussions and not making change on-the-ground, I believe is irresponsible. You need to do both." (Shelagh McCartney)

For Persaud, it is a matter of creating the space within the community and within administrations to think about housing ecosystems, long-term housing planning, and integrated housing planning. They go on to recommend that if possible, and if they have the funding, communities could create a position in addition to a housing manager whose job it is to think about and prepare for long-term housing planning and the ways in which housing interconnects with other aspects of the community.

In summary, based on the suggestions of the experts interviewed and the insights from NND's objectives for planning, one way to reconcile the two seemingly conflicting yet important dimensions of short term need and long term planning was to undertake both concurrently – to work on the addressing current needs and the improving the day-to-day realities while at the same time envisioning and planning the long-term strategy – rather than waiting to catch up on current needs first before starting the long-term plan. Thus, establishing a united direction for the future should not only be a long-term planning exercise, but also spur immediate action.

Implementation

Mannell et al. (2013) assert that the planning principles are intended to be notions about what needs to be done during plan development and implementation, and with regards to establishing a united direction, a plan should be a legacy that endures as elected officials change, staff come and go, and community members move. However, they do not elaborate much on how a community's 'united direction' might be practically implemented over the long term. Given that planning is apt to produce yet another "report on a shelf", this aspect is crucial for communities to find success through their planning processes.

In undertaking new planning initiatives, NND is endeavouring to mitigate against building another 'new plan' that is static and never gets implemented in any meaningful way. They have expressed that it is vital to build in mechanisms for continuity, so that they do not lose sight of the plan as has been done in the past. They are specifically looking for ways to ensure that a plan can withstand both staff and leadership turnover while still incorporating good governance into the overall planning process. They suggested that perhaps this includes incorporating some form of digital master record that tracks progress on an ongoing basis based on self-developed performance indicators and can adjust with changing staff and circumstances. In their visionary approach to future planning in their community, they aim to develop a neighbourhood plan that would be undertaken over multiple years in a phased approach, potentially resulting in an 'evergreen' or living document that is designed to be updated and revisited as priorities and circumstances evolve. They are not interested in having a 500-page book that sits on the shelf and is ignored

for 25 years be the result of a planning process, and thus are looking for ways to make any plans moving forward flexible enough to be adjusted and pivot as circumstances and priorities change.

In a similar way that having a tracking mechanism may be a powerful tool for implementation, incorporating mechanisms for evaluation and monitoring is an important but often overlooked component of the planning process, according to a few of the experts interviewed. Fritz explained that there are rarely enough resources allocated for a follow-up evaluation of a project, to go back and see how the project is going and learn from it in a systematic way. They add that with housing, it is important to study how a house worked for different people and bring this back to both the community and design team to build on and improve from. Whatever evaluation data is gathered should also be in a format that the community can use when planning for more housing projects or seeking federal funding to build more houses, so they already know what works and what does not based on their own performance metrics.

Cooke shared that when they have an active research project with a community partner, they monitor the house and gather data to see how the house is behaving. They then share this data with the occupant and the community in digestible portions, to help them decide if it is working for them and if that particular model is something they want to do again. In Jacobs's pilot project, they monitored the house and systems for a few years tracking temperature, humidity, air flow, overall comfort, to ensure it was functioning properly. In this way they learned about the things they did right, including that the house was very comfortable, but they also learned what not to do next time. Based on this monitoring process, they knew not to replicate these errors when building the second project (their own house).

McCartney et al. (2020) echoes sentiments by NND and Fritz that any evaluation criteria and or performance measures used should reflect local values and understandings, so as to accurately and meaningfully reflect community members' experiences. Standardized assessments are often based in normative assumptions, and thus their findings have the potential to steer community policy towards assimilatory formations and spatial practices (ibid).

7.3 Analysis 2: Additional Principles for the North and Planning Practice

In attempting to bring Mannell et al.'s (2013) principles northwards in Canada, there are many additional considerations for planning in this context that planners and other community practitioners should take into account. Where the planning principles fell short in this regard, NND and the experts interviewed shared stories and offered advice that may be able to augment planning practice with housing in northern communities. These include designing for unique northern lifestyles, heat, transportation of materials, maintainability and (dis)assembly, and operation. When combined, these factors some insight into how

housing in northern Indigenous communities can be made more sustainable and culturally appropriate overall, enhancing long-term financial viability, affordability and quality of life.

The second main aspect that is not emphasized in Mannell et al.'s (2013) principles is the role of the planner, or way in which practice can be undertaken better in terms of the relationship between planning practitioners and communities. Considering the historic role of planning processes in creating the existing marginalization of Indigenous peoples, there is a need for reflexivity on the part of the planner in order to first recognize and then alter these power imbalances (McCartney et al., 2016). Drawing lessons shared by NND and the experts interviewed, my findings point to several ways that planners can decolonize their chosen field of practice by centering reciprocal and respectful relationship-building, fostering an environment of sharing and mutual learning, and creating safe spaces for listening. Thus, the following section outlines the insights and particularities about planning housing in a northern context, as well as lessons learned about what it means to be a planner meaningfully in service of communities.

7.3.1 Lessons from the north: dimensions of northern living and building

Design for how northern people live

Historically many First Nations just built with whatever the construction standard was in the past, which was often imported from vastly different southern climates and thus resulted in housing that was inappropriate for the harsh northern conditions, explains Fritz. Indeed, for decades, housing programs in the north failed to respond to the climactic, logistic, and socio-cultural realities of the north's diverse peoples, often because they were determined by external imperatives or agencies (Sheppard & White, 2017). As northern communities plan for alternate pathways forward that break with the convention of imported southern or imported models or structures designed to be temporary or stop-gap solutions, therein lies an envisioning process that is concerned with what social and spatial forms this may take. Thus, applying the principle of connecting physical and social structures in the context of the north may mean connecting what is important or particular about northern lifestyles with the built forms that support them.

Beyond planning a structure that is suitable to the climactic and geographic realities of a given place, 'building to the north' also means building appropriately to how northern peoples live. For Cooke, that means asking: "How does a northern house look, but also how does a northern house work?" (Aaron Cooke). The practices of building a home, making a fire in the hearth, and being part of a household are all enmeshed with other activities and events of life in the circumpolar north (Wishart, 2013). Cooke contends that every culture everywhere, if you go far enough back in time, had homes built by the people who were going to live in them, with a firm understanding of the materials at hand, and the microclimate, and the culture that the home needed to suit. They elaborate:

"You should be able to see a picture of a northern house with no context and be able to tell if it's a northern house,[…] just like you would be with a tropical house. You should say okay, I have a general idea, just by looking at what this house looks like, what kind of physical environment it's trying to take part in on behalf of its occupants." (Aaron Cooke)

Cooke adds that while colonialism disrupted this practice amongst northern Indigenous peoples, since the 1970s there has been a growing resurgence in interest in home-building practices suited to the context, questioning: how do northern people live differently than southern people? What spaces should we be providing? How do they look different? How do they perform differently?

"The way that northern people live should affect the spaces that they create for themselves in order to live the way that they want, just like anyone else on Earth." (Aaron Cooke)

Lepine explains that one example of how this could look is with Arctic entrances – or a bigger non-heated enclosed porch area with a two-door system, so that when you enter the house, you do not get an influx of cold air coming in. A lot of heat is lost when the door is opened to the outside, and so a double door system is much more energy efficient than a single door system. This is an example of designing to the climate, but also for how the occupant interacts with their house in a northern context. Building on this, the notion of living memory is important to take into consideration when designing spaces for the north and for the northerner. Cooke shares that "I'll take an Elder's opinion of which way the wind blows over an anemometer any day. They will tell you which way the front door should face". The cases of Arctic entrances and local understandings of climactic conditions both exemplify ways in which social practices and traditional knowledge connect with physical form and design. The interrelationship between climactic conditions and socio-cultural lifeworlds in the north should be an integral consideration when considering what future planning for the north means. By seeking to find solutions to meet the necessities of climactic adaptation in the north, one is also part of engaging in finding solutions to other equally important aspects of being human and living complex political lives (Wishart, 2013). Furthermore, by valuing and building on local knowledge, such as an Elder's knowledge of their microclimate, a plan or design will better reflect local needs and be embraced by the community (Mannell et al., 2013).

Design for heat

The hearth, and its relationship with the home and household, is a crucial interdependency for human habitation in the circumpolar north (Andersen, 2013). Speaking from the context of Alaska, Cooke explains that when we design for our own climate, we are always talking about heat first: how will a building be heated, and how will it retain heat. Furthermore, the envelope design, or what kind of coat is put on the house, is more important than what is used to heat the house. Indeed, Semple (2013) agrees that there is not a more efficient or cost-effective way to create energy than to save energy, and that such

demand side savings are essential to addressing the future of sustainable northern housing. Lepine adds that the cheapest and best way to get more energy efficiency in the home is to put more insulation in and thus increase the 'R' value[4] of the envelope (walls and roof) - in this practice, this is building to the north. Summarizing the need to make decisions based on heat when building to the north, Cooke asserts: "Reduced demand and more intelligent supply – those are the hallmarks of northern heat". They further argue that it makes no sense to have thin walls and then just upsize the heating appliance to call that a northern home. They elaborate:

> "We can heat with sun, we can heat with oil, we can heat with natural gas, we can heat with pixie dust - but if we don't have a good envelope then it's not a northern house. Because that's not how a northern animal would work, it doesn't eat more in the winter, it grows a thicker coat." (Aaron Cooke)

Design for transport

Quality housing is expensive to build in the north, and this high cost of building homes in the north is driven in large part by the expense of building materials and transportation (Pulla, 2012). Indeed, CMHC has noted that construction materials have to be "shipped great distances throughout a region where environmental conditions place significant limitations on the use of land, water, and ice roads for transportation. These constraints dramatically increase the costs of building materials and of construction in the north" (CMHC, 2007, p.8). As a result, in many cases, the design of northern housing is dependent upon transportation options (Pulla, 2012).

While NND has year-round road access and thus does not face logistical challenges to the same extent as communities reliant on sealift, ice-roads, or air transport, they are nonetheless a small population rural and remote community many hours' drive from a major urban centre, and thus transportation of building materials factors in very heavily to cost and logistics. Because of their distance from construction material markets, if a part is missing, it can cause extensive delays and increased cost to the building process for that part to be located and brought up. To mitigate this, NND have to build a facility to store building materials in community, which is also a significant asset to construct, maintain, manage, and keep secure year-round.

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[4] 'R' Value: the capacity of an insulating material to resist heat flow. The higher the R-value, the greater the insulating power.

Cooke shared some insights on the challenge of getting materials to site in the north within the planning and design processes. In architecture school, there was never a class on how to get materials to site – materials would be chosen only based on their suitability to the building. In the north however, a very large proportion of construction costs are from logistics – and yet materials are not chosen based on how they transport, which is problematic. If these processes were taken into greater consideration, costs could be greatly reduced. One example of contending with the challenge of transportability is in a new prototype their organization is developing, constructing a house that uses steel studs rather than wood. While wood is a better insulator, they are finding a way to make a thermal break in the steel stud, and their design of the steel stud can fit twice as many units for the same volume as their wood stud counterparts. When materials have to travel by barge or by plane, space is at a premium, and thus minimizing this aspect may make a massive difference in transport costs. They explain: "Now we're thinking like northern people, because we're designing with transport of materials in mind as one of the primary constraints that we select materials for" (Aaron Cooke).

Design for maintainability

One of the key ideas emerging from a multi-national research project's discussions about homes, hearths, and households in the circumpolar north was the idea that homes in the north never seem to be complete (Wishart, 2013). The Gwich'in Elders they worked with were perpetually adding on to their cabins, and would often disassemble parts of them and use the pieces elsewhere (ibid). Fritz explains that this is their rationale for adhering to the principles of "design for disassembly", which almost automatically makes it designed for maintainability – because then parts can be taken off, replaced, repaired, and be part of a circular economy. They add that in some cases designers try to reduce the amount of work a house takes to upkeep by putting in ugly, industrial, "durable" materials, because of a perception that people will not look after their homes. This is problematic on a number of levels, not only because it plays out harmful stereotypes but also limits the ability for the occupant to actually undertake maintenance or adapt and reuse building parts:

> "Houses need to be maintained. You cannot design and build a house that will not require maintenance – so design for maintenance, design for maintainability. And don't make it so that when they do have to maintain it they can't [because] they need specialized knowledge, they need specialized pieces or parts." (Stacey Fritz)

One of the experts interviewed also expressed that the consideration of maintenance and maintainability should be integrated into the overall plan and design of a house. Jacobs explained that in the planning phase, they tried to factor in maintenance when they were designing all of the systems that the neighbourhood would have – including estimating what the maintenance requirements and costs would be,

to ensure that they wouldn't be more than a conventional house. This echoes Minnery et al.'s (2000) findings, that the sustainability of housing depends on the ability of the community to organise effective maintenance—both to carry it out and to pay for it.

Design for occupation and operation

One of the main dimensions of the housing affordability challenge in the north is that northern housing is unusually expensive to operate and maintain, according to Pulla (2012). For many First Nations communities, housing is the biggest debt load they carry, and as a consequence housing is considered a liability rather than an asset. Part of addressing affordability challenges in the northern context means increasing focus on designing high-quality, energy-efficient homes that are built to codes and standards to meet the diverse challenges of northern environments, with the aim of ensuring that operations and maintenance costs can be reduced for the occupant or provider over the long-term (ibid). Related to the discussion of upfront capital investment, a few of the experts interviewed repeated Pulla's (2012) findings, and felt strongly that planning for housing should also consider what the costs and operations would look like for the occupant. As discussed in another section of the analysis, the housing shortage is putting a lot of pressure on governments of all levels to implement fast solutions and build housing quickly – but once that housing goes in, if it's a liability for the occupant, there is going to be pressure the other way, explains Cooke.

A good example that illustrates the way costs can be either transferred to or redirected from the occupant is through energy (in)efficiency, and how well a house retains heat. For Cooke, the greatest challenge for northern housing is first energy, then cost – and the challenge of cost is directly related to the challenge of energy. In fact, they explain that a vast majority of rural communities in the northern regions of north America face energy poverty, meaning that an unsustainable percentage of a household's annual income goes towards heating their homes. They argue that if one has a little money, one should spend it on the envelope, not the appliance. Lepine echoes this view, explaining that it is cheaper to put in more insulation than it is to create a new type of technology, that the capital payback of better more robust insulation was about 5-10 years compared with an energy efficient heating system which was between 25-30 years. It is for this that Cooke strongly advises to never choose a cheaper material, especially insulation, that will put the burden of heating the home on the occupant – as this is one of the greatest recurring costs for individuals and communities and is avoidable with appropriate and conscientious upfront investment. Fritz contends that "The perfect home will be an asset for generations, not a burden that people inherit that screws them over. We want it to be an heirloom, an asset". They add:

> "When you do have money, which [sometimes] comes from the government, make the most of that money. Build the nicest, most durable, maintainable house you can – a house that is set up to be

off the grid, or have solar panels, etcetera – so that it doesn't instantly become a financial burden to whoever lives there forever." (Stacey Fritz)

Having home ownership, and in turn personal investment and responsibility over housing, is detrimental rather than empowering for the occupant if the home operation and maintenance costs are too high (Pulla, 2012). Thus, especially because operations and maintenance costs are higher in the north, the utmost consideration should be taken with regards to what the operation and occupancy of the home will look like when planning for socially and economically sustainable housing.

At what cost?

The planning considerations discussed above, in terms of designing for transportation, heating, maintenance, and occupation, all come with a price tag, and can often result in increasing the upfront cost of a house. However, all of these considerations also point to significant efficiencies, financial sustainability, and savings over the long-term. For Pulla (2012), building sustainable quality northern housing requires significant upfront capital investments. There are two main aspects to the housing affordability challenge in the north: first, that quality houses are difficult and expensive to build; and second, that northern housing is unusually expensive to operate and maintain (ibid). Indeed, Persaud explains that the dilemma of balancing short-term versus long term cost effectiveness is a major challenge facing Indigenous communities across Canada related to addressing the housing shortage. According to Lepine, this is part of the bigger picture of community development, in always trying to find the balance between budget versus product. Fritz advocates for spending more money upfront, even if that means fewer houses:

> "Affordable housing is not cheap, and it shouldn't be. I really believe strongly in putting as much money as you can in the design and upfront costs to make that house easy and affordable to live in. And I think this is true with any products." (Stacey Fritz)

Vehbi et al. (2007) contend that while there are a number of ways that housing can contribute to the achievement of sustainable development objectives, this is a two-way process; because in the long-term, the most cost-effective way to develop and maintain high-quality housing is to integrate principles of sustainability into all parts of the housing development process. Persaud echoes this statement, explaining that if communities are somehow able to figure out how to make a much larger initial investment, they will see that they are actually saving money within 20 years – by building a house that could last more than a century as opposed to just 10 years. While it will cost more to build a nice house, Fritz explains that it will save the community over the years, not only in money but also in healthcare, and in heartache from seeing a family living in a house that should be condemned. Echoing this sentiment, Lepine participant felt

strongly that when administrators or leadership are only focused on budgets, then they're not focused on people, who should always be the first priority.

7.3.2 Role of the Planner

Decolonizing the role of the planner

Planning theorist Libby Porter (2010) calls for an "unlearning" of the colonial cultures of planning so that planners become allies to Indigenous people and communities in pursuit of justice and reconciliation. Erfan and Hemphill (2013) warn however that the narrative of external planner allies "empowering" Indigenous communities to make better plans is problematic, because the power dynamic remains unidirectional. Indeed, McCartney et al. (2016) found that Indigenous communities are too frequently understood as beneficiaries to whom services must be provided, and the desire to "teach" planning perpetuates a colonial legacy by "essentializing technical knowledge and erasing local understandings of the land and community planning" (p.20). This, in order to break from a system that perpetuates asymmetrical power relations towards one that places the locus of control on the community, there is a need for ongoing reflexivity on the part of the outside planner (ibid).

Erfan and Hemphill (2013) consider that an external planner working with an indigenous community must take on a "decolonizing role", seeking to reverse the power relations so that the professional planner is fully in service of the local community. They consider what a genuine decolonizing relationship between outside or "ally" planner and community might look like instead, and suggest that the most successful strategies for outsider planners committed to decolonization include: knowing to listen for a long time before one speaks; being flexible and open to the community's needs; and committing to capacity building (ibid). In order to break the contributor-beneficiary dynamic and advance equity in external planner-community relationships, the planner must relinquish their position as sole expert within the partnership, explains McCartney et al. (2016). In relation to planning for housing, Fritz asserts that there is no room for one person's individual design ego to be involved when designing homes that work in a community. Interview participant McCartney confirms that you cannot go into community giving your opinion, you need to allow the opinion to develop and to actually develop from the community. Erfan and Hemphill agree, arguing that one committed to decolonization in community planning has to let go of their own agenda. It is for this that Cooke sees their organization's role as giving people and communities the technical tools to determine their own destiny, rather than telling them which option should suit them.

Relationship building

Another aspect of the decolonizing role of external planners is in the nature of partnerships and relationship building. Interview participant McCartney asserts that the practice of how to build partnerships is something that is not written about enough in the planning field. They share that one of the biggest lessons

they've learned is the importance of relationships and how to be a good partner, because projects are entirely based on relationships, and ultimately this is the largest determining factor that will allow a project to go well or not. McCartney asserts that it is not enough to just assume that it is a given that people will be respectful and do good work.

When NND was seeking to partner with a consultancy firm to undertake capital planning and neighbourhood planning work, they emphasised that first and foremost they were looking for a long-term partner in planning rather than a completed plan. Their reasoning for wanting to develop a relationship with planning proponents in order for them to build better understanding of how NND's organizations functions and to mitigate against creating yet another "new plan" that is static and does not get meaningfully integrated or implemented. This echoes McCartney et al.'s (2016) argument that learning should be something that is mutually occurring, rather than a one-way transmission of "teachings" from planner to community. NND intends, through relationship-building, that the planning firm will learn from them in a more in-depth and nuanced way such that planning activities become living processes rather than simply a final report that sits on a shelf. Persaud also echoes this sentiment, explaining that in their organization's work they've attempted to create strategic partnerships with Nations and work with them in long-term in-depth relationships that allow them to work together on the whole suite of options that might be available or are related to housing. They assert that a deeply embedded ecosystem approach to housing is not possible to realize with surface-level short-term partnerships.

The learnings shared by NND and the experts interviewed also suggests the relevance of Wilson's (2008) principle of relational accountability as being foundational to decolonizing planner-community relationships. NND expressed that in order to effectively work with a new planning partner, that partner should make the best effort to meaningfully understand how they work as an organization, and thus make any future planning work based in the community's unique context and realities, rather than being based on assumptions or ideals. Furthermore, the working relationship should be grounded in reciprocity – taking an approach of being in service of the community rather than perpetuating a colonial power dynamic whereby the planner teaches or contributes, and the community listens and receives. Communities such as NND demanding relationship-building and relational accountability of its planners and partners echoes Porter's (2010) call for the planning discipline to engage more earnestly in relational processes with Indigenous peoples, so that the profession might expand its repertoire.

Sharing and mutual learning

McCartney et al. (2016) explain that valuing the opportunity to listen and then share learnings serves to build relationships and networks that can last beyond a meeting or project. They suggest that community participants be encouraged to promote the vision or planning activity within their broader community,

while the planner's responsibility should be to share and amplify the community's voices to policy makers and other professionals outside the community. Sharing grows the project's influence beyond the limited bounds of those who were directly involved (ibid). In reflecting on their sustainable housing and neighbourhood, which unfortunately didn't move forward beyond the pilot project phase, Jacobs explains that one of the biggest impacts of their project was the ripple effects which is empowering a new generation to take up the helm of sustainability in their community. In the 2000s they had a dedicated group of participants that were passionate about fulfilling the project, and even though they didn't succeed in building the neighbourhood in the end, a lot of those first people that were involved in the project have gone off and done their own housing projects, gone to school for something related, implemented components, or advised other people. This spread into the community at large, and other community members have since built homes that used some of the sustainable concepts demonstrated in the pilot project house. This speaks to the way that through project participants taking their visions and learnings into their homes, friend groups and the broader community, the impact and influence of a single project gained a much greater reach.

Over twenty years later, there is a younger generation who have come across information about the project and are learning about what they were trying to do back then – so now there is this group of young people who are saying that they want to see a project like this come back, to dust off documents, create something inspired by the original project, with new technologies or innovative sustainable materials and energy systems, and also using many of the cultural concepts they were trying to implement. Reflecting on the impacts of their project, especially years later, Jacobs shares:

> "Sometimes you can only get your version to a certain place and that's as far as you can go, but the ripple effects are still there from the benefits that can come from the work that was done. And we're still seeing those ripple effects today when the younger people are finding out about that project and what we were trying to do back then."   (Lynn Jacobs)

This resurgence and renewed interest in the project by a younger generation exemplifies the way that sharing the goals and lessons from the project are able to have influence in the long-term, in new and unexpected ways.

Create space for listening

Erfan and Hemphill (2013) contend that listening is a vital principle of decolonizing planning, and in this way the outside planner should enter with a beginner's mind, not with an expert mentality. When teaching is replaced by listening, the burden of learning is shifted towards the planner (McCartney et al., 2016). In their work, Erfan and Hemphill (2013) found that community members shared in profound ways, once they found the unassuming ear of a compassionate outsider. Cooke echoes this sentiment, explaining that for an

outsider to work with communities respectfully, one needs to cultivate an anthropological sense of listening to people, as well as leaving pre-suppositions at the door when trying to understand a person's wants and needs with regards to housing. Lepine also explains that it is very important to build good relationships with individuals within the community, particularly by making the space to listen and have their voices heard. In their former work in a First Nations government, they worked with many individuals who were facing challenges including with housing, and would sometimes have a lot of anger directed towards those responsible for housing. They learned that in working with these individuals over time, the relationship changed dramatically. They would invite folks in who were upset and yelling and listen to them, and by the time they left they were calm – explaining that creating this space for listening, even if they disagreed, made a huge difference for those individuals and the relationship they had to their government.

8 Discussion

In this thesis, I sought to progress an understanding of how planning approaches to community housing in northern Canada can be decolonized. In this undertaking, I interviewed experts and community practitioners working with and researching Indigenous housing, as well as engaging in dialogue and some action research with the First Nation of Na-cho Nyäk Dun. Through this data gathering and analysis, I aimed to explore what roles locals and outside experts played, what dimensions were important for sustainable and culturally appropriate housing - particularly in the north, and what the implications for planning practice were. I framed my analysis in terms of Mannell et al.'s (2013) principles of good planning, both to draw out insights in the area of Indigenous planning practice as well as contribute to and augment these principles as they apply to northern housing.

In this framework, I brought in topics that were not addressed in the principles, namely the housing sector and northern geography. These additional subjects served to both test the broad applicability of the planning principles, as well as augment them with further knowledge on these two specific planning contexts. The following section discusses the contributions my research makes to principles of good planning and understandings of a decolonization of planning practice. A table in Appendix 2 summarizes the findings and recommendations discussed below. The principle of engaging a broad cross section of the community agreed with my findings that there should be egalitarian representation across all community groups and demographics. However, my findings added that there also needs to be a conversation around what engagement methods should be used that meaningfully reflect a community's cultural context, as well as considering that as much as possible how to remove unequal power dynamics from engagement space.

With the principle of valuing local and traditional knowledge, my findings echoed Mannell et al.'s (2013) that planning processes should build on local ideas and knowledge but at the same time have an openness to new ideas and outside perspectives. Indeed, my findings pointed to the fact that awareness of alternatives

and different options was a powerful tool in fostering innovation and creativity. My findings also added that this practice was one actively being engaged with in northern communities in the form of hybridization of imported material and technology with local needs and knowledge. The principle of reflecting on the past and present, which includes identifying strengths and issues, connected strongly with my findings. NND as well as a few experts emphasised the importance of comprehensive background research and building from past work. The findings also pointed to the need to work within the practical capabilities of a community, which can be done by identifying and then building upon resources and opportunities, and addressing or planning around gaps. The principle of connecting physical and social structures perhaps resonated most strongly with my findings. While Mannell et al. (2013) discuss this principle on a general community scale, my findings pointed to this principle being very relevant for housing more specifically too, as NND and all the experts interviewed conveyed that housing intersected with every other facet of community life. However, there is a gap in how to identify and address such interconnections in practice, and thus my findings suggest that systematic tools that identify core criteria or values be developed to support this undertaking.

The principle of establishing a united direction for the future was one where there may be more dissonance with my findings. The main area of agreement was in that thinking long term was equally important as immediate action. While Mannell et al. (2013) do acknowledge that visioning is an exploratory and challenging process, my findings also suggest that there is a need to take this a step further and engage in more in-depth deliberation around possibilities, options, wants, needs, and realities. This is because there is a need to foster understanding by the community around the trade-offs, balances, and practical capabilities that come with planning, for instance in a housing program or residential development. Furthermore, with little detail on how a 'united direction' might be practically implemented, my findings may augment this principle by suggesting the need for monitoring and evaluation mechanisms that track a plan's progress and success on the community's own terms.

Overall, my findings were in line with and even supplemented Mannell et al.'s (2013) principles of good planning with Indigenous communities. However, the most notable gap in this theory was a lack of consideration for northern context. Thus, in endeavouring to build knowledge on improving planning practice in northern communities, I offer an additional category for my findings that suggest ways in which planning, particularly for housing, can be approached in more sustainable and culturally appropriate ways. One major finding highlighted the importance of considering how northern lifestyles differed from southern ones, begging a reimagining of how a northern house works based on the interplay between climactic conditions and socio-cultural practices and knowledge. Another key dimension that emerged from the findings was that northern houses, or indeed entire settlements, should be designed for heat as the central consideration. Additionally, built forms should be designed with transport in mind, because often

construction materials have to be moved hundreds or even thousands of kilometres. Maintainability, or the ability for structures to be repaired, disassembled, moved, renovated, or adapted by the community, is also a critical consideration, because of the costs and logistical challenges associated with getting replacement parts or bringing in qualified tradespeople. Furthermore, the cost of keeping up the house through operation and maintenance is a pivotal consideration for ensuring that affordability can be maintained over the long-term. Finally, all of these considerations need to be accounted for in tandem in the planning process in order to ensure that the end products truly serve the individual occupants and community at large in transformative and beneficial ways.

While Mannell et al. (2013) advocated strongly for the need for planning, there was limited reflection on the positionality and role of external planners whose services and expertise Indigenous communities frequently engage. Insights from my findings suggest some ways that these roles can be improved and decolonized to be in better service of the community. It is apparent that "state", "expert", and in the case of the north, "southern" driven planning models have mixed results and consequences for communities, imposing inappropriate solutions and perpetuating colonial power dynamics. At the same time, Walker and Mutunga (2013) argue that the planning profession has a critical role and ethical responsibility to not only to confront its own complicity, but also support the recovery of Indigenous communities. As Mannell et al. (2013) contend that there is an urgent need for planning in Indigenous communities, this calls for a decolonized reimagining of the role of the planner.

One way this can be advanced is through the planning profession facilitating frameworks and tools to connect the traditions of mainstream and Indigenous planning, which will in effect alter the course of its own future (Walker & Matunga, 2013). A few of the experts interviewed reflected that the north is going through a period of immense change, with traditional practices and local knowledge intersecting with outside ideas and imported material and technology. While in the past, northern communities were forced to take what they could get from the south and try to adapt, there is an opportunity in the contemporary to empower communities to determine what identities, lifestyles, and structures they want to negotiate and form for themselves. Planning as a practice may be well served to facilitate and support what this articulation of hybrid structures, policies, and spatial patterns might look like for the north's diverse communities and the unique individuals within them. A connection of Indigenous and mainstream planning frameworks, like the shifting intersections and hybridization of outside ideas and traditional knowledge, alters the shared future of both. This thus contributes to what Sheppard and White (2017) consider as a phenomenon of "future thinking" for the north. Furthermore, in reimagining the role of the planner, the findings from the case study and experts interviewed also points to a need to reverse the power dynamics between community and planner, so that the planner is fully in service of the community. There was an emphasis on building respectful, reciprocal, and long-term working relationships.

While many of my findings are particularly salient for the outside planner, they may also be relevant for the local community planner. Indeed, Prusak et al. (2015) found that even community-led planning initiatives could serve to reproduce settler planning processes, authority, and control. Thus, as hybrid mainstream and Indigenous planning approaches emerge, a reflexivity on the part of the planner, local or outside, is necessary to ensure that those harmful aspects get left behind.

9 Conclusion

Across Canada, Indigenous communities are advancing self-determination and reclaiming autonomy over all aspects of community life, including planning. Given planning's historical embeddedness in colonial structures of power and dispossession, and concurrently with an urgent need for planning in Indigenous communities, there is a pressing need for transformation within planning practice if it is to positively serve communities for the future. My thesis sought to explore and provide insight into how planning approaches to Indigenous community housing in northern Canada might be decolonized, so that 'home' can be once again be a site of empowerment rather than marginalization.

My contribution to the conversations on planning in Indigenous communities is to augment these principles of good planning with Indigenous communities from the perspective of housing and northern geographies, and to suggest ways that planners might be able to support communities in their planning endeavours in more respectful and beneficial, and thus decolonized, ways. Building on and adding to these planning principles, my research suggests that a decolonized approach to housing planning is one that is inclusive off all community groups, integrates multiple objectives and needs, is sensitive to the surrounding landscape, builds on past work, sparks creativity and innovation, enables better understanding of both possibilities and trade-offs, and creates tangible and immediate change on the ground while acting with a long-term focus. Bringing this planning theory to the north, my research also finds that there are additional and particular planning considerations that ought to be taken into account. Transportability, intuitive heating, maintainability, and design that centres the lifestyle, knowledge, and evolving cultural needs of the inhabitants are all tenets of planning northern homes, and are worth the higher upfront cost in the long run.

Furthermore, for planning practice to be in better service of communities and support them in their self-determined transformation, there is a need for significant and ongoing reflexivity on the part of the planner to ensure that colonial systems of domination are not perpetuated. As planners, we often rely on established tools and processes to guide our work. With the radical transformation that is occurring as communities reclaim their self-sufficiency and self-determination, planning practice needs new and improved tools and processes to redress the harms of colonialism and support communities in realizing their aspirations for future generations. My research findings may add, in some small way, to the important conversation,

speculation, imagination, and deliberation about what such a planning practice could look like. In order to open the door to alternative trajectories in housing, planning as a profession has to be held to a higher standard of practice that places itself in fully service of communities, empowers local and traditional knowledge and aspirations, connects opportunities and bridges gaps, and enables the true breadth of potential to emerge within, across, and between communities.

9.1 Implications and areas of future research

As McCartney et al. (2016) advocate that it should be within the planner's purview to share and amplify the community's voices to policy makers and other professionals outside the community. This practice could also extend and expand opportunities for mutual learning beyond the community, regionally or even internationally. Just as (global) "south-south" cooperation, learning, and exchange has become a buzzword amongst development policymakers (Lewis, 2017), another necessary shift to counteract decades of one-way flow of policy, practice, structures, and information by southern federal agencies or other external parties on Indigenous communities may be some form of "north-north" learning, or as Penikett (2017) describes, strengthening the "east-west" links across the north to counter the south's domination. On a global scale this has been endeavoured in a number of ways, for instance northern and Indigenous communities have been pursuing their own foreign policies, as witnessed by the proliferation of circumpolar conferences on everything from agriculture to health to climate change (Penikett, 2017).

Furthermore, researching planning practices in the Far North may offer insight for advancing sustainable urban development and planning elsewhere in the world. Larsen and Hemmersam (2018) highlight that one of the dominant images of the Arctic is as a 'canary' for climate change. Furthermore, northern ecosystems are highly sensitive and have low thresholds for accommodating resource intensive human lifestyles (Sheppard & White, 2017). Considering these notions, sustainability in a northern setting may mean something radically different than in other environments that are more resilient or where environmental impacts are not as immediately pronounced. If northern sustainability has higher stakes, because of the harsh climate, high costs, and sensitive ecosystem, then sustainable planning must more comprehensively account for all of the relevant factors that contribute to genuinely sustainable urban forms. For example, while the "greenwashing" of components of a sustainable building may pass relatively unnoticed in Vancouver, if a building in Mayo does not have integrated ventilation, insulation, heating, and plumbing systems, as well as incorporation of local knowledge and cultural practices such as food and fuel storage, household structure, or weather variability, there can be detrimental, even lethal, consequences for the occupant. In the north, sustainability is a matter of survival. Thus, planning sustainable northern communities through empowering local voices and thinking systemically may serve as lessons and models for what genuine sustainability means in practice.

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Appendix 1: Interview Guide

Summary:

Thank you for taking part in my research! This research will investigate the challenges and opportunities in providing access to affordable, sustainable, and appropriate housing in the context of rural, Northern, and Indigenous communities in Canada. In particular, this project will research the use of local resources, methods of enabling financially viable and affordable housing options, how community knowledge and values can be integrated into decision-making.

The following questions make up the general structure of the interview, and are organized by theme. Many of the questions are intentionally broad, with the purpose that we will delve into the details and implications of the topic area from your perspective. I'll only ask you to consider the questions from your own experience, rather than trying to answer for all cases and contexts. I am interviewing experts such as yourself from a diversity of backgrounds, so not all questions will be equally relevant to everyone – if there are questions or topics you would prefer not to address, we can skip them.

Introduction

1. Can you briefly describe how you/your organization works with housing in the context of rural, Northern, and/or Indigenous communities? What kind of housing projects have you been involved with?

Challenges

2. What are some of the main challenges associated with housing provision in the rural, Northern, and/or Indigenous communities you've worked with?

Prioritizing objectives

3. Based on your experience, what are the most important things that communities should take into consideration when planning for housing?
4. How do you determine if a housing option/model will meet individual and community wants and needs?
5. Is there a need to balance individual wants and needs with community considerations or limitations?
   a. How have you approached these trade-offs?
   b. Can you give some examples?
   c. (ex. members wanting large private lots, but there is a limited amount of land and high servicing costs)
6. If relevant, how have you approached integrating the following considerations into housing:
a. Cold climate
   b. Culturally appropriate design
   c. Energy (alternative, efficient)
   d. Environmental sustainability/ecological footprint (ex. water conservation)
   e. Health and wellness (ex. mold prevention, accessibility)

Affordability and Financial Sustainability

7. Do you consider short-term and long-term cost effectiveness?
   a. If yes, how so?
   b. (ex. up-front cost of solar panels vs lifetime utility cost savings)
8. How have you approached/do you approach making housing affordable for residents, and financially viable for providers (cost recovery)?
   a. What types of programs can support this? (ex. Rent-to-own, flexible financing)
   b. How have you approached/do you address the higher costs (transportation, labour, skilled trades, materials) associated with northern/rural construction? Are there ways these can be alleviated?

9. In your view, should home ownership options be a priority in community housing programs? If so, why?
10. How can home ownership be made more attainable and accessible for more people?

Governance
11. Describe the decision-making process around determining housing directions and options that you used in your housing project(s).
a. When and how is community input integrated? How have you approached seeking out and integrating community input?
b. What are the key decision points? (ex. settlement design, house design, training and education, construction and project management, post-occupancy management)
c. Is there an internal decision-making process, policy, or pathway that you follow?
12. How can a community housing program account for the diversity of community wants and needs?
a. Can these wants/needs be met by offering different types of tenure options?
b. What does this look like?

Local Resources
13. How have you approached making use of local resources and assets?
a. What are some creative or effective ways you have used (or created) local resources?
14. What was your process to identify and/or address local resource gaps?

Sense of Place
15. What are some of the most effective ways of fostering pride and responsibility over housing amongst residents?
a. How can a community support their members in making their house a home?

Successes and Lessons Learned
16. If some time has passed since your housing project was completed, how is the project going now?
17. What are some of the lessons learned along the way?
a. How could your project/approach be improved or built upon moving forward?
b. What types of things would have to be taken into consideration before trying to copy your project(s) in another community?
18. What are some of the major successes of the housing project?
a. What does it mean to have a "successful" project?
b. How do you determine if a housing project is successful (i.e. that it achieved what it set out to do)?
c. What were some of the keys factors necessary to achieving them?

Final Word
19. Is there anything else you would like to add?

Appendix 2: Summary of Findings

Planning principle	Recommendations
Engage a broad cross section of the community	o Engagement should be interdisciplinary – all groups represented o Prioritize meaningful community involvement throughout entire process, rather than only producing a final report or plan o Consider the power dynamics of community engagement, ensure engagement is structurally egalitarian so all voices are heard o Engage in conversations around what culturally relevant engagement might look like – this is different in each community
Value local and traditional knowledge and outside ideas	o Openness to both local and outside ideas paves way for new hybrid forms o Knowledge of different possibilities helps inspire new local ideas
Reflect on the past and present	o The planner should do as much background research as possible, and build on past work rather than starting with a blank slate o Comprehensive background knowledge builds an understanding of unique context of each community, in order to prevent a one-size-fits-all standardized approach o Assess the community's practical possibilities and capabilities, to make most of opportunities and plan effectively for gaps
Connect the physical and social	o Buildings and communities operate in a system, and planning needs to integrate and consider many components together o Housing is not just shelter, but also about the land: settlement patterns of residential development should consider which areas to develop and which to protect, as well as arrange in spatial pattern relevant to community o Taking on all components in a system at once can be overwhelming. Start by work in one layer (ex. housing), create a dedicated position for considering the system long-term, and develop systematic tools such as a checklist to ensure important ideas kept at forefront o Housing should have many value added outcomes. Do not just build a house, because there is opportunity to advance and benefit other community priorities
Establish a united direction for the future	o Visioning should be a challenging, exploratory, as well as deliberative process. There is a need and opportunity to negotiate individual and community considerations, wants versus needs, and sustainability considerations o Deliberation around the trade-offs and impacts associated with different options is critical for generating understanding and support around any vision or unified direction for housing. o Immediate action should be taken alongside long-term planning directions, and the implications of immediate actions need to be considered in the long-term too o Visions, directions, and plans need implementation strategies, or ways to track, monitor, and evaluate the plan's progress based on what the community wants and values o Value the process as much as the end product
Northern living and building	o Consider the relationship between climactic, logistic, and socio-cultural realities in order to understand how a northern house should work o When designing for northern housing, heat, transport, and operations should be primary decision factors in cost-benefit analysis
Role of the planner	o Reverse the power relations wherever possible, so that the planner is fully in service of the community o Let go of preconceived ideas or agenda, and allow an opinion to emerge from the community

	o	Provide community the tools to determine their own destiny, but do not impose technical knowledge as the only way to make plans
	o	Relationship building is the most important factor in a project's success, and it needs to be long-term
	o	Engage in mutual learning and reciprocity, rather than a one-way transmission of information
	o	Advocate for and amplify community voices externally
	o	Create space for listening
	o	Sharing and promoting the planning process can have positive short-term impacts and long-term ripple effects