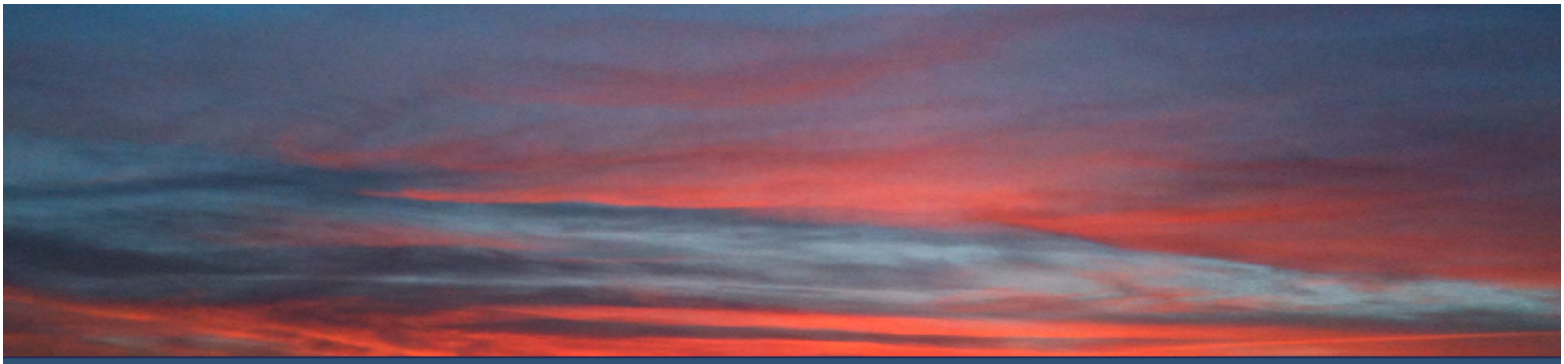

ENERGY EFFICIENCY IN FIRST NATIONS COMMUNITIES

METHODS OF COMMUNITY ENGAGEMENT

First Nations and Indigenous Studies Practicum Project Report
University of British Columbia
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This report was prepared for the Fraser Basin Council. The Fraser Basin Council is a non-profit organization based in Vancouver, which works towards fostering sustainability. This report presents the key findings from interviews with First Nations community members about community engagement on energy efficiency. The views expressed in this project reflect the interview findings with participants, and are not the views of Fraser Basin Council.

This project was completed as part of the practicum requirements for an undergraduate degree in the First Nations and Indigenous Studies Program at the University of British Columbia. It is the result of collaboration between Eliana Chia of the Fraser Basin Council, and Courtenay Crane, a student researcher working under the supervision of Dr. Sheryl Lightfoot at the University of British Columbia.

Chi Miigwetch

I would like to express my gratitude and say Chi Miigwetch to all those who took the time to speak with me and who participated in this study. People from different nations all across Turtle Island participated, and their willingness to share their stories and recommendations made this project possible.

Eliana Chia of the Fraser Basin Council developed and supervised the project, and I would like to thank her for her direction and support throughout the research process.
Dr. Sheryl Lightfoot at the University of British Columbia is the lead researcher, and it is under her supervision that this project came to fruition. I am extremely grateful to Dr. Lightfoot for all of her help and guidance in conducting this research. I would also like to say Meduh to Tanya Bob, the UBC Practicum Coordinator, whose tireless organization and planning provided the tools necessary for this project to develop.

Finally, I would like to raise my hands in hay čxʷ qə to the Musqueam people, as it is on their unceded territory that I live and study, and for this I am grateful.

Chi Miigwetch,

INTRODUCTION

This project addresses the research question: What are effective and creative strategies that people in on-reserve First Nations communities can use to reduce household energy consumption? Reducing energy consumption is tremendously important, especially since both the environmental and financial costs of consuming energy are so extreme. This research is driven by an objective to understand *how* communities are working towards energy efficiency. Living in an urban center with the ability to flick a switch and have energy is something that I personally have taken for granted for most of my life, until I experienced living off grid and then got older and started actually paying energy bills, or paying for the fuel necessary to produce the energy that I used. As many Indigenous communities are located outside of major urban centers, obtaining energy is often not as easy as flicking on a light switch. Many communities are off-grid and rely on imported diesel fuel to power generators. Remote communities that are connected to the power grid often have to pay exorbitant delivery fees in order to receive the power from provincial hydro corporations. These are the same hydro corporations that have grown rich by exploiting Indigenous lands, and often influenced the dispossession of Indigenous peoples from their communities. One community that I spoke with experienced a forced migration due to intentional flooding for the construction of a nearby hydroelectric dam and other Canadian led extractive resource projects. This system is inherently bound up in uneven power relations between settler colonial corporations and Indigenous peoples. So, energy efficiency can be a very political and also a very contentious issue.

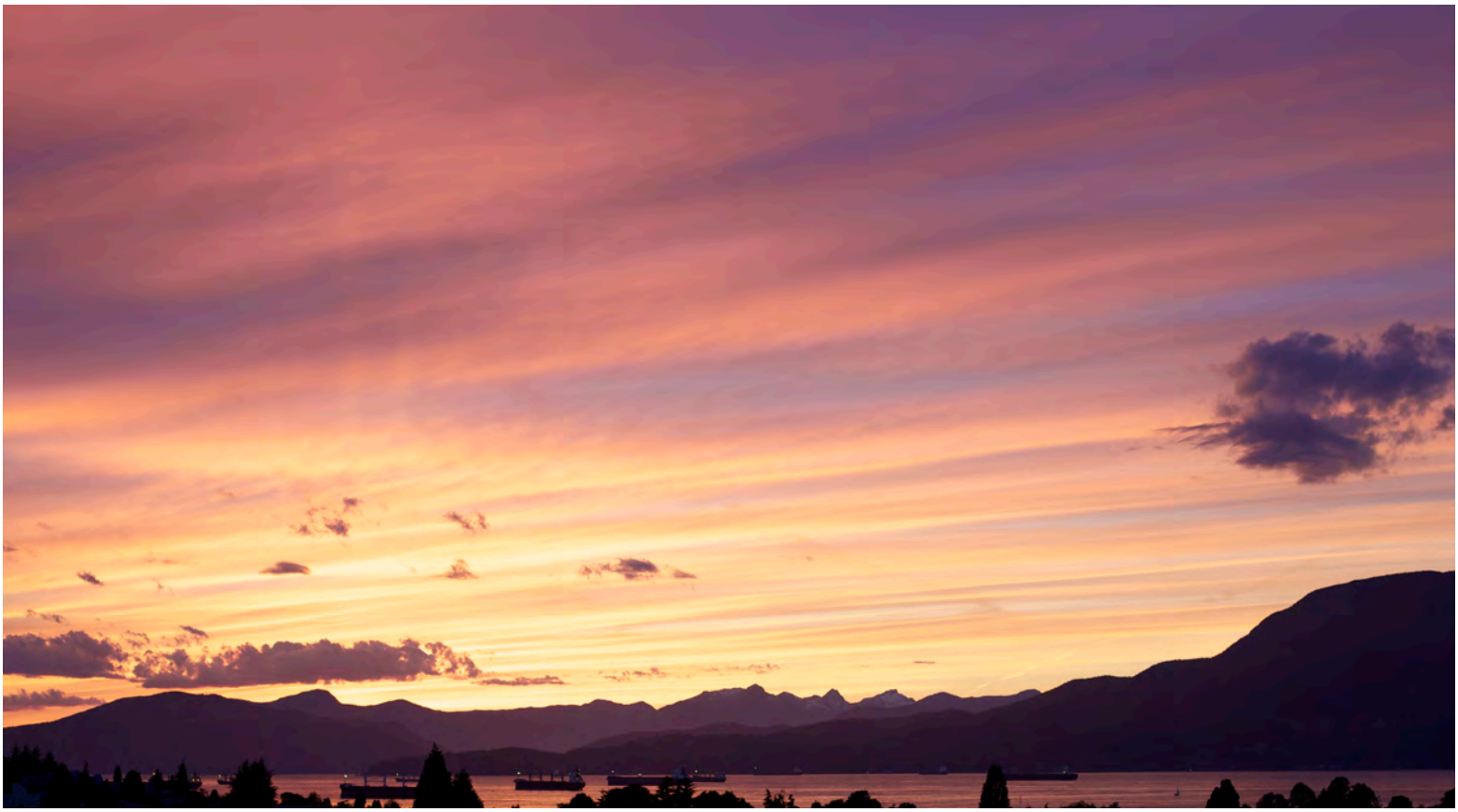
The research summarized in this report focuses on First Nations on-reserve communities. This was to limit the research scope, which is already immense. There is a tremendous diversity of culture and history between each reserve community. While there are incredible differences, and this work in no way wants to homogenize those experiences, there are also many commonalities of experience that should be highlighted. There are laws and legislations that are specific to Indian reserves, and the ways in which people navigate those laws to develop their communities and to fund energy efficiency projects is of interest. The whole idea and existence of Indian reserves is the result of oppressive settler colonial governance structures that have served to dispossess Indigenous peoples from their lands, and as a result, Indian reserves themselves are inherently political spaces that highlight the ongoing nature of the colonial system. In this system energy plays a key role, as it reinforces asymmetrical power relations between Indigenous peoples and the Canadian government. In this backdrop, energy efficiency and the ways that communities are engaging with energy efficiency, provides an opportunity to push back against some of the oppressive power structures that have constrained Indigenous peoples from developing their communities in the ways that they want to.

This report will highlight key findings from my community research interviews and will present three case studies of methods of community engagement around energy efficiency. This project is intended for anyone in any Indigenous community interested in ways to contribute to energy efficiency. Some of the people who may find it particularly useful are community members, Chief and Council, housing managers, energy managers, public works managers, community energy champions, and consultants working with energy efficiency. It is my hope that the research presented in this report can highlight some of

the incredible ways that First Nations communities are engaging to solve energy related problems. I also want to shed light on some of the issues that exorbitant energy prices are causing in many communities, and to provide recommendations from community members. Stories that highlight how communities are engaging successfully can be a model for other communities wanting to develop energy efficiency projects. As well, any barriers or problems that communities are facing in regards to energy efficiency can draw attention to these problems and provide recommendations for improvements.

METHODOLOGY

I would like to take a moment to position myself as a researcher, and highlight my connection to the themes presented in this paper. I am a Saulteaux woman, a member of the Key First Nation in Saskatchewan, and I have always been interested in environmental issues. I am motivated by theories of decolonization and it is my hope that this research works towards creating



more holistic and sustainable methods for consuming energy in Indigenous communities.

I began my research by conducting a literature review of the available academic and grey literature surrounding community engagement on energy efficiency. After preparing a project description, I applied to the UBC Research Ethics Board, to attain permission to conduct interviews. After receiving ethics approval, I contacted First Nations communities via email at the information listed on their websites. To do this, I looked at the Indigenous and Northern Affairs list of First Nations in each province, and contacted approximately 300 communities. In Saskatchewan and Manitoba a lot of communities did not have an email contact listed, but were part of a tribal council. In these cases, I contacted the tribal councils. I contacted First Nations communities in all of the provinces and territories except Nunavut and Quebec. In cases where there were multiple email contacts I often addressed the administrative assistant, the office manger, the housing supervisor, and also in a few cases there was a community energy contact listed.

A key aspect to my research was completing interviews with First Nations community members who were interested in speaking about energy efficiency. I spoke with seven people from seven different communities who work in diverse areas, but all have experience with energy efficiency programs in their communities. I also heard about the barriers that communities are having in reducing energy consumption. Following the interviews I sent the notes that I took during our calls to the participants to ensure that they were satisfied with the key things that I noted from the interviews. They had the option of removing or correcting anything that I wrote. They also had the option of their

comments being made anonymous in the report, which is why some sources are not named in this paper. Finally, I wrote this paper documenting my key research findings.

INTERVIEW FINDINGS

From the invitations to participate there was about a 5% response rate, with about half of those who responded giving interviews. Some people responded to me and said that they did not want to participate in the study and questioned the validity of researching energy efficiency when so many communities have inadequate housing. Others thanked me for the invitation but said they just did not have time to participate. Some of the key interview findings were that Indigenous people in remote communities face exorbitant delivery fees, and energy efficiency is often an economic necessity. Canada is a cold country and people need to heat their homes to survive. People described the difficulty of having to choose between food, rent and hydro. Paying for energy itself creates a huge barrier in many Indigenous communities and impacts the local economies. The major themes that came through in the interviews and that will be discussed below are: building capacity, economics and housing. Many community members I spoke with expressed a desire to get off of fossil fuels and to live sustainably. This environmental consideration was something that was common throughout all of the interviews. Of the seven people interviewed no one cited any internal community resistance to energy efficiency. People in the communities that I spoke with all really want energy efficient buildings in their community. The major restriction to attaining this is the lack of funding available to construct new homes and community buildings.

CAPACITY DEVELOPMENT

Everyone that I interviewed spoke about the importance of building capacity from within the community so that people can build their own houses, heat their own homes, generate their own electricity, and remove the dependence on federal and provincial governments for funding. There is an overwhelming desire to be independent and get out of the 'grips' of the system. As one participant put it "if you are paying somebody to get a service that you need, then you are under their thumb".[1] People described a systemic attachment to the federal government for funding that continues to enforce uneven power relations.[2] Participants also expressed a need to break away from that system and that cycle. People do not want to have to depend on outside funding to develop their communities, but unfortunately that is the position in which many communities are. In many remote communities the majority of goods are more expensive because of the freight costs and there are often problems with contractors from outside the community. Contractors would overcharge and do work that was not up to par. To combat this problem, in Bella Coola, the community started to promote Red Seal training for the community members. Now they have several apprentices in the community. This helps to empower the community because they can do work from within. Building capacity can break the cycle of dependence on government funds. Smart building design that promotes energy efficiency, and renewable energy projects are pathways towards independence for many First Nations. Having the power to construct all of that within the community stimulates the local economy as well.

[1] Dunn, Terry. Personal Interview.
[2] Hall, Richard. Personal Interview. Other people interviewed also expressed this sentiment as well.

ECONOMICS

Of the seven people I interviewed from widely distant communities everyone mentioned cost as a major driver for energy efficiency. Many people use wood to heat their homes in order to save money. However, this has other negative impacts in the household, which will surely cost money later on. Often the wood is damp, and it reduces the air quality by creating CO_2 in the house. It also often causes mold. One participant spoke of how it was difficult to convince people in the community not to use wood burning stoves. This is principally because they do not want to spend the money to heat their homes when they can go out and chop wood and use that instead. Many people are energy efficient as a necessity because they simply cannot afford to heat their homes. Having no energy bills adds up and the savings can help to stimulate the local economy.

HOUSING

In discussing energy efficiency there is a huge overlap with housing. There is currently a housing crisis on many First Nations communities in Canada. Many homes have mold, are not properly insulated and are not up to standard for healthy living. From the interviews that I conducted many people regarded retrofits as a band-aid solution for a much more serious problem. Retrofits are often inadequate and what is necessary is a huge investment in housing in First Nations communities so that new homes can be built energy efficient. In many cases, approaching the topic of energy efficiency, it is necessary to first address the housing crisis.

Retrofits are really only beneficial if it is done on a home that is of good construction quality. There is no point in doing a retrofit and putting in energy efficient windows if the doors are not installed properly and air is escaping in other parts of the house.

You have to live in quality housing for it to be beneficial to invest in improvements. Most of the time, a whole new build is necessary. With many of the homes that were built in the sixties, seventies or eighties, they are already often in such poor condition that it is better to just tear them down and build a new house. However, this costs a lot of money and often is not possible for many people living on reserves. If they do not have the money to complete energy efficiency upgrades, then they will have to seek out funding from the band's housing department, which often does not have enough funds for upgrades and repairs. Without money to complete upgrades or to construct new housing, then people are trapped in inadequate and low quality housing that can be very damaging to their health and well being. When we are speaking of retrofits we are speaking of a certain level of housing quality, which sadly, most people on reserves do not have. When retrofits are done, it is often about improving the building envelope. If it is new construction, then it is about smart building design that is going to reduce energy use. The design of the house needs to promote natural ventilation. This sometimes means going back to traditional designs that will enable people to continue their traditional practices that might not be compatible with western constructions. For example, if someone is going to be tanning hides in their home, then it is necessary to have a room for such activities that is going to allow ventilation and air circulation so that mold does not build up and so that the smell can escape.

One of the major barriers to energy efficiency is that there are not enough funds to tap into for housing upgrades and new construction. To improve housing in First Nations communities massive amounts of money are needed.

THE IMPACT OF DELIVERY FEES ON A REMOTE COMMUNITY

NORTHERN ONTARIO

In Ontario, high costs for delivery fees from Hydro One have had a severely negative impact on some First Nations communities, and this is an area that is in need of greater study. In one rural, remote northern community in particular, exorbitant energy costs sent the community into a crisis. For many years the community received extremely expensive energy bills. In 2013 Hydro One changed their billing strategy and took out old meters and put in smart meters. They could go back two years to charge for missed costs, and they did. People got $5000 dollar bills, and that is where the crisis started. People had huge bills that they could not afford to pay, and when they did not pay there was a late payment charge added. Then disconnection notices came. The band had to take money out of its other programs in order to pay hydro bills for people to avoid massive hydro disconnections in the community. It had such a terrible social impact because it is really stressful for people. There were severely negative mental and economic impacts associated with high costs of energy.

Hydro and electric heat provides about 90% of the heat in the community. Some people use wood heating; however, there are a lot of elders who can no longer physically get and burn wood, so energy bills have a big impact on them. Energy reduction is a big priority because people have really high bills. For a 3 bedroom 1 story home a monthly bill would be $1600-1800, some people got $3000 monthly bills.

The community addressed this problem through their community engagement strategy. As a directive of Chief and Council, a Community Energy Plan was created. The nation hired a Research and Community Engagement professional to work with community members, band office staff and Hydro One to address the problem. They are still working with Hydro One and trying to get the delivery rate set to one rate for the whole community; however, they would like to get rid of the delivery charge altogether. They are trying to get a plan that will sustain a better quality of life in the community. They worked with Hydro One and came up with an arrears repayment plan. Now, the average hydro bill is $400-$500 with the budget billing plan. Hydro One came in and explained billing so that people could better understand what they were being charged for. They explained different time of use rates, and how this impacts their bills. Although there are small things that they can do as a community together, like unplugging electronics, it goes back to Hydro One and Ontario Energy Board distribution rates. There are a lot of hidden charges in the rates, and this is a major barrier for the community. People had to choose between food, rent or heat. If the community was not burdened by such expensive energy costs, then the energy efficiency savings could have tremendous benefits for the community. It would reduce stress and depression because people would not have to worry about not being able to heat their homes. The money saved from those exorbitant energy bills could go into the local economy.

Something else that could help reduce energy consumption is paving the roads in the community, as this would allow people to hang their laundry to dry. People in the community do not hang their laundry to dry on clotheslines because it gets all dusty from the dirt roads.

WEST MOBERLY FIRST NATIONS

Energy efficiency is very important to West Moberly First Nations. They are fighting against Site C hydro dam. The valley that they are going to flood for the dam is the highest grade of agriculture and it is going to be wasted. They strongly believe that there is no need for the dam, and that it is not warranted. The energy generated is going to support LNG and is dependent on the global economy. This is an example of how the Canadian settler colonial system continues to disregard the United Nations Declaration on the Rights of Indigenous Peoples, and it highlights how energy generation in Canada has been largely reliant on exploiting Indigenous lands. If Canada were to implement UNDRIP, then First Nations people would have free, prior and informed consent rights with development projects that impact them. The example of Site C illustrates why energy is a highly contentious issue that impacts people in very disproportionate ways.

The community wants to eliminate their use of fossil fuels, and they are choosing to build efficiently with passive housing. Terry Dunn, who is a housing manager, suggested that "we have to start rethinking our planning process, and re-educating the construction industry so that contractors can be trained in Passive Housing." They are starting to build energy efficient, reducing the energy cost by 90%. They did an energy audit and found a 70-73% range of efficiency. The new health station is on schedule to break ground in early May. It is a commercial application of Passive House construction. West Moberly First Nation chose to build the health station in Passive construction so that everyone in the community could get to experience being in the

building. This is strategic planning, a way of getting the community on board and feeling the benefits of Passive construction. There are also 6-plex multifamily units that are under construction for next year and they will also be Passive certified. Passive Housing is the standard that they want to have in the community. Raising the standard of housing is going to improve health and safety. There is a potential for great strides ahead as Passive construction will keep costs down. Passive certified is based on air tightness. There is a heat recovery system with fresh air brought in and filtered from outside. It is also about lifestyle and healthy living.

The current system is to go to INAC and other higher ups to get funding for housing. INAC's theory is affordable housing, but "if you buy cheap you get cheap".[3] West Moberly First Nations wants to raise the standard. Originally energy efficiency was not a priority in the community, but then they did a capital cost analysis and they looked at the generational, long term. It is a challenge to do that shift, and it requires planning. Older homes should just be plowed down and rebuilt. One of the major barriers is convincing INAC that buying cheap is not the best way.[4] Passive housing will save money in the long run. To build all new passive certified can be a very expensive proposition, but it is about thinking about the longevity and long term. When they have that extra savings in energy efficiency it is an economic driver for the community because they can spend that money on other things. They are also trying to build a talent base within the community to have people trained in Passive construction. They want to get the community excited about this and to start training construction workers in passive process. That way, they could have more qualified people, and that could help the local economy.

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[3] Dunn, Terry. Personal Interview.
[4] Dunn, Terry. Personal Interview.

HOW GEOTHERMAL IS CONTRIBUTING TO ENERGY EFFICIENCY IN MANITOBA

LONG PLAIN FIRST NATION

Long Plain First Nation is trying to minimize their use of fossil fuels by using geothermal. Geothermal heating systems have been great for their community. They are saving the community money and tenants are happy because of the savings. It reduced costs by 2/3 after installation. A report from Hydro showed $900- $1500 savings a year per house. There are around 320 houses in the community so this will save people a lot of money.

They are currently building capacity and training people to be geothermal installers. The trainees are learning through the installation process. On Long Plain fifteen people were trained for geothermal, out of 60-70 applicants who wanted to be trained. This is the result of a local First Nations company hiring local trainees in geothermal.

One of the major barriers that the community experiences in attaining energy efficiency is their partnership with Manitoba Hydro, and dealing with Indian Affairs.[5] The community has a financing fee agreement with Manitoba Hydro. The provincial government was described as a barrier, because "there is a paternalistic perspective and a need to control."[6] Also, the whole system of accessing funding requires that people know how to write proposals and access those different revenue streams. There is no real literature about energy efficiency in the community, and it is hard to access funds. There is an immediate need to build houses, yet many communities do not have the resources to employ someone to fill out applications full time. Also, it is a barrier to access the funds for people without post secondary education. The community wants to develop geothermal without the government and are looking at purchasing our own equipment to do installations. There are also talks of having a non-profit created to deal with energy efficiency. This is also connected to other aspects of living sustainably, like raising your own chickens and growing your own food.

At Long Plain, like many other communities, there is no big budget for housing maintenance. Long Plain subsidizes renovations through different corporations; they have some gas bars and gaming centers. They also utilize the Residential Rehabilitation Assistance Program- that provides capital items like windows and doors. They also use the energy efficiency program through Manitoba Hydro, which provides insulation.

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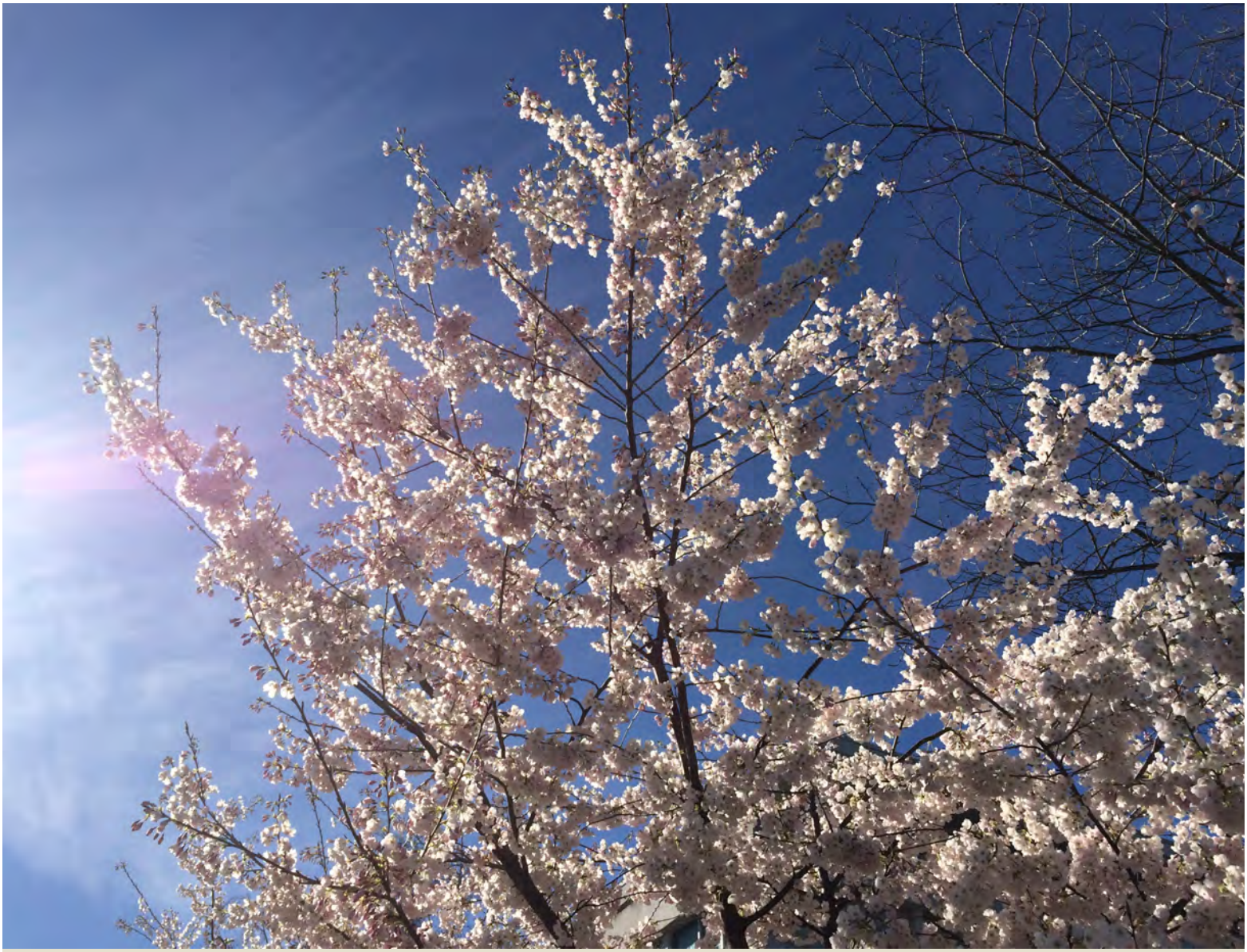
[5] Woods, Steven. Personal Interview.
[6] Woods, Steven. Personal Interview.

Community Engagement

Band Newsletters were noted as an effective means of communicating information about energy efficiency projects and goals.

Social media was also noted as a great tool to share energy ideas with community members. Check out the BC First Nations Passive House Association Facebook page to read some great articles on energy efficient housing!

Another form of community engagement that is successful is when the children learn about energy efficiency at school and come home and teach the parents.



CONCLUSION

This report is the product of several months of research about methods for community engagement in energy efficiency. Throughout this research I have found that when projects are created from within communities, from the ground up, and are consistent with community values, then they have the greatest potential for success. Indigenous communities can benefit immensely from developing energy efficiency programs, not only in terms of savings, but also in terms of building stronger communities.

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