

BC Wood Stove Exchange Program

First Nations Participation in the Wood Stove Exchange Program

Strategies for improved implementation of the Wood Stove Exchange Program in First Nation communities

Final Report

September 2017

Prepared by:



ACKNOWLEDGEMENTS

This report was prepared by Pinna Sustainability Inc. We heartily thank the numerous people throughout BC who took the time to contribute their expertise and ideas to this program review. In particular, we would like to thank the following (alphabetical by first name):

Amy Seabrooke, BC Hydro

Casey Dick-Wyatt, Lil'wat First Nation

Dan Wilson, Whistler Centre for Sustainability

Ernie French, Takla Lake First Nation

Gethsemane Luttrell, First Nations Health Authority

Graham Haywood, Squamish Lillooet Regional District

Gregory Ambrozic, Indigenous and Northern Affairs Canada

Ilse Sarady, Cowichan Valley Regional District

Jamie Pond, Kitasoo First Nation

Jim Vanderwal, Fraser Basin Council

Kevin Brown, Council of Haida Nation

Louis Legal, Sunshine Coast Clean Air Society

Markus Kellerhals, BC Ministry of Environment

Paula Smith, Health Canada

Paula Stewart, Tla'amin First Nation

Richard Hall, Nuxalk First Nation

Shawn Louie, Tla'amin First Nation

TABLE OF CONTENTS

1	Introduction.....	1
1.1	The Issue	1
1.2	Project Goals and Objectives	2
1.3	Current Program Overview	2
2	Methodology	3
2.1	Steering Committee	3
2.2	Research Program	3
3	Results.....	5
3.1	Background Research.....	5
3.2	Interviews.....	5
3.3	Summary of Barriers and Opportunities by Desired Outcome	13
4	Emerging Strategies.....	15
5	Potential Partners	18
6	Next Steps.....	20
	Appendix A: Steering Committee Terms of Reference	23
	Appendix B: Interview Questions	25

1 INTRODUCTION

Over the last nine years, the Province of British Columbia has been working to curtail the release of particulates from wood stoves across the province through the Wood Stove Exchange Program (WSEP). Many of this province's First Nation communities rely on wood burning as their primary source of space heating. To date, the Province has not been successful in engaging First Nations to apply for and take advantage of this program, as only one Nation (Nuxalk Nation) has participated in the program and the benefits were limited.

The main objective of this research is to improve air quality and associated health outcomes in First Nation communities by reshaping programs like the WSEP, which is aimed at reducing particulate matter caused by wood burning. This project examines barriers preventing First Nation communities from participating in the program, and works with First Nations and agency partners to determine appropriate measures to remove these barriers.

The 2015 Wood Stove Exchange Program Evaluation concluded that additional effort could be allocated towards targeting First Nation populations more effectively. The findings indicated that the program could be very beneficial in First Nation communities, though would need adjustments to improve First Nations uptake. This research provides recommendations on how the existing program can be adapted to target Nations more effectively, thereby equipping the Province to better support reducing particulate matter in First Nation communities.

1.1 The Issue

Many First Nation communities in BC make significant use of wood burning as a heat source, and this burning can result in fine particulate matter and other pollutants in these communities. According to the EPA, fine particulate matter is the pollutant of greatest concern to human health, as it is a known carcinogen, and has been linked to many adverse health effects including premature death, exacerbation of asthma, acute respiratory symptoms, chronic bronchitis, and decreased lung function (<http://www3.epa.gov/pm/health.html>). The Province has been addressing this issue in communities throughout BC through the Wood Stove Exchange Program (WSEP). In 2015, a program evaluation of the WSEP highlighted that although the program has had many successes, it has not adequately served First Nation communities. The evaluation report included a recommendation to create a targeted program to better serve this segment of the population (http://www.bcairquality.ca/reports/pdfs/WSEP_evaluation.pdf).

1.2 Project Goals and Objectives

This project offers recommendations that will enable the Province to adapt the Wood Stove Exchange Program to more effectively access First Nations, thereby decreasing particulate matter and improving air quality and related health outcomes in BC's First Nation communities.

Specific research objectives being addressed in this work are:

- **Objective 1** → Create a collaborative group of stakeholders who will be able to implement the outcomes of this research.
- **Objective 2** → Identify and understand barriers preventing First Nations from taking advantage of the WSEP.
- **Objective 3** → Identify strategies to remove barriers and enable effective First Nation participation in the WSEP.
- **Objective 4** → Disseminate learning to key professionals and stakeholders that can have an impact on improving the program.

1.3 Current Program Overview

The Provincial Wood Stove Exchange Program (WSEP) is designed to encourage British Columbians to exchange their older wood-burning appliance for a new, more efficient, and low-emission wood stove. The objectives of the program are to:

- Improve community air quality through the use of low-emission appliances.
- Provide education on clean burning practices through workshops, brochures, websites, and social media.

The current WSEP is run at a community level, typically by local governments, non-profit organizations, and airshed/air-quality management groups. These organizations apply for annual funding to implement an exchange program. Each program needs proof that the old stove was being used, proof that the new stove has been installed, and proof that the old stove has been destroyed. Each organization may choose how to implement the program, resulting in slightly different local delivery modes. Once mandatory steps have been completed, a cheque for \$250 will be issued (note: some local governments and organizations provide a top-up of an additional \$50 or more). The BC WSEP is the largest and longest running program of its kind in Canada; it began in 2008 and has successfully replaced over 6,000 wood-burning stoves.¹

¹ BC Wood Stove Exchange Program: Program Evaluation (2008 to 2014) prepared by Pinna Sustainability Inc.

2 METHODOLOGY

This section outlines the methodology used to conduct the research program.

2.1 Steering Committee

A Steering Committee was established at the beginning of the project to support the research team to:

- Inform research questions.
- Identify resources for review.
- Participate in a stakeholder mapping exercise to identify key people and groups to include in the interview phase of the project.
- Offer feedback on proposed strategies to overcome identified barriers.

The Steering Committee also provided guidance on how the end report will be disseminated to relevant audiences. The Steering Committee Terms of Reference are included in Appendix A.

The following individuals/organizations participated in the Steering Committee:

Organization	Contact Name
Sliammon First Nation	Paula Stewart
Kitasoo First Nation	Jamie Pond
Nuxalk First Nation	Richard Hall
Council of Haida Nation	Kevin Brown
Lil'wat First Nation	Graham Haywood
Ministry of Environment – Wood Stove Exchange Program	Markus Kellerhals
Ministry of Energy and Mines – Alternative Energy	Christina Inniciello
AANDC – Housing Department	Gregory Ambozic
Fraser Basin Council	Jim Vanderwal

2.2 Research Program

The research program included the following tasks. Results are presented in the following section.

Conduct background research on effective indigenous program design

A review of existing wood stove exchange programs and program evaluations was conducted, with a focus on communities with an indigenous population. This research pointed to previously identified barriers and strategies deployed in other regions. The background research resulted in a table of

potential barriers, and possible approaches to overcome these barriers. Findings are presented in 3.3 on page 13.

Develop interview questions

The project team, in consultation with the Steering Committee, developed two sets of interview questions, one for communities and another for potential agency partners. The objectives for each group are listed below, and interview questions can be found in Appendix B: Interview Questions.

Community Interview Objectives

- Confirm and clarify the barriers identified through the background research.
- Assess why First Nations have not fully engaged in current program.
- Assess how the existing programs could be adapted to better serve their needs.
- Determine interest in testing potential solutions.

Agency Interview Objectives

- Understand the mandate of each agency and determine capacity to overlap with WSEP.
- Gather transferable lessons from other successful programs.

Conduct interviews

Interviews were conducted with community and agency partners to identify barriers to program uptake. The Council of the Haida Nation, Lil'wat First Nation, Takla First Nation, and Tla'amin First Nation were the communities interviewed in this phase. Agency interviews included BC Hydro, Cowichan Valley Regional District, First Nations Health Authority, Fraser Basin Council, Health Canada, Ministry of Environment, Squamish Lillooet Regional District, Sunshine Coast Clean Air Society, and Whistler Centre for Sustainability. Interview notes were summarized and reviewed, allowing key themes to be identified, and are presented in Section 3: Results.

Development of recommended strategies to overcome root barriers

The outcome of this work specifies new program and policy options that reflect constraints and opportunities experienced by First Nation communities, and identifies a path to bring these communities into the existing provincial air quality planning and management regime and programs. Strategies and partnerships for an improved wood stove exchange program offering targeting First Nation communities are provided in Section 4: Emerging Strategies.

Dissemination of final report

This work will be disseminated to all project participants and government representatives responsible for reconciliation, as well as representatives that design air quality programming in our province.

3 RESULTS

3.1 Background Research

The research phase included a review of other community and First Nations wood stove exchange program evaluation reports² as well as the CCMR Wood Burning Code of Practice and the 2015 BC WSEP Evaluation report. The outcomes of the background research informed the first conversations with the Steering Committee, which resulted in the following desired outcomes of a successful wood stove exchange program for the province:

- **Desired Outcome 1:** First Nation staff and leadership are aware of the program.
- **Desired Outcome 2:** WSEP can be managed by a local coordinator.
- **Desired Outcome 3:** Appliance change-outs occur.
- **Desired Outcome 4:** Burning is efficient in indigenous communities.

The background research also identified potential barriers to these desired outcomes, which were tested during the interview phase.

3.2 Interviews

A total of 13 interviews were held during October and November 2016 with representatives from First Nation communities and government agencies. Interviewees included First Nation staff responsible for asset management, housing, and maintenance departments; civic government agencies, including Regional Districts, health organizations, federal government agencies, and non-profit organizations.

The following key themes emerged from the interviews:

Theme 1: **Human resources and community capacity are limited.** Human resources include staff time to focus on this issues (e.g., the housing manager's time is focused on more pressing issues in the community) and the availability of special skills, including WETT-certified professionals. Community capacity includes available skilled workers and time taken on additional tasks. Regional and interagency coordination may provide opportunities to pool resources.

Theme 2: **Financial resources are limited.** Communities are not able to complete the program with the level of financial support offered, or to pay for upgrades in advance and wait for rebates as required program steps are completed.

² This includes the report Measurable Outcomes of a Wood Stove Change-out on the Nez Perce Reservation: Final Performance Report, December 31, 2009, and the journal article "A rural community intervention targeting biomass combustion sources: effects on air quality and reporting of children's respiratory outcomes, Occupational and Environmental Medicine 2012; 69:354-360.

Theme 3: Administrative barriers. The administrative burden put on communities to apply for, run, and report on work cannot be easily met by indigenous communities. There are opportunities to streamline interagency communications and processes to alleviate this burden.

Theme 4: Communication about WSEP. Existing messaging is not culturally inclusive, and does not resonate with some indigenous people and communities. Existing information could be improved and tailored to an indigenous audience.

Subsequent sections describe each theme in more detail, and give insights into barriers and possible opportunities to overcome these barriers.

Theme 1: Human resources and community capacity are limited

Context

Capacity and human resources are defined as the ability (including available time) and/or power of housing managers or other officials to take action on the WSEP. A successful program requires dedicated staff time or a local coordinator to provide education on the program, and to organize inspections, applications, funding, and installations. It is estimated that a coordinator would require 8 to 20 hours a week of dedicated time to administer the program, depending on the community and the details of the program.³ Capacity and human resources also include special skills, such as WETT-certified technicians, and stove decommissioning centres.

Barriers

Program process: From conversations with both First Nation and non-indigenous organizations, individual members and/or administration (e.g., housing managers) lack the time due to other demands, and individuals are unable to complete the required steps of the WSEP program. Specifically, interviewees noted the following human resources-related barriers to program participation:

- Developing proposals and writing funding applications: Administrative tasks require human resources to complete, and can be a significant barrier to accessing the program. The process can be complicated, especially for smaller communities that generally have less administrative staff. It is likely additional support would be needed from other agencies to administer the project on reserve.
- Completing associated paperwork: Managing the paperwork is seen as a challenge due to the complexity of forms, and keeping track of required documentation. Specifically, keeping track of forms during the process and submitting the completed package is challenging, as paperwork tends to get lost.
- Completing the requirements for appliance destruction: Wood stoves are very heavy, and the Nations and individuals in the community often do not have a vehicle to transport the stove

³ Based on experience with development of other programs.

to a disposal site, or disposal sites are often very far from the community, adding additional burden and costs.

Available staff and skills: Many communities noted that there are limited staff resources and specialized skills available on reserve, particularly in remote communities. Issues that arose during interviews include:

- Organizing wood stove change-outs: Many communities are significant distances from wood stove suppliers and WETT-certified technicians. It is more cost effective to organize multiple inspections and a bulk change-out rather than have technicians come out for one stove at a time. Without human resources dedicated to the program to coordinate bulk inspections and change-outs, this would be difficult to achieve.
- Competing priorities for existing staff resources: First Nations administrators are dealing with housing crises, including mould in homes and a lack of available housing for community members. Often, there are other needs that have a higher priority than wood stove exchanges.
- Lack of WETT-certified technicians: Communities are often unable to identify a WETT-certified technician to inspect existing wood stoves. Often times there is limited or no availability of WETT-certified professionals to inspect and replace wood-burning appliances in the community or locally, and the costs to bring a technician in are prohibitive. This is particularly true for remote communities.
- Hard to identify a contact in communities: It can be challenging to identify the right person within a Nation to communicate with about the WSEP, especially if there is no housing manager, or if staff is currently operating at capacity (i.e., no additional time left to manage a new program).

Opportunities

Streamlined program process: There are opportunities for agencies to work together to advance the mandate of the WSEP and other programs by creating synergistic programs; this opportunity is currently being missed due to lack of coordination between agencies providing services or programs to First Nation communities. Specific opportunities include:

- Collaborate with other agencies: Interviews with BC Hydro and First Nations Health Authority (FNHA) suggested that the WSEP could be tied into each of these agencies' existing programs, specifically BC Hydro's and FortisBC's (electric) Energy Conservation Assistance Program,⁴ and FNHA's Environmental Health Services, which are provided by FNHA Environmental Health Officers. These existing programs could be used to provide information to community members on WSEP and potentially identify unsafe, old wood stoves. It is important to note that the FNHA program only does visual inspections, so further inspection by WETT-certified technician would be required.

⁴ FortisBC has the identical program name, structure, and implementation process, it is just funded by a different company.

- Work with communities to develop a supportive project team: There is also an opportunity to include the land manager and the capital asset manager in the process to support the housing manager. There may be overlapping projects and issues, so coordination within the Nation would help streamline the process and spread out the workload.

Staff and skills: There is an opportunity to provide training for community members to fill critical capacity gaps, including:

- Offer WETT-certified technician training: Work with communities to identify a maintenance employee who can perform routine maintenance and assessments in the community, and have them trained.
- Fund a community champion: Provide training and funding for a community champion and/or regional coordinator for wood stove exchange (not a member that already has a role, like a housing manager). This is already provided in some cases, but could be further explored.

Training could be combined with existing programs, including the CMHC home maintenance and training program or others.

Theme 2: Financial resources are limited

Context

An EPA-approved wood-burning appliance can cost from \$1000 to \$3000, not including shipping, installation (\$600–\$800 in urban areas, potentially double that in remote areas), or other secondary costs associated with the change-out of a wood-burning appliance.

The current program provides a rebate of \$250. In some jurisdictions, local governments provide an additional top-up rebate from the organization running the program (e.g., the Cowichan Valley Regional District provides an additional \$50 per appliance, for a total of \$300.)

In British Columbia, after-tax income in 2010 of the total indigenous identity population (aged 15 years and over in private households) averaged \$25,164.⁵ Members on social assistance receive a monthly allowance of \$375 for a single person, to be used towards rent and utilities, but that does not cover these costs.⁶

Most First Nations receive funding from the federal government through general revenue, but housing is not included in this, as it is expected to be self-sufficient: rent should cover mortgage, maintenance, administration, and replacement costs. A monthly subsidy is available for social housing if units have not incurred arrears and the Nation is meeting all its responsibilities, though the social housing subsidy is not currently enough to do a wood stove change-out, particularly considering competing housing priorities.

⁵ NHS Aboriginal Population Profile, 2011. <http://www12.statcan.gc.ca/nhs-enm/2011/dp-pd/aprof/index.cfm?Lang=E>

⁶ Personal communication with Jamie Pond.

Barriers

The majority of interviewees reported that the current rebate program does not work in an indigenous context. This is primarily due to the significant upfront capital cost borne by individuals or Nations, and the time lag between incurring the cost and receiving the rebate. Additionally, rebates cover less than 20% of the cost, at most. Feedback from interviewees includes:

- Low income levels: Most community members in on-reserve housing do not have income levels that support purchasing and installing a high-efficiency wood stove, even with the rebate.
- Lack of resources for WETT participation: Resources are needed to do up-front assessment work by a WETT professional.
- Lack of resources for broader investments: Often the entire chimney and other home renovations will be required to accommodate the new stove. This adds to the cost of replacing a wood stove.
- Cash-flow constraints: Some indigenous communities experience cash-flow constraints that do not allow for up-front financing on wood stove replacement programs, and are not able to offer additional incentives in the form of a top-up.

Opportunities

To overcome the financial barriers, additional funding is required. There may be opportunities to consolidate funding from all agencies that provide financial contributions to First Nation housing and energy projects. This would require a collaborative approach between government agencies to determine how funds could be allocated and contributed to meet each agency's mandate, while serving community needs. Potential solutions that emerged in the interviews include:

- Explore an alternative funding model: Agency interviews indicated that funding sources for the wood stove and assessment/installation/transportation/decommissioning costs could come from a consortium of agencies such as BC Hydro, BC Housing, FortisBC, MEM, and INAC, as it would align with their current programs' mandates, which include energy efficiency and housing. Ideally, up to 100% of the costs would be covered, depending on individual need.
- Align the WSEP with other housing upgrade programs: Many agencies currently offer housing upgrade programs and resources, and aligning offerings would allow communities to make their own decisions on how to allocate these resources to best meet program objectives and improve living conditions.

Theme 3: Administrative barriers

Context

There are many agencies and programs that work with First Nations on health, air quality (indoor and outdoor), energy efficiency and conservation, housing, and on-reserve economic development. Some examples of these agencies include: BC Hydro, Canada Mortgage and Housing Corporation,

First Nations Health Authority, FortisBC, Health Canada, Indian and Northern Affairs Canada, and, in some cases, Regional Districts. Each agency has different mandates, programs, and funding cycles.

Barriers

Generally, all interviewees reported that the lack of ongoing, transparent communications between agencies involved in the program, or related programs that touch on housing, air quality, health, and energy efficiency, leads to lost opportunities to meet multiple program objectives. Some specific barriers are outlined below:

- Lack of communication and coordination between organizations: Some interviewees report there is little overlap in program development and implementation regarding the wood stove exchange program, between non-First Nations organizations and First Nations. For example, when a Regional District applies for and receives funding, in many cases the surrounding First Nations communities are not targeted as possible participants. While some Regional Districts offer the program to on-reserve residents within their boundaries, others take a narrow view and only offer the program to their taxpayers.
- Mismatched funding timelines: First Nations staff report that multiple funding timelines and requirements from different programs are difficult to organize and require precious staff time to manage. The result is that funding opportunities are often not accessed by communities with limited capacity.
- Complicated ownership structure on reserve: Housing ownership on reserve can be complicated, making the case for investment in new wood-burning appliances difficult to justify.

Opportunities

There is a significant opportunity to collaborate with many agencies that provide funding and services to indigenous communities. These include:

- Multi-stakeholder working group: Creating a working group or touch point for all agencies with overlapping mandates to ensure that resources are used efficiently and opportunities for program synergies are not missed.
- Targeted program delivery option: Rather than a voluntary program, base wood stove replacement on need rather than financial situation (as per Nez Perce wood stove change-out program and similar to BC Hydro's and FortisBC's ECAP).⁷ This would bypass complicated housing ownership issues, and eliminate the need to make a house-by-house business case for replacement. The benefits of this would include improved indoor and outdoor air quality, improved health, especially for people with respiratory-related illnesses, and save time and money because the stoves are more efficient. There also may be opportunity for wood stove replacement to take place as part of a general home heating upgrade. For example, FortisBC

⁷ The Nez Perce program requirements were residences that used an older model wood stove as primary heat, non-smoking members, and had a child between the ages of 6 and 17 with an asthma or respiratory-related illness.

provided approximately 50 heat pumps to the Okanagan Band housing based on criteria, including the age of the home occupant (e.g., wood stoves were replaced with heat pumps in elders' homes).

- Paid champion: Identify and resource a community champion to organize a change-out with support from agencies like First Nations Health Authority (FNHA).

Theme 4: Communication about the WSEP

Context

Communication about the WSEP to indigenous communities and within communities is key to the success of the program. There are multiple key messages that need to be communicated to various audiences:

- The province needs to communicate with First Nations that the program exists, can offer benefits, and help First Nations understand how the program works in order to apply and offer it in their communities.
- First Nation administrations need to communicate with their members about clean burning practices, how the wood stove exchange program works, how to apply, program benefits, and other program details.

Different forms of communication are needed:

- For communication from the Province, implementation organizations, or Regional Districts to the Nations about developing a local program.
- From the First Nations staff and administration to community members about participation in the program. Also, it is important to consider culturally appropriate content and delivery mechanisms when providing educational content to First Nation audiences.

Barriers

Interviewees report that there is little to no awareness about the wood stove exchange program, and community members are not familiar with the clean-burning messages promoted by the program. Some specific comments are outlined below:

- No awareness on health impacts: Currently there is little to no awareness in communities on the risks to human health resulting from wood smoke. In some cases, the burning of cedar is part of local cultural practices and messages about adverse health affects could be seen as disrespectful.
- Little staff awareness: First Nation staff reported not receiving or noticing advertising for the program in their communities. Staff are not aware of the program and therefore cannot communicate information on WSEP to their members.
- Lack of target audience: Some communities have housing managers, asset managers, or capital managers, and others do not. The diversity of administrative structures across communities makes targeting the appropriate audiences for communications difficult.

- Program details not directly communicated: WSEP details, including upfront costs and benefits, have not been communicated to communities.

Opportunities

Clear communication is key to the success of a WSEP. There are partnership opportunities with agencies and organizations with overlapping or similar mandates on housing, energy, health, and the environment. Some of the ideas that emerged from the interviews with indigenous administration include:

- Identify a community liaison (from within government or agencies to Nations). This will ensure consistent, clear messaging is delivered to the housing manager and/or leadership. It is best to call or visit in person. The FNHA emerged as a possible agency champion—they have indicated that they would be willing to be a conduit for program information, as they have existing relationships.
- Identify and support a community champion (from within Nations). The role of the champion is to provide a clear and positive message on WSEP to the community. The champion may be a well-liked community member; they do not necessarily have to be a member of Council or the administration. They would engage the community through outreach on social media or in-person/community workshops. It is suggested that honorariums be given to community champions.
- Collaborate with agencies that have education mandates like Health Canada, First Nation Health Authority, and utilities (e.g., partner with FortisBC/BC Hydro Energy Conservation Assistance Program and/or Energy Ambassador programs) to ensure a common message on WSEP. Outreach and building trust in the community is important; face-to-face meetings are most effective.
- Start with a safety message about wood burning. Messaging should focus on preventing chimney fires and improving indoor air quality, not outdoor fires for cultural practices. Local fire departments or housing maintenance staff can potentially assist in delivering this message.
- Share program experiences among First Nations. For example, peer-learning networks, such as the Coastal First Nations' Great Bear Initiative and Fraser Basin Council programs.
- Communicate face to face about the program. Methods could include door-to-door information handouts and chats, community meetings and talks, presentations. Ideally, determine the best person to deliver the message based on the community preference. It is important that the message is delivered by someone the community respects and trusts.
- Use social media channels to engage community members. Many interviewees, from both First Nations and agencies, mentioned that social media has been embraced within First Nation communities. Community Facebook groups were suggested as a potential avenue for reaching a wide audience. In some communities, connectivity is limited, so messages should be clear and concise, and not rely on strong Internet connections. Videos should be accompanied by graphic posters.

3.3 Summary of Barriers and Opportunities by Desired Outcome

Desired Outcome	Barriers	Opportunities
1. First Nations staff and leadership are aware of the program	<p><u>HR and Capacity (Theme 1):</u></p> <ul style="list-style-type: none"> Unclear who the ideal community representative is to communicate with about WSEP. <p><u>Communication (Theme 4):</u></p> <ul style="list-style-type: none"> Lack of target audience—communications do not reach communities. Program details not directly communicated: community members are unaware of the program and its details. 	<p><u>Administrative (Theme 3):</u></p> <ul style="list-style-type: none"> Create a multi-stakeholder working group. <p><u>Communication (Theme 4):</u></p> <ul style="list-style-type: none"> Identify a community liaison and a community champion. Bring awareness of WSEP with face-to-face meetings. Promote program with safety messaging, using maintenance staff or local fire departments. Collaborate with agencies with education mandates that are building trust, like the FNHA. Clearly communicate WSEP details in a culturally appropriate manner. Share program experiences among First Nation communities.
2. WSEP can be managed by a local or regional coordinator	<p><u>HR and Capacity (1):</u></p> <ul style="list-style-type: none"> Competing priorities for existing staff resources. Limited to no access to WS- and WETT-certified technicians. Difficult to complete requirements for appliance destruction. <p><u>Administrative (3):</u></p> <ul style="list-style-type: none"> Program requirements are challenging to administer including writing funding applications and completing associated paperwork. Lack of communication and coordination between organizations and deadlines. 	<p><u>HR and Capacity (1):</u></p> <ul style="list-style-type: none"> Work with communities to develop a supportive project team. WETT training for community member(s). <p><u>Administrative (3):</u></p> <ul style="list-style-type: none"> Develop interagency collaboration. Paid champion: identify and resource a community champion to organize a change-out. Train community champion on program delivery. Explore alternative delivery model with other agencies to streamline program process.

Desired Outcome	Barriers	Opportunities
3. Appliance change-outs occur	<p><u>HR and Capacity (1):</u></p> <ul style="list-style-type: none"> Lack of resources for WETT participation. <p><u>Financial (2):</u></p> <ul style="list-style-type: none"> Cash flow constraints and low income levels: program requires financial investment before rebates. Rebates do not cover full costs. Difficult to make business case for investment. <p><u>Administrative (3):</u></p> <ul style="list-style-type: none"> Lack of communication and coordination between organizations Mismatched funding timelines. Complicated ownership structure on reserve. <p><u>Communication (4):</u></p> <ul style="list-style-type: none"> Program details not directly communicated. 	<p><u>HR and Capacity (1):</u></p> <ul style="list-style-type: none"> Interagency working group to streamline program and funding delivery. <p><u>Financial (2):</u></p> <ul style="list-style-type: none"> Explore an alternative funding model. <p><u>Administrative (3):</u></p> <ul style="list-style-type: none"> Targeted program delivery option: offer change-outs free of cost based on need. Align the WSEP with other housing upgrades. <p><u>Communication (4):</u></p> <ul style="list-style-type: none"> Identify and support a community champion to organize the WS assessments and change-outs, and to complete the administrative requirements.
4. Burning is efficient in First Nations communities	<p><u>Communication (4):</u></p> <ul style="list-style-type: none"> Lack of knowledge about burning practices. Lack of knowledge on wood storage. Lack of knowledge about health and safety risks of inefficient wood burning. 	<p><u>Communication (4):</u></p> <ul style="list-style-type: none"> Identify a community liaison within Provincial or Federal agencies to the Nations. Start with safety message about wood burning. Provide in-home training following change-out (Nez Perce). Collaborate with agencies with education mandates to share health messages and ensure a common message. Share program experiences among First Nations, e.g., peer-to-peer learning networks. Use social media to get engage community members.

4 EMERGING STRATEGIES

The emerging strategies presented below are a synthesis of messages heard in the interviews and the opportunities identified in the previous section. These strategies are considered emerging, as they need to be validated and further refined with the new agency stakeholders identified by the Steering Committee and during interviews. The refining and validation of strategies will occur in Phase 2 of this project.

Strategy 1: Develop interagency partnerships to leverage existing programs and create a Working Group

<i>Relates to</i>	<i>#2 Program can be managed by a local or regional coordinator</i>
<i>Desired</i>	<i>#3 Appliance change-outs occur</i>
<i>Outcomes</i>	

The following are action items that the working group can undertake as next steps towards a First Nations-focused WSEP.

- Develop a Terms of Reference and convene the interagency working group.
- Develop interagency collaboration with Health Canada and FNHA on health issues, such as indoor air quality and mould.
- Streamline the WSEP for First Nations by partnering with other existing programs like ECAP. Explore opportunities to provide the WSEP incentive as a credit towards alternative heating equipment such as a heat pump.
- Explore opportunities to utilize the existing FNHA Inspections, and in community relationship managers.
- Explore the potential to include wood-burning appliances in INAC New Approach to Housing, and subsidy program to include wood-burning appliances in program.
- Work to access Health Canada educational resources and FNHA infrastructure to deliver content to communities, including introducing educational presentations in schools.
- Identify all organizations that have funding available for wood stove appliances or programs related to occupant health or home energy efficiency and create a funding pool for First Nation communities based on assessed need (assessed need would require administrative support to coordinate/conduct audits by a WETT professional).
- Create a new merged program/funding mechanism for First Nations WSEP with financial and/or in-kind contributions from BC Hydro, FortisBC, FNHA, Health Canada, INAC, and the Provincial Government. This “portal” would eliminate the multiple applications and deadlines that are currently experienced with accessing funding for energy efficiency, health, and housing programs.

Strategy 2: Develop a targeted alternative delivery model for First Nations participants

<i>Relates to</i>	<i>#1 First Nation staff and leadership are aware of the program</i>
<i>Desired</i>	<i>#2 Program can be managed by a local or regional coordinator</i>
<i>Outcomes</i>	<i>#3 Appliance change-outs occur</i>

- Review current air quality data for First Nation communities to identify data gaps and areas that could greatly benefit from WSEP.
- Conduct a survey of cultural appropriateness to ensure that wood burning for heat aligns with community practices.
- Review list of First Nation communities with other service-providing agencies to target communities participating in other programs, and the potential to integrate WSEP into ongoing programs.
- Invite communities to express interest through a simple questionnaire. This program could be managed internally, similar to BC Hydro's ECAP program, through an agency with close ties to communities, e.g., potentially delivered by FNHA Environmental Health Officers.
- Identify resources to provide all funding to indigenous communities up front. This would involve completing an assessment, providing and installing an EPA-approved wood stove, and other ancillary upgrades (stove pipe, drying rack, etc.) with few administrative requirements from the First Nation, other than coordination with the community champion and/or regional coordinator.
- Determine different ways to structure the cost to reduce the initial capital costs, like through financing or tying the cost of replacement into other programs. The costs of assessments must also be included in the program.
- Develop a guide for First Nations on how to incorporate wood stove maintenance or replacement into housing work, including a list of trusted WETT technicians.
- Reach out to local and regional governments where wood burning is a known air quality issue and explore the opportunity to include the Wood Stove Exchange Program into ongoing reconciliation work.

Strategy 3: Ensure First Nations are able to take advantage of economic opportunities provided by the Wood Stove Exchange Program

<i>Relates to</i>	<i>NEW</i>
<i>Desired Outcome</i>	

- Increase capacity on reserve to support change-out tasks, including in-home visits, decommissioning appliances, and WETT certification by:
 - Inviting Nations' maintenance staff to participate in WETT training.

- Offering co-training opportunities on WETT to increase the number of experts in the province.
- Exploring ways to offset the costs of individual insurance for WETT technicians.
- Partnering community members with outside experts when they are in communities performing related tasks, such as FNHA visual home auditors with the community champion or other identified person. For example: home auditors could note the presence and age of wood stoves. The local champion could use the information to organize inspections by a WETT-certified professional.
- Incorporate honorariums for tasks that require community members to “volunteer” their time.
- Explore opportunities for utilizing waste wood from forestry operations, such as regional First Nation–operated pellet production facilities.
- Develop a shadowing program associated with external professionals that includes an honorarium. Mentees would be assigned to external professionals.

Strategy 4: Develop a culturally appropriate communication campaign on clean wood burning for an indigenous audience

Relates to

#4: Burning is efficient in First Nation communities

Desired Outcome

- Work with communities to select elders and other respected community members to act as community champions and share information with the broader community.
- Explore opportunities to bring the education component into schools.
- Use existing resources on the health effects of wood smoke and using wood stoves safely for presentations to communities considering a wood stove exchange.
- Engage the communities through face-to-face meetings with the FNHA coordinator or another trusted partner. Deliver information on the First Nations WSEP and the health benefits.
- Develop online content (i.e., posters and other content easy to view without downloading a video) and in-person educational tools, including videos, to teach proper seasoning and wood-burning techniques.
- Develop resources for the community champion to go door-to-door with the program messages.
- Develop communication materials that include the benefits of taking a proactive approach to clean wood burning.
- Communicate these benefits, including maintenance to avoid excessive particulate matter and emergency repairs.

5 POTENTIAL PARTNERS

Interviewees and the Steering Committee identified that developing interagency partnerships with overlapping mandates was critical to a successful wood stove exchange program in an indigenous community. There are a number of federal and provincial organizations that offer programs and services to First Nation communities related to health, housing, energy efficiency, and air quality. The table below summarizes potential agency partners, and their mandates that align with the work of the Wood Stove Exchange Program:

Agency	Mandate (related to WSEP)	Related Program Areas
Aboriginal Housing Management Association	Off-reserve housing.	N/A
BC Hydro	Electricity supply and demand-side management.	Energy Conservation Assistance Program (ECAP)
Canada Mortgage and Housing Corporation (CMHC)	Assistance to support construction of new housing, purchase and/or renovation of existing housing, and development of housing capacity.	On-Reserve Housing – Retrofit Initiative Emergency Repair Program On-Reserve (for low-income households)
First Nation Health Authority (FNHA)	Environmental Public Health Services—prevent and identify environmental health risks that could threaten the health of community residents.	Healthy Housing
FortisBC	Electricity supply and demand-side management in South Okanagan Area.	Energy Conservation Assistance Program (ECAP)
Health Canada	Research on health issues, education and outreach; works only with other government agencies.	Wood smoke health hazards
Indigenous and Northern Affairs Canada (INAC)	Supports indigenous peoples in their efforts to improve social well-being and economic prosperity, and develop healthier, more sustainable communities.	New Approach to Housing Social Housing allowances
Ministry of Environment	Responsible for the protection, management and conservation of BC's water, land, air, and living resources.	Air quality — WSEP Climate Change (no funding)

The visual below provides a map of shared mandates that may benefit the desired outcomes of the Wood Stove Exchange Program. This map is not complete, but offers a starting place for exploring collaboration.

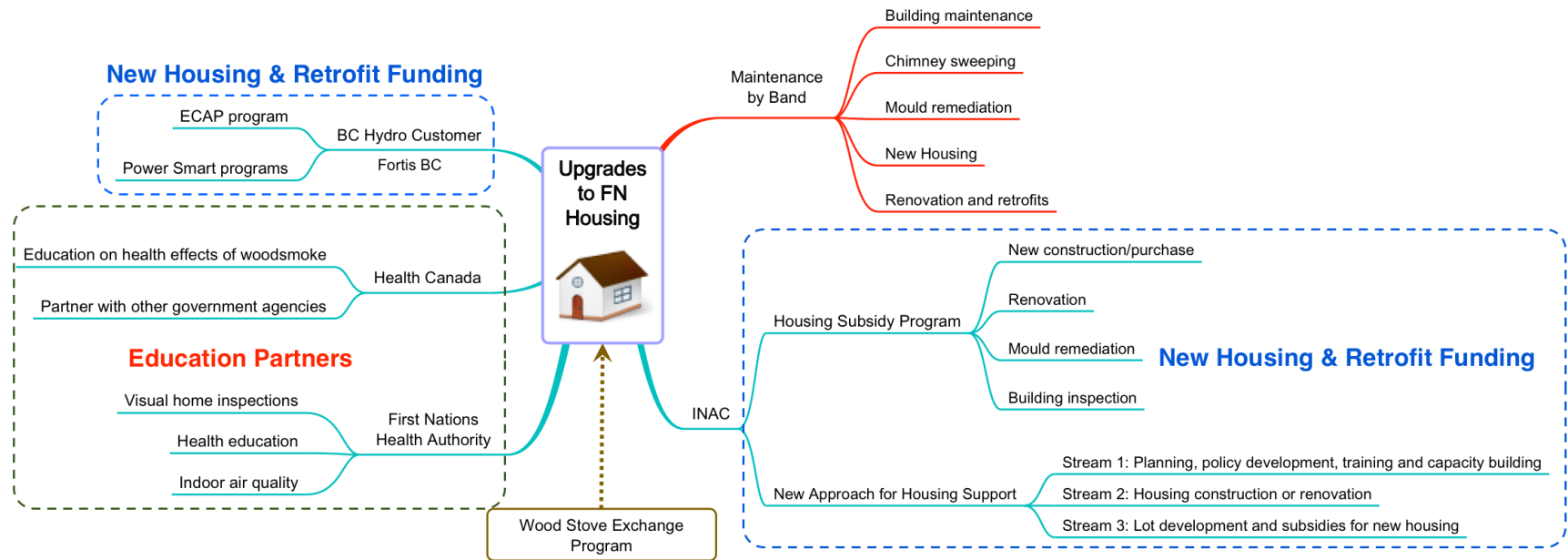


Figure 1: Mind Map of Related Agencies and Associated Programs (for discussion)

6 NEXT STEPS

As recommended by the Steering Committee, the next steps in this project are to:

1. Deepen interagency relationships and collaboration to recruit a broader working group that will evaluate and refine emerging strategies to support the proposed pilot programs.
2. Obtain funding and resources from partner agencies to design and pilot two different approaches to WSEP delivery:
 - a) A self-directed pilot, where a community champion and a regional coordinator direct the program.
 - b) An externally run program, where there is limited administration demand on Nation staff time.

Program Funding Sources

Funding is a key component of the pilot programs, and collaboration from all agencies in terms of in-kind support or financial contributions will ensure the success of the pilot programs. Other financial sources may be identified for specific action items within the program, such as a capacity fund for training interested community members as WETT-certified technicians. Support for the pilot programs may also be obtained as in-kind support from partner organizations.

Table 1: Funding Sources

Grant Organization	Category	About	Eligibility & Deadlines
BC First Nations Forestry Council (http://www.fnforestrycouncil.ca/programs/training-youth/forestry-training-program)	Education and training <i>Note: not directly related to WSEP, but related to economic development with respect to ideas about pellet production.</i>	It is designed to match students with sponsoring companies and provide individually structured training that reflects the operations of their sponsoring company. The result is both employment with the company and recognized or accredited education for the student, all of which will help fill the labour needs within the industry.	See website for applications, ongoing (no deadline).
Nechako-Kitamaat Development Fund (NKDF) Society (http://nkdf.org/)	Community economic development, job creation, sustainable employment	Limited to those areas with evidence of impacts from Rio Tinto Alcan's Nechako Reservoir and Kemano power project, in particular the Nechako region and Kitamaat Village.	4 deadlines per year, Email manager to ensure project is eligible: manager@nkdf.org
Real Estate Foundation (http://www.refbc.com/grants/eligibility)	Built environment sustainability <i>(This may be a stretch, but could be worth a chat with the Grants Coordinator.)</i>	The built environment encompasses the buildings and infrastructure that support where and how people live. The way we plan, design, build, and operate our communities has significant economic, social and environmental impacts. By funding initiatives focused on better land use policies, development regulations, and building practices that respond to both human and ecological needs, the Real Estate Foundation contributes to more sustainable communities. Learn more	For registered non-profit organizations (including charitable organizations, municipalities, regional districts, First Nations, senior government departments, professional associations, and other societies), as well as Community Contribution Companies (C3s). Contact the Grants Coordinator (Nick Davies 604.343.2626) if you have any questions about the grant application process or would like to discuss funding criteria and eligibility.

Grant Organization	Category	About	Eligibility & Deadlines
Southern Interior Development Trust (http://www.sidit-bc.ca/grant_applications.html)	Regionally strategic investments in economic development projects that will have long-lasting and measurable regional benefits for the Southern Interior. Location specific.	The SIDIT grant program provides non-repayable funding for municipalities, regional districts, First Nations, registered non-profit societies, institutions, and industry associations to support regionally strategic investments in economic development projects that will have long-lasting and measurable regional benefits for the Southern Interior.	Request for funding are continually accepted.
Western Economic Diversification Fund (http://www.wd-deo.gc.ca/eng/301.asp)	Clean technology	Contributions will be made to projects that support the development and diversification of the western Canadian economy, and activities where economic and/or employment benefits accrue primarily within Western Canada.	Eligible activities include clean technology and/or indigenous economic growth. Intake period for new applications is closed (no dates currently listed on website).
Vancouver Foundation (https://www.vancouverfoundation.ca/grants)	Education and training: test and grow	Test grants are longer-term grants to help project teams run and test the effectiveness of a new or existing social innovation on a systemic issue.	Two-stage application process, first deadline in December, and then invitation to stage two in early March. Up to \$75,000 over 3 years.

Other location-specific grants include:

- Columbia Basin Trust
- Island Coastal Economic Trust
- Northern Development Initiative Trust

Sources of listings for BC Grants:

- <http://www2.gov.bc.ca/gov/content/employment-business/economic-development/funding-and-grants>
- <http://www.civicinfo.bc.ca/grants>

APPENDIX A: STEERING COMMITTEE TERMS OF REFERENCE

Purpose

The main objective of this research project is to improve air quality in First Nation communities. Over the last seven years, the Province of British Columbia has been working to curtail the release of particulate matter from wood stoves across the province through the Wood Stove Exchange Program (WSEP). However, most First Nation communities have not taken advantage of this program. This research project will identify barriers and provide recommendations on how the existing WSEP can be modified to target First Nation communities more effectively.

The purpose of these Terms of Reference is to ensure that Steering Committee members are aware of the roles and responsibilities of the Steering Committee.

Role

Steering Committee members will play a key role in identifying barriers, guiding the research, and making sure the final recommendations reach the target audiences.

Tasks that Steering Committee members will be invited to participate in include:

- Identifying relevant communities and community leaders to participate in interviews.
- Informing research questions.
- Commenting and expanding on (if possible) barriers identified during interviews, and offering guidance on overcoming identified barriers as required.
- Reviewing outcomes of the research as they are completed, including strategies developed during this research project.
- Identifying target audiences and how to best disseminate research findings.

Membership

The following individuals/organizations have been invited to participate in the Steering Committee:

Organization	Members (alternates)
Sliammon First Nation	Paula Stewart
Kitasoo First Nation	Jamie Pond
Nuxalk First Nation	Richard Hall
Council of Haida Nation	Kevin Brown
Lil'wat First Nation	Graham Haywood
Ministry of Environment - Wood Stove Exchange Program	Markus Kellerhals

Ministry of Energy and Mines - Alternative Energy	Christina Inniciello
AANDC – Housing Department	Gregory Ambozic
Fraser Basin Council	Jim Vanderwal

- The Funding Parties for the Program include BC CLEAR, Pinna Sustainability, Sliammon First Nation, and Nuxalk Nation. Please note that Pinna Sustainability, Sliammon First Nation, and Nuxalk Nation have provided in-kind contributions to this project.

Meetings

- Membership in the Steering Committee is voluntary and each member's level of involvement will be at their own discretion.
- Pinna Sustainability will convene a project initiation meeting with the Steering Committee.
- Following the initiation meeting, it is expected that the Steering Committee will be able to meet approximately five times over the course of the project. The number of meetings is subject to change based on research findings.
- It is expected that this project will take approximately 10 months to complete from commencement. The Steering Committee will exist until the project has been completed.

Prepared by Pinna Sustainability

APPENDIX B: INTERVIEW QUESTIONS

Community Objectives

- Confirm and clarify the barriers identified through the background research.
- Assess why First Nations have not participated in current program.
- Assess how the existing programs could be adapted to better serve their needs.
- Determine interest in testing potential solutions.

Preliminary questions	<p>Does your community burn wood for heat?</p> <p>Is wood burning a primary heating source?</p> <p>How old are the wood stoves in your community?</p> <p>Are there any other forms of heating (baseboard heaters, furnaces, heat pumps)?</p>
Bands are aware of the program	<p>Is the community aware of the WSEP program?</p> <p>Is your community interested in participating in this program? Why or why not?</p> <p>How is the program advertised?</p> <p>Can you think of a more effective way to advertise the program to First Nation communities in BC?</p>
Burning is efficient in First Nation communities	<p>Has your community ever received training or information on efficient wood-burning practices/benefits?</p> <p>How do community members generally store/season firewood?</p> <p>Is your community aware of the health and safety risks of inefficient wood-burning practices?</p>
Appliance change-outs occur	<p>For a wood stove exchange program to be functional in your community, how should the program be designed, or what would the program need to offer?</p> <p>How should it dovetail into your housing and maintenance planning?</p> <p>How could the incentive mechanism be improved?</p> <p>How could messaging be culturally attuned?</p>
Community capacity to manage the program	<p>Do you have capacity within your community to hire a wood stove exchange coordinator and run this program?</p> <p>If not, are you open to working regionally? If so, what regional body would be appropriate? (Tribal Council? Regional District? Other?)</p>
Industry capacity to manage the program	<p>Are there any local retailers that can participate/offer the program?</p> <p>Do you know of someone locally who would be able to supply and service a new stove?</p> <p>Are there dealers within BC that would be willing to arrange shipping and handling of program-related (e.g., ECAP) products to any First Nation community?</p>

Closing questions	<p>How can we make it easier for community members to take advantage of the program?</p> <p>Would you be interested in testing potential solutions?</p> <p>Do you have any recommendations for future education/outreach/promotion activities?</p> <p>What is the most effective way of reaching community members?</p> <p>Is there anyone else or any other Nation that you can recommend we speak with?</p> <p>What opportunities to curtail inefficient wood burning would your community be interested in?</p>
-------------------	--

Agency Interview Objectives

- Understand the mandate of each agency and determine capacity to overlap with WSEP.
- Gather transferable lessons from other successful programs.

Mandate	<p>How does your organization engage with First Nation communities?</p> <p>The WSEP has not been effective at reaching/engaging First Nation communities. We are exploring opportunities to modify the program to better suit First Nations OR offer a separate program.</p> <p>To this end, what programs do you offer that could potentially be partnered with the Wood Stove Exchange Program?</p>
Transferable Lessons	<p>Does your agency offer a successful incentive program related to housing and maintenance?</p> <p>If so, what can we model/learn from this program to modify the WSEP?</p> <p>Any initial thoughts?</p> <p>Can you suggest other people to interview as part of this process?</p> <p>Are there other agencies/people we should share with in order to improve the impact of our research?</p> <p>Are you interested in receiving the results of this project?</p>
