Collecting Baseline Socio-Economic Data for Socio-Economic Impact Assessment: The Metlakatla Membership Census

by

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B.A. (Environmental Studies), University of Alberta, 2014

Project Submitted in Partial Fulfillment of the
Requirements for the Degree of
Master of Resource Management (Planning)

in the

School of Resource and Environmental Management
Faculty of Environment

Report No. 682

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SIMON FRASER UNIVERSITY

Fall 2017

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Degree:	**Master of Resource Management (Planning)**
Report No.	**682**
Title:	***Collecting Baseline Socio-Economic Data for Socio-Economic Impact Assessment: The Metlakatla Membership Census***
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Date Defended/Approved: December 03, 2017 _____

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The author, whose name appears on the title page of this work, has obtained, for the research described in this work, either:

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Abstract

Socio-economic Impact Assessment (SIA) is a tool to assess the social, economic, health, and cultural impacts of a proposed plan or activity. Developing good baseline information is a crucial step in SIA because changes to valued social components may be more easily identified and assessed when they are compared to a baseline. For SIAs in Aboriginal communities, baseline socio-economic data are often unavailable or deficient. I examine community surveys as a tool to collect Aboriginal community-specific baseline data, through a case study of the Metlakatla Membership Census, a census-style survey designed and implemented in collaboration with the Metlakatla First Nation. I investigate the development, design, and administration of the census in 2015 and 2016, the first two years in which it was conducted. I discuss elements of the census that were successful, identify limitations and lessons learned, and make recommendations for similar initiatives in other settings.

Keywords: Socio-economic impact assessment; Baseline socio-economic data; Baseline studies; Socio-economic information for Aboriginal populations; Community survey methodology; Indigenous data governance

For Aaji. Your loving memory continues to inspire and guide me every day.

.

Acknowledgements

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List of Acronyms

AFN	Assembly of First Nations
AIR	Application Information Requirements
APS	Aboriginal Peoples Survey
BC EAO	British Columbia Environmental Assessment Office
BC MOE	British Columbia Ministry of Environment
CEA	Cumulative Effects Assessment
CEAA	Canadian Environmental Assessment Agency
CEM	Cumulative Effects Management
EA	Environmental Impact Assessment
FSC	Food, Social and Ceremonial
LNG	Liquefied Natural Gas
MDC	Metlakatla Development Corporation
MGC	Metlakatla Governing Council
MMC	Metlakatla Membership Census
MSO	Metlakatla Stewardship Office
MSS	Metlakatla Stewardship Society
MVEIRB	Mackenzie Valley Environmental Impact Review Board
REM	School of Resource and Environmental Management
SFU	Simon Fraser University
SIA	Socio-economic Impact Assessment
TEK	Traditional Ecological Knowledge
VC	Valued Component
YEAB	Yukon Environmental and Socio-economic Assessment Board

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Chapter 1.

Introduction

1.1. **Research Context**

Socio-economic impact assessment (SIA) is a vital component of environmental impact assessment and cumulative effects assessment. SIA is a tool to assess the social, economic, health, and cultural impacts of a proposed plan or activity (IAIA, n.d.; MVEIRB, 2007). The Interorganizational Committee on Principles and Guidelines for Social Impact Assessment (2003) defines social impacts as:

> *The consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organize to meet their needs and generally cope as members of society. The term also includes cultural impacts involving changes to the norms, values, and beliefs that guide and rationalize their cognition of themselves and their society* (p. 231)*.*

In British Columbia (BC) and the rest of Canada, social impacts are typically evaluated on a project-by-project basis through federal and provincial environmental impact assessment (EA) processes. However, one of the many criticisms of EAs in Canada is that the SIAs associated with these project reviews have not adequately conceptualized, assessed, and presented social impacts (Carniol, Gutnick, & Ryan, 1981). Many EA processes have only considered the economic impacts of a project and have not assessed other social consequences, or if they have considered other social effects, these effects have been inadequately assessed (Friesema & Culhane, 1976). Assessments of socio-economic impacts on First Nations and other Indigenous communities have been particularly problematic (Reid et al., 2017).

A crucial step in SIA is the development of good baseline information, because changes to social valued components may be more easily identified and assessed when they are compared to a baseline. The *Principles and Guidelines for Social Impact Assessment in the USA* emphasize the importance of the collection of baseline information (Interorganizational Committee, 2003). The first of these principles states, "Achieve extensive understanding of local and regional settings to be affected by the action of a program or policy" (Interorganizational Committee, 2003, p. 234). Despite being a crucial step in SIA, developing baseline information is often overlooked and is perhaps the least understood step of SIA (Beanlands, 1990).

For SIAs in Aboriginal communities, baseline socio-economic data are often unavailable or deficient. While broad national or regional surveys, such as the Canadian Census, can be helpful in providing large-scale data for Aboriginal communities, these surveys may not provide a sufficient level of detail at the community level for a specific baseline community profile for the purposes of an SIA (Saku, 1999; Bruce et al., 2010; Swimmer & Hennes, 1993; Wright, 1993). Also, surveys at large scales that are administered to the general population may not collect relevant data for Aboriginal communities due to differences in the ways in which Aboriginal and non-Aboriginal participants interpret the questions. In addition, the frequency of data collection and the timing of release of results may vary between surveys, resulting in large data gaps over time (Bruce et al., 2010; Gramling, 1992). Additionally, national and regional surveys often have low response rates amongst Aboriginal populations living on-reserve (Saku, 1999). Therefore, there is a need for a more effective methodology for collecting baseline socio-economic data in Aboriginal communities to develop a reliable understanding of the status of social, economic, cultural, and health values.

In this research, I worked in collaboration with Metlakatla First Nation, Compass Resource Management Ltd., and the School of Resource and Environmental Management (REM) at Simon Fraser University to develop and test a new methodology and survey instrument—the Metlakatla Membership Census (MMC)—to collect baseline socio-economic data for an innovative cumulative effects management (CEM) program instituted by the Metlakatla First Nation. The MMC is designed to gather baseline information on present conditions within the Metlakatla community and eventually build a

database of consistent information through time. The data collected through the MMC will be used in the Metlakatla CEM program and other planning and decision making processes, including: 1) at the individual project scale in EA and permitting processes; and 2) at a territory-wide scale in land and marine-use planning and decision making for future development (Metlakatla First Nation, 2015). The MMC methodology could also be used in other Indigenous communities where better baseline socio-economic data are needed for decision making.

In this report, I describe the methodology and process through which the MMC was developed and tested, including the literature review, engagement with Metlakatla leaders and community members, design and administration of the MMC, results, and preliminary use of resulting data for various planning purposes. I discuss the elements of the MMC that were successful, identify the limitations, and make recommendations for areas of potential improvement.

1.2. **Overview of Research Objectives**

This research focuses on the problem of collecting baseline data for Indigenous groups to use in environmental and social impact assessment and other decision-making processes. The problem is illustrated and investigated through a case study of the development and application of a census style survey in collaboration with the Metlakatla First Nation. The objective of the research is to develop and test a methodology to gather detailed and comprehensive baseline socio-economic information about the Metlakatla people consistently over time, to be used to inform the Metlakatla CEM program, social impact assessment processes, and other planning and decision-making. The case study situates the problem within a specific social, economic, and environmental context that provides a basis for understanding and testing this new approach and methodology.

1.3. The Case Setting – Metlakatla First Nation and the CEM program

Metlakatla First Nation is one of seven Tsimshian village communities and is located in the Prince Rupert region on the northwest coast of British Columbia. The traditional territory of the Metlakatla First Nation encompasses approximately 20,000 square kilometers of land and sea in what is now called the Great Bear Rainforest. Located in the Skeena-Queen Charlotte Regional District, the traditional territory ranges from where the Kitnaywakna River joins the Zymoetz River in the east to the middle of Hecate Straight in the west, and from the Klewnuggit Inlet along Grenville Channel in the south to the headwaters of the Sutton River in the north. As of June, 2017, the Metlakatla First Nation had approximately 950 members (INAC, 2017a). While most of the members lived off-reserve, approximately 100 members lived in Metlakatla Village, one of ten Metlakatla First Nation Reserves.

Metlakatla initiated the CEM program in response to multiple liquefied natural gas (LNG) projects and pipelines in Metlakatla Traditional Territory (see Figure 1), and other proposed industrial projects such as mines and mineral processing facilities, transportation projects, hydroelectric facilities and port expansions (BC JTST 2016; BC EAO, 2017). These projects have the potential to impact a wide range of valued components within Metlakatla Traditional Territory and to contribute to cumulative effects in the region.
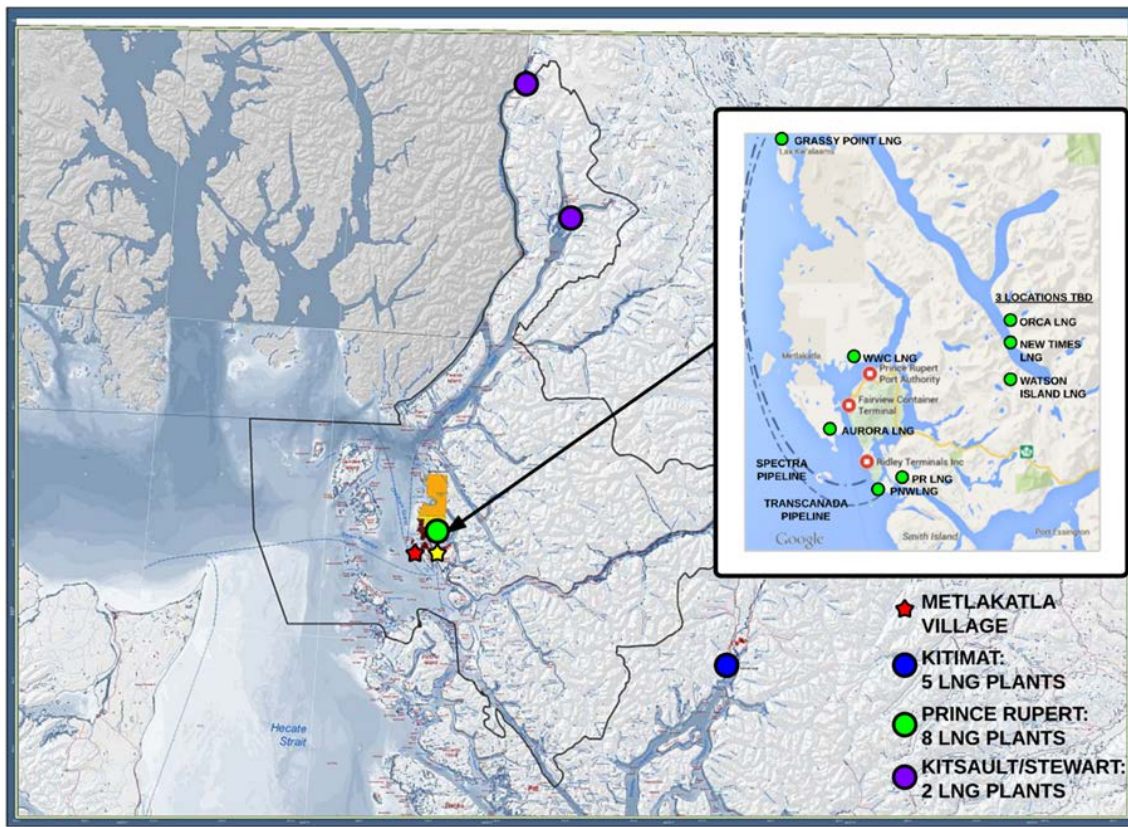
Figure 1:   Location of Metlakatla First Nation Traditional Territory and Proposed LNG Development on the North Coast of BC (Metlakatla First Nation, 2015)

The Metlakatla community and the CEM initiative provide a good case setting for this research. The context highlights the great need for baseline information within Indigenous communities in BC. With the number of large-scale industrial projects proposed in BC, many Indigenous groups need additional capacity and data to meaningfully participate in provincial and federal EA processes and to inform their own planning and decision making. Lack of capacity can affect the ability to develop and assess baseline data, especially for cumulative effects assessment (CEA) (Booth & Skelton, 2011a, 2011b). The MMC and the broader CEM program within which it was developed are Metlakatla community initiatives that provide the opportunity to understand how similar initiatives may be developed in other Aboriginal communities. All important decisions made in the development of the census were vetted and approved by Metlakatla managers.

1.4. **The Metlakatla CEM Research Collaboration**

The Metlakatla CEM program is a collaborative research initiative between Metlakatla First Nation, Compass Resource Management, and the School of Resource and Environmental Management (REM) at Simon Fraser University. Taylor Zeeg (Metlakatla Stewardship Society) is the lead coordinator of the CEM program. The researchers collaborated with Metlakatla on gathering best practices and developing a long-term work plan organized in phases for the CEM program. The focus of Phase 1 (July 2014 to May 2015) was to develop a CEM framework, characterize priority values and associated indicators, and identify management triggers and benchmarks (Metlakatla First Nation, n.d.). In that first phase, the researchers developed a new methodology for identifying and selecting VCs for the CEM program (Kwon, 2016). In Phase 2 (May 2015 to February 2016), Celina Willis (REM) and I developed and administered the MMC with the support of Katerina Kwon. The contents of Chapter 4 of this report are a result of a joint effort by Willis and myself. As part of Phase 2, Brennan Hutchison (REM) examined cultural values that are important to Metlakatla and how best to capture those data in the MMC. The CEM program is currently in its third phase which involves establishing management benchmarks and responses, and implementing monitoring for pilot values.

1.5. **Report Structure**

In the second chapter of this report, I discuss the importance of baseline data in SIA and CEA, as well as the deficiencies in obtaining this data in current processes. The third chapter provides a more detailed description of the research setting and the Metlakatla CEM program. I discuss case study research in general and the Metlakatla case in particular. A detailed description of the methodology for the conception, design, and administration of the MMC is presented in Chapters 3 and 4. In the fourth chapter, I discuss the design and administration of the MMC, and the results from the first two years in which it was administered (2015 and 2016). Chapter 5 discusses the strengths, limitations, and areas for further improvement of the census methodology. Finally, the report concludes with a summary of the research and recommendations for future study.

Chapter 2.

Baseline Data in Socio-Economic Impact Assessment and Cumulative Effects Assessment

2.1. Socio-Economic Impact Assessment and Baseline Data

Despite the substantial amount of literature on social assessment that offers best practice frameworks, direction, and other recommendations for improvements within the field, there has not been a consistent and reliable approach to addressing socio-economic impacts in environmental assessment processes in Canada (Carniol et al., 1981; Burdge, 2004). Several factors contribute to the inconsistencies; however, a recurring and persistent problem is the conceptualization and contextualization of socio-economic impacts (Torgerson, 1981; Taylor, Bryan, & Goodrich, 2004).

The Mackenzie Valley Environmental Impact Review Board (2007) defines socio-economic impact assessment as a "systematic analysis used during EIA to identify and evaluate the potential socio-economic and cultural impacts of a proposed development on the lives and circumstances of people, their families, and their communities" (p. 6). The purpose of SIA is to provide information on potential or actual consequences from a proposed policy, action, or project and provide guidance on the avoidance, mitigation, and management of consequences and potential adverse impacts resulting from that proposal (Burdge, 2004).

While a variety of methodological frameworks exist for SIA, there are six core steps that exist in some form within many frameworks:

1. Scoping: identifying issues and variables to be described and measured as well as identifying assessment boundaries (Burdge, 2004; MVEIRB, 2007; Taylor et al., 2004).

2. Profiling: overviewing and analysing the current social context and historical trends through baseline studies (Burdge, 2004; MVEIRB, 2007; Olsen et al., 1977; Taylor et al., 2004).

3. Estimating and projecting effects: examining and analyzing potential socio-economic impacts (Burdge, 2004; MVEIRB, 2007; Olsen et al., 1977; Taylor et al., 2004).

4. Evaluating significance: determining if the proposal is likely to cause significant adverse impacts on valued components (MVEIRB, 2007; Olsen et al., 1977).

5. Monitoring, mitigating, and management: collecting data on actual effects during project or policy implementation, mitigating negative effects, and managing change (Burdge, 2004; MVEIRB, 2007; Taylor et al., 2004).

6. Evaluation: reviewing the social effects of the change and the assessment process itself systematically and retrospectively (Taylor et al., 2004).

This report focuses on the second step in the SIA process: collecting baseline information on the community being impacted. There does not appear to be a universally accepted definition of "baseline studies", as more than 15 formal definitions have been recorded (Beanlands, 1990). Vague definitions of "baseline" often cause difficulties for baseline studies. For the purposes of this report, "baseline" refers to "a time line and associated social, cultural and community information from which to start the assessment" (Interorganizational Committee, 2003). This report focuses on aspects related to the socio-economic environment including economic, social, health, and cultural conditions of a community. The primary objective of socio-economic baseline studies is to gather a community profile that maps the existing conditions and past trends associated with the human environment in which the proposed action is to take place.

2.2. Current Practices in Baseline Studies in Impact Assessment in Canada and BC

2.2.1 Purpose of Baseline Studies

The scoping phase and the profiling phase are known as the preliminary assessment of a project or program (Taylor et al., 2004). The profiling phase should follow the scoping phase closely: measuring existing conditions of identified valued components within clear assessment boundaries defined in the scoping phase. The success of an impact assessment process may depend largely on how well the preliminary assessment is conducted (Beanlands, 1990). Impact assessment processes are often conducted in circumstances with limited time and resources, which makes the preliminary phase particularly important as it guides the rest of the assessment process (Beanlands, 1990). The crux of the scoping process is determining which aspects of the existing environment are important and what information is needed.

The purpose of baseline studies is twofold: 1) to provide a primary basis for forecasting the consequences of a proposal on a community; and 2) to provide a basis for measuring and evaluating the changes that may occur as a result of the proposal (Branch et al., 1984). "Profiling describes the initial conditions of an impact situation and provides baseline social data on the impact area from which the magnitude and intensity of changes, induced and incidental, can be estimated" (Finsterbusch & Wolf, 1977). The description of the existing environment is a key element in the entire impact assessment process, serving a descriptive as well as a highly analytical function (Branch et al. 1984).

Impact assessment provides information for decision making, but there is often a misconception that it results in only one major decision: whether or not to approve a project. Rather, as a planning tool, impact assessment informs a network of multiple decisions made by various agencies in the public and private spheres (McMichael, 1975). Beanlands (2002) emphasizes that baseline studies should not be undertaken for the sake of rationalizing decisions that have already been made. On the contrary, the concept and the practice of baseline studies should aid decision-makers at various stages of the project cycle and adequately accommodate the different information requirements at various stages of the planning process (Beanlands, 1990).

2.2.2 Guidance on Conducting Baseline Studies for SIA

A demographic analysis of the characteristics of the affected population is often the first step within SIA (Finsterbusch, 1980). However, one of the more universal issues with baseline studies is that they are often undertaken without clearly defined objectives. This leads to superficial surveys being conducted that provide only reconnaissance-level data that may not be relevant later in the process (Beanlands, 1990). To avoid this, baseline studies should be tailored to address issues identified in the scoping and planning phase as closely as possible (Branch et al, 1984; Armour et al. 1977). The methodology to obtain baseline data should consider what is realistic and appropriate. The key is to use a methodology that will collect sufficient data while keeping in mind that SIA does not require absolute comprehension. Rather, it is important to focus efforts on obtaining the most important and relevant data (Carley, 1983; Taylor et al., 2004).

Baseline studies should consider gathering both quantified and unquantified data. While quantified data should be obtained where available, qualitative data are also important (Carley, 1983; Tester & Mykes, 1981). Tester & Mykes (1981) and Taylor et al. (2004) suggest that the myth of quantitative data being superior to qualitative data has resulted in failure at the methodological level in achieving a better understanding of the usefulness of, and the relationship between, the different forms of data. As the Mackenzie Valley Pipeline Inquiry illustrates, both quantitative and qualitative information can make unique contributions to the assessment process (MVEIRB, 2007).

In provincial EA processes, practitioners often rely on provincial government guidance concerning collecting baseline information. However, most of the available BC guidance for baseline studies focuses on biophysical elements of the environment. For example, the BC Environmental Assessment Office (BC EAO) advises practitioners to follow technical guidance published by the BC Ministry of Environment (BC MOE) outlining its expectations and requirements for water and air baseline studies and monitoring for mining proponents (BC EAO, n.d.). Similarly, Alberta Environment and Parks published the *Guide to Preparing Environmental Impact Assessment Reports in Alberta* (2013), which sets out the province's expectations and requirements for baseline studies for hydrogeology, vegetation, biodiversity, wildlife, aquatic ecology and other

biophysical components. Similar guidelines for social baseline studies are not available from either province.

At the federal level, section 5 of the *Canadian Environmental Assessment Act, 2012* mandates the assessment of socio-economic components only if they are affected by changes in the environment. If a socio-economic effect is not caused by an environmental change, but by something else related to the proposed project, the socio-economic effect is not defined as an environmental effect within the meaning of the Act. In other words, assessing direct socio-economic changes as a result of a proposed project is not a federally legislated mandate.

The Canadian Environmental Assessment Agency (CEAA) has published the *Cumulative Effects Assessment Practitioner's Guide* (Hegmann et al., 2016), which includes guidance on collecting regional baseline data. However, the guide only focuses on the assessment of biophysical effects and does not include approaches to assessing socio-economic effects. The guide does acknowledge that the practice of CEA and impact assessment as a whole should work towards obtaining a better understanding of socio-economic effects.

Health Canada (2010) also has published guidance on what kinds of information are required in federal environmental assessments to determine health effects resulting from changes to environmental components. However, similar to the CEAA guide on cumulative effects assessment, Health Canada states that it does not have the expertise to comment on the human-health related socio-economic impacts of projects. They instead encourage readers of the guide to "seek this expertise from appropriate agencies". What the "appropriate agencies" are is not specified.

There is a substantial body of literature on different methodologies for collecting socio-economic data, including baseline data for SIA, which I discuss in section 2.3 of this report, but there are no established best practices in Canada for collecting baseline information for SIA from potentially affected Aboriginal communities. The BC Environmental Assessment Office (BC EAO) does not have published guidance or standards for the conduct of SIA. Standards for obtaining socio-economic baseline information are lacking despite provincial regulations requiring that environmental

assessments consider the impacts to the socio-economic environment. Practitioners and proponents rely on the Application Information Requirements (AIR) developed by the BC EAO individually for each project to determine what data should be collected and assessed (BC EAO, n.d.). The AIR, however, typically do not provide specific guidance on how socio-economic data should be collected from Aboriginal communities.

The BC Ministry of Agriculture and Lands Strategic Land Policy and Legislative Branch published the *Guidelines for Socio-Economic and Environmental Assessment (SEAA): Land Use Planning and Resource Management Planning* in 2007. These guidelines were developed to provide a framework for analysing scenarios for large scale strategic land and resource management planning, and they include consideration of the social and heritage implications specific to local Aboriginal communities. The guidelines state that discussions with Aboriginal leaders and representatives are an integral part of any resource management planning process. While these guidelines emphasize the importance of considering Aboriginal-specific implications, they do not provide any best practices on gathering information from Aboriginal communities.

The lack of clear methods, approaches, and measures for SIA in Aboriginal communities is not limited to BC, as it is an issue that affects environment assessment processes across Canada. Aside from the Yukon Environmental and Socio-economic Assessment Board (YESAB) and the Mackenzie Valley Environmental Impact Review Board (MVEIRB), no other jurisdictions in Canada have a legislative framework for proper SIA at this time (Reid et al., 2017). Clear and transparent standards for SIA are necessary to ensure consistent methods and quality (Reid et al., 2017).

As shown in this section, most of the existing guidance on the collection of baseline information for impact assessment focuses on biophysical components of the environment being studied. There is little guidance available on socio-economic baseline requirements. Guidance and academic literature on collecting socio-economic baseline data from Aboriginal communities is severely lacking. As a result, issues regarding social, cultural, economic, and health aspects within Aboriginal communities are often disregarded or unaddressed. The next section describes the current practices used by

SIA practitioners in British Columbia and Canada to collect socio-economic data from Aboriginal communities.

2.3. **Baseline Studies Methodologies**

Baseline studies for SIA in Aboriginal communities require community-specific data that are not currently available from sources such as broad national or regional surveys. Moreover, there is no comprehensive guidance available for collecting baseline socio-economic data specifically from Aboriginal communities for SIA. In the field of SIA, and more broadly, EA, methodologies, best practices, or recommendations for collecting baseline socio-economic data specifically from Aboriginal communities are not available. Although there has been substantial research on gathering traditional ecological knowledge (TEK) from Aboriginal communities, these methodologies may be distinct to TEK. I discuss TEK and the methods for gathering this knowledge in section 2.4. Here, I provide an overview of more general methodologies available for baseline studies in SIA, including: secondary sources; interviews; workshops and community meetings; and field trips and observational studies.

In SIA, the aim of gathering information from various sources is not necessarily to gather as much comprehensive data as possible, but rather to gather the specific data necessary to adequately assess impacts (Carley, 1983; Taylor et al., 2004). Data gathering should use an issues-oriented approach that focuses on concerns and VCs identified in the scoping phase. The methodology of data collection should ensure that the data are relevant and valid so that the primary objectives of the SIA can be achieved (Taylor et al., 2004). The methodologies described in this section can be used to collect quantitative and qualitative data.

For any research on or with Aboriginal communities, principled methodologies with appropriate ethical standards should be emphasized and implemented. Research in which Aboriginal communities are the focal interest either directly or indirectly should honour principles of partnership, protection, and participation (FHSD, 2003; Panel on Research Ethics, 2015). The Aboriginal community should be fully informed about use and interpretation of data and researchers should obtain informed consent prior to the

beginning of any study. Research should empower Aboriginal people and be conducted in collaboration and partnership with Aboriginal communities to the fullest extent possible (FHSD, 2003; Panel on Research Ethics, 2015). These principles should be understood and implemented prior to conducting any of the methodologies described below.

2.3.1 Use of Secondary Sources

Secondary data are data that were originally collected for a different purpose than the purpose for which they are now to be used. Sources of existing data can be identified during the scoping phase of the SIA. Secondary data can be used in SIA to supplement and validate primary data (Branch et al., 1984). Additionally, secondary data may be helpful to cover topics for which primary data collection is not possible, and can be used throughout the assessment process as key sources of information and to provide social context (Branch et al.,1984;Taylor et al., 2004).

There are two principal ways to use secondary data in SIA: descriptively and analytically (Branch et al., 1984). Sources such as Canadian Census data, previous environmental impact statements, state reports, local newspapers, and local histories can provide valuable descriptive information about the community, the region and past development to broaden understanding of the community being impacted. From an analytical approach, secondary sources can also be used to analyze what type of information is perceived to be important, what types and magnitudes of impacts may occur, and how the community would be affected overall. In addition to focusing the SIA, existing data sources can provide an empirical basis and analytic framework for forecasting project impacts (Branch et al., 1984). Additional data sources may include provincial, federal or university publications, journal articles, local housing and real estate agencies, public and private museums, community centers, public health centers, news sources, and business directories (Branch et al., 1984; Taylor et al., 2004).

The use of secondary data may save time and money in conducting a baseline study. First, data that are publically available are often easy to obtain, which may save time in the course of an SIA (Taylor et al., 2004). Second, secondary data are cost-effective when compared to primary sources of data such as interviews and surveys. A

variety of different data sources can provide historical background and social trends for the assessment area. Secondary data are also useful for making comparisons between assessments for similar areas under similar circumstances. Taylor et al. (2004) emphasize that descriptive information such as maps, written histories, local and regional newspapers, and previous studies or assessments can be beneficial at the initial stages of an SIA as part of a scoping exercise that can then inform what additional, detailed information is required. Furthermore, historical documents collected over time can be used for trend analysis which is an essential aspect of SIA, particularly in forecasting future changes (Motz, 1983).

Secondary data sources can add substantial value to an SIA; however, they must be used in combination with one or more other methodologies in order to develop a complete understanding of the community profile. While existing data are helpful in defining community and demographic characteristics, existing institutional structure, and community history, the information available is often limited. Existing data may be out of date or incomplete, especially for communities that are rapidly changing (Branch et al., 1984). "Fugitive" documents, studies that are conducted for internal purposes by government agencies or private consultants, can be a rich source of information. However, such material is difficult to identify and hard to obtain. There may also be concern about the validity and reliability of the secondary data, depending on the source (Motz, 1983). For these reasons, primary data are also needed to profile a community and fill data gaps, regardless of how comprehensive the available existing information is (Branch et al., 1984; Taylor et al., 2004).

2.3.2 Questionnaires and Surveys

There is extensive literature and guidelines on developing, administering and interpreting surveys in social research. The purpose of this section is to provide an overview of the use of surveys in SIA and baseline studies. The specific guidance and methodology used for the MMC is described in detail in Chapter 4.

A survey is the process of gathering information for analysis by asking people questions. A questionnaire is a set of questions that are typically printed or written and

that may be used as a survey instrument. Questionnaires and surveys can be used throughout the impact assessment process, including for collecting baseline information, monitoring effects, and engaging the public, to gauge knowledge, perceptions, attitudes and values of stakeholders and the general population (Maclaren, 1987; Finsterbusch & Wolf, 1977). Surveys can provide crucial information, both quantitative and qualitative, that may not be available through other means (Finsterbusch, 1977; Taylor et al., 2004).

There are several ways surveys can be administered, including in person, through the post, and online. New technology allows for the use of computer-assisted collection of survey information, enabling a variety of modes that differ in the extent of interviewer involvement in the administration of the survey (Vehovar & Manfreda, 2008). Time, resources, the type of information required, and the limitations of each method should be considered when determining which survey type to choose for an assessment (Taylor et al., 2004). Postal questionnaires are useful for targeting a large number of participants on a large geographic scale at a relatively low cost (Dillman, 2000; Graetz, 1985; Taylor et al., 2004). However, mail surveys may have poor response rates. Online surveys are often cheaper than conventional data collection methods (De Leeuw, 2012). Online questionnaires allow respondents to answer without a survey administrator necessarily being present, and this may alleviate the problem of socially biased responses (De Leeuw, 2012). However, since not everyone may have access to a computer and the internet, coverage gaps are a major issue with online surveys. Additionally, like other survey types, online surveys must use well-designed probability sampling so that sampling error, when targeting a large population, can be calculated properly (De Leeuw, 2012).

There are four basic stages in survey research (Taylor et al., 2004). The survey research process should always begin by defining the problem through consultation with key actors. Decisions on the nature of the survey should be undertaken after intensive scoping, some analysis of secondary data, and understanding the context for the survey and the final use of the data. The second stage in survey research is the development of a survey research plan and questionnaire. At this stage questions of sample size, representativeness, survey methodology, and other detailed survey techniques are considered and the questionnaire is designed and constructed. The appropriate sample

size depends on the size of the population, the degree of accuracy required, and the extent of variation in key characteristics of the population in the study (De Vaus, 2002). The third stage is the actual implementation of the survey. It is recommended that the questionnaire be pre-tested so that it can be checked and further developed to resolve issues with logistics, scope, length and language choice (Taylor et al., 2004). The final step in survey research is to analyze, interpret and present the findings. Considerations in this stage of the research should be planned for in the second stage of the process.

Survey research can be time and resource intensive; therefore, practitioners should be careful about the use of this method, considering the common constraints on time and resources in many SIAs (Taylor et al., 2004). Surveys often cannot produce a high degree of certainty because of the practical difficulties of obtaining a sufficient sample size and response rate (Finsterbusch, 1977). If it is determined that a survey is the most appropriate means of gathering data for a social assessment, the research should be conducted by practitioners who have the essential knowledge and skill in survey design and administration (Taylor, et al., 2004). Surveys should not be used as the sole method for data collection in SIA (Maclaren, 1987; Taylor et al., 2004; Finsterbusch, 1977) for the reasons stated above and because they are largely a one-way flow of information and typically do not have an opportunity for feedback and two-way communication (Maclaren, 1987)

Finsterbusch (1977) argues that mini surveys with sample sizes from 20 to 80 can be ideal to suit the needs of SIA because they are inexpensive, easy to conduct, informative, and quick. The mini surveys can be cost-effective because the accuracy of mini-surveys, for the purposes of an SIA, increases at a lower rate than the cost of increasing the sample size (Finsterbusch, 1977). Even so, the methodology of mini-surveys may not produce a high degree of accuracy and requires a different style of reporting results that focuses on confidence intervals rather than point estimates, because confidence intervals provide the most accurate image of the kind of knowledge produced.

To be most effective and to best utilize the time and resources available in an SIA, proper consideration should be given to the design and administration

methodologies of survey research. When designed and administered properly, survey research can provide valuable information to contribute to a community profile in an SIA. However, SIA practitioners should be aware of the advantages and disadvantages of each survey methodology in order to ensure that the methodology is appropriate for the target population and acquires the required information identified in the scoping phase of the assessment.

2.3.3 Interviews

Interviews are a specific form of survey research that can be used to collect primary data for SIA. Interviews can range from unstructured conversations to highly structured formal questionnaires. Structured interviews are interviews where questions are standardized so that differences between the questions asked in interviews are minimized (Bryman & Bell, 2016; Walliman, 2006). In contrast, unstructured interviews are interviews with a flexible format where the interviewer may have topics or guides for questions but the discussion is more open ended and subject to the choices of the interviewer and interviewees. Branch et al. (1984) recommend a semi-structured format for interviews in SIA. Semi-structured interviews contain structured and unstructured sections (Bryman & Bell, 2016; Walliman, 2006). The advantage of semi-structured interviews is that the interviewer can adapt the format and sequence of questions based on the kind of information they are receiving from the participant and can engage the participant to expand on answers and provide further information on topics that were not initially in the interview guide (Branch et al., 1984). At the same time, the structured components allow comparison between respondents and help to ensure that nothing important is omitted from the interview.

Interviews can be administered either face-to-face or via telephone or other electronic means. Face-to-face interviews in SIA can achieve high response rates because respondents may be willing to speak about high-interest topics such as development (Branch et al., 1984). Since the interviewer is present with the respondent, there is an opportunity for the interviewer to observe the physical environments that respondents reside in, which provides additional social context for the SIA. Furthermore, face-to-face interviews can address complex topics and issues in depth. However, face-

to-face interviews also have several disadvantages. First, they are resource and time intensive (Branch et al., 1984; Bryman & Bell, 2016; Walliman, 2006). Second, respondents may not feel comfortable answering questions on sensitive topics in person because of worries about potentially being judged or other negative repercussions (Pickard et al., 2016). Another disadvantage is that participants may not be receptive to being interviewed by strangers from outside of their community which may result in higher non-response rates (Branch et al., 1984). Telephone interviews can be substantially cheaper than face-to-face interviews (Branch et al., 1984; Bryman & Bell, 2016; Walliman, 2006). Telephone interviews can also be less time-consuming than in-person interviews, so a greater number of telephone interviews can be conducted with the same amount of time and money (Brach et al., 1984). It is recommended that potential participants be notified in advance about the purpose and details of the interview (Branch et al., 1984; Bryman & Bell, 2016; Walliman, 2006). All types of interviews should be conducted by researchers who are trained in the methodology of interviews so that the assessor avoids biasing the responses. Researchers should also ensure that respondents are selected through proper sampling methodologies.

Even a small number of interviews can be beneficial in developing a baseline profile for a community. Sanders (1960) and Savatsky & Freilich (1977) advocate that interviews focused on gathering information from community leaders can assist in developing a community profile in a cost-effective manner. Conducting interviews with community leaders allows for cost-effective analysis of social interactions, quality of life, perception of social change, and life styles (Savatsky & Freilich, 1977). Sanders (1960) argues that experience has shown that community leaders have more knowledge about the community since they are accustomed to thinking about the community in a broader context. However, it takes time and effort to identify community leaders. Also, the leaders do not necessarily represent all important social divisions within a community. Therefore, through interviews with leaders, subleaders of social divisions can be identified to fill any data gaps and to verify information (Sanders, 1960). Participant responses can then be compared to known information about the community and any apparent discrepancies which run counter to expectations can be examined through further interviewing (Savatsky & Freilich, 1977).

Another form of interview that is more cost-effective and efficient than individual interviews is a group interview or meeting in which multiple respondents are interviewed simultaneously. Group interviews can be used for exploratory, pretest, or triangulation purposes (Frey & Fontana, 1991). Such interviews can be a rich source of information on community values and expectations of residents. However, the information gained cannot be assumed to be representative of the entire community and responses depend on the participants that are present in the group (Branch et al., 1984; Frey & Fontana, 1991). Group interviews typically use different methodologies than individual interviews and researchers must be sensitive to group dynamics (Frey & Fontana, 1991). Additionally, there are logistical issues such as timing and location that need to be considered for a group interview to be administered.

2.3.4 Field trips and observation

Branch et al. (1984) note that field trips and observations are one of the principal ways to obtain information on the description of the existing environment. Observing a community can provide direct information about how a community organizes itself, the conditions of housing and buildings, recreational facilities, and how community events and meetings are organized. Appropriate field trips are determined by several factors including: 1) the objective of the assessment method; 2) the role of the field trip within the assessment; 3) the information requirements of the specific assessment; and 4) information gathered from other sources (Branch et al., 1984). Field trips can be combined with other sources of data collection, such as surveys and interviews, to be more effective (Branch et al., 1984; Bernard, 1998).

Field trips and observations are a beginning step in ethnographic and cultural studies that can help researchers identify and guide relationships with community members and reveal what is deemed to be important in leadership, politics, social interactions, and other areas (Kawulich, 2005). Field trips provide the researcher an opportunity to collect different types of data and help facilitate involvement in sensitive activities (Bernard, 1998). Additionally, observing communities can help researchers to develop questions that are culturally relevant and appropriate (Bernard, 1998).

Field trips require sufficient planning and preparing to be effective. Researchers should familiarize themselves with the geography of the study area and important players in the communities, determine appropriate sampling and surveying methods in the field, and notify leadership in the community (Branch et al., 1984). Field work can include interviews with local officials, influential community members and other knowledgeable community members. Methods for organizing observations, perceptions, and interview results should be determined in advance.

There are limitations to observations and field trips as a tool for data collection. Researchers must understand how their own personal characteristics such as ethnicity gender, class, and theoretical approach may affect their observations, analysis and interpretation and also affect how others behave in their presence (DeWalt & DeWalt, 2002). Access to different bodies of information depends on how well the researcher is trusted and accepted within the community (Kawulich, 2005). Additionally, field work and observations may only provide limited detailed information on socio-economic variables and would have to be supported by other methodologies to collect additional information.

2.3.5 Sources of Data for Aboriginal Communities

Although some of the concerns of Aboriginal communities regarding the impacts of projects on the physical environment may be similar to those of non-Aboriginal communities (BC MAL, 2007), Aboriginal perspectives towards land and the economic, social, cultural, heritage, and spiritual impacts of development may not be captured or addressed appropriately in assessments conducted from non-Aboriginal perspectives. Accordingly, Aboriginal values and concerns should be discussed and assessed separately from those of non-Aboriginal people. Not only are there major differences between Aboriginal and non-Aboriginal communities, there may also be substantial differences within a single Aboriginal community. For example, there can be differences between on-reserve and off-reserve Aboriginal populations (Bruce et al., 2010). However, as discussed earlier, there is little guidance available on acquiring Aboriginal-specific information for EA and SIA.

Federal, provincial, and territorial governments are engaged in the collection and analysis of Aboriginal data in Canada; however, most of these processes collect administrative data and do not gather primary socio-economic information (Saku, 1999; Swimmer & Hennes, 1993). Broad national and regional surveys can be very helpful in obtaining information at large scales from Aboriginal and non-Aboriginal communities across the country and there is an abundance of large scale surveys administered to the general population that may be used to obtain these data. For example, the Centre for Education Statistics (2010) conducted a scan on federal education data sources and found 15 major sources of data that included Aboriginal identifiers and asked questions about education. Three of these surveys focused solely on Aboriginal peoples: the Aboriginal Children's Survey; the Aboriginal Peoples Survey (APS); and the Census of the Population (Canadian Census). While these larger sources of data provide some information on Aboriginal peoples, they are administered at the individual level rather than at the household level, and the level of detail on Aboriginal identifiers such as Aboriginal ancestry, Aboriginal identity, Registered or Treaty Indian Status, and Indian Band or First Nation membership, differs between these surveys (Centre for Education Statistics, 2010). As such, these data sources, depending on the specific Aboriginal identifiers obtained, may not provide sufficient data at the community-level to constitute useful data for a baseline community profile for the purposes of an SIA.

The Canadian Census and the APS, developed and administered by Statistics Canada, are often relied upon because they provide the most comprehensive information on Aboriginal communities in Canada (Saku, 1999; Swimmer & Hennes, 1993). The Canadian Census is one of the few surveys that gathers information for on-reserve and off-reserve Aboriginal people and has been a major source of information on the characteristics of Aboriginal communities (Wright, 1993). The APS was designed to gather detail on certain socio-economic aspects such as education, economic participation, sources of income, financial well-being, physical and mental health, and sense of belonging (INAC, 2017). However, the APS includes only Aboriginal peoples living off-reserve.

There are several other broad surveys that collect information from First Nations in Canada. The First Nations Information Governance Center (FNIGC) administers three

surveys to people of all ages living on-reserve and in northern First Nations communities: 1) the First Nations Labour and Economic Development Survey, which will be administered for the first time in 2018; 2) the First Nations Regional Early Childhood, Education, and Employment survey, for which a full report was released in 2016; and 3) the Regional Health Survey (RHS) (INAC, 2017; FNIGC, 2017). In addition to these surveys, the Assembly of First Nations (AFN) administers the AFN School Survey, which is targeted towards gathering information from each First Nation school in Canada (AFN, 2013). The AFN School Survey interviews directors of education or principals but does not collect information directly from the students themselves.

The Canadian Census and the APS tend to focus on gathering nation-wide information, while the needs for Aboriginal data in SIA are frequently community based (Swimmer & Hennes, 1993). Several issues arise with the reliance on larger survey data to profile individual Aboriginal communities for SIA. First, since most data regarding Aboriginal communities in BC and Canada are collected through regional and national surveys, the data exist in aggregate form (Saku, 1999; Bruce et al., 2010; Swimmer & Hennes, 1993; Wright, 1993). The *Statistics Act* requires that information be kept confidential, and for communities with small populations, data are suppressed or rounded to hide individual identities (Saku, 1999). Confidentiality constraints also affect other surveys administered to Aboriginal groups. As such, community characteristics for SIA are often estimated based on larger databases from regional or national surveys or studies; this may not provide an accurate representation of smaller communities and their profiles. Another way larger survey datasets preserve individual confidentiality is by reducing the level of detail in the data by aggregating data into less detailed categories (Wright, 1993). The removal of detail is not ideal and may limit the analysis that can be performed. As Swimmer and Hennes (1993) note in their overview of government data for the use of Inuit statistics, researchers and Inuit organizations have to conduct surveys themselves because government surveys are not adequate to meet their data needs.

A second major issue with large-scale surveys is that non-Aboriginal and Aboriginal people may differ in their interpretation of questions within surveys that target the general population, such as the Canadian Census (Swimmer & Hennes, 1993). This

issue can be most prominently found in questions about work, unemployment, education, income, and family. Many Canadian Census questions emphasize the wage economy and market society where the values of non-market activities such as subsistence hunting, fishing, and gathering are poorly accounted for (Saku, 1999). These activities may also not be perceived to be income-generating activities, resulting in an inaccurate representation of economic life. Additionally, the quantification of non-market activities in monetary terms is difficult and may not be accurate. Swimmer & Hennes (1993) also observe that definitions in the Canadian Census for work, income, housing, and family are conceptually different from Indigenous definitions of these concepts. To properly recognize significant differences between Aboriginal versus non-Aboriginal populations, data should be properly disaggregated from the overall results to local and regional populations (The Firelight Group, n.d.). However, there is a need to find a balance between collecting data that are relevant and meaningful in the Aboriginal context while allowing for appropriate comparison with non-Aboriginal people and communities for planning purposes (Bruce, 2010; Saku, 1999). Additionally, translating the Canadian Census into local languages may change the meaning of the questions because the context of certain terms may differ substantially between different languages (Saku, 1999).

The third issue with the reliance on larger surveys for data on Aboriginal communities is that there is often a high rate of non-response from Aboriginal communities living on-reserve (Saku, 1999), which may lead to thousands of individuals being missed by the Canadian Census or other larger-scale surveys. However, in recent years, there has been a rise in census participation by Aboriginal communities, including communities on reserve (Lum, 2016). In 1986, 136 Aboriginal reserves refused to participate in the Candian Census, whereas in 2016 only 14 Aboriginal communities were incompletely enumerated. Between 2011 and 2016, Aboriginal participation in the Canadian Census increased from 89.9 percent to 92.5 percent. The higher rate of participation may be attributed to increased recognition of the importance of data for planning purposes, whereas in the past Aboriginal communities were not seeing benefits from such research and statistical analysis (Lum, 2016).

Finally, another major issue with the use of national, regional, or special surveys is variability in the timing of data collection and reporting (Bruce et al., 2010, Gramling, 1992). The timeframe (frequency of data collection) and the release date of the data into the public domain vary with each survey. For example, the census is collected every five years, while the more targeted surveys such as the First Nations Regional Early Childhood, Education, and Employment survey do not specify a timeframe. Since different data sources provide information on different social variables, comparing and analysing statistics across surveys administered at different times may result in inaccuracies (Gramling, 1992). For the purposes of SIA, in order to overcome timing issues, proponents may choose to use only the most recently available data, which may contain gaps and may not provide information on trends.

In addition to national and regional surveys, data on Aboriginal communities may be available in public databases. In 2014, Indigenous and Northern Affairs Canada developed a new online system called the Aboriginal and Treaty Rights Information System (ATRIS) intended to map the location of Aboriginal communities and display data pertaining to potential or established Aboriginal or treaty rights (INAC, 2016). ATRIS obtains information from existing sources and information systems resulting in the database being incomplete with severe data gaps. Truesdale (2014) argues that, due to these gaps, the system cannot be relied upon by governments or proponents. Additionally, since the system only contains information pertaining to rights, it does not include data on socio-economic factors within each Aboriginal community.

Despite the issues with using current sources of information about Aboriginal communities for SIA, the continuation of data collection through these means is crucial. Currently, there is insufficient detailed information on Aboriginal communities to properly assess the potential socio-economic impacts of a proposed project. This is a prominent issue for CEA as well because the data requirements to properly assess cumulative effects from past, present, and foreseeable future projects are substantial. Proponents may rely on existing data sources for SIA and CEA; however, as described above, community-specific information is lacking. Additionally, the current practice for many SIAs is for proponents to collect information on a project-by-project basis to meet the

specific requirements of a particular EA process. This level of detail may not be available through the data sources described in this section.

2.4. **Methodologies for Obtaining Traditional Ecological Knowledge**

Although there is little available literature and guidance on collecting socio-economic baseline information from Aboriginal communities, there is a substantial body of literature on how to collect and use traditional ecological knowledge (TEK) in resource management and in environmental assessment. TEK is not static, and due to its dynamic nature it is difficult to define (MVEIRB, 2005; Berkes, 2008). For this report, TEK is defined as,

> *[A] cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of living beings (including humans) with one another and with their environment* (Berkes, 2008)*.*

TEK has also been described as being much more than just a body of knowledge and is instead a "way of life" (McGregor, 2004). There is a difference between TEK and an Aboriginal community's socio-economic conditions. Socio-economic data represent the historic, present, and future status of social, economic, cultural, educational, and health conditions of an individual and community. Therefore, guidance on collecting TEK may not be applicable or appropriate for gathering socio-economic information because they are different kinds of knowledge, and the goals of the research and the information being sought are conceptually different.

While much of the literature on TEK is oriented toward providing guidance on the applicability and use of TEK in resource management (Berkes, 2008; Nadasdy, 1999; Usher, 2000), guidelines on best methods to collect TEK in collaboration with Aboriginal communities could apply to SIA. Similar methods to those described in the previous section can be used in gathering TEK, with modifications to suit the information sought and the individuals and communities involved. Since TEK is commonly passed down orally from one generation to another by elders, many guidelines state that interviews

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are the most appropriate method to investigate traditional knowledge (Armitage & Kilbun, 2015; Garvin et al., 2001; Huntington, 2000; Simmons et al., 2012). Focus groups or workshops are another means to provide avenues for guided discussion on a given subject within TEK (Armitage & Kilbun, 2015; Huntington, 2000). Questionnaires and surveys may not be suitable for research on TEK, because they may be too restrictive in the language and context used (Armitage & Kilbun, 2015; Huntington, 2000). Additionally, many guidelines suggest concentrating some effort on understanding which community members should be interviewed, with many also recommending to begin with community leaders and elders (Armitage & Kilbun, 2015; Garvin et al., 2001, Simmons et al., 2012). However, researchers should not rely solely on elders as a source of information because other community members may have specialized knowledge through their own experiences, and may be able to provide information about the communication of TEK from generation to generation.

Chapter 3.

The Metlakatla Nation and Cumulative Effects Management

3.1. Metlakatla First Nation

The Tsimshian, a group of culturally and linguistically related peoples, live in northwestern British Columbia in the area of the Nass and Skeena rivers (Halpin & Seguin, 1990). The Coast Tsimshian, one of the major Tsimshian groups, is comprised of two distinct First Nations: Metlakatla and Lax Kw'alaams (Metlakatla Governing Council, 2015). The main Metlakatla community, called Metlakatla Village, is located roughly 7 kilometers northwest of the city of Prince Rupert and 25 kilometers south of the home community of Lax Kw'alaams. Metlakatla First Nation's traditional territory spans approximately 20,000 square kilometers of land and sea in the Great Bear Rainforest. The traditional territory ranges from Hecate Straight in the west to where the Kitnaywakna River and Zymoetz River meet in the east, and extends north to the headwaters of the Sutton River and south to just below Klewnuggit Inlet along Grenville Channel (Metlakatla Governing Council, 2015).

As of May 2017, there were roughly 950 registered members of the Metlakatla First Nation, with approximately 100 members residing in Metlakatla Village and 850 members living off-reserve (INAC, 2017). Roughly 300 individuals of the off-reserve membership reside in the city of Prince Rupert (Metlakatla Governing Council, 2015). Due to the limited participation by Metlakatla members in the Canadian National Household Survey in 2011, there is little publically available demographic data on the Metlakatla community (INAC, 2017). However, Metlakatla managers have observed a changing demographic in their membership and a decline in their on-reserve population (Metlakatla Governing Council, 2015).

Historically, Metlakatla people harvested resources from their traditional territory based on seasonal availability (Halpin & Seguin, 1990). Metlakatla relied mainly on marine and freshwater resources for their traditional and cultural activities and livelihood (Metlakatla First Nation, n.d.). From the end of the winter through to spring, members harvested eulachon and seaweed. Summer was dedicated to harvesting herring spawn, fishing for salmon, and collecting summer berries. Members processed and preserved salmon in the autumn and in the winter they harvested shellfish and carried out cultural activities such as weaving and carving. Metlakatla continue to carry on this seasonal pattern of traditional and cultural activities to the extent that they are able to do so (Metlakatla First Nation, n.d.).

The Metlakatla Governing Council (MGC) is the primary governing body that oversees a number of services within the Metlakatla First Nation to ensure that their members have access to healthcare, education, social development, and recreation. The individual departments within the MGC administrative body are responsible for program planning and implementation under their specific mandates. The Metlakatla Development Corporation (MDC) is the business arm of the Metlakatla First Nation that is responsible for developing economic strategies and identifying business opportunities that are consistent with MDC principles of sustainable development and the social goals of Metlakatla First Nation (Metlakatla First Nation, n.d.).

The health and vitality of Metlakatla members and their culture depends on the well-being of the lands and waters within their territory (Metlakatla First Nation, n.d.). Metlakatla assert that as stewards of the lands and waters, they are committed to maintaining the integrity of the natural resources in their territory by implementing management and planning programs throughout their territory (Metlakatla First Nation, n.d.). Metlakatla Stewardship Society (MSS) and the Metlakatla Stewardship Office (MSO) are the authorities responsible for natural resource decision-making (Metlakatla First Nation, n.d.). The MSS Board provides direction to the operation of the MSO through establishing the budget and strategic planning (Metlakatla First Nation, n.d.).

Through the MSS and the MSO, Metlakatla have developed and implemented land and marine use planning initiatives that provide guidance on how natural resources

are managed (Metlakatla First Nation, n.d.). Under their land use planning initiatives, Metlakatla have established 28 conservancies in their traditional territory, each with specific management goals and objectives. In addition to implementing internal programs, Metlakatla also collaborate with the Province of BC pursuant to a Strategic Land Use Planning Agreement (SLUPA), and have worked as part of the Coastal First Nations through the "New Relationship" initiatives to develop a Land and Resource Protocol Agreement (LRPA) with the province (Metlakatla First Nation, n.d.). Metlakatla are in the process of developing a new marine use planning initiative based on Marine Use Zones that designate specific areas for appropriate uses. Metlakatla also engage with the province and other First Nations on marine planning initiatives such as the Marine Plan Partnership for the North Pacific Coast (Metlakatla First Nation, n.d.) According to the MSO, these collaborative strategies have helped to equip Metlakatla with the ability to manage the marine and terrestrial resources within their traditional territory in accordance with their values while exploring opportunities to engage in sustainable development activities (Metlakatla First Nation, n.d.).

3.2. **Development in Metlakatla Traditional Territory**

The BC Ministry of Jobs, Tourism and Skills Training (BC JTST) reported that as of December 2016, there were 65 major projects proposed or underway in the North Coast region of BC with a total capital cost of $218.5 billion dollars (BC JTST, 2016). Fifty-two of these projects were within or close to Metlakatla Traditional Territory. The BC JTST Major Project Inventory only reports on projects with capital costs of over $15 million (CAD) and does not include projects or development with lower capital costs such as forestry, small hydroelectric plants, mining exploration, or oil and gas drilling. In addition to BC JTST, other federal and provincial agencies have registries of projects that require an EA, permitting, or other regulatory process, including: the Canadian Environmental Assessment Agency (CEAA), the National Energy Board, the Major Projects Management Office of Natural Resources Canada, the BC Ministry of Energy and Mines, and the BC Environmental Assessment Office (BC EAO).

Nineteen of the projects listed in the North Coast BC JTST Major Project Inventory that are proposed or located in or close to Metlakatla Territory are directly

linked to liquefied natural gas (LNG) production, transportation, or export. In February 2012, the BC provincial government adopted an LNG Strategy that focussed on expanding LNG extraction, production, and export. In the strategy, the Province asserted the goal of having three LNG plants in operation by 2020 (Province of BC, 2012). If the strategy's goals were met, natural gas production in BC would approach 3 trillion cubic feet per year by 2020. The North Coast region of BC is a focus for LNG development. Proposed LNG developments within the Prince Rupert area, Stewart, and Kitsault are within Metlakatla Traditional Territory and have the potential to impact the natural resources and the Metlakatla way of life. While Kitimat is outside of Metlakatla Traditional Territory, LNG facilities proposed in the Kitimat region have potential impacts on the Metlakatla First Nation through shipping routes.

3.3. Overview of the Metlakatla Cumulative Effects Management Program.

In response to recent and proposed industrial development, in July 2014 Metlakatla First Nation initiated a Cumulative Effects Management (CEM) program within Metlakatla Traditional Territory. The CEM program is a values-based framework that is founded on Metlakatla values, priority valued components (VCs), indicators, and management triggers and actions (Compass Resource Management Ltd., 2015a). The program aims to track changes to priority VCs, monitor and mitigate impacts, and implement strategies to manage cumulative impacts. Metlakatla's approach to CEM aims to inform decisions at two levels: 1) at the individual project scale via federal and provincial EA processes and 2) at a territory-wide scale to inform marine, land, and community planning and establish key considerations for future development (Compass Resource Management Ltd. 2015a; Metlakatla First Nation, 2015).

The CEM program defines values as things that are important for maintaining the integrity of Metlakatla members, Metlakatla way of life, and the natural environment (Compass Resource Management Ltd., 2015a). Valued components are elements of the human and natural environment that will be measured and monitored to protect Metlakatla values (Metlakatla First Nation, 2015). The CEM program uses two types of indicators to monitor the status of valued components: condition indicators and stressor

indicators. Condition indicators are metrics used to measure the overall status of a VC. Stressor indicators are metrics that measure changes in factors that may impact condition indicators. These indicators for each VC then inform management triggers. Management triggers are quantitative thresholds of change in the condition of a VC that assist in interpreting the significance of levels of change of a value over time and responding appropriately. These triggers define tiered management zones such that when a VC is within a particular zone, an associated set of management responses and actions is applied to it. Management actions are strategies and policies that have been specifically developed to maintain or restore the condition of a VC. Figure 2 describes the tiered management trigger and management zone system developed for the CEM program.
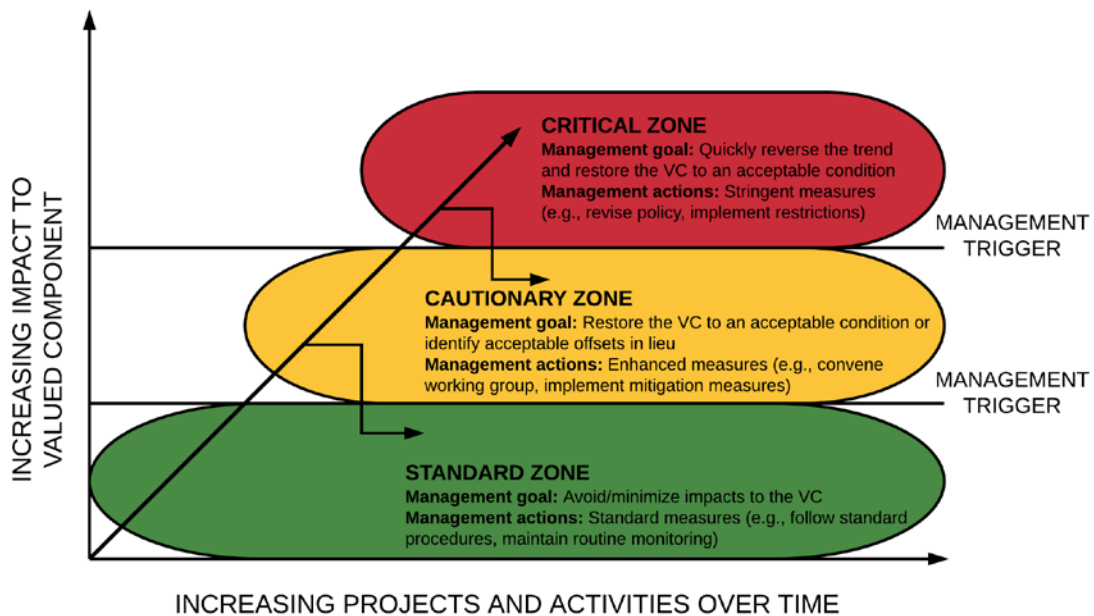
Figure 2: **Tiered trigger and management zone approach to managing changes to VCs in the Metlakatla First Nation CEM program (Metlakatla First Nation, n.d.).**

Note: Adapted by Katerina Kwon (2017) from *Metlakatla Cumulative Effects Management: Phase 1 Executive Summary,* by Metlakatla First Nation (2015). Retrieved from: http://www.metlakatla.ca/sites/default/files/CEM%20Phase%201%20Executive%20Summary%205June15.pdf

Maintaining the condition of a VC in the green, "standard" zone is preferred and within this zone management consists of applying standard procedures and routine

monitoring. The "cautionary zone" triggers restorative action. The red zone means that the condition of a VC is critical and requires stringent measures to quickly restore the VC to a preferred zone, if possible. These tiered triggers assist in addressing uncertainty and incorporate a precautionary approach (Metlakatla First Nation, 2015).

The design and development of the CEM program is taking place in two phases. Phase 1 focussed on the development of the CEM values foundation, including the identification of priority values, associated indicators, comparison benchmarks, and preliminary management triggers. Working with Metlakatla managers and community members, the research team determined that the program would track values within five pillars: economic prosperity, social/health, environment, cultural identity, and governance. Within these pillars, ten priority values and 12 indicators were selected for Phase 2, the pilot implementation project (Metlakatla First Nation, 2015).

Table 1: **List of VCs and Condition Indicators for each VC (Metlakatla First Nation, 2015).**

Pillar	Value	Indicator(s)
Environment	Butter clams	Population density / contaminant levels
	Chinook salmon	Spawner abundance Critical juvenile habitat
Cultural Identity	FSC / Cultural Activities	Participation rates
Economic Prosperity	Economic self-sufficiency	High school completion rate
	Wealth distribution	Income equality ratio
Social and Health	Access to health services	Ambulatory care sensitive conditions rate
	Chronic health conditions	Diabetes prevalence Hypertension prevalence
	Adequate housing	Individuals in core housing need
	Personal safety	Crime severity rates & Perception of safety levels
Governance	Ability to Steward	Stewardship ability

Phase 2 of the CEM program includes collecting data on current conditions of the socio-economic and environment VCs. Metlakatla will establish tiered management triggers and implement monitoring, mitigating, and management strategies for each VC. As development in the traditional territory progresses and circumstances change,

Metlakatla will reassess priority VCs and indicators that will be monitored through the CEM program.

3.4. **Metlakatla Membership Census**

The need for a process to collect community-specific baseline socio-economic data was identified in phase 1 of the CEM program, because the CEM project managers determined that the available primary socio-economic data specific to the Metlakatla community were not sufficient. For example, although the National Household Survey gathers demographic, social, and economic information about people in Canada, including Aboriginal peoples, it has obtained little demographic information about Metlakatla members due to lack of participation from the First Nation in the NHS (INAC, 2017). In the next chapter I discuss the design and administration of the MMC, which was developed to collect the necessary baseline socio-economic data for the CEM program.

Chapter 4.

Design and Administration of the Metlakatla Membership Census

This chapter describes the methodology used to design and administer the MMC (Gupta & Willis 2016), the administration process, and the general results of the first two annual administrations of the census, in 2015 and 2016. The chapter begins with a description of the design process for the different elements of the MMC questionnaire. Next, I provide an overview of the initial survey administration plan for 2015. Then I describe the actual administration process for MMC 2015 and how it deviated from what was initially planned. This is followed by a discussion of the lessons learned from administering MMC 2015 and how these lessons were incorporated into the second iteration of the MMC in 2016. The chapter concludes with an overview of the data collected from MMC 2015 and MMC 2016.

4.1. Designing the Metlakatla Membership Census Questionnaire and Administration

The MMC was primarily proposed to support the data needs of the CEM program but it also presented an opportunity for Metlakatla department managers to obtain information from the membership to inform other policies and programs. The MMC was designed to be administered as an annual census initially for the first few years, with the option in subsequent years to reduce the frequency of iterations, or administer only parts of the census survey, based on the ongoing data requirements of the CEM program and Metlakatla managers.

The target population for the MMC, defined by the geographic scope of the CEM program, was all members of the Metlakatla First Nation of 15 years of age and over,

living within the Metlakatla Traditional Territory. For the purposes of the MMC, youth were defined as people from 15 to 24 years of age; adults were defined as those from 25 to 64 years of age; and elders were defined as those of 65 years of age and over.

The process of designing and developing the MMC began with a literature review to determine best practices for general survey methodology and specific practices for using questionnaires in small Aboriginal communities. While there is a substantial body of literature on survey design and methodology, literature on conducting surveys in Aboriginal communities is limited. The review of general survey methodology is described in Chapter 2 of this report. To learn specifically about surveying Aboriginal communities, the research team reviewed three First Nation community surveys. These community surveys assisted in determining various elements of survey design and administration such as: appropriate structure and phrasing of questions, length of the questionnaire, methods to recruit participants, data collection methodology, and incentives. The three community surveys reviewed were:

1. Tsawwassen First Nation Community Survey 2008 (Mustel Group, 2008)

2. Stellat'en First Nation Membership Survey 2014 (Stellat'en First Nation & The Firelight Group, 2014)

3. Curve Lake First Nation Community Survey 2014 (Curve Lake First Nation, 2014)

Table 2:   **Survey Design Components of Other First Nation Community Surveys (Adapted from Gupta & Willis, 2016).**

	Tsawwassen First Nation Community Survey	Stellat'en First Nation Membership Survey	Curve Lake First Nation Community Survey
Data collection method	Personal interviews, with option for telephone interviews	Self-administered, paper and online version of questionnaire	Self-administered paper questionnaire
Survey Length	90 minutes	12 pages, 43 questions	16 pages, 40 questions
Recruitment Methods	Mailed invitation letter and called all members, newsletter	Emails, newsletter, website	Emails, website, flyers, community meetings
Distribution Methods	Telephone and mail-out surveys	Mail-out surveys	No information available
Incentives	$50/interview	$25 gas card/interview plus early completion prize draw for $500	Prize draw, including for an Apple iPad

Seven other surveys not specific to a single Aboriginal community were also reviewed for their design and administration processes:

1. Aboriginal Peoples Survey 2012 (Statistics Canada, 2012)

2. National Household Survey 2011 (Statistics Canada, 2011)

3. Regional Health Survey 2008 (FNIGC, 2008)

4. Canadian Community Health Survey 2014 (Statistics Canada, 2014)

5. North Coast Tsimshian Health Survey 2013 (Metlakatla First Nation, 2013)

6. Calgary Citizen Satisfaction Survey 2015 (City of Calgary, 2015)

7. Safer Calgary Community Survey 2004 (HarGroup Management Consultants, 2004)

This combination of literature, background material and other surveys was used to guide the sample design, questionnaire design, and data collection methodology for the MMC.

In addition, recommendations for obtaining TEK were applied in the design and planning of the MMC. These recommendations include focused workshops and interviews with elders, which were used extensively in the planning phase of the MMC. Workshops were conducted with Metlakatla department heads to understand precisely what types of data were missing and what would be useful, in addition to understanding the nuances of the community itself. Elders from the community were informally interviewed to obtain an understanding on specific topics such as cultural activities and the importance of language. Using these methodologies recommended for obtaining TEK in the planning phase gave researchers the understanding needed to design a questionnaire that fit Metlakatla data requirements and to administer the MMC in a culturally appropriate manner. However, with regards to the collection of the socio-economic data, TEK guidelines were deemed not appropriate for this purpose (see section 2.4 of this report). One of the main reasons is that TEK guidelines focus on interview approaches, which is limiting because the interview method is not the best approach for collecting quantitative or comparative data (Armitage & Kilbun, 2015).

The process of designing the MMC can be divided into four components: sample design, questionnaire design, data collection methodology, and MMC administration work plan. A major choice in the first component was the decision to use a census-type survey rather than a survey of a smaller sample of the population. Questionnaire design included determining aspects such as questionnaire length, structure and layout, question formatting and the questions themselves. Data collection methodology included the survey platform, data collection method, and incentives. The fourth component, the census administration work plan, is a set of guidelines to help researchers and MMC administrators effectively implement the MMC.

4.1.1 Sample Design

There are two main kinds of surveys: sample surveys and censuses (Statistics Canada, 2010). Censuses collect data from an entire defined population, whereas sample surveys collect data from a small portion of the population that ideally represents the broader population. There are advantages and disadvantages of both survey types and the decision to use one or the other depends on the population being surveyed, the goals of data collection, and the resources available to implement the survey.

A sample survey can be a more economical method of data collection than a census. Since sample surveys are implemented on a smaller scale, they are also easier to control and monitor. However, because sample surveys only collect data from a fraction of the population, proper sample frames and stratification need to be determined in order to yield results that accurately reflect the characteristics of the population (Parker, 2011; Statistics Canada 2010). On the other hand, censuses can be costly and time-consuming, but they may more accurately capture data on the entire population than a sample survey does and they can provide better demographic data across the population (Parker, 2011). Censuses can be the preferred data collection methodology for small population sizes or when data are required for small geographic areas (Statistics Canada, 2010).

The census method was chosen for the Metlakatla survey instead of sampling a portion of the population because, for minimal additional cost and resources, data for the full Metlakatla population in the traditional territory could be collected. The Metlakatla population was relatively small and the primary goal of the project was to collect socio-economic baseline data for the CEM program, which has a clearly defined geographic scope – the Metlakatla Traditional Territory. In SIA, ideally, the survey population should encompass the full population that could be affected (Finsterbusch, 1983), which in this case would be all Metlakatla members residing in the traditional territory. Limiting the defined population to this geographic scope may avoid skewing results for some questions that may not apply to members living outside the territory such as cultural activities and education data. Additionally, the MMC targeted members of the age 15 and over based on the information needs of the CEM program. The Metlakatla First Nation population within the traditional territory represents a small target population that

is predominantly located in the Prince Rupert region. The defined population and the geographical location of the members made it feasible to contact survey the entire population. Additionally, the Metlakatla department managers suggested that promoting the project as a census would help communicate the goals and importance of the CEM program and could create a feeling of responsibility for members to participate in the MMC and the CEM program as a whole. Due to the types of data required for the CEM program, the research team determined that the census would collect more relevant data if administered at the individual-level rather than at the household-level.

The research team also decided that a single combined survey that collected a broad range of socio-economic information, rather than multiple topic-specific surveys, would be the most appropriate approach for the Metlakatla census, for the following reasons (Compass Resource Management Ltd., 2015b.). First, the process of developing, administering and interpreting a combined census survey could improve coordination and communication between departments. Departments would be able to align objectives, share knowledge and understanding of issues facing the community, and aid with decision-making. Second, a combined census survey would offer a consistent methodological approach, in that data would be collected consistently through one medium, allowing uniform data collection across topic areas and years, and easier interpretation of the results. Third, collecting data over a broad range of topics would provide the opportunity to compare results across topics and analyze relationships between variables. Finally, a single combined survey was considered to be a more efficient use of time and resources than multiple topic-specific surveys. A single community survey would also reduce the number of times each respondent would be called upon to answer survey questions, which could result in higher response rates.

4.1.2 Questionnaire Design

A modular format was selected for the MMC so that Metlakatla managers could tailor the content of components of the questionnaire to meet their information needs, as well as the information requirements for the CEM program (Compass Resource Management Ltd., 2015b). The modular format consisted of a base module containing demographic, economic, and education questions, accompanied by additional modules

with questions on other topics that could be added or removed in any particular iteration of the census depending on whether the specific data were required or not for that year. Copies of the questionnaires used for MMC 2015 and MMC 2016 can be found in Appendices A and B, respectively.

The modules designed specifically for the CEM program included Cultural Activities, Economic Prosperity, and Health. Additional modules designed for other individual Metlakatla department needs included Crime Perception, Land Code, Governance, and Communications. While Governance is also a pillar under the CEM program, it was included in the MMC as a general module and not a CEM-specific module. The reason for this is that the VC for governance in the MMC is "ability to steward" and the indicator is "stewardship ability." This indicator could not be reliably measured with a census survey. Instead, the Governance module of the questionnaire included general questions pertaining to respondent's perceptions of Metlakatla governance.

For the Cultural Activities Module, the 2015 census focused on individual levels of effort and participation. The indicators for the FSC participation VC under the Cultural Identity pillar were: level of effort, youth participation and household participation. Since the MMC was administered on an individual level and not a household level, questions regarding the third indicator for FSC participation, household participation, were not included.
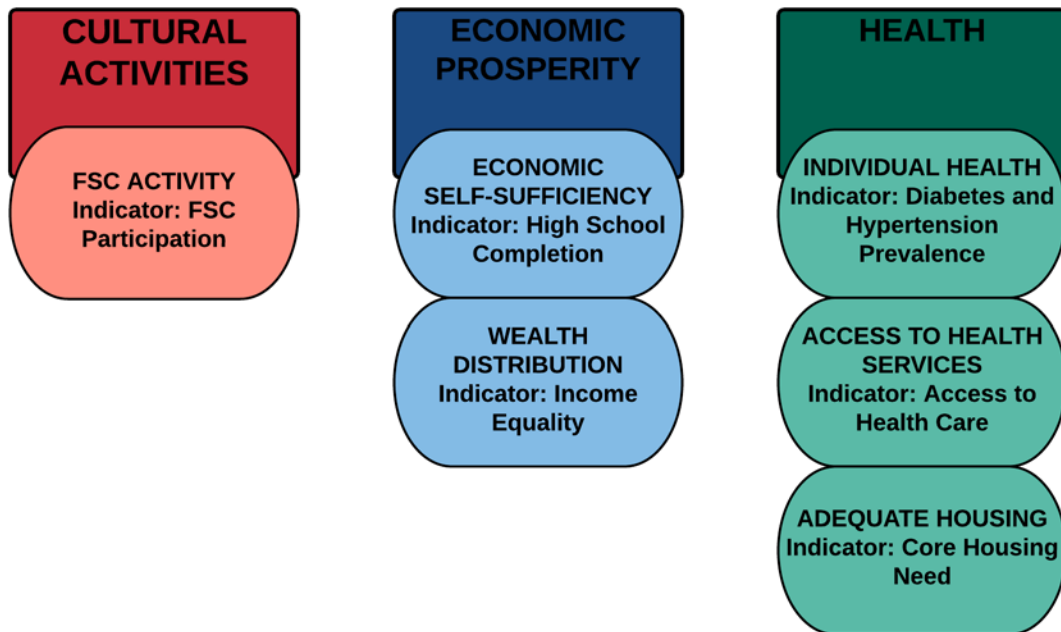
Figure 3: **Six priority values under three of the five pillars for the CEM program that were addressed in the MMC (Gupta and Willis, 2016).**

Designing survey questions is a crucial aspect of the data collection process (Statistics Canada, 2010). Appropriate methods should be used in designing the questionnaire including determining which questions to ask, and how the questions should be structured and formatted. Whenever possible, it is best to develop questions based on surveys that have been tested and administered successfully (Check & Schutt, 2012). Using tried and tested questions from surveys on similar topics can enhance the robustness of the data and may allow for comparative analysis between data sources (Cloutier and Langlet, 2014). For each MMC module, a database of appropriate and applicable questions from other Aboriginal specific and general surveys was collected.

Table 3:   **Summary of Sources of Questions in the MMC 2015 Questionnaire (Gupta and Willis, 2016).**

MMC 2015 Module	CEM Indicators	Primary Sources
Personal Information	NA	• Curve Lake First Nation Community Survey 2014 • Stellat'en First Nation Member Survey 2014
Communications	NA	Questions provided by the Metlakatla Communications department
Land Code	NA	Questions provided by the Metlakatla Land Code department
Governance	NA	• Curve Lake First Nation Community Survey 2014 • Calgary Citizen Satisfaction Survey 2015
Cultural Activities	• Level of effort • Youth participation rate	Questions were developed through a Food, Social and Ceremonial (FSC) Activity working group meeting and discussions with Metlakatla staff and members
Health	• Ambulatory care sensitive conditions rate • Diabetes prevalence • Hypertension prevalence	• North Coast Tsimshian Health Survey • Regional Health Survey (RHS) 2008 • Canadian Community Health Survey 2014 • Stellat'en First Nation Member Survey 2014
Crime Perception	NA	• Safer Calgary Community Survey 2004 • North Coast Tsimshian Health Survey 2013
Demographics	• High school completion rate • Income equality	• Aboriginal Peoples Survey 2012 • Regional Health Survey (RHS) 2008 • National Household Survey 2011 • Stellat'en First Nation Member Survey 2014
Housing	• Adequate housing	• National Household Survey 2011 • Regional Health Survey (RHS) 2008 • Stellat'en First Nation Member Survey 2014

Since the CEM program is unique to Metlakatla, examples for questions pertaining to some CEM-specific indicators were unavailable from other sources. In these instances, new questions were developed that would gather information required to assess the specific CEM indicator. Once a set of questions for each module was developed, a Metlakatla manager reviewed the questions to select those that would be most appropriate and best suited for their needs.

4.1.3 Data Collection Methodology

Questionnaires can be administered using interview-assisted methods or self-administered methods (Statistics Canada, 2010). The choice of the best method for a particular application depends on the size of the target population, the availability of resources, and the nature of the survey (Gray & Guppy, 2003; Statistics Canada, 2010). As described in Chapter 2, there are advantages and disadvantages of both methodologies, and these were considered in determining which methodology would be most suitable for the MMC. Interview-assisted methods allow the interviewer to personalize questions and probe for more in-depth answers, which can increase the overall quality of the data (Statistics Canada, 2010). However, proper training for interviewers is necessary and conducting interviews of a large number of participants can be expensive and difficult to manage (Walliman, 2006; Statistics Canada, 2010). On the other hand, sensitive information is more frequently and more accurately reported by respondents in self-administered survey modes than in interviews, and self-administered surveys avoid interviewer bias (Floyd & Fowler 2009; Kays et al., 2011; Tournagou & Yan, 2007). The major concern about using a self-administered survey for the MMC was that respondents might misunderstand or misinterpret questions, which would reduce the quality of data compared to interview-assisted methods (Statistics Canada, 2010).

The method of questionnaire distribution for the MMC also needed to be determined. Traditionally, paper-based surveys are more common than on-line or computer assisted surveys (Statistics Canada, 2010), but computer-assisted data collection can be used for both interview-assisted and self-administered surveys. Computer-assisted methods are advantageous because they can combine data collection and data organization, which can make the later stages of the survey process

faster and more efficient (Statistics Canada, 2010). Additionally, the computer-assisted method allows researchers to use complex question structures and logic such as filtering, skip questions, and branching. However, for computer-based methods respondents must have access to computers and know how to use them.

The MMC was administered through a combination of methods to reach as much of the target population as possible. Survey administrators went door-to-door, and if respondents were willing to participate in the survey they were given the option of using either a computer-assisted questionnaire or a paper-based questionnaire. Based on the advice of Metlakatla department managers, survey administrators used iPads and an on-line questionnaire with members who were familiar with the technology, and offered paper questionnaires for members who were not as comfortable using computers (e.g., some elders). If the respondent chose a paper questionnaire, they had the option of completing the questionnaire with the survey administrator present, or completing it on their own time and arranging for it to be picked up at a later date. If the respondent chose the computer-assisted method, the survey administrator provided the iPad and waited until the respondent had completed the online survey. The online survey was also available for respondents to complete on their own computers on their own time. When respondents chose to complete the survey while administrators waited, the survey administrators were available to discuss what the survey was being used for, clarify points, and answer questions. While using mixed methods can improve response rates, the drawback is that different methods can affect the way participants respond to questions (de Vaus, 2002). Therefore, the questionnaire was designed so that structure, order of questions, response choices, and instructions to skip questions were the same in the computer-assisted form and the paper-based form.

4.1.4 Census Administration Plan

The researchers developed an administration plan for the pilot census administered in the summer of 2015. The objective of the plan was to ensure that the process of data collection would be efficient and would achieve a high response rate while still obtaining good quality data. The census administration plan was developed based on recommended methods obtained from academic literature and through

iterative discussions about the details of the administration methodology with Metlakatla department managers. The administration plan was developed as a mechanism for researchers and survey administrators to determine which online survey platform, survey distribution methodology, and incentives would be best suited for the MMV. The administration plan also helped researchers fully understand the tasks and responsibilities and organize a schedule and work plan for the administration time period. In the rest of this section I describe the original census administration plan developed by the researchers, then in the next section I explain how the plan was modified during the administration of the 2015 MMC.

Once the questionnaire was designed, the next major task set out in the administration plan was to hold a census testing workshop with Metlakatla managers and community members in order to pre-test the questionnaire and review the administration plan. The feedback received during the workshop was then incorporated into the questionnaire design and the administration plan. The census testing workshop gave researchers the opportunity to determine how long the census would take to complete on average, whether the questions were phrased and structured properly, and whether the questionnaire was culturally sensitive and appropriate. Researchers also presented details of how the census would be delivered, in order to receive feedback on whether the methodologies chosen would be appropriate and effective within the community. The census testing workshop involved a diverse group of participants in order to obtain input on how the census would be received in the community by different demographic groups, such as youth and elders.

The participant recruitment strategy presented in the administration plan proposed that the target population would be informed of the census and its purpose through emails sent to individual members directly and advertisements on the official Metlakatla Facebook account. The regular community newsletter published by the Metlakatla Communications Department also advertised the MMC and its importance. To stress the need for the MMC and to encourage members to participate, a video was recorded of the Metlakatla Chief describing the CEM program and the value of the data to be collected by the census. This video was distributed in a recruitment email to Metlakatla members. In addition to the initial communications, the administration plan

proposed that all members be sent weekly reminder emails which would: 1) remind members that SFU researchers would be coming door-to-door to administer the census over the following three weeks; 2) provide members with the opportunity to contact SFU researchers to schedule a time to complete the survey and; 3) provide a link to the online survey.

The incentives proposed for participants in the MMC 2015 were prize draws for five $100 gift-cards and six iPad Air tablet computers. This choice of incentives was based on available resources for prize draws, and feedback from Metlakatla managers who confirmed that the proposed incentives were appropriate and would likely be effective. Additionally, community elders who completed the questionnaire would be given a small gift consisting of a package of cookies and tea.

The census administration plan specified that the survey would be administered by two SFU researchers and one Metlakatla field staff member. Each of these survey administrators would pair up with one Metlakatla high school student and go door-to-door with an iPad to survey the members. There were two main reasons for involving students in the census administration: 1) department managers suggested that it would be more likely that members would be open to participate in the census if a Metlakatla member was present, and 2) the students would acquire research experience and it would provide an opportunity for them to be involved with a Band initiative. Two of the census administration teams would administer the census in the city of Prince Rupert, while the third team would administer the census in Metlakatla Village.

Table 4:   **Recommended Practices for the Metlakatla Membership Census 2015 (Adapted from Gupta & Willis, 2016).**

	Tsawwassen First Nation Community Survey	Stellat'en First Nation Membership Survey	Curve Lake First Nation Community Survey	Metlakatla Membership Census	Rationale
Data collection method	Personal interviews, with option for telephone interviews	Self-administered, paper and online version of questionnaire	Self-administered paper questionnaire	Self-administered, paper and online version of questionnaire	More frequent and accurate reporting of sensitive information
Survey Length	90 minutes	12 pages, 43 questions	16 pages, 40 questions	18 pages, 54 questions	NA
Recruitment Methods	Sent invitation letter and called all members, newsletter	Emails, newsletter, website	Emails, website, flyers, community meetings	Emails, newsletter, video from the Chief, called all the members	Multiple recruitment strategies would reach more members
Distribution Methods	Telephone and mail-out surveys	Mail-out surveys	No information available	Personal drop-off	Interviewer can explain the study, answer questions Response rates tend to be like those of personal interviews
Incentives	$50/interview	$25 gas card/interview plus early completion prize draw for $500	Prize draw, including for an Apple iPad	Prize draw for 5 $100 gift cards, and 6 Apple iPads	Recommended by Metlakatla managers

4.2. **Metlakatla Membership Census 2015**

4.2.1. **MMC 2015 Administration**

The MMC 2015 was the pilot census for the CEM program and was administered between August 21 and September 10, 2015. The number of Metlakatla members in the target population and their contact information were determined through band member records provided by the Metlakatla Communications Department. According to these records, the total number of Metlakatla members of 15 years of age and over residing in Metlakatla Traditional Territory at the time of the MMC 2015 was 309. Of these, Metlakatla records had 296 members with confirmed addresses out of which 275 members' phone or email contact information was known.

The administration of MMC 2015 initially followed the original census administration plan closely. The researchers organized a census testing workshop and invited band staff to attend. Most attendees were staff members of the Metlakatla Band Office. This included adult members, non-members, elders, and youth. Researchers received feedback on the phrasing of questions and questionnaire format, as well as suggestions for additional questions to ask on issues that concerned the community. The time it took participants in the workshop to complete the questionnaire ranged from roughly 25 minutes to an hour. While the questionnaire length was not decreased at the time because of the priority topics the questions addressed, the questionnaire was revised to incorporate suggestions on question phrasing, structure, and questionnaire organization. During the workshop, participants were given the option of testing either the paper survey or the computer-assisted method and provided feedback on the ease of use of the computer-assisted method as well as the paper method.

While the proposed census administration plan was helpful at the beginning of the administration process, researchers changed certain aspects during administration of the census due to circumstances. Due to scheduling conflicts with their work with the Metlakalta Band Office, the high school students were unable to assist with census administration. Instead of high school students, three adult Metlakatla members were hired to help the researchers in door-to-door census administration. Working on the

census administration team provided these census administration assistants with temporary employment, the opportunity to participate in an important Band initiative, and work experience. These assistants were familiar with the communities in Metlakatla and in Prince Rupert. They assisted the researchers by contacting members to inform them of the census and following-up with members who had already been contacted. The census administration assistants received a full day of training on the purpose and process of the census, and the importance of confidentiality and methods to maintain confidentiality.

The second crucial change in the administration plan was in how the census was actually administered to participants. As proposed in the census administration plan, researchers anticipated that the computer-assisted method would be the preferred method for members to complete the census. However, as census administration proceeded, researchers noted that despite encouraging participants to use the electronic online tool, many preferred to complete the census using paper copies. Filling out the census on paper gave respondents the convenience of completing it on their own time without the administrators being present. This preference was observed both in Metlakatla Village and in Prince Rupert. The primary method of administering the census was by going door-to-door, informing members about the census and confidentiality protocols, offering members the option of filling out the census electronically while researchers waited, or dropping a paper copy off and arranging to pick it up at a later date. Most participants preferred the latter option of filling out a paper-copy of the census on their own time. This required researchers to conduct follow-up phone calls to arrange dates and times to pick up completed copies of the census.

4.2.2. Lessons Learned from MMC 2015

The pilot census in 2015 provided a good initial set of baseline socio-economic data for the Metlakatla CEM and other decision-making processes (the results are summarized in section 4.4 below). The research team also learned from the initial pilot census about how the census program could be improved to enhance data collection in future years. Based on the proposed census administration plan and the changes that were instituted during the process, researchers identified seven key recommendations

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for improvement. These recommendations are specific to the MMC and are targeted towards increasing the reach of the census and the response rate as well as improving the quality of responses.

1. Administer a paper based census, and maintain an online census option

While many participants opted to complete the census on iPads, most members said that they preferred to complete a paper version of the questionnaire. For the next iterations of the census, researchers recommended distributing paper copies of the questionnaire while still keeping the online census platform available for members to use with their own iPads or other computers. Eliminating the provision of iPads in the administration process would reduce the cost of administering the survey while still maintaining the option for members with access to computers to complete the census online at their convenience. Additionally, keeping the online census option available would help reach members who are not available through the door-to-door method or who reside elsewhere within the traditional territory.

2. Distribute questionnaires through personal, scheduled drop-offs and pick-ups with members.

Researchers found that delivering the questionnaire to individual members by going door-to-door provided the opportunity to speak with respondents personally, explain the purpose of the census, go over confidentiality measures, and answer any questions the respondents had about the census. To make this process more efficient and manageable, a standardized procedure for drop-offs, follow-ups, and pick-ups of completed censuses was developed. If respondents wish to complete the census on their own time, administrators can use follow-up phone-calls for reminders or to organize pick-up times.

3. Continue employing Metlakatla members to assist with census administration.

Working with community members was a critical factor in establishing personal contact with potential respondents and encouraging them to participate in the census and fully complete the questionnaire. The survey administration assistants were members of the First Nation who were active in the community and well-known among the membership. The relationships of these assistants with other community members helped participants to appreciate the need and importance of the census, which

appeared to encourage respondents to complete the questionnaire. Additionally, employing and training Metlakatla members to administer the census develops capacity within the community.

4. Reduce the total length of the questionnaire.

The 2015 questionnaire was lengthy and it took some members more than one hour to complete. The questionnaire included some questions that were later determined to be unnecessary or ineffective. Therefore, researchers recommended that questions that did not collect essential information on the membership should be removed in subsequent iterations of the census. A shorter questionnaire would be less onerous for respondents and may achieve a higher response rate. As the census evolves over time, administrators will be able to learn more about which modules and specific questions within modules are required every year and which can be repeated at more extended intervals.

5. Organize two census testing workshops prior to census administration.

The census testing workshop was a critical element in the design of the MMC because researchers had the opportunity to incorporate feedback on the design and administration of the census and to adapt the questionnaire and administration plan to the community's specific characteristics. However, due to time constraints, for the pilot census researchers were unable to fully incorporate some suggestions from the workshop because more follow-up and discussion about the details would have been required. Once the census was revised after the initial workshop, another test of the questionnaire would have been helpful to ensure that the revisions were appropriate and sufficient. A second testing workshop would allow the census administrators to research suggestions provided by the participants in the first workshop, follow-up with workshop participants about comments that required additional discussion and information, and re-test the census once revisions had been made.

6. Revise the Cultural Activities module to obtain more relevant data and achieve a higher response rate.

The Cultural Activities module collected data on FSC participation, which was identified in the CEM framework as the priority indicator for the Cultural and Heritage value pillar. Many of the questions within this module of the 2015 MMC questionnaire

were left unanswered or were answered incorrectly, which suggests that the questions may not have been well designed or may have asked for information that participants were reluctant to reveal. Designing questions to properly gather the information needed to measure and track FSC participation requires more research and discussions with the community. Additionally, a better understanding of the Cultural and Heritage pillar was required for the CEM program. To address these challenges, Hutchison (2017) conducted interviews with Metlakatla members to better understand cultural values important to Metlakatla. This research informed changes to questions on FSC participation which were administered in MMC 2016.

7. Provide a small "Thank You" package with all censuses.

The small gifts were well received by the Elders; therefore, researchers recommended that, if the budget permits, a small appreciation gift be offered to every member who is contacted in person. Community members, Metlakatla staff, and the census administration assistants suggested that these gifts would be appreciated in the larger community as a "thank you" for the participants' time. The gifts for this incentive were small packages with a few teabags, candy, a packet of cookies, and a thank you note.

Table 5:   Lessons Learned from MMC 2015 (Gupta and Willis, 2016).

1. Administer a paper based census, and maintain an online census option
2. Distribute questionnaires through personal, scheduled drop-offs and pick-ups with members.
3. Continue employing Metlakatla members to assist with census administration.
4. Reduce the total length of the questionnaire.
5. Organize two census testing workshops prior to census administration.
6. Revise the Cultural Activities module to obtain more relevant data and achieve a higher response rate.
7. Provide a small "Thank You" package with all censuses

4.3. **Metlakatla Membership Census 2016**

For the CEM program to be able to properly track and manage changes to VCs, consistent data need to be collected over time. In order to gather a robust set of baseline data on the socio-economic VCs, Metlakatla managers decided to administer a second iteration of the MMC in the summer of 2016. MMC 2016 followed the same general

format as MMC 2015 but incorporated lessons learned from the first iteration in order to achieve better response rates and gather more information from the community. Administering the MMC annually reinforces to Metlakatla members that it is an ongoing and necessary census. However, as a more complete set of baseline data is established and trends are better understood, the frequency of the administration of the MMC or some of the modules may change over time.

Most of the lessons learned from MMC 2015 were incorporated into the design and administration of MMC 2016, with the exception of the recommendation that two census testing workshops be held. It was not possible to schedule a second workshop in 2016 because of time constraints. This recommendation is still a valuable suggestion and should be incorporated into iterations of the census in the future.

The MMC 2016 was administered from August 10 to August 26, 2016 using primarily paper-based questionnaires that were distributed using the scheduled door-to-door methodology. An online questionnaire was also available for members who could not be reached in person or who lived outside the Metlakatla Village/Prince Rupert region. Census administrators contacted members via telephone to inform them of the census and requested a time for a drop-off or suggested that the member complete the census online if an in-person meeting was not possible. Additionally, Metlakatla members familiar with the community were hired to accompany SFU researchers to assist with census administration.

The participant recruitment strategy for MMC 2016 included publishing announcements through community newsletters and social media, reminder emails to the members for whom Metlakatla managers had email addresses, and personal invitations to members through email and phone. The announcements through email and social media also included the link to the online survey. The questionnaire followed the same modular structure as MMC 2015 and included six modules: Communications, Land Code, Cultural Activities, Health, Base and Demographic Module, and Adequate Housing. The Communications and Land Code modules were modules designed for specific Metlakatla department needs and were not components of the CEM program. While MMC 2016 included the same modules and covered similar topics as MMC 2015,

the questionnaire in 2016 was shorter and had 41 questions, whereas MMC 2015 had 54 questions.

As a result of Hutchison's (2017) research on Metlakatla cultural values, the questions in the 2016 questionnaire pertaining to cultural activities were more specific and detailed than in 2015. The questionnaire asked members to (1) estimate how many days per year they participate in various FSC activities including harvesting, processing and preparing, (2) identify how any transfer of knowledge occurs within these activities, (3) identify the barriers they face when participating in these activities, (4) estimate their knowledge of the Sm'algyax language, and (5) identify which social activities and programs they would like to see in the community (Hutchison and Kwon, 2017). This module gathered information on the FSC indicator for the CEM program and additional information on knowledge transfer, barriers to FSC participation, the food fish program operated by the Metlakatla, social activities, and language.

The information collected in MMC 2016 added to the database for the CEM program. Additional iterations of the MMC may be implemented in the future, depending on the data requirements for the CEM program

4.4. **Overview of the Data Collected**

MMC 2015 and MMC 2016 collected an array of data on various socio-economic aspects of the Metlakatla membership. Due to confidentially provisions, details of the specific results obtained from the MMC cannot be provided in this report. However, the general nature of the data collected can be revealed, and this provides insight into the importance of the MMC and its relationship to the CEM program. In this section, I provide an overview of the type of data collected from MMC 2015 and 2016, and provide some examples of results from MMC 2015 that have been used in an economic effects assessment for the EA of the Aurora LNG project.

For MMC 2015, of the 309 known Metlakatla members over the age of 15 living in the traditional territory, 204 (66%) completed the census questionnaire (Gupta and Willis, 2016). In 2016, the total population of Metlakatla members of 15 years and over

living in the traditional territory increased to 335, of which 222 individuals (69%) completed the 2016 MMC (Hutchison and Kwon, 2017). The demographic profile of the respondents generally aligned with the overall population in terms of gender, location, and age groups (Kwon, 2017). For each of the iterations of the census 17% of the respondents were youth, 63% were adults, and 20% were elders. The location of the respondents, on-reserve in Metlakatla Village or off-reserve in the Prince Rupert region, was also similar for the two iterations of the census, with 24% of the participants stating their location of primary residence as Metlakatla Village in 2015 while 21% of the participants stated Metlakatla Village as their location in 2016.

The demographic module of the questionnaire collected information for the economic indicators for the CEM program in addition to general demographic data such as education, income, and employment. Data on high school completion rates and individual income ranges can be used to calculate trends in economic self-sufficiency and income equality and distribution across the membership. Data collected from other questions pertaining to employment, income, and education provide details such as the labour participation rate, employment rate, individual and household income levels, and educational attainment, that can be analyzed against different demographic factors such as age, location, and gender (Kwon, 2017).

One of the crucial areas of data collected through the MMC is information on FSC participation, which is a value under the cultural pillar of the CEM program. The MMC investigated two of the three indicators for this VC: i) level of effort for cultural activities and ii) youth participation rate in cultural activities. The third indicator for FSC, household participation rate, was not included in the MMC because the census focused on individual rather than household characteristics. The Cultural Activities module in the MMC was piloted in MMC 2015 and revised in MMC 2016 due to additional research (Hutchison and Kwon, 2017). Data collected through this module provides information on the number of days spent harvesting and processing or preparing traditional foods on an individual level, which informs the level of effort indicator. The same data analyzed by age group provides the basis for the youth participation rate indicator. Additional information collected through the Cultural Activities module of the MMC includes data on means of cultural knowledge transfer, barriers to FSC participation, participation in

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socio-cultural activities, and knowledge of Sm'algyax, the Metlakatla language (Hutchison and Kwon, 2017).

The health pillar for the CEM program includes individual health conditions, access to health services, adequate housing, and personal safety as priority values. While data on perceived personal safety was gathered in MMC 2015, researchers and Metlakatla managers determined that it did not need to be addressed in MC 2016 because data on perceived crime severity was unlikely to change in a single year in the absence of extraordinary events, and annual data on this variable was not a priority for Metlakatla (Kwon, 2017 b). The health module focussed questions towards individual health conditions and access to health services to gather data relevant to CEM indicators under the Social and Health pillars. The health module also included additional questions on an individual's perceived overall health. The CEM program is using type 2 diabetes and hypertension prevalence as indicators for individual health conditions, hence the MMC questionnaire asked individuals whether and when they had been medically diagnosed with these conditions. Data were also collected pertaining to the frequency and types of difficulties encountered when accessing health services. Adequate housing information was collected through a separate module, including questions pertaining to the suitability of housing, adequacy of housing, and affordability of housing, in order to assess core housing needs.

The MMC program achieved its objective of providing Metlakatla with important data that are otherwise unavailable and are unique to the community, and those data are being used to inform EA. For example, Metlakatla First Nation was one of two Aboriginal groups that provided supplementary community-specific data (information not publically available) on employment, education, and income levels that was used in the Aurora LNG environmental assessment certificate application (Stantec, 2017). Stantec (2017) used these data to conduct an economic effects assessment for the proposed project. Based on MMC 2015 results, Metlakatla stated that employment as a percentage of the total population surveyed was approximately 53% (approximately 43% were employed full-time, 8% employed part-time and 2% self-employed). Approximately 2% of the membership surveyed were employed as unwaged caregivers, 5% were students and 14% were retired. MMC 2015 results also provided insight into the differences between

on-reserve and off-reserve employment levels. As reported in the in the Aurora LNG EA and based on MMC 2015, approximately 20% of membership surveyed living on-reserve were employed full-time compared to 51% of membership surveyed living off-reserve. These statistics depict the percentage of individuals employed in the population surveyed, rather than the employment rate, which is the percentage of individuals within the labour force who are employed. The average income level on-reserve was $ 20,000-24,999, as compared to $ 30,000-39,999 off-reserve. Through MMC 2015, Metlakatla managers were also able to provide data on education and training levels. Fifty-one percent of the membership surveyed had a high school diploma or higher. Roughly 28% of the membership surveyed had completed grade 12 only, 9.9% held a trade certificate or diploma, 8.5% a collage diploma and 4.3% a university degree. Compared to males, a greater number of surveyed female Metlakatla members held a postsecondary certificate, diploma or degree (27.5% vs. 17.8%)

The iterative design of the MMC program, which allowed revisions to the survey design and administration, may have contributed to the improvements in the overall response rates and the quality of data collected between MMC 2015 and MMC 2016. Additionally, response rates for questions pertaining to sensitive information such as income or health conditions improved as there were fewer non-responses for questions pertaining to individual and household income levels and individual health conditions in MMC 2016 than in MMC 2015. For example, the non-response rate for the question pertaining to household income decreased from 44% in 2015 to 26% in 2016 (Kwon, 2017a). The value and use of the MMC results for the CEM program and other Metlakatla decision-making processes are discussed in the next chapter.

Chapter 5.

Discussion

In this concluding chapter I discuss how data from the MMC have been used by Metlakatla First Nation and how community-specific data collection of this type can contribute to improving SIA. I then offer over-arching recommendations derived from this case for programs similar to the MMC that may be implemented in other small Aboriginal communities. I conclude by discussing the limitations of this research and areas for further research.

5.1. Data Collection and Decision Making in Metlakatla First Nation

The primary goal of the MMC is to gather baseline socio-economic data to inform the CEM program, other SIA processes, and Metlakatla decision-making more broadly. Continuous collection of data from Metlakatla membership should allow department managers and the CEM coordinator to assess the status of health, economic, education, cultural, and other social aspects of the Metlakatla people over time. Changes in valued components will be tracked and assessed to monitor status and trigger management responses to mitigate and manage negative effects. By collecting socio-economic data with the MMC, Metlakatla managers will be able to observe changing conditions within the community from internal and external factors. Additionally, Metlakatla have begun recording important information that can be archived over time. A written, detailed record of socio-economic and, specifically, cultural practices is crucial for governance of Metlakatla traditional lands and waters. .

Beyond the CEM program and the Aurora EA, the MMC data are being used in various other Metlakatla decision-making processes. First, the MMC demographic data and questions specific to respondents' contact and personal information have been used by the Metlakatla Communication Department to update and expand its contact lists for the membership. Data from the Land Code modules in MMC 2015 and MMC 2016 are being used by the Land Code Department to understand perceptions of the Metlakatla about the land code process. The Coastal Training Centre, a department of the MDC, utilizes MMC demographic and employment data to estimate the level of effort required to help members receive training and employment. Employment and income data from the MMC is being used by MDC staff to design programs to pursue the objectives of increasing the employment rate and bettering members' employment positions and income levels.

There are additional iterations planned for the MMC to continue to collect valuable data for the CEM program and for other internal department needs. The frequency of the administration of the MMC will depend on the data needs of the CEM program and Metlakatla decision makers. However, since the design of the MMC was strategically planned to be based on a modular structure, the MMC can be administered on an annual basis with a shorter questionnaire that only includes the modules needed to gather the specific data required in a particular year. Additionally, in future years the Metlakatla should be able to administer the MMC without the assistance of external researchers. The capacity-building efforts undertaken during MMC 2015 and MMC 2016 should support the Metlakatla in administering the MMC in future iterations.

5.2. **Implications of Community-Based Data Collection**

This report offers one possible solution to a major issue in SIA: how can gaps in baseline data for SIA in Aboriginal communities be addressed? One of the best practices proposed by Plate, Foy and Krehbiel (2009) is "each First Nation should complete its own territory based social, economic, and cultural baseline studies to inform and give direction to environmental assessment and other processes." As the Metlakatla case illustrates, a community survey specifically designed to gather information on values and factors identified as important by the Aboriginal community itself is a good method that

can be employed by the community to gather the necessary socio-economic data. Community surveys can be used to address issues such as lack of any data for desired indicators; lack of recent data for indicators; and data that are not otherwise available at the local community level due to confidentiality issues.

The importance of community-designed and administered surveys goes well beyond impact assessment: these surveys can play a key role in Indigenous data governance and data sovereignty. Data governance is the ownership, collection, control, analysis, and use of data (FNIGC, 2015), while data sovereignty is the right of an Indigenous community or other group to collect and manage its own data. According to the First Nations Information Governance Centre (FNIGC, 2014), the principles of data governance and stewardship include ownership, control, access, and possession. The 'ownership' principle states that First Nations communities own their own information collectively in the same way a person owns her or his personal information. The 'control' principle affirms that communities are within their rights in seeking control over all aspects of information management processes, from the planning process to the use of the data. The 'access' principle refers to the right of communities to access information and data regardless of where it is stored. Additionally, it refers to the management and authority to make decisions regarding who can access the collective information. 'Possession' refers to the physical control of data and is the mechanism through which ownership can be asserted.

Many Aboriginal communities in Canada have been subjected to research that is not relevant to them, often conducted by non-indigenous researchers who have not provided sufficient and understandable information on their studies to obtain informed consent from Aboriginal communities or individuals (FNIGC, 2016; White, 2014; Rainie et al., 2017). In addition, researchers often have not considered the communities' priorities. Data sovereignty and data governance by Aboriginal communities can combat these abundant instances of misuse and abuse of Aboriginal information (FNIGC, 2016; Rainie et al., 2017). In Canada, the First Nations Information Governance Center and similar programs in BC such as the British Columbia First Nations' Data Governance Initiative have started to equip Aboriginal groups with knowledge, tools, and resources to work toward data sovereignty and community-based data governance (BC FNDGI, n.d.;

FNIGC, 2016). Community surveys that are initiated, managed, controlled, and owned by Aboriginal communities are one of many tools that communities can use to assert and maintain Indigenous data jurisdiction (FNIGC, 2016).

Turning specifically to SIA, Aboriginal communities may be more equipped to participate in the assessment process if they have the means and capacity to collect and monitor data pertaining to their own communities. In Canadian federal and BC environmental assessment processes, the proponent bears the primary responsibility for collecting sufficient baseline data for the assessment (Plate et al., 2009), which may create uncertainty about the ownership of the data collected from Aboriginal groups. Also, the quality of data collected can depend on whether an agreement between the proponent and Aboriginal groups was reached and what such an agreement provides for in terms of data collection. For example, proponents may fund an Aboriginal community to undertake traditional use studies or occupational use studies within the specific geographic scope of the proposed project's assessment. Community surveys can be a strategic approach for EA practitioners and Aboriginal communities to address existing critical data challenges such as inconsistent data, irrelevant data, data that are of poor quality, or data that are under external control (Rainie et al., 2017). Rainie et al. (2017) emphasize that community-driven data collection initiatives can enhance data use and can provide data that are accurate for the community's specific context. The MMC is an example of how a community-managed census can enhance a First Nation's stewardship and governance of their own information.

In addition, the collection of community-specific data by Aboriginal communities could lead to earlier and deeper engagement by these communities in the EA process and project planning, so that they are able to provide input into, and influence, scoping and identification of VCs. Community surveys conducted in Aboriginal communities could provide more data for SIA and EA, provided that these communities consent to the collection and use of the data. As illustrated by the MMC case study, data collected through community surveys can be more detailed, and if the surveys are conducted well, more accurate than data from other regional or national sources. Furthermore, community survey programs can create opportunities for partnerships with agencies and organizations that collect secondary data. Aboriginal groups could, If they wish to do so,

develop partnerships with provincial and federal agencies such as Indigenous and Northern Affairs Canada, Statistics Canada, and others involved in data collection, to ensure that the most appropriate data are collected and made available in a timely manner. This may include, for example, financing or introducing new surveys or activities to obtain data that are not presently collected, or resolving data sharing concerns (Bruce et al. 2010).

5.3. **Lessons Learned**

This research, conducted in collaboration with Metlakatla First Nation, sought to develop a methodology to effectively collect baseline socio-economic data on Metlakatla communities for the purposes of SIA and CEA. The recommended methodology is based on principles of the Metlakatla First Nation while also integrating guidance from the literature on socio-economic data collection methodologies and previous surveys of Aboriginal communities. This section presents broad recommendations based on the Metlakatla case for collecting baseline socio-economic information in small Aboriginal communities for the purposes of SIA and CEA.

5.3.1.   A community survey can be an effective method to collect baseline socio-economic data for SIA

The MMC is a case where a community survey, designed and administered in collaboration with community leaders and members, was successful in obtaining relevant and detailed socio-economic data specific to an Aboriginal community. If a community has the resources and the means to gather its own data, designing and administering a community survey may be an effective way for the community to enhance its influence and participation in an environmental assessment process. A community survey can be a means to consistently collect data over time to monitor changes in socio-economic VCs. As described earlier, a community-designed and administered survey can also contribute to a community's data governance and sovereignty goals. Additionally, since data in a community survey are reported by the community members themselves, such surveys can provide information that members trust (Rainie et al., 2017), rather than using data collected by external sources, such as

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proponents, which may be perceived to be biased and not have as much integrity (Fluker and Yewchuk, 2017). While the MMC was designed and implemented in a very specific context, the recommendations outlined in Chapter 4 may assist the administrators of other community surveys for similar purposes.

5.3.2. Effectively engage a community throughout the design and administration process of the survey

To develop an effective community survey, a critical lesson learned from the MMC is that community leadership and individual members should be engaged throughout the design and administration of the survey. The CEM program is a proactive initiative led by Metlakatla leadership and managers. Metlakatla First Nation has clear decision-making authority over each phase in the CEM program including the design and implementation of the MMC. The consistent engagement and collaboration with Metlakatla department managers and individual community members throughout the MMC process was an important attribute in the success of the program. The methodology of the MMC program is founded upon Metlakatla knowledge and values and is directed by principles of Aboriginal-led research and engagement. Lovett (2016), argues that statistics developed from Aboriginal perspectives and with greater engagement by communities in data conceptualization, design, collection, analysis and reporting would enhance the utility of information for nations. Accordingly, community managers, community leaders, and individual members should be actively involved in each step of the development, design, and administration of a community survey.

The process of identifying VCs and Metlakatla data requirements began early in the CEM program, and the scoping phase of that program incorporated Aboriginal traditional knowledge and local knowledge in identifying management priorities and the indicators used to track these priorities (Kwon, 2016). This process clarified specific information needs for the CEM program and directed the need for the ensuing MMC process. A common feature of successful surveys in First Nation communities is that the chief and other band members are actively involved in the process of designing and administering the survey (Kant et al., 2014; Takasaki, 2014). In the MMC, after a literature review was conducted, researchers presented best practices and guidance on

survey methodologies to Metlakatla department managers, who then offered perspectives specifically regarding which practices would be appropriate for the community. Additionally, department managers and elders from the community assisted in determining what sort of information was needed for the CEM program and what might be needed for other information needs. For example, gathering knowledge and pursuing iterative discussions with elders in the community regarding the FSC indicator specific to the cultural activities VC was especially helpful to researchers in identifying what questions would be most effective to acquire this information. Feedback on the suggestions of the department managers and the researchers' proposals was obtained through the census testing workshop which involved band staff and a range of individual members. The administration plan was improved through the incorporation of advice from community members and department managers through individual discussions and the census testing workshop.

Having an assistant who is a member of the community to help conduct interviews can also be important to the success of the study (Jonk, 2009). In the case of the MMC, hiring community members who were active in the community and well-known among the membership helped the survey administrators to contact potential respondents and encourage these potential respondents to complete the questionnaire. Having a member communicate the Band initiative is likely to be more convincing than having researchers from outside the community approach potential respondents. Having members participate actively in a community initiative not only provides them with work experience, it also builds capacity within the community and develops consistency in the administration process over time.

5.3.3. Disseminate the data collected back to the community and make it accessible for community leadership and staff to use (with appropriate safeguards to maintain confidentiality and integrity of the data)

For both iterations of the census, preliminary data were reported back to the community at the annual general meeting of the members of the Metlakatla First Nation. In addition to the ethical obligation to disseminate results of collaborative research back to the community (AFN; 2009; Panel on Research Ethics, 2015), there are additional

benefits to reporting community survey results to the community. Disseminating findings from community-based research is a critical aspect of collaborative research as it contributes to inclusivity throughout the process (Ferrieria and Gendron, 2011; Horowitz et al., 2009; KAHR, 2008; Panel on Research Ethics, 2015). Through this work, communities can learn about the importance of the research and how it may benefit them (Horowitz et al., 2009). In SIA, specifically, the dissemination of results of baseline data gathering can provide the community with an opportunity to understand and critique their own community profile and be able to compare it to other communities. It is important that the results are communicated using methods and language that allow members to understand the results and their implications (Horowitz et al., 2009; KAHR, 2008). Additionally, disseminating results back to the community can show the community how their efforts and participation contribute to Band initiatives and may be an occasion to thank the members for their contributions. MMC researchers communicated results at Metlakatla's annual general meeting as this event brought a large portion of the population together. Results can also be communicated through other oral and written means such as town hall meetings, newsletters, brochures, and video summaries.

In addition to disseminating results, it is important that the data be analyzed and transformed to inform and influence policy (Horowitz et al., 2009; KAHR; 2008). An additional component of this recommendation is to ensure that appropriate members of a community's leadership have access to the data for their use. However, it is critical that safeguards be in place to maintain confidentiality and the integrity of the data. This is discussed further in the next recommendation. For community surveys designed to gather data for SIA, access to the data should be provided to the coordinators of the EA and other relevant band members (subject to confidentiality restrictions) who would need the data to design and implement management programs and policies. Data may also be shared with external entities for the purposes of SIA, such as the proponent or government agencies, provided that an appropriate agreement is in place governing the confidentiality, use and publication of the data. A community survey's objectives should specify who will have access to the data collected by the survey and for what reasons. For example, while the MMC was predominantly designed to gather baseline data for the CEM program, it also gathered information for various Metlakatla departments such as

the Land Code department and the Communications department. Data pertaining to these areas of concern were provided to the departments to use for their own purposes. Additionally, data collected for a particular purpose may be of use for other needs as well. A protocol should be in place to ensure that access to the data is granted to those who need it for valid reasons, provided that appropriate confidentiality measures are in place. Ultimately, as part of the principles of data governance, it is the community's and the leadership's authority to decide what the data protocol would entail according to their own principles and needs, subject to obtaining informed consent of individual respondents at the time that they complete the questionnaire.

5.3.4. Formalize an understanding of the confidentiality, ownership, and use of data and information

This recommendation closely relates to the preceding recommendation on dissemination of results and maintaining protocols for access to the information. Information collected through community surveys may contain sensitive personal data, such as personal and household income, health, and contact information. Confidentiality can be a particular concern for small community populations because, even if personal identifiers are removed, there is a risk that the identities of individuals will be apparent with smaller aggregate collections of data (AFN, 2009). In such cases, it may be necessary to change the grouping of data so that the aggregate data cannot be deconstructed to the individual level.

Researchers working with First Nations communities have an obligation to establish privacy and confidentiality measures early in the engagement process (Panel on Research Ethics, 2015). The extent of disclosure of personal information should be decided by local authorities together with the researchers (with the informed consent of individual respondents), and is largely determined by the community's perspectives of ownership, control, access, and possession. An understanding of confidentiality and use of the data should be formalized, especially if data are being shared with agencies outside the community.

Any researchers or staff involved with the collection and handling of data should undergo proper training in confidentiality protocols and ethics in research. Communities

can use existing codes of conduct or codes of ethics, such as those of the First Nations Safety Council of BC (2017), or the FNIGC Code of Research Ethics (2007). A major aspect of maintaining confidentiality and integrity of data is the proper storage of data both physically and digitally. For the MMC, researchers and the SFU Department of Research Ethics recommended that the data be stored on a secured external hard-drive disk that is password protected, and that physical copies of completed surveys be destroyed.

5.3.5. Conduct an ex-post evaluation of the community survey to help improve future iterations of the survey

The lessons learned from MMC 2015 (outlined in section 4.2.2) were helpful in understanding how the administration of MMC 2016 could be improved. Survey administrators should conduct a self-evaluation after each iteration of the survey to assess which administration practices were successful and which practices could be enhanced. In addition, surveys administrators could conduct workshops or interviews with participants and non-participants of the survey to better understand how the survey was received and how it can be improved from the respondents' perspective. In addition to these internal reviews, the administrators should arrange for external reviews of the census program every few years.

Table 6:   Recommended Practices for Community Surveys in Aboriginal Communities.

Recommendation	Rationale
A community survey can be an effective method to collect baseline socio-economic data for SIA	• A community survey can be a means for the community to consistently collect data over time to monitor changes in socio-economic VCs. • Since data in a community survey are reported by the community members themselves, such surveys can provide information that members trust (Rainie et al., 2017)
Effectively engage a community throughout the design and administration process of the survey	• Greater engagement by communities in data conceptualization, design, collection, analysis and reporting would enhance the utility of information for First Nations (Lovett, 2016)

	• Having an assistant who is a member of the community to help conduct interviews can be key to the success of the study (Jonk, 2009)
Disseminate the data collected back to the community and make it accessible for community leadership and staff to use (with appropriate safeguards to maintain the integrity of the data)	• Dissemination is a critical aspect of collaborative research as it creates inclusivity throughout the process (Ferrieria and Gendron, 2011; Horowitz et al., 2009; KAHR, 2008; Panel on Research Ethics, 2015) • Communities can learn about the importance of the research and how it may benefit them (Horowitz et al., 2009) • In SIA, specifically, the dissemination of results of baseline data gathering can provide the community with an opportunity to understand and critique their own community profile and be able to compare it to other communities
Formalize an understanding of the confidentiality, ownership, and use of data and information	• Researchers working with First Nations communities have an obligation to establish privacy and confidentiality measures early in the engagement process (Panel on Research Ethics, 2015)
Conduct an ex-post evaluation of the community survey to help improve future iterations	• Developing lessons learned from previous iterations of a survey can help improve future iterations • Survey administrators can seek feedback from survey participants to understand how to improve survey administration from the respondents' perspective

5.4. **Limitations and further research**

There are several limitations to this research, primarily related to the case study approach and the unique context of the MMC and the CEM program. The CEM program is a specific community-driven initiative for which Metlakatla First Nation has a vision and to which it has dedicated substantial resources. This specific Metlakatla context must be taken into account when considering the applicability of the MMC methodology for other Aboriginal communities.

The case study approach was chosen for this research because case studies allow researchers to examine complex phenomena holistically (Yin, 2014). The case study methodology enabled development of an in-depth understanding of the intersections of various variables that could influence the success of efforts to collect baseline information for and from an Aboriginal community. Several of the variables of interest in the Metlakatla case, such as the relationships between individual actors and the rationale for various decisions, might not have been fully captured through conventional research methods.

Caution is needed, however, when generalizing from a single case. Generalizations from case studies are not based on statistical tests; rather, they are based on analysis and reasoning (Johansson, 2003). While case studies may be generalizable to support theoretical propositions, they cannot be extrapolated to represent populations or universes (Yin, 2014). Within the field of impact assessment, case studies can serve as examples of a practice, but they do not necessarily represent "sate-of-the-art" procedures (CEAA, 2016). Case studies in EA can offer an adaptive approach involving learning from experience and applying the lessons to enhance research and practice (CEAA, 2016).

One key factor in the Metlakatla case that might not be present in other communities was the level of community-wide interest and willingness to participate in data collection. The number of projects being proposed in the Metlakatla traditional territory has created a dynamic setting where baseline information is critical in understanding how the community can balance the objective of supporting beneficial developments with the objective of maintaining traditional practices and other aspects of community well-being. Metlakatla leaders and community members are well aware of the need to manage and benefit from these development pressures.

Another important consideration in the Metlakatla case is that the MMC has a narrowly defined population outlined by the scope of the CEM program and the extent of the traditional territory. The population includes members of the Metlakatla First Nation living within Metlakatla Traditional Territory. For the purposes of administrating the MMC, it was fortunate that the majority of the defined population lived within a small geographic

span in Metlakatla Village and the Prince Rupert region, which made it feasible to make contact with them through an "in person" door-to-door survey. If this changes, MMC administrators will have to consider other ways to reach members who live farther away. The possibility of an expanded geographic range is one reason that researchers recommended maintaining the online version of the census. For communities where members are distributed over a larger geographic range, the primary administration methodology for the MMC may not be appropriate, and alternative means, such as online surveys, may need to be examined.

A third consideration, which is closely related to the second, is the amount of resources, particularly financial resources that are required for conducting community surveys. Community surveys can be very resource intensive (Finsterbusch, 1997; Taylor et al., 2004). From larger costs such as wages for survey administrators and travel costs, to smaller details such as small appreciation gifts, the budget for a survey should be carefully considered. For community surveys to be a practical method for First Nations to use in SIA, funding may be needed from external sources such as federal or provincial governments, or through cost-recovery from proponents. One of the recommendations of the Expert Panel on the Review of Environmental Assessment Processes (2017) is that "…a funding program be developed to provide long-term, ongoing IA capacity development that is responsive to the specific needs and contexts of diverse Indigenous Groups." Additional research is needed in order to determine what a funding program should entail and how it would affect data collection processes for Aboriginal communities.

In addition to financial considerations, communities need to consider the other resources that are required to maintain consistent data collection and reporting. These activities require human resources, technical abilities, and appropriate hardware and software (Bruce et al. 2010). As such, a capacity building strategy should be in place to maintain and use a program similar to the MMC. While the initial baseline data collected could be used as a starting point, there is a need to address how this database would be maintained and used. This could require an increase in professionally trained Indigenous statisticians. One possibility would be to make statistical training more accessible for staff in First Nations communities (Lovett, 2016).

Additional research is needed on the advantages and limitations of using community surveys to continuously inform SIA over time. For changes to be measured easily, surveys may need to ask the same questions in every iteration so that results are comparable. Repeated administration of the same survey may cause respondents to clarify or form new opinions on certain topics by making respondents more informed and sometimes more opinionated (Finsterbusch, 1983). In the case of community surveys to track changes in socio-economic factors, respondents and participants may become more aware of the social, economic, cultural, and health aspects of the community they live in. Although this may be a positive outcome, it is also possible that consistent repetition of questions over time will cause respondent fatigue to the extent that responses rates decline or responses are provided out of habit and are not reflective of the actual conditions. This potential issue requires further examination.

5.5. **Conclusion**

This research demonstrates that a community survey can be an effective tool for Aboriginal groups to collect community-specific socio-economic data for the purposes of SIA and CEM. A community survey that is designed and administered by, or collaboratively with, an Aboriginal community can also supplement efforts to achieve data governance and sovereignty. This research provides a methodology and recommendations that can be applied to other community initiatives with similar objectives and circumstances to those of the Metlakatla First Nation CEM program. However, further research is required to better understand the advantages and limitations of using community surveys as a data collection methodology for SIA in other settings and the advantages and disadvantages of using the methodology in the long-term.

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Appendix A.

Metlakatla Membership Census 2015 Questionnaire

METLAKATLA FIRST NATION

METLAKATLA MEMBERSHIP CENSUS

FALL 2015

Version 1: Adult Member

Introduction

Many projects and activities are being proposed within Metlakatla's Traditional Territory. These projects offer benefits but may also have unintended impacts on the things we care about.

In response, the Metlakatla First Nation has developed a Cumulative Effects Management (CEM) program to better understand the impacts and benefits. Cumulative effects, in simplest terms, are changes to Metlakatla values due to past, present and future actions. The CEM Program attempts to track and manage these values over time. A major challenge is the lack of information specific to Metlakatla

members on certain social and economic values. Good baseline information helps Metlakatla managers make good decisions because we cannot manage what we don't know.

The Metlakatla are working with Simon Fraser University researchers to conduct a Metlakatla Membership Census. This census will collect consistent information about our membership over time and find out "how Metlakatla members are doing." From this point forward, we hope to ask members to complete the census on all topics once a year.

As a member of the Metlakatla First Nation, you are asked to participate in the Census. To show our appreciation, you will be entered into a draw for some great prizes, including five $100 gift cards and six iPads Airs. Please note that the geographic scope of the census is intended for Metlakatla members living within the Traditional Territory. We ask that you please take the time to complete the census.

Participant Information

What is your band number? _____

What is your age? _____

What is your gender? ○ Male ○ Female ○ Other

What is your address?
      Street Address: _____
      City: _____
      Postal Code: _____

Is your primary place of residence in the Metlakatla Village? ○ Yes ○ No

Section 1: Communications

1. How do you receive information about Metlakatla programs and initiatives? Please select all that apply.
    - ○ Email
    - ○ Facebook/Social media
    - ○ Website
    - ○ Newsletter
    - ○ Other (please specify): _____

2. Are you satisfied with the level of information you receive from the Metlakatla Communications Office? Please select on a scale of 1-5.

    Not satisfied at all   Very satisfied

    | 1 | 2 | 3 | 4 | 5 |

Section 2: Governance

3. Did you vote in the last Metlakatla First Nation General Election?
    - ○ Yes
    - ○ No

4. How likely is it you will vote in future Metlakatla First Nation General Election?
    - ○ I will definitely vote
    - ○ I will probably vote
    - ○ Undecided
    - ○ I probably will not vote
    - ○ I definitely will not vote
    - ○ Don't know

Metlakatla First Nation has its own custom election code as of 2006.

Currently, the Metlakatla Governing Council consists of a Chief Councillor and six (6) Councillors. A General election is held every three (3) years. An Elector, a Metlakatla member of 18 years or older, can nominate Candidates for the Election by attending the Nomination Meeting or sending in a mail-in nomination. A Candidate can run for either Chief Councillor or Councillor but not both. For more information, the election code is available to view on the Metlakatla website.

5. Are you satisfied with the **current election process** for the Metlakatla First Nation Chief and Council? Please select on a scale of 1-5.

   Not satisfied at all   Very satisfied
            1   2   3   4   5

6. Do you have any suggestions on how to improve the election process?

   _____
   _____
   _____

7. Are you familiar with how to participate in the following activities? Please check 'Yes' or 'No' for each activity.

ACTIVITIES	Yes	No
Attend a Band meeting		
Arrange to speak before Band council		
Access Council decisions		
Vote in a Band election		

8. In the past 12 months, how many times have you attended a public engagement activity organized by the Band (e.g. public meeting, open house, workshop, barbeque, or feast)? _____ number of times

9. Overall, considering all aspects of your life, how connected do you feel with other Metlakatla members (including the Village and Prince Rupert)? Please select on a scale of 1-5.

   Not connected at   Very
           all   connected
            1   2   3   4   5

10. Overall, considering all aspects of your life, how do you feel about your quality of life? Please select on a scale of 1-5.

   Not good at all   Very good
            1   2   3   4   5

   a. If you selected 1-4, can you name the <u>most important change</u> that would improve your quality of life?

      _____

Section 3: Land Code

This portion of the census is about the Metlakatla Land Code. The Land Code initiative is about resuming and exercising control over Metlakatla reserve lands and resources.

Developing the Metlakatla Land Code is a community driven process and the final version will be put to a vote before the Metlakatla membership in the Fall of 2016. If the vote is successful, the authority and management of Metlakatla's reserves will be transferred from the Federal government to the Metlakatla, and remove us from roughly 25% of the Indian Act.

11. In your opinion, should the Federal government continue to manage Metlakatla's reserve lands or should the authority and management of these lands be transferred to the Metlakatla First Nation?
     ○ Federal government should continue to manage Metlakatla's reserve lands
     ○ The authority and management of Metlakatla's reserve lands should be transferred to the Metlakatla First Nation
     ○ Don't know

12. Overall, how familiar are you with the Metlakatla Land Code?
     ○ Very familiar
     ○ Somewhat familiar
     ○ Not very familiar
     ○ Not at all familiar **[Skip to Question 16]**

13. Overall, do you support or oppose transferring the authority and management of Metlakatla's reserve lands from the Federal government to the Metlakatla First Nation?
     ○ Support strongly
     ○ Support somewhat
     ○ Oppose somewhat
     ○ Oppose strongly
     ○ Don't know

14. What do you think would be the **main benefits** to developing a Metlakatla Land Code? **Please check all that apply.**
    ○ Metlakatla First Nation control over land management and development
    ○ Increased ability to protect environmental and cultural values
    ○ More efficient and local management of Metlakatla's 10 Reserves
    ○ Increased land management accountability to Metlakatla members
    ○ Removal of reserves from the Indian Act administration
    ○ Ability for the Metlakatla First Nation to make laws and regulations related to land management
    ○ Other (please specify):_____

15. Regardless of whether you support or oppose the initiative, what would be your **main concerns** about developing a Metlakatla Land Code?

    _____
    _____
    _____
    _____

16. How likely is it you will vote on the Metlakatla Land Code when it is put before members in the Fall of 2016?
    ○ I will definitely vote
    ○ I will probably vote
    ○ I might or might not vote
    ○ I probably will not vote
    ○ I definitely will not vote
    ○ Don't know

17. Do you have any additional comments or suggestions regarding the Metlakatla Land Code?

    _____
    _____
    _____

Section 4: Cultural Activities

The Metlakatla First Nation identifies Food, Social, and Ceremonial (FSC) Activity as a priority value. FSC activity is defined as harvesting (including fishing, gardening, gathering, hunting, or trapping), processing, preparing, or consuming any traditional foods. Harvesting, processing and preparing can be grouped under the category of FSC Participation.

The following tables are about FSC participation.

18. Please fill out the following information about participation in **food harvest activities.** If you did not participate in the activity, please put '0'.

	In the past 12 months, how many days did you participate in each activity? **(# of days/year)**	How often did you participate with another Metlakatla member for each activity? **(% of time)**
Fishing		
Harvesting other seafood (e.g. crab, clams)		
Hunting		
Trapping		
Harvesting marine plants (e.g. seaweed)		
Collecting land-based plants and berries		
Gardening		

19. For the activities you **want to participate in more**, please **check the top 3 barriers** that prevented you from participating.

	Lack of gear or equipment	Lack of time	Lack of knowledge	Lack of companionship	Competition	Water quality	Government regulations	Access to resource	Health/Age/ Disability
Fishing									
Harvesting other seafood (e.g. crab, clams)									
Hunting									
Trapping									
Harvesting marine plants (e.g. seaweed)									
Collecting land-based plants and berries									
Gardening									

20. Please fill out the following table about participation in **food preparation activities.** If you did not participate in the activity, please put '0'.

	In the past 12 months how many days did you participate in each activity? **(# of days/year)**	How often did you participate with another Metlakatla member for each activity? **(% of time)**
Processing traditional foods (e.g. gutting fish)		
Preserving traditional foods (e.g. jarring, smoking)		
Cooking traditional foods		

21. For the activities you **want to participate in more**, please **check the top 3 barriers** that prevented you from participating.

	Lack of equipment	Lack of time	Lack of knowledge	Lack of companionship	Lack of traditional foods
Processing traditional foods (e.g. gutting fish)					
Preserving traditional foods (e.g. jarring, smoking)					
Cooking traditional foods					

22. Please fill out the following table about participation in **social activities.** If you did not participate in the activity, please put '0'.

	In the past 12 months, how many times did you participate in each activity? **(# times/ year)**	How often did you participate with another Metlakatla member for each activity? **(% of time)**
Feasts		
Traditional arts (e.g. cedar weaving, dancing, drawing, carving or regalia making)		
Language courses		

23. For the activities you **want to participate in more**, please **check <u>the top 3 barriers</u>** that prevented you from participating.

	Cost	Lack of time	Lack of knowledge	Lack of companionship	Limited opportunity	Health/ Age/ Disability
Feasts						
Traditional arts (e.g. cedar weaving, dancing, drawing, carving or regalia making)						
Language courses						

24. How do you access food fish (salmon and halibut)? Please select all that apply.
    ○ I fish
    ○ Someone in my household fishes
    ○ From friends
    ○ Food fish distribution program
    ○ Other (please specify): _____

25. How well can you speak Sm'algyax?
    ○ Very well
    ○ Relatively well
    ○ With effort
    ○ Only a few words
    ○ Can't speak it at all

26. Are you interested in learning Sm'algyax?
    ○ Very interested
    ○ Somewhat interested
    ○ Not interested
    ○ Not applicable

27. Which services and programs would you like to see available in Metlakatla Village? Please rank the following options from highest priority to lowest priority, with **1 being the highest priority** and **5 being the lowest**.
    __ Language immersion
    __ Communal processing facility (e.g. shared smokehouse)
    __ Elder-youth education programs
    __ Traditional arts workshops
    __ Exploring/learning about the Traditional Territory

Section 5: Health

28. In general, would you say that your health is
   - ○ Excellent
   - ○ Very good
   - ○ Good
   - ○ Fair
   - ○ Poor

29. How many hours do you spend exercising each week? _____
   This involves any physical activity including walking.

30. On average, how often do you eat healthy foods?
   Healthy foods include traditional foods, non-processed foods, and foods that are low in saturated fat and contain limited amounts of cholesterol and sodium.
   - ○ Several times a day
   - ○ Once a day
   - ○ A few times a week
   - ○ About once a week
   - ○ Never/hardly ever

The following questions ask about health conditions. We recognize that health conditions are sensitive, personal information and you may choose not to answer some questions. Please note that your answers will help ensure that the physical, mental, and spiritual health of all members is improved over time.

31. Have you ever been diagnosed with type 2 diabetes? ○ Yes ○ No

   a. If yes, were you diagnosed within the last year? ○ Yes ○ No

32. Have you been diagnosed with hypertension (also known as high blood pressure)?
   ○ Yes ○ No

   a. If yes, were you diagnosed within the last year? ○ Yes ○ No
   b. If yes, was the high blood pressure related to pregnancy? ○ Yes ○ No

33. In the past 12 months, how many times have you been admitted to the hospital for **each of the following conditions**? If none, please put '0' for each.

_____ Seizures (grand mal status)
_____ Chronic obstructive pulmonary disease, COPD
_____ Asthma
_____ Heart Failure and/or pulmonary edema
_____ High blood pressure (hypertension)
_____ Severe chest pain (angina)
_____ Diabetes

34. In the past 12 months, did you ever experience any difficulties getting routine or on-going care?

○ Yes
○ No
○ Not applicable

   a. If yes, what type of difficulties did you experience? Please select all that apply.

○ Do not have a personal/family physician
○ Wait times are too long
○ Service or appointments unavailable
○ Transportation problems
○ Cost
○ Unable to leave the house because of a health problem
○ Other (please specify): _____

35.   a. What is the biggest health concern to you?

     _____

   b. What is the biggest health concern to your children (if applicable)?

     _____

Section 6: Crime and Safety

36. In general, how safe do you feel from crime in **Metlakatla Village**? Please select on a scale of 1-5.

Not at all safe   Extremely safe
    1   2   3   4   5

   a. If you selected 1-4, can you name the most important change that would make you feel safer from crime?

     _____

37. In general, how safe do you feel from crime in **Prince Rupert**? Please select on a scale of 1-5.

Not at all safe   Extremely safe

      1   2   3   4   5

   a. If you selected 1-4, can you name the most important change that would make you feel safer from crime?

   _____

Section 7: Demographics

38. What is your current employment status? Please select the best answer.

○ Full-time employed (35 hours per week or more)   ○ Unemployed

○ Part-time employed (Fewer than 35 hours per week)   ○ Employment Insurance (EI)

○ Self-employed   ○ Retired

○ Unwaged Caregiver   ○ Student

39. Which of the following best describes your marital status?
      ○ Single
      ○ Married
      ○ Living with partner (Common-law)
      ○ Widowed

40. Including yourself, how many people live in your home? _____

   a. Including yourself, how many of them are under the age of 18? _____

   b. Including yourself, how many of them are over the age of 65? _____

   c. Including yourself, how many of them are Metlakatla members? _____

41. What other people usually live in your home? Please select all that apply.

○ Spouse (husband/wife)   ○ Grandparent
○ Common-law partner   ○ Grandchildren
○ Mother   ○ In-law
○ Father   ○ Uncle/Aunt
○ Children   ○ Other related
○ Sibling   ○ Unrelated
○ Foster parent   ○ Not applicable
○ Foster children

We recognize that income can be sensitive, personal information and you may choose not to answer the following questions on income. However, please note that your answers to the following questions will help us understand if our goals for economic development are being reached by members of our community.

42. Are you an income earner in your household?
An income earner is anyone who through work, investments or a combination of both obtains income
○ Yes
○ No **[Skip to Question 46]**

43. How many income earners are there in your household? _____

44. For the previous year, what was your **total individual income** from all sources before tax?
By personal income, we are asking for your total personal wages and salaries including commissions, bonuses, tips, research grants, royalties, CPP, and EI etc. in the past year before any tax deductions.

○ No income   ○ $30,000 - $39,999
○ Under $5,000   ○ $40,000 - $49,000
○ $5,000 - $9,999   ○ $50,000 - $59,999
○ $10,000 - $14,999   ○ $60,000 - $79,999
○ $15,000 - $19,999   ○ $80,000 - $99,999
○ $20,000 - $24,999   ○ $100,000 - $124,999
○ $25,000 - $29,999   ○ $125,000 and over

45. For the previous year, please think of your **total household (combined) income** from all sources before tax.
By household income, we are asking for the total sum of wages and salaries of all contributing members in the household. For the purpose of this census, a 'household' is a group of people (often a 'family') who live in the same dwelling and share meals and living space together. A single dwelling may be considered to contain multiple "households" if meals or living space are not shared.

○ No income
○ Under $5,000
○ $5,000 - $9,999
○ $10,000 - $14,999
○ $15,000 - $19,999
○ $20,000 - $24,999
○ $25,000 - $29,999

○ $30,000 - $39,999
○ $40,000 - $49,000
○ $50,000 - $59,999
○ $60,000 - $79,999
○ $80,000 - $99,999
○ $100,000 - $124,999
○ $125,000 and over

46. What is the highest level of education you have completed?
○ Grade 8 or lower
○ Grade 9-10
○ Grade 11
○ Grade 12
○ Trade certificate or diploma
○ College diploma
○ Bachelor's degree
○ Masters or PhD degree
○ Other (please specify): _____

47. If you are currently in high school, do you plan to attend post-secondary?
○ Yes
○ No
○ Not applicable

48. **Beginning from grade 8**, how many years did it take to receive your high school diploma?
If you do not take any breaks or skip/repeat grades, it takes 5 years to receive a high school diploma.
○ 4 years
○ 5 years
○ 6 years
○ 7 years
○ 8+ years
○ Can't remember

Section 8: Adequate Housing

49. How many children live in your residence?
    For those between the ages of 5-17, please list how many children of each gender live in the home. If none, mark '0'.

	Number of females	Number of males
Children 0-4 years old		
Children5-17 years old		

50. How many bedrooms does your residence have? _____

51. Does your residence need repairs? Note that:
    - **Major repairs include**: *defective plumbing or electrical wiring, structural repairs to walls, floors, ceiling etc.*
    - **Minor repairs include**: *missing or loose floor tiles, bricks, shingles, defective steps, railings, siding, etc.*

    ○ Yes, major repairs
    ○ Yes, minor repairs
    ○ No, only regular maintenance is required (painting, furnace)
    ○ Don't know

52. Do you own or rent your residence? ○ Own ○ Rent

53. a. What is your monthly rent or mortgage payment? _____
    b. What are your monthly costs of electricity, heat, water, property taxes, and/or condo fees? _____
    c. What are your monthly costs of transportation between Prince Rupert and Metlakatla Village? _____

54. If an appropriate house is available on Metlakatla Village, would you choose to live there?
    ○ Yes
    ○ No

    a. **If no**, why?

    _____

Contact Information

The following personal information is needed for the Communications Department, so that we can contact you with information from the Treaty Office and the Land Code Department. It is also required to enter you into the prize draw, so that we can let you know if you win! Each participant will be entered in a draw for one of five $100 gift cards (gas card or VISA gift card) or one of six iPad Airs.

Your personal information will be separated from your census responses.

What is your email address? _____
What is your phone number? _____

How do you prefer to be contacted for information on Land Code, Treaty and other Metlakatla programs?
    ○ Email
    ○ Phone
    ○ Mail
    ○ Other (please specify): _____

Appendix B.

Metlakatla Membership Census 2016 Questionnaire

METLAKATLA FIRST NATION

METLAKATLA MEMBERSHIP CENSUS

FALL 2016

Participant Information

What is your band number? _____

What is your age? _____

What is your gender? ○ Male ○ Female ○ Other

What is your address?
      Street Address: _____
      City: _____
      Postal Code: _____

Is your primary place of residence in the Metlakatla Village? ○ Yes ○ No

Section 1: Communications

1. How do you receive information about Metlakatla programs and initiatives?
   Please <u>select all</u> that apply.
   - ○ Email
   - ○ Facebook/Social media
   - ○ Website
   - ○ Newsletter
   - ○ Other (please specify): _____

2. How do you usually receive and read the newsletter?
   - ○ Email
   - ○ Mail
   - ○ Other (please specify): _____

3. Are you satisfied with the level of information you receive from the Metlakatla Communications Office? **Please select on a scale of 1-5.**

Not satisfied at all				Very satisfied
1	2	3	4	5

Section 2: Land Code

This portion of the census is about the Metlakatla Land Code. The Land Code initiative is about resuming and exercising control over Metlakatla reserve lands and resources.

Developing the Metlakatla Land Code is a community driven process and the final version will be put to a vote before the Metlakatla membership in the Fall of 2016. If the vote is successful, the authority and management of Metlakatla's reserves will be transferred from the Federal government to the Metlakatla, and remove us from roughly 25% of the Indian Act.

4. In your opinion, should the Federal government continue to manage Metlakatla's reserve lands or should the authority and management of these lands be transferred to the Metlakatla First Nation?
   - ○ Federal government should continue to manage Metlakatla's reserve lands
   - ○ The authority and management of Metlakatla's reserve lands should be transferred to the Metlakatla First Nation
   - ○ Don't know

5. Overall, how familiar are you with the Metlakatla Land Code?
   - ○ Very familiar
   - ○ Somewhat familiar
   - ○ Not very familiar
   - ○ Not at all familiar

6. The Metlakatla Land Code referendum will be on October 13, 14, and 15th, 2016. Which voting method will you use?
   - ○ In person (polling station)
   - ○ Mail-in ballot
   - ○ Electronic voting
   - ○ Not planning to vote
   - ○ Cannot vote (i.e., under 18)

7. Did you know you can contact the Metlakatla Lands Department to arrange for:
   - – a ride to the polling station
   - – assistance with voting electronically, or
   - – more information about the Metlakatla Land Code initiative?
   - ○ Yes
   - ○ No

The Metlakatla Lands Department can be reached at <u>lands@metlakatla.ca</u> or (250) 624-3234 Ext 2009.

Section 3: Cultural Activities

The Metlakatla First Nation identifies Food, Social, and Ceremonial (FSC) Activity as a priority cultural value. FSC activity is defined as harvesting (including fishing, gardening, gathering, hunting, or trapping), processing, preparing, or consuming any traditional foods. Harvesting, processing and preparing can be grouped together under the category of FSC Participation.

8. Please fill out the following table about participation in **food harvesting activities.** If you did not participate in the activity, please put '0'.

In the **past 12 months**, how many days of each season did you harvest the following species? **(# of days/season)**				
Species	**Summer** (May to August) **122 Days in the Season**	**Fall** (September to October) **60 Days in the Season**	**Winter** (November to January) **92 Days in the Season**	**Spring** (February to April) **89 Days in the Season**
Salmon (sockeye, coho, etc.)				
Halibut				
Eulachon				
Crab				
Clams				
Seaweed				
Berries				
Medicinal Plants				
Other: _____				

9. Who do you usually participate with in these food harvesting activities? **Please select all that apply.**

○ Alone
○ Spouse
○ Youth/Children
○ Other Family (grandparents, aunts, uncles, etc.)

○ Friend(s)
○ Parent(s)
○ Brother or Sister(s)
○ Other (please specify): _____

10. How often do you participate with youth (someone under the age of 24) in these food harvesting activities?
- ○ Never
- ○ Less than 50% of the time
- ○ About 50% of the time
- ○ Over 50% of the time
- ○ Always

11. Who did you learn your food harvesting skills from? **Please <u>select all</u> that apply.**

- ○ Parent(s)
- ○ Elders
- ○ Teachers or other school staff
- ○ Other Family (grandparents, aunt, uncle, etc.)
- ○ Community Members
- ○ Knowledge Holders
- ○ No One
- ○ Other (please specify): _____

12. Which food harvesting activities do you want to participate in more, if any?

- ○ Fishing (e.g. salmon, halibut)
- ○ Harvesting other seafood (e.g. crab)
- ○ Hunting (e.g. deer, birds)
- ○ Trapping
- ○ Harvesting marine plants (e.g. seaweed)
- ○ Collecting land plants (e.g. berries)
- ○ Gardening
- ○ Other (please specify): _____

13. Please **choose the <u>top THREE (3) reasons</u>** for not participating in more food harvesting activities.

- ○ No transportation (e.g. boat)
- ○ Too busy (i.e. working)
- ○ No food harvesting knowledge
- ○ No equipment/gear
- ○ No access to harvesting locations
- ○ Health/Age/Disability
- ○ No one to participate with
- ○ Different priorities
- ○ Not interested
- ○ Other (please specify): _____

14. How do you access **most** of your food fish (salmon and halibut)? **Please select one.**
    - ○ I fish
    - ○ Someone in my household fishes
    - ○ From friends
    - ○ Food fish distribution program
    - ○ Other (please specify): _____

The following information about the harvest of wildlife species will help the Metlakatla Stewardship Society (MSS) to make wildlife management decisions that allow continued access for Metlakatla membership. Wildlife harvest numbers will be especially important as the MSS begins to engage with the province as part of their required consultation with First Nations.

15. Please fill out the following table about the **harvest of wildlife species** listed below.

Species	In the **past 12 months,** how many of each species did you harvest?	In the **past 12 months,** how many full days did you spend hunting for each species?	What was each species used for? (e.g., food, ceremonial, other)	Were you able to harvest enough of each species to meet your needs? **(Yes or No)**
Moose				
Grizzly Bear				
Black Bear				
Mountain Goat				
Deer				

16. Please fill out the following table about participating in **food processing and preparing activities.** If you did not participate in the activity, please put '0'.

In the **past 12 months,** how many days of each season did you participate in the following activities? **(# of days/season)**				
Activity	**Summer** (May to August) **122 Days in the Season**	**Fall** (September to October) **60 Days in the Season**	**Winter** (November to January) **92 Days in the Season**	**Spring** (February to April) **89 Days in the Season**
Processing traditional foods (e.g. gutting, chopping)				
Preserving traditional foods (e.g. jarring, smoking)				
Cooking traditional foods				

17. Who do you participate with in these food processing and preparing activities? **Please <u>select all</u> that apply.**
    - ○ Alone
    - ○ Spouse
    - ○ Youth/Children
    - ○ Other Family (grandparents, aunts, uncles, etc.)
    - ○ Friend(s)
    - ○ Parent(s)
    - ○ Brother or Sister(s)
    - ○ Other (please specify): _____

18. How often do you participate with youth (someone under the age of 24) in these food processing and preparing activities?
    - ○ Never
    - ○ Less than 50% of the time
    - ○ About 50% of the time
    - ○ Over 50% of the time
    - ○ Always

19. Who did you learn your food processing and preparing skills from? **Please <u>select all</u> that apply.**

○ Parent(s)   ○ Community Members
○ Elders   ○ Knowledge Holders
○ Teachers or other school staff   ○ No One
○ Other Family (grandparents, aunt,   ○ Other (please specify):
uncle, etc.)   _____

20. Which food processing and preparing activities do you want to participate in
more, if any?
○ Gutting fish   ○ Smoking
○ Chopping (seaweed)   ○ Canning
○ Brining   ○ Cooking traditional foods
○ Jarring   ○ Other (please specify):
                                                _____

21. Please **choose the top THREE (3) reasons** for not participating more in food
processing and preparing activities.

○ No traditional foods available   ○ Health/Age/Disability
○ Too busy (i.e. working)   ○ Different priorities
○ No equipment/gear   ○ Not interested
○ No one to participate with   ○ Other (please specify):
                                                 _____
○ No food processing/preparing
knowledge

The following questions focus on other important parts of Metlakatla culture.

22. Please **choose the top THREE (3) social activities** you want to see more of in
the community?

○ Feasting   ○ Regalia Making
○ Cedar Weaving   ○ Traditional Drawing
○ Traditional Singing and Dancing   ○ Language Classes
○ Carving   ○ Elder-Youth Mentorship Programs
○ Passing of oral histories and   ○ Other (please specify):
traditions (i.e. family laws and   _____
governance)

23. How well can you speak Sm'algyax?
        ○ Fluent

○ Intermediate
○ Basic
○ Only a few words
○ Can't speak it at all

24. Are you interested in learning Sm'algyax?
○ Very interested
○ Somewhat interested
○ Not interested
○ Not applicable

25. Please **choose the top THREE (3) barriers** that limit your ability to learn Sm'algyax.

○ No language classes available   ○ Too busy
○ No one available to teach the   ○ Not interested
language
○ No one to practice with   ○ Too young
○ Not motivated enough   ○ Cost is too high
○ Not easy to get to   ○ Other (please specify):
_____

26. Many projects and activities are being proposed within Metlakatla's Traditional Territory that could impact Metlakatla culture. **Please <u>rank</u> the following cultural values (from 1 to 6)**, in terms of what you think is most important to keep track of and protect from proposed development in the region?

"1" is the cultural value that you think is the most important to track and protect while a "6" is the cultural value that you think is the least important to track and protect. Each number from 1 to 6 can only be used once.

_____ Speaking Sm'algyax
_____ Participating in social activities (feasts, cedar weaving, dancing, carving, etc.).
_____ Protection of culturally significant locations
_____ Eating key traditional foods
_____ Harvesting of key traditional foods and other goods
_____ Stewardship of land and marine resources

Section 4: Health

27. For the following types of health, in general, would you say that your health is:
Emotional health includes feelings of love, loneliness, stress, etc.

	Excellent	Very Good	Good	Fair	Poor
Physical Health					
Mental Health					
Emotional Health					

The following questions ask about health conditions. We recognize that health conditions are sensitive, personal information and you may choose not to answer some questions. However, please note that your answers will help ensure that the physical, mental, and emotional health of all members is improved over time.

28. Do you have type 2 diabetes? ○ Yes ○ No

   a. If yes, did you find out from a doctor within the last year? ○ Yes ○ No

29. Do you have hypertension (also known as high blood pressure)? ○ Yes ○ No

   c. If yes, did you find out from a doctor within the last year? ○ Yes ○ No
   d. If yes, was the high blood pressure related to pregnancy? ○ Yes ○ No

30. In the past 12 months, did you ever experience any difficulties getting routine or on-going care?
     ○ Yes
     ○ No
     ○ Not applicable

   a. If yes, what type of difficulties did you experience? **Please <u>select all</u> that apply.**
          ○ Do not have a personal/family doctor
          ○ Wait times are too long
          ○ Service or appointments unavailable
          ○ Transportation problems
          ○ Cost
          ○ Unable to leave the house because of a health problem
          ○ Other (please specify): _____

Section 5: Demographics

31. What is your current employment status? **Please select the <u>best answer</u>.**

○ Full-time employed (35 hours per week or more)

○ Part-time employed (Fewer than 35 hours per week)

○ Self-employed

○ Unwaged Caregiver

○ Unemployed – able and looking to work

○ Unemployed – disabled/unable to work

○ Employment Insurance (EI)

○ Retired

○ Student

32. Which of the following best describes your marital status?
   ○ Single
   ○ Married
   ○ Living with partner (Common-law)
   ○ Widowed

We recognize that income can be sensitive, personal information and you may choose not to answer the following questions on income. However, please note that your answers to the following questions will help us understand if our goals for economic development are being reached by members of our community.

33. For the previous year, please think of your **total individual income** from all sources before tax. What income range does it fall under?
   By personal income, we are asking for your total personal wages and salaries including commissions, investment income, bonuses, tips, research grants, royalties, CPP, and EI etc. in the past year before any tax deductions.

   ○ No income
   ○ Under $5,000
   ○ $5,000 - $9,999
   ○ $10,000 - $14,999
   ○ $15,000 - $19,999
   ○ $20,000 - $24,999
   ○ $25,000 - $29,999

   ○ $30,000 - $39,999
   ○ $40,000 - $49,000
   ○ $50,000 - $59,999
   ○ $60,000 - $79,999
   ○ $80,000 - $99,999
   ○ $100,000 - $124,999
   ○ $125,000 and over

34. What is the highest level of education you have completed? **Please select <u>one</u>.**
   ○ Grade 8 or lower

○ Grade 9-10
○ Grade 11
○ Grade 12 (high school diploma)
○ Trade certificate or diploma
○ College diploma
○ Bachelor's degree
○ Masters or PhD degree
○ Other (please specify): _____

35. If you are currently in high school, do you plan to attend post-secondary (university, college, or trade school)?
○ Yes
○ No
○ Not applicable

Section 7: Adequate Housing

The next few questions will ask about your household in terms of who lives there, income, and the home itself. For the purpose of this census, a 'household' is a group of people (often a 'family') who live in the same dwelling and share meals and living space together. A single dwelling may be considered to contain multiple "households" if meals or living space are not shared.

36. For the previous year, please think of your **total household (combined) income** from all sources before tax. What income range does it fall under?
By household income, we are asking for the total sum of money you and the other earners in the household made in the past year.

○ No income   ○ $30,000 - $39,999
○ Under $5,000   ○ $40,000 - $49,000
○ $5,000 - $9,999   ○ $50,000 - $59,999
○ $10,000 - $14,999   ○ $60,000 - $79,999
○ $15,000 - $19,999   ○ $80,000 - $99,999
○ $20,000 - $24,999   ○ $100,000 - $124,999
○ $25,000 - $29,999   ○ $125,000 and over

37. Typically, how many people live in your house **at least half the time**?
If none, mark '0'.

	Number of females	Number of males
Children 0-4 years old		
Children 5-17 years old		
Adults 18 – 64 years old		
Elders 65+ years old		

38. How many bedrooms does your home have? _____

39. Does your home need repairs? Note that:
    - ***Major repairs include***: *defective plumbing or electrical wiring, structural repairs to walls, floors, ceiling etc.*
    - ***Minor repairs include***: *missing or loose floor tiles, bricks, shingles, defective steps, railings, siding, etc.*

    ○ Yes, major repairs
    ○ Yes, minor repairs
    ○ No, only regular maintenance is required (painting, furnace)
    ○ Don't know

40. Do you own or rent your home? ○ Own ○ Rent

41. Please fill out the following table with the **<u>average yearly</u>** costs of living.
    If a field is does not apply to you, please write N/A.

Cost of Living	Average Yearly Cost ($/year)
Water and municipal services	
Electricity	
Heat (if separate from electricity)	
Property taxes and/or condo fees	
Cable and/or internet	
Transportation between Prince Rupert and Metlakatla	

---**END OF CENSUS**---------------------------------------

Contact Information

The following personal information is needed for the Communications Department, so that we can contact you with information from the Treaty Office and the Land Code Department. It is also required to enter you into the prize draw, so that we can let you know if you win! Each participant will be entered in a draw for one of five $100 gift cards (gas card or Walmart gift card) or one $500 VISA gift card.

Your personal information will be separated from your census responses.

What is your email address? _____
What is your phone number? _____

How do you prefer to be contacted for information on Land Code, Treaty and other Metlakatla programs?
○ Email
○ Phone
○ Mail
○ Facebook/Social Media
○ Other (please specify): _____