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Lessons Learned Through Community-Engaged Planning

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Abstract
This article explores the potential for community-engaged planning to empower Indigenous communities to take ownership of planning and plan-making. We do this through a source water protection planning process with a First Nation community in Alberta, Canada. Access to safe drinking water for many First Nation communities in Canada remains problematic. Source water protection planning seeks to better integrate land and water management to prevent contamination of the drinking water supply. We employ a community-based planning initiative to develop a source water protection plan. While the planning initiative developed a successful drinking water protection plan it also served to built trust between the participants, respected traditional and Western values, as well as empowered the community. Lessons learned from this initiative are shared.

Keywords
community-engaged planning, Canada, Indigenous, First Nations, source water protection

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Lessons Learned Through Community-Engaged Planning

State-forces once organized to assimilate, colonize, and commit genocide in order to deface and eradicate the Indigenous Peoples of what became Canada (Truth and Reconciliation Commission [TRC], 2015). The collective response of Indigenous Peoples to overcome those forces exemplifies human resilience. Today, the instruments of colonization remain embedded in state-led policies and other institutional arrangements of government—and yet the resolve of Indigenous Peoples to resist and flourish has not diminished. One such instrument is the practice of Western planning, which continues to play a significant role in the colonization process by upholding the apparent value of private land ownership, individual property rights, and state-led laws and regulations. For Indigenous Peoples, Western planning has largely consisted of usurping Indigenous sovereignty to service the interests of non-Indigenous peoples (Lane & Hibbard, 2005). In this article, we explore the benefits of, and lessons learned from, a different form of planning—a form that engages with communities in the plan-making process. This form of community-engaged planning, we argue, empowers Indigenous people as active participants in what Smith (1999) described as an emancipatory process. Of course, a community-engaged land use planning process alone will never remove the overburden of colonization but it may empower communities and help to facilitate reconciliation. Here we describe and reflect upon a community-engaged planning process undertaken at Frog Lake First Nation (FLFN) in Alberta, Canada. This plan-making process focused on the protection of that Nation's drinking water supply. Using this plan-making process as an example, we illustrate that community-engaged Indigenous planning contributes not only to community resilience but also to community empowerment.

The colonial system of "Indian reserves" imposed elements of state-controlled infrastructure services, including housing, waste disposal, and water distribution services. The inadequacy of these services has been well documented in both academic and government literature. In terms of water distribution services specifically, the literature has noted a lack of piped water distribution and community sanitation sewers, as well as frequent boil water advisories and inappropriate or antiquated water treatment infrastructure. In response, the Prime Minister Justin Trudeau has proclaimed his new government will "fix" the First Nation water problem in the next 5 years (Canadian Press, 2015). While many are hopeful that the Canadian government will act on this claim, there is also significant skepticism regarding its feasibility: Can such widespread water problems on First Nations, the result of systemic colonial oversight, be "fixed" in such short order? Furthermore, the commitment to fix the water problem implies that technology and infrastructure investment alone can undo the complex drinking water problem facing First Nations communities. We argue that a possible "fix" will not be found in science and technology alone, but rather that engagement of First Nations in community-based planning, specifically source water protection planning, will provide the presently missing, yet critical, "fix." Initiatives based on such efforts do not exclude the federal government or the research community; instead, they redefine the roles of those parties to ensure that Indigenous voices are present at all stages of the process: from framing the problem to exploring solutions that are both culturally appropriate and context specific.

The Water Problem

Despite ongoing commitments by the federal government to resolve problems of water quality, the contamination of drinking water in First Nations reserves remains high. In fact, as of April 30, 2016,

there were 131 drinking water advisories in effect in 88 First Nations communities across Canada (south of the 60th parallel), excluding British Columbia (Health Canada, 2016). A drinking water advisory is a preventative measure to protect public health from confirmed or suspected microbial or chemical contamination in waters designated for human use and consumption (Health Canada, 2009). More problematic than a drinking water advisory is a boil water advisory, which is issued *after* the contamination of a water supply with fecal pollution indicator organisms has been confirmed (Health Canada, 2009). Boil water advisories are 2.5 times more frequent for First Nations communities than for non-First Nations communities (Eggerton, 2006; Patrick, 2014). In addition, approximately 30% of water systems in First Nations communities in Canada are classified as high risk, and the number of waterborne infections in First Nations communities is an alarming 26 times higher than the Canadian national average (Eggerton 2008; Patrick, 2011). In Alberta alone, there were 16 boil water advisories in effect in First Nations communities in November 2016; the longest was in effect for over 8 years with the average being 2.5 years (Health Canada, 2016). It is beyond the scope of a single study to account for all of the factors that contribute to water contamination in First Nations communities. Similarly, possible solutions to such water-related issues are multi-faceted and vary between First Nations communities. However, the protection of drinking water sources from contamination has been identified as a critical first step toward ensuring the provision of safe drinking water (Canadian Council of Ministers of the Environment [CCME], 2004; O'Connor, 2002; Patrick, 2011).

The Safe Drinking Water for First Nations Act (2013) has required all First Nations in Canada to develop source water protections plans. This is a considerable undertaking for the 634 First Nations governments spread across Canada, many of which are in isolated rural areas, and who may have never participated in a modern plan-making process. In addition, the level of technical, human, and financial capacity that is necessary to undertake plan-making and plan implementation is geographically uneven and often lacking—not all First Nations have the capacity to develop the source water protection plans that the Act requires (Wang & Patrick, 2014). In the past, First Nations communities have been given little guidance—let alone any practical tools—that would help them assist in the development of a source water protection plan. In 2013, the federal government released a source water protection-planning framework for use by First Nations (Aboriginal Affairs and Northern Development Canada [AANDC], 2013). The government's intent was that First Nations would use this planning framework to develop their own source water protection plans. While well intended, this framework never explained *how* a First Nation might engage in the planning process. This article describes and reflects upon a community-engaged planning process that makes use of the AANDC (2013) framework. We see the community-based planning process as essential not only to source water protection plan making but also to fostering community empowerment and resiliency.

Source Water Protection

Source water is untreated water from groundwater or surface water sources that supplies drinking water for human consumption. Source water protection is a vital first step in the protection of water supplies and is often referred to as the first step in the multi-barrier approach to safe drinking water (CCME 2004). The multi-barrier approach (MBA) to clean drinking water is "an integrated system of procedures, processes and tools that collectively prevent or reduce the contamination of drinking water from source to tap in order to reduce risks to public health" (CCME, 2004, p. 15). In the context of drinking water management, the goal of the MBA is to reduce the risk of drinking water contamination

through the presence of system redundancies, or barriers, that are built into the water system. CCME (2004) has described three main barriers of the MBA. The first is protecting the source water from the threat of contamination. The second is the treatment of drinking water through various methods, including chlorination, filtration, and other chemical and mechanical treatments. The third is maintaining, monitoring, and testing the water distribution system.

Source water protection (SWP) gained global media attention following the Walkerton, Ontario, water contamination crisis of May 2000, which resulted in 7 deaths and 2,300 cases of serious illness. Academic literature in the aftermath of the Walkerton crisis initially focused on capacity building to support SWP at a local scale of inquiry. This was much needed at the time, given the downloading of responsibility by government, de-regulation of provincial policies, and limited resources at the local level (Patrick, Kreutzwiser, & deLoë, 2008). Small and rural communities were, and remain, particularly vulnerable to a broad range of financial, human resource, technical, and administrative capacity limitations. While Walkerton will forever remain a tragic event in Canadian history, the persistent water quality issues that continue to plague First Nations communities in this country show that there has been little sign of improvement since 2000. Arguably, source water protection planning offers one means of improving drinking water quality on First Nations (Patrick, 2014).

Community-Engaged Planning

This and other contemporary planning processes should not be construed as a first attempt at planning by First Nations communities. We acknowledge that planning and plan making both have a long tradition in First Nations communities. Settlement planning, hunting and food gathering, transportation and trade routes, and migration and seasonal settlement all depended upon Indigenous Peoples' prolonged planning. Beginning in the late 1800, the Canadian state's forced assimilation policies—for example, the Indian Residential School system and other state apparatuses—interfered with Indigenous Peoples' traditional planning practices. It is important at this point to pause and reflect on the role and consequences of Western planning on Indigenous communities on a global scale. Lane (2006) has noted that modern planning has served to strip Indigenous Peoples of their inherent right to access their lands. Non-Indigenous planners in Australia and elsewhere have used state-led planning to eradicate Indigenous sovereignty over land and resources (Lane & Hibbard, 2005). In Canada, state-led planning operated similarly, supporting land parcelization, private land ownership, exclusionary zoning, and private land sales, which served to remove Indigenous title, rights, and sovereignty over access to land and resources. Such planning effectively aided colonial seizure of and control over land and resources by facilitating practices such as the damming of rivers, flooding Indigenous settlements, establishing Indian reserves, disrupting Indigenous Peoples' livelihoods, extracting natural resources, and denying access to traditional food and medicinal supplies. Even Indigenous beliefs, expression of thought, and ceremonial practices were controlled through government policies, bylaws, regulations, and legislation—themselves examples of Western planning practices. In this article, we look to the role of community-based planning as a means of reclaiming Indigenous planning (Jojola, 2013). Indigenous planning comes from a different place, wherein a collective vision is centered on land stewardship, where the benefits of plan making are distributed evenly across space and where the planning horizon is multi-generational. We argue that community-engaged planning is one means of moving toward Indigenous planning. Community-based approaches to resource planning and management can lead to positive results by reducing conflict and solving complex problems (Ostrom, 2009).

Here we report the lessons learned from the application of a planning framework designed around community-engaged planning in order to develop a source water protection plan for Frog Lake First Nation (FLFN). FLFN is a Cree community located in Treaty 6, Alberta, approximately 200 km east of Edmonton, Canada (see Figure 1). It is located 11 km northeast of the Hamlet of Heinsburg and 13 km southwest of the Fishing Lake Métis Settlement on Secondary Highway 897. The community is easily accessible by paved roads. The on-reserve population of FLFN is approximately 1,400 to 1,500 persons. As of May 2014, there were approximately 310 existing homes plus an additional 70 houses and trailers under construction (FLFN, personal communication, May 2014).

Planning Framework

The plan-making process at FLFN adopted AANDC's (2013) five-stage source water protection planning framework. This planning framework was developed by the lead author for use by First Nations in Canada, with the specific purpose of ensuring the protection of drinking water (see Figure 2). The planning framework, in its current form, makes no specific mention of adopting a community-based approach. Instead, a deliberate effort was made to engage with community members early in the process of developing the FLFN source water protection plan. During the plan-making process, members of the community with related experience and knowledge (the Working Committee) offered perspectives on, opinions about, and stories concerning the condition of the Nation's water and land. This was done to promote a community-centered approach to planning, as opposed to one that privileged and was controlled by the interests of people from outside the community. The following section will describe the five stages of the planning framework.

Stage 1: Establish working committee. Prior to the inaugural SWP meeting in May 2014, directors from FLFN appointed members to the Source Water Protection Plan Working Committee (the Working Committee) to lead the development of a source water protection plan. In total, 11 community members and three technical support personnel contributed to the development of the source water protection plan. The community members included an Elder, two students, an elected councilor, as well as representatives from key departments from the First Nation's government, including the Health Centre, Lands, and Public Works. These representatives included three water treatment plant operators and a water truck driver. The technical personnel on the Working Committee included a water treatment circuit rider[1] from Technical Services Advisory Group (TSAG), a TSAG biologist, and a plan facilitator from the University of Saskatchewan.

[1] The Circuit Rider Training Program is a long-term capacity building program operated by Indigenous and Northern Affairs Canada (INAC, formerly AANDC) to provide training and mentoring services to operators of First Nations drinking water systems and wastewater systems. Qualified experts rotate through a circuit of First Nations communities training the people responsible for operating, monitoring, and maintaining drinking water and wastewater systems.

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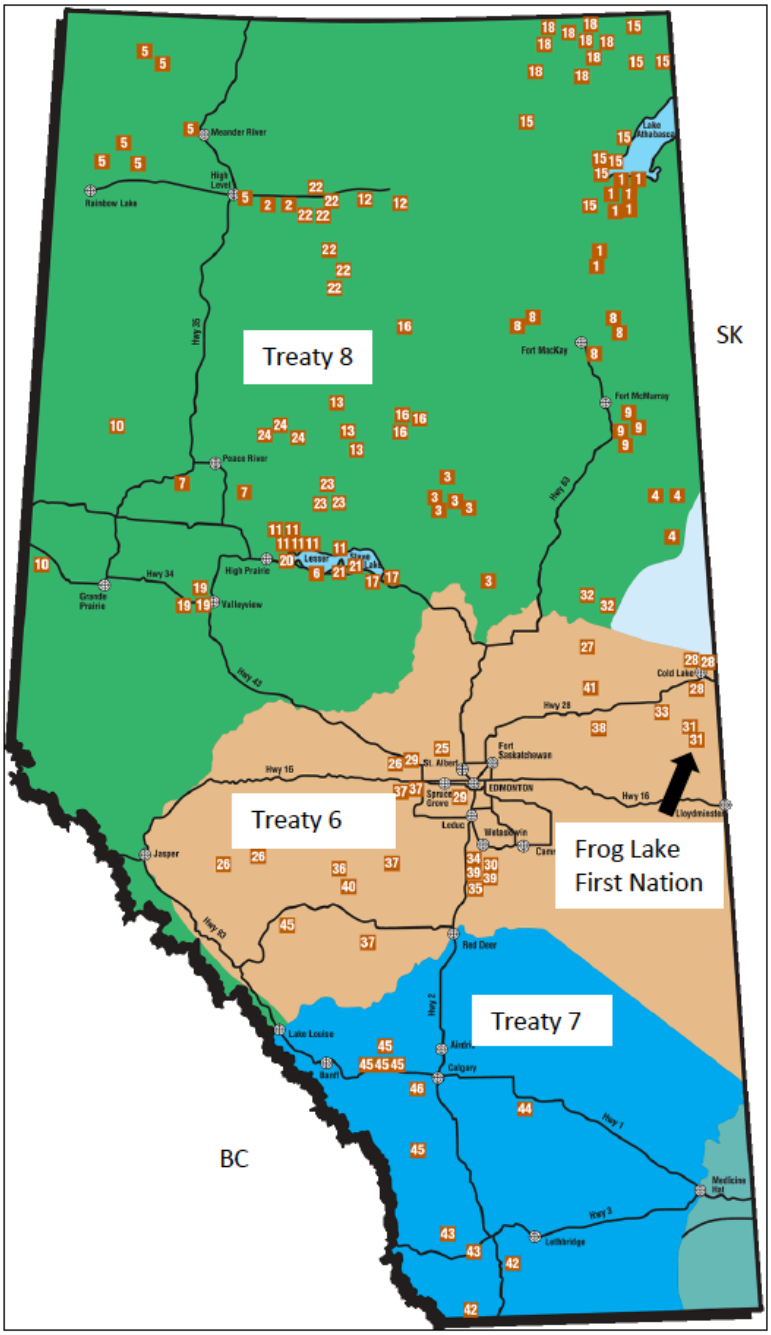

Figure 1. **First Nations in Alberta, Canada.**

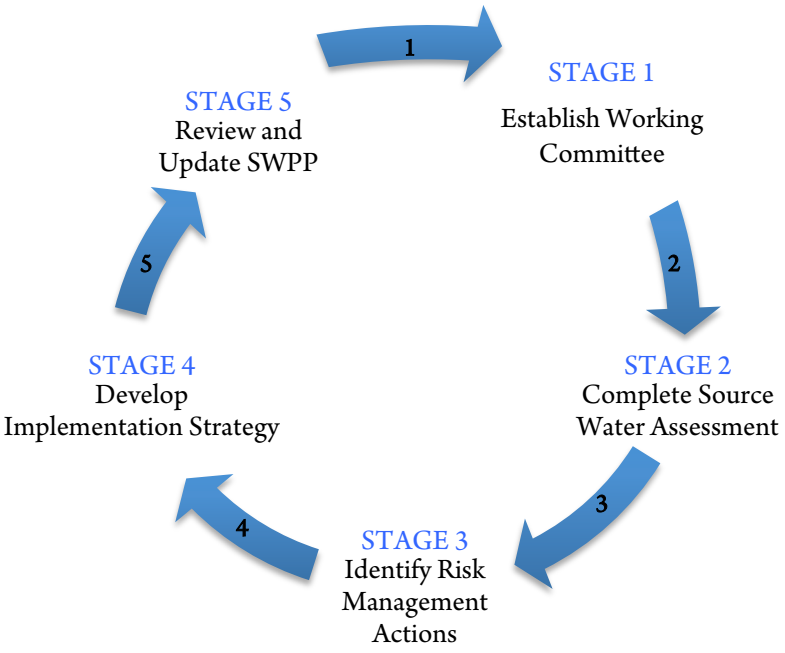

Figure 2. **Source water protection planning framework (AANDC, 2013, p. 8).**

At the Working Committee's inaugural meeting, the plan facilitator shared the planning framework with the Working Committee and the technical committee, and the planning process began immediately thereafter.

The purpose of the Working Committee was to provide knowledge about local water conditions generally including, but not limited to local drainage, drinking water quality, water quantity, wastewater management, and natural and human induced threats to local water sources. Using the planning framework outlined in Figure 2, the Working Committee was tasked with overseeing development of the plan in collaboration with the technical members and community rights-holders who possess knowledge of past and present land uses as well as local hydrological conditions.

Meetings were conducted over consecutive days to help focus the work effort. Specific tasks for each meeting were identified in an agenda consistent with the planning framework outlined in Figure 2. Meetings were held in Chief and Council chambers of FLFN, and a Working Committee member acted as chairperson for each. As is custom when working with many First Nations, lunch was provided. This meal sharing enabled informal discussion, which, in turn, led to a general sense of trust and camaraderie between participants. All meetings opened and closed with a Cree prayer offered by the Elder. An honorarium was paid to the Elder for each meeting attended. As well, a gift of tobacco was offered to the Elder at the start of each meeting. In addition to respecting cultural tradition and protocol, these practices also served to build a trusting relationship.

Following these preliminary meetings, a total of 5 full-day meetings were held to draft the source water protection plan between May and September of 2014. Following the initial draft of the plan, a series of Open House sessions were scheduled over 2 days in December of 2014 at four locations in the community: the Health Centre, the Frog Lake Energy Resources Corporation, the Band Office, and the

Chief Napeweaw Comprehensive School. Following the Open House sessions, the Working Committee met in June 2015 to reflect on the community's input and to make final revisions to the draft plan.

A consensus-based approach to decision making was employed throughout the plan-making process. The plan facilitator encouraged this approach based on the qualitative nature of the data collected. Capturing general perceptions of risk was more important to the plan-making process than precise measurement. For this reason, the consensus-based approach was most appropriate.

Stage 2: Source water assessment. The second stage of the planning framework involved the completion of a source water assessment of the local water system and water supply area. The assessment included the collection of information relating to:

- The source of water,
- The location of water intake,
- The type of water treatment and distribution system,
- The extent of the service area, and
- The number of residential units, commercial users, and institutional users served by the water system.

The source water protection area was decided to be the boundary of the First Nation. However, areas outside of the reserve boundary were also given consideration in this planning exercise because activities in those areas may have negative impacts on the quality of water in FLFN.

Following the description of the water system, an inventory of potential contaminant sources was taken. Using local knowledge, the Working Committee developed an inventory of all known and perceived land uses and activities that could potentially degrade water quality. This inventory included all human-generated sources (e.g., point source and non-point source[2]) as well as natural sources (e.g., erosion, turbidity[3]).

[2] Point source pollution enters the environment at a specific place or "point" from an identifiable source. Examples of point source pollution are landfill site leachate, on-site septic systems, leaking oil and gas storage tanks, and industrial pipe effluent discharge. Unlike point source pollutants, non-point source pollutants come from a wide area of sources. Non-point source pollution comes from natural and human-made sources that are transported by water running over the land that enters surface water or groundwater through percolation. Examples include agricultural runoff and urban runoff.

[3] Erosion is the process of eroding, or the wearing down, of natural material such as rock or soil by wind action, water, or other natural agents. Turbidity is a measure of the clarity of a liquid. Large numbers of suspended microscopic particles in water cause cloudiness of the water. Turbidity is a key test of water quality: The higher the turbidity, the greater the cloudiness of a water sample.

The final component of the source water assessment was a risk assessment of known and perceived threats to the water source. In this context, risk refers to the likelihood of an occurrence multiplied by its potential impact. Both the likelihood and impact of occurrence range in numeric value from 1 (*most unlikely and insignificant*) to 5 (*almost certain and catastrophic*). The likelihood of an occurrence may be low (e.g., a train derailment), but the impact of such an occurrence very high (e.g., long-term groundwater contamination). Conversely, the likelihood of contamination may be very high (e.g., from stream bank erosion) but the corresponding impact may be very low (e.g., increased turbidity of raw water).

The drinking water system at FLFN has many components, including a lake water intake at Frog Lake proper (i.e., the body of water named Frog Lake), a water treatment plant, water delivery trucks, and approximately 300 households with individual water cisterns. In addition, approximately 40 homes are connected to a piped water distribution system from the water treatment plant. This type of "blended" water distribution system is common on First Nations in Canada. As such, there was a need for various community members to make presentations to the Working Committee to explain potential threats to the water supply system. Information from water treatment plant staff, water truck drivers, well drillers, and local health authority personnel was made readily available to the Working Committee members. The purpose of such information was to better inform the Working Committee on key questions relating to the land and water use that would ultimately lead to a better informed source water protection plan.

Contaminant sources were identified based on the Working Committee members' local knowledge. Indeed, this stage of planning depended heavily on the experience and knowledge of the Working Committee members. Land and resource managers provided information about current land management practices that could potentially impact water quality, and the water truck operators shared their experiences working with water cisterns (i.e., their conditions) and cistern filling procedures. Treatment plant operators were important participants too, as they held key knowledge of raw water quality and are often the first to report spikes in raw water turbidity. The Elder on the committee provided knowledge about past land use activities that may affect water quality, as well as the location of private wells, traditional food gathering places, and lake conditions. One observation was that the water level in Frog Lake had been dropping for several decades, potentially as a result of directional drilling for oil and gas deposits under the lakebed.

Beyond identifying potential threats to the water source, it is essential to quantify such threats via a risk assessment process. Thus for each threat identified, committee members assigned a value for both likelihood and consequence. This process generated healthy discussion and, almost always, a clear consensus. Working committee members were reminded that the numbers on the risk assessment scale are merely relative values and are not intended to reflect an accurate assessment. What the values do provide is a means of ranking one activity or event higher or lower in comparison to another, thereby allowing a relative risk ranking for each threat. This is helpful in Stage 3 (see Figure 1), wherein the identified risks become prioritized leading to identification of management actions. At least 3 full-day meetings were committed to completion of Stage 2, which was the most time-consuming stage in the plan-making process.

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In this community-based planning process, members of FLFN became engaged in plan making and also empowered in plan implementation through action-oriented research (Smith, 1999). A more in-depth household survey would potentially reveal a different set of concerns with water. For example, if the study were to incorporate a feminist perspective, then it would be possible to identify concerns with water safety at the household level, particularly surrounding how water quality impacts food preparation, hygiene, sanitation, and children's health. Such an approach could help deconstruct relationships between place, gender, health, and water (Smith, 1999).

Stage 3: Identify risk management actions. After ranking the identified threats (i.e., after Stage 2 of the process), the Working Committee focused on the different management actions that could address the potential risks to source water. Management actions are intended to reduce or eliminate identified risks to source water. For most risks, a single management action is not sufficient to address and rectify potential risks. As such, local knowledge and the experience of the Working Committee were critical during this stage. The Working Committee proposed management actions that were desired, workable, and based on the technical expertise of the committee members.

Generally, there are two types of management actions: structural and non-structural. Structural management actions include land alteration and building infrastructure, while non-structural management actions include communication and education. Blending these two types provides the greatest opportunity for effective, broad-ranging management actions. Again, in the context of the planning process at FLFN, the Working Committee members' breadth of knowledge and experience contributed to creative, yet effective, management actions that are capable of reducing the risk to source water. Discussion during this stage typically emphasized the necessity of rejecting both past and present management practices in favour of suggestions regarding new practices or management actions that should be considered going forward. In all instances, committee members agreed on which management actions would be most effective and suitable for the planning process.

Stage 4: Develop an implementation strategy. Next, the Working Committee developed a strategy to implement the chosen management actions. This involved creating timelines for executing the chosen management actions and identifying potential partnerships. Implementation is critical to plan making and is the factor that most often determines the success or failure of a plan. In addition, implementation allowed the Working Committee to see the results of their efforts and to celebrate the early success of the planning process. The Working Committee noted that certain management activities could be initiated almost immediately, while other activities would take considerably longer to implement. As a result, the Working Committee decided to specify a timeline to completion for each management action: Short term actions were to be completed within 1 year, medium term actions within 3 years, and longer term actions within 5 years.

Another critical aspect of developing an implementation strategy is the identification of key partners to assist with each management action. In most instances, FLFN needed cooperation between several departments within the local government to accomplish the management actions. For example, some homes in the community use "shoot-outs" (raw sewage discharge to the ground surface) as their primary method of disposing of wastewater; in order to deal with the "shoot-out" issue, the Public Works Department, Lands Department, Health Centre, and school would all need to coordinate

implementation. In other instances, outside partnerships may be required from adjacent landowners, businesses, and various levels of government.

Stage 5: Review and update of the SWPP. On an annual basis, the plan should undergo a full review for the purposes of:

- Reporting on the progress of implementing the plan, particularly with reference to water quality monitoring results;
- Re-evaluating the chosen management actions; and
- Re-engaging the Working Committee and the broader community about the planning progress and the next steps.

Given the recent (2015) completion of the FLFN source water protection plan and the ongoing implementation of many management actions included in the plan, it would be prudent to begin regular reviews of the plan.

Planning and plan making is time consuming. Those engaged in plan making at the community level are likely to invest hundreds of hours of their time into plans, and these people are essential to the success of a plan, giving their experiences in community. Despite this, however, they are unlikely to be paid for their services. Community members serving on working committees for planning processes more than likely already hold permanent jobs—elected officials, land managers, treatment plant operators, and school principals. It is important for the external plan facilitators, researchers, and/or consultants to recognize and acknowledge that new planning projects place an additional workload onto participants. While plan-making processes are relatively short—typically lasting between days and weeks—the implementation of these plans may take years. Identifying a person (often called a "plan champion") to assist in early plan development is crucial to ensuring the success of the plan. In the context of the planning process at FLFN, a plan champion emerged from the community, and the implementation of this plan began almost immediately. Without a plan champion or group of plan champions, implementing any plan will be challenging at best. As such, an assessment by the community may help identify the readiness of that community to move forward in plan making prior to actual commencement of a plan. Such an assessment could seek out a plan champion and assess a community's human, financial, political, and technical capacity to undertake not only the plan-making process but also the implementation of a plan.

Discussion

The lead author of this article made an initial visit to FLFN to begin building a working relationship and to tour selected sites within the community. During this visit, the lead author took time to provide an overview of the plan-making process with key staff members and managers within the community. At about the same time, TSAG was undertaking water quality monitoring with youth in the community. It was decided that a combined effort between TSAG, the researcher, and FLFN would most effectively guide the source water protection planning process.

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As mentioned above, the Working Committee for this project was made up of individuals representing different interests within FLFN. These interests ranged from industry to environment and from housing to road infrastructure. It was expected that Working Committee members could participate in a way that would protect their respective interests; however, this did not materialize. Instead, the Working Committee focused on ensuring safe drinking water and the importance of protecting a drinking water source for all community members immediately overtook any competing interests of the Working Committee members. Indeed, the fact that all of the Working Committee members were from the same community, drinking the same water, and shared the same concerns about the health of community members, helps explain the members' immediate commitment to the plan-making process. This might not be the case in other planning processes wherein participants work outside the communities in which they live. We argue that planning—especially the ability of a community to actively engage in a planning process—is a tremendously empowering process. Planning and the process of plan making at the community level is essentially about future seeking. Realizing the collective potential of engaging in and with decision making about the future of one's community is empowering on all levels, and this is magnified in Indigenous communities wherein community members have long been written out of the plan-making process.

As with any plan-making process, building trust between and among the Working Committee and plan facilitators at the start of the planning process was critical. Building trust has a special meaning when working with any First Nations community: The impacts of colonization, residential schools, and racism toward First Nations in Canada have the potential to produce uneasy relations. In addition, the legacy of much of the academic work "on" First Nations has produced a general suspicion towards researchers intent on extracting information for personal benefit. In this project, the positive working relationship between the technical advisors, plan facilitator, and the members of the Working Committee provided a friendly and trusting platform from which to commence the plan-making process. Research with Indigenous communities requires personal contact and the development of lasting relationships. Making multiple site visits to a community and investing time to meet with the membership and leadership is necessary; trust cannot be built through telephone or email alone. At FLFN, preliminary community visits enabled relationship building, open discussion around community events, and visits to various water-related infrastructure sites in the community.

Very few of the Working Committee members had been involved with a plan-making process before the beginning of this project. While there was a degree of excitement among members, there was also some apprehension and uncertainty about the planning outcomes and the expectations of the Working Committee members. It was important, therefore, to remind the Working Committee of the limitations of the plan-making process. One limitation, for example, was that the plan-making process would not guarantee immediate action. That said all members saw the value of a community-based planning initiative.

The identification of a "plan champion" from the community was helpful in terms of logistics (e.g., scheduling meetings), but it was also helpful in terms of ensuring there was a spokesperson for the project within the community. The plan champion may also serve as liaison between department heads, the general membership, and the leadership in the First Nation. Moving forward, a major challenge for community-based planning is plan implementation. We see this as a challenge of human capacity more than anything else. Making a plan is one thing, but implementing a plan is quite another. Existing staff

and management are busy with their existing workloads and the addition of long-term plan implementation is not normally a task people can easily "add-on." Plan implementation requires a dedicated person—a "plan implementation champion"—to coordinate, oversee, and document plan implementation activities. This work entails fundraising, grant writing, information coordination, industry and government collaboration, project management, and outreach to youth, Elders, leadership, and members.

Threat identification was the first group exercise and the information generated was based on local knowledge and experience. The plan facilitators believed that any perceived threat should be identified and recorded for the source water protection plan. Confirmation of the threat, in terms of impact on water quality, would come later if a management action called for water monitoring or contaminant testing. The identification of threats was facilitated through the use of a large wall map of the entire lake and surrounding community. Individual members of the Working Committee marked specific threats on the map and then discussed them. The map was a helpful visual aid for all participants in the plan-making process, as some members of the Working Committee were not aware of the location of certain land features that posed a threat to their source water. Similarly, not all Working Committee members were familiar with the location of the community water system infrastructure.

The risk ranking exercise continued to generate discussion and allowed the Working Committee to determine what constituted a risk (likelihood multiplied by impact). It was surprising to see how much consensus there was within the Working Committee when determining the risk rank value. This had been similarly observed in other community planning exercises. The open, iterative discussion of risks to source water made Working Committee members aware of additional threats that they had initially missed in the previous exercise. For many participants, this became a learning exercise—a history lesson for some younger members who were unaware of past land use activities within their own community. In addition, Elder knowledge played a large role in the identification of past and present threats to the water source.

Next, management actions were identified and listed for each risk. Working Committee members were encouraged not to think of financial considerations, but rather to creatively imagine what action(s) would be necessary to eliminate or at least reduce each identified risk.

The implementation strategy (Stage 4) required the Working Committee to consider key partners (funders) and stakeholders (interested or concerned groups) that could become involved with each management action. The timeline to completion of each management action was also identified in the implementation strategy. At this time in the plan-making process, the facilitators emphasized the importance of early plan implementation. Any early successes in plan implementation would normally come from those threats with a lower risk rank. In this plan, for example, submerged fuel tanks and other debris were noted to exist close to the shores of Frog Lake. These were extracted almost immediately after completion of the plan at a very low cost. The rationale for early successes in plan implementation is meant to offer encouragement and provide a sense of accomplishment to the Working Committee while also showing planning progress to the community.

In the wake of this and other plans, financial resources to support plan implementation is an ongoing issue and concern. Smaller amounts of funding are available from a variety of sources including

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individual First Nations and provincial and federal sources. However, large infrastructure investments—such as a new landfill or sewage lagoon—are not likely to be initiated from a single source water protection plan. Rather, the purpose of the plan is to "flag" concerns, gain community input, and alert external agencies and stakeholders. Follow-up studies and assessments can, and should, arise from this initial planning process.

Conclusion

At the time of publication, source water protection planning with First Nations in Canada is in its infancy. The FLFN case study provided an early application of a source water protection planning process (AANDC, 2013). Overall, the template was very useful to both the Working Committee and the plan facilitators. The five-stage-planning framework provided sufficient structure to guide the plan-making process, yet it was flexible enough to record the complexity and uniqueness of the community's water system and the potential threats to its source water.

While this template helped to guide the plan-making process, the community-engaged planning approach also facilitated a mutually beneficial partnership, which, in turn, supported the development of a planning document and enabled a critique of the AANDC (2013) planning framework. The AANDC planning framework does have its limitations. The first and perhaps most obvious limitation is that the framework is stored on a government website and therefore not accessible to Indigenous communities without Internet access or where such websites are not frequently visited. In addition, this document is written largely in Western science language that adheres to a rational, positivist, planning process, none of which are culturally appropriate in most Indigenous communities. Finally, many Indigenous groups are less familiar with the Western mode of planning and thus may not engage with such a planning framework independently. By centering the plan-making process on the Working Committee, we experienced a collaborative process that placed community members in an empowering position. Through the planning process, it became clear that much more than a plan was being developed. The planning process enabled knowledge sharing, reinforced the importance of protocol by including Elders and youth, and empowered the Working Committee to take control over the plan-making process. From these observations, we conclude with five lessons that we learned from this community-based planning project, offering them as suggestions to other planners, researchers, and consultants who are interested in exploring community-engaged planning with Indigenous communities.

1. Build a Foundation of Trust

Modern planning, as well as Western research more generally, has not always worked to the benefit of Indigenous communities (Lane, 2006; Schnarch, 2004). As a result, a long history of distrust has paralleled the conventional forms of planning and research in many Indigenous communities. A core principle of community-engaged planning is trust building between and among communities and researchers. For this reason, it is critical to build trust early in any community-based planning project or initiative. This requires sensitivity, awareness, and commitment on the part of planners and/or researchers. A single phone call or email is not the pathway to building trust with Indigenous communities. Multiple visits to the community, meeting with First Nations staff and management, as well as field trips and engaging with teachers and other community institutions will help to build trust between planners, researchers, or consultants and Indigenous communities.

2. Work in a Consensus Model

A consensus format for decision making encourages respectful discussion, sharing experiences on the land, and open dialogue. Consensus was especially important for this plan-making process given that many of the threats to water quality were based on perception, local experience, and place-based history. Free discussion versus majority rule facilitated the sharing of experiences in a way that helped soften differing viewpoints, promote open mindedness, and offer new perspectives. In all our deliberations, consensus was successfully achieved.

3. Respect Traditional Protocols

The presence of an Elder on the Working Committee helped to ensure respectful dialogue. At the opening and closing of each meeting, there was a Cree prayer followed by a tobacco gift to the Elder. The Elder was encouraged to share stories and traditional knowledge with the youth and other committee members. Youth membership on the committee was also beneficial because it allowed us to document their perspectives on the health of the community—particularly regarding recreation opportunities, litter, and housing. Further opportunity to involve youth and local schools should be pursued particularly where opportunities exist for expanded water-based environmental education. Furthermore, sharing a meal at each meeting contributed to the plan-making experience, as it made time for informal discussion, as well as sharing stories and laughter. The importance of informal discussion often unrelated to the plan-making process was integral to the overall experience.

4. Be Patient and Flexible

Researchers trained in the Western university system are largely driven by timelines whereby any disruption in a schedule is interpreted as inefficiency. This attitude must be relaxed when working with Indigenous communities. Non-Indigenous planners and researchers visiting Indigenous communities may experience meeting delays, cancellations, or lower than expected attendance. A death in the community, for example, may result in multi-day office closures and broad cancellation of meetings. Researchers trained in Western science must recognize this cultural shift when working with Indigenous communities. In addition, planners and researchers must be mindful of the demands they often place on these communities. Heavy workloads and multi-tasking seems to be the norm rather than the exception in Indigenous communities. These conditions are often not the fault of communities themselves, but are rather symptoms of service downloading and underfunding by the state.

5. Don't Be an "Expert"

The privileged space of Western science and Enlightenment thinking has long prioritized colonial knowledge over Indigenous knowledge (Lane, 2006). Positivist science built the stage from which "expert" knowledge was both created and disseminated. Through the lens of Western science, researchers have long surveyed, interviewed, photographed, and sampled Indigenous Peoples and their communities. Under this colonial model, Indigenous Peoples were the subjects of research, and Western "expert" researchers were the beneficiaries. The notion of the "expert" researcher must be discarded. Both Western and Indigenous knowledge are valuable contributors to research questions. Thus, the language incorporated into plans must be inclusive, jargon free, and appropriate for the

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community members. The use of legal terms and planner talk is not helpful to the process. Above all, provide space to hear voices long silenced.

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