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Insights and Opportunities: Challenges of Canadian First Nations Drinking Water Operators

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Insights and Opportunities: Challenges of Canadian First Nations Drinking Water Operators

Abstract
Providing safe drinking water continues to be a challenge in Canadian First Nations communities. In 2011, in Ontario and British Columbia, only 45 percent and 51 percent of 143 and 160 First Nations had water systems with a fully trained certified operator, respectively. The objective of this research was to investigate the issues of operator training, retention, and job satisfaction through semi-structured interviews and surveys of water system operators in Ontario and British Columbia. Operators reported the lack of funding for operation and maintenance, and a lack of support from band council as challenges in performing their jobs. Of those who reported being unsatisfied with their position, wages, hours of work, and lack of funding or support were cited as primary reasons.

Keywords
Canadian First Nations, drinking water supplies, operators, challenges

Acknowledgments
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Insights and Opportunities: Challenges of Canadian First Nations Drinking Water Operators

Providing safe drinking water continues to be a challenge for First Nations communities in Canada despite considerable financial investment from the Canadian federal government over the last decade (McCullough & Farahbakhsh, 2012). In Neegan Burnside Ltd.'s 2011 *National Assessment of First Nations Water and Wastewater Systems,* a project commissioned by the federal government, 807 water systems serving 560 First Nations communities were assessed. Of these water systems, 315 (39%) were categorized as high risk, 278 (34%) as medium risk, and 215 (27%) as low risk (Neegan Burnside Ltd., 2011a). A high-risk system by definition is one that has major deficiencies that pose a high risk to the quality of water and could require that a drinking water advisory be put in place (Neegan Burnside Ltd., 2011a). The majority of high-risk systems were reported in British Columbia ($n = 154$) and Ontario ($n = 72$).

One common theme that continues to be a barrier to ensuring improved access to safe drinking water in First Nations communities is the availability and presence of qualified and adequately trained operators (Neegan Burnside Ltd., 2011a; Simeone & Troniak, 2012; Swain, Louttit & Hrudey, 2006). According to the *Expert Panel on Safe Drinking Water for First Nations* report *(*Swain et al., 2006), there are several aspects that complicate the issue of ensuring qualified operation of water systems in small communities. These aspects include ensuring that operators are adequately trained and certified, as well as finding people who reside in the communities who meet the requirements and are willing to become operators, and issues of operator retention.

Bill S-8, The Safe Drinking Water for First Nations Act echoes some of the same concerns including that there is often "limited local capacity and ability to retain qualified or certified operators and . . . [there is a] lack of resources to properly fund water and waste water system operation and maintenance" in First Nations communities (Simeone & Troniak, 2012, pp. 2-3). According to the Neegan Burnside Ltd. (2011a) assessment, it is projected that approximately $419 million is required annually in order to meet operation and maintenance requirements for all First Nations water systems across Canada. A significant amount of this projected budget is allocated for salaries and training of certified operators. Moreover, as of 2011, only 54 percent of the 572 First Nations water systems in Canada that require an operator had primary certified operators in place. Further, 3 percent of systems did not have a primary operator, and 19 percent of systems did not have a back-up operator on staff (Neegan Burnside Ltd., 2011a).

Notably, there are significant variations in the percentage of systems with certified primary operators that are located in communities with varying accessibilities as summarized in Table 1. These findings suggest that training is less accessible to those operators working in more isolated communities.

In Ontario, 143 plants require a certified operator. At the time of the Neegan Burnside Ltd. report, only 45 percent had a fully trained certified operator, and 87 percent did not have a fully certified back-up operator (Neegan Burnside Ltd., 2011b). In British Columbia, 160 water systems require a certified operator; however, only 51 percent and 20 percent had a primary certified operator and certified back-up operator, respectively, at the time of the Neegan Burnside Ltd. assessment (Neegan Burnside Ltd., 2011c).

Table 1. Percentage of Systems with Certified Primary Water Treatment Operators by Zone

Zone	Characteristics of Zone	% of Certified Primary Water Treatment Operators
1	Communities that are located within 50 km from the nearest service center and have year-round road access	67%
2	Communities that are located between 50 and 350 km from the nearest service center and have year-round road access	59%
3	Communities located over 350 km from the nearest service center and have year-round road access	47%
4	Communities that have **no** year-round road access to a service center and experience higher transportation costs	26%

Note. Source: Neegan Burnside Ltd., 2011a.

The objective of this research was to investigate the issues of operator training, retention, and job satisfaction through semi-structured interviews and surveys of water system operators in Ontario and British Columbia First Nations communities. To the authors' knowledge, this is the first time surveys of this nature have been undertaken in Canadian First Nations communities.

Methods

Semi-Structured Interviews in Ontario First Nations Communities

In order to investigate the issue of operator training and retention, a series of semi-structured interviews were conducted with First Nations operators and community leaders on eight southern Ontario communities between March and August 2014. The study area extends along the Windsor–Ottawa corridor, the region between Ottawa and Sudbury, locations along Highway 17 between Sudbury and Sault Ste. Marie, and, finally, the range between Sault Ste. Marie and Windsor including Manitoulin Island. This research was approved by the University of Guelph Review and Ethics Board Protocol (REB# 13NV048).

The interviews focused on the following themes: operator retention, job satisfaction, certification, difficulty with operation of the treatment system, funding available for operation, and maintenance and operator challenges.

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The Ontario communities were selected as follows:

1. A list of First Nations communities in the study area were compiled from data provided by AANDC. The final list consisted of 45 communities.

2. All of the communities were called to see whether they had a water treatment plant and a water treatment plant operator. We were only able to get in touch with and confirm with 28 communities that they had both a water treatment plant and an operator.

3. From this list of 28 communities, water treatment plant operators were contacted directly to organize interviews. Many communities denied requests for interviews or did not return phone calls.

4. For the eight operators that agreed to be interviewed, in person interviews were coordinated where possible and otherwise interviews were conducted by phone.

Interview responses were recorded on paper questionnaires by the interviewer. Both open and closed questions were employed. For open-ended questions, responses were coded and classified during data analysis and key quotes were retained. Interviews were not tape recorded because some operators who agreed to participate in the study feared that they could face repercussions for speaking with us and therefore did not want the interviews recorded. Establishing trust with the First Nations communities that we interviewed was crucial for us to engage fully with the operators we spoke with; therefore, operators' wishes were always respected.

Structured Interviews with Operators from British Columbia (B.C.) First Nations Communities

To examine the issues of operator retention and job satisfaction in First Nations communities in B.C., a structured, closed-answer survey was prepared based on feedback collected from interviews with Ontario operators. The surveys included questions regarding level of certification, operator retention, job satisfaction, hours worked, paid vacation, compensation, and challenges faced as an operator. These new surveys were distributed to Water Treatment Plant Operators in B.C. at the 7th Annual BC First Nation Water and Wastewater Operational Excellence Conference and Interactive Trade Show, which was held from October 8 to 10, 2014. There were 79 operators who responded to the questionnaire and we believe that this group of operators is representative of the population of water system operators in B.C. Assuming each operator represented an individual community, the sample collected represents approximately 40% of the population of operators in BC. The operators came from all over the province including remote communities in the BC interior and island communities. The operators were asked to answer the survey questions to the best of their knowledge and were informed that filling out the survey was their choice. Moreover, participants were informed that feedback from their participation would generate responses that could be used to compare the results obtained from interviews conducted in Ontario.

Given the relatively small number of communities interviewed in Ontario, a predominantly qualitative analysis of the findings is presented. The results from these interviews helped to define the questions

posed to B.C. operators in subsequent surveys. A descriptive quantitative analysis of the results from the B.C. surveys is presented. Data were analyzed using Microsoft Excel Version 14.4.4.

Results

Ontario First Nations

Operator certification and working conditions in Ontario. The operators who were interviewed in the eight Ontario communities have been operators from periods ranging from 1 to 23 years, and all are certified. They all work full-time as water treatment operators between 35 and 40 hours a week; however, they are also on call 24/7 for emergencies. They reported receiving anywhere from 3 to 5 weeks of paid vacation per year. In total, 14 full-time operators and four part-time operators were employed in these communities. Seven of the eight communities employ at least one full-time and one part-time operator, while one community has no back-up operator on staff to support the full-time operator. The practice of sharing responsibilities and hours between operators varies from plant to plant; for instance, in one community, three operators work full-time, but they are also responsible for any construction in the community and anything to do with public works. In other communities, part-time operators are hired to work weekends. In one community, two operators alternate the weekend shift. For example, during one week, one operator will work Monday through Friday and the second operator will work Monday through Wednesday, then Saturday and Sunday. The following week, they alternate.

In general, the operators interviewed reported that they were satisfied and/or enjoyed their job. When asked to elaborate as to why, the following thoughts were shared:

- They feel respected within the community.
- They have a sense of responsibility.
- There is a good working environment.
- The system is easy to maintain. There are no large problems.
- They are performing a service.
- They are close to home or close to family in the community.
- Their work is interesting, and the potential to learn new things is important

Interestingly, none of the operators cited compensation as a reason for liking their position.

The operators interviewed reported only ever working in their current community, which initially suggested that operator retention might not be a concern in the communities interviewed. However, after further investigation, we discovered that at least 29 different operators have worked in five of these communities since they were commissioned (representing 69 years total). The existing operators were asked why previous operators chose to leave their positions and the following reasons were listed:

- Found higher paid employment;
- Not prepared for the responsibility of being an operator or not prepared to be on call 24/7;
- Personal reasons or family reasons;
- Personal disagreement with Chief and Council;
- The Chief and Council let operators go because they were not certified;
- Operators were "unsuitable" for work environment and removed by Chief and Council.

B.C. First Nations

During the 7th Annual BC First Nation Water & Wastewater Operational Excellence Conference & Interactive Trade Show, 79 B.C. First Nations Water Treatment operators completed a survey regarding certification, job satisfaction, and working conditions.

Operator certification, working conditions, and compensation. Figure 1 illustrates the breakdown of certification levels of the operators interviewed. The majority of operators reported that they had Level I ($n = 30$) or small water system ($n = 23$) certification. Nine operators reported that they were not certified, while one indicated that he or she was a manager and did not specify certification. The remaining reported that they were either Operators In Training (OIT) ($n = 3$), or certified to Levels II ($n = 6$), III ($n = 1$), or IV ($n = 1$). Five operators did not respond.

When asked whether they were certified to the level required by the system in place, of the 76 operators who responded, 44 said "yes" (58%) and 32 (42%) said "no." Of those who stated "no," 8 were not certified, 2 were OIT, 7 were certified only to operate a small water system, 10 were certified to Level I, 1 to Level II, and 1 to Level III. Three operators did not respond.

The respondents reported working actively anywhere from less than 19 hours per week to more than 45 hours a week as a water system operator (Figure 2). Of the 72 who responded, half answered that they work between 0 and 19 hours per week, while only 11 reported actively working more than 40 hours a week as a water system operator.

Compensation and the number of paid weeks of vacation are shown in Figures 3 and 4, respectively. From Figure 3 it seems that there is no consistency in salaries for water treatment operators in B.C. First Nations communities. Most of the operators surveyed ($n = 50$) reported making less than $40,000 per year. Only 16 reported making greater than $40,000 per year, and the remaining operators ($n = 33$) chose not to disclose their salaries. Fifty operators stated that they get at least two weeks of paid vacation annually, 3 reported they get only one week of paid vacation, and 13 said they get no paid vacation. The remaining operators did not respond.

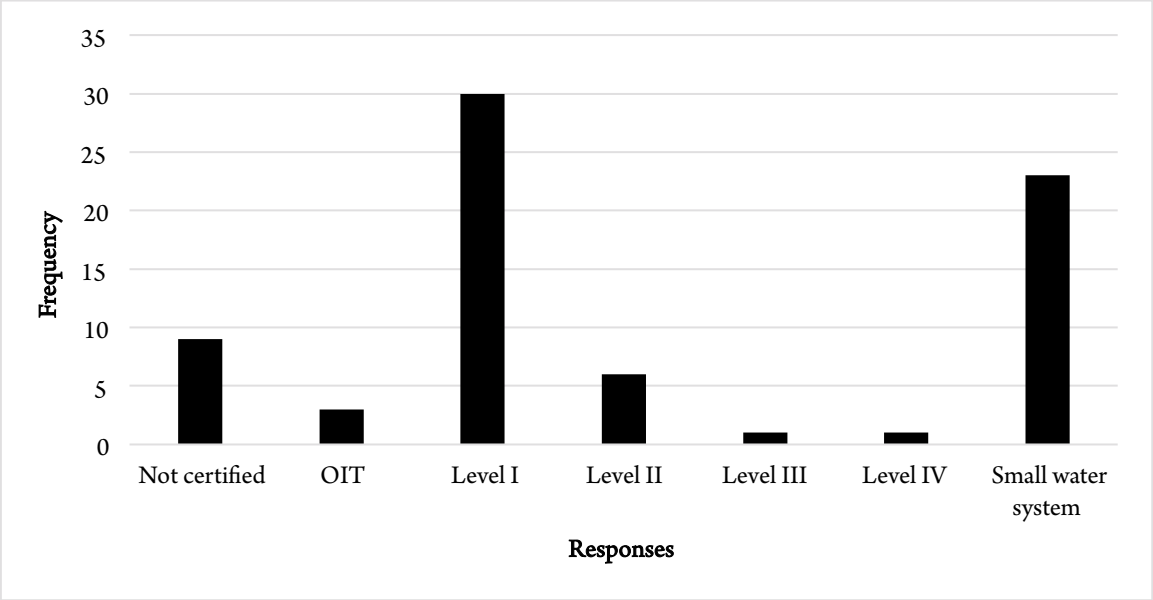

Figure 1. **Self-reported certification levels of water treatment operators from B.C First Nations communities.**

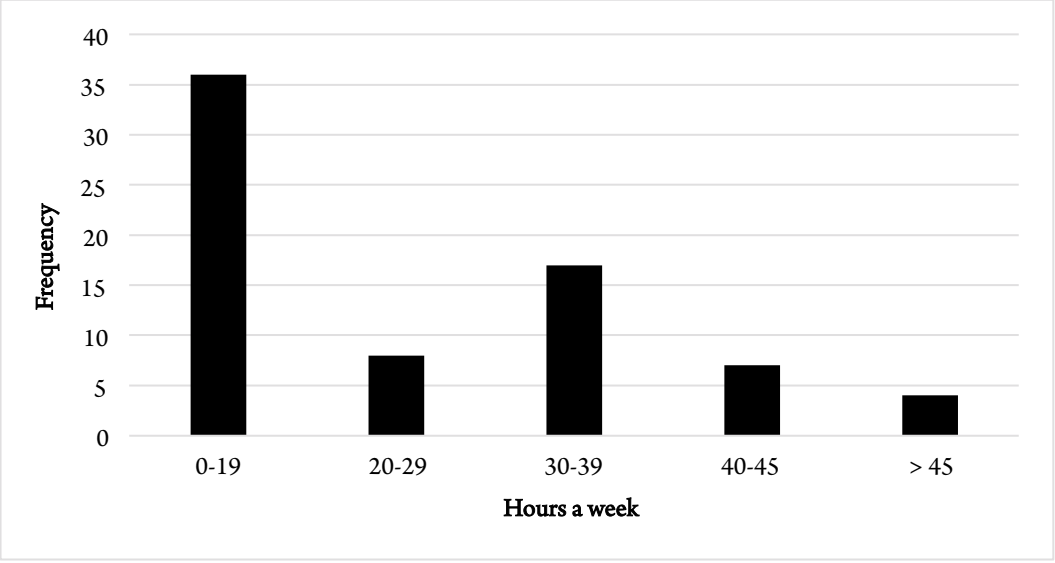

Figure 2. **Self-reported number of hours a week the B.C. operators work on the provision of drinking water in their community.**

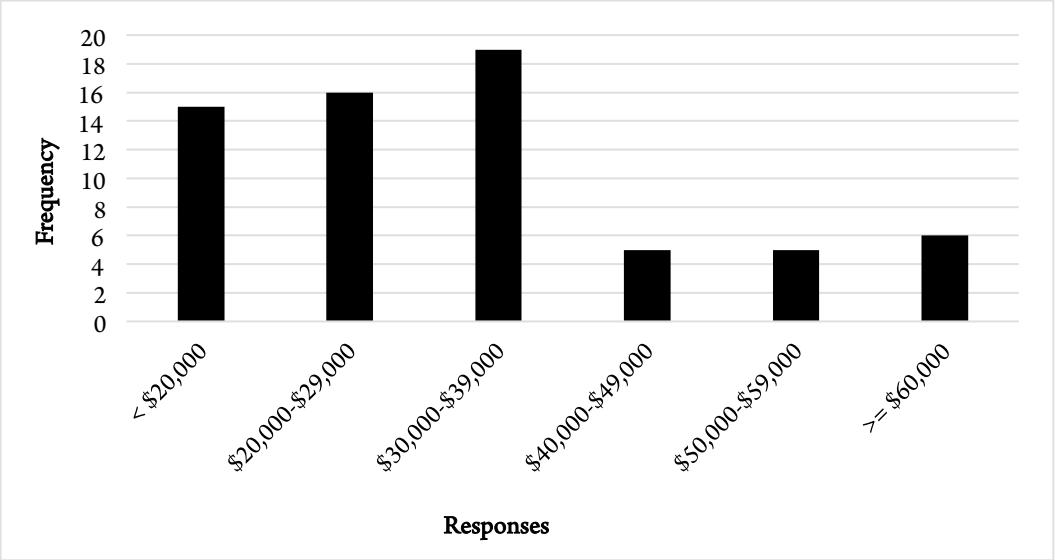

Figure 3. **Self-reported compensation for working as a water system operator in B.C.**

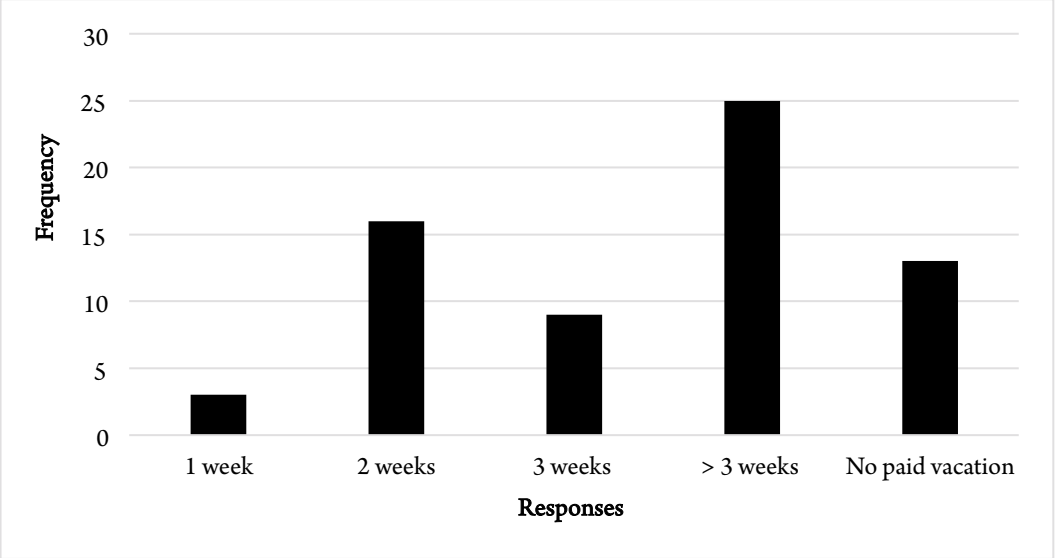

Figure 4. **Self-reported number of weeks of paid vacation received annually by B.C. operators not including statutory holidays.**

Operator job satisfaction and retention. When asked whether or not they were satisfied with their job as a water system operator, 53 responded that they were satisfied, 15 that they were not satisfied, and 3 indicated that they were both satisfied and unsatisfied (they checked both answers). Eight surveys were left blank for this question. Reasons cited for being satisfied and unsatisfied are presented in Tables 2 and 3. Responses for being satisfied and unsatisfied with their roles as a water system operators were grouped into categories. Sometimes operators cited multiple reasons for why they were satisfied or not satisfied with their roles and therefore the response of one operator may have fallen under multiple categories. The most commonly cited reasons for being satisfied with their positions fell under two categories related to: (a) having a sense of responsibility towards their communities ($n = 26$), and (b) being interested in their jobs and training ($n = 18$). The two most cited reasons among those who were unsatisfied with their jobs were (a) wages and hours of work ($n = 6$), and (b) lack of funding and support ($n = 6$).

Using the data collected in the interviews conducted in Ontario, a question was developed regarding the challenges faced by First Nations operators. The operators surveyed in B.C. were asked to identify which (if any) of the challenges listed in Figure 5 they face as water system operators in their communities. The two most frequently cited challenges in the responses were a lack of support from band councils and lack of funding for operation and maintenance. These findings were in line with the information gathered during the Ontario interviews. Other important challenges listed included limited technical support when needed ($n = 19$), community complaints ($n = 25$), difficulty obtaining supplies ($n = 14$), interpersonal challenges with colleagues or band councils ($n = 12$), working with plants that are challenging to operate ($n = 10$), and drinking water advisories ($n = 8$).

Figure 6 shows the distribution of reported number of years that the respondents have been water treatment operators. Only 70 operators (out of 79) responded to this question. From Figure 6 one can see that there was a fairly even distribution of operators with all levels of experience. All but five reported working in the same community once they became an operator. Four of the operators who had worked in other communities prior to their current communities reported leaving their prior positions for the following reasons“ politics,” “change of management,” “council not seeing eye to eye,” and “opportunities.”

Discussion

Operator Certification, Working Conditions, and Compensation

Only 58 percent of the B.C. operators who responded to the survey reported being certified to the required level of their water system in place; the remaining 42 percent were either not certified or their certifications were inadequate for the systems that they were operating. These findings are higher than those presented by Neegan Burnside Ltd. in their 2011 assessment report, whereby 75 of 290 (26%) B.C. systems reported that the operators were not certified or their certifications were inadequate (Neegan Burnside Ltd., 2011c). Consequently, it appears little additional progress has been made since the Neegan Burnside Ltd. assessment (which was conducted in 2009 to 2011) to ensure that operators receive the training they need to operate the systems.

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Table 2. Reasons Cited by B.C. Operators for Being Satisfied with Their Jobs

Category	Example of Responses	Number Who Cited Reason
Feeling a sense of responsibility to community members, and/or their safety/health	"A warrior looking after my community and our people." "Safety. Wellbeing of the community." "I like being able to support my community and make sure the water they have access to is potable and palatable." "Like working with water and people. Happy they have good drinking water." "Love to provide safe drinking water to community…"	26
Interested in job, learning more, training, and being challenged.	"…Interested in water supply, treatment, and delivery." "Job satisfaction through training." "They invest their money into my training and certification." "Enjoy learning challenges and how to fix things."	18
Support from community, Chief & Council, and/or the people with whom they work.	"Generally supported by community and administration." "Because of my crew—work as a team." "Have support from Chief and Council."	5
Satisfied with hours, workload, job security, benefits, or location (close to home)	"Work close to home…" "…It's fun and easy" "Benefits…" "Steady job…" "Live in the community…" "Duty is light…"	9

Table 3. Reasons Cited by B.C. Operators for Not Being Satisfied with Their Jobs

Category	Example Responses	Number Who Cited Reason
Wages/Hours	"Wages."	6
	"Even if you're certified, wages stay the same."	
	"Need better pay for the work you do."	
	"For being available 24/7, not having weekends, etc. holidays."	
Lack of training	"Need more training."	3
	"Certification for myself is below facility level."	
Lack of funding/support	"Lack of support to purchase equipment, lack of council support."	6
	"Water plant is 2.5 years overdue for commissioning/funding issue…"	
	"Need more support from upper management to bring water quality up."	
	"Not knowing what (the) funding for the water program (is) annually."	
Lack of a back-up operator	"No back-up operator."	2
	"Need back-up operator…"	

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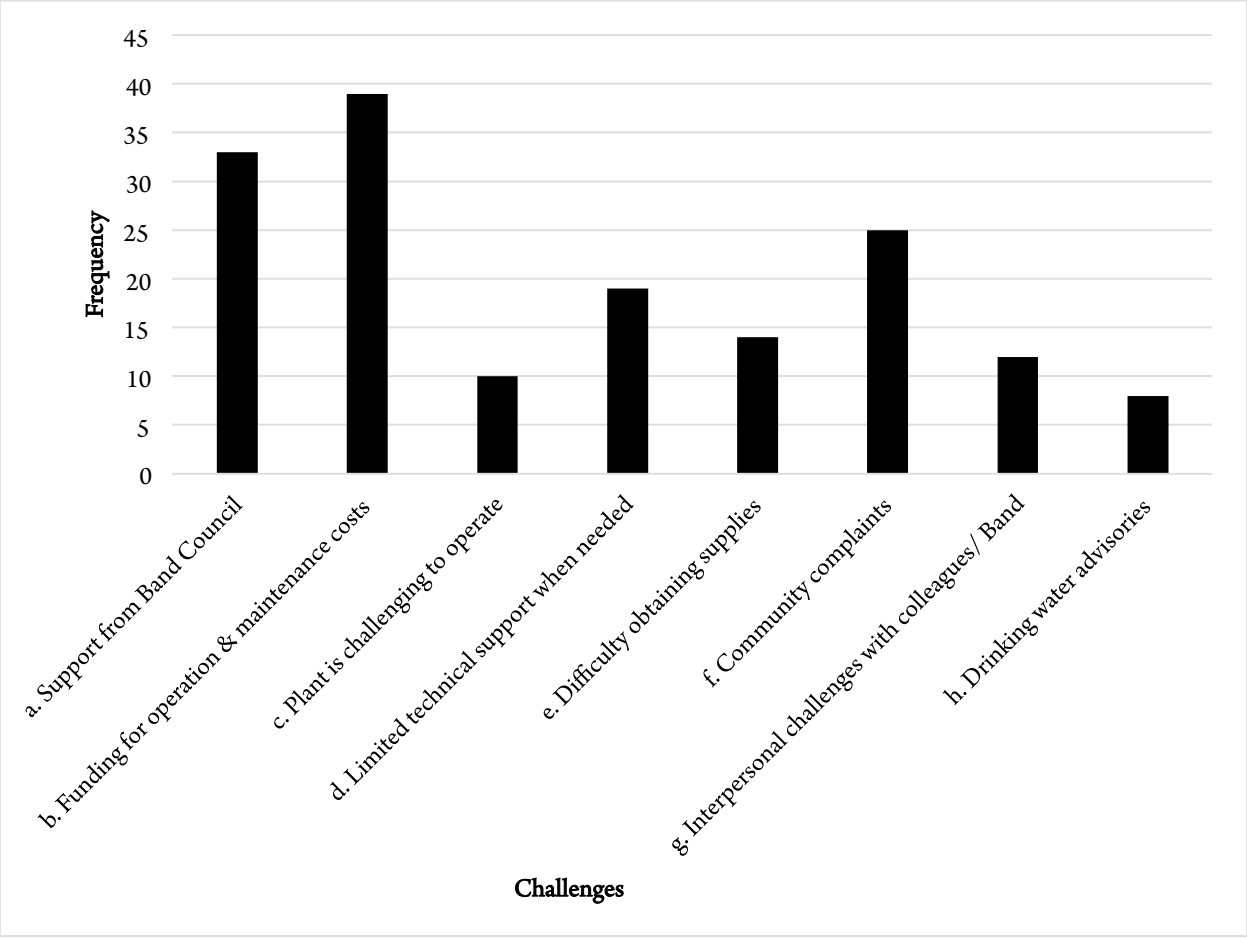

Figure 5. **Reported challenges faced by B.C. water operators in First Nations communities.**

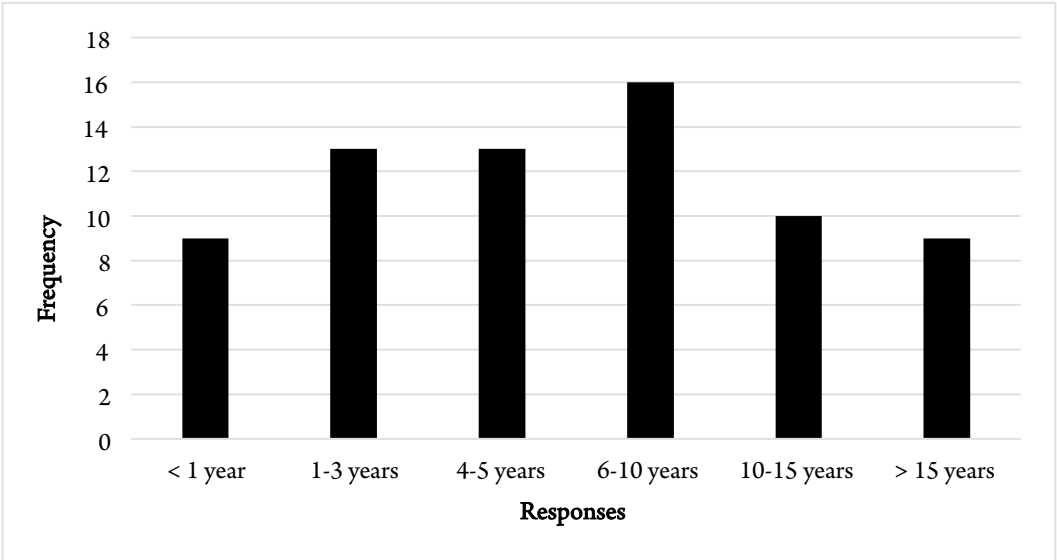

Figure 6. **Distribution of self-reported years of experience acting as water treatment operators in B.C. First Nations communities.**

It is essential that those who are responsible for the provision of drinking water are adequately trained, supported, and compensated in line with the consequences of their actions and inactions in protecting the health of their communities (Hrudey, 2011). Today, over a decade since the Walkerton tragedy, small Canadian communities—including First Nations—still try to get away with employing operators with the lowest level of certification, and providing them with minimal compensation. As a result, these communities may be risking the health of their populations (Hrudey, 2011). This is consistent with the findings of the present study.

From Figures 2 to 4, it is clear that there is a wide variation in the number of hours that operators are required to work as well as how they are compensated in terms of salary and weeks of paid vacation. There were no trends in the data indicating that those who work more hours are compensated more, or vice versa. Given the complexity of governance in First Nations communities, there is no regulatory body that can establish compensation rates for water system operators to ensure that it is equal across communities. However, it has been suggested that provincial laws could be applied to workers' compensation in First Nations communities. In 1994, "a B.C. Court of Appeal case held that a provincial workers' compensation scheme extended to employees of band councils. That case explicitly held that the provincial law did not impair federal jurisdiction or 'Indianness' by its application to the Band Council" (Kahn, Thornton, Kamanga, Sherry & McGregor, 2001, p. 36; see also Isaac v. British Columbia [Workers' Compensation Board], 1994). Consequently, there may be precedent to apply a standard workers compensation scheme across all First Nations communities for water operators in British Columbia and other provinces. However, even if this precedent could be applied, it is likely that many communities will lack the funds to adequately compensate their operators (Smith, Guest, Syrcek & Farahbakhsh, 2006).

Job Satisfaction and Operator Retention

Most of the operators interviewed in Ontario ($n = 8$) and British Columbia ($n = 53$) reported being satisfied with their current employment. Reasons cited for being satisfied with their jobs fell under four general categories (outlined in Table 2):

a. Feeling a sense of responsibility towards their communities and/or the safety and health of community members;

b. Interest in the job, learning opportunities, training, and being challenged;

c. Support from community, Chief & Council, and/or the people with whom they work; and

d. Satisfied with hours, workload, job security, benefits, or location (i.e., working close to home).

Although in both B.C. and Ontario most operators reported they were satisfied with their jobs, many of them reported challenges with obtaining support from their chief and council, as well as having funding for the operation and maintenance of their systems (see Figure 5). In Ontario, one operator explained that he felt stressed at times because he was not sure that he had enough money available to purchase consumables, supplies, and spare parts for the system. Council controlled the water treatment plant budget and he needed to obtain approval for all purchases. These concerns were echoed by other

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Ontario operators who were also not permitted to make decisions without chief and council approval. Moreover, their requests were occasionally not approved, which could have compromised public safety. In one case, an operator reported that he was told he was not allowed to purchase chlorine for the treatment system. These conflicts and political challenges go against the recommendations of the *Expert Panel on Safe Drinking Water for First Nations* (Swain et al., 2006), which states that operators require an "operating, management and governance framework that supports them" (p. 14) so that they can make decisions to prevent risks—as opposed to reacting when dangerous circumstances arise. Chief and council must support system operators and managers and must be aware of the obligations of safe water provision, including ensuring that adequate funds are spent on repairs and maintenance (Swain et al., 2006).

Of the B.C. operators who responded to the question regarding job satisfaction, 53 cited that they were satisfied with their position, while 15 said that they were not satisfied. Reasons for not being satisfied with their position included concerns around wages and hours ($n = 6$), training ($n = 3$), lack of funding or support ($n = 6$), and lack of a back-up operator ($n = 2$).

Operator retention and job satisfaction seem to be closely related to the annual water system operation and maintenance budget available in communities. Not only does this budget affect the operators' compensation, but it also may contribute to their autonomy in terms of decision-making regarding the replacement of equipment and purchase of consumables. In the current funding structure, Aboriginal Affairs and Northern Development Canada (AANDC) contributes 80 percent of funds for the annual operation and maintenance of drinking water systems in First Nations communities. The community is required to contribute the remaining 20 percent (Simeone, 2010). The communities interviewed in Ontario sourced this 20 percent from a variety of income-generating activities, including collection of user fees, collection of land lease fees for businesses and cottage owners, and the "band programming" budget. In 3 of 7 of the communities interviewed in Ontario that have full-scale water treatment systems, user fees are collected to help fund the annual operation and maintenance of the water treatment system. Households pay between $80 and $85 per year and businesses pay between $500 and $1200 per year. Although user fees are collected in these communities, operators still complain of inadequate funds for operation and maintenance, noting that Band Councils ask them to reduce costs or claim that the budget is in deficit, therefore restricting the flow of funds.

McCullough and Farahbakhsh (2012) suggested that the 80:20 split in operation and maintenance costs does not reflect economic reality because many communities do not have income-generating activities that can support the collection of user-fees and, as a result, this funding divide sets the stage for two-tier service delivery—communities with higher incomes can afford to pay for more qualified operators and keep up with maintenance needs, in contrast to those whose incomes are lower and must cut salaries and corners in terms of operation and maintenance. Nevertheless, the collection of user fees alone does not seem to preclude two-tier service delivery in the Ontario communities interviewed. Although user fees are collected in some of the communities, it seems as though the fees may be inadequate to support regular operation and maintenance activities, or that these fees are not being used exclusively for the upkeep of the water system. Several of the operators interviewed in Ontario and B.C. suggested that there may be a lack of transparency between chief and council, and the operators in terms of the budget that is available for the operation and maintenance of the plant, since the operators reported that they are not aware of the annual operating and maintenance costs of the water treatment systems in place. In

addition to transparency, band council members may not be adequately trained in water plant operation when compared to a water treatment plant operator or manager. Band council members may not be aware first-hand of the annual costs associated with consumables, routine maintenance, and repairs, and may only review the requests that come in for these items. As a result, this knowledge gap may be leading to the inadequate forecasting of annual budgets and/or the withholding of funds as routine preventative maintenance activities may not be seen as a priority by band council over other more immediate needs in communities.

The findings reported herein are in line with existing literature regarding operator retention. For instance, Smith et al. (2006) reported that the cultural and political environment on First Nations communities means that "operators can be chosen because they are related to individuals on Band Council or because they are already involved in some other aspect of public works on the Reserve, not because they are possibly qualified or interested in the work" (p. S13). In some Ontario communities interviewed, operators in place were related to members on band council or an employee in the administration offices. Though in these particular situations the operators were qualified and interested in their work, the hiring of relatives may lead to numerous issues including the possibility that the operators may not understand or appreciate the high level of responsibility that is associated with their positions (Smith et al., 2006). In addition, the selection process of operators in some communities is not structured in a way that might mitigate personal conflicts between operators and band council, and, as a result, band council politics may dictate on a whim which operators are appointed and/or dismissed (Smith et al., 2006).

Many communities make attempts to hire from within their own community. This may be due to the fact that the location of the community is too remote, that the community is unable to attract operators from outside the community due to the economy on the reserve, or, possibly, that the community is trying to create a stability on the reserve by creating job opportunities for residents who already reside there (First Nations Information Governance Centre, 2012). The findings of the interviews conducted suggest that hiring from within the community may contribute to improved operator retention. However, information gained from the interviews with operators show that stability in funding is important—in these cases, band councils should ensure that standard processes are in place for hiring in order to mitigate personal conflicts or conflicts of interest between band council, band staff, and operators. Of utmost importance is that the high level of responsibility associated with the position is respected (Smith et al., 2006).

The dismissal of operators because they were not certified suggests that communities may not have had the funds to invest in operator training. This poses other challenges in operator retention: Although the community may save money by hiring operators that are fully certified, they may not be able to retain those operators if they cannot adequately compensate them (Swain et al., 2006). One of the reasons cited for operator satisfaction was the ability to stay and work in one's home community (and remain close to family); therefore, investing in training of existing operators from the communities themselves may be worth the training investment—as opposed to hiring operators from the outside who may not want to stay in these communities for the long term. For instance, in two of the Ontario communities interviewed, band council and public works are working together to recruit youth from high schools and offering them co-op summer positions at the communities' water treatment plants. Once they finish

high school, these youths can go on to take their Operator in Training (OIT) certification and become employed by the community.

Conclusions

Although significant investments have been made by the federal government to support First Nations communities in the operation and maintenance of their water treatment systems, there are still financial gaps and institutional governance structures that need to be strengthened to ensure the ongoing provision of safe water. Eight southern Ontario First Nations operators were interviewed from relatively affluent and accessible communities, and it was expected that these communities would represent "best case" water systems. Yet, the operators in these communities reported that funding and band council intervention are challenges that may interfere with both the operation and maintenance of the system as well as long-term operator retention in these communities.

Using the findings from Ontario, a questionnaire was administered to seventy-nine B.C. water system operators regarding certification, job satisfaction, compensation, and working conditions. The responses from the B.C. operators were in line with those from Ontario. Operators reported that a lack of support from their band councils and a lack of funding for operation and maintenance are two major challenges in their day-to-day operations. For those who reported being unsatisfied with their jobs, wages and hours of work, and lack of funding and support were cited as reasons.

Until sustainable funding strategies are conceived and sound governance structures are in place that can adequately compensate operators and provide them the adequate technical and financial support necessary to fulfill their responsibilities, safe water provision will continue to be a challenge in Canadian First Nations communities. Possible policy recommendations that may address these issues include:

a. The standardization of operator wages, ensuring that operators with the same training and certification are compensated equally. Ensuring, too, that funds provided by AANDC to communities are allocated in such a way that sufficient funds are available for operator salaries and that operator salaries are separate from operation and maintenance costs.

b. Encouraging the training of chief and council in water system operation so that they better understand the role of operators and their day-to-day needs. This may encourage transparency and open dialogue between operators and chief and council regarding operation and maintenance needs and the allocation of funds necessary for the upkeep of water systems.

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