



House of Commons Standing Committee on Finance
2021 Pre-Budget Consultation Submission

SECURING SAFE DRINKING WATER FOR THE FIRST NATIONS PEOPLE OF CANADA

By:

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RECOMMENDATIONS:

Recommendation 1: That the Government of Canada offers the First Nations communities, TRITON, a real-time continuous water monitoring system as a solution to prevent drinking water contamination.

Recommendation 2: That the Government of Canada provides funding in the amount of \$153,134,000 (over five years), for the capital, operations and maintenance, system upgrades and training for water treatment operators to properly maintain the TRITON technology and the water treatment plants, in order to prevent drinking water contamination events in the First Nations communities.

A. SUMMARY:

1. This submission seeks funding for the Safe Water Project, a First Nations (FN) initiative that is ending Boil Water Advisories (BWAs) and protects these communities from a wide range of contaminants and chemicals (e.g. THM and heavy metals) found in drinking water. It protects public health and saves money, while empowering communities to take control of their drinking water for a better quality of life.
2. **Melamen Water Services Inc.**, a FN Federally incorporated company is undertaking the implementation of the Safe Water Project. This project was initiated in early 2015, by the Keewaytinook Okimakanak (KO) Tribal Council of Ontario that is serving six FN in northwestern Ontario. The project includes three components:
 - a. Provide continuous Training and Certification to local water operators.
 - b. Support the Operations, Maintenance, and System Upgrades for local water operators and treatment plants; and
 - c. Deploy proven Canadian-developed and manufactured technology to monitor the quality of water on a continuous 24/7 basis.

In 2016, this project was expanded to 15 other Northern Ontario FN communities, of which 60% have persistent BWAs. From March 2017 to September 2018, the system identified 749 water contamination events (Ref: Project Status Report 10/16/18). Water operators were notified in advance to take appropriate actions to treat and prevent the water contamination incidents. At present, there is no budget for operations & maintenance (O&M), upgrades and training for the water operators. Therefore, the sustainability of the project is at risk.

3. A submission was made by KO to the Finance Committee in the 2015 Pre-Budget Consultations. The submission was recommended by the Finance Committee (Recommendation 31) and was included in the 2016 budget (ref. Chapter 3, page 142 “Monitoring Water on Reserve”), but the budget was later reallocated.
4. The Safe Water Project is the only initiative in Canada that has been able to successfully eliminate BWAs in FN communities using real-time, continuous water monitoring technology.
5. The Safe Water Project has created jobs for FN people (trained water technicians and operators) and helped them acquire relevant certifications.
6. The Assembly of First Nations has endorsed this initiative (Resolutions: 65-2015 & 51-2017).
7. The Safe Water Project aligns with the Government’s priorities. Its first phase will be available in 350 FN communities that wish to participate. It provides the Government an opportunity to offer a solution that will help ensure clean drinking water to the FN communities. The requested budget for 350 FN communities that wish to participate will cost \$ 153,127,148.52 (over five years), which includes:
 - a. \$ 83,411,367.42 in capital costs (infrastructure);
 - b. \$ 42,090,670.62 in O&M and upgrades.
 - c. \$ 20,333,341.50 for operator’s training; and
 - d. \$ 7,291,768.98 for contingency.
8. The Safe Water Project will be administered by **Melamen Water Services Inc.**

B. Budget:

B.1 CURRENT BUDGET ESTIMATES:

In Table 1 as following, an estimate of how much it will cost the Government to support the operation of the water maintenance facilities in five First Nations (FN) communities is provided. The figures were taken from the KO FN communities for O&M labour and chemicals. For the laboratory testing we have assumed sampling once a month with the trip to each community costing \$5000.00 and the analysis \$20,000.00 for an extended list of tests.

All figures have been adjusted upwards by 4% year after year.

TABLE 1:				
FIRST NATIONS BUDGET FOR WATER & WASTEWATER FOR 5 COMMUNITIES				
	Laboratory Sampling	O&M	TOTAL	Average Cost per Community
2018-2019	\$1,500,000.00	\$1,180,000.00	\$2,680,000.00	\$536,000.00
2019-2020	\$1,560,000.00	\$1,227,200.00	\$2,787,200.00	\$557,440.00
2020-2021	\$1,622,400.00	\$1,276,288.00	\$2,898,688.00	\$579,737.60
2021-2022	\$1,687,296.00	\$1,327,339.52	\$3,014,635.52	\$602,927.10
2022-2023	\$1,754,787.84	\$1,380,433.10	\$3,135,220.94	\$627,044.19
2023-2024	\$1,824,979.35	\$1,435,650.42	\$3,260,629.78	\$652,125.96
2024-2025	\$1,897,978.53	\$1,493,076.44	\$3,391,054.97	\$678,210.99
2025-2026	\$1,973,897.67	\$1,552,799.50	\$3,526,697.17	\$705,339.43
TOTAL	\$13,821,339.39	\$10,872,786.99	\$24,694,126.38	\$617,353.16

B.2 NEW BUDGET ESTIMATES WITH THIS PROPOSAL:

In Table 2 as following, an estimate of the cost for the Government to support the operation of the water maintenance facilities in five FN communities under the new proposal is provided.

It is assumed that the required laboratory testing will take place once every six months, with the costs remaining that same as that in Table 1. Every six-month testing is expected to take place once it has been reached a steady state situation and everything works well. In the meantime, more tests may take place to comply with regulations.

It is assumed that two Water Operators (WO) will work in each FN community for the water operations at a rate of \$70,000.00/year. In addition, for every 5 FN communities, an overall

responsible operator will be overlooking the WO of each of the five communities at a rate of \$100,000.00/year.

Continuous training will also take place, to ensure at least one WO is trained from every FN community where the TRITON monitoring system is installed. The training cost are estimated at \$20,000.00/person.

TABLE 2:
Safe Water Project BUDGET per 5 FN communities

	Laboratory Sampling	Capital	O&M + Hardware/Software Upgrades + 24/7 Online monitoring and reporting	Training	Total	Average Cost per Community
2021-2022	\$250,000.00	\$1,100,000.00	\$1,210,000.00	\$100,000.00	\$2,660,000.00	\$532,000.00
2022-2023	\$312,000.00	\$0.00	\$1,258,400.00	\$52,000.00	\$1,622,400.00	\$324,480.00
2023-2024	\$389,376.00	\$0.00	\$1,361,085.44	\$54,080.00	\$1,804,541.44	\$360,908.29
2024-2025	\$485,941.25	\$0.00	\$1,531,036.01	\$56,243.20	\$2,073,220.46	\$414,644.09
2025-2026	\$606,454.68	\$0.00	\$1,791,095.58	\$58,492.93	\$2,456,043.19	\$491,208.64
2025-2026	\$756,855.44	\$0.00	\$2,179,141.64	\$60,832.65	\$2,996,829.72	\$599,365.94
2026-2027*	\$944,555.59	\$0.00	\$2,757,309.36	\$63,265.95	\$3,765,130.90	\$753,026.18
TOTAL	\$3,745,182.95	\$1,100,000.00	\$12,088,068.04	\$444,914.72	\$17,378,165.72	\$496,519.02

B.3 BUDGET COMPARISONS AND SAVINGS:

In Table 3, a comparative study is presented on how much it will cost with the new structure when compared with the existing one. The proposed program not only ensures safe drinking water for FN communities, but also offer considerable savings to the Federal Government.

This could be an offering from the Federal Government to the FN communities, and FN communities themselves will determine their level of involvement and participation. Therefore, this proposed solution will help the Federal Government to manage and minimize their liabilities for water contamination incidences, especially for the FN communities who do not wish to implement the proposed solution and remain with the status quo.

TABLE 3: Comparisons of current and new budget spending			
YEAR	CURRENT SPENDING	PROPOSED SPENDING	SAVINGS
2021-2022	\$211,024,486.40	\$206,059,589.12	\$4,964,897.28
2022-2023	\$219,465,465.86	\$191,632,879.51	\$27,832,586.34
2023-2024	\$228,244,084.49	\$196,236,888.58	\$32,007,195.91
2024-2025	\$237,373,847.87	\$198,044,009.67	\$39,329,838.20
2025-2026	\$246,868,801.78	\$208,611,635.16	\$38,257,166.63
TOTAL SAVINGS OVER 5 YEARS:			\$142,391,684.35

In the table above, it is based on the assumption that 70 FN communities are joining per year, while the communities that are not in the new program continue with their previous spending.

C. PROPOSED BUDGET ALLOCATION:

In Tables 4, 5, 6, 7 and 8, the requested funding allocation per category is presented for a five year period.

It is estimated that:

1. 70 FN communities are joining this program every year.
2. The operational life and renewal of each TRITON system is at least seven years.
3. Two certified water operators per community (\$70,000/year/operator) and one overall responsible water operator (\$100,000/year/five FN Communities).
4. The budget includes \$30,000.00 per FN Community for consumables.
5. \$30,000 per FN community per year for: 24/7 monitoring; support for water operators; and for software and hardware upgrades.
6. Training and certification costs \$20,000 per water operator per year.

BUDGET FOR 350 FN COMMUNITIES OVER FIVE YEARS (ASSUMING 70 FN COMMUNITIES ARE JOINING PER YEAR)

TABLE 4: Capital Equipment Budget per year			\$ 83,411,367.42
2021-2022	\$	15,400,000.00	
2022-2023	\$	16,016,000.00	
2023-2024	\$	16,656,640.00	
2024-2025	\$	17,322,905.60	
2025-2026	\$	18,015,821.82	
TABLE 5: O&M Labour, Repairs, Upgrades and Consumables per year			\$ 42,090,670.62
2021-2022	\$	2,970,000.00	
2022-2023	\$	5,491,200.00	
2023-2024	\$	8,209,344.00	
2024-2025	\$	11,136,153.60	
2025-2026	\$	14,283,973.02	
TABLE 6: Continuous Training			\$ 20,333,341.50
2021-2022	\$	2,178,000.00	
2022-2023	\$	2,964,790.40	
2023-2024	\$	3,926,208.00	
2024-2025	\$	5,036,016.13	
2025-2026	\$	6,228,326.97	
Table 7: Contingency (5%)			\$ 7,291,768.98
TOTAL BUDGET FOR 350 FN Communities			\$ 153,127,148.52

TABLE 8: SUMMARY BUDGET OF ALL YEARLY EXPENSES OVER 5 YEARS						
Year	CAPITAL	O&M	TRAINING	CONTIGENCY	TOTAL	
2021-2022	\$ 15,400,000.00	\$ 2,970,000.00	\$ 2,178,000.00	\$ 1,027,400.00	\$ 21,575,400.00	
2022-2023	\$ 16,016,000.00	\$ 5,491,200.00	\$ 2,964,790.40	\$ 1,223,599.52	\$ 25,695,589.92	
2023-2024	\$ 16,656,640.00	\$ 8,209,344.00	\$ 3,926,208.00	\$ 1,439,609.60	\$ 30,231,801.60	
2024-2025	\$ 17,322,905.60	\$ 11,136,153.60	\$ 5,036,016.13	\$ 1,674,753.77	\$ 35,169,829.09	
2025-2026	\$ 18,015,821.82	\$ 14,283,973.02	\$ 6,228,326.97	\$ 1,926,406.09	\$ 40,454,527.91	
TOTAL OVER FIVE YEARS FOR 350 FN COMMUNITIES					\$ 153,127,148.52	

D. CONCLUSION:

The proposed solution will have the following benefits:

1. Provide real-time continuous monitoring of a wide range of water contaminants tailored to the needs of each First Nations Community.
2. Estimate the level of concentration of each contaminant and provide a health assessment based on the concentration and human exposure in the drinking water.
3. Provide early warning to water operators when the concentration of a contaminant rises and reaches a dangerous level as determined by the World Health Organization.
4. Provide the water operators a list of suggestions to prevent contaminations, which includes:
a) apply corrective actions to the operation of the water treatment plants, b) identify shortages of water treatment chemicals, c) install necessary additional components at the water treatment plant to treat the contaminated water.
5. Help the Government provide and sustain clean drinking water with additional water protection procedures.
6. Provide an economical solution that is sustainable through Operations, Maintenance and continuous system upgrades, training, and 24/7 monitoring of the water quality.
7. Solve the drinking water problem in the First Nations communities and end the long-standing BWAs.