

Pre-Budget Consultation Brief

Submitted to the Standing Committee on Finance

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Aqua Forum's Recommendations for the 2021 Federal Budget

Aqua Forum urges the Standing Committee on Finance to consider the following recommendations:

Recommendation 1: That the government transform Canada into a technological innovation leader for the optimization of sustainable water management.

Recommendation 2: That the government implement a \$25-million, three-year innovation program for water-related start-ups to set up technology showcases and pilot projects in Canadian municipalities.

Recommendation 3: That the government work with Aqua Forum to manage the \$25-million, three-year program.

Recommendation 4: That the government contribute \$25 million over three years to create a \$100-million impact investment fund for companies developing freshwater management technology for North America and bringing that technology to market.



Aqua Forum

Since 2012, the de Gaspé Beaubien Foundation has focused on water issues in North America including conservation, protection, access and quality. The Foundation believes in the passion and creativity of youth and recognizes that entrepreneurship can have a long-term impact on society. This led to the creation of the ***AquaHacking Challenge***, which has given rise to emerging and innovative solutions to the most pressing water issues, most of which must be addressed by municipalities and industry. There are currently 22 AquaHacking start-ups in operation (see Appendix 5)

Founded in 2015, Aqua Forum is a not-for-profit organization that organizes the AquaHacking Challenge across Canada and has run the following challenges:

- [Ottawa River \(2015\)](#)
- [St. Lawrence River \(2016\)](#)
- [Lake Erie \(2017\)](#)
- [Lake Ontario \(2018\)](#)
- [Great Lakes and St. Lawrence Basin \(2019\)](#)
- [Lake Winnipeg \(2020\)](#)
- [Okanagan Basin \(2020\)](#)
- [Atlantic Canada \(2020\)](#)

Aqua Forum's goal is to support emerging technological solutions and connect AquaHacking innovators to the municipalities and industrial sectors grappling with these issues.

Transform Canada into a Water Technology Hub

Now more than ever, the health of Canadians must be a priority not only as we develop short-term public health measures but also as we create public policy and economic initiatives. Water quality and water protection are ongoing public health issues because of how we consume, use and conserve water. *Water is a natural resource and a point of national pride, but, unfortunately, water management in Canada is suboptimal and the related technology is utterly obsolete.*

Water has tremendous economic potential and can absolutely play a role in economic recovery. A growing ecosystem of new tech and innovation enterprises focused on water has emerged in recent years thanks to Aqua Forum and its AquaHacking challenges, whose goal is to put the power of technology and innovation to work for an environmental purpose: better water management and protection.

Our economic recovery must take into account the importance of public health needs. This is 2020, and we need a high-tech drinking water, wastewater and stormwater treatment infrastructure as well as healthy watersheds. Sound management of our freshwater resources must be a priority and has huge potential to benefit Canadians and Canadian entrepreneurs economically.

Aqua Forum is calling on the Government of Canada to make water technology innovation a key component of national economic recovery initiatives in order to better protect and conserve our blue gold.

Recommendation 1: That the government transform Canada into a technological innovation leader for the optimization of sustainable water management.

Create a Program for Water Start-ups to Help Municipalities

Municipalities lag far behind with respect to innovation in water treatment. Multiple barriers to entry, such as undervaluation of the water cycle, lack of relevant data and analysis, complex government issues, fragmentation and a lack of synergy among existing stakeholders and a divide between multinationals and municipalities, are the reason so many businesses in the sector have failed so far.

The AquaHacking approach has shown that, by pairing water experts' knowledge with the next generation's innovative talents, we have created a valuable source of solutions to practical issues around optimizing and managing water operations and infrastructure. A new sector-specific program would support more entrepreneurial undertakings and help develop more tools for making fast, reliable public health decisions. This program should be created together with the Government of Canada and relevant federal departments.

Investing \$25 million over three years in a program to support Canadian municipalities and communities would make it possible to achieve many of the steps that are essential to preparing and transforming the market and integral to the investment chain but not particularly attractive to investors. We believe that, unless this chain is as strong and functional as possible, it will not have either a financial or an environmental impact.

Aqua Forum would work with the government to manage the program, bringing its expertise and its team to the table to ensure success. Program funding would enable municipalities and communities to access the scientific and entrepreneurial know-how of young innovators by financing pilot projects designed to solve water issues in their jurisdictions. With Aqua Forum's backing, the program will encourage communities to support innovation through targeted, accessible financial incentives.

The municipal assistance program would do the following:

1. Assign one or more tech resources to communities in the program, whose job is to provide support and guidance and measure the integration of new technological solutions into water service departments' water management practices.
2. Fund pilot projects that connect Canadian municipalities to Aqua Forum start-ups (alumni) and transform the country's water sector.

Aqua Forum believes this proposed program can improve the existing water municipalization model and have an environmental, social and economic impact. By investing in this program, the Government of Canada would be embracing a long-term, apolitical, citizen-driven vision that will generate economic benefits thanks to the success of new Canadian businesses and environmental benefits thanks to better municipal water management

Recommendation 2: That the government implement a \$25-million, three-year innovation program for water-related start-ups to set up technology showcases and pilot projects in Canadian municipalities.

Recommendation 3: That the government work with Aqua Forum to manage the \$25-million, three-year program.

Conclusion

We believe that a plan to add value to the sector combined with strategic investment will enable us to change Canada's water management practices significantly. Canadians have taken the quantity and quality of our water resources for granted for too long. We have a false sense of security. Water is essential to life, to economic development and to balanced ecosystems.

Water must be protected in a way that enables stakeholders to reap the benefits of sound water management through innovative technology that helps municipalities and industry make the right decisions about water use and treatment. Aqua Forum wants to support the Government of Canada's economic, technological and environmental goals.

APPENDIX 1: Partners

Financial partners



Academic partners

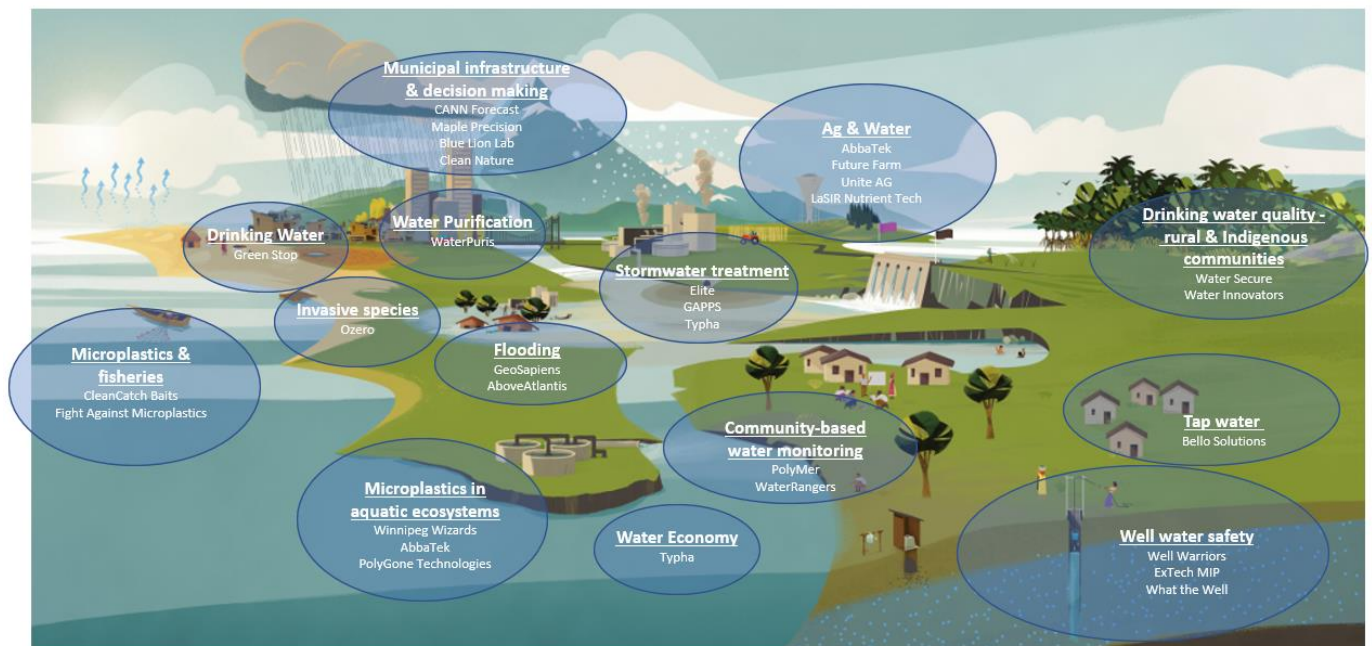


Water sector partners



APPENDIX 2: AquaHacking Solutions

Mapping of AquaHacking Winning Solutions 2015-2020



APPENDIX 3: AquaHacking Start-ups

Cohort	Name	Location	Description
2015	Water Rangers	Montreal	Water testing kit for citizens to easily and quickly collect water quality data from samples from local water bodies and share the data on an interactive online platform.
2016	CANN Forecast	Montreal	Uses primarily artificial intelligence to develop tools that inform decision-making in water management: <i>InfoBaignade</i> enables more reliable prediction of recreational water contamination. <i>InfoBris</i> allows municipal managers to better identify pipes vulnerable to leaks and breakages.
2017	Blue Lion Labs	Waterloo	Provides 24/7 low-cost monitoring and rapid prediction of green algae blooms using AI and collection of unique data.
2017	Maple Precision	Kitchener	Intelligent software for better management and application of phytosanitary agricultural products.
2017	PolyGone Technologies	Waterloo	Detects the quantity of microplastics in water and provides a "microplastic-free" certification.
2017	PolyMer	Montreal	Collects and geolocates microplastics in freshwater through citizen science; identifies the type of plastic to better work with "polluting" stakeholders to reduce the use of plastic as a raw material.
2017	Emagin	Waterloo	Intelligent software for better management of municipal water services.
2018	Geosapiens	Quebec	Developed intelligent software, <i>E-nundation</i> , to simulate and predict floods and to evaluate the impacts on population, buildings and infrastructure.
2018	WaterPuris	Waterloo	Treat endocrine-disrupting chemicals before they reach water bodies.
2019	Clean Nature	Quebec	Developed guIA, an AI system for better management and optimization of road salt application in winter.
2019	Bello Solutions	Montreal	Intelligent water fountains for water quality analysis to inform consumers.
2019	The Green Stop	Montreal	Temporary drinking water distribution system for refilling reusable bottles at outdoor sites and events to reduce dependence on single-use plastic water bottles.

2020 BC	Ozero	Sherbrooke	Technology to decontaminate ballast water in sport boats to prevent the propagation of zebra and quagga mussels in freshwater.
2020 BC	GAPSS	Kelowna	Designed an engineering solution, adapted to the land contour, to collect debris, waste, and sediment as it flows over the urban landscape during high-water events.
2020 Winnipeg	Water Secure	Regina	Series of localized testing hubs that affordably track water quality and upload the data to a live water map that can be used to raise public awareness, help governments identify and invest in infrastructure gaps, and increase the population health and water security of remote communities.
2020 Atlantic	Clean Catch Baits	Halifax	First to manufacture a 100% biodegradable, PVC-free, soft-bait fishing lure used for recreational fishing developed through a unique organic biopolymer solution. Our baits' biodegradation process starts after just 48 hours of submersion in the water, and they're edible! This technology allows anglers to fish worry-free and contributes to the safety of fish and all aquatic life.
2020 Atlantic	Water Innovators	Fredericton	The solution is a containerized distillation water treatment system that integrates existing off-the-shelf technology to provide a high-quality, reliable water supply to small rural and Indigenous communities in an accessible, sustainable and culturally appropriate way.