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RE: Building the Canada We Want in 2050

We would like to first commend the federal government for initiating this effort to develop a National Infrastructure Assessment to lead Canada in addressing climate change and our shared infrastructure challenges, while also promoting innovation, economic prosperity and quality of life for all.

I am writing on behalf of the Canadian Water and Wastewater Association (CWWA). We are THE national voice of the municipal water sector in Canada. As such, our comments draw from the professionals who plan, build, operate and maintain the most critical, life-dependant infrastructure systems across Canada. **We offer our full support and services to this project and to any advisory committee or working groups** moving forward.

Our comments on the engagement paper will address the following:

- Suggestions to support an effective and meaningful Assessment project
- The critical importance of water (water/wastewater/stormwater) infrastructure
- How investment in the water sector addresses each of the primary goals of the government (climate change, energy, innovation, equality and social inclusion)
- Factors to be considered with regard to financing and funding opportunities

Supporting an effective and meaningful Assessment

Our members played a major role in the development of the former InfraGuide program and supported the two editions of the Canadian Infrastructure Report Card (CIRC), as well as provided valuable input on many national projects addressing infrastructure plans, asset management programs, climate change adaptation, flood risk and cybersecurity.

One of the greatest lessons learned from the CIRC process was discovering how many communities were just not capable of responding fully, if at all, to such an assessment survey. Lower participation in the CIRC survey was not due to a lack of desire, but a lack of capacity (resources and data availability), especially amongst small to medium-sized communities. While federal funding has been made available (through the FCM) to support capacity building in these communities, **these programs may need to be amplified** with greater funds and easier, more immediate access in order for municipalities to fully participate.

The development of a more standardized template/toolkit for smaller communities or a **federally-regulated contracting rate** and standards would make it **affordable for smaller communities** to hire the consulting and assessment services they require for this project.

For this Assessment to be most-meaningful, it needs to be more comprehensive than the CIRC in what information it collects. In order to address the many federal objectives identified in this engagement paper, we advise that the Assessment should collect information on more than just the current condition and expected life of each asset being assessed.

Other factors that will support informed decision making would be:

- options to optimize current infrastructure and prolong its life
- existing and target service standards
- the risk assessment and potential impact of its failure
- an assessment of the energy consumed by that infrastructure and its contribution to GHG's and the potential of reduced energy consumption if addressed
- the potential for energy production

While we do not wish to delay any critical infrastructure projects or slow the current National Infrastructure Plan, any future infrastructure funding should be tied to a clear commitment from a community to participate in this National Assessment program.

Finally, we feel this National Assessment needs to be more clearly led by the owners and operators of public infrastructure, represented by organizations such as our CWWA, the Canadian Public Works Association (CPWA), the Canadian Water Resources Association (CWRA) and the Canadian Network of Asset Managers (CNAM). Meaning no offence to our partners in the CIRC project, but the Report Card process was perceived as being led by the private sector through the Association of Consulting Engineering Companies Canada (ACEC) and the Canadian Construction Association (CCA), with the potential optics of a conflict of interest. Meanwhile, the organizations I listed above were relegated to a more minor advisory role. To enhance the credibility of this Assessment, we recommend that organizations such as CWWA, be seen to be taking a more prominent role.

The critical importance of all water infrastructure

Water is life. Securing reliable sources of safe, clean water for all Canadians must be recognized as the most critical first priority for ensuring the health and economy of every community. While housing, transit, broadband and recreation/culture are all valuable sectors supporting quality of life, they are meaningless if we do not have clean water. Water is a first necessity for that housing, for hospitals and care homes, it is essential to food production and a critical element of all industry. While we are fully supportive of this Infrastructure Assessment initiative, we are concerned that water is barely mentioned but twice in the engagement paper. While described once in the engagement paper as a “core community service”, it seems to be a minor consideration under the priorities and is not noted in any of the examples.

We understand that water and wastewater services are not an exciting 'new' infrastructure. In fact, they are a very old infrastructure – in many cases, too old, and overdue for renewal and revitalization. While hidden underground and too-often taken for granted, this most-critical infrastructure needs to be addressed with the same urgency and enthusiasm as new infrastructure.

Global climate change has led to weather-related disasters across the country and around the world. Flood damage has become, by far, the greatest threat to our communities, and the greatest cost to property owners, governments and insurance groups. Addressing the changing flood plains, coastal flooding and urban flooding during extreme rain events must be one of our highest priorities.

Water and the government's primary objectives

As the minister states, the primary purpose of this National Assessment project is "linking investments with outcomes." We believe strongly that water and wastewater infrastructure is so closely aligned with all of the major objectives identified in the engagement paper. Knowledge of the status and condition of our water infrastructure will enable the most beneficial and impactful means for addressing those federal goals.

Tackling Climate Change and Increasing Resilience:

Our first task as a nation must be to minimize our contribution to the global climate problem by reducing our energy consumption, and thus our GHG's – supporting our national goals toward Net-Zero emissions.

As the engagement paper states, almost 62% of Canada's infrastructure is owned and operated at the municipal level. A review of the municipal energy consumption in every community will indicate that their highest energy use is for operating their water and wastewater systems. The potential for energy reduction is tremendous if we just address the waste resulting from aging infrastructure. Leakage of 30 to 50% of treated water is the norm across Canada. This is not only a waste of the water, but more importantly, a waste of the energy used to treat and pump that water for no use. The same is true for wastewater systems that allow the infiltration of stormwater into the system thus requiring the unnecessary pumping and treating of much higher volumes. Even greater reductions can be found through optimization and new, lower-energy technologies. For this reason, we have suggested that the National Assessment include data on the energy consumption of current infrastructure systems and the potential for reductions through appropriate, targeted investment.

At the same time, the water/wastewater sector offers great potential for the production of energy from waste. The development of biogas and heat capture technologies have offered new opportunities for municipal operations to move toward Net-Zero if not a negative energy position. Both energy conservation and renewable energy production are clearly measurable factors when gauging Canada's efforts regarding climate change.

Our second task is to ensure resilience by making the adaptations to our infrastructure in order to maintain critical operations at appropriate service levels to protect communities. The health and economic viability of every community depends on a reliable source of clean water, reliable wastewater systems and effective storm management. Our systems must be optimized, adapted and/or redesigned to ensure their reliability through droughts, storms or other risks. Recognizing the value of natural infrastructure offers tremendous opportunities for adapting to both extreme storm events and drought. A failure of water systems will cause a failure of business and industry and will threaten the health of Canadians.

The impacts of changing climate have been felt in every community; this is not just a concern for communities in coastal and fluvial flood plains, but rather all communities must be prepared for extreme, prolonged rain events. Flood damage is, by far, the highest cause of property damage, thus leading to the highest insurance payments and need for government emergency assistance.

Economic Growth, Innovation and Job Creation:

There are thousands of jobs in Canada's water sector – research, innovation, planning, design, construction and operation. This is an exciting and inclusive sector of our economy offering a full range of opportunities for a diverse workforce from all levels of education.

The potential for Canada to be an innovation leader in water solutions cannot be understated. As the minister states, "Canada is in a competitive global race" and "countries with next-generation infrastructure will be out-sized winners." Water is the most precious commodity on the planet and Canada is poised to be a world leader when it comes to water stewardship and innovation. As caretakers of so much of the world's freshwater, we have a moral obligation to be water leaders, and we also possess the passion, knowledge, and expertise to develop local solutions that can be implemented globally. Our Canadian researchers and private sector entrepreneurs have what it takes to compete internationally and be the global leaders.

We wish to stress the benefits of innovation in the water sector and CWWA remains available to assist the federal government in nurturing that potential. But how can the federal government best support this water innovation sector within Canada? How can the federal government better support the incubation and development of Canadian innovation? And more importantly, how can the government support the adoption and implementation of that innovation within Canada, proving its value to the world? These are questions on which the Assessment should be designed to provide information.

Quality of Life, Equality and Social Inclusion:

Water lies at the heart of quality of life. Ensuring safe, clean drinking water provides an immeasurable quality of life that is sadly not enjoyed by everyone on this planet, and not yet enjoyed by all Canadians. The concept that 'access to clean water is a right' is a moral obligation for all levels of government. Our shared commitment is to develop safe, reliable and affordable water for all. There are certainly great economic benefits from investments in transit, transportation and digital infrastructure, but we must first ensure the basic necessities of water, then shelter.

Appreciating water, in its natural state, in rivers and lakes and aquifers, is part of the Canadian psyche – a major part of our national identity. Protecting that water as healthy, natural habitats for wildlife, fisheries, recreation and simple enjoyment is a key element of what we would describe as our quality of life in Canada. We are encouraged by the creation of the Canada Water Agency in this regard.

Water and wastewater systems not only offer the basics of health to our First Nations, these systems offer rewarding jobs and professional careers. Reliable access to safe, clean water is a core element for supporting a healthy First Nation community, but it is also a key element of self-governance. We are most supportive of the new Atlantic First Nations Water Authority as a hopeful governance prototype for all First Nations.

Financing and funding considerations

The **financing of infrastructure must be a reliable, long term commitment** as opposed to sporadic, competitive grant programs. The long range planning, community engagement, design, construction and full implementation of our projects can take many years. Municipalities, First Nations and our utilities require stable, multi-year financing. If the owners and operators of infrastructure systems are to make the best choices, considering innovation and maximum impact, we need to know there is a financing process we can count on. Immediate funding for 'shovel-ready' projects may mean the funds do not go to the most effective or most needed projects. Short-termed grants do not offer the time to consider alternative technologies. Particular consideration in financing programs must be given to small and medium-sized communities that do not have the staffing capacity to make shovel-ready plans or have projects on the shelf awaiting possible funding.

CWWA, along with the FCM, has always advanced the concepts of self-sufficiency and a reduced reliance on grants for utilities. We have always promoted effective asset management and appropriate consumer pricing, but again, small and medium-sized communities do not have that same capacity for self-financing based on economies of scale. For smaller communities, the cost per household can quickly become unreasonable or even unviable. In these situations, they may require funding support from provincial and federal levels, as well as supports to consider affordable alternatives and new innovation.

It is understood that municipalities are very risk averse, but this is to be expected when investing very limited local funds. Appropriately, this risk aversion is even greater with water, as an error or failure will cost lives. So how can the federal government encourage the consideration and adoption of new, Canadian innovation?

The National Assessment must gather data and information which will allow government policy to be shaped in a way that best promotes the government's primary objectives; for example:

A **procurement process based on 'outcomes'** as opposed to pre-selection of technologies. Governments must ensure that procurement processes are fully open to receive bids from Canadian innovators and to provide them an equal chance for consideration in the analysis and selection of solutions.

An **innovation Insurance program**. Could the federal government, through the Canadian Infrastructure Bank or a separate program, offer an 'innovation insurance' to back-up those communities willing to take a risk on new innovation? If we, as local utilities, are encouraged to adopt new Canadian innovation, what happens if it doesn't work out as planned – especially when the entire community's health and economy are at stake?

How can the **Canadian Infrastructure Bank be of greater support** to municipalities? Their current programs and focus on private-public-partnerships, do not work for small communities. We would recommend they continue to engage Canadian municipalities and utilities to learn how they can be more impactful.

Finally, the National Assessment must pay attention to the variation of governance models under which decisions regarding our infrastructure systems are made. Canada's infrastructure is managed by governance bodies ranging from local and regional municipal councils, to municipal corporations and utility boards, to contracted services. Do the basic elements of these governance models enable problem-solving and action, or are they an obstacle to the more sustainability-minded and science-minded decision making that is required? What lessons can be learned from the governance models currently existing?

In closing, we would like to repeat our complete support for this National Infrastructure Assessment initiative and offer to serve in any advisory capacity. The CWWA has been the national association for water professionals in Canada since 1986. Our members are the municipal utility professionals as well as the private sector consultants and service providers that support our mission. We offer the expertise and experience of our CWWA members, the water utility leaders across Canada.

Sincerely,

Robert Haller

Robert Haller
Executive Director