Attachment 14: TRCA Submission on Canada Water Agency

March 1, 2021

VIA EMAIL (ec.water-eau.ec@canada.ca)

Environment and Climate Change Canada
4905 Dufferin Street, 2S423
Toronto, ON
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Re: Toward the Creation of a Canada Water Agency, Discussion Paper

Thank you for the opportunity to comment on Environment and Climate Change Canada's "Toward the Creation of a Canada Water Agency" Discussion Paper.

The Toronto and Region Conservation Authority (TRCA) is one of 36 conservation authorities in Ontario. Conservation authorities are watershed-based, natural resource management agencies created to safeguard and enhance the health and well-being of communities through the protection and restoration of the natural environment. TRCA's jurisdiction represents a diversity of communities and landscapes across nine watersheds, 65 kilometres of Lake Ontario shoreline, and an area that includes a population of almost 5 million. TRCA's 28-member Board of Directors is largely comprised of elected officials including Mayors and Regional Councillors from throughout TRCA's jurisdiction. TRCA staff are multi-disciplinary, applying watershed-based science at multiple scales for multiple benefit, collaborating with a diversity of public and private partners to achieve shared objectives on private and public lands and waters.

TRCA conducts itself in accordance with the objects, powers, roles and responsibilities set out for conservation authorities (CA) under the *Conservation Authorities Act* and the provincial Procedural Manual chapter on CA policies and procedures for plan review and permitting activities. TRCA's roles are:

- A public commenting body under the *Planning Act* and *Environmental Assessment Act*;
- An agency delegated the responsibility to represent the provincial interest on natural hazards under Section 3.1 of the Provincial Policy Statement;
- A regulatory authority under Section 28 of the *Conservation Authorities Act*;
- A service provider to municipal partners and other public agencies;
- A Source Protection Authority under the *Clean Water Act*;
- A resource management agency; and
- A major landowner in the Greater Toronto Area.

In these roles, and as stated in "A Made-In-Ontario Environment Plan," TRCA works in collaboration with municipalities and stakeholders to protect people and property from flooding and other natural hazards, and to conserve natural resources.

Canada-Ontario Great Lakes Water Quality Agreement

As a related initiative, it is important to note that in 2019, TRCA commented on the Government of Ontario's proposal to update the Canada-Ontario Great Lakes Water Quality Agreement (COA) to recognize the need to strengthen efforts to address new and continuing threats to Great Lakes water quality and ecosystem health, including aquatic invasive species, excessive nutrients, harmful pollutants, discharges from vessels, climate change and the loss of habitats and species. TRCA supported the proposed update to the COA and appreciated its premise that Great Lakes water quality and ecosystem health cannot be achieved by addressing individual threats in isolation, but rather depends upon the application of an ecosystem approach that addresses individually and cumulatively all sources of stress to the Great Lakes. There is a strong alignment with conservation authorities' (CAs) ecosystem approach and watershed-based work that serves to mitigate for the impacts of urbanization and climate change on the Great Lakes and improves ecosystem health.

The COA supports the Toronto and Region Remedial Action Plan (RAP). TRCA administers the RAP for the Toronto Area of Concern (AOC) as part of a 5-year (2015-2020), $2.5 million agreement with Environment and Climate Change Canada and the Ministry of Environment, Conservation and Parks (matching funding). In addition to habitat restoration work, through development and infrastructure planning processes, TRCA staff work with municipalities and proponents to ensure restoration is directed toward strategic areas to address RAP priorities in the Toronto AOC.

Great Lakes Water Quality Monitoring

On a collective basis, CAs and their partners' environmental protection and management of rivers, wetlands and headwaters provide downstream benefits to the Great Lakes, including those for water quality, habitat and recreation. As local watershed and partnership agencies, CAs are well-positioned to play a key role in many of the actions identified in the COA. This is particularly the case for the Greater Golden Horseshoe CAs with Great Lakes shorelines, where the impacts of urbanization and the compounding effects of climate change are acutely felt.

TRCA work on the Great Lakes includes:

- Monitoring nearshore and coastal marsh water quality in Ajax –Pickering nearshore area with support from York and Durham Regions and MECP and ECCC.
- TRCA collaborated in water quality studies looking at eutrophication issues in the Toronto Harbour.
- TRCA assists the City of Toronto with wet weather flow studies (tributary & watershed monitoring).
- TRCA helping MECP and ECCC with monitoring of nuisance algae and lakebed biota in Lake Ontario.

- Sustainable Technologies Evaluation Program (STEP) program offers significant advancements in LID and stormwater technology.
- TRCA has a Rural Clean Water program and Restoration and Stewardship programs that address sources of nutrients.
- Regional Watershed Monitoring Network and Watershed Report Cards document current nutrient conditions and trends within the TRCA.
- TRCA provides plan input and review services related to development planning applications and infrastructure undertakings in TRCA regulated areas. In areas where natural hazards, natural heritage or water resources may be affected by these works, TRCA applies the mitigation hierarchy and where avoidance is not possible, requires that the proponent provide comprehensive mitigation strategies and where appropriate, compensation/off-setting plans.

Canada Water Agency Proposal

We understand that in 2019, the Government of Canada committed to establishing a Canada Water Agency (CWA) to "work together with the provinces, territories, Indigenous communities, local authorities, scientists and others to find the best ways to keep our water safe, clean and well-managed." In the current consultation, the Discussion Paper, "Toward the Creation of a Canada Water Agency," presents key issues for consideration in the Government's approach to creating the agency. Broad input from provinces, territories, Indigenous peoples, stakeholders and the public, is being sought. The results of this engagement process will inform the Government's next steps in implementing the commitment to create a CWA. Further, we understand that the Government is not embarking on legislative or regulatory changes through this Discussion Paper.

The Discussion Paper states that identifying freshwater management objectives for the federal government, while recognizing provincial and territorial jurisdiction, is critical in designing the CWA. The Government of Canada has previously stated its objective to ensure First Nations have access to safe, clean drinking water and is working with First Nations communities to improve water infrastructure on reserves, end long-term drinking water advisories on public systems on reserves, and prevent short-term advisories from becoming long term. The Paper proposes the following further objectives to enhance freshwater management:

- Federal policies promote effective management and protection of freshwater resources and ecosystems in Canada for 21st century challenges and beyond—including adapting to climate change.
- Canada has a state-of-the-art prediction system for floods and droughts that informs climate change adaptation and disaster risk reduction. Indigenous peoples play an increased role in the management of Canada's fresh water.
- Canada is a leader in sustainable agricultural water management.

- Canada's economic sectors have the fresh water they need to grow sustainably, and the tools they need to improve freshwater management and use.
- Canada has and applies cutting edge science to tackle the freshwater challenges of the next century, including climate change.
- Data and information are available to support informed freshwater decision making at all levels.
- Collaborative arrangements are in place and support effective management of domestic and Canada-U.S. transboundary fresh waters.
- Canada is a global leader in freshwater technology, innovation, and infrastructure.
- Canadians are actively engaged in managing and protecting fresh water.

TRCA Comments

TRCA is in receipt of comments provided by Conservation Ontario in response to the CWA Survey on the public consultation website. TRCA supports Conservation Ontario's comments and wishes to provide our own on selected areas of the Discussion Paper as outlined in the table below, based on TRCA's local partnerships and programs, and experience and expertise specific to our watersheds.

Discussion Paper: Toward the Creation of a Canada Water Agency	
Section	**TRCA Comments**
Introduction	• TRCA appreciates the statement that the CWA, "will work collaboratively and respect the jurisdictions of provincial, territorial, and Indigenous governments by building on successful existing mechanisms for cooperation." As a partner and collaborator for watershed health with all three levels of government on public and private initiatives, TRCA is well positioned to assist in providing guidance on how to build on existing mechanisms for meeting shared objectives, while avoiding duplication and finding synergies and efficiencies.
3.1 Freshwater objectives a. What are your thoughts on the above objectives? b. Which objectives are a priority for you? c. Are any objectives missing?	• TRCA supports the creation of a CWA to build on the success and address the challenges of existing mechanisms to meet the stated objectives. • We recommend prioritization of the objectives based on input from the national and regional freshwater forums. Given the range of issues and objectives presented and the diversity of landscapes, communities and their experiences across the country, it may be necessary to prioritize and phase the action plan in setting out resources and timelines to accomplish the objectives.
3.2 Freshwater policy, coordination and multilateral engagement	• The federal government has done extensive work along the Oak Ridges Moraine over the past 20 years. Great partnerships were established with the Ontario Geological Survey, conservation

a. What are your thoughts on the current level of federal engagement on freshwater issues with others in Canada? How can the federal government support engagement? b. How should federal, provincial, territorial, municipal, and Indigenous governments work together to coordinate efforts and cooperatively address local and regional freshwater issues? c. How should the federal government support freshwater-related international activities?	authorities and municipalities. This work has diminished in recent years and should be re-energized. The government should provide guidance and financial support to ensure that work is coordinated and optimized and that a robust framework is in place to share data, knowledge, and wisdom with respect to the geology and hydrogeology of Canada. • In addition, the government should sponsor international forums and leverage the work of groups such as the International Association of Hydrogeologists and the Canadian Water Resources Association. They should support attendance by groups with stories to be told but lacking in the financial resources to be at the table.
3.3 Freshwater prediction to inform climate change adaptation and disaster risk reduction a. What scale and geographic precision of modelling output is needed to support your decision-making and how do you see this evolving over the next decade? b. What are your needs for water quantity prediction products, services, and applications? c. Which of your needs are or are not being met now? How do you see your needs evolving over the next 10 years?	• It would be helpful if the federal government were to provide the overarching directions or standards that should be met by each jurisdiction with regard to ecosystem protection, flood management, water quality, etc. and then providing the funding mechanisms to support local authorities in achieving those standards, e.g., an update to "How Much Habitat is Enough?" is needed, especially with respect to urban area targets. The amount of natural cover and impervious surface in TRCA watersheds is directly tied to the health of its freshwater waterbodies and hydrologic systems. • An outstanding need on the research side is to downscale future climate data for continuous modelling to support hazard risk management, including erosion risks. For this, sub-daily future climate data is needed and not just daily as it is insufficient. As the science is not yet able to facilitate this, the federal government's assistance is needed in terms of research grants and/or innovation support. • Conservation Authorities work at the quaternary watershed scale and below. We therefore need a high degree of precision in our models. The federal government could support this work through the funding of supercomputing centres, such as the one currently running in the GTA. • Moving forward, large scale, high precision models are needed that integrate the local knowledge of conservation authorities' watershed models with the continental scale climate models. Our

	integration of climate models with the existing hydrologic and hydrogeologic models is in its infancy and will need to significantly improve in the years ahead. Advanced computing systems and provincial-scale databases will be needed to support the high resolution and precision required to inform land use and water policy decisions. • Currently, we have a reasonable understanding of our local conditions, but there are issues with respect to edge-matching and consistency of approach across conservation authority boundaries. Over the next five to ten years, the individual models (over 70 major models and counting that touch the TRCA jurisdiction alone) need to be tested and linked to provide seamless model products.
3.4 Indigenous peoples and freshwater management a. From the perspective of Indigenous peoples, what concerns, gaps or opportunities related to fresh water should be taken into consideration when establishing the mandate of the CWA? b. What are some positive examples of First Nations, Métis, and Inuit participation in freshwater governance and decision-making? How might the CWA present an opportunity for better freshwater management informed by these examples?	• While TRCA is not a crown-agency and therefore does not have the Duty to Consult, it does undertake the procedural aspects of Indigenous consultation when requested by its crown-agency partners and in cooperation with partner municipalities. In addition, TRCA's owned and managed lands are typically water-based so that the potential for indigenous interests is high. • TRCA's jurisdiction contains many overlapping Traditional territories and Treaty areas relating to Anishinaabe, Haudenosaunee, Huron-Wendat and Métis nations. TRCA lands contain hundreds of known ancestral archaeological sites as well as high potential for many hundreds more. TRCA's in-house licensed archaeologists regularly communicate two-way information with the modern descendant communities of the people who occupied these past site locations, particularly when there is the need to investigate a site during an archaeological assessment. • TRCA has Engagement Guidelines to obtain guidance on stewardship and management decisions within the archaeological assessment process and other TRCA land management processes. The Guidelines outline and provide guidance on TRCA's commitment to growing our relationships with Anishinaabe, Huron-Wendat, Haudenosaunee and Métis communities, whether that be relatively informal partnerships in various initiatives or formal engagement for TRCA projects subject to legislation requiring engagement. TRCA's overall aim is to develop a positive relationship with communities whose interests may be impacted by TRCA projects, through a process of meaningful, mutually respectful engagement.

	• During the past 35 years, various partnerships have evolved between TRCA Archaeology and a variety of agencies and school boards for the purposes of site protection and public education, including the Ontario Ministry of Tourism, Culture and Sport, Ontario Heritage Trust, school boards, the Royal Ontario Museum, Ontario Archaeological Society and York University.
3.5 Agriculture and fresh water a. How should Canada support the agriculture sector to sustainably manage freshwater resources needed for production and to enhance resilience? b. What new or improved tools or science-related information would help the agriculture sector to enhance water management?	• It would be helpful if the CWA could support compensating farmers for implementing best management practices on their lands that help protect and restore natural features and/or use water more efficiently. Funds for this kind of work are currently relatively limited but could have a substantial impact downstream and on the quality of Lake Ontario. • The agricultural sector has a strong connection to the land and a vested interest in the sustainable use of our hydrologic resources. In this regard, on-line guidance tools, including assistance with multi-sourcing of irrigation water, aquifer mapping, and real-time irrigation optimization tools may be welcomed. For example, our overall understanding of evapotranspiration rates and soil moisture remains limited, but funding of the complex monitoring systems has ceased, at least in Ontario. This is despite the fact that evapotranspiration comprises 60-70% of the hydrologic water budget in Canada. • This work should be restarted and expanded, with the data and analysis fully available to the public. Support for long term partnerships with universities would also be helpful to ensure that monitoring is geographically extensive and covers a wide range of agricultural activities.
3.6 Economic sectors and fresh water a. What sectors do you believe will face the greatest freshwater challenges nationally, and in your region in the next 5, 10, and 20 years? What support is needed to assist sectors in addressing these challenges in terms of technology, information, and other approaches for sustainable freshwater management? b. What are some positive examples of freshwater challenges addressed in sector-specific strategies	• In TRCA's jurisdiction, the issue has been too much water, and this is expected to continue. We have experienced record high water levels in the Great Lakes over the past 5 years. At the same time, Ontario has undergone significant drought events over the past 20 years. Perhaps investment is needed in water storage for use in times of drought; increased water stress is one prediction of a future climate but will not be the main concern based on current science. • Better understanding is needed of long-term trends and influences, regional aquifer systems and the annual water budgets of the Great Lakes, so that governments can more accurately assign water use permits that match the available supplies. • Canada should be a leader in innovative water treatment technologies that make better use of the additional stormwater generated by urbanization, thereby managing stormwater as a resource rather than a liability.

and what can we learn from them?	• Better understanding of the requirements of the growing aquaculture industry is needed to ensure that freshwater availability does not limit their success. One positive example is a successful stormwater treatment at a GTA golf course that produces high-quality irrigation water from a waste product that had previously impacted the natural hydrologic system with excess nutrients.
3.7 Freshwater science a. What are the priority knowledge and research gaps to be filled to achieve effective freshwater management over the next 10 years? b. How well is freshwater science coordinated today? If further coordination is needed, how might that be accomplished?	• TRCA strongly supports the idea of collaboration among the provinces, territories, and others to develop a national freshwater science agenda that would galvanize efforts around key research priorities, improve science integration and communication across governments, academics, and others, and ensure the science is well linked with policy and program needs, including climate change adaptation. • Responding to unique regional water management challenges by supporting regional centres of expertise is another welcome idea presented in the Discussion Paper that would bring expertise together to focus on issue-specific freshwater science. For example, more study is needed on how future climate will affect water resources. TRCA is starting to tackle these issues through watershed planning. Regional forums for discussing these priorities as a Community of Practice would be a helpful role for the CWA to take on. • In terms of water quality, we need an improved understanding of the nature, extent, and impacts of PFAS, endocrine disruptors, and other emerging contaminants in the hydrologic system. Currently, our laboratory testing is limited and expensive for these chemicals, which results in limited testing. • In terms of water quantity, we need a more comprehensive understanding of the availability of both groundwater and surface water, and the cumulative impacts of water use and wastewater disposal. We need official endorsement and support of the cross-jurisdictional work done by hydrologic and hydrogeologic practitioners across the country. More opportunities are necessary for these professionals to interact with each other and the academic community to ensure that ongoing research addresses issues that are identified by those who make use of freshwater resources and those that regulate such uses. We need to encourage, support and fund professionals across this nation to share their data, knowledge and wisdom early and often.
3.8 Freshwater data a. What are your experiences with freshwater	• The Discussion Paper raises the possibility of a Freshwater Data Discovery Strategy that allows users to discover vital freshwater data and bring datasets together based on agreed themes. In April

data? What worked well and what areas have the most room for improvement? Are there good models to learn from? b. What advances in data analytics present opportunities for freshwater management and decision-making? What can the Government of Canada do to capitalize on these opportunities? c. What are examples of where compatibility and interoperability of data across orders of government and with non-government organizations has been achieved? What can we learn from these examples?	2021, TRCA will be launching a Watershed and Ecosystems Reporting Hub, which is an example of how a similar platform is being developed on a regional and watershed scale. • In TRCA's experience, an excellent example of data management is the Oak Ridges Moraine Groundwater Program (ORMGP). This diverse team of professionals has developed one of the most comprehensive regional freshwater datasets and regional assessment of freshwater resources, largely with funding from regional government sources, and limited investment by both the provincial and federal governments. • The ORMGP model could be expanded to provide timely access to hydrologic data across the country, but adoption of this approach would require financial investment to put the appropriate staff and resources in place to ensure the resultant datasets are robust, reliable, and available to the public. • The advancements of shared supercomputer platforms have the potential to allow for high-resolution modelling at scales never before considered. The underlying comprehensive, regional, and national datasets are needed to provide the foundation for this modelling in the future.
3.10 Freshwater technology, innovation, and infrastructure a. What are your thoughts on the technology and infrastructure priority areas identified above? Should others be considered? b. What are the most important freshwater infrastructure priorities for your community, including those needed to adapt to a changing climate? c. What models should the Government of Canada consider to enhance coordination and collaboration on freshwater technology, innovation and infrastructure?	• TRCA strongly supports all of the technology and infrastructure priority areas identified. In addition to the Oak Ridges Moraine Groundwater Program already mentioned, another excellent example of multi-agency coordination is the ongoing Federal-Provincial-Conservation Authority workshop/open house on the Regional Hydrogeology of Southern Ontario.
3.11 Engaging Canadians in managing and protecting fresh water a) What specific tools and approaches will be most effective in advancing high-	• Funding to support training, equipment and coordination of citizen science groups to collect, store, and roll-up monitoring data to the regional centre scale (or beyond) would be helpful; training should

quality citizen and community science and data for freshwater decision-making, and in enabling involvement by all groups?	ensure rigorous quality assurance/quality control to ensure that the right data are attributed to the correct location(s).
3.12 Overarching discussion questions a. What are your views on the possible opportunities to enhance freshwater management identified in sections 3.2 to 3.11? Which should be the highest priority? What is missing? b. Which of these possible opportunities should be priority roles for a CWA?	• The key opportunities in the Paper centre around the collection, storage, and dissemination of extensive, reliable freshwater quality and quantity data. Once that has been accomplished, these data can be the foundation of ongoing resource assessments and implementation of mitigative strategies to ensure the long-term sustainability of our vital freshwater resources. Section 3.10 does a good job of outlining the priorities.
4.0 Governance considerations for a Canada Water Agency a. What are examples or best practices from other jurisdictions or other governance models the Government of Canada should consider in creating a CWA? b. What are your views on the considerations presented? What should be the highest priority? What is missing?	• The Province of Ontario's Provincial Policy Statement requires land use planning authorities to protect, improve or restore the quality and quantity of water by using the watershed as the ecologically meaningful scale for integrated and long-term planning, noting that it can be a foundation for considering cumulative impacts of development. The watershed-based approach should be the foundation of the CWA. As conservation authorities are unique to Ontario, other provinces currently do not benefit from this nature-based, local needs, partnership model. The CWA could provide direction to provinces and regions to adopt such a model through legislation and partnerships across municipal/regional jurisdictions with shared watersheds.

Thank you once again for the opportunity to provide comments on the Discussion Paper on the creation of a Canada Water Agency. Should you have any questions, require clarification on any of the above, or wish to meet to discuss our remarks, please contact the undersigned at 416.661.6600, Ext. 5281 or at laurie.nelson@trca.ca.

Sincerely,

- Original signed by -

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cc:
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