

NRT NATIONAL WATER FORUM REPORT:



# MOVING TO ACTION



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SETTING PRIORITIES FROM  
NRT's *CHARTING A COURSE*  
RECOMMENDATIONS

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## MESSAGE FROM THE NRT VICE-CHAIR AND PRESIDENT & CEO

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This report, on the National Round Table on the Environment and the Economy's (NRT) National Water Forum, provides the start of an action plan that will make important contributions to the management and governance of Canada's water resources. The NRT's report, *Charting a Course, Sustainable Water Use by Canada's Natural Resource Sectors*, brings together the ecological and economic importance of water — highlighting the need to improve water management and governance to ensure healthy ecosystems and prosperous natural resource sectors. The Forum brought together experts from across Canada in January 2012 to discuss the NRT recommendations in *Charting a Course* and provide advice on how they could be put into action.

There was clear consensus among the experts and participants at the Forum that now is the time to begin acting on many of our recommendations for better water governance, exploring the use of water pricing and investing in water-use forecasting and data. Participants felt so strongly about the importance of these issues they developed a new recommendation to create a charter affirming the legitimacy of collaborative water governance processes.

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The NRT strongly encourages governments, industry, and others to act on these recommendations. A number of initiatives and activities already underway could embrace some of the NRT priority recommendations and move them forward, such as the Council of the Federation’s (CoF) Water Stewardship Council, the Canadian Council of Ministers of the Environment’s (CCME) water action plan, the Canadian Water Resources Association’s (CWRA) work on a Canada-wide water strategy, and provincial and territorial water strategies and policies that are currently under renewal. In the current fiscal situation, it will be impossible for any one government or organization to move all these recommendations forward, but through new collaborations and partnerships, we can make real progress on sustaining Canada’s most valuable resource — our water.



R.W. SLATER, CM, PH.D.  
NRT Vice-Chair



DAVID McLAUGHLIN  
NRT President and CEO

## ACKNOWLEDGEMENTS

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The National Round Table on the Environment and the Economy (NRT) would like to express its sincere gratitude to everyone who participated in our National Water Forum. This report would not be possible without their ideas and contributions. We hope that this report captures the essence of their many interventions and insights.

A special thank you to the expert panel members for their time in preparing thoughtful and engaging presentations: Tony Maas, Anthony Watanabe, Steven Renzetti, Kirsten Vice, David Marshall, Don Pearson, David Brooks, Jean Cinq-Mars, and Cairine MacDonald. Their considered perspectives sparked our debate and helped shape the dialogue.

Thanks to George Greene of Stratos Inc. for facilitating the forum so capably.

The NRT Secretariat put forth an exemplary effort to deliver an engaging event. A special note of thanks is due to the Communications team for its efforts to extend the reach of our events through our first-ever live webcast.

Finally, thanks to the NRT members who also took time to participate in the forum: Robert Slater, Mark Parent, Christopher Hilkene, Robert Kulhawy, and Dianne Cunningham.

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# SECTION 1

## *THE NRT NATIONAL WATER FORUM*



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In 2011, the National Round Table on the Environment and the Economy (NRT) published *Charting a Course: Sustainable Water Use by Canada's Natural Resource Sectors*, which provided 18 recommendations for improving water management and governance.<sup>1</sup> The report discusses and explores water forecasts, water-quantity data and information, policy instruments with an emphasis on water pricing, and collaborative water governance. It concluded that for Canada to ensure the sustainability of its water supply — which is crucial to the prosperity of its industries in the natural resource sectors — governments at all levels need to engage in collaborative models of governance, develop and publish a regularly updated national Water Outlook, and further explore the use of water pricing for the natural resource sectors to encourage conservation.

All levels of government in Canada share responsibility for water management and governance. As the major users of water, the natural resource sectors have a significant stake in water management as well. Many efforts are underway in different regions of Canada to improve water strategies, regulations and policies, and collaborative approaches. The recommendations set out in *Charting a Course* provide information and advice to help provinces, territories, and federal departments improve policy approaches and achieve their respective water management objectives.

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<sup>1</sup> See Appendix I for full listing of recommendations.



Canadians need to set the discussion of estimating, forecasting, monitoring, and managing water use, demand, and supply in the context of ecosystems and sustainability.

In January 2012, the NRT convened a multi-stakeholder meeting with 50 Canadian water experts, government representatives, academics, and industry representatives.<sup>2</sup> Participants from across the country discussed, deliberated, and ranked the recommendations in *Charting a Course*, suggesting ways to move the recommendations from argument to action.

In this report, the NRT summarizes these discussions, identifies key points, and brings forward what forum participants thought was most important. We report on how the recommendations can be strengthened and provide the top priority recommendations as identified by this national group of water experts. Participants went on to identify organizations or groups that might be able to lead or contribute to moving the recommendations forward. This report demonstrates that there is significant momentum to act on the NRT's recommendations and sets out suggestions for what can be acted upon now.

<sup>2</sup> See Appendix II for the list of participants.

# SECTION 2

## *KEY FORUM THEMES*



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This section summarizes the key themes discussed in the morning panel sessions of the Water Forum.<sup>3</sup> While many challenges are involved in implementing the NRT recommendations, we take note of one particularly difficult challenge for each topic.

### **WATER FORECASTS AND THE IMPORTANCE OF WATER DATA AND INFORMATION**

Although many of the NRT recommendations related to water forecasts and data were viewed as relevant and important, four key themes emerged from the discussions:

- A broader ecological and sustainability context
- Data and information collection with purpose
- Forecasting good, backcasting better
- Accessible and open data

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<sup>3</sup> See Appendix III for Water Forum Agenda.

## **A BROADER ECOLOGICAL AND SUSTAINABILITY CONTEXT**

Canadians need to set the discussion of estimating, forecasting, monitoring, and managing water use, demand, and supply in the context of ecosystems and sustainability. A sector approach to collecting water data can be useful. Even more beneficial, however, is a broader approach that integrates measuring, monitoring, and forecasting water use with ecosystem needs and directly correlates this to a desired management outcome.

A singular focus on quantitative water use misses issues of water quality, biodiversity, and ecological integrity. Many participants noted that a significant gap in our knowledge centres on in-stream flow needs and the sustainable withdrawals that can be accommodated. Such information is necessary both within a watershed context and with a temporal component to capture seasonal flows and withdrawals.

Without taking climate change into account, data collection does not provide for good forecasting. Water-use forecasting needs to integrate changing climate patterns, which directly affect hydrological conditions. The idea of stationarity — where past hydrological conditions (precipitation, runoff or other flows) are seen as key inputs to future projections — no longer prevails; with climate change, historical water use may not be representative of future use due to differing hydrology and water temperatures.

## **DATA AND INFORMATION COLLECTION WITH PURPOSE**

Data for the sake of data is latent potential — it needs meaning in terms of how it links to economic growth and industrial competitive advantage on a specific watershed or sector basis. At a strategic level, it is necessary to first set the conditions society wants for economic development and ecosystem health and then develop monitoring and information programs that reflect those conditions.

Data and information can be viewed as an economic opportunity. Considerable information already exists on water resources, but it's scattered. Communities need to think about opportunities for integrating data and knowledge and explore the economic opportunities of working with information technology sectors to develop processes and programs that can be leveraged, used, and exported to other parts of the world.

## FORECASTING GOOD, BACKCASTING BETTER

Forecasting provides a way of looking toward a future based on current conditions. Participants agreed that a more substantive but not necessarily “perfect” water-demand and use forecast is needed. They agreed with the recommendation in *Charting a Course* that this be done at a basin level and that the results be integrated with the supply-side hydrological data creating water balances. In this way, questions about future water demands could be better understood.

While forecasting water use and demand was seen as a useful and important tool, it was suggested it be used in a different way. Rather than simply forecasting future demand, participants recommended that a better approach would be to “backcast.” Backcasting sets a sustainability agenda for water, envisioning a desirable state of a watershed in the future and then uses water forecasts to figure out how that vision could be achieved. This backcasting approach is based on the “Water Soft Path Approach”<sup>4</sup> that uses strategic thinking to envision a desirable future and then integrates policies, plans, and technological innovation accordingly.

## ACCESSIBLE AND OPEN DATA

The NRT’s recommendation to have a national water portal was favourably viewed. As many noted, industry, governments, and non-government organizations hold a considerable amount of data; what is required is a means to collect and use that data in a more transparent, open, and accessible way. To move this idea forward, participants suggested we look for best practices within provincial initiatives and adapt them for a national portal. Two examples are the Water and Environmental Hub (WEHUB) and the Alberta WaterPortal. More work is needed to standardize data, decide on its best use, and determine appropriate levels of disclosure. In an era of transparency in which consumers demand product provenance, chain of custody, and full ingredient disclosure, governments should be leading the way to “democratize data.”

## NOTED CHALLENGE

Data and information collection, dissemination, and interpretation require sustained and focused efforts. Moving these recommendations forward will require new human and financial resources, not an easy challenge to overcome in the current financial situation facing many governments. Leadership and accountability are essential to ensuring the collection of water data and information over the longer term.

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<sup>4</sup> Advocated by the Polis Project on Ecological Governance: <http://poliswaterproject.org/softpath>



In an era of transparency in which consumers demand product provenance, chain of custody, and full ingredient disclosure, governments should be leading the way to “democratize data.”

## PUTTING A PRICE ON WATER

The NRT’s research on the potential use of pricing water, specifically with the use of volumetric charges, was viewed as innovative and applauded as a necessary first step toward further exploring this much talked-about, but not well understood, policy tool. The recommendations were largely accepted by Forum participants. Their discussions on water pricing revealed two themes:

- Signal the value of water to change behaviour
- Water pricing has real potential as a water management tool but needs further investigation

### SIGNAL THE VALUE OF WATER TO CHANGE BEHAVIOUR

Using economic instruments, such as water charges, encourages conservation by moving water use to its higher value. This will ultimately change the way industry uses water. Currently, all Canadian provinces and territories have the legislative authority to charge for water use. However, the charges — for the most part — reflect administrative fees, not the true *value* of water. Existing fees charged by governments are too low to affect the behaviour of the users. Water markets, another economic instrument, are in limited use in Canada, but exist for water quantities being traded in the South Saskatchewan Basin and water quality being traded in Ontario’s South Nation Watershed.

In signalling a value for water we have the option of volumetric charges versus water markets. The proposal put forward at the Forum was not to choose one, but to use both where appropriate — water management strategies could include *integrated* water management frameworks using both water charges and water markets. Participants also recognized that pricing is but one tool to change behaviour; others, such as stewardship programs, also induce behavioural change. Having a suite of policy instruments is necessary in water management as the issues will vary from region to region. The instruments being applied should fit the problem.

### **WATER PRICING HAS REAL POTENTIAL AS A WATER MANAGEMENT TOOL BUT NEEDS FURTHER INVESTIGATION**

The NRT's recommendation to investigate the use of water pricing scenarios on a watershed and/or firm basis was strongly supported. The modelling was heralded as a good and important first attempt; however, the conclusions were directional. To further advance water pricing as a viable option it will first be necessary to refine definitions of water use and then to integrate information about the unique features and uses of the natural resource sectors. These definitions and information can then be used to inform the actual design of pricing policies and water conservation and management policies.

### **NOTED CHALLENGE**

The biggest challenge facing the implementation of the recommendations on water pricing is that we simply do not yet have the capacity in place — intellectually and institutionally — to move forward briskly. We need to develop the analytic capacity (modelling, framework, forecasting), and understand how water pricing could impact industries and firms. One suggestion for addressing the deficiency was to undertake specific case studies in watersheds that are already stressed to investigate what the impact of markets and/or pricing might be. Related to this, the scope, depth, and nature of the data currently available is likely insufficient to advance water pricing policies in the immediate future. The analytical modelling is only as good as the data that is used, and this needs to be improved to achieve more accurate and reliable results.

## **COLLABORATIVE WATER GOVERNANCE**

Collaborative water governance is happening across Canada more than ever. It is here to stay because

- people understand the importance of working together, to ensure sustainable management of our resources, and in doing so maximize benefits and minimize costs;
- multi-disciplinary and multi-interest approaches are necessary because of the complexity of resource management issues;
- it reduces potential for conflict later and promotes more harmonious communities; and
- it enhances trust among water resource users.

The discussion of collaborative water governance validated and reinforced the NRT's recommendations. Participants noted that all four recommendations are essential for collaborative water governance to work. They are not mutually exclusive; rather they are inter-related and must be implemented in parallel. Two key themes arose from the discussions:

- collaborative water governance works at the strategic level
- governance is a shared responsibility and stakeholders other than government will need to help implement the recommendations

### **COLLABORATIVE WATER GOVERNANCE WORKS AT THE STRATEGIC LEVEL**

Collaborative processes should be used for strategic-level matters such as assessing, planning, and developing water strategies at the watershed level. The Forum affirmed the NRT's conclusion that collaborative water governance processes work when requiring input from multiple stakeholders into decision making on "big picture" or strategic issues. This reinforced our finding that it is not an appropriate approach for all water-related decisions: for example, it is not necessarily a tool for project-specific decisions requiring clearly legislated decisions such as regulatory approvals.

## **GOVERNANCE IS A SHARED RESPONSIBILITY AND STAKEHOLDERS OTHER THAN GOVERNMENT WILL NEED TO HELP IMPLEMENT THE RECOMMENDATIONS**

Participants recognized that in many regions, governments are not in a financial position to lead collaborative water governance processes. Significant cuts to key ministries responsible for water would have enormous implications for this approach. Therefore non-government entities are stepping in to lead the way. Participants suggested that even if governments cannot lead, they could assist by changing the water governance frameworks, removing some of the institutional barriers to collaborative water governance approaches. Water governance and management includes a big responsibility for other stakeholders to step up: industry clearly will if the right incentives and conditions are in place.

### **NOTED CHALLENGE**

Collaborative water governance approaches by definition means shared responsibility. The main concern with these processes centres on the possibility that “shared responsibility” is “no responsibility.” Forum participants were challenged to figure out how to overcome this key issue. They suggested that despite this challenge, a movement toward collaborative water governance that puts the responsibility of water management into the hands of collaborative multi-stakeholder groups is still a good step in the right direction.

# SECTION 3

## *PRIORITY RECOMMENDATIONS AND STARTING TO ACT*



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This section identifies the priority recommendations within each theme, as determined by participants at the Water Forum. They proposed changes to modify and strengthen some of the NRT's original recommendations, and these are noted. Two new recommendations were also put forth and identified as priorities.

To move these priorities forward, Forum participants offered solid ideas on actions in the short to medium term aimed at giving the recommendations traction. Initial suggestions were made about organizations or groups that could either take a leadership role or contribute to the implementation of the recommendations and actions for the top priority in each category.

### **WATER FORECASTING**

The recommendation noted as being of highest priority was the following, but with modifications, noted in italics:

#### **PRIORITY #1**

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Recognizing that accurate water forecasting requires improving how *and what* we measure and report water-quantity data, governments and industry should work collaboratively to develop appropriate measurement and reporting requirements on a sector-by-sector *and basin-to-basin* basis.



When tackling tough issues such as water management and governance, we need to better understand the linkages between the environment and the economy, that the two are synergistic.

Cairine MacDonald

This recommendation was seen as a necessary first step as it builds the foundation for the other two priority recommendations, noted below. Accurate forecasting determines how and what is measured. A number of short-term actions were suggested to implement this recommendation:

ACTION	LEADERS AND/OR PARTICIPANTS
Identify regional priority action plans for measurement and reporting	Regional/basin/conservation-level authorities
Initiate approach for provincial regulatory management for data collection	Provincial governments
Identify critical policy questions that we are trying to answer on a regional basis	Provincial governments and stakeholders; may include federal government if boundary waters are involved
Identify appropriate mechanisms and institutions to collate data and provide a regional picture	No group identified

These steps could then allow a pilot study to be conducted within the target area to identify needs and issues, that should be led by regional, watershed or conservation authorities.

The implementation of the recommendation above would then enable the following two priorities to move forward:

### PRIORITY #2

Governments should develop new predictive tools, such as water forecasting, to improve their understanding of where and when water demands might increase. The information provided by forecasts will be important to inform water allocations and management strategies in the future.

### PRIORITY #3

The federal, provincial, and territorial governments should collaborate in the development and publication of a national water-use forecast *and water-use forecasts for major basins*, updated on a regular basis — a Water Outlook — the first to be published within two years. This could be led by a national organization such as the Canadian Council of Ministers of the Environment.

The idea that governments begin collaborating to develop water quantity data is critically important. Data collection and knowledge generation needs to be viewed less as something that is reluctantly required and more as an incredibly important input into water management. This will drive questions of what is the best, most effective and efficient information to collect.

## WATER DATA AND INFORMATION

One water data and information recommendation was noted as being of highest priority:

### PRIORITY #1

In collaboration with partners and stakeholders, governments at all levels should develop protocols for transparent access to water data. Provinces and territories should continue establishing their own water-data portals. The federal government should develop a national web-based water portal, in collaboration with the provinces and territories, that also provides access to provincial and territorial water portals.

It was suggested that while the other NRT water data and information recommendations are important, this one had to be implemented first for the other data-related recommendations to be possible. The development of protocols of water data collection and the availability of accessible water portals, leading to better data and information, would enable the development of more accurate water forecasts. To move this recommendation forward, the following two short-term actions were put forth:

#### ACTION

#### LEADERS AND/OR PARTICIPANTS

Set Canada-wide goals to define the actual data needs.

Council of Federation — Water Stewardship Committee

Develop a common protocol and language based on international standards.

Statistics Canada, Natural Resources Canada, Canadian Council of Ministers of the Environment, NRT

In the medium term it was suggested that governments develop and implement a regulatory framework to ensure water data reporting, one that addresses confidentiality issues. It was noted that a few innovative water data management and water portals have recently been developed. In moving this recommendation forward, these pilots should be examined to see if they could serve as models for other jurisdictions in the country.

## WATER PRICING

Participants proposed a new recommendation that was agreed upon as the first priority in this category:

### PRIORITY #1

Estimate the value of water.

Participants agreed that this new recommendation was more comprehensive and articulates the direction in which Canada needs to go to sustainably manage its water resources. As a starting point for implementing this recommendation, two short-term actions were seen as necessary to developing a robust yet manageable framework and methodology for estimating the value of water.

ACTION	LEADERS AND/OR PARTICIPANTS
Identify state-of-the-art concepts and methods for valuation.	Canadian Council of Ministers of the Environment, Council of Federation Water Stewardship Committee, Council of Canadian Academies
Carry out case studies in a coordinated fashion across the country on how to value water.	Provincial governments, conservation and watershed authorities, CWRA

Participants suggested that two of the NRT's water pricing recommendations be combined into one. This became the second priority:

### PRIORITY #2

Develop the capacity to price water and anticipate impacts.

Three important enabling conditions will be necessary before Canadians can implement these recommendations on water pricing:

- develop a social marketing campaign to convince Canadians of the need for the valuation of water and to explain what this means;
- build capacity — intellectual and organizational — within governments, academia, and sectors; and
- conduct more modelling of water demands and the impacts of pricing, and explore water quality trading.

## COLLABORATIVE WATER GOVERNANCE

All four of the NRT's recommendations related to collaborative water governance were noted as necessary and important. Some participants considered the proposed recommendations in the context of national, provincial/territorial, and regional jurisdiction and initiatives, concluding that the federal government alone would have trouble articulating any kind of national approach to collaborative water governance. To make it workable, the four NRT water governance recommendations were combined, bringing in partners with national scope. This was the most highly ranked priority of the Forum.

### PRIORITY #1

A coalition of the Council of the Federation, the Federation of Canadian Municipalities, the Assembly of First Nations, and the resource sectors, with the support of the Government of Canada, should develop a charter that affirms the legitimacy of collaborative water governance. This charter should articulate the guiding principles that coalition members will adopt in developing their own regional, provincial/territorial, or local structures, including roles, responsibilities, accountabilities, mechanisms for enabling participation, and integration with other planning processes and policies.

This new recommendation creates a framework based on principles that allow local needs to be articulated in response to specific problems but giving it national importance. Participants suggested that the Canadian Water Resources Association (CWRA) is well positioned to lead this initiative as it is well aligned with its proposed work on a Canada-wide water strategy and could develop the charter in a period of 12 to 18 months for consideration. Of course all levels of governments would ultimately be required to fully participate and affirm the legitimacy of the charter once drafted.

# SECTION 4

## *PERSPECTIVES*



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Toward the end of the Water Forum, three distinguished speakers provided their final perspectives on both the report and what they heard during the day. This section highlights a few of those views that either add to or build upon some of the priorities and opportunities proposed during the event.

### **DAVID B. BROOKS, DIRECTOR, WATER SOFT PATH RESEARCH, POLIS PROJECT ON ECOLOGICAL GOVERNANCE**

Dr. Brooks' comments were linked to the themes of renewing the social licence for the natural resource sectors to operate and increasing the contribution of the sectors to public welfare. He presented three priorities for consideration. The top priority has to be to measure water use. In the absence of information about water use, proposals for greater efficiency and conservation will be little more than guesswork. Regrettably, except in urban areas, where few components of the resource sector are based, stable long-term funding for measuring water use has been declining, not increasing, in recent years.

The second priority is to put a value on water and then to start charging water users on a volumetric basis, echoing the strong support of the forum participants earlier in the day. Finally, as a third priority Dr. Brooks suggested that while the recommendations in the NRT report are

all relevant *for* the agriculture sector, they are not directly applicable *to* agriculture. Therefore Dr. Brooks urged the NRT to research and develop a set of recommendations for agriculture that begin from what has just been published in *Charting a Course*.

## **JEAN CINQ-MARS, COMMISSIONER OF SUSTAINABLE DEVELOPMENT, QUÉBEC**

Mr. Cinq-Mars agreed with all the recommendations that participants deemed to be of highest priority, saying that Canada has to move forward with a national water strategy especially as Canada is negotiating a free-trade agreement with the European Union (EU). In this regard, Canada has to be aware of the EU's broad environment policies to ensure that its own policies are consistent for trade and environment purposes. However, Canada is living through a period of constraint and cannot tackle everything. Given this, one way forward could be to manage water on the basis of risk management. With climate change, companies, especially those in the natural resource sector, face two kinds of risks today: reputational and environmental. First, reputational risks affect Canadian firms operating internationally as they are exposed to more scrutiny and audits. To avoid this risk, Canada and Canadian firms could adopt internationally acceptable policies, standards, and best practices, including water monitoring reporting practices. Second, the environmental risk comes from changing environmental conditions disrupting companies' supply chains as a result of flooding, drought, shipping issues, ice-roads melting, etc. These risks, if not managed wisely, can significantly affect the profitability of a firm.

Mr. Cinq-Mars endorsed the NRT report conclusions and recommendations that called for further exploration of water governance and management at a regional and/or watershed scale. Such case studies would help to better understand the potential implications and application of what the NRT's research has directionally provided.

## **CAIRINE MACDONALD, DEPUTY MINISTER, ENVIRONMENT, GOVERNMENT OF BRITISH COLUMBIA**

In August 2010 all Canadian premiers signed the Council of the Federation (CoF) Water Charter. Cairine is the chair of its Water Stewardship Council, the group tasked with implementing the Charter. This group is tackling the Charter commitments with a whole-of-government approach in partnership with business, ENGOs, academia, and interested citizens, an approach that she noted is consistent with the #1 priority of the NRT's Water Forum, which is to form a coalition to address collaborative governance processes. Many of the commitments



The top priority has to be to measure water use. In the absence of information about water use, proposals for greater efficiency and conservation will be little more than guesswork.

Dr. David B. Brooks

in the Charter support the NRT recommendations: making water use more efficient by challenging water-use sectors to prepare water conservation and efficiency plans, enhancing water monitoring efforts, and co-operating and sharing information. Cairine undertook to bring the NRT's recommendations to the CoF for consideration.

Cairine reinforced the idea that water has *value*, and that Canadians must start to treat water as a valuable resource. She suggested that a common language is needed to say that water has value, to pinpoint the common components of water that are valued, and to recognize how that plays out in different situations and regions of the country. Many lessons outside the water realm illustrate how to put a value on a resource. The example she cited was electricity deregulation in Alberta, especially as it pertains to time of use and differentiation between different kinds of power. Possible parallels can be drawn between electricity deregulation and water (the latter in terms of its temporal use and different uses by the natural resource sectors), and valuable lessons learned as we move forward on valuing water.

Finally, Cairine stressed that there is no more urgent conversation today in Canada than that involving both the environment and the economy, emphasizing the importance of the work the NRT has undertaken in its water program. Implementing many of the solutions for issues of the environment and the economy will require better communication. When tackling tough issues such as water management and governance, we need to better understand the linkages between the environment and the economy, that the two are synergistic. In closing she emphasized, "We as Canadians can get it right."

# SECTION 5

## TOP RECOMMENDATIONS



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Of the original 18 NRT recommendations in *Charting a Course*, participants identified seven as being of top priority:

### **WATER FORECASTING**

- Recognizing that accurate water forecasting requires improving how and what we measure and report water-quantity data, governments and industry should work collaboratively to develop appropriate measurement and reporting requirements on a sector-by-sector and basin-to-basin basis.
- Governments should develop new predictive tools, such as water forecasting, to improve their understanding of where and when water demands might increase. The information provided by forecasts will be important to inform water allocations and management strategies in the future.
- The federal, provincial, and territorial governments should collaborate in the development and publication of a national water-use forecast and water-use forecasts for major basins, updated on a regular basis — a *Water Outlook* — the first to be published within two years. This could be led by a national organization such as the Canadian Council of Ministers of the Environment.

## **WATER DATA AND INFORMATION**

- In collaboration with partners and stakeholders, governments at all levels should develop protocols for transparent access to water data. Provinces and territories should continue establishing their own water-data portals. The federal government should develop a national web-based water portal in collaboration with the provinces and territories, which also provides access to provincial and territorial water portals.

## **WATER PRICING**

- Estimate the value of water.
- Develop the capacity to price water and anticipate impacts.

## **COLLABORATIVE WATER GOVERNANCE**

- A coalition of the Council of the Federation, the Federation of Canadian Municipalities, the Assembly of First Nations, and the resource sectors, with the support of the Government of Canada, should develop a charter that affirms the legitimacy of collaborative water governance. This charter should articulate the guiding principles that coalition members will adopt in developing their own regional, provincial/territorial, or local structures, including roles, responsibilities, accountabilities, mechanisms for enabling participation, and integration with other planning processes and policies.

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## APPENDIX I: LIST OF NRT *CHARTING A COURSE* RECOMMENDATIONS

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### PANEL I

#### WATER FORECASTING

- The federal, provincial and territorial governments should collaborate in the development and publication of a national water-use forecast, updated on a regular basis — a Water Outlook — the first to be published within two years. This could be led by a national organization such as the Canadian Council for Ministers of the Environment.
- Governments should develop new predictive tools, such as water forecasting, to improve their understanding of where and when water demands might increase. The information provided by forecasts will be important to inform water allocations and management strategies in the future.
- Recognizing that accurate water forecasting requires improving how we measure and report water-quantity data, governments and industry should work collaboratively to develop appropriate measurement and reporting requirements on a sector-by-sector basis.

#### WATER DATA AND INFORMATION

- Provincial and territorial governments should establish demand-side data systems that have clearly defined reporting requirements for water licence holders. These systems would have common obligations to report provisions, contain defined time periods for reporting, and introduce enforcement programs to ensure reporting of water use by water licence holders.
- The provinces and territories, in collaboration with stakeholders and partners, should develop common measurement techniques to collect water-quantity data.

- The provincial and territorial governments, in collaboration with the natural resource sectors, should research the sector-specific future water data needs of their jurisdictions. These initiatives would help jurisdictions identify and develop data-management approaches and systems that have buy-in from the natural resource sectors.
- Governments at all levels should collaborate with partners and stakeholders to develop and integrate water-quantity data for use as a water-management tool at a local watershed scale. Provinces and territories should first develop integrated water-management tools within their jurisdictions at a finer spatial resolution, as it is easier to “roll-up” small-scale assessments to larger scales rather than to disaggregate an initial assessment performed at a larger spatial scale.
- In collaboration with partners and stakeholders, governments at all levels, should develop protocols for transparent access to water data. Provinces and territories should continue establishing their own water-data portals. The federal government should develop a national web-based water portal in collaboration with the provinces and territories, that also provides access to provincial and territorial water portals.

## **PANEL II: PUTTING A PRICE ON WATER**

- Governments should research the relationship between water use and pricing needs before they implement water pricing on a volumetric basis. Specifically, they need to better understand the potential implications on sectors and firms. In order to do so, data on water-use needs to improve, to gain a better understanding of water intakes, recirculation, and recycling within facilities.
- The natural resource sectors should look closely at their water intake and where the costs rest within their use of water. Incorporating the “value” of water into operations may reveal opportunities for cost savings, through implementation of improved technologies or best management practices, possibly leading to overall water intake reductions.
- If a price is put on water use by the natural resource sectors, revenues should be directed to support watershed-based governance and management initiatives, rather than put into general revenue of the province or territory.
- Recognizing that further research is required on the use of economic instruments within the context of watersheds, governments intending to use EIs should evaluate their environmental, economic, and social implications, allowing for an informed discussion of trade-offs.

### PANEL III: COLLABORATIVE WATER GOVERNANCE

- Governments should affirm the legitimacy of collaborative water governance and demonstrate that collaborative governance bodies have an important role to play. If governments choose to invest in collaborative processes, they must act on the recommendations provided by the collaborative process as much as possible and commit to provide formal feedback to the group when recommendations are ignored. Otherwise, participants from the natural resource sectors will lose confidence and leave the process, given the significant time and financial commitment for them.
- Governments must recognize that collaborative water governance structures require clear roles and responsibilities and well-defined accountability rules. Most people and organizations involved in collaborative water governance across Canada, including the natural resource sectors, believe that there is insufficient clarity about authority and accountability for decision making within the current frameworks. As a minimum, the Terms of Reference for the collaborative processes require a written description of roles and responsibilities. A more formal document would strengthen the accountability, and in some cases, governments may want to enshrine the governance structure into a new piece of legislation.
- Collaborative water governance processes should be developed and implemented in a coordinated manner with other planning processes and policies. Water governance is not only about water and cannot take place in isolation from other planning processes affecting and involving the natural resource sectors, such as municipal land use planning or forest management plans. As these processes operate at various scales and involve several orders of governments, policy alignment will require coordination between a number of governmental and non-governmental organizations.
- Governments should provide incentives for participation. Effective collaborative water governance requires the involvement of a broad range of stakeholders, including the major water users in the natural resources sectors. For collaborative water governance processes to become operating concerns in the natural resources sectors (rather than optional activities), government must identify them as a priority. This could be done by making participation mandatory, through regulation or as a condition of water licences.

## APPENDIX II LIST OF WATER FORUM PARTICIPANTS

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## APPENDIX III: WATER FORUM AGENDA

<b>8:00 – 8:30</b>	Registration and Breakfast	
<b>8:30 – 8:45</b>	Welcome and Opening Remarks	Robert Slater <i>NRT Vice-Chair</i>
<b>8:45 – 9:00</b>	Overview of <i>Charting A Course</i> Recommendations	Jill Baker, <i>NRT</i>
<b>9:00 – 9:50</b>	Panel I: Water Forecasts and the Importance of Water Data and Information  <i>* All panel presentations to be followed by discussion with participants</i>	Tony Maas <i>WWF Canada</i>  Anthony Watanabe <i>Innovolve</i>
<b>9:50 – 10:45</b>	Panel II: Putting a Price on Water	Steven Renzetti <i>Brock University</i>  Kirsten Vice <i>NCASI</i>
<b>10:45 – 11:00</b>	Health Break	
<b>11:00 – 11:50</b>	Panel III: Collaborative Water Governance	David Marshall <i>Fraser Basin Council</i>  Don Pearson <i>Conservation Ontario</i>
<b>11:50 – 12:00</b>	Instructions for the Afternoon Session	Facilitator George Greene <i>Stratos Inc.</i>
<b>12:00 – 13:00</b>	Networking Lunch	
<b>13:00 – 15:00</b>	Outlining an Action Plan	Small Group Discussion
<b>15:00 – 15:15</b>	Health Break	
<b>15:15 – 16:15</b>	Panel IV: Starting to Act  Moderator: Mark Parent, <i>NRT Member</i>	Cairine MacDonald, <i>Government of British Columbia</i>  Jean Cinq-Mars, <i>Government of Québec</i>  David B. Brooks, <i>POLIS</i>
<b>16:15 – 16:30</b>	Closing Remarks	Robert Slater <i>NRT Vice-Chair</i>

# ABOUT US

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Through the development of innovative policy research and considered advice, our mission is to help Canada achieve sustainable development solutions that integrate environmental and economic considerations to ensure the lasting prosperity and well-being of our nation.

Emerging from the famous Brundtland Report, *Our Common Future*, the NRT has become a model for convening diverse and competing interests around one table to create consensus ideas and viable suggestions for sustainable development. The NRT focuses on sustaining Canada's prosperity without borrowing resources from future generations or compromising their ability to live securely.

The NRT is in the unique position of being an independent policy advisory agency that advises the federal government on sustainable development solutions. We raise awareness among Canadians and their governments about the challenges of sustainable development. We advocate for positive change. We strive to promote credible and impartial policy solutions that are in the best interest of all Canadians.

We accomplish that mission by fostering sound, well-researched reports on priority issues and by offering advice to governments on how best to reconcile and integrate the often divergent challenges of economic prosperity and environmental conservation.

The NRT brings together a group of distinguished sustainability leaders active in businesses, universities, environmentalism, labour, public policy, and community life from across Canada. Our members are appointed by the federal government for a mandate of up to three years. They meet in a round table format that offers a safe haven for discussion and encourages the unfettered exchange of ideas leading to consensus.

We also reach out to expert organizations, industries, and individuals to assist us in conducting our work on behalf of Canadians.

The *NRTEE Act* underlines the independent nature of the Round Table and its work. The NRT reports, at this time, to the Government of Canada and Parliament through the Minister of the Environment. The NRT maintains a secretariat, which commissions and analyzes the research required by its members in their work.