New Nouveau Brunswick

A Water Strategy for New Brunswick

2018–2028

Department of Environment and Local Government

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2018–2028

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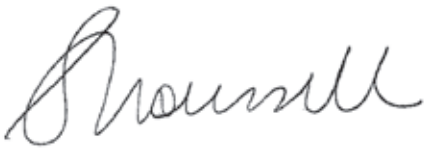
This Strategy contains internet links that are functional in the web-based version, which can be accessed by visiting www.gnb.ca and following the links to "Departments" > "Environment and Local Government" > "A Water Strategy for New Brunswick".

A Message from the Minister

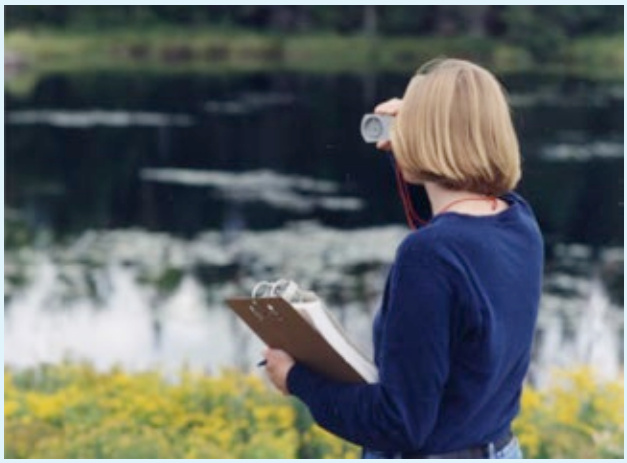
Your government takes its responsibility to protect water and the environment seriously. That is why we have developed a Water Strategy, based on the input of New Brunswickers.

Last year, our government began the process of engaging stakeholders, First Nations and the public on their ideas concerning water. The ideas collected were used to develop this strategy and provide the necessary framework from which we can continue to protect our province's most important natural resource.

I am confident that New Brunswick's Water Strategy will help ensure that our water is managed sustainably, realizing its benefits to ecosystems and society.



Serge Rousselle, Q.C.
Minister, Environment and Local Government



Building the Water Strategy

In early 2016, the Department of Environment and Local Government began work on a strategy aimed at providing a foundation for enhanced water resource protection and management. In completing this task the Department worked collaboratively with other government departments, non-governmental agencies, stakeholders and First Nations.

Previous engagement

The discussion paper *Working Together to Build a Water Strategy for New Brunswick* was released in the spring of 2016 to begin a conversation about water, and was followed by workshops and open houses in Grand Falls, Bathurst, Miramichi, Moncton, Saint John and Fredericton. All New Brunswickers were invited to submit written comments.

Over 250 people attended a meeting or submitted written comments via the province's water strategy website. Participants included representatives of non-governmental organizations, businesses, consultants, local, provincial and federal governments, and individuals.

Information regarding the proposed water strategy was sent to First Nations Chiefs at the outset of the initiative and an invitation to discuss water-related topics of interest was extended. Since then, a number of meetings have been held and engagement with First Nations is on-going.

What we heard

New Brunswickers told us about their water-related concerns and ideas on how to move forward. A summary of comments from the early engagement was released on the Department of Environment and Local Government's water strategy web page as *Working Together to Build a Water Strategy for New Brunswick - Summary of Comments* (September 2016).

A draft water strategy was released for a 45 day public review and comment period, ending on November 20, 2017 and additional comments were collected and reviewed. This input, along with dialogue and input from First Nations, was used to inform the development of this Water Strategy (December 2017).

Why a New Brunswick Water Strategy?

In New Brunswick we are fortunate to have a plentiful supply of good quality water available to use and enjoy, but this is not something that should be taken for granted. This strategy has been prepared in recognition that water is a precious resource and in order for New Brunswick's existing surface water and groundwater resources to provide us with abundant clean water now and into the future, they need to be protected and managed responsibly to ensure their long-term sustainability. The strategy will provide the foundation for improvements that will enable the Province to continue to manage water resources in a sustainable way now and into the future. It will define the main water-related priorities for government over the next 10 years.

Implementing this Strategy will enable a better understanding of the state of New Brunswick's water resources, improved water management and greater transparency. It will allow the province to build on areas of success, share information and knowledge with New Brunswickers and encourage collaboration. The strategy is focused on the key subject areas described in the diagram below.

Focus of the Water Strategy

In order to achieve this purpose and meet the challenges ahead, New Brunswick has created a future-oriented, publicly visible, coordinated strategy that: identifies water related challenges and opportunities; provides a clear and comprehensive vision for the province's water resources; establishes goals and desired outcomes in support of the vision; describes actions necessary to achieve these outcomes; and assigns responsibilities for the actions.

A water strategy is not a static document or a result of a one-time effort. It represents an on-going, evolving activity that will have to be reviewed and adjusted to ensure that its goals and actions remain relevant.

This water strategy is not a stand-alone initiative. Other initiatives including *New Brunswick's Flood Risk Reduction Strategy (2014)* and *Transitioning to a Low-Carbon Economy - New Brunswick's Climate Change Action Plan (2016)* contain additional actions to address water-related challenges and opportunities in New Brunswick.

Water Strategy Framework

Vision statement

New Brunswick's water will be protected and managed to ensure its quality and availability for future generations.

Principles

The following five principles expand on the vision statement and will be used to guide decision making in relation to New Brunswick water.

Significance	**Water is a vital resource for all life, so human and ecosystem health will be given priority when making decisions affecting water.**
Sustainability	**Decisions about water will take a long-term view, will be informed by science and consider the potential for impacts to Aboriginal and treaty rights.**
Conservation	**Water will be used wisely and will not be wasted.**
Shared stewardship	**New Brunswickers will have a role to play in managing and protecting New Brunswick's waters.**
Transparency and accountability	**Water-related information will be shared and progress on strategy implementation will be reported.**

Goals

The goals connect the vision and principles to specific subject areas of focus. The Action Plan (page 7) describes the goals in greater detail and lists the various initiatives that will translate the goals into tangible actions.

Goal 1: To better understand and share knowledge about water.
Goal 2: To protect drinking water supplies.
Goal 3: To preserve and enhance aquatic ecosystems and the water on which they depend.
Goal 4: To work cooperatively on aspects of water protection and management.
Goal 5: To report publically on strategy implementation.

Water in New Brunswick Today

Over the years various legislation, policies and programs have been developed in the province that have led to advances in water protection and management. This is not to say that the task is complete. Some longstanding issues remain and new challenges have arisen.

New Brunswick's water resources

New Brunswick contains approximately 60,000 kilometres of rivers and streams, and 2,500 lakes and ponds. This represents approximately 1,460 square kilometres of surface water. There are thousands of kilometres of coastline in New Brunswick, stretching between the Gulf of St. Lawrence and the Bay of Fundy. Potable groundwater underlies much of the province. For these reasons, water is often taken for granted. In reality, as is the case with many other parts of Canada, water in this province is not always plentiful at the specific times and locations where it is required.

New Brunswick also faces other water-related challenges, including localized areas of poor groundwater and surface water quality, occurrences of algae blooms and a continuing need to make water-related information more widely available. Climate change is an overriding concern that will continue to affect water, magnifying existing challenges and adding new ones.

Climate change and water

Climate change and its potential to affect the quality, quantity and distribution of water is an overriding issue that adds to the complexity and magnitude of the other challenges facing the Province. Given water's social, environmental, and economic importance, anything that changes its quality, quantity or distribution will have a marked effect on our communities, ecosystems and economic competitiveness. Climate change therefore represents a significant challenge that will have to be continually assessed and accommodated in public policy decisions.

New Brunswick has begun to experience an increase in mean annual temperature, more pronounced in inland areas. Precipitation is expected to increase, but seasonal and yearly variations will also become more evident. Summers may become drier, especially inland. Potential impacts on the Province's freshwater include an increased frequency of both floods and droughts, greater fluctuations in groundwater levels and stream flows and increased surface water temperatures. Climate change is an issue that will require on-going attention for the foreseeable future. New Brunswick's Climate Change Action Plan (CCAP) identifies a number of initial water-related actions that will be taken to address these challenges and these have been included in this document for reference.

A First Nations perspective on water

Aboriginal peoples have a long-standing, integral relationship with the land, waters and environment that sustains them. New Brunswick's waters have been fundamental to the way of life of Aboriginal people. In preparing this water strategy, the province recognizes the unique significance of water to First Nations.

> *"Our people have … relied on rivers for physical, spiritual, and cultural sustenance and their livelihood since time immemorial."*
>
> - Chief Bill Ward, Metepenagiag First Nation

> *"Our waters continue to be an important resource for transportation, sustenance and ceremony. Put simply, the waters are the modern day equivalent of our super highways, grocery stores, workplaces and churches."*
>
> - Wolastoqey Nation in New Brunswick

As stated in the *First Nations Integrated Watershed Planning* (2011) by the Centre for Indigenous Resources, "First Nations have a unique, complex relationship with water that extends beyond using water for their personal or community needs or as the life-support system for the foods they harvest and consume. First Nations' relationship with water includes cultural, spiritual, economic, stewardship, governance and rights-based aspects."

Government will continue to engage and collaborate with First Nations on the actions within this strategy and consult with them as appropriate on individual initiatives as they are developed.

Action Plan

The following section is organized by goal and provides an overview of the progress to date in each area of focus. It also outlines the actions that will translate the goals into tangible initiatives. These actions collectively define what government would like to achieve through the implementation of this strategy. In other words, they define the main water-related priorities for government on behalf of the people of New Brunswick from 2018 to 2028. Many of the actions will require further engagement and consultation as they are developed and implemented. Although discussed separately here, these issues are often interrelated and require solutions that recognize the connections between natural, social and economic systems.

Government intends to focus on eight initial actions from 2018 to 2020. These include:

- Issue an initial report on the state of water quality in in lakes and rivers in New Brunswick (Action 1).
- Maintain an on-going dialogue with First Nations in order to better understand and incorporate the Aboriginal perspective as it relates to water (Action 2).
- In collaboration with local governments, issue a report based on a comprehensive analysis of drinking water quality for all New Brunswick communities that have a public water supply system (Action 9).
- Develop and implement a renewed approach to managing surface water quality in the province on a watershed basis in light of recommendations from the Working Group on Watershed Management (Action 15).
- Improve wetland protection and management in New Brunswick (Action 16).
- Establish a recreational water monitoring program for the provincial park system that includes water quality monitoring and signage that enables the public to make informed decisions and protects public health (Action 17).
- Continue a collaborative dialogue between government and First Nations regarding permits, projects, initiatives and other topics of mutual interest (Action 24).
- Work collaboratively with watershed groups, lake associations, First Nations, academia, and non-governmental organizations on data collection, education, stewardship and other water protection and management-related initiatives (Action 25).

The remaining actions are important priorities for government and they will be implemented over the life of the strategy. As noted under Action 29, this strategy will be reviewed within 5 years to ensure its continued relevance and to identify potential new actions.

Links to Water Monitoring Data Currently Available On-line

Surface Water Quality Data Portal

Canadian Water Quality Assessments

Surface water quality by watershed

Groundwater Chemistry Atlas

On-line Well Log System

Real time hydrometric (flow) data

Bi-annual state of surface and groundwater water levels report

Goal 1: Understanding and sharing knowledge about water

Timely and accurate water-related information is necessary to support sound, science-based decisions, therefore it should be available to all in order to: a) measure the effectiveness of implemented actions; b) identify and respond to pressing issues such as climate change; c) include Indigenous traditional knowledge in relation to water resources and the importance of ecosystems in water-related initiatives, and d) identify new actions that should be undertaken.

Progress to date:

Water quality and quantity information is obtained from a wide range of sources (e.g. monitoring stations, stream flow/water elevation gauges, a River Ice Observation and Reporting System, etc.). It is necessary to obtain information about the location, quantity and quality of water to understand the overall status of water in the province. Efforts must be increased to make this information more widely available in a form that can be easily understood.

The Department of Environment and Local Government's Hydrology Centre, conducts flow and water level monitoring across New Brunswick and works closely with the Emergency Measures Organization to release public alerts regarding floods or ice jams as part of the River Watch Program.

Under *New Brunswick's Flood Risk Reduction Strategy*, government launched a *Flooding in New Brunswick* webpage to provide the public on-line access to flood hazard maps and guidance on how to protect homes against flooding. In addition, the government has commenced the preparation of flood hazard maps for coastal areas that include consideration of storm surges and climate-related sea level rise.

Goal 1: Actions

Goal 1	Corresponding principles	Desired outcome
To better understand and share knowledge about water.	• **Sustainability** • **Shared Stewardship** • **Transparency and Accountability**	**Sufficient information is available to all, to support sound, science-based decisions and consider the potential for impacts to Aboriginal and treaty rights.**

Initial actions (2018 to 2020)	
1. Issue an initial report on the current state of water quality in lakes and rivers in New Brunswick. Among other things, this report will include: • Water quality scores using the Canadian Council of Ministers of the Environment's Water Quality Index; • Trends in Water Quality Index results using long-term monitoring sites; • Information about the trophic state on lakes; and • An overview of the Canadian Aquatic Biomonitoring Network (CABIN) sampling sites in New Brunswick.	Lead agency: Department of Environment and Local Government
2. Maintain an on-going dialogue with First Nations in order to better understand and incorporate the Aboriginal perspective as it relates to water.	Lead agencies: Department of Environment and Local Government, First Nations, Aboriginal Affairs Secretariat
Subsequent actions	
3. Pursue a legislated requirement, similar to that contained in the *Clean Air Act*, for mandatory annual reporting by government on the state of New Brunswick's surface water and groundwater.	Lead agency: Department of Environment and Local Government
4. Provide on-line access to the final reports of projects funded by the Environmental Trust Fund, so the results of these projects are more widely available.	Lead agencies: Department of Environment and Local Government, New Brunswick Legislative Library
5. a) Prepare a standard, electronic data reporting template for use by First Nations, non-government organizations and industry when providing water monitoring results to the Department of Environment and Local Government; and **b) Develop and implement a plan to establish a government-led, publically accessible water data warehouse as part of New Brunswick's Open Data Policy.**	Lead agencies: Department of Environment and Local Government, Service New Brunswick

6. Expand the provincial groundwater and surface water monitoring networks to provide more complete information about New Brunswick's water resources including the effects of climate change.	Lead agency: Department of Environment and Local Government
7. Continue implementation of water metering for industrial water users.	Lead agency: Department of Environment and Local Government
8. Identify and implement options for on-line posting of water-related permits, approvals and associated conditions.	Lead agency: Department of Environment and Local Government

In addition to the above, *Transitioning to a Low-Carbon Economy - New Brunswick's Climate Change Action Plan* (2016) includes the following actions that support this goal:

- Strengthen research capabilities into the impacts of climate change by identifying research priorities, developing a research network and encouraging greater collaboration and sharing of information across partners (e.g. academic institutions, other jurisdictions, federal government, NGOs) (Action 66);
- Develop a more coordinated approach to tracking changes in the physical environment, (e.g. temperature precipitation, sea levels and migration of pests and invasive species) in collaboration with other partners to be used in future climate modelling (Action 67);
- Renew and expand…flood hazard data and mapping, and ensure that these predictive tools incorporate the anticipated effects of climate change in parallel with the development of a provincial statement of interest that addresses flood risk and climate (Action 96);
- Examine the relationship between watershed condition, land use and peak flow events associated with extreme precipitation (Action 97); and
- Support on-going research into climate related health risks, including drinking water quality and quantity, etc. (Action 100).

Goal 2: Protecting drinking water

Potable water is a basic human need and all New Brunswickers should have access to safe, secure drinking water to meet their daily requirements.

Progress to date:

New Brunswick's Wellfield Protection Program has been recognized as being one of the strongest drinking water protection programs in the country. To date, 48 of 54 local governments have moved forward with wellfield protection measures. In addition, all 29 watersheds that provide drinking water to local governments have been protected under the *Clean Water Act* since 2001. The Watershed Protection Program, and the *Water Well Regulation* and *Potable Water Regulation* are also important tools used to protect drinking water.

Government has developed guidelines recommending that private well owners have their water quality tested twice per year (preferably in the spring and fall); however, not all private well owners take this advice and are therefore not aware of the quality of their well water.

Goal 2: Actions

Goal 2	Corresponding principles	Desired outcome
To protect drinking water supplies.	• **Significance** • **Sustainability**	**New Brunswickers have access to clean, safe, drinking water.**

Initial action (2018 to 2020)	

9. In collaboration with local governments, issue a report based on a comprehensive analysis of drinking water quality for all New Brunswick communities that have a public water supply system.
This report will include:
• An analysis of water quality data collected under the *Clean Water Act*; and
• An evaluation of drinking water in 70 local governments based on indicators that include:
  • Microbiology;
  • Chemistry;
  • Trace metals;
  • Comparison with Water Quality Guidelines; and
  • Trends over time.
	Lead agency: Department of Environment and Local Government, Department of Health

Subsequent actions	
10. In collaboration with local governments, introduce a legislated requirement for public reporting of drinking water quality monitoring results.	Lead agency: Department of Environment and Local Government, Department of Health
11. Complete the designation of New Brunswick's existing local government drinking water wellfields under the *Wellfield Protected Area Designation Order - Clean Water Act*.	Lead agencies: Department of Environment and Local Government, local governments
12. Develop a coordinated plan to enhance protection and testing of private water wells through a combination of public education and strengthening of the *Water Well Regulation* (e.g. water well and geothermal well construction standards, set-backs, etc.), and the *Potable Water Regulation* under the *Clean Water Act*.	Lead agencies: Department of Environment and Local Government, Department of Health
13. Evaluate options for introducing regulatory requirements for the bottling and sale of potable water; and for drinking water supplies with capacity below the current 50 m3/day requirement to ensure that: **a) public health is protected and these operations undergo inspections and monitoring; and** **b) potential effects on existing water users are considered.**	Lead agency: Department of Environment and Local Government, Department of Health
14. Evaluate options for extending source water protection to communal and provincially-owned drinking water supplies.	Lead agency: Department of Environment and Local Government

In addition to the above, *Transitioning to a Low-Carbon Economy - New Brunswick's Climate Change Action Plan* (2016) includes the following action that supports this goal:

- Work with local governments to evaluate vulnerabilities of critical infrastructures (e.g. drinking water supplies and sewage treatment systems) and ensure they are resilient to climate change impacts (Action 74).

Goal 3: Preserving and enhancing ecosystem health

Within each watershed, the needs of aquatic life such as fish, plants and other wildlife must be considered in water use decisions, to help ensure that ecosystem needs are respected. While meeting the primary goal of protecting ecosystem health, water must be managed in a way that recognizes its value to First Nations and for social and economic uses. There is also need to develop a renewed framework for watershed management in New Brunswick.

Progress to date:

The *Water Classification Regulation* under the *Clean Water Act* was intended to provide a framework for watershed management in New Brunswick; however, there were deficiencies within the regulation that prevented its use. A working group with broad representation developed recommendations on an enhanced approach to watershed management and presented their report to the Minister of Environment and Local Government in December 2017 (see Action 15 below).

In response to an increase in algal blooms in lakes and ponds, government has developed a response protocol and continues to support volunteer lake monitoring initiatives and research. Through the *Canada-wide Strategy for the Management of Municipal Wastewater Effluent*, wastewater treatment facilities have been upgraded to meet more stringent requirements. The Province has also banned the sale and use of more than 240 over-the-counter lawn care pesticide products through the *Pesticide Control Act*, all in efforts to improve environmental protection.

There are other initiatives in place that support the conservation, sustainability and diversity of ecosystems such as the *Shellfish Aquaculture Development Strategy*, the *Fisheries Renewal Framework Action Plan* and the *Biodiversity Strategy*. Government recently released a water monitoring protocol for Parlee Beach near Shediac along with the implementation of studies and capital investments aimed at enhancing water quality.

Goal 3: Actions

Goal 3	Corresponding principles	Desired outcome
To preserve and enhance aquatic ecosystems and the water on which they depend.	• **Significance** • **Sustainability** • **Conservation**	**New Brunswick's lakes, rivers, wetlands and coastal areas remain healthy, resilient and biologically diverse now and in the future.**

Initial actions (2018 to 2020)	
15. **Develop and implement a renewed approach to managing surface water quality on a watershed basis in light of the recommendations submitted to the Minister of Environment and Local Government by the Working Group on Watershed Management in December 2017.** Key Working Group recommendations include: • Use the watershed as the geographic unit for water management in New Brunswick; • Develop and implement watershed management plans supported by legislation; • Adopt water quality objectives by legislation; • Maintain good water quality or enhance it as required by the Minister to meet the water quality objectives.	Lead agency: Department of Environment and Local Government

16. Improve wetland protection and management in New Brunswick by: **a) Releasing new, more accurate on-line wetland mapping using the most up-to-date data. The mapping will be improved on a continuous basis by incorporating the latest information as it becomes available in order to better identify wetland locations;** **b) Releasing Implementation Guidelines to help ensure consistent decision-making and transparency when applying the New Brunswick's Wetlands Conservation Policy (2002) and to assist individuals through the regulatory process; and** **c) Amending the *Watercourse and Wetland Alteration Regulation* under the *Clean Water Act* to extend protection to coastal Provincially Significant Wetlands less than 1 hectare in size.**	Lead agencies: Department of Environment and Local Government, Department of Energy and Resource Development.
17. Establish a recreational water monitoring program for the provincial park system that includes water quality monitoring and signage that enables the public to make informed decisions and protects public health. The Provincial Park Beach Monitoring Program will: • be based on the same principles as the Parlee Beach Protocol. • use information from Environmental Health and Safety assessments, as recommended by the *Guidelines for Recreational Water Quality*, to determine sampling frequency of each beach. • be in place for the 2018 bathing season.	Lead agencies: Department of Environment and Local Government, Department of Health, Department of Tourism, Heritage and Culture
Subsequent actions	
18. Prepare a policy aimed at the identification and maintenance of environmental flows so that water resources are not over-exploited and ecosystem health is preserved.	Lead agencies: Department of Environment and Local Government, Department of Energy and Resource Development, working with Fisheries and Oceans Canada and Environment and Climate Change Canada
19. Prepare a water conservation plan for the province that addresses water use by households and industry and includes water demand management, education and response to drought conditions.	Lead agency: Department of Environment and Local Government, Department of Agriculture Aquaculture and Fisheries
20. Understand and evaluate the causes of algal blooms in order to develop and implement a comprehensive action plan that will reduce their occurrence over the long-term.	Lead agencies: Department of Environment and Local Government, Department of Justice and Public Safety, Department of Health, Department of Agriculture Aquaculture and Fisheries
21. Assemble a multi-agency working group to review the regulation and management of on-site sewage disposal systems including: **a) design and construction standards, such as new technology to address nutrients; and** **b) options for ensuring that on-site sewage systems are properly functioning and maintained.**	Lead agencies: Department of Environment and Local Government, Department of Justice and Public Safety, Department of Health

22. Evaluate the pesticide permitting requirements for the agriculture industry under the *Pesticides Control Act* for non-domestic pesticides, and take appropriate action.	Lead agencies: Department of Environment and Local Government, Department of Agriculture Aquaculture and Fisheries
23. Develop a regulatory framework to designate coastal protected areas under the *Clean Water Act*.	Lead agency: Department of Environment and Local Government

In addition to the above, *Transitioning to a Low-Carbon Economy - New Brunswick's Climate Change Action Plan (2016)* includes the following actions that support this goal:

- Promote and use natural infrastructure (e.g. forests, wetlands, salt marshes, floodplains) as an important tool to buffer against climate change impacts (Action 71);
- Implement Statements of Provincial Interest under the *Community Planning Act* to establish province-wide standards and requirements for responding to climate change at the community level such as flood risk reduction (Action 80); and
- Recognize the importance of ecosystems (e.g. wetlands, forests, soil, dunes, and coastal salt marshes) in buffering the impacts of climate change, and integrate ecosystem services (e.g. temperature control, maintaining air quality, erosion control, water quality improvement, and flood reduction) into land-use planning (Action 89).

Goal 4: Working cooperatively on water protection and management

The Province recognizes that it has a leadership role in developing and enforcing water-related legislation; however, all New Brunswickers have a stake in the protection and management of water and have responsibilities with respect to its safekeeping. Federal, provincial, and local governments, First Nations, stakeholders and the public must work cooperatively to better protect and manage New Brunswick's waters. Partnerships between the province and others should be further developed to achieve the province's water protection and management vision.

Progress to date:

The Department of Environment and Local government works with community-based watershed groups to supplement water quality sampling, implement surface water monitoring plans, complete restoration work, and provide environmental stewardship at the grass roots level.

From a compliance and enforcement perspective, government continues to work on compliance through permitting and approvals processes, and educating New Brunswickers on the programs and laws that protect our water resources. This supports everyone in making wise decisions about their use of water.

Goal 4: Actions

Goal 4	Corresponding principles	Desired outcome
To work cooperatively on aspects of water protection and management.	• **Shared stewardship**	**New Brunswickers can participate meaningfully in the protection and management of New Brunswick's waters.**

Initial actions (on-going)	
24. Continue a collaborative dialogue between government and First Nations regarding permits, projects, initiatives and other topics of mutual interest.	Lead agencies: Department of Environment and Local Government, First Nations, Aboriginal Affairs Secretariat
25. Work collaboratively with watershed groups, lake associations, First Nations, academia, and non-governmental organizations on data collection, education, stewardship and other water protection and management-related initiatives.	Lead agency: Department of Environment and Local Government
Subsequent actions	
26. Develop and implement a public education and awareness plan aimed at ensuring New Brunswickers: **a) understand the legislative framework that affects the use of water and how to comply with it;** **b) have the knowledge and opportunity to become involved in water management activities; and** **c) have sufficient information to make wise decisions about their use of water.**	Lead agency: Department of Environment and Local Government
27. Pursue a partnership with the Geological Survey of Canada to develop groundwater availability mapping.	Lead agencies: Department of Environment and Local Government, Department of Energy and Resource Development

Goal 5: Implementing the strategy and reporting progress

This 10 year Water Strategy identifies actions designed to respond to challenges facing the province. Progress in implementing the strategy will be measured, tracked and reported. The strategy must also remain current; a water strategy is not a static document or a result of a one-time effort. Therefore, it will be reviewed and revised in the future to ensure that it remains relevant.

Goal 5: Actions

Goal 5	Corresponding principles	Desired outcome
To report publically on strategy implementation.	• **Transparency and accountability**	**The strategy is implemented and updated to keep it relevant and New Brunswickers are informed about its progress.**

Initial actions (2018 to 2020)	
28. a) Identify key performance indicators for each action in this strategy as the actions are initiated; and **b) Issue annual progress reports on the status of the action items listed in this water strategy.**	Lead agency: Department of Environment and Local Government
Subsequent action	
29. Review the strategy within five years of its release to ensure its continued relevance and to identify potential new actions for consideration in the next version.	Lead agency: Department of Environment and Local Government

Glossary

Algal bloom: a rapid increase in the population of algae (including blue-green algae, also known as cyanobacteria) in an aquatic system. It is often the result of excess **nutrients**; specifically phosphorus and nitrogen.

Blue-green algae: cyanobacteria also known as blue-green algae or more commonly as "pond scum" are bacteria that occur naturally in surface waters and have photosynthetic capability, meaning they utilize the sun's energy to produce sugar which they use for growth. Cyanobacteria can contain poisons called cyanobacterial toxins which can impact human health. These toxins can also be toxic to pets and livestock if ingested.

Coastal Areas: includes features along New Brunswick's coast such as beaches, dunes, coastal marshes, inter-tidal areas, dyked lands and rock platforms.

Communal drinking water supply: a water supply serving more than one user.

Environmental flow: the quantity, timing, and quality of water flow required to sustain freshwater and estuarine ecosystems and the human livelihoods and well-being that depend on these ecosystems.

Environmental Trust Fund: a source of dedicated funding provided by the provincial government for community-based, action-oriented activities aimed at protecting, preserving and enhancing New Brunswick's natural environment.

Estuary: the mouth of a river that flows into the ocean. Estuaries experience tidal flows and their water is a changing mixture of freshwater and salt water.

Freshwater: water that is not salty.

Groundwater: water found in subsurface layers of sand and gravel or in bedrock fractures.

Hydrology: the scientific study of the distribution and movement of water in the atmosphere, on the earth's surface and underground.

Ice jam: an accumulation of floating or grounded ice in lakes or rivers causing full or partial blockage of flow, resulting in elevated water levels and potential damage due to moving ice.

Invasive species: plants, animals or other organisms introduced to a new location as a result of human activity, including climate change. Species are considered invasive when their introduction or spread threatens to disrupt existing ecosystems.

Nutrients: various chemical compounds and elements essential to the growth and survival of living organisms. In aquatic ecosystems, nitrogen and phosphorus are the most important, as they are most often in short supply relative to the needs of aquatic plants, algae, and micro-organisms.

On-site Sewage Disposal System: a septic tank with subsurface disposal field, and all other on-site sewage disposal systems that are not connected to a wastewater treatment facility approved by the Minister of Environment and Local Government under the *Clean Water Act*.

Private well: a water well that supplies a single user or supplies a water distribution system other than one operated on behalf of a local government or the province.

Provincially Significant Wetlands: wetlands defined in the *New Brunswick Wetlands Conservation Policy* (2002) as having provincial, national or international importance, including all coastal wetlands. Provincially Significant Wetlands are identified using a set of seven social, biological and hydrological criteria listed in the New Brunswick Wetlands Conservation Policy.

Source Water Protection: measures to prevent the contamination of the sources (lakes, rivers and groundwater) that are used to supply drinking water.

Surface water: any flowing or standing water on the surface of the earth water (e.g. water found in lakes, rivers, and wetlands).

Water: includes (a) flowing or standing water whether on or below the surface of the earth, and (b) the ice of any body of water.

Watershed: all the watercourses (lakes, rivers and wetlands) that drain to a single, defined point (e.g. the mouth of a river) plus all the land that contributes drainage to these watercourses.

Wellfield: the area from which a well draws water. It is defined by the location of the groundwater, the maximum rate at which the well is pumped and the resultant time it takes groundwater to reach the well.

Wellfield Protected Area Designation Order: a legislative instrument under the *Clean Water Act* that enables the protection of water wells that serve as public drinking water supplies. The Designation Order establishes appropriate restrictions on land use in a **wellfield**.

Appendix A – Government Roles and Responsibilities

Some of the key water-related roles of the Government of Canada and the Government of New Brunswick are summarized below. The complexity and variety of water-related issues and the number of agencies involved is readily apparent.

Federal Agencies

Fisheries and Oceans Canada	• Management of Canada's fisheries, oceans and freshwater resources, and safeguarding its waters. • Habitat protection. • Management of fishery-related activities for conservation, contamination or other reasons. • Research concerning marine and freshwater ecosystems, aquaculture and biotechnology.
Environment and Climate Change Canada	• Long-term water monitoring and data collection for water resource management (in partnership with the New Brunswick Department of Environment and Local Government).
Transport Canada	• Regulation of navigable waters ports, marine safety and security. • Ballast Water Management Program (water quality and invasive species). • Regulation of transportation of dangerous goods.
Health Canada	• Preparation of guidelines for drinking water quality and recreational water quality. • Pesticide regulation.
Indigenous and Northern Affairs Canada	• Development of proposals for regulations under the *Clean Drinking Water for First Nations Act* in association with First Nations and Health Canada. • Provision of support for services on reserves, including drinking water and wastewater.
Natural Resources Canada	• Management of hydroelectric projects and mining on federal lands.

Intergovernmental Agencies

Canadian Council of Ministers of the Environment (CCME)	• Development of management tools such as the *Canadian Water Quality Guidelines for the Protection of Aquatic Life* and the *Canadian Water Quality Index*.
Federal-Provincial-Territorial Ministers responsible for Conservation, Wildlife and Biodiversity	• Fostering of cooperation in the areas of conservation, wildlife and biodiversity.
Canadian Council of Fisheries and Aquaculture Ministers (CCAFM)	• Enhancement of national collaboration on a range of issues including marine conservation, market access for Canadian fish and seafood, responsible aquaculture development and aquatic invasive species.

New Brunswick Provincial Agencies

Department of Environment and Local Government	• Operation of the provincial water quality and quantity monitoring network. • Providing local government drinking water supply protection (Wellfield Protection Program for groundwater and Watershed Protection Program for surface water). • Issuing licenses to water well contractors and water well drillers. • Funding for development and upgrade of local government water and wastewater systems in partnership with the Government of Canada. • Regulatory oversight of public drinking water systems that use 50 or more cubic metres of water per day, in co-operation with the Department of Health. • Regulation of private water supplies with a capacity to use 50 or more cubic metres of water per day. • Regulation of activities within 30 metres of a watercourse or wetland. • Regulation of facilities that manage materials that result in the potential or actual emission of contaminants including industries, local government sewage treatment plants, and aquaculture facilities. • Regulation of the sale, storage and use of all non-domestic pesticide products. • Administration of remediation of contaminated sites. • Coordination of environmental impact assessments of proposed activities (including those which may affect water quality and quantity) using technical experts from various government departments. • Integrated community and land use planning (social, economic and environmental issues). • Lead Department responsible for *New Brunswick's Flood Risk Reduction Strategy*. • Lead Department responsible for *New Brunswick's Wetlands Conservation Policy*. • Flood Forecasting, River Watch (ice jams), and the Hydrology Centre. • Permitting of in-land aquaculture facilities having a discharge to the environment. • Administration of the Environmental Trust Fund that funds various projects including aquatic ecosystem monitoring, restoration activities, education, research on water, as well as efforts to address climate change impacts in the province.
Climate Change Secretariat (Department of Environment and Local Government)	• Identification of mitigation and adaptation activities for climate change impacts on water resources. • Preparation and administration of climate change action plans.
Department of Health	• Investigating and issuing orders regarding health hazards and communicable diseases. • Establishing guidelines for drinking water quality. • Assessing drinking water quality. • Co-operating with the Department of Environment and local Government in the regulation and protection of public drinking water systems. • Issuing public advisories regarding drinking water quality. • Issuing public advisories regarding recreational water quality in public beaches. • Issuing public advisories regarding mercury in fish. • Investigation of water quality conditions that may affect public health. • Provision of information on health risks of flooding.

Department of Energy and Resource Development	• Management of Crown lands, the regulation of activities on Crown land, and measures to protect aquatic habitats. • Development of policy and planning for establishing and managing Protected Natural Areas for the conservation of ecologically significant features including surface waters. • Management of populations of fish and wildlife and their habitats, including lakes, rivers and wetlands. • Management, inventory and the protection of forest resources contributing to watercourse mapping, the protection of aquatic habitats and water quality. • Mapping and classification of ecological regions. • Regulation of mineral and petroleum exploration activities including protection of water resources. • Reviewing and approving closure and reclamation plans for mines and mineral quarries including drainage management. • Lead department responsible for the New Brunswick Biodiversity Strategy. • Protection of species at risk under provincial legislation. • Oversight of river and water stewardship projects funded by the New Brunswick Wildlife Trust Fund. • Provision of technical expertise to the Department of Environment and Local Government in the review of applications under the Watercourse and Wetland Alteration Regulation and the Environmental Impact Assessment Regulation.
Department of Agriculture Aquaculture and Fisheries	• Identification of freshwater requirements for agriculture and aquaculture. • Working with agriculture and aquaculture practitioners to promote beneficial management practices to protect the environment, including water quality. • Offering technical advice to food producers on water management and irrigation. • Licensing of inland aquaculture sites. • Integrated Pest Management education and awareness.
Department of Tourism Heritage and Culture	• Promotion of tourism including recreational use of water. • Operation, maintenance and development of provincially owned tourism infrastructure including provincial parks. • Water Quality monitoring at selected beaches.
Department of Justice and Public Safety	• Compliance and enforcement. • Approvals and inspections of on-site sewage disposal systems. • Co-ordination of emergency preparedness including flooding (Emergency Measures Organization). • Co-ordination of provincial emergency response (Emergency Measures Organization). • Co-ordination of provincial disaster financial assistance programs (e.g. flood damage) (Emergency Measures Organization). • Release of public alerts for floods or ice jams.