Recommendations for Enhanced Watershed Management in New Brunswick

Report of the Working Group on Watershed Management

December 2017

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Summary and Recommendations

The Working Group on Watershed Management (referred to as the Working Group throughout this report) was announced by the Minister of Environment and Local Government in October of 2016 and launched in March of 2017. It was given a mandate to make recommendations to the Minister about a preferred approach for the management and protection of surface water quality in the Province of New Brunswick.

This report presents the Working Group's recommendations for improvements to the way surface water is protected and managed in this Province. Detailed recommendations are provided throughout this document. In summary, it is recommended that:

- water quality be managed on a watershed basis and that legislation be enacted to enable: a) the development and adoption of watershed management plans; b) the adoption and enforcement of provincial water quality objectives;

- the provincial government adopt the vision that: *The surface waters of the province will be protected and managed to ensure its quality and availability for future generations*. In the context of watershed management this will mean that water quality and quantity are maintained or enhanced as required by the Minister, in order to meet the social, biological and economic needs identified at the watershed scale;

- the principles of integrated watershed management developed by the Canadian Council of Ministers of the Environment (2016), be adopted by New Brunswick;

- the role of watershed groups in watershed management be acknowledged and their capacity to participate be strengthened;

- the role of Indigenous peoples and traditional knowledge in watershed management be recognized and the capacity of Indigenous peoples to participate in watershed management be strengthened;

- the knowledge and expertise of the academic community be harnessed to assist in watershed plan development and to assist in addressing specific challenges such as the identification of environmental flows so that ecosystem health is preserved;

- adequate funding and resources be provided to support the creation and implementation of watershed management plans; and

- government permitting and approval processes including but not limited to land use planning decisions by provincial and local governments and other planning authorities such as regional service commissions be required to consider the

goals, water quality objectives and recommendations contained in watershed management plans approved by the Minister under the authority of legislation.

Introduction

The Watershed Management Working Group (Working Group) was given a mandate to make recommendations to the Minister of Environment and Local Government concerning a preferred approach to the management and protection of surface water quality in the Province of New Brunswick. The Working Group is comprised of representatives of watershed groups, stakeholders, industry, government staff, First Nations and Regional Service Commissions (see Appendix A).

To fulfil its mandate, the Working Group met eight times between March and June of 2017. During its deliberations, the following topics were considered:

- the current legislation and programs in place for the protection and management of water in the Province;
- the *Water Classification Regulation* and the issues that prevented its implementation;
- water management systems in other jurisdictions;
- current water-related projects and initiatives in New Brunswick;
- the basic principles of watershed management; and
- alternative approaches, instruments and tools that could be used in watershed management in New Brunswick.

Relationship of these Recommendations to the New Brunswick Water Strategy

A Water Strategy for New Brunswick 2018-2028 - Draft for Discussion was made available for review and comment from October 6 to November 20, 2017. This working group was formed in response to an action in the draft strategy and is one of a number of specific actions that it contains. The draft Water Strategy contains a variety of water-related actions and initiatives that are not addressed in this working group report; however many of them would complement and reinforce these recommendations.

Relationship of these Recommendations to the *Water Classification Regulation*

The Working Group was presented with an overview of the current *Water Classification Regulation* and the challenges encountered with its implementation. This report recommends that legislation be enacted that will lead to the adoption by regulation of Provincial and Site-Specific Water Quality Objectives and the preparation of watershed management plans (recommendations 3, 5 and 6). This approach, coupled with the expanded application of the principles from the *CCME Canada Wide Strategy for Management of Municipal Wastewater Effluent* to enhance management of point source discharges (recommendation 7) would serve as the basis of a new, effective watershed-based management framework.

The proposed watershed-based model and the establishment of water quality objectives would meet and improve upon the intent of the *Water Classification Regulation* while

avoiding its operational challenges. In summary, the recommendations contained in this report would result in:

- legally enforceable, watershed-based water quality objectives;
- explicit use of a water quality management process that provides a holistic, consistent framework for making water management decisions;
- public, stakeholder and Indigenous involvement in water management and protection;
- consensus-based watershed plans informed by scientific evidence;
- identification of watershed-based actions for water protection, restoration and monitoring;
- recognition of the on-going importance of Indigenous peoples, and non-governmental organizations such as watershed groups as vital partners and resources in the protection of New Brunswick's waters; and
- clean water to support human and ecosystem health as wells as other uses.

Relationship of these Recommendations to Other Existing Regulatory Programs

The watershed-based water management model recommended in this report would complement rather than replace other important water management programs. As an example, the province's 30 watersheds that are used as sources for municipal drinking water supplies are currently protected by the *Watershed Protected Area Designation Order* under the *Clean Water Act* and this would not change under the proposed model. Land and water-based activities including discharges would continue to be restricted within these protected areas. Similarly, all provisions of the *Wellfield Protected Area Designation Order* would remain in place to protect groundwater sources of municipal drinking water.

Anyone constructing, operating, and/or modifying a facility that is a source of a contaminant would continue to require an Approval under the *Water Quality Regulation* of the *Clean Environment Act*. In addition, the Canada-wide Strategy for the Management of Municipal Wastewater Effluent that is currently used to regulate discharges from municipal waste water treatment facilities would continue and its application would be expanded to other point sources as described elsewhere in this document.

NB Water Quality Vision

There is consensus among the Working Group of the need to ensure good water quality in the waters of New Brunswick and the group is confident there is broad public support for this as well.

1. **It is recommended that, as stated in the draft Water Strategy, the provincial government adopt the vision that the surface waters of the province will be protected and managed to ensure its quality and availability for future generations. In the context of watershed management this will mean that water quality and quantity are either maintained or enhanced as required, to meet the water quality objectives and the biological, social and economic needs identified in the various watershed management plans.**

Principles of Integrated Watershed Management

In its 2016 *Summary of Integrated Watershed Management Approaches Across Canada,* the Canadian Council of Ministers of the Environment (CCME) articulated eleven principles of integrated watershed management (see Appendix B). All Canadian provincial and territorial jurisdictions had the opportunity to provide input to the development of these principles, which describe a continuous, adaptive process of managing human activities and ecosystems at the watershed scale. Integrated watershed management means: a) integrating multiple concepts and methods, including water management and land use planning; b) evaluating and managing cumulative impacts; and c) integrating environmental, social and economic considerations through an inclusive decision making process. As a member of CCME, New Brunswick accepted these principles and the Province should therefore consider adopting them so that they are reflected in various decision-making processes.

2. **It is recommended that Government adopt by policy the CCME principles of integrated watershed management.**

Watershed-Based Management

An integrated, watershed-based approach to water quality management would offer an opportunity to address a range of factors that may affect water quality including but not limited to: a) “end-of-pipe” (point source) discharges from industries, municipal wastewater plants, etc.; b) land uses which can lead to widely distributed discharges from diffuse (non-point) sources; c) water withdrawals; d) flow management, structures and strategies; and e) impacts of climate change. The development of watershed management plans will help support the achievement of water quality objectives (recommendations 5 and 6) while providing First Nations, stakeholders and all interested individuals an opportunity to provide input to the actions that should be taken to help ensure that the objectives are met.

3. **It is recommended that water quality and quantity be managed on a watershed basis and that this approach be enabled through the development and implementation of watershed management plans and objectives. It is further recommended that this approach be enabled by legislation.**

Watershed-based management would be supported by a number of actions contained in *A Water Strategy for New Brunswick 2018-2028 - Draft for Discussion* including:

- Preparation of a policy aimed at the identification and management of environmental flows so that water resources are not over-exploited and ecosystem health is preserved;
- Completing the implementation of the province's wetland management strategy; and
- Establishment of a government-led, publically accessible water data warehouse.

The following sections describe additional recommended elements of a watershed-based model for regulating and managing New Brunswick's surface waters.

Management Unit

A watershed is an area of land (including fields, forests, settlements, lakes, rivers and wetlands) that drains to a specific point that is located at a lower elevation. All parts of New Brunswick are located within one of 13 major (Level 1) watersheds. A set of smaller sub-watersheds is nested within each of them.

4. **It is recommended that the watershed be used as the geographic unit for water management in New Brunswick and that watershed management plans be prepared for this purpose.**

Watershed Management Plan Development

Consultation with First Nations, stakeholders and individuals would be used to help establish the issues and priorities to be addressed within each watershed management plan. The completed plan would require Ministerial approval before it would be used as a planning and enforcement tool by government. While details can be developed at a later date, some basic elements of the management structure for watershed plan development and the standard issues that would typically be addressed within each plan are provided in Appendix C.

Government or the “Crown” has a legal obligation (duty) to consult with First Nations on matters that may impact rights under Section 35 of the *Constitution Act*. The emphasis is on the honor of the Crown to hold meaningful and wholesome consultation and accommodation. The depth of consultation is determined, in part, by the level of impact and the strength of claim.

Water Quality Objectives

Provincial Water Quality Objectives

A set of legally enforceable, province-wide water quality objectives would be a useful tool to help govern water management decisions. CCME has developed water quality guidelines which are a set of numerical and narrative statements that serve as indicators representing a high level for surface water quality.

5. **It is recommended that CCME’s Water Quality Guidelines form the basis for the development of Provincial Water Quality Objectives for New Brunswick and that these provincial objectives be adopted by legislation**.

At present, the province attaches pollutant discharge limits to *Approvals to Construct and Operate* that it issues under the *Clean Environment Act*. These limits are established based on an assessment of existing water quality at the discharge location. The cumulative impacts of other upstream and downstream discharges are not considered.

Once established, the Provincial Water Quality Objectives (PWQOs) would become the standard that government uses to assess the water quality impacts of development proposals. New approvals would have to recognize that the proposed discharge plus the cumulative impacts of all the other discharges and activities effecting water quality in the watershed must not exceed the PWQOs at the edge of a mixing zone. New Brunswick’s surface waters could then be managed in a way that achieves the water quality objectives while considering all existing and potential future uses of water throughout each watershed (i.e. drinking water, recreational uses, aquatic life, etc.).

Site-Specific Water Quality Objectives

6. **It is recommended that decisions affecting watersheds including water management, land use planning and development approvals be subject to the Provincial Water Quality Objectives unless these are superseded by Site-specific Water Quality Objectives.**

As part of the proposed watershed management model, it may be necessary to establish Site-Specific Water Quality Objectives in instances where use of the Provincial

Water Quality Objectives is not appropriate (e.g. if the Provincial Objective is either under-protective or over-protective based on scientific, site-specific considerations such as geological influences, sensitive environmental features, site-specific water uses, etc.). In such cases, a Site-Specific Water Quality Objective would supersede the provincial objectives and would be used as the standard in making water management decisions for all or part of a given watershed. This would typically involve adjustments to key parameters of concern for the watershed rather than a comprehensive set of new standards. The supporting scientific evidence for Site-Specific Water Quality Objectives would be identified in a watershed management plan and their use would require approval by the Minister.

Site-specific Water Quality Objectives must not be introduced to a watershed solely as a means of either allowing or precluding a given development (by arbitrarily decreasing or increasing the required level of protection). Site-specific Objectives should only be developed on the basis of clear scientific rationale including but not limited to:

- an assessment of historical water quality in light of local geological conditions;
- an assessment of ecosystem health;
- sensitive water users within the watershed, including potable water supplies;
- sensitive aquatic habitats within the watershed;
- existing land uses;
- planning instruments (e.g. local or regional plans);
- assessments or predictions of cumulative impacts; and
- Indigenous traditional knowledge

<u>Point Source Management</u>

The Working Group received presentations on the current regulatory framework used by the province to protect both surface water and groundwater from discharges of point source effluents.

The CCME-developed *Canada-wide Strategy for the Management of Municipal Wastewater Effluent* (2009) is based on an agreement reached by 14 ministers of the environment in Canada and is currently used throughout New Brunswick to regulate point source discharges of municipal wastewater effluent. As described in CCME's documentation this approach:

"*…requires that all facilities achieve minimum National Performance Standards and develop and manage site-specific Effluent Discharge Objectives. The National Performance Standards address pollutants common to most wastewater discharges. The site-specific Effluent Discharge Objectives will address specific substances that are of concern to a particular discharge or environment. These objectives will provide additional human health and environmental protection where needed and cover pollutants such as pathogens, nutrients and metals."*

This approach includes the concept of mixing zones, which are areas of water bordering a point source (or a definable diffuse source) where water quality does not comply with one or more parameters contained in a water quality objective.

7. **It is recommended that a similar approach to that contained in the *Canada-wide Strategy for the Management of Municipal Wastewater Effluent* be applied to other point source discharges (i.e. in addition to municipal wastewater facilities) through the development of effluent discharge objectives implemented using conditions attached to *Approvals to Construct and Operate* under the *Water Quality Regulation (Clean Environment Act)*.**

8. **It is recommended that a mixing zone: a) be as small as possible, b) not interfere with the desired water uses or water quality objectives, and c) not be used as an alternative to reasonable and practicable treatment.**

9. **It is recommended that the government use its permitting and approvals authority to ensure the best available, economically achievable technologies for each industrial sector be utilized to treat all wastes that are amenable to treatment to meet the Provincial or Site-Specific Water Quality Objectives.**

The Effluent Discharge Objectives support the attainment of the Provincial Water Quality Objectives by taking into consideration the effects of effluent on the receiving water and its human and ecosystem users and by incorporating the concept of adaptive management to improve effluent quality as required. This may result in more stringent water quality criteria for a given discharge than the Provincial Water Quality Objectives. In any case, the strictest objective should apply.

As reflected in the vision statement (Recommendation 1), water quality should remain at or above the Provincial Water Quality Objectives (or Site-specific Water Quality Objectives where applicable). In areas where water quality does not meet the applicable objectives, the intent would be that further degradation of water quality would be avoided and that measures would be taken to improve the water quality until it meets or exceeds the quality specified in the objectives.

<u>Water Quality Monitoring</u>

Long-term monitoring using consistent locations, methods and protocols is critical for thoroughly assessing water quality, confirming the effectiveness of restoration work, and detecting changes in water quality over time. Water quality information collected by government, as well as others, should be consolidated and made readily available to the public in a usable, standardized format. This is vital to enable sound decision making by government and build support for watershed management activities.

10. **Given that relevant and consistent data is necessary to measure progress and to implement adaptive management, it is recommended that the provincial water quality monitoring programs be strengthened.**

11. **It is recommended that monitoring by the Province be supplemented by the work of other partners, such as municipalities, watershed groups, members of the academic community and First Nations, especially within the context of watershed management plans.**

The above recommendations are supported by actions contained in *A Water Strategy for New Brunswick 2018-2028 - Draft for Discussion* including:

- Enhancements to the province's surface and groundwater monitoring system;
- A standardized, electronic data reporting template for water data reporting; and
- A government-led, publically accessible water data warehouse.

Role of Watershed Groups

Non-government organizations and researchers with a watershed focus should be key partners in the development and implementation of watershed management plans. Watershed groups and associations should have the capacity and mandate to conduct standardized activities, such as monitoring, to supplement the provincial water monitoring network, assessing water quality, reporting, planning and conducting restoration work, formulating and helping implement action plans, and delivering educational projects, etc. to assist in the development and implementation of watershed management plans. In particular, water quality monitoring conducted by these groups is very valuable and should be encouraged as a complement to the Department of Environment and Local Government's Surface Water Monitoring Programs.

Program management, legislation and enforcement are the responsibility of government. The development of a watershed management plan would not mean delegation of enforcement powers to watershed groups, or other non-governmental organizations (NGOs); however cooperation and partnerships should be encouraged as a complement to the government's activities.

Role of the Academic Community

The knowledge and expertise of the academic community should be harnessed to assist in watershed plan development and to assist in addressing specific challenges such as: the identification of environmental flows, the impacts of climate change, understanding invasive species, researching emerging issues, evaluating cumulative effects, and conducting modeling (e.g. hydrology, temperature, etc.) among many other subjects.

Indigenous Perspectives

The Province of New Brunswick has a duty to consult with First Nations when contemplating an action or a decision that may infringe upon proven or asserted Aboriginal or treaty rights. This duty will be respected during the development of watershed management plans.

Section 35 of the *Constitution Act, 1982* “recognizes and affirms" the "existing" Aboriginal and treaty rights in Canada. These include the right to hunt, trap, fish, gather and follow Aboriginal customs, practices and traditions on traditional lands. In the Maritime Provinces, we have “Peace and Friendship Treaties” and First Nations assert that they did not surrender their traditional lands, so they also assert title to the land itself.

Any watershed management model that is implemented must recognize First Nations as partners in developing and implementing watershed management plans. Towards this end, representatives from the Wolastoqey Nation in New Brunswick and Mi’gmawe’l Tplu’taqnn Incorporated participated as members of the Working Group. Indigenous peoples must also be invited to participate in watershed steering committees and study teams.

12. **It is recommended that Watershed Management Plans reflect Indigenous traditional knowledge as provided by Indigenous people and respect traditional practices. Any watershed management planning exercise should also invite participation of First Nations and recognize and complement watershed management planning that First Nations might also be undertaking.**

In addition, *A Water Strategy for New Brunswick 2018-2028 - Draft for Discussion* calls for:

- Maintaining an on-going dialogue with First Nations to better understand and incorporate the Indigenous perspective on water; and

- Continuing a collaborative dialogue with First Nations regarding permits, projects, initiatives and other topics of mutual interest.

Funding Mechanism – Watershed Groups and Watershed Management Plans

If the recommended legislated regulatory framework is put in place to enable watershed management plans, a funding mechanism to support their creation, including addressing the subject matter described in Appendix C would also be necessary. It is expected that watershed management plans could take several years to develop and implement, requiring a commitment of resources for the duration. A likely source of funding would be the Environmental Trust Fund (ETF). Alternatively, government could consider allocating funding from its general revenues to support the development of watershed management plans.

Watershed groups have a long history of involvement in their communities and would undoubtedly have a significant role to play in the development of watershed management plans. Obtaining stable, multi-year, core funding has long been a desire of watershed groups. This would help ensure continuity in watershed management planning. Government has provided this funding on annual basis in the past through the ETF. Some members of the Working Group have suggested that there should be a dedicated ETF category to support watershed groups and watershed management planning.

13. **Government should provide stable, multi-year funding for watershed groups on the basis of results-based performance (as measured by adherence to applicable protocols, timely reporting, achievement of previously agreed milestones, etc.)**.

In addition, as stated in *A Water Strategy for New Brunswick 2018-2028 - Draft for Discussion* it is anticipated that the province will 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.

Land Use Planning

The Working Group received a briefing on land use planning in New Brunswick and the components of the updated *Community Planning Act* (anticipated to come into force in January 2018) Planning instruments such as regional, municipal, and rural plans will have to consider Statements of Provincial Interest once the latter are established.

A Statement of Provincial Interest could be established to create a link between water quality objectives contained in watershed management plans and the instruments in the *Community Planning Act* that manage land use within watersheds. Linkages between watershed management plans and other programs such as Environmental Impact Assessment should also be made.

14. **It is recommended that government's decisions including permitting, approvals, environmental impact assessments and land use planning decisions by provincial and local governments and other planning authorities such as Regional Service Commissions be required to respect the goals, water quality objectives and recommendations contained in watershed management plans that have been approved by the Minister. It is further recommended that a Statement of Provincial Interest be established that links these decisions and approvals to water quality objectives established in approved watershed management plans.**

Appendix A – Watershed Management Working Group Members

Josée Albert, Chief Executive Officer, New Brunswick Agricultural Alliance

Wilson Bell, Executive Director/Planning Director, Greater Miramichi Regional Service Commission

Lois Corbett, Executive Director, Conservation Council of New Brunswick

Rémi Donelle, Manager, Shediac Bay Watershed Association

Nicole Duke, Environmental Specialist, Department of Environment and Local Government

Don Fox, Acting Manager Water Quality and Quantity, Department of Environment and Local Government

John Gilbert, Manager, Fish, Wildlife and Environment, J.D. Irving Ltd

Michelle Gray, Assistant Professor and Forestry & Environmental Management Science Director, University of New Brunswick Faculty of Forestry and Environmental Management

Donald Killorn, Executive Director, Eastern Charlotte Waterways

Stephanie Merrill, Vice President, Nashwaak Watershed Association

Katie Pettie, Strategic Policy Lead, Department of Environment and Local Government

Annick Poirier, Executive Director, Gestion H2O, Caraquet

Darryl Pupek, Director, Department of Environment and Local Government

Samantha Robichaud, Energy and Mines Coordinator, Mi'gmawe'l Tplu'taqnn Inc.

Deana Sappier, Wolastoqey Nation in New Brunswick

Appendix B – CCME Principles of Integrated Watershed Management (IWM)

The Canadian Council of Ministers of the Environment (CCME) is the primary intergovernmental forum on environmental issues of national and international concern and is led by all environment Ministers in Canada. In 2016, CCME developed principles of Integrated Watershed Management (IWM) based on concepts used by Canadian jurisdictions. All Canadian jurisdictions (federal, provincial and territorial) had the opportunity to input to the development of CCME IWM principles.

1. **Geographical Scale**: The watershed should be the planning boundary for integrated watershed management, and should be at an appropriate scale to address the issues under consideration in a way that recognizes its connectedness to upstream and downstream watersheds.
2. **Ecosystem Approach**: An interconnected process should be considered that uses best available knowledge, considers cumulative impacts, and promotes watershed and sub-watershed approaches.
3. **Adaptive Management**: Flexible and continuous improvement and adaptation of approaches, policies and management should be undertaken by incorporating new knowledge and innovative design, practices and technology.
4. **Integrated Approach**: Land, water and infrastructure planning, investment and management should consider the direct, indirect or potential impacts and their interdependencies.
5. **Cumulative Impacts**: IWM planning should consider cumulative effects on the environment and the interdependency of air, land, water and living organisms.
6. **Precautionary Principle and No Regrets Actions**: Caution should be exercised to protect the environment when there is uncertainty about environmental risks.
7. **Proactive Approach**: Environmental degradation should be prevented. It is better for the environment and more cost-effective to prevent degradation of the environment than to clean it up after the fact.
8. **Shared Responsibility**: The responsibility for policy and program development and implementation should be shared within the mandate of all actors at the appropriate scale.
9. **Engaging Communities and Aboriginal Peoples**: IWM processes should recognize and duly support the identity, culture and interests of local communities and Aboriginal peoples. IWM processes should enable meaningful participation by local communities and Aboriginal peoples who have a vital role in IWM because of their knowledge and traditional practices.

10. **Sustainable Development**: The right to development should be fulfilled to equitably meet economic and societal needs while not compromising the environment for present and future generations.
11. **Natural Capital**: Natural capital should be protected and managed to reduce short- and long-term negative financial impacts. Natural systems provide goods and services of environmental, economic, social, cultural and spiritual value.

Source: *Summary of Integrated Watershed Management Approaches Across Canada*
Canadian Council of Ministers of the Environment (2016)

Appendix C - Conceptual Management Structure for Watershed Plan Development

The following information is not definitive and is presented for illustrative purposes only.

a) A Steering Committee would be established by the Minister for each watershed. The steering committee would include broad representation of interests from within the watershed and would be responsible for:
    - developing of the Terms of Reference (see below);
    - providing guidance and input to the study; and
    - obtaining scientific advice as needed.
b) The Project Manager would:
    - Serve as a point of contact between the steering committee and the study team; and
    - oversee the efforts of the study team.
c) The Study Team would be drawn from the Steering Committee and would be responsible for:
    - developing the watershed management plan in accordance with the Terms of Reference for the respective watershed (including monitoring, assessing, reporting, report writing, restoration plans, public education, etc.).

Conceptual Terms of Reference for a Watershed Plan

The Steering Committee would develop a terms of reference (TOR) for the watershed plan, which would then be approved by the Minster of Environment and Local Government. While the details of each TOR could vary between watersheds, they would typically include key components such as:

a) data collection and reporting (including consolidation of existing information) as required to characterize baseline water quality and establish the “state of the watershed”;
b) documentation led by indigenous people of current and historical indigenous knowledge related to the watershed area;
c) a description of existing land use (including existing point and non-point source influences);
d) a description of potential future land use as envisioned in any regional plans, municipal plans, rural plans, etc.;

e) proposed water quality objectives for all or a portion of the watershed, which may differ from Provincial Water Quality Objectives (see Water Quality Objectives section);
f) a description of the public, stakeholder and First Nation* engagement that was used to inform the development of the watershed management plan;
g) consideration of government priority actions;
h) plans for on-going (future) education and engagement;
i) restoration action plans; and
j) monitoring plans (for identifying trends in water quality and for confirming the effectiveness of the action plans).

* This information would be used to help inform government's decision to approve the watershed plan but would not replace government's duty to consult First Nations.

Appendix D – Glossary

Adaptive Management - a systematic method of improving resource management over time by learning from the outcomes of previous management decisions. The intent is to reduce uncertainty and make progressively better decisions.

Approvals to Construct and Operate - permits that are issued in accordance with environmental legislation administered by the Department of Environment and Local Government (e.g. the *Clean Environment Act* and its regulations). Approval is typically based on a set of conditions that must be followed by the applicant.

Best Available, Economically Achievable Technology - a technology such as a wastewater treatment system that gives the best result of all available alternative technologies and is economically feasible to build and operate.

Canada-Wide Strategy for the Management of Municipal Wastewater Effluent - a strategy developed by the CCME that requires all municipal wastewater facility owners to achieve national performance standards and develop and manage site-specific effluent discharge objectives.

CCME (Canadian Council of Ministers of the Environment) - an intergovernmental forum for collective action on environmental issues of national and international concern, led by Canadian ministers of the environment (federal, provincial and territorial).

Cumulative Impacts - the environmental effects of two or more individual human activities that can combine and interact with each other to cause aggregate effects that may be different in nature or extent from the effects of the individual activities.

Effluent - liquid discharge to a watercourse.

Effluent Discharge Objectives - Effluent discharge objectives differ from the Provincial Water Quality Objectives in that the former apply to discharge from a specific facility at a specific location (i.e. within a mixing zone at the outlet of a pipe), while the latter are generic criteria that would apply to the province as a whole. Site-Specific Water Quality Objectives (if identified) would apply within all or part of a watershed (e.g. a specific reach of a river) but outside of a mixing zone.

Environmental Flows - the quantity, timing, and quality of water flows 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.

Integrated Watershed Management - a continuous, adaptive process of managing human activities and ecosystems at the watershed scale. It integrates multiple concepts and methods, including water management and land use planning and evaluates and manages cumulative impacts.

Level 1 Watershed - one of 13 major watersheds that collectively cover the entire province. Most Level 1 watersheds define the drainage areas of New Brunswick's larger rivers that drain directly to salt water. Some Level 1 watersheds are composite, containing a number of smaller coastal streams that drain to the ocean without connecting to a large river.

Mixing Zone - a portion of a water body located immediately adjacent to piped discharge from a point source. Within the mixing zone, concentrations of substances contained in effluent may be permitted to exceed the water quality objectives. Outside the mixing zone, the applicable water quality objectives must continue to be met.

Non-Point Source - a diffuse or widely distributed source of discharge to water that cannot be attributed to a single, specific location. Discharges from non-point sources typically reach a water body indirectly via wind, overland flow (during precipitation or snow melt) or infiltration to groundwater.

Point Source - a source of discharge to water that can be attributed to a specific location such as a building or facility, or the end of a pipe, channel, or ditch.

Provincial Water Quality Objectives - a set of water quality objectives that are intended to apply to all waters within the province.

Site-Specific Water Quality Objectives - a modified subset of the provincial water quality objectives that apply to a specific location because of the non-typical natural characteristics of the location (e.g. the presence of a highly sensitive natural feature or a naturally-elevated concentration of a substance that does not meet the provincial water quality objectives).

Statements of Provincial Interest - a future Regulation enabled under the updated *Community Planning Act* (coming into force January 2018) in which the provincial government can protect the provincial interest in the use and development of land. A regional plan, municipal plan, rural plan by-law or regulation under the *Community Planning Act* that is made or adopted after the coming into force of a statement of provincial interest must be consistent with the statement of provincial interest.

Terms of Reference - a document that describes the subject matter that will be included a watershed management plan and the methodology and the management structure that will be used to create the plan.

Water Classification - a system of water management in which water bodies are assigned to one of a set of predefined classes, based on their current or desired characteristics and uses. Water quality is then managed to achieve or maintain the water quality standard that is associated with the applicable class.

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.

Watershed Groups - non-governmental environmental organizations that focus the majority of their interests and activities on a specific watershed, or part of a watershed.

Watershed Management - management of water quality and quantity using a watershed as the area of focus and the unit of management.

Watershed Management Plan - a proactive, comprehensive plan that is developed in partnership with First Nations, stakeholders, watershed groups and interested individuals. Its purpose is to build relationships between the partners and to guide the management of water quality and quantity within a specific watershed, in order to achieve a set of desirable outcomes (e.g. achieving water quality objectives).