

11. CANADA

11.1 Water Resources Management Policies and Actions

In Canada, the Environment Canada has formulated “The Federal Water Policy” in 1987. The Policy addresses the management of water resources, balancing water uses with the requirements of the many interrelationships within the ecosystem. It takes into account the needs of all Canadians in its overall objective of encouraging the use of freshwater in an efficient and equitable manner consistent with the social, economic and environmental needs of present and future generations.¹⁵⁷

To manage Canada's water resources, the federal government has defined two main goals (i) Protection and enhancement in the water resource (ii) Promotion of the wise and efficient management and use of water.

The federal government uses five strategies¹⁵⁸ to reach its stated goals, which are generally described as follows:

Water Pricing: Owing to government subsidies, Canadians get use to a low-priced water supply system. In order to raise their concerns on overuse of water and those resulted problems, one of the approaches the government going to take is to encourage the application of pricing and other strategies, for instance the beneficiary/polluter pays concept, to encourage efficient water use.

Science leadership: Water-based economic development that is environmentally compatible requires cooperation in developing new and improved technology. To obtain this, the federal government plans to encourage opportunities for non-governmental technological development and private sector in water conservation industry.

Integrated planning: The federal government endorses an integrated approach to the planning and development of water resources. This integrated approach takes into account all water uses and water-related activities, within whatever political, administrative, economic or functional boundaries they are defined. It is an approach that can apply to any scale of planning, whether governmental or private, but for the major river basins, integrated water resource planning is practically synonymous with joint federal-provincial-territorial planning. The interdependence and growing competition among water users, and the recognition of recreational, social, environmental and heritage values are additional reasons for the increasing importance of cooperative planning between the various levels of government agencies and institutions.

Legislation: The present legislation plans to be modernised in order to support the federal water policy goals.

¹⁵⁷ Extracted from http://www.ec.gc.ca/water/en/policy/federal/e_pol.htm

¹⁵⁸ Extracted from http://www.ec.gc.ca/water/en/info/pubs/fedpol/e_fedpol.htm#5

Public awareness: The federal government plans to raise the public awareness in water resources management and protection by providing chances for the public to involve in decisions making through public consultation and to give input on water decisions that have broad social, economic or environmental implications.



Source: "Securing Calgary's Water Supply in the Face of Explosive Population Growth"¹⁵⁹

¹⁵⁹ Description of the Study is obtained from "Securing Calgary's Water Supply in the Face of Explosive Population Growth", http://sustainablecommunities.fcm.ca/files/Infraguide/Case_Studies/city_calgary_water_case_study_oct06.pdf, page 2, 5

11.2 Environmental Evaluation/SEA in Canada

In Canada, it is an administrative requirement to conduct SEA for the integration of environmental considerations into new policies, programmes and plans. A directive, named "Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals" (the Directive), was issued by the Cabinet on the environmental assessment of policy and programme proposals in 1990, then it was expanded to include the environmental assessment of plans in 1999, and was modified to include a requirement for a public statement of environmental effects in 2004.

Under the Directive, Ministers expect that departments and agencies conduct SEA of a policy, plan or programme proposal when the following two conditions are met: (i) the proposal is submitted to an individual minister or Cabinet for approval; and (ii) implementation of the proposal may result in important environmental effects, either positive or negative.

Departments and agencies are also encouraged to conduct SEA for other policy, plan or programme proposals when circumstances warrant. Ministers expect the SEA to consider the scope and nature of the likely environmental effects, the need for mitigation to reduce or eliminate adverse effects, and the likely importance of any adverse environmental effects, taking mitigation into account.

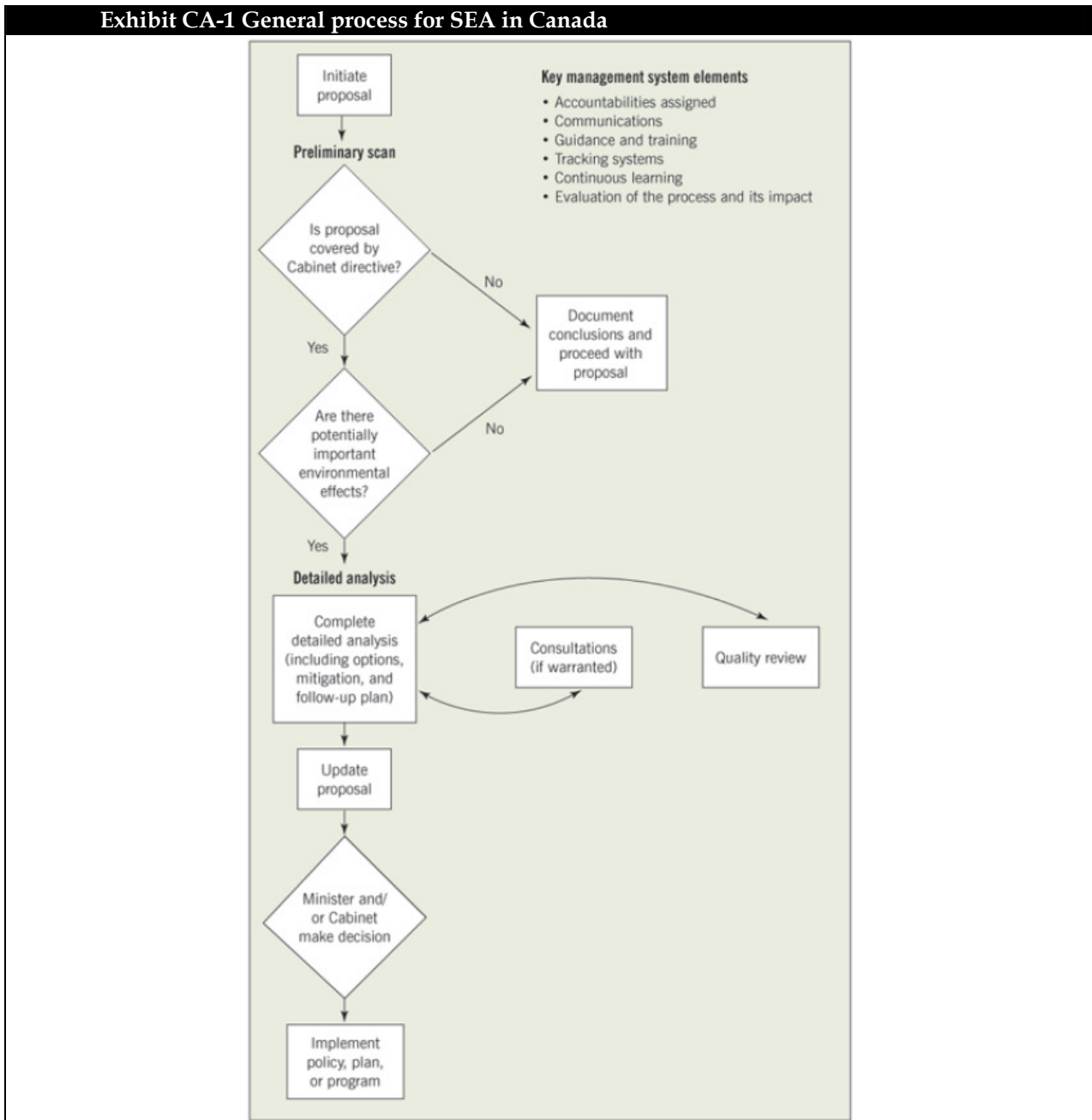
The SEA should contribute to the development of policies, plans and programmes on an equal basis with economic or social analysis; the level of effort in conducting the analysis of potential environmental effects should be commensurate with the level of anticipated environmental effects. The environmental considerations should be fully integrated into the analysis of each of the options developed for consideration, and the decision should incorporate the results of the SEA.

Departments and agencies should use existing mechanisms to involve the public, as appropriate. They should prepare a public statement of environmental effects when a detailed assessment of environmental effects has been conducted through SEA. This will assure stakeholders and the public that environmental factors have been appropriately considered when decisions are made.^{160,161}

¹⁶⁰ The above paragraphs are summarized from the web site of Office of the Auditor General of Canada regarding "1999 Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals, 2004, <http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20041004se01.html>

¹⁶¹ Guidelines on implementing the Cabinet Directive can be found in the web site of the Canadian Environmental Assessment Agency, http://www.ceaa.gc.ca/016/directive_e.htm#1

The SEA process is presented in Exhibit CA-1¹⁶².



¹⁶² Extracted from the "Report of the Commissioner of the Environment and Sustainable Development, 2004" in the section "Generic process and elements for conducting strategic environmental assessment" under the web site of the Office of the Auditor General of Canada, <http://www.oag-bvg.gc.ca/domino/reports.nsf/html/c20041004xe04.html>

11.3 Environmental Evaluation/SEA on Water Resources Management in Canada

It is administratively required to conduct SEA in Canada for the policies, plans and programmes related to Water Resources Management, following the requirement as stated in the Cabinet Directive. For the process and requirements on SEA, information can be referred to Section 11.2.

A summary table for the water resources management policies and actions and SEA status in Canada is presented in **Exhibit CA-2**.

Exhibit CA-2 Summary of Water Resources Management (WRM) Policies and Actions and SEA status in Canada	
(a) WRM Policies and Actions	
WRM Policies and Actions	Policies: <ul style="list-style-type: none"> ● Federal Water Policy Actions: <ul style="list-style-type: none"> ● N/A
Guidance/Legislations for WRM	N/A
(b) Environmental Evaluations / SEA Status in WRM Policies and Actions	
Type of Assessment	Strategic Environmental Assessment
Requirement Mechanisms	Administrative
Legislation for Environmental Evaluation / SEA	Cabinet Directive (1999)
Applications	Policies, Plans and Programmes

11.4 Analysis and Conclusions

WRM Policies

In Canada, the Environment Canada has formulated "The Federal Water Policy" in 1987. The overall objective of the federal water policy is to encourage the use of freshwater in an efficient and equitable manner consistent with the social, economic and environmental needs of present and future generations. The purpose of the Federal Water Policy is to set down the goals and actions by which the federal government intends to contribute to this objective through its own and through cooperative programs, the development of information and expertise, technological development and transfer, and promotion of public awareness.

The federal government has identified two main goals with respect to water:

To protect and enhance the quality of the water resource: This goal means anticipating and preventing the contamination of all Canadian waters by harmful substances, and working to encourage the restoration of those waters that are contaminated. It is now realized, however, that more stringent regulations and standards alone cannot protect the water resources without economic incentives (and penalties) to prevent their impairment. This policy emphasizes the promotion of the "polluter pays" principle, which will re-direct the inevitable costs of pollution reduction to those responsible. As a result, costs are distributed more fairly to the benefit of all Canadians and the environment as a whole.

To promote the wise and efficient management and use of water: This goal means establishing new ground rules and procedures that respect the value of water to all sectors of society and to the environment. The key innovation is to recognize the value of the resource - both by promoting the realistic pricing of water used, and by respecting the value of recreational water uses and other similar uses where direct charges are not applicable. As a result, governments will be able to reduce their water investments and improve the operating efficiency of water systems through better technology and practices. The private sector and individuals will benefit in direct savings to particular water users, growth of environmental industries, personal health and, ultimately, the peace of mind that comes from knowing that Canada's water will be safe for both present and future generations.

Compared to Canada, Hong Kong's two main sources of water are from rainfall from natural catchment and supply from Guangdong. It is Water Supplies Department's (WSD) scope of work to cover the whole process from the collection of natural yield from rainfall, the reception of raw water from Guangdong to the provision of a supply with a quality of accepted international standards to the users' taps. WSD also supplies sea water for flushing purposes to over 80% of the population. For protection against flooding, sewage collection, treatment and disposal, it is under Drainage Services Department's (DSD) jurisdiction.

For the sustainable development of Hong Kong, WSD has initiated a *Total Water Management programme* comprising key elements of new water resources, water reclamation, water conservation and water resources protection and management was

initiated for better utilization of the different water resources.

Similar to Canada, Hong Kong adopts "polluter pays" principle. Following this principle, the sewage charging scheme was introduced in Hong Kong on 1 April 1995. Dischargers are required to pay the cost of the sewage services according to the quality and quantity of their discharge. Also, Hong Kong, while is part of Guangdong province, has a neighbour city, Shenzhen, to the north. Effective transboundary cooperation is considered to be essential for the protection of inland water bodies.

EE/SEA

Regarding SEA/EE requirements in Canada, although it is not statutory to conduct SEA, the Environment Canada, who is responsible for constructing policies, plans or programmes (PPP) on WRM for the country, shall follow the "Cabinet Directive on the Environmental Assessment of Policy, Plan and Program (PPP) Proposals" on how environmental assessment to be carried out for PPP proposals during planning stage. Under this Directive, preliminary scan was proposed as the first step for the Cabinet to decide if a detailed assessment is needed.

Apparently, the SEA/EE system in Canada is one of the few systems that are largely non-statutory in nature. The system of using Cabinet Directive to decide the requirement of a detailed assessment is considered to be flexible for implementation. However, for decision making, it relies on a preliminary scan which is a crucial step to decide how the scan is undertaken and the extent of submissions.

Hong Kong's SEA/EE is under Environmental Protection Department's (EPD) jurisdiction. At present, there are both statutory and administrative systems for PPP projects. While the statutory requirements govern primarily large scale development projects (i.e. over 20 ha of area or population over 100,000), the administrative counterpart has been applied to land use planning, transportation and sectoral PPP.

11.5 Examples of Water Resources Management Policies / Actions or their Environmental Evaluation/SEA

Example CA-1 National Action Plan to Encourage Municipal Water Use Efficiency ¹⁶³	
Description of Study	<p>Development of this action plan was based on the following fundamental principles:</p> <ul style="list-style-type: none"> ● Leadership: All levels of government – federal, provincial and territorial and municipal – must show leadership in advancing water use efficiency, building on existing knowledge and technologies. ● Partnership: Environment ministers cannot achieve the goals of this plan alone. In order to succeed, this plan requires the participation of other government departments, municipalities, and all Canadians. ● Harmonisation: There shall be consistent regulatory requirements relating to water use efficiency across Canada. ● User pays on basis of volume: Consumers shall be pay for water and wastewater services on the basis of measured actual use. ● Full cost pricing: Municipalities shall move towards water and wastewater rate structures that reflect the full cost of delivery and treatment. ● An informed public: The public shall be informed of the real costs of water use and the savings that can be achieved through water efficiency, and of actions they can take to reduce usage. <p>And, there are 5 major ways to implement the plan:</p> <ul style="list-style-type: none"> ● Demonstrate leadership ● Adopt consistent policies ● Public education and awareness ● Research and development and technology transfer ● Encouraging municipal actions
Outcome of Study	<p>There is a variety of expected outcomes from this action plan.</p> <ul style="list-style-type: none"> ● Capital cost saving on the infrastructure to deliver water and treat wastewater – eliminate public funding for additional facilities on water and wastewater treatment; reduce the cost of collecting and treating wastewater ● Environmental quality improvements – reduce the volume of water used by consumers and the volume of wastewater to be treated ● Energy conservation – less energy is used to heat water, and to pump potable water and wastewater ● Urban intensification – allows more intensive development on existing water and sewer infrastructure ● Development opportunities, increased competitiveness and job creation – the move to water efficiency will trigger new economic activities for water-related manufacturing and service sectors, encouraging new business opportunities and job creation. Increased efficiency also means lower costs to business, leading to increased competitiveness ● Water conservation – help to preserve and protect surface waters for fish and wildlife habitat and the natural attractions

¹⁶³ Details of the Plan can be found in the Environment Canada website, http://www.ec.gc.ca/water/en/info/pubs/action/e_action.htm

Example CA-2 Water Efficiency Plan for the City of Calgary¹⁶⁴	
Description of Study	<p>The new Water Efficiency Plan was endorsed in December 2005. The Plan provides a framework for the City of Calgary’s water conservation efforts, and outlines the scope, purpose and potential water savings of its programmes. The Plan also describes the key “30 in 30” sustainability goal which the utility will use to continue to move towards that vision and encapsulates all the programmes that will contribute to reaching the goal.</p> <p>Some points for the framework:</p> <ul style="list-style-type: none"> ● To measure customer demand for its water: The City tracks a number of key consumption measures. ● To measure supply: The City is increasing the number of locations where production and distribution flows are metered. ● To track public attitudes and influence public behaviours: Municipal staff have developed and implemented public awareness and education campaigns to raise awareness about the importance of water efficiency and describe the responsibility each Calgarian has to reduce water usage.
Outcome of Study	<p>In conclusion, the Water Efficiency Plan has helped the community to take the next bold step toward sustainability. The water efficiency programmes are on the way to the “30 in 30” sustainability goal, which means the target reduction of the average water consumed by each person in Calgary has set to be 30 percent in coming 30 years.</p>

¹⁶⁴ Description of the Study is obtained from “Securing Calgary’s Water Supply in the Face of Explosive Population Growth”,
http://sustainablecommunities.fcm.ca/files/Infraguide/Case_Studies/city_calgary_water_case_study_oct06.pdf,
page 2, 3, 4, 7