

P597 Assignment 3

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What should be the Nature and Content of a National Water Strategy (NWS) for Canada?

What should be the Nature of a Canadian NWS?

Canada's water resource problems will require accommodating competing interests, understanding historical forces that have created the existing framework, innovation and leadership to address emerging and complex problems, and policy coordination at all political and administrative levels.

An effective NWS must:

- Address a range issues, from the control of water withdrawals and source protection at the watershed level to the creation of institutions for implementation.
- Learn from other jurisdictions in order to provide signposts for Canadian authorities along the path to a sustainable water future.
- Price water fairly but effectively enough to encourage its wise use

In our opinion, the nature of the NWS for Canada must be equitable, efficient, coordinated and sustainable. It must strengthen human resources development in terms of awareness creation programs, train water managers, develop new institutions for governance, create effective information management, protect the environment while still allowing development, integrate water planning into the national economy and lastly finance and scientific research to do so.

The core of this strategy is the establishment of multi-disciplinary teams at local, regional, national and international levels to communicate different perspectives on water resources, building consensus on the conservation of water resources and the maintenance of aquatic ecosystem health.

Prevention and precaution, ecosystem-based management, matching authority to jurisdiction, and adaptive management will be the key elements for water planners and managers to reach sustainability. Working together, federal and provincial governments can promote the tools and institutions to

allow all local interests such as suppliers, businesses, consumers and local governments to develop water sustainability.

Once defined goals are defined, a planning cycle follows that builds commitment to the process, analyzes gaps, prepares strategy and action plans, and creates an implementation framework, followed by monitoring and evaluation. The results of these evaluations will likely redefine our goals and strategies and begin the planning cycle again.

The nature of a NWS for Canada should be consistent with IWRM as defined by the GWP; *‘a process that promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems’*.

What should be the content of a Canadian NWS?

NWS should entrench a right to safe drinking water for Canadians. Water Source Protection is necessary to minimize required treatments to make water potable. Land Use zoning that is compromising water source protection should be reexamined and moratoria established on further development until adequate protection is possible. Likewise, regulation that establishes minimum safe drinking water standards everywhere in Canada is essential. Funding assistance from all levels of government to finance water treatment should be made available.

NWS should require regulation of groundwater extraction to not exceed recharge and require polluters of groundwater to face stiff financial or even criminal penalties. NWS should require drier areas with surplus surface water to develop District Water Systems and reduce their ground water use.

The NWS should establish water minimum needs for aquatic and riparian ecosystems and ensure they get first allocations prior to human needs. To achieve this, Canadian water agencies should have “adaptive withdrawal permits” for surface waters. This avoids over-allocation of water sources by linking withdrawals to water availability. Legally, this will involve amending current water licenses and entitlements; and will require detailed hydrological, ecological, and human water use monitoring.

For the NWS to reduce water demand and fund water treatment and distribution, Demand Side Management in combination with conservation-based pricing is needed to provide incentives to reduce water use and signal the value of water. Universal metering of all water withdrawals will be necessary as well as mobilizing social capital to get public and political buy-in at all levels.

Similarly, the NWS will need market-based instruments for water sustainability that provide financial incentives for desired behaviour or impose fees on undesirable behaviour to reduce water use. The NWS will need long-term conservation planning that guides and incentivizes individuals, governments, and companies with conditional funding and legislation to achieve water sustainability.

For NWS, a utility full-cost accounting system is necessary to promote a true value of water to end user. By mandating reuse and recycling of water through standards and regulation wastewater and potable water demand can be minimised. The NWS should require updating of Building codes, infrastructure standards and zoning requirements to require dual plumbing, water conservation fixtures and permeable ground requirements or effective structural substitutes. The NWS should create national guidelines for reused water and health regulations to ensure safety and promote public understanding. The costs of treating and mitigating current environmental externalities related to water pollution must be included in this accounting.

The NWS should promote Environmental management systems that embed planning in an adaptive management framework which ensure regular assessment of business practices and consequential environmental impacts and regularly adjusts them as needed.

A NWS should develop conservation capacity at all levels of government. Professionals should be developed to create and run long-term DSM programs and be given financial resources and recognition commensurate with their critical role in reducing water use.

NWS should promote the concept of “Water parliaments” that ensure holistic planning and decision making at the watershed scale by bodies aware of local needs and circumstances. To be effective, this will involve collaboration by key stakeholders and senior governments who must provide

sufficient resources and delegate local decision-making authority to these parliaments.

Conclusion:

Canada needs NWS to avoid long-term ecological, human health and economic damage. We should not repeat the mistakes of other countries and civilizations by ignoring our water problems until they become crises that require Herculean sacrifices to remedy.

Figure 1.

Key elements of a national water strategy for Canada

	Practice (BMP)	Purpose(s)	Key enabling requirement(s)
Ecosystem-based water allocations Chapter 5	Water allocations that ensure watershed health	Allocate water to sustain ecosystem integrity	Provincial action on fundamental reform of water licensing and allocation systems
	Adaptive withdrawal permitting	Avoid future over-allocation of water sources by allowing permitted withdrawals to be adjusted over time in response to water availability	Change water licenses and entitlements; and demand detailed hydrological and human water use monitoring
	Market-based instruments for water sustainability	Provide incentives (financial rewards) for desired behaviour or impose fees on undesirable behaviour to reduce water use and provide potential revenue to subsidize conservation and restoration	Pricing - attention to distributive effects (i.e. political economy of water) Trading - property rights with clear ecological water allocations and significant government regulation Liability - public access to legal system
Innovative Urban Water Management Chapter 6 and 7	Long-term conservation planning	Overcome short-term decision making that increases long-term impacts/costs	Water conservation planning guidelines and incentives that require their use (conditional funding, legislation)
	Environmental management systems	Embed planning in an adaptive management framework, ensuring regular assessment of business practices and consequential environmental impacts	Overcome upfront costs for management process (e.g. plan, do, check, act) and ensure availability of detailed information
	Utility Full-Cost Accounting	May eliminate perverse subsidies by promoting a truer value of water to end users, ensuring long-term financial stability for the utility	Local political will or provincial legislation as in Ontario. Citizen/end-user education
	Developing conservation capacity	Develop professionals that create and run effective long-term DSM programs	Sufficient financial resources and recognition that DSM professionals are critical to any water supply team
	Best practices clearing-house	Disseminate information and opportunities to improve water management and promote innovation	Create one central and credible resource in collaboration with key stakeholders
Key DSM measures Chapter 7	Promote market in DSM planning/implementation	Ensure ongoing innovation and continual integration of conservation technologies	Commitment by local government to link development with conservation incentives
	Labelling	Allow purchasers to identify and select the most water-efficient products to meet their needs, facilitating a market for conservation technologies	Credible oversight and enforcement of standards
	Social Marketing	Promote behavioural change at community level	Specific training and direct public contact and involvement
	Conservation-based pricing	Provide incentives to reduce water use and signal the value of water	Universal metering and public and political buy-in
Watershed Governance Chapter 8	Reuse and recycling	Cascade water use to reduce wastewater and water use	Dual plumbing, enabling regulation, pilot projects, national guidelines for reused water and health regulations
	Water parliaments	Ensure holistic planning and decision making at the watershed scale by bodies aware of local needs and circumstances	Collaboration by key stakeholders and senior governments; sufficient resources and delegated decision-making authority

From: “At a Watershed, Ecological Governance and Sustainable Water Management in Canada” UWDM, Polis Institute 2005

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