

FOR PUBLIC REVIEW

Draft Yukon Water Strategy

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For more information, please contact:

Environment Yukon Water Resources Branch Box 2703 (V-310), Whitehorse, Yukon Y1A 2C6

P: 867.667.3171

Toll Free: 1.800.661.0408 local 3171 E: water.resources@gov.yk.ca

For copies of this document, please visit:

yukonwater.ca or env.gov.yk.ca/draftwaterstrategy

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ISBN: Draft Yukon Water Strategy for Public Review

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The Government of Yukon invites public consideration and feedback on the *Draft Yukon Water Strategy for Public Review* contained in this document. We invite all Yukoners, including those who have been involved in the process so far, to provide comments by May 31, 2013. A detachable comment sheet is available in the centre of this document for your convenience.

The collection, use, and disclosure of information is done in compliance with the *Access to Information and Protection of Privacy Act*. Your written comments to the Yukon government may be summarized in order to provide a final report. Personal information that you provide, e.g. your name, will be protected in accordance with the *Act*.

Six Ways To Provide Your Comments

1. Online:	yukonwater.ca or env.gov.yk.ca/draftwaterstrateg
2. Email:	water.resources@gov.yk.ca
3. Fax:	867.667.3195
4. Mail:	Water Resources Branch, V-310 Environment Yukon Box 2703 Whitehorse, Yukon Y1A 2C6
5. In person:	Monday to Friday 9 a.m. – 12 p.m., and 1 p.m. – 3 p.m.
	Water Resources Branch Environment Yukon Suite 203, 1191-1 st Avenue Whitehorse, Yukon Y1A 0K5
6. Attend an open house:	Visit the website or look for ads in the newspapers for dates and location.

The deadline for submissions is May 31, 2013.

Draft Yukon Water Strategy for public review



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Minister's Message

Water is essential to life and to the health of Yukon's people, economy and natural environment. It has been fundamental to our heritage, remains important to our culture and will be crucial for our future prosperity. The Yukon water strategy, once it is finalized, will help ensure the Yukon government manages water in a coordinated way so that our water supply remains healthy now and into the future.

By releasing a draft for public review, the government is providing Yukoners with the opportunity to participate in the development of a comprehensive, thoughtful and innovative water strategy. It is important that the strategy considers the perspectives of all Yukoners.

This draft strategy builds on the work already done to establish a water management framework for the Yukon government and assess the vulnerabilities of Yukon's water supply to climate change.

I encourage Yukoners to participate in this review because we all will benefit from it. Protecting this precious resource is of utmost importance and requires thoughtful and careful planning.

Currie Dixon
Minister of Environment



Introduction

Why We Need a Yukon Water Strategy

A Yukon water strategy will clarify the Yukon government's approach to addressing complex water issues. It establishes a framework of goals and priority actions, which in turn are based on a vision and set of principles. Short- and long-term priority actions are proposed in the form of policies, plans and programs. Once the strategy is finalized, further work will be required by government to determine how these actions will be resourced.

A water strategy developed with input from Yukoners will help ensure water managers' decisions reflect the values of Yukoners. To be effective, the water strategy will provide for present and future needs and support better collaboration among all governments and agencies that share responsibilities for water management.

A water strategy developed with input from Yukoners will help ensure water managers' decisions reflect the values of Yukoners.

Work to Date

The Yukon government has made a number of recent commitments towards improving water management – some related to policy and programs, others related to infrastructure.

Policy and program improvements include a report on the vulnerabilities of Yukon water to climate change, two new water websites (an information portal and an on-line registry for applying for and tracking water licenses), the development of a Wetlands Classification Framework and the new information package for Type A and B quartz mining undertakings.

In regards to infrastructure, there has been significant investment in community drinking water and municipal waste water infrastructure, much of this as a result of new legislation and resulting standards. Yukon government has invested in new wells and a variety of upgrades and replacements to infrastructure in several communities. This includes more than \$100 million for constructing and upgrading water and wastewater systems across Yukon, such as constructing drinking water fill stations, and support for municipalities and First Nations to develop and upgrade drinking water systems and wastewater systems.

Several steps have already been taken to develop this draft strategy. The Yukon government's Strategic Water Initiatives Group, an interdepartmental working group, developed a discussion paper that incorporated priority areas, a vision, a set of principles and goals.

First Nation, federal, municipal and other Yukon government policy and technical staff were engaged via an information sharing and gathering workshop in June 2012, informal discussions and written submissions. Using the input received, a draft water strategy was written.

The government is now asking Yukoners to review and provide feedback on the draft strategy. This input will be carefully considered when finalizing the water strategy. **The deadline is May 31, 2013.**



Yukon's Unique Waters

Yukon has abundant water resources. Water covers about 8,000 km² of the territory in six major watersheds: the Alsek, Yukon, Porcupine, Peel, Liard and North Slope (Natural Resources Canada, 2005). Each of these has several tributaries. Yukon has extensive groundwater resources and aquifers, as well as widespread frozen water sources such as glaciers and permafrost. A total of 1,396 glaciers covers an approximate area of 10,000 km² of the Yukon's landscape (Barrand and Sharp, 2010).

Yukon's heritage and economic prosperity have been built on access to and use of its water resources. The territory's rivers and lakes have been fundamental to the way of life of First Nation people. They have also been the determining factor in the establishment of our communities, providing travel routes in the early days and becoming embedded within our identity today.

Water remains vital to Yukoners: It is a necessity of life, the economy and the natural environment. It supplies adequate drinking water and wastewater treatment to communities, households and businesses. Water bodies and water ways are essential for travel, firefighting, recreation and harvesting. Water continues to hold cultural and spiritual importance to Yukoners. Industries such as agriculture and placer mining depend entirely on water's availability. Hydroelectric facilities need reliable river flows as well as water storage in order to meet energy demands. Water provides habitat for plants and animals and supports basic life processes, including nutrient and waste cycles.

Areas of Focus

In order to ensure that Yukoners can continue to rely on the existing supply and quality of water, action and policy are needed to ensure that good water management decisions are made. Yukon waters are not immune to problems such as those associated with natural and human-caused climate change and industrial development.

The strategy calls for the following actions:

- Develop a common understanding of the vision and principles that the Yukon government will use when making decisions affecting water resources;
- Generate a better understanding of Yukon's water resources and especially our groundwater resources that we currently know so little about;
- Facilitate improved collaboration among water decision makers in various governments and organizations (e.g., federal, territorial, First Nation, regional and municipal);

- Support the steps we take towards maintaining and improving our access to safe and affordable drinking water;
- Expand upon the generation and use of water information and better communicate what we know;
- Promote the sustainable and wise use of water so current and future water needs are met; and
- Address pressures that affect our water resources such as climate change.

Water remains vital to Yukoners: It is a necessity of life, the economy and the natural environment.

Roles and Responsibilities

Roles and responsibilities for protecting Yukon water, regulating water use and planning for future uses are shared among all levels of government, boards and councils, non-government organizations, industry, community organizations and individual Yukoners. Some have direct responsibilities, such as regulating water use, and others have indirect responsibilities, such as providing advice to decision makers.

In 2003, the federal government transferred ("devolved") most of its responsibilities for land and resource management to the territorial government. Water management does not rest with the Yukon government alone. It remains a collaborative effort among territorial, federal, First Nation, regional and municipal governments, stakeholders and the public.

Within the Yukon government, there are seven departments with responsibilities for Yukon waters:

1. Community Services

Builds and manages water, sewerage, road works, flood and erosion control, and solid waste disposal projects for unincorporated Yukon communities. For First Nations and municipalities who are providers of drinking water and waste water treatment services, Community Services' Community Development Division also provides advice and project assistance.

2. Economic Development

Works with other departments to ensure that water remains useable and accessible to Yukon's private sector, from eco-tourism operators to placer miners.

3. Energy, Mines and Resources

Responsible for protecting water resources in relation to placer and quartz mining, including monitoring compliance of water licences (Client Services and Inspections). It is also indirectly accountable for water as it relates to managing minerals (Minerals Branch), abandoned mines (Assessment and Abandoned Mines), lands (Lands Branch), oil and gas (Oil and Gas Resources Branch), energy (Energy Solutions Centre), agriculture (Agriculture Branch), forest resources (Forest Management Branch), groundwater and ground ice research (Yukon Geological Survey) and regional land use planning.

4. Environment

Develops water-related strategic plans and policies; monitors, analyzes, and reports on some aspects of water quality (e.g., aquatic health) and quantity (e.g., flood forecasting); and provides expert technical advice in these areas. It plays a key role in the administration and enforcement of the *Waters Act*, including monitoring compliance of water licences (Water Resources Branch). Other responsibilities include the review of project applications for water use and the deposit of waste, monitoring of licensed groundwater sampling for solid waste disposal sites (Environmental Programs Branch), park planning and operations (Parks Branch), and freshwater fish and fish habitat management (Fish and Wildlife Branch).

5. Executive Council Office

Responsible for administering the water licensing process and supporting the Yukon Water Board (Yukon Water Board Secretariat).

6. Health and Social Services

Regulates drinking water through the Drinking Water Regulation under the *Public Health and Safety Act*; provides information and advice; and performs inspection and enforcement in a variety of areas, including drinking water quality, sewage disposal, food service, institutions and child care facilities (Environmental Health Services).

7. Highways and Public Works

Ensures safety and comfort in Yukon government buildings and, as such, provides potable water and sewage disposal (Property Management Division).

Strategic Framework

Vision

The following statement describes the future the Yukon government would like to see:

Yukoners have access to safe and sufficient water to meet their needs in ways that also preserve ecosystem health now and into the future.

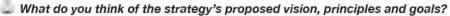
Principles

Sustainability	Undertake actions that are environmentally, economically and socially sustainable.
Forward-looking	Anticipate future changes in water quality, quantity and needs due to factors such as cumulative effects, climate change and population growth.
Adaptability	Promote and develop adaptive management strategies to cope with uncertainty and change.
Security	Seek to maintain affordable, adequate, equitable and reliable water quality and quantity for all Yukoners.
Stewardship	Ensure Yukon's watersheds remain intact and healthy, based on both individual and shared responsibilities.
Cooperation	Develop and promote partnerships and collaboration as appropriate in light of shared responsibilities.
Respect	Demonstrate respect for the intrinsic value of water and the values and interests of all Yukoners.

Goals

These are the goals that the Yukon government would like to achieve:		
Water for People	Ensure accessible, safe and sufficient water for drinking and other purposes, including industrial, recreational, heritage, cultural and spiritual uses and values. Promote sustainable and valuable use of water for communities and economies for key business sectors.	
Water for Nature	Preserve water quality and quantity for aquatic health and ecosystem services while respecting the intrinsic value of water.	
Water Monitoring, Knowledge and Management	Strengthen understanding, knowledge and overall management of water.	







Water management does not rest with the Yukon government alone. It remains a collaborative effort among territorial, federal, First Nation, regional and municipal governments, stakeholders and the public.

Moving Forward

Priorities

The following priorities are the areas of work that the Yukon government feels will address the goals identified:

Better understand and manage Yukon's groundwater regime. Most Yukoners rely on groundwater for their drinking water. Groundwater is also used for a variety of industrial purposes (oil and gas, and mining operations) while remaining integral to the replenishment of surface water systems that support aquatic life. In order to protect Yukon's groundwater from contamination, improvements to our understanding, monitoring and management of this resource are essential.

Maintain/improve access to safe drinking water for all Yukoners.

Safe drinking water is essential to people across Canada and in Yukon. Governments operate drinking water supply systems, make improvements to those systems, and construct new systems. Yukoners want to know the state of their drinking water systems, that standards are being met, and what work is being done to improve such systems.

Promote the sustainable use of water. Efficient water use practices are important in both reducing impacts to our environment and reducing financial costs. Promoting best management practices will help reduce impacts and ensure adequate water availability for industry, communities and other users.

Improve the generation and use of water information.

Information regarding surface and ground water supply and quality is essential when planning water use activities and assessing and minimizing their impact on the ecosystem. Several agencies conduct water monitoring and research programs. Improved collaboration may help address gaps in the efficiency of individual programs as well as increase awareness of available information.

Assess and improve government management programs.

There are a number of government agencies with water management responsibilities. The Yukon Water Strategy will identify ways for government agencies to improve collaboration and identify areas of water management needing improvement.

Plan for water needs now and in the future. Water systems will be changing in response to the impacts from climate change, population growth, and potential future development. Future developments in previously undeveloped areas require baseline water quality, hydrology and meteorological baseline data. Agencies and proponents need to consider these future issues now in developing and implementing research and monitoring programs.

Actions

The following short- and long-term actions are the strategic items that the Yukon government will carry out under each priority.

PRIORITY A: Better understand and manage Yukon's groundwater regime.

SHORT-TERM ACTIONS • Undertake a workshop to identify knowledge gaps and prioritize groundwater issues. • Create a Yukon groundwater program that will bring together the work of various agencies. LONG-TERM ACTIONS • Create a toolkit, including a regulatory framework and legislative tools to protect groundwater. • Develop a centralized groundwater database and make it available online.

The actions identified for this priority will help achieve the following goals: Water for People; Water for Nature; and Water Monitoring, Knowledge and Management.

What do you think of the strategy's proposed actions for this priority? (Use the comments section to respond.)

PRIORITY B: Maintain/improve access to safe drinking water

for all Yukoners.

Gather baseline data to assess drinking water use and the real cost of providing water in Yukon.

 Increase public education to increase knowledge of water use, costs and conservation opportunities.

SHORT-TERM ACTIONS

LONG-TERM ACTIONS

- Ensure regulatory oversight of all public water systems through current legislative and enforcement programs.
- Undertake intergovernmental work to collect information on community water-system costs and sustainability; and organize education initiatives involving communities and stakeholders.
- Continue to run the Rural Domestic Water Well Program.
- Continue to develop community wells as needed.

The actions identified for this priority will help achieve the following goals: Water for People; and Water Monitoring, Knowledge and Management.

What do you think of the strategy's proposed actions for this priority? (Use the comments section to respond.)





PRIORITY C: Promote the sustainable use of water.

SHORT-TERM ACTIONS

LONG-TERM ACTIONS

- Review, improve and expand existing Best Management Practices (BMPs) for works affecting water in Yukon, engaging all users.
- Communicate BMPs and their application.
- Develop a webpage on the Yukon Water website that gives practical tips on the wise use of water.
- Use BMPs to help inform other water and land use practices/ processes.
- Continue to develop and improve BMPs using the best available science and technology as well as local and traditional knowledge.
- Encourage innovative technology that works to improve affordability and the sustainable and wise use of water.
- Continue to upgrade and modernize infrastructure to ensure efficient provision of safe drinking water now and into the future.

The actions identified under this priority will help us achieve the following goals: Water for People; Water for Nature; and Water Monitoring, Knowledge and Management.



What do you think of the strategy's proposed actions for this priority?

(Use the comments section to respond.)

PRIORITY D: Improve the generation and use of water information.

SHORT-TERM ACTIONS

LONG-TERM ACTIONS

- Increase communication on water in a manner that is most effective for users.
- Continually make improvements to yukonwater.ca based on the results of periodic evaluations.
- Continue and expand the Yukon government water information network.
- Identify ways to improve timely access to data (e.g. identify ways to retain experts, collectors and reviewers).

The actions identified under this priority will help us achieve the following goal: Water Monitoring, Knowledge and Management.



What do you think of the strategy's proposed actions for this priority?

(Use the comments section to respond.)

PRIORITY E: Assess and improve government management programs.

SHORT-TERM ACTIONS

improvements.

Establish a Water Forum consisting of water program managers to exchange information, collaboratively address water issues and promote continuous

- Enhance communication with First Nation governments on water issues within their traditional territories.
- Increase intergovernmental communication on specific water issues such as flooding.

LONG-TERM ACTIONS

- Establish a program to ensure water use decisions are effective over time.
- Monitor the effectiveness of the Waters Act and Waters Regulation.
- Enhance and/or develop appropriate programs and mechanisms for protecting source waters.
- Work with other levels of government to implement and adhere to the new municipal wastewater standards for community wastewater systems.

The actions identified under this priority will help us achieve the following goal: Water Monitoring, Knowledge and Management.



What do you think of the strategy's proposed actions for this priority?
(Use the comments section to respond.)

PRIORITY F: Plan for water needs now and in the future.

SHORT-TERM ACTIONS

Incorporate adaptive management approaches as well as local and traditional ecological knowledge into water policies and plans.

- Explore ways to integrate water valuation into decision-making.
- Undertake research to better understand and adapt to Yukon's hydrological response to climate change.
- Review and adjust water monitoring networks (including surface water, groundwater, permafrost and glaciers) to ensure adequate information is available for good decision making now, taking into consideration climate change, adaptation measures and future needs.

LONG-TERM ACTIONS

- Invest in technology and innovation (e.g. models for water planning and forecasting).
- Employ available tools and governance mechanisms for Integrated Water Management.
- Prepare for new resource sectors (e.g. petroleum) as they relate to water management and build internal capacity to respond to resource extraction.

The actions identified under this priority will help us achieve the following goals: Water for People; Water for Nature; and Water Monitoring, Knowledge and Management.



What do you think of the strategy's proposed actions for this priority?

(Use the comments section to respond.)



Implementation and Evaluation

This draft Yukon water strategy aims to identify priorities and high level actions. Once these have been confirmed following the public engagement process, further work will be needed to prepare an action plan. This will describe how the short- and long-term actions will be addressed. Departmental leads and partners will be identified as will the options, costs and timing for implementation.

To ensure that the Yukon water strategy remains relevant over time, it is important to evaluate progress and the effectiveness of actions. The next steps following completion of the strategy and associated action plans would include:

- Updates on progress during regular meetings of the Yukon government's Strategic Water Initiatives Group;
- Updates on progress and effectiveness at water forums; and
- A formal review of the Yukon water strategy after five years.





Glossary

Adaptive Management	A scientific approach to resource management that rigorously combines management, monitoring and research to effectively manage complex ecosystems in the face of uncertainty. Adaptive management tackles uncertainty about the system head-on by identifying clear objectives, developing conceptual models of the system, identifying areas of uncertainty and alternate hypotheses, testing critical system and actions, learning from the system as actions are taken to manage it, and incorporating what is learned into future actions.
Aquifer	An underground layer holding water that can yield a usable quantity of water.
Ecosystem Services	A catch-all term for the things that water, in its natural setting, does for us. Generally, ecosystem services are broken into four categories:
Provisioning Services	Drinking water, food, timber.
Regulating Services	Climatic control, waste assimilation, flood protection, water purification, fire regulation.
Cultural Services	Recreation, spiritual nourishment.
Supporting Services	Photosynthesis, soil formation, nutrient cycling, animal habitat.
Glaciers	Glaciers influence both streamflow and water quality in Yukon. The territory's glaciated regions include the southwest coast, the Saint Elias Mountains and portions of the Mackenzie Mountains. Glaciers in northern British Columbia at the headwaters of the Yukon River Basin are important to Yukon's hydrologic regime, influencing flows on the Yukon River at Whitehorse and communities downstream.
Groundwater	Groundwater is water located in the spaces between soil particles and in the fractures of rock formations underground. Water enters the ground through infiltration, and flows underground either to be stored in aquifers or to return to the surface through springs, wells or seepage into creeks and other water bodies. The presence of permafrost can limit the interactions between groundwater and surface water. The majority of Yukoners rely on groundwater for their domestic needs; only Carcross and Marsh Lake's Army Beach Water Treatment Plant supply surface water to users. Outside of communities, many rural residents also have their own groundwater wells.
Integrated Water Management (IWM)	A comprehensive approach to managing water, including human activities and their effects on watersheds and ecosystems. IWM aims to ensure water sustainability and its values now and into the future.
Permafrost	Permafrost is ground remaining at or below 0°C continuously for at least two years. In Yukon, permafrost distribution, thickness and the thickness of the active layer (the surface layer that thaws annually) play an important role in influencing the movement of water. Ice-rich permafrost restricts rain or snowmelt infiltration to subsurface zones, resulting in surface storage in the form of ponds or wetlands, such as in the Old Crow Flats. A thicker active layer enhances infiltration and associated groundwater recharge, which results in greater groundwater contributions to streamflow. Three permafrost zones exist in Yukon, distinguished by the relative amount of underlying permafrost. Continuous permafrost areas have greater than 90% coverage, discontinuous areas have between 50–90% coverage and sporadic areas have 10–50% coverage.
Watersheds	Six major watersheds drain the territory, each with several tributaries. The major watersheds are the Alsek, Yukon, Porcupine (which drains into the Yukon River in Alaska), Peel (which drains into the Mackenzie Delta), Liard (which drains into the Mackenzie Basin through British Columbia, Alberta and the Northwest Territories), and North Slope.

Appendix II:

Water Information for You

Below are sources of Yukon government departments and programs on water:

General	Information regarding Yukon's water, management regime, and programs related to water quality, hydrology, inspections, and climate change. www.yukonwater.ca www.env.gov.yk.ca/monitoringenvironment/aboutwaterresources.php
Acts and Regulations	An index of acts and regulations including the Waters Act and accompanying Waters Regulation; the Public Health and Safety Act and accompanying Drinking Water Regulation and Sewage Disposal Systems Regulation; and, the Government Organization Act. www.gov.yk.ca/legislation
Climate Change	A report and a summary version of the vulnerabilities to Yukon's water resources as a result of a warming climate. www.gov.yk.ca/climatechange
Drinking Water	Information regarding water wells, water testing and permitting. www.community.gov.yk.ca/property/ruralwaterwell.html www.hss.gov.yk.ca/environmental_drinkingwater.php
Emergency Planning and Preparedness	Information regarding preparedness and planning for flooding, toxic spills, extreme weather and other emergencies. www.community.gov.yk.ca/emo
Enforcement and Compliance	Information regarding the enforcement and compliance of water licences. www.emr.gov.yk.ca/csi www.env.gov.yk.ca/monitoringenvironment/waterinspections.php
Fishing	Information regarding fish, fishing regulations and licensing. www.env.gov.yk.ca/fishing
Infrastructure	Information regarding Yukon's water supply, waste management, recreational structures, transportation systems and more. www.infrastructure.gov.yk.ca
Licensing	Information regarding water licensing. www.yukonwaterboard.ca
Monitoring	Information regarding environmental monitoring programs related to climate change, water resources, contaminated sites, spills, site assessment and remediation, and environmental assessment. www.env.gov.yk.ca/monitoringenvironment
Municipal Services	Information regarding the operation of and maintenance of community infrastructure and service delivery programs for clean water, sewage, flood and erosion control, recycling, and solid waste systems in unincorporated Yukon communities. www.community.gov.yk.ca/cd/operations.html
Natural Resources	Information regarding industrial and natural resource sectors such as agriculture, mining, oil and gas, and forestry. www.emr.gov.yk.ca
Parks	Information regarding territorial parks and protected areas including the Canadian Heritage Rivers. www.env.gov.yk.ca/parks
Tourism	Information regarding water-related activities, travel and attractions. www.travelyukon.com

Appendix III:

Acknowledgments

The Yukon government's Strategic Water Initiatives Group would like to thank the following governments and organizations for assisting with the development of this *Draft Yukon Water Strategy for Public Review*:

- Aboriginal Affairs and Northern Development Canada
- Association of Yukon Communities
- City of Dawson
- · City of Whitehorse
- Champagne and Aishihik First Nations
- Department of Fisheries and Oceans
- Environment Canada, Water Survey
- · Environment Canada, Environmental Protection
- First Nation of Na-Cho Nyak Dun
- Kwanlin Dün First Nation
- Ta'an Kwäch'än Council
- Town of Faro
- Town of Watson Lake
- · Yukon Development Corporation
- Yukon Energy Corporation

We would also like to thank Cambio Consulting for facilitating the engagement held in June, 2012 to develop this draft strategy. Your assistance and guidance is greatly appreciated.



