



**British Columbia
Ministry of Environment and Climate Change Strategy**

**Agency Report to the
Mackenzie River Basin Board**

**Meeting 70 of the
Mackenzie River Basin Board
November 3-4, 2021
Edmonton, Alberta**

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Acknowledging the Ongoing COVID-19 Pandemic

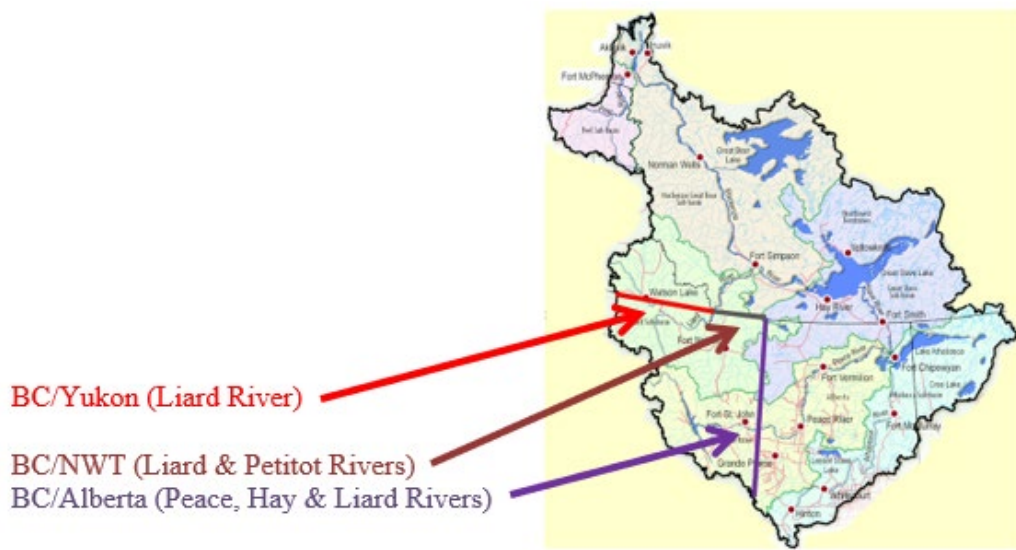
The Province of British Columbia announced a state of emergency on March 18, 2020. The COVID-19 provincial state of emergency declared under the *Emergency Program Act* ended at 11:59 pm on June 30, 2021.

Since the last annual report in fall 2020, the COVID-19 pandemic continues to challenge the collective capacity to undertake certain types of work, and efforts have been made to prioritize health and safety. Field work was scaled back or remained postponed from last year, especially where work involved partnerships with Indigenous governments and communities. Some training and other field-based learning has also been delayed or postponed for the foreseeable future. Many Indigenous government offices have been partially closed as they and their communities have continued to work from home and prioritize the health and safety of their communities. An intense summer with heat waves and wildfire affected many communities this year, adding to the disruption.

Despite some challenges in specific work areas, the combination of vaccination rates, full or partial work-from-home models, and continued COVID response measures in offices have been successful in supporting a highly productive public service around water management. Executive travel started again in fall 2021, and a vaccine mandate has been implemented for all public servants with a transition back into the workplace planned for November 2021.

1 Bilateral Water Management Agreements

The *Mackenzie River Basin Transboundary Waters Master Agreement* provides for neighbouring jurisdictions to negotiate Bilateral Water Management Agreements (BWMAs) to address shared surface water quantity, quality and groundwater. Under the Master Agreement, British Columbia is required to negotiate three such agreements with the governments of the Northwest Territories, Yukon and Alberta.



British Columbia – Northwest Territories

British Columbia and the Northwest Territories signed their BWMA in October 2015. The Agreement is available on the MRBB website at:

<http://www.mrbb.ca/information/120/index.html>

The British Columbia – Northwest Territories BWMA applies to all transboundary waters shared between British Columbia and the Northwest Territories in the Mackenzie River Basin, primarily the Liard River basin. On August 31, 2017 the British Columbia government approved implementation of the B.C./NWT BWMA through an Order in Council.

In 2021, a focus for this BWMA has been preparing a report of key activities that have been undertaken since the last implementation report. Some key activities for B.C. included a Bilateral Management Committee virtual meeting in June 2020, identifying options to address water knowledge gaps for the Liard and Petitot River watershed, supporting Fort Nelson First Nation in conducting water monitoring in tributaries flowing into the Liard River system, maintaining efficient approaches for sharing information with all BWMA partners, and establishing procedures for major project notifications.

British Columbia – Yukon

British Columbia and the Yukon completed signing of their BWMA on March 30, 2017. The Agreement is available on the MRBB website at:

<http://www.mrbb.ca/information/126/index.html>

On August 31, 2017 the British Columbia government approved implementation of the B.C. – Yukon BWMA through an Order in Council. This BWMA applies to all transboundary waters shared between British Columbia and Yukon in the Mackenzie River Basin, primarily the Liard River basin. Transboundary waters shared between the jurisdictions outside the Mackenzie River Basin, such as the headwaters of the Yukon River, are not included in the BWMA.

Implementation of the British Columbia and the Yukon Territories BWMA over 2021 continued the momentum of good virtual engagement, including a sixth Bilateral Management Committee in February 2021, a seventh in June 2021, and an eighth in October 2021. Tangible collaborative efforts have focused on supporting Indigenous members in testing an updated stream classification methodology that better enables the collection of Indigenous knowledge and local experiences and observations to contribute to a review of the preliminary Liard River classification. Water monitoring (i.e. supporting Kaska Nations in biomonitoring in the Liard River basin) that supports learning plan activities has been another priority.

British Columbia – Alberta

Subject to government approval to proceed, the parties will re-engage on the British Columbia – Alberta BWMA. This BWMA will apply to all transboundary waters shared between British

Columbia and Alberta in the Mackenzie River Basin, with a significant focus on the Peace River. While the BWMA has not been signed, communications between B.C. and Alberta water teams remain positive and valuable. Regular bi-monthly information exchanges and updates have been held in virtual meeting format since February 2021, and the two jurisdictions remain in contact about transboundary water priorities.

B.C. posts updates on the implementation of agreements to its [Water Management Agreements](#) website pages:

The screenshot shows the British Columbia government website. At the top, there is a blue header with a COVID-19 emergency notice and the BC logo. Below the header is a navigation breadcrumb: Home > Environmental protection and sustainability > Air, Land & Water > Water > Water Planning & Strategies >. The main content area is titled "Water Management Agreements" and includes a sub-section for "Mackenzie River Basin". A sidebar on the left lists various water-related topics, with "Water Management Agreements" highlighted. A COVID-19 digital assistant chatbot is visible in the bottom right corner of the page.

B.C. has declared a state of emergency. Learn about [COVID-19 health issues](#). | [B.C.'s response to COVID-19](#).

BRITISH COLUMBIA

Home > Environmental protection and sustainability > Air, Land & Water > Water > Water Planning & Strategies >

- Laws & Rules
- Water Licensing & Rights
- Drought, Flooding, Dikes & Dams
- Water Quality
- Groundwater Wells & Aquifers
- Water Planning & Strategies
 - Living Water Smart
 - Water Use Planning
 - Water Allocation Plans
- **Water Management Agreements**
 - Mackenzie River Basin State of the Aquatic Ecosystem
 - Northeast Water Strategy
 - Wetlands in B.C.
- Water Conservation

Water Management Agreements

British Columbia works with other jurisdictions to manage and protect common water resources.

Mackenzie River Basin

The Mackenzie River Basin Board was established under the Mackenzie River Basin Transboundary Waters Master Agreement between the Government of Canada, Saskatchewan, Alberta, British Columbia, Yukon and Northwest Territories. The Board acts to carry out the purposes of the Master Agreement.

- [Mackenzie River Basin Transboundary Waters Master Agreement](#) (1997) (PDF)
- [Mackenzie River Basin: State of the Aquatic Ecosystem Report](#) (2003)
- [Mackenzie River Basin Board Issues Report](#) (2012)

Bilateral Water Management Agreements (BWMA) are progressive agreements made in support of the Mackenzie River Basin Transboundary Waters Master Agreement. Bilateral Water Agreements define how provincial and territorial governments will work together to manage waters in the region.

The Master Agreement makes provisions for seven BWMA between neighbouring jurisdictions. BWMA involve B.C.:

- [B.C.–Northwest Territories \(Liard and Petitot River Basins\)](#) (PDF, 5MB)

Hello, I am your COVID-19 digital assistant. I can help you find COVID-19 related information. I'm still learning, so please be patient with my responses. Please don't enter personal information. Read more about [Privacy](#).

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2 Water-Related Legislation / Policy / Regulations / Planning

Water Sustainability Act Implementation Continues

Implementation of the 2016 [Water Sustainability Act](#) (WSA) continues, as one of several key legislative drivers for continuous improvement in water management in B.C. WSA implementation priorities for 2021 continue to focus on transitioning existing use groundwater users into the water licensing system before the deadline to apply expires on March 1, 2022; developing policy and guidance related to provisions enabled under the WSA (e.g. WSA Objectives, water sustainability plans and governance); and continuing the development of various operational WSA policies in support of the Act, such as finalizing an interim policy on Water Use in Mineral Exploration and Small Scale Placer Mining and guidance on Changes In and About Streams.

Collaborative work with the First Nations Fisheries Council (FNFC) continues to help establish new and improved approaches to Indigenous engagement on WSA Policy and regulation development. FNFC hosted a series of three workshops with First Nations and B.C. over summer 2021 to engage on an interim policy for developing Water Objectives – a key water management policy tool provided under Section 43 of the *Water Sustainability Act* – with Indigenous and local governments. The Province also provided opportunities for direct meetings with interested First Nations and hosted a webinar for active participants of the Cumulative Effects Framework and Environmental Stewardship Initiative on the Water Objectives policy proposal.

For more information about the WSA and regulations, visit the [Water Sustainability Act](#), the [WSA public engagement and blog](#) and [Water Licensing and Rights](#) web pages.

Mandate to Develop a Provincial Watershed Security Strategy and Watershed Security Fund

Following provincial elections in fall 2020, the Ministry of Environment and Climate Change Strategy received a mandate to develop a provincial Watershed Security Strategy and associated Watershed Security Fund, in partnership with the Minister of State for Land and Natural Resource Operations and the Parliamentary Secretary for Fisheries and Aquaculture. Public and stakeholder engagement is being undertaken in phases, with focused engagement with key stakeholders having been undertaken over summer 2021 to inform the proposal for a broader engagement strategy, being implemented fall 2021. Priority has been placed on engaging with Indigenous and local governments, as well as the federal government.

Key policy directions that the Strategy will explore may include governance, climate change, ecosystems, drinking water, community and economic stability, and education and knowledge building.

Update to B.C.'s Drought Level Indicators

In spring 2021, the Province engaged on a proposal to update and expand B.C.'s provincial drought level indicators. The proposal aimed to more accurately describe drought and water scarcity conditions in B.C., allow for improved protection of water resources and local aquatic ecology, and make B.C. more consistent with other jurisdictions across the continent.

The proposal was modified to address feedback, and in May the [B.C. Drought and Water Scarcity Response Plan](#) was updated with the revised indicators (see Table 1 below). A summary and outcomes of the engagement was also released in a [What We Heard and Outcomes](#) document. B.C. is now implementing a province-wide operational trial of the updated drought levels during the 2021 drought season. An evaluation of the trial will be conducted at the end of this period to determine effectiveness. More information is available in this [short video](#).

Table 1: B.C.'s Updated Drought Level Indicators (2021)

Level	Impacts	General Response Measures
0	There is sufficient water to meet socio-economic and ecosystem needs	Preparedness
1	Adverse impacts to socio-economic or ecosystem values are rare	Conservation
2	Adverse impacts to socio-economic or ecosystem values are unlikely	Conservation Local water restrictions where appropriate
3	Adverse impacts to socio-economic or ecosystem values are possible	Conservation Local water restrictions likely
4	Adverse impacts to socio-economic or ecosystem values are likely	Conservation and local water restrictions Regulatory action possible
5	Adverse impacts to socio-economic or ecosystem values are almost certain	Conservation and local water restrictions Regulatory action likely Possible emergency response

B.C. Climate Preparedness and Adaptation Strategy

B.C.'s [draft Climate Preparedness and Adaptation Strategy](#) (CPAS) outlines four pathways to strengthen provincial capacity to anticipate and respond to the impacts of climate change – like wildfires, floods and heatwaves, loss of habitat, changes in growing seasons and rising sea levels. These pathways are:

- [Strengthen foundations for success](#)
- [Enhance community climate resilience](#)
- [Foster resilient species and ecosystems](#)
- [Advance a climate ready economy and infrastructure](#)

The strategy describes actions the Province is taking in 2021 and 2022 and proposed actions to be taken in 2022 to 2025. It builds on the [substantial work already underway](#) in B.C. to prepare

for climate change and is informed by the 2019 [Preliminary Strategic Climate Risk Assessment](#), which examined some of the greatest risks to B.C. as a result of climate change.

CPAS has benefitted from the substantial input and expertise of people, communities, businesses, organizations, and institutions from across the province. Indigenous peoples have been central partners in developing the strategy.

Canada Water Agency Consultation in B.C.

B.C. participated in consultation on the Government of Canada's recent proposal to develop a Canada Water Agency (CWA). Key areas where B.C. identified opportunities for improved coordination and alignment with the federal government through a CWA included:

- Aligning work planning and funding opportunities
- Information and data sharing
- Monitoring
- Including Indigenous knowledge institutions, knowledge systems, values, and responsibilities in freshwater governance.

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3 Science, Monitoring and Information

Groundwater Science Program

B.C.'s Groundwater Science Program continuously improves the level of scientific knowledge on provincial groundwater, aquifers and the interactions between surface water and groundwater in order to support the sustainable management of our shared water resources and water-related values. Science and research are often conducted collaboratively with leading experts, stakeholders, and, increasingly in partnership with local communities and Indigenous groups, which facilitates a more transparent and inclusive growth in our knowledge of water. These activities support the implementation of the *Water Sustainability Act* and [Groundwater Protection Regulation](#).

The following key projects represent some of the groundwater science work underway in 2021/22:

1. Nicola - Coldwater River Groundwater-Surface Water Interaction Study Phase 2 – City of Merritt Wellfield Project
2. Assessment of Groundwater-Surface Water Interactions on the Vaseux Creek Alluvial Fan, Oliver, BC
3. Aquifer Summary updates and data maintenance of the [GWELLS application](#)
4. Surface Water Exchange Dynamics in Low-Gradient and Tidally Influenced Streams in the Lower Fraser Valley
5. South Area Aquifer Mapping
6. South Coast Aquifer Mapping
7. North Area Aquifer Mapping Northeast Area

Multi-year groundwater projects initiated in previous years that are also funded in 21/22:

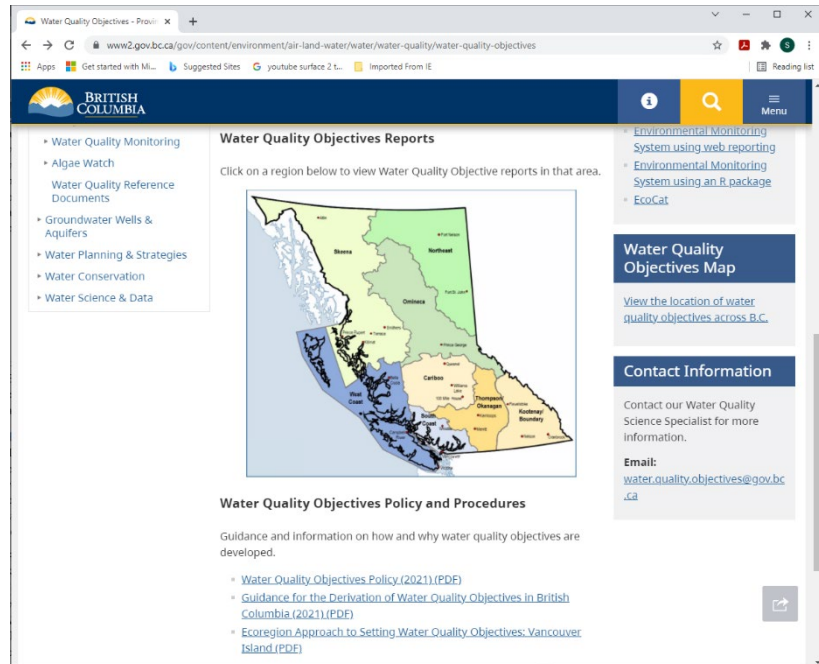
1. Assessment of aquifer- stream connectivity related to groundwater abstraction in the Lower Fraser Valley: Tools to support science-based decision making
2. Identifying Drought Susceptible and Drought Resilient Aquifer-Stream Systems in B.C.

Water Quality Guidelines and Objectives

Pursuant to the *Environmental Management Act*, B.C.'s [water quality guidelines \(WQGs\)](#) provide provincial benchmarks for fresh and marine water quality, which are used to assess and manage the health and sustainability of B.C.'s aquatic resources. Water quality guidelines are established for the protection of aquatic life, wildlife, agriculture, drinking water sources and recreation.

B.C. has recently updated its Molybdenum WQG for the protection of aquatic life, wildlife, livestock, and crops. Other key WQGs currently under development include Nickel, Polycyclic Aromatic Hydrocarbons, and Major Ions.

Also pursuant to the *Environmental Management Act*, [Water Quality Objectives \(WQOs\)](#) provide approved policy direction to guide the balance between human use, values and healthy aquatic environments by guiding statutory decisions that may impact the quality of a specific waterbody. WQOs are established on a priority basis for freshwater, estuarine and marine waterbodies of regional, provincial, inter-provincial, and international significance. They



are used to inform resource management decisions, identify which values should be addressed based on local concerns, promote water stewardship, and support long-term planning in communities across B.C. WQOs are numbers or statements representing low-risk conditions to provide protection for a specific waterbody and its associated water values and uses. These include:

- Drinking water sources;
- Aquatic life and its habitat;
- Wildlife and its habitat;
- Agriculture (livestock watering and irrigation);
- Recreational use and aesthetics; and
- Traditional, cultural, and social uses.

In the past year, B.C. updated its WQO policy statement and derivation guidance. In northeast B.C., the Ministry of Environment and Climate Change Strategy continues to work collaboratively with Treaty 8 First Nations (West Moberly First Nation, Saulneau First Nation, and McLeod Lake Indian Band) to develop WQOs for the Murray River watershed.

The Northeast Regional Strategic Environmental Assessment

The Northeast Regional Strategic Environmental Assessment (RSEA) is a collaborative approach between seven Treaty 8 First Nations and B.C. to assess the cumulative effects of natural resource development activities on the ability to exercise Treaty 8 rights. The RSEA process will provide management recommendations to government based on the assessment of several key values (water, old growth, moose, environmental livelihood, and peaceful enjoyment) important to the exercise of Treaty 8 rights.

Following last year's work on completing a Cumulative Watershed Disturbance Model, the RSEA Water Working Group has been reviewing the Interim Water Current Condition Report (CCR). The CCR summarizes the status of surface water in the Northeast under the cumulative watershed disturbance model, along with other supporting information gathered. The RSEA Water Working Group is also working on drafting the management recommendations based on the interim current condition results. Endorsement of the CCR (current status information and proposed management recommendations) will be sought by the end of the calendar year.

Pilot Collaborative Water Monitoring Program Underway in Northeast B.C.

Following the [scientific review of hydraulic fracturing](#) in B.C. in 2019, a [Pilot Collaborative Water Monitoring Program](#) was initiated in Northeast B.C. The program is establishing five sites for co-located monitoring of water quantity, water quality, benthic invertebrates, groundwater and climate. The data gathered will provide a well-rounded picture of water for one watershed in an otherwise data-sparse region. Partner First Nations are helping to identify the site locations and perform monitoring. For one or two of the sites, there is interest in employing a “two-eyed seeing” approach for monitoring, enabling a cross-over in braided streams of knowing between Indigenous Knowledge and Western science approaches.

The project is primarily funded by Geoscience BC and involves a collaboration between the Province (Ministry of Energy, Mines, and Low Carbon Innovation, the B.C. Oil and Gas Commission), Shell Canada Ltd., Matrix Solutions, and six of the Treaty 8 First Nations: Doig River First Nation, Blueberry River First Nation, Halfway River First Nation, West Moberly First Nation, Sauleau First Nations, and McLeod Lake Indian Band. Funding is in place until March 2023.

New Website Launched about Algae Blooms in B.C. Lakes: “Algae Watch”

During summer 2021, a new water quality outreach website was launched. [Algae Watch](#) enables citizen scientists to report and learn about algae blooms in lakes in the Province. The new education site invites people to contribute information to create a comprehensive picture of B.C.'s algae situation. The site helps people to recognize potentially harmful algae blooms and differentiate them from other natural phenomena such as foam or pollen, which can sometimes look like blooms. With the extreme heat dome that affected much of B.C. this summer, the Province received reports of algae blooms in northern lakes.

The data collected will help water quality scientists determine future water-monitoring programs. The work is also linked to the 53 lakes that are regularly monitored throughout B.C. through [the BC Lake Monitoring Program](#). Improvements to the Lakes Monitoring Website this year enabled the display of a monitoring results summary webpage for each lake on the site. The summary information includes general information about the lake, monitoring results and trends, map information, and bathymetric maps. A northern B.C. example is [Charlie Lake](#) (below).



Figure 1: Image of Charlie Lake from the B.C. Lakes Monitoring Results Summary Page

Canadian Aquatic Biomonitoring Network in BC

The Province continues to work closely with Environment and Climate Change Canada (ECCC) to promote the nationally standardized Canadian Aquatic Biomonitoring Network (CABIN) program across B.C. CABIN uses benthic macroinvertebrates as indicators of aquatic ecosystem health. CABIN uses data from a wide range of reference sites (i.e., minimally affected by human activities) to build predictive models that can be used to evaluate the condition of test sites (i.e., where there are concerns about the aquatic ecosystem). The differences between the macroinvertebrate communities at the test site and the “healthy” reference sites provides an indication of the extent of effects to aquatic biota.

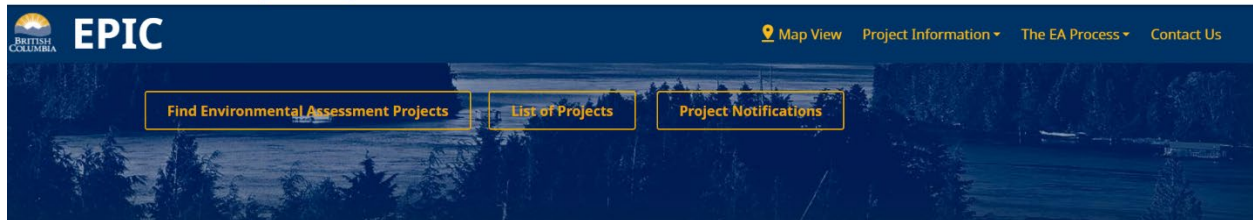
There are two CABIN models available to monitor and assess aquatic ecosystem health within the B.C. portion of the Mackenzie River Basin (i.e., Liard and Peace Basins). In 2021, ENV partnered with three different Indigenous groups to collect reference site data to maintain these models, including the Fort Nelson First Nation, Kaska Dena, and Tahltan Nation.

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4 Major Projects

In B.C., major projects are assessed for potential environmental, social, economic, health and cultural effects by the Environmental Assessment Office (EAO). In 2018, the system the B.C. Environmental Assessment Office uses to report on and provide information on major projects was updated: the [EPIC Portal](#) provides searchable information on Environmental Assessment projects, an overview of the environmental assessment process, and an interactive map that displays the geographic locations of projects.



Recent Activities & Updates

The Environmental Assessment Office and COVID-19

August 7, 2020

As government continues to coordinate the provincial response to the COVID-19 pandemic, the Environmental Assessment Office (EAO) is continuing its work while remaining committed to protecting the health and safety of both our staff and those with whom we work.

The following tables summarize the major projects in EPIC that fall under the Project Types of Energy-Petroleum and Natural Gas, Energy-Electricity, Industrial, Mines, Water Management, and Waste Disposal, that are in the Pre-EA, Pre-Application, and Application Review phases. There is one project in the Pre-EA phase. There are twelve projects in the Pre-Application phase. One project, the Sukunka Coal Mine Project, remains under review. There are no major projects under the Evaluation phase.

Pre-Environmental Assessment Act

Title	Category and Location	Phase	Comments
Stronsay Lead/Zinc	Mines; Mineral Mines Northeast of Fort Ware	Pre-EA Act Approval; June 1995	An open-pit mine operation.

Pre-Application and Early Engagement

Title	Category and Location	Phase	Comments
Pacific Northern Gas Looping Project	Energy-Petroleum and Natural Gas; Transmission Lines Summit Lake to Kitimat	Pre-Application; Scoping	The Pacific Northern Gas Looping Project would supply natural gas, via a 525 km long pipeline, from Summit Lake to proposed liquefied natural gas (LNG) export facilities in Kitimat, BC. It would have an initial capacity of 600 million standard cubic feet per day.
Kutcho	Mines; Mineral Mines	Pre-Application; Scoping	An underground copper-zinc mine with a production capacity of approximately

	100 km East of Dease Lake, B.C.		3,500 tonnes of ore per day, yielding an annual average of 33 million pounds of copper and 46 million pounds of zinc over a mine life of up to 14 years.
Aley Mine	Mines; Mineral Mines 140 km N of Mackenzie, B.C.	Pre-Application; Scoping	Proposed 10,000 tonne per day open pit niobium mine with a 25 year mine life.
Carbon Creek Coal Mine Project	Mining Approximately 40 km west of Hudson's Hope, B.C.	Scoping	Cardero Coal Ltd. proposes to develop a new open-pit surface and underground metallurgical coal mine with an average annual production rate of 2.9 million metric tonnes of clean coal.
Gething Coal	Mines; Coal Mines 25 km Northwest of Hudson's Hope, B.C.	Pre-Application; Scoping	Proposed new underground coal mine with an onsite coal preparation plant. The production rate is 2 million tonnes per year with a mine life estimated at 40 years.
Frontier Project	Energy-Petroleum and Natural Gas South to Southwest of Fort St. John, B.C.	Early Engagement	Enbridge proposes to construct a natural gas liquids straddle plant, 130 to 170 kilometre (km) pipeline, and associated infrastructure in northeastern B.C. The straddle plant and initiating pump station are located approximately 36 km west of Chetwynd, and the pipeline is proposed to span from the straddle plant to Taylor.
Wonowon Landfill	Waste Disposal 9 km southeast of Wonowon, B.C.	Pre-Application; Scoping	Secure Energy services Inc. proposes to construct and operate the Wonowon Landfill Project, which is anticipated to handle approximately 200,000 tonnes of waste annually over a 25-75 year lifespan, dependent on disposal services demand.
Arctos Anthracite	Mines; Coal Mines 160 km Northeast of Stewart, B.C.	Pre-Application; Scoping	The proposed Project would involve developing a new open pit coal mine in north-western BC located about 90 km southeast of Iskut. With a production capacity of 8,200 tonnes per day of clean coal, and a mine footprint of about 4000 hectares, the mine would produce about 3 million tones of coal for about 25 years.
Taylor Wind	Energy-Electricity	Pre-Application; Process Planning	Taylor Wind Project would be located on private land in the Peace River Region approximately 10 km south of the District of Taylor. The proposed project would have a nominal power production capacity of up to 400MW.
Red Willow Wind	Energy-Electricity	Pre-Application; Process Planning	Red Willow Wind Limited Partnership is proposing to construct and operate a 200 MW wind energy facility in the Peace River Region of B.C. The project is located southeast of the District of Tumbler Ridge and within the traditional territory of Treaty 8 First Nations.

Sundance Wind	Energy-Electricity	Pre-Application; Process Planning	The Sundance Wind Project would be located in the Peace River Region approximately 20 km north of Tumbler Ridge and would have a nominal power production capacity of up to 250 MW.
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Application Review (Pre Application)

Title	Category and Location	Phase	Comments
Sukunka Coal Mine	Mines; Coal Mines Near Chetwynd, B.C.	Application Review	Glencore (Proponent) proposes to develop and operate a surface mining operation and coal handling and processing plant to produce hard coking coal for export to overseas steel manufacturers. The Project will produce 3 million tonnes per year of saleable coal over a mine life of 20 years.

There are 41 projects in the Post-Decision phases of Pre-Construction, Construction, Operation, Care and Maintenance, Complete, and Substantial Start phases. These projects include the Site C Clean Energy electricity power plant which is in the construction phase (more information below); the Mt Milligan Copper-Gold Mine which is in operation; and the Roman Coal Mine, which is currently in care and maintenance. One project, the Kemess South Mine, is in decommissioning.

Important Related Links:

- BC Environmental Assessment Office: <http://www.eao.gov.bc.ca/>
- Frequently asked questions: <http://www.eao.gov.bc.ca/FAQ.html>

BC Hydro Site “C” Clean Energy Project

Site C will be the third dam and hydroelectric generating station on the Peace River in northeast B.C. The project will provide 1,100 megawatts of capacity and about 5,100 gigawatt hours of energy each year to the Province’s integrated electricity system. Despite ongoing challenges of the COVID-19 pandemic, construction progress for the Site C Project continued over 2021.

Construction on the generating station and spillways civil works area advanced, with placement of concrete in the powerhouse, intakes and spillways, installation of the penstock segments, and construction of the steel super structure for the powerhouse. By concrete volume, the generation station and spillways civil works sub-project is about 50 per cent complete.

BC Hydro continue to uphold its commitments to the environment, Indigenous groups and local communities by securing appropriate permits and authorizations to continue the ongoing

construction. BC Hydro estimates that approximately 600 permits will be required throughout the life of the Project, and of those, 493 have been received by June 30, 2021 and are being actively managed. In June 2021, BC Hydro submitted its final Environmental Assessment Certificate amendment request to the EAO regarding the use of haul trucks on a contingency basis to transport till material from 85th Avenue Industrial Lands to the dam site area. Engagement took place earlier in the year with local government, First Nations and local residents. A decision on the amendment is expected in fall 2021.

Work also advanced in the areas of environmental monitoring and assessment, as well as fish, wildlife, habitat, vegetation management and heritage programs. Environmental activities focused on responding to and assessing noise, light and air quality concerns within the Hudson's Hope area as well as refining the operations of the temporary fish passage and operating a contingency trap and haul program to augment the fish passage.

Some work was delayed in response to managing the COVID-19 pandemic. The project schedule for the first generating unit to go into service in late 2023 and a final in-service date in 2024 is at risk and being monitored. More information on the project, its construction progress, risks and budget are available through the [progress reports](#) BC Hydro voluntarily files with the BC Utilities Commission. Past annual and quarterly progress reports can be viewed by visiting [Site C's News and Information](#) webpage.

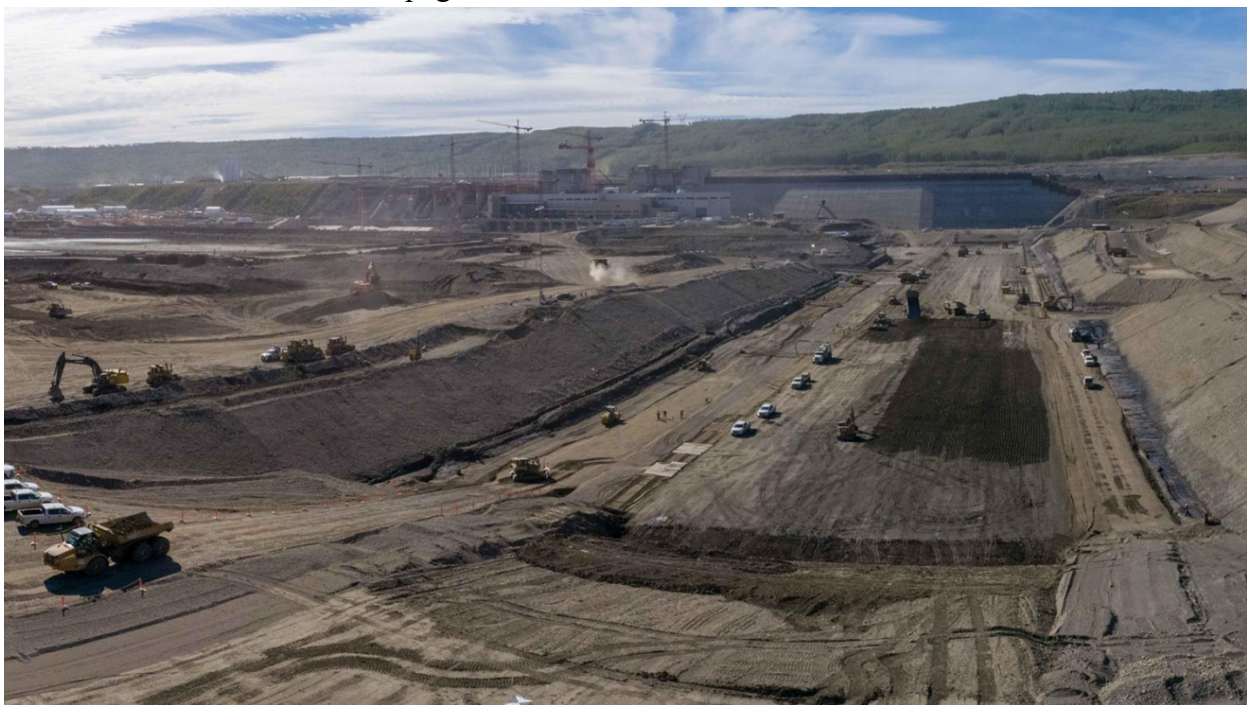


Figure 2: September 2021 - Crews in the dam core trench busy placing till, filters and aggregates.

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5. Events, Conferences and Seminars

As with the previous year, in response to the COVID-19 pandemic, many conferences, events and seminars this past year did not go forward. A few transitioned their mode of delivery to virtual. Two events are highlighted below from this year.

2021 B.C. Groundwater Association Convention (BCGWA) (Virtual)

On April 16 and 17, 2021, the BCGWA celebrated 50 years of excellence. The BCGWA's mission is to provide professional and technical leadership in the advancement of the groundwater industry and in the protection, promotion, and responsible development of groundwater resources. Hosting the convention aligned with their mission to foster and promote education, standards, research and techniques that improve methods of well construction, materials and services.

On Day 1, talks included technical presentations on several different topics, such as flowing artesian conditions, surface water and groundwater interactions, WSA and the Groundwater Protection Regulation highlights and GWELLS demonstration, as well as discussions around respectful workplaces. Day 2 of the convention was focused on delivering a pump installer course. Eight staff from two ministries of the B.C. provincial government took part in the convention, including hosting a virtual "table" at the Convention to enable industry and other participants have discussions about groundwater initiatives and resources.

MRBB Water Quality Task Team

Directly related to the work of the Mackenzie River Basin Board, B.C. continues to participate actively in the SOAER committee work (all continuing to take place virtually), and in the Water Quality Task Team. The Water Quality Task Team meets monthly and recently awarded a contract to complete a comprehensive review of statistical methods used by MRBB jurisdictions for water quality trend analysis. The outcomes for this work are recommendations on standard approaches for data management and analysis, with the ultimate goal of promoting greater coordination and improving efficiencies.

6. Other

Healthy Watersheds Initiative – COVID-19 Stimulus Funding

In Fall 2020, the B.C. Provincial Government identified \$27M in stimulus funding for watershed-related projects across B.C. as part of the B.C. Economic Recovery Plan. This funding is being administered by the Real Estate Foundation of B.C. under the Healthy Watersheds Initiative (HWI - <https://healthywatersheds.ca/>).

As of September 2021, 61 projects have finalized grant agreements in place under the HWI. Many of these projects are led by or undertaken in partnership with Indigenous communities. An Indigenous Leaders Advisory Circle has been established to consider questions, advise, and comment on the practices and learning of HWI people and partners.

The projects span the Province, and one falls within the Mackenzie River Basin: The Wetlands Workforce project. The B.C. Wildlife Federation's [Wetlands Workforce](#) project is a collaboration with conservation organizations and First Nations that will deploy work-pods across British Columbia throughout 2021. Work-pods have been working to restore, stabilize, and monitor B.C.'s wetlands to improve wetland inventories, management and decision making. Several work-pods have been deployed in the Mackenzie River Basin. The project as a whole is supporting over 100 jobs province-wide and will provide training to workers in Wetlands Ecosystem Enhancement Protocol and Wetland Inventory.

Treaty 8 Nations and B.C. Move Forward on Cumulative Impacts

In June 2021, the Supreme Court of B.C. released a decision on the Yahey v. British Columbia court case in which the Court determined that the cumulative impacts from a range of provincially authorized industrial activities (e.g. oil and gas, forestry, and hydroelectric infrastructure) within Blueberry River First Nations traditional territory constituted an infringement of the Blueberry River First Nations Treaty 8 rights. The Court was clear that the Province must improve its assessment and management of cumulative impacts from industrial developments on the Blueberry River First Nation's Treaty rights, and to ensure those constitutional rights are protected. B.C.'s Attorney General, David Eby, released a statement in late July that the Province will not appeal that decision.

On October 7, 2021, the Province and Blueberry River First Nations reached an [initial agreement](#) that supports healing the land and helps provide stability and certainty for forestry and oil and gas permit holders in the traditional territory in the immediate term. Under the agreement, the Province will establish a \$35-million fund for Blueberry to undertake activities to heal the land, creating jobs for nation members and business for service providers in the northeast region. Activities will include:

- Land, road and seismic restoration;

- River, stream, and wetland restoration;
- Habitat connectivity;
- Native seed and nursery projects; and
- Training for restoration activities.

An additional \$30-million will be set aside to support Blueberry River First Nation in protecting their Indigenous ways of life.

Legislation Recognizes Indigenous Rights in B.C.

Continuing the Province's commitments to advance reconciliation and adopt and implement the UN Declaration on the Rights of Indigenous Peoples, B.C. passed new legislation to recognize Indigenous human rights on November 26, 2019. The *Declaration on the Rights of Indigenous Peoples Act* ("Declaration Act") is the foundational framework for reconciliation in B.C. The legislation sets out a process to align B.C.'s laws with the UN Declaration, and requires the development of an action plan to achieve the alignment of provincial laws with the UN Declaration, providing transparency and accountability to the process. Regular reporting to the Legislature is required to monitor progress. The new legislation also provides a framework for decision-making between Indigenous governments and the Province on matters that affect their citizens. More information on the Declaration Act is [available on the webpages](#). An annual report was prepared for the period of April 1, 2021 and March 31, 2021, and is available on the [Annual Reporting webpage](#).

Other Initiatives Contact:

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