Draft Initial Project Description: Deep Geological Repository for Canada's Used Nuclear Fuel Project

2025 SUMMARY FOR ENGAGEMENT

nwmo
NUCLEAR WASTE MANAGEMENT ORGANIZATION
SOCIÉTÉ DE GESTION DES DÉCHETS NUCLÉAIRES

PROTECTING WHAT MATTERS.
PLANNING WITH YOU.

The Nuclear Waste Management Organization (NWMO) is a not-for-profit organization tasked with the safe, long-term management of Canada's used nuclear fuel, in a manner that protects people and the environment for generations to come. The plan is to contain and isolate the used fuel in a deep geological repository using a multiple-barrier system.

Since our beginning, we have been working closely with Indigenous Peoples, Canadians, industry, regulators and all levels of government to protect people and the environment, both now and in the future. In November 2024, Wabigoon Lake Ojibway Nation and the Township of Ignace agreed to move into the regulatory decision-making phase as potential host communities for a deep geological repository for Canada's used nuclear fuel, or "the Project."

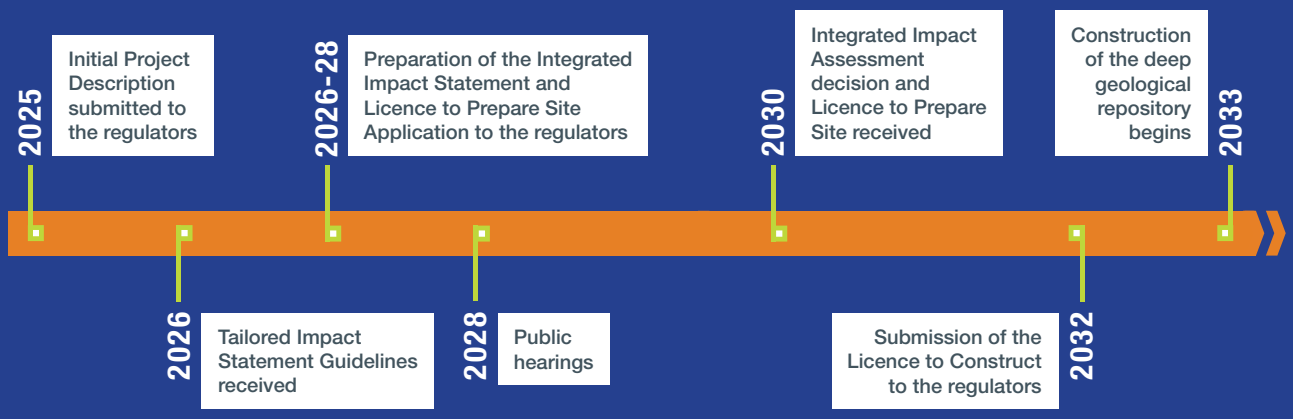
The Project now moves into the required regulatory decision-making process, which marks a new chapter in Canada's plan for used nuclear fuel, and another opportunity for Indigenous Peoples and the public to share their voice. The purpose of the regulatory process is for the safety of the repository to be independently confirmed by the regulators, including the Canadian Nuclear Safety Commission and the Impact Assessment Agency of Canada.

The process includes an impact assessment integrated with licensing. An impact assessment is a process that looks at how a deep geological repository could affect the environment, health, socioeconomics and Indigenous rights before it gets approved. A licence is required to make sure any nuclear activity in Canada is done safely, protects people and the environment, and follows strict rules.

The first step of the regulatory process is for the NWMO to draft and submit an Initial Project Description to the Impact Assessment Agency of Canada. This submission formally initiates the regulatory process.

An Initial Project Description explains the purpose and need for a project, the preliminary assessment of impacts, and how a company is planning to avoid and mitigate them. The Initial Project Description is the first of many steps in the rigorous licensing process for nuclear facilities, including engaging with Indigenous Peoples and local and regional residents.

The NWMO is currently in the process of preparing that regulatory submission document and will actively seek input as part of the process.



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Introduction

In 2002, federal legislation directed the Nuclear Waste Management Organization (NWMO) to study how to manage used nuclear fuel and to recommend a preferred approach. In 2005, after a three-year period of study and dialogue with Indigenous Peoples and Canadians from coast to coast, we submitted our proposed approach to the federal Minister of Natural Resources. In June 2007, the federal government selected the plan we are now implementing, known as Adaptive Phased Management, as Canada's plan for the safe, long-term management of used nuclear fuel.

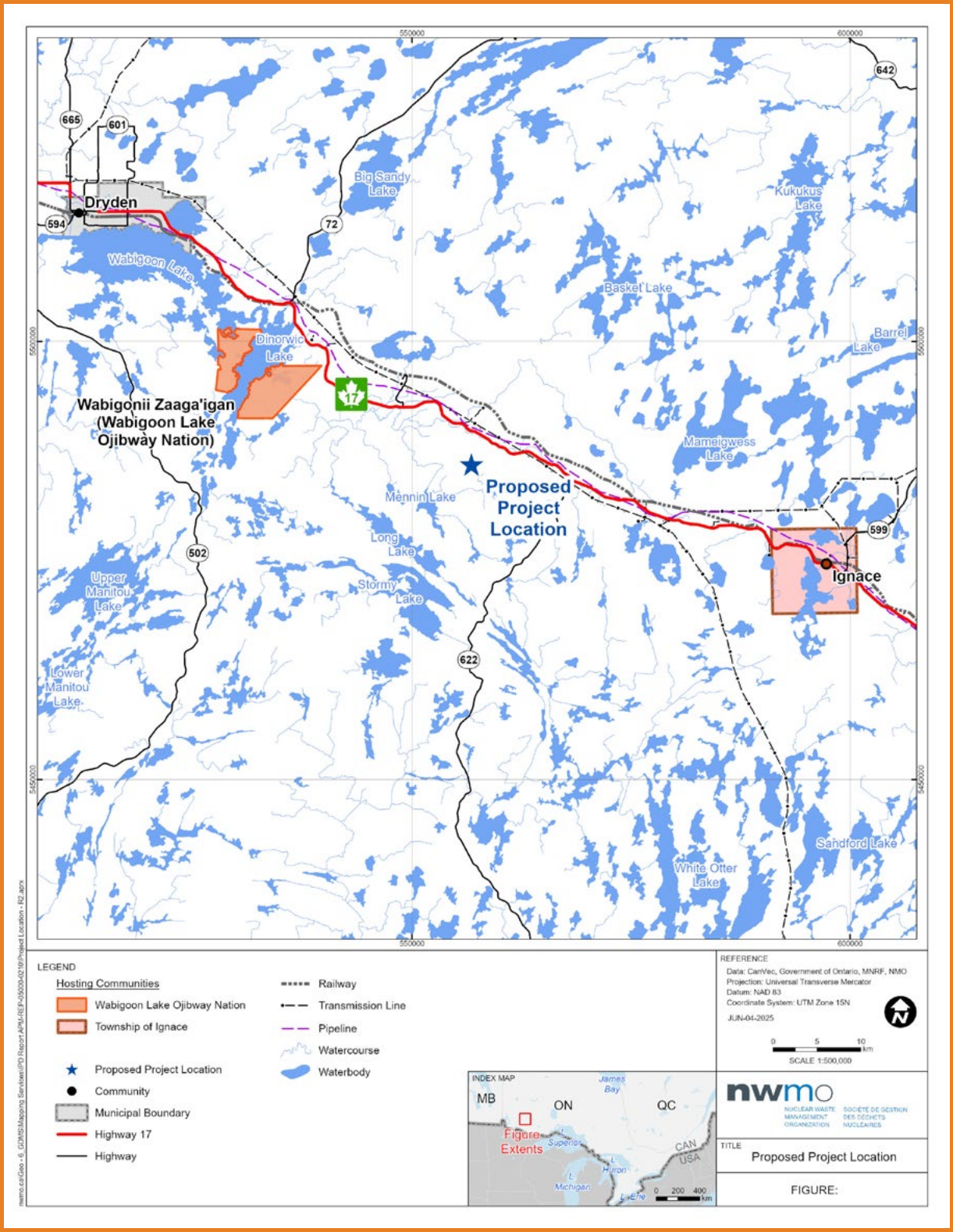
Following an extensive 14-year site selection process, Wabigoon Lake Ojibway Nation and the Township of Ignace agreed to move into the regulatory decision-making phase as potential host communities for a deep geological repository for Canada's used nuclear fuel.

We are now advancing Canada's plan to safely manage used nuclear fuel in a deep geological repository, subject to regulatory approval. The Project proposes the development of a carefully engineered underground facility, designed to safely contain and isolate used nuclear fuel essentially forever.

This document shares highlights of the NWMO's work in this pre-planning phase of impact assessment and licensing, including technical safety and design progress, engagement activities, environmental considerations and next steps as the Deep Geological Repository for Canada's Used Nuclear Fuel Project advances into regulatory decision-making.

In 2005, after a three-year period of study and dialogue with Indigenous Peoples and Canadians from coast to coast, we submitted our proposed approach to the federal Minister of Natural Resources.

PROPOSED PROJECT LOCATION



About the Project

The Deep Geological Repository for Canada's Used Nuclear Fuel Project will:

- Provide for the safe, long-term management of up to 5.9 million used nuclear fuel bundles;
- Be located in a stable rock formation to naturally contain and isolate used nuclear fuel over hundreds of thousands of years; and
- Be implemented in collaboration with surrounding First Nations and municipalities.

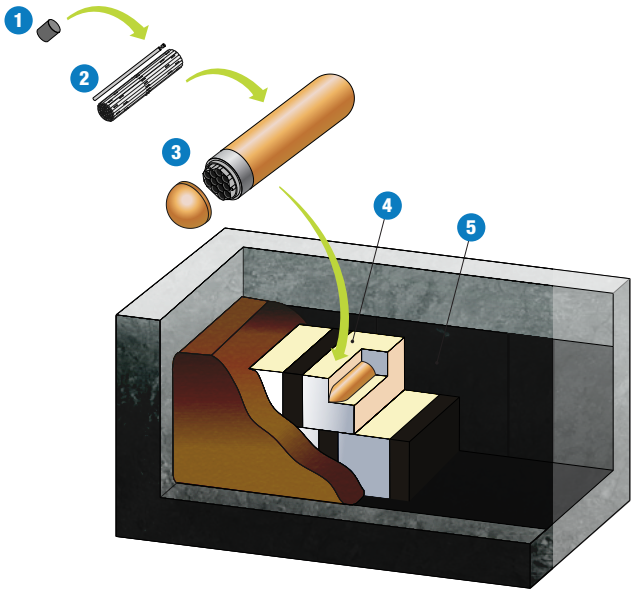
The Project will use a multiple-barrier system. The system includes a series of engineered and natural barriers, working together to safely contain and isolate used nuclear fuel within the repository.

Each barrier will provide a unique and stand-alone level of protection, while serving as a backstop to the last barrier. If any of these barriers were to fail or not perform as expected, the next barrier comes into play, to be sure materials remain contained and isolated.

Rigorous safety standards will govern the Project. The NWMO is committed to meeting all applicable federal and provincial regulatory requirements to protect the health, safety and security of people and the environment for generations to come.

The multiple-barrier system

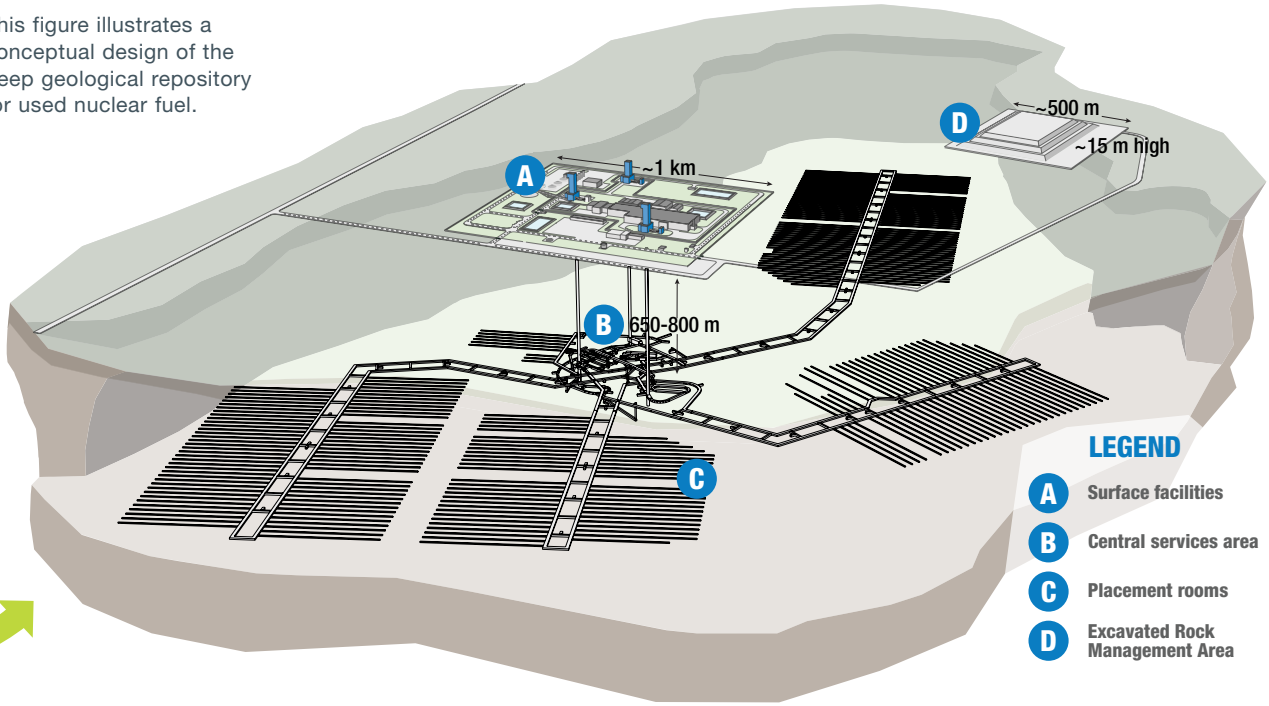
1. **Fuel pellet** — a very stable, solid ceramic made of baked uranium.
2. **Fuel bundle** — made from a highly corrosion-resistant material called Zircaloy.
3. **Copper-coated steel container** — engineered to resist corrosion and strong enough to keep the used nuclear fuel completely contained until radioactivity decreases to safe levels.
4. **Bentonite clay box** — highly compacted clay material, encasing each container and backfilling the repository.
5. **The rock itself** — protects the repository from disruptive natural events, water flow and unintentional human intrusion.



MORE ABOUT THE DEEP GEOLOGICAL REPOSITORY FOR CANADA'S USED NUCLEAR FUEL

- The host rock is stable and predictable over long periods of time.
- The host rock has low permeability, meaning that the tiny traces of water in the deep rock are isolated and do not mix with surface waters.
- The deep geological repository system would maintain an environment that is favourable to the stability and performance of the repository.
- Examples in nature provide evidence that engineered-barrier system components are stable for very long periods under similar deep geological conditions.
- The depth of the repository makes any mistaken human intrusion into the closed repository very unlikely in the future.
- Countries around the world are implementing repositories — this Project builds on scientific consensus and practical experience.
- Safety case studies indicate that any radiation impacts are likely to be well below the natural background dose rates.
- The deep geological repository can be built and operated safely using proven technologies.
- The radionuclides in the used fuel decay, making them less dangerous with time.
- The repository site can be monitored to confirm repository system performance.

This figure illustrates a conceptual design of the deep geological repository for used nuclear fuel.



PURPOSE OF THE PROJECT

The Project will protect people and the environment through sustainable, safe, long-term management of used nuclear fuel. The NWMO is proposing the site preparation, construction, operations, decommissioning and closure of the deep geological repository for Canada's used nuclear fuel to safely isolate approximately 5.9 million used nuclear fuel bundles. The Project will be licensed by the Canadian Nuclear Safety Commission for approximately 160 years.

UNDERSTANDING NUCLEAR POWER IN CANADA

In Canada, nuclear power is responsible for 15 per cent of electricity generation with 19 operable Canada Deuterium Uranium (CANDU) reactors at four nuclear generating stations. For many years, Canada has been a leader in nuclear research and technology, exporting reactor systems developed in Canada, as well as a high proportion of the world supply of radioisotopes used in medical diagnosis and cancer therapy.

Nuclear power offers a reliable power source, contributing to sustainable economic growth and improved human welfare. The Government of Canada has been clear nuclear power will play an essential role in decarbonization and the ability of Canada to achieve carbon neutrality by 2050. The growth of Canadian investment in nuclear will help strengthen our energy security now and in the future.

Currently, Canada's used nuclear fuel is managed in facilities licensed for interim storage. This approach is safe; however, given the long time frames associated with the hazardous nature of used nuclear fuel, it is not a permanent solution as it requires ongoing maintenance and management. That is why the NWMO agrees with international best practice to construct a deep geological repository to safely contain and isolate used nuclear fuel for the very long term.

ESTIMATED PLAN TIMELINE

The implementation of Canada's plan will span approximately 160 years. It will take approximately 10 years to prepare the site and construct the deep geological repository, with an expected operations start date in the mid-2040s. The deep geological repository will operate for approximately 50 years. After that, the repository will be monitored for an extended period of time before decommissioning, closure and post-closure monitoring.

Over the lifespan of the Project, the NWMO will maintain a commitment to host communities and the surrounding area to contribute to long-term well-being. This requires awareness and analysis of how the Project may impact social and economic conditions, including employment and job opportunities.

ASSUMED PROJECT PHASES AND PLANNING TIMELINES

Project phase	Approximate timeline (years)	Phase duration (years)
Site Preparation and Construction	2030-42	13
Operations	2043-92	50
Extended Monitoring, Decommissioning and Closure	2093-2192	100
Institutional Control[1]	2193+	

[1] The control of any risks at a site after decommissioning and closure, including activity like surveillance, maintenance or signs/markers.

The Integrated Impact Assessment and Licensing process

The Project will undergo a thorough impact assessment process, co-ordinated by the Impact Assessment Agency of Canada and integrated with the initial licence application to the Canadian Nuclear Safety Commission.

This process will ensure that details like impacts on harvesting, hunting and Indigenous ways of life are considered alongside any possible impacts on overall environmental, health, social and economic factors.

The Project is currently in the pre-planning phase, and the impact assessment has not started yet. Early input from the host communities, Indigenous communities in the region and the public is shaping our Initial Project Description document for submission to the regulators and our path forward to decision-making.

The preliminary assessment and proposed mitigation strategies for potential impacts described in the draft Initial Project Description will require input from the host communities, Indigenous communities, interested groups and individuals, and regulators. The results of the assessment will be used to tailor the impact statement guidelines for the Project, which will be issued by the Impact Assessment Agency of Canada.

The Initial Project Description is simply an initial screening step. The Impact Statement work that comes after the Initial Project Description must describe the designated project, key project components and ancillary activities, scheduling details, the timing of each phase of the project and other key features.

When drafting the Impact Statement, the NWMO will also work to respectfully align with Indigenous Knowledge and land use studies in the impact assessments and the design of mitigation strategies, so that the Project supports the interests of Wabigoon Lake Ojibway Nation, the Township of Ignace, and other Indigenous communities and the public in the region.

The next decade of our work will be focused on navigating the robust regulatory decision-making process to deliver on our promise to sustainably protect people and the environment. We are grateful for the close collaboration we have with Indigenous Peoples, Canadians, industry and regulators, which will help ensure our success.

— Dr. Mackenzie Denyes, Director of Impact Assessment and Licensing at the NWMO

Benefits of the deep geological repository Project

In addition to helping Canada achieve net-zero and energy security targets, the Project will create and sustain high-quality jobs in northwestern Ontario and beyond by supporting a highly technical and diverse supply chain, and meaningful economic benefits to regional communities. This national infrastructure project will drive a wide range of benefits for the host communities, the region and Canada as a whole over the approximate 160-year timeline. The Project will provide several hundred jobs, many of which will be needed for more than one generation. It will require people resources, equipment and materials to support construction and operations.

Because this multi-generational project will be implemented in phases over a period of about 160 years, we will continually review, strengthen and adjust the plan in the face of new information, direction and guidance. We are committed to implementing the Project in a safe way to meet the applicable *General Nuclear Safety and Control Regulations* (SOR/2000-202).

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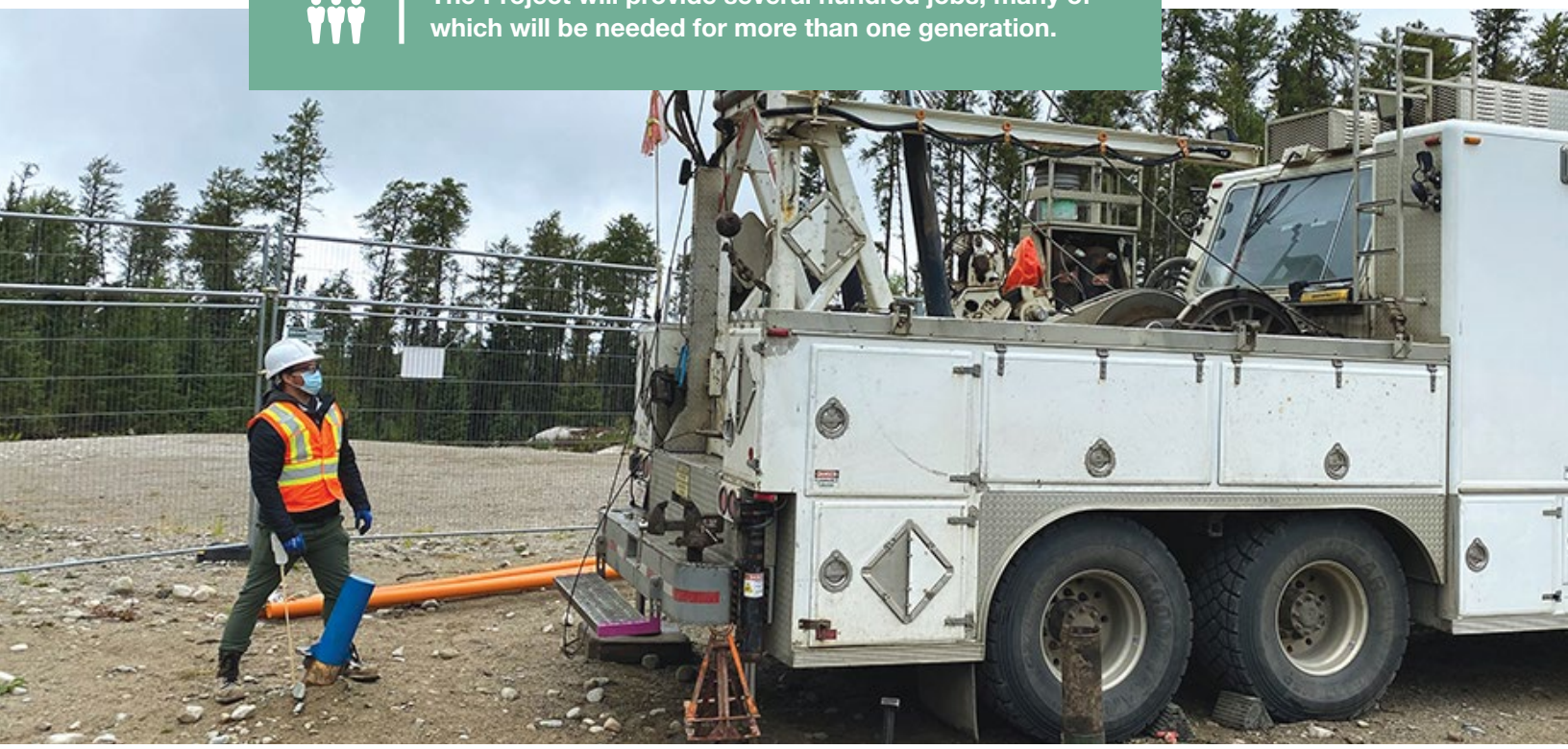


AVERAGE JOBS BY PROJECT PHASE

2024-32 PRE-CONSTRUCTION

Total direct jobs:

200

SKILL SETS

Geosciences, drilling, engineering, equipment operation, technical support, environmental assessment, safety assessment, monitoring, engagement, social sciences and communications.

2033-42 CONSTRUCTION

Total direct jobs:

640

210

430

SKILL SETS

Equipment operators, engineers, scientists, mining personnel, construction workers, tradespeople, and financial, administrative and public communication professionals.

2043-88 OPERATIONS

Total direct jobs:

700

630

70

SKILL SETS

Equipment operators, engineers, scientists, safety specialists, mining personnel, tradespeople, and financial, administrative and public communication professionals.

NWMO staff

Construction and mining trades

Continued engagement: Sustained dialogue, participation and collaboration

Engagement and relationship building with Indigenous communities, the public and interested parties will remain at the heart of this Project. Former, current and future activities include:

- **Implementation of the hosting agreements:** Collaborative work with Wabigoon Lake Ojibway Nation and the Township of Ignace, including investments in training, education and skills development. These topics are laid out in hosting agreements, including how we can move forward together through the regulatory process.
- **Regulatory engagement and participation activities:** Ongoing efforts to share information transparently and gather feedback on how the Project will proceed. This engagement and participation will seek to gain input on the potential impacts of the Project. Feedback on the design, implementation and monitoring of the Project is important to regulatory engagement because it helps ensure the Project protects the environment, respects culture, safeguards water and supports long-term benefits for the local communities.
- **Communications and information sharing:** Providing clear, timely and accessible information to Indigenous communities, the public and interested parties about the NWMO's activities and progress. This includes regular updates, opportunities for two-way discussions, published materials and other resources to help keep communities informed and aware of the Project's development.

Key themes and concerns that we heard during the site selection process will continue to be addressed as part of our engagement activities during the regulatory process. These include things like:

- The importance of protecting water resources and the natural environment;
- Requests for clear commitments on safety, health and environmental protection;
- Interest in long-term economic and capacity-building opportunities;
- Emphasis on community involvement in monitoring and oversight;
- Support for respectful alignment with Indigenous Knowledge alongside western science, to the extent that communities are willing to share; and
- Protection of the ancestral wisdom of the Knowledge Holders as their sovereign intellectual property.

The NWMO continues to maintain open communication and engagement with host communities, other Indigenous and municipal communities, and the public and will do so at every stage of the Project. The NWMO's engagement as part of impact assessment and licensing will seek feedback and participation on topics such as:

- Baseline data collection programs;
- Project activities and their interactions with people and the environment;
- Proposed mitigation measures to avoid adverse impacts, or alternatively, opportunities to enhance benefits; and
- Future followup and regulatory monitoring programs.

Building on the years of engagement that have already occurred, the NWMO will undertake outreach activities between July 17 and Aug. 22, 2025, specifically tailored to the host communities, Indigenous communities, and other interested groups and individuals.

Such activities will include information sessions and webinars, website and social media updates, and a comment period.

ENGAGEMENT AND PARTICIPATION WITH INDIGENOUS PEOPLES

The NWMO remains committed to building and maintaining strong, lasting relationships with First Nations and Indigenous Peoples, including ongoing relationships with national and provincial Indigenous organizations to ensure that continuous and meaningful dialogue persists.

Applying learnings from Elders, Knowledge Holders, Indigenous Peoples and communities, the Indigenous engagement and participation objectives for the Project include:

- Amplifying and uplifting Indigenous voice and knowledge systems;
- Respectfully aligning with Indigenous perspectives and knowledge into project planning and decision-making;
- Building respectful relationships grounded in reciprocal truth, honesty and trust; and
- Creating opportunities for equitable participation, collaboration and partnership.

The NWMO will look to Indigenous Peoples to share Indigenous Knowledge with us to the extent that they wish. The NWMO will ensure that Indigenous intellectual property is protected, as agreed to with the Indigenous Peoples who choose to share that knowledge.

The Project is located on the territory of Wabigoon Lake Ojibway Nation. Its willingness to move forward with the Project's next steps in its territory was required for making a siting decision for the Project and before the NWMO could proceed to regulatory decision-making. As part of the hosting agreement, the NWMO agreed for Wabigoon Lake Ojibway Nation to complete its own Regulatory Assessment and Approval Process for the Project. The NWMO is committed to respecting Wabigoon Lake Ojibway Nation's sovereignty throughout the implementation of the Project.

The Project is located on the territory of Wabigoon Lake Ojibway Nation. Its willingness to move forward with the Project's next steps in its territory was required for making a siting decision for the Project and before the NWMO could proceed to regulatory decision-making.

The NWMO acknowledges the importance of relationships with other Indigenous communities in the regional area of the proposed Project. The NWMO will work to maintain those relationships that currently exist and to establish new ones. The NWMO commits to meaningful communication, engagement and participation with other Indigenous communities, and the implementation of the NWMO's Reconciliation and Indigenous Knowledge policies, and Ethical and Social Framework.

The NWMO recognizes, honours and supports the belief that Indigenous Peoples have a special relationship with the natural environment and have unique stewardship responsibilities that are part of this relationship.


Nuclear Waste Management Organization:
Conversation Corner
LEARN MORE

THE NWMO'S RECONCILIATION JOURNEY

The NWMO is on a Reconciliation journey. In 2019, as part of this journey, we created and finalized through ceremony a *Reconciliation Policy*. It sets out how the organization will contribute to Reconciliation. Under the policy, the NWMO commits to respectful and meaningful engagement with Indigenous Peoples and communities, providing cultural awareness and Reconciliation training to staff and contractors.

Additionally, in 2016 and updated in 2020, the NWMO published an *Indigenous Knowledge Policy* to ensure we are guided by a clear set of principles as we work with communities and Indigenous Knowledge Holders. Under that policy, the NWMO commits to considering Indigenous Knowledge in our work and respecting the value of what Indigenous Knowledge systems can contribute to project development and decision-making processes.

In 2023, the NWMO published a Water Statement that affirms our commitment to water protection by considering how the agency of water (from surface to underground) may be in relationship with Canada's planned deep geological repository and its surrounding area. The Water Statement is a companion document to the NWMO's Environmental Responsibility Statement.

The NWMO will continue to apply Indigenous Knowledge to both technical safety and community well-being aspects of the Project when given permission to do so by Indigenous Knowledge Holders.

The NWMO will continue to meaningfully engage with Wabigoon Lake Ojibway Nation and other Indigenous communities potentially impacted by the Project, to identify and understand the potential impacts of the Project on Indigenous Peoples and their rights, including their lands, territories and resources, and to align with Indigenous Knowledge.

For more on our Reconciliation journey, please visit nwmo.ca/reconciliation.

The NWMO will continue to meaningfully engage with Wabigoon Lake Ojibway Nation and other Indigenous communities potentially impacted by the Project.

2024

Developed significant actions that will result in economic Reconciliation progress in northwestern Ontario

Strengthened data collection and tracking of the implementation and limitations of policy commitments on Indigenous Knowledge and Reconciliation within the NWMO

Developed a deeper awareness of First Nations and Métis communities in the site selection process through experiential learning opportunities alongside community members

2023

Released Water Statement

Released Sustainability Statement

2022

Publicly released the first annual Reconciliation Report

Expanded Reconciliation Training Program to communities and external partners

2021

Included Indigenous Knowledge in water protection plans

Applied the Reconciliation assessment tool to regional engagement strategies

2020

Enhanced policies and procedures to address Reconciliation

Enhanced procurement program to include an Indigenous strategy

Assessed corporate Reconciliation baseline and developed a Reconciliation measurement matrix

2019

Published *Reconciliation Policy*

Developed and delivered Reconciliation Training Program

Developed a corporate Reconciliation baseline assessment tool and began assessments

Continued to communicate the NWMO's Reconciliation program with communities involved in the site selection process

2018

Reconciliation Statement finalized through Indigenous ceremony

PUBLIC ENGAGEMENT AND PARTICIPATION

In addition to engagement with Indigenous communities, the NWMO has engaged extensively for over two decades with interested groups and individuals and a wide range of interested parties, including the host municipality — the Township of Ignace — and other municipalities, businesses, service providers and environmental organizations.

The purpose of public engagement is to enable early discussions specific to the site while informing the Project design through various engagements on the Initial Project Description. To achieve this objective, the NWMO will:

- Identify public and affected interests through early community engagement;
- Understand public preferences for engagement methods;
- Conduct engagement activities focused on specific deliverables to solicit feedback; and
- Incorporate received input to shape Project elements and ensure transparent recordkeeping and reporting.

The NWMO will hold open sessions to ensure members of the public who have not yet begun to engage with the NWMO can join the conversation.

Now that site selection is complete, there are several ways that people can provide input, including participating in information sessions or webinars, dropping by the Ignace Learn More Centre, or sending written feedback. More information regarding feedback opportunities can be found at nwmo.ca/PlanningWithYou.

How baseline data is used in the regulatory decision-making process

Baseline data collection studies for natural and human environments are ongoing and will continue through the regulatory decision-making process. Environmental monitoring will continue to collect data to describe existing conditions of many components of the environment.

With a good understanding of baseline conditions, predictions can be made on how the project may impact people and the environment. Measures can then be explored to avoid, manage, mitigate, and in some cases, offset adverse impacts.

The Initial Project Description will summarize many years of baseline data and use that data to inform potential mitigations (discussed in next section).

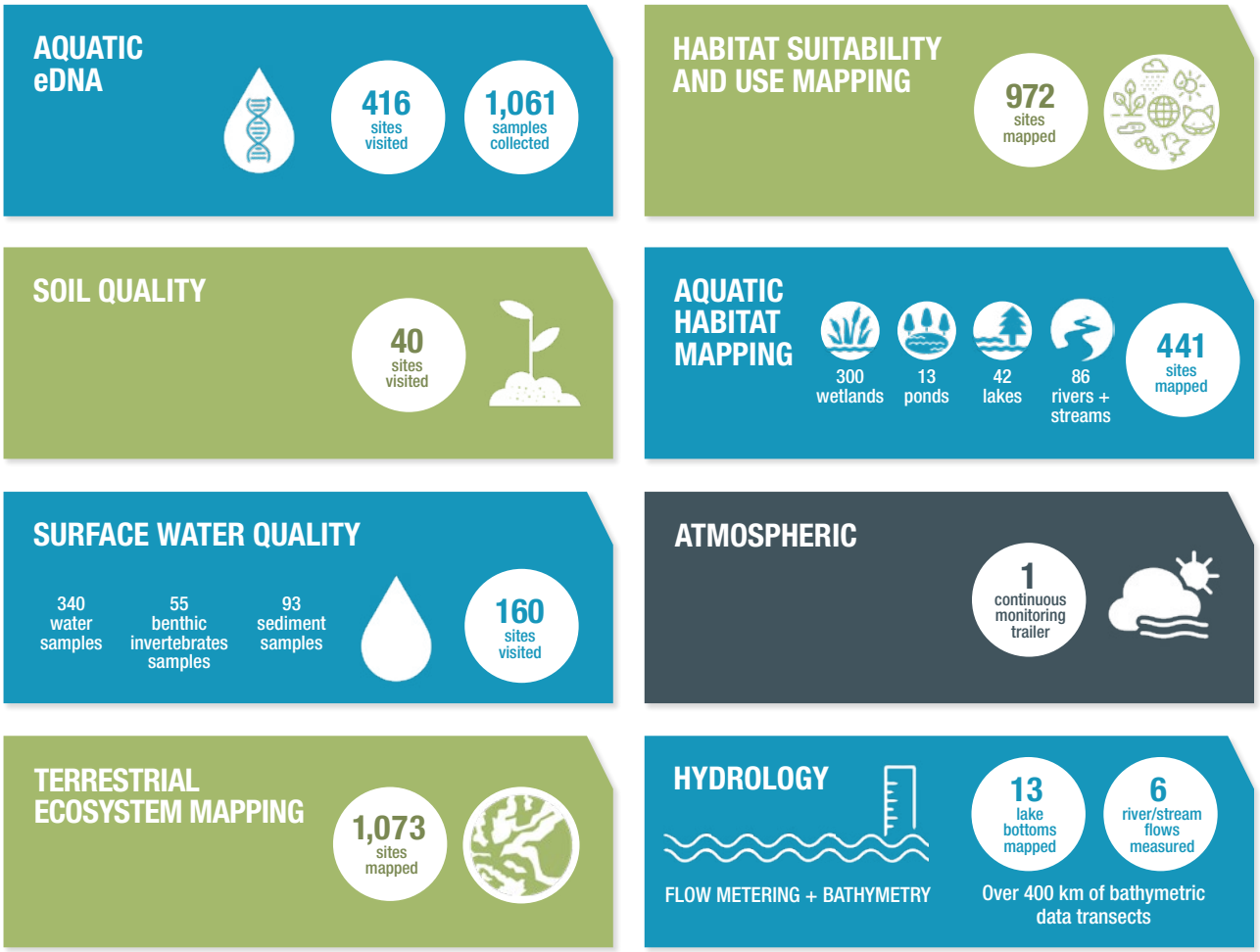
Environmental monitoring will continue to collect data to describe existing conditions of many components of the environment.

PROJECT HIGHLIGHTS TO DATE: ENVIRONMENTAL BASELINE

Regulatory decision-making requires that baseline environment data is collected and used in assessment and design planning before approval can be given for the site to be prepared for the deep geological repository. That process of studying the environmental baseline data is called “site characterization” by the Canadian Nuclear Safety Commission.

The NWMO has built an understanding of the Project site, by collecting, evaluating and modelling data about the regional geology since 2010. There have also been environmental studies conducted in the Project area since 2014.

The process of studying the environmental baseline data is called “site characterization” by the Canadian Nuclear Safety Commission.



This figure presents some of the baseline information gathered about the proposed Project site.

Highlights of components of the natural environment known to date from about 15 years of data collection

1. **Geochemistry:** When tested, rock core samples indicate that the rock does not have acid-generating or metal-leaching potential. The NWMO studied the complete chemical composition of whole rocks in the area, and their properties do not indicate the presence of dangerous minerals.

2. **Groundwater and surface water**

   - **Hydrogeology and hydrogeochemistry:** Hydrogeology and hydrochemistry are the study of groundwater. Hydrogeological and hydrogeochemical characteristics of the proposed site are favourable for the Project. At the depth where the repository would be built, water moves very slowly through the rock. This is based on tests from six deep boreholes which show that the rock lets very little water through — and even less the deeper you go.

     The composition of the groundwater samples, and the porewater (microscopic amounts of water trapped in rock) from core samples, show trends with depth that are consistent with expectations for a Canadian Shield environment.

   - **Hydrology:** Hydrology is the study of water movement. The site lies within the Wabigoon River watershed, which drains from Raleigh Lake northwest to Wabigoon Lake. Wabigoon Lake then drains towards Winnipeg River and Nelson River, eventually reaching Hudson Bay. The area surrounding the proposed Project contains several small, connected waterbodies that collectively drain into Mennin Lake. Mennin Lake flows north into Mennin River, and then northwest into Wabigoon River. The largest rivers in proximity to the proposed Project site are Mennin River located approximately two kilometres southwest of the proposed Project site and Revell River located approximately two kilometres to the north, which runs parallel with Highway 17. The confluence of Revell River and Wabigoon River is approximately six kilometres to the northwest of the site.

   - **Surface water quality:** The NWMO collects baseline surface water quality data quarterly. Water quality is normal with suitable dissolved oxygen, slightly acidic pH, and low to moderate clarity. Most contaminant-of-concern concentration levels are below guidelines, though some samples exceed guidelines for E. coli, phosphorus, aluminum, copper, manganese and mercury.

3. **Climate data:** Climate projections predict a 3 to 4 C increase in temperature by the 2050s and an approximate increase of 6 C by the 2080s. Precipitation is expected to increase by 50 to 75 mm/year by the 2050s and 100 to 125 mm/year by the 2080s.

4. **Background radiation:** In Canada, on average, 76 per cent of radiation exposure comes from naturally occurring radiation in soil and air. Average background radiation doses in Canada are estimated to be approximately 1.8 millisievert (mSv) per year, which is lower than the worldwide average of 2.4 mSv. Baseline radiation levels vary depending on location, elevation and other local geographic influences.

5. **Wildlife and wildlife habitat:** The NWMO is currently collecting baseline data for the characterization of land-based wildlife and habitat. Information will be presented for various wildlife groups within and surrounding the proposed Project site, including ungulates (moose), carnivores, small mammals, semi-aquatic mammals (e.g., beavers), bats, reptiles, amphibians, invertebrates and vegetation.

6. **Species at risk:** The NWMO is identifying species of conservation concern, including federally and provincially listed species at risk and provincially rare species. Potential species at risk include birds (Olive-sided Flycatcher, Common Nighthawk, Eastern Wood-pewee, Eastern Whip-poor-will), fish (American Eel), carnivores (American Badger, Wolverine, Grey Fox), bats (Little Brown Myotis, Northern Myotis), and vegetation (Black Ash). No critical habitat necessary for the survival or recovery of federally listed wildlife species at risk is known to occur at the proposed Project site.

7. **Birds, migratory birds and their habitat:** A total of 76 bird species were detected within and surrounding the proposed Project site, including five species at risk, 25 other priority species, 65 species protected by the *Migratory Birds Convention Act*, and one species that is afforded nest protection under the *Migratory Birds Regulations*.

8. **Fish and fish habitat:** Several important fish habitats, including spawning and nursery areas, were documented within the regional investigation area. Further work includes fish community surveys and benthic invertebrate studies to evaluate fish habitat within and surrounding the proposed Project site.

The Black-capped Chickadee is one of the bird species protected under the *Migratory Birds Convention Act* and *Migratory Birds Regulations*.

Next steps — Environmental baseline

Our current understanding of the natural environment at the proposed Project site indicates the site can meet the Project's requirements to safely contain and isolate used nuclear fuel to protect people and the environment.

The NWMO will advance additional site characterization and baseline data collection studies to further understand the baseline natural environment. These data will be used to optimize engineering designs for surface facilities and underground repository layouts.

PROJECT HIGHLIGHTS: SOCIO-ECONOMIC AND HEALTH BASELINE

Socio-economic reporting, including effects of the NWMO's activities, on a community's way of life or on its social, cultural or economic aspirations is a mandatory requirement of the *Nuclear Fuel Waste Act*. The NWMO is required to report on it triennially under section 18 of that Act. This reporting will continue for the life of the Project.

The NWMO is also required to do an impact assessment on social, economic and health related components of the human environment. This assessment would include any impacts of the Project on the rights of Indigenous Peoples, requiring baseline data on a variety of human environment components.

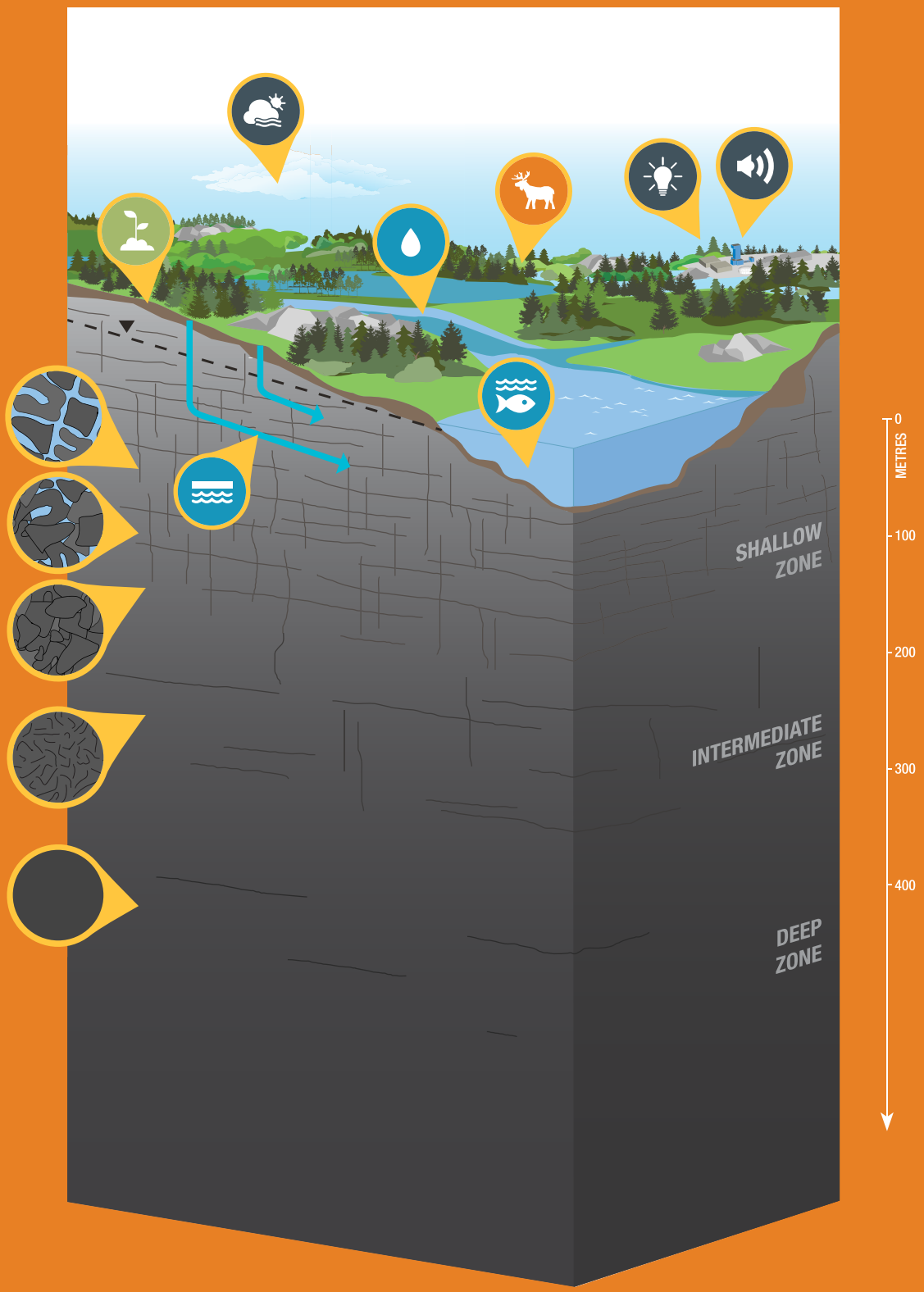
Highlights of components of the human environment that are particularly important to understanding the impacts of the Project

1. **Population and demographics:** Population growth in the area has been generally flat since 1991, although this does not necessarily reflect population trends in individual communities. The communities share demographic trends between 1996 and 2021, including an aging population, slight decreases in the number of persons per census family and children living at home, and an increasing proportion of the population who identify as Indigenous.
2. **Land and resource use:** The natural environment is important to residents and visitors of the communities surrounding the Project site. Residents participate in several types of land and resource use activities, including fishing, hunting, trapping, gathering, hiking, ATVing, snowmobiling and boating. A cultural screening study for the NWMO's borehole drilling program at the proposed repository site in 2024 examined known archaeological and historic sites using the Ontario Archaeological Sites Database. The cultural screening noted that there were no known archaeological or historical sites in or near the borehole sites. Additional work should be conducted not only to confirm these results, but also to explore potential areas of cultural or historical significance to Wabigoon Lake Ojibway Nation.

Next steps — Socio-economic and health baseline

The NWMO will continue baseline data collection and reporting to meet the requirements of the *Nuclear Fuel Waste Act* and *Impact Assessment Act*. Most importantly, the NWMO will seek opportunities to work with communities to verify information collected to date, and seek opportunities to learn more via tailored, community-specific studies, including Indigenous Knowledge and land use studies where appropriate.

CONCEPTUAL SITE MODEL FOR THE BIOPHYSICAL ENVIRONMENT



PROJECT HIGHLIGHTS: POTENTIAL EFFECTS OF THE PROJECT

The NWMO is preparing to submit an Initial Project Description to the Impact Assessment Agency of Canada to support an Impact Assessment under the *Impact Assessment Act*. The impact assessment will be integrated with the initial licence application to the Canadian Nuclear Safety Commission. In an impact assessment, the NWMO assesses the significance of impacts of the Project that remain after the implementation of mitigation measures on the following components that are within federal jurisdiction:

- Indigenous Peoples;
- Fish and fish habitat;
- Aquatic species at risk; and
- Migratory birds.

Further, the licensing under the *Nuclear Safety and Control Act*, which is integrated into the assessment, requires the NWMO to show how we will protect the environment and people when implementing the Project.

There are two opportunities in the impact assessment process for the NWMO to assess potential impacts and propose mitigation measures:

1. The Initial Project Description; and
2. The Impact Statement.

The NWMO is actively seeking participation from the host communities for the Project — Wabigoon Lake Ojibway Nation and the Township of Ignace — and from other First Nations and others in the region.

The NWMO is in the pre-planning phase of impact assessment, preparing the Initial Project Description report. The NWMO is actively seeking participation from the host communities for the Project — Wabigoon Lake Ojibway Nation and the Township of Ignace — and from other First Nations and others in the region on key themes of the Initial Project Description, which are summarized in this document.

The NWMO's engagement and opportunities to participate and provide feedback are ongoing throughout the process. A detailed overview of the Impact Assessment process is provided earlier in this report (see section *The Integrated Impact Assessment and Licensing process*).

Next steps — Potential effects of the Project

The Project has the potential to impact people and the environment (i.e., human and natural components of the environment), and the NWMO must study the pathways of those impacts as part of the regulatory process.

For an impact to occur, there must be a source (i.e., a project component or activity) that interacts with people and the environment. For the Initial Project Description, we have identified the following list of project-related activities that may have an impact on people and the natural environment, and need to be assessed as part of the impact assessment process:

- Land clearing during site preparation and construction;
- Blasting and excavation during site preparation and construction, and operations;
- Development and operations of surface facilities, the deep geological repository, the worker accommodation camp, the Excavated Rock Management Area during site preparation and construction, and operations;
- Materials handling during site preparation and construction, and operations;
- Vehicle traffic at the Project site during all Project phases; and
- Site water management and treatment (water taking, dewatering and treated water discharge) during all Project phases.

This list of Project interactions may be expanded upon through engagement with host communities, Indigenous communities, the public and regulators.

Preliminary screening assessment considerations and findings

These four conditions are the basis upon which the NWMO has made some preliminary assessments of the Project's impacts:

- No radiological materials will be on-site during site preparation and construction phases;
- Radiation safety will be subjected to rigorous Canadian Nuclear Safety Commission oversight and licensing during operations and closure;
- Effects, mitigation and monitoring during site preparation and construction will be similar to those of other infrastructure projects (such as mining and forestry) in northern Ontario; and
- As part of the screening assessment proposed in the Initial Project Description, potential changes are considered and mitigation proposed based on what has been approved on other projects with similar activities and impacts.

The NWMO will continue detailed safety assessments and a detailed quantitative human health and ecological risk assessment to confirm the safety case and that the Project will not have an adverse effect on people and the environment. These studies would be updated and submitted to the Canadian Nuclear Safety Commission at each licensing phase.

The draft Initial Project Description will share the following findings from the first level assessment of potential project impacts:

- For this Project, it is expected that best practices and standard mitigation will prevent changes or reduce the risk of impacts to fish and fish habitat, migratory birds and aquatic species at risk;
- For safety and security purposes, the Project will restrict access to land currently used by Indigenous Peoples for traditional land and resource use;
- Due to the storage of the used nuclear fuel, the Project may lead to perceptions of potential radioactive contamination that may result in alterations to traditional land use.

The impact assessment process will seek and confirm the extent of these impacts and on which communities, and assess the potential for impacts of the Project on other Indigenous communities as required by the *Impact Assessment Act*. The assessment would be tailored by community concerns, land use and pathways of impacts.

The NWMO welcomes feedback on the proposed approach and preliminary findings presented in this summary. The NWMO also welcomes the opportunity to learn more about how the Project may interact with people and the environment to allow further tailoring of the impact assessment.

Strategic assessment of climate change

The *Impact Assessment Act* requires a strategic assessment of climate change be completed for the Project to ensure climate change considerations are integrated into all stages of project planning and decision-making, ultimately contributing to more sustainable development and national climate goals.

The Project is critical to the life cycle of nuclear energy, which the federal government has identified as an important part of a low-carbon future in Canada. To maintain our commitment to protect people and the environment throughout our work, the NWMO will:

- Complete a best-available-technology assessment with the goal that the Project can become carbon neutral by 2050 during the estimated operations phase; and
- Develop and implement a credible net-zero plan that meets the requirements of the Government of Canada's strategic assessment of climate change.

Next steps for this work include additional climate change studies; optimizations to Project design; and engagement with the host communities, Indigenous communities and the public on the development of the net-zero plan.

What's next

- **Initial Project Description (IPD) submission:** Preparing an initial report that will describe the Project, current baseline conditions and potential interactions with people and the environment for regulatory and community review — the NWMO's submission of the Initial Project Description to the Impact Assessment Agency of Canada to formally initiate the Impact Assessment and Licensing process for the Project.
- **Regulatory engagement and participation:** Continuing the process of respectful relationship building with Wabigoon Lake Ojibway Nation, the Township of Ignace and surrounding communities.
- **Technical program advancement:** Advancing a site-specific design based on iterative feedback from safety, geoscience, environment and impact assessment studies and community input.
- **Technical assessments for the Integrated Impact Statement and Licence Application:** Preparing technical assessments for the Integrated Impact Statement and Licence Application throughout the impact statement phase of the impact assessment (about three years) and working collaboratively with the host communities, First Nations, and interested groups and individuals to develop mitigation measures and ensure transparency in findings. The Integrated Impact Statement and Licence Application is expected to be submitted approximately three years after the Initial Project Description is submitted.

Moving forward, the Deep Geological Repository for Canada's Used Nuclear Fuel Project will be subject to the *Impact Assessment Act* and many subsequent permits, licences and approvals that will be pursued by the NWMO during or after the Integrated Impact Assessment process.

- **Public hearing:** The Project will be subject to an independent panel of experts who will consider the impact statement, the views of various federal and provincial regulators, and the perspectives it hears from Indigenous communities and members of the public who participate. The hearing is a formal process where the Impact Assessment Agency of Canada, the Canadian Nuclear Safety Commission and others (such as Fisheries and Oceans Canada, Environment and Climate Change Canada, and Health Canada) review technical evidence to assess the safety of a proposed project or activity. It also provides an opportunity for Indigenous groups and the public to participate by presenting their views and concerns before an impact assessment or licensing decision is made.

Questions or feedback?

Your thoughts are welcome. Please submit your comments by Aug. 22, 2025, to RegulatoryFeedback@nwmo.ca or by mail to:

NWMO — IPD summary feedback
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Toronto, ON M4T 2S3

See what's next, find out about upcoming in-person events and learn more at nwmo.ca/PlanningWithYou.

Together, we are working towards a safe, sustainable future for Canada's used nuclear fuel.

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